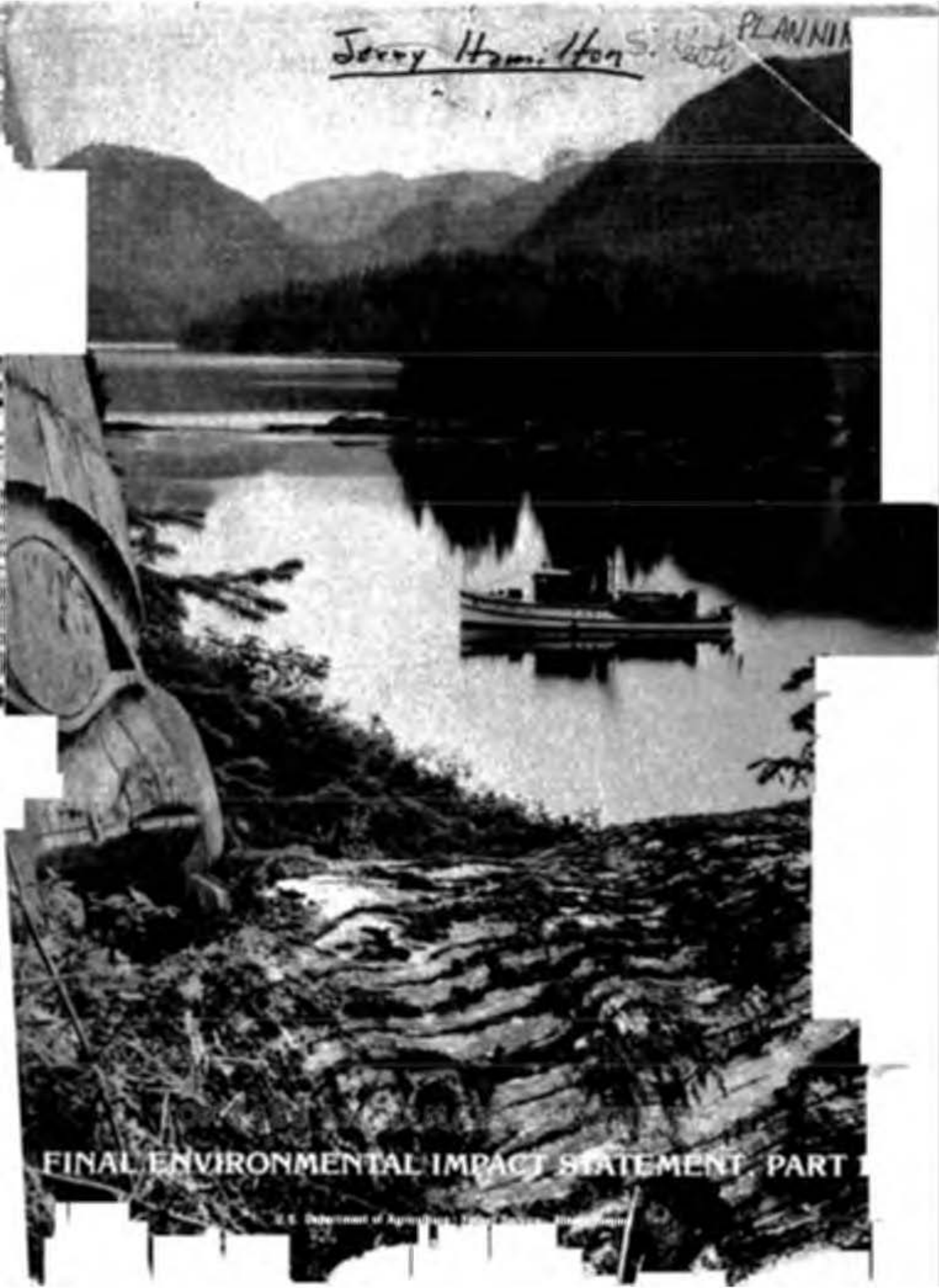
Jerry Hamilton
PLANNI
FINAL ENVIRONMENTAL IMPACT STATEMENT, PART

TONGASS LAND MANAGEMENT PLAN FINAL ENVIRONMENTAL IMPACT STATEMENT (Two parts). Alaska Region, Forest Service, U.S. Department of Agriculture (P.O. Box 1628, Juneau, Alaska 99802). March 1979, Series No. R10-57.

Final Environmental Impact Statement

10-01-79-05

TONGASS NATIONAL FOREST LAND MANAGEMENT PLAN

Southeast Alaska

Responsible Federal Agency: USDA-Forest Service
P.O. Box 2417
Washington, D.C. 20013

Responsible Official: John R. McGuire, Chief
USDA-Forest Service

For further
Information contact: Rai Behnert
TLMP Coordinator
Alaska Region
P.O. Box 1628
Juneau, Alaska 99802
(907) 586-7484

ABSTRACT

This Environmental Impact Statement describes a proposed action for the management of lands and resources in the 15,189,193 acre Tongass National Forest. It also describes 10 alternatives, three management recommendations and two alternative variations that were considered in identifying the Proposed Action. The anticipated effects of implementing the alternatives, recommendations, variations and the Proposed Action are discussed. The rationale for the Proposed Action is presented.

~~Implementation of the Proposed Action is scheduled on or after June 4, 1979, to allow for sufficient review and receipt of comments.~~

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

March, 1979

E R R A T A

The following corrections should be made to "Tongass Land Management Plan Final Environmental Impact Statement," (Part 1) Series No. 10-01-79-05, March 1979, published by the Forest Service.

Page	Location	Correction
Cover	Inside Cover last sentence.	Last two lines on page should be deleted.
xvi	Eight Para.	Should be moved to page xix following last para. of the Conclusion.
27	Bottom Para., fourth line	The number "2,831" should be "3,005."
159	Fifth Para., after last sentence.	Add the sentence after environment. "Figure 16 illustrates the allocations of the 867 watersheds for both Sport Fish and Commercial Fish in F-1, F-3, and the Proposed Action."
E26	Fourth Para., first sentence second line.	Insert "(Table 3)" after the word "examined."
E35-E36	Both Pages	These two pages should follow page E38.
315	Following VCU 183	Insert "193" under the VCU column, "x" under the LUD I column, and "ALP 76-81 FEIS Timber Sale" under the Reason column.

UNITED STATES DEPARTMENT OF AGR
FOREST SERVICE

RECORD OF DECISION

FOREST PLAN
ENVIRONMENTAL IMPACT STATEMENT
SOUTHEAST ALASKA
USDA-FOREST SERVICE
TONGASS NATIONAL FOREST

March

It is my decision that the proposed action described in the Tongass National Forest Land Management Plan final environmental impact statement be adopted. It incorporates the decision of the Secretary of Agriculture to recommend certain areas in the Tongass National Forest for inclusion in the National Wilderness Preservation System as described in the record of decision for the Roadless Area Review and Evaluation (RARE II) final environmental impact statement. The proposed action is based on the analysis and evaluation in the final environmental impact statement for the Tongass Land Management Plan dated March 12, 1979.

The proposed action provides for a diversity of resource management, a balance of recreation opportunities, and limits, to some extent, high costs at the margin. It is reasonably sensitive to a wide range of environmental needs providing the best means to minimize environmental harm, provides for a fairly stable economy, and meets local and National goals for wildland use opportunities. The decision was based on its ability to serve a large range of desires of local communities and National publics.

Implementation of this Plan will not take place until April 15, 1979, after the final environmental impact statement has been received by the Environmental Protection Agency and this Record of Decision has been made available to interested individuals, organizations, and agencies.

John R. McGuire

JOHN R. McGUIRE
Chief
P.O. BOX 2417
Washington, D.C. 20013

March 12, 1979
Washington, D.C.

SUMMARY

Final Environmental Impact Statement

10-01-79-05

Tongass Land Management Plan (TLMP)

This is both an Administrative and a Legislative Action.

Responsible Federal Agency: USDA-Forest Service
P.O. Box 2417
Washington, D.C. 20013

Responsible Official: John R. McGuire, Chief
P.O. Box 2417
Washington, D.C. 20013

For Information Contact: Rai Behnert
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Date of Transmission to EPA and the public:
Draft - June 28, 1978
Final - March 12, 1979

Summary

I. Introduction

The Tongass National Forest land management plan provides management direction for the next 10 years. Two-thirds of the Forest is recommended for multiple uses other than wilderness and one third is recommended for wilderness. This action is a part of the broad planning direction for all Forest Service activities laid out by Congress in the Forest and Rangeland Renewable Resources Planning Act of 1974 and the National Forest Management Act of 1976.

The wilderness is that recommended by the Secretary of Agriculture which was contained in the RARE II Final Environmental Statement filed January 4, 1979, and based on the analysis contained in the land management plan. It includes the newly proclaimed Admiralty Island and Misty Fiords National Monuments. Current timber-related employment opportunities will be maintained, based on the timber supply available from the National Forest, State, and private lands with some additional investments in timber management. Additional employment opportunities are projected. The recommended allocations provide for environmentally sensitive management of

fishery, wildlife, recreation and other values in the area not recommended for wilderness. More than half the forest will remain in a basically unmodified state.

The action also includes a decision to pursue a land exchange with Goldbelt, Inc. to provide lands for the corporation off of Admiralty Island.

An interdisciplinary planning team (IDT) was assembled to guide the project. Because of the diverse interests and environments to be considered, a wide range of expertise was included. In addition to Forest Service personnel, the IDT had representatives from the State of Alaska. The IDT was assisted by task forces that provided information about the differing resources and issues, i.e. fisheries, wildlife, wilderness/recreation, minerals, landtype/timber, socioeconomic and others.

II. Alternatives Considered in Reaching the Proposed Action

Alternative A - Fosters economic growth and increased employment in southeast Alaska by providing opportunities for development on the Tongass National Forest by providing a large timber harvest from the forest, facilitating access to mineralized areas, encouraging tourism, and promoting building of roads, hydroelectric plants and fish enhancement projects while providing at least minimum protection for the other forest resources. Under this alternative 15 percent of the Forest would be allocated to wilderness.

Alternative A-1: CMAL Proposal - Citizens for the Management of Alaska Lands (CMAL) alternative which would provide for diversification of the product base and increased employment in the private sector; protect existing jobs and provide growth opportunities in the timber and mineral industry; preserve opportunities for transportation corridors, hydroelectric development and fish and wildlife enhancement; provide for a broad spectrum of recreation oportunities; protect existing life styles. Includes 12 percent in wilderness.

Alternative A-2 - The February 1978, Federal Administration proposal was portrayed using Alternative A as a base for the balance of the Forest. In addition to specific proposals for wilderness areas on the Tongass, it provides for sufficient timber harvest from the forest and other sources to maintain timber industry related employment in southeast Alaska at the current level. This proposal includes 37 percent wilderness.

Alternative A-3: SEACC Proposal - Southeast Alaska Conservation Council proposal intends to provide for the protection and preservation of wildlife, fisheries and recreation areas; the growth of fishing and tourism industry; maintenance of a viable and diversified timber industry. This proposal includes 38 percent in wilderness.

Alternative B - Maintains economic stability in southeast Alaska by providing sufficient timber harvest from the forest to maintain current industry levels, facilitates access to mineralized areas, encourages tourism and promotes building of roads, hydroelectric plants and fish enhancement projects. This proposal includes 18 percent in wilderness.

Alternative C - Keeps over half of the forest in a natural, unmodified state while providing sufficient timber harvest from the forest and other sources to maintain the timber industry at current levels and other provide for other resource development opportunities. This proposal includes 25 percent in wilderness.

Alternative D - Keeps two thirds of the forest in a natural, unmodified state to provide wilderness and opportunities for dispersed recreation, and to safeguard fish and wildlife habitat. It also provides enough timber from the forest to meet existing

contractual commitments with the timber industry. This proposal includes 30 percent in wilderness.

Alternative E - Keeps the majority of the forest in a natural, unmodified state by providing an extensive wilderness system, emphasizing dispersed recreation opportunities, safeguarding fish and wildlife habitat. It makes enough timber available to maintain at least one of the two major pulpmills. This proposal includes 55 percent in wilderness.

Alternative A+ - Obtains the highest timber yield possible by placing all the watersheds with operable timber in designation IV.

Alternative E+ - Recommends all roadless watersheds for inclusion in the National Wilderness Preservation System.

Proposed Action - Recommends wilderness proposals from Alternative A-2, the IDT's previous recommendations, and public comment that are the same as announced in the Secretary's RARE II decision. Nonwilderness direction is based on consideration of Alternative A, C, and the IDT's previous recommendation, and resembles Alternative B in the nonwilderness areas. This proposal includes 35 percent in wilderness.

Seven steps were used in developing the Proposed Action:

Step 1. The Secretary of Agriculture reviewed the draft environmental statement, the analysis of public comments, the IDT's recommendations, and recommendations from the Regional Forester. This analysis resulted in the Secretary's January 4, 1979 RARE II decision.

Step 2. Given the Secretary's RARE II recommendations for 5,400,400 acres of wilderness, other goals were defined which would maintain the current timber industry employment levels while providing for protection, use and enhancement of the natural resources in an environmentally sensitivie manner; be responsive to the public, State of Alaska, and other Federal agencies' concerns in the resolution of the issues; and achieve the above in a cost effective manner.

Step 3. Information developed through the planning process was combined with the Secretary's RARE II wilderness recommendations and the previously defined alternatives. Two variations were developed, one emphasizing cost effectiveness and the other emphasizing environmental sensitivity. They were identified F-1 and F-3.

Step 4. The difference between the two variations were evaluated and the key effects considered.

Step 5. A tentative proposed action was developed by making a series of incremental changes from F-1 and F-3 so as to provide for the best mix of use opportunities. This step started with the previously developed alternative B to which additional modifications were made to accommodate public input and State of Alaska concerns. The IDT then described the effects of this proposed action.

Step 6. This proposal was evaluated against the identified goals by describing the major effects which differentiated it from the other variations.

Step 7. The Proposed Action was selected.

III. Summary of Environmental Effects

To provide uniformity in the assessment of the resource attributes the Forest was divided into 867 identified waterhseds, referred to as value comparison units (VCU). Major resources were assigned value ratings from 0 to 5 (5 being highest) in each unit by interagency task forces so that a direct comparison could be made watershed-by-watershed throughout the forest.

Additionally, it was determined that allocations could be accomplished by assigning each watershed to one of the four land used designations (LUD) identified as follows:

LUD I. Area to be recommended for wilderness designation. Designation I is applied to undeveloped lands providing opportunities for solitude and primitive types of recreation and containing unaltered habitats for plant and animal species which provide outstanding oportunities for additions to the National Wilderness Preservation System. (5,400,000 acres)

LUD II. This designation is a roadless backcountry type of management which provides greater management flexibility than designation I while still retaining the primitive wildland environment. In designation II primitive recreational facilities can be built and habitat improvements for fish and wildlife are permitted. (2,746,000 acres)

LUD III. This designation emphasizes amenity management while providing for a combination of both amenity and commodity values. The management goal in designation III is to achieve a high degree of compatibility between competing resources within the same area. (2,833,000)

LUD IV. In designation IV the goal is to provide opportunities for intensive development of resources. Emphasis is primarily on commodity, or market, resources and their use. Amenity values are also provided for. When conflicts over competing resource uses arise, however, these conflicts would more often be resolved in favor of the commodity values than would be the case in designation III. (4,212,000 acres)

Wilderness

The Secretary's RARE II wilderness decision, which was based on National concerns and data from the Tongass National Forest planning process, are the same in the Proposed Action and the two variations. Consequently, there was no change in effects attributable to the wilderness allocations between the variations. Wilderness values remain essentially intact under designation II, but would be largely modified under designation III and IV when the areas so allocated are actually used to yield commodities.

Wildlife

Effects of the Proposed Action on wildlife can be estimated by assessing the degree of potential impact on habitat of three important species - the Sitka blacktail deer, the brown bear and the bald eagle.

The Sitka blacktail deer is believed to be dependent on old growth spruce-hemlock forests for its key winter and intermediate range. There is greater latitude in designation III areas for locating and dispersing the timber harvest, and protecting the important old growth habitat than in designation IV. Figure A shows

the acres of commercial forest land (CFL) which the task forces determined were also important habitat for the deer, bear and eagle.

Figure A illustrates that during the life of the plan, the effect on the habitat of the three species is greatest in F-1, least in F-3, and most favorable in achieving a balance between the stated goals of the plan in the Proposed Action.

The wildlife task force designated 298 watersheds as having high wildlife values. Of these, 85 are included in the wilderness allocation. The Proposed Action allocates an additional 35 high wildlife value watersheds to designation II, which disallows timber harvesting but permits habitat enhancement, and 178 to designations III and IV, thus providing an equitable balance of protected wildlife habitat and timber availability (Fig. B).

The northern bald eagle is not an endangered species in Alaska, but it is Forest Service policy to protect all eagle nest trees. Perch trees are protected generally; however, in areas allocated to designation IV there is more of a possibility for some perch trees to be lost and there is a greater potential for disturbance to the nesting birds if timber is harvested near their beach fringe habitat.

The only known threatened or endangered species are certain peregrine falcons that migrate through southeast Alaska. There are no known effects on them in either F-1, F-3, or the Proposed Action. Existing policy will provide adequate protection.

Fisheries

Forest Service management direction and activity standards stress full protection of the biological potential of streams and rivers.

Activities allowed under designation IV increase the possibility of unplanned disturbances and short-term disruptions to fish habitat, i.e., those that may occur with culvert installation and other activities which are allowed in the streamside zone. The latitude for more selective spacing of cutting units in designation III areas allows for selection of locations which may be less critical and can, therefore, eliminate some temporary disturbances to the aquatic environment. Figure C illustrates the allocations of the 867 watersheds for both Sport Fish and Commercial Fish in F-1, F-3, and the Proposed Action.

The Alaska Department of Fish and Game identified 19 "High Quality Streams" and 65 "Important Waterhseds." Figure D displays the allocation to designations III and/or IV in the Proposed Action and the two variations.

Because wilderness is the principal allocation which would restrict fish enhancement opportunities, the effect of the Proposed Action and the two variations would be the same. Of the 180 potential enhancement sites identified by the Alaska Departmment of Fish and Game, only 33 are in the areas recommended for wilderness that would not be available for development.

Recreation

The most significant effects on recreation opportunities will be through the changing opportunities for primitive and semi-primitive recreational experiences. Figure E illustrates the number of watersheds with high values for primitive recreation and their allocation in F-1, F-3, and the Proposed Action. Existing primitive recreation values will be retained under designation II, while management

Figure A-- Million Acres of commercial forest land which is also important wildlife habitat*

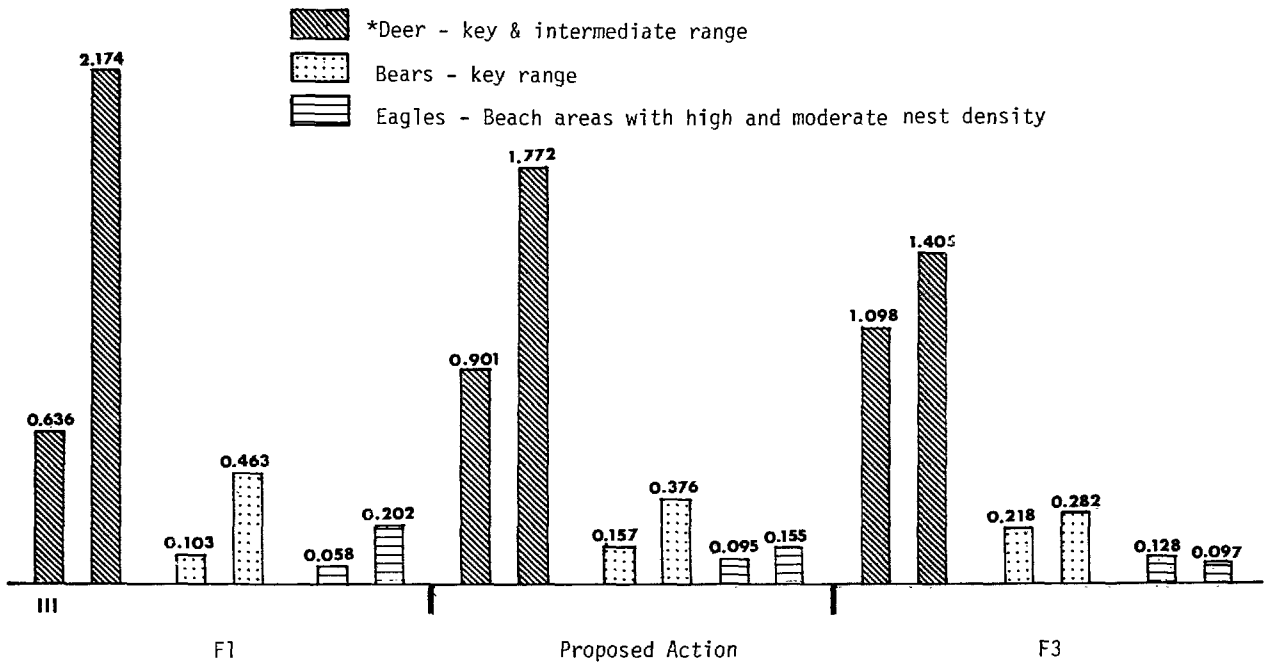


Figure B-- 298 Watersheds with High Wildlife Values.

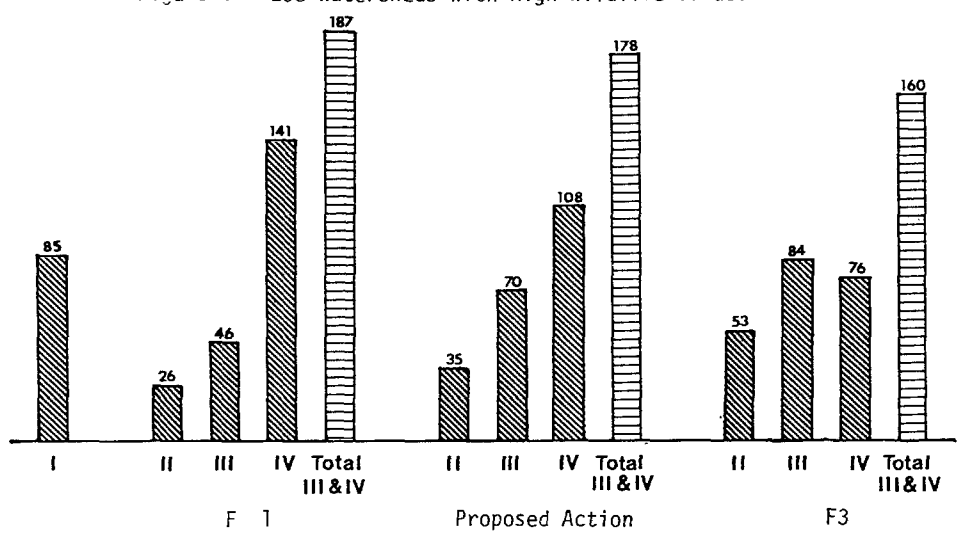


Figure C

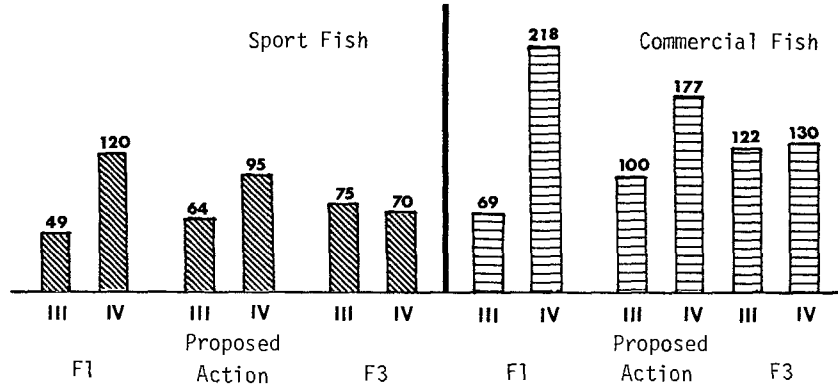


Figure D

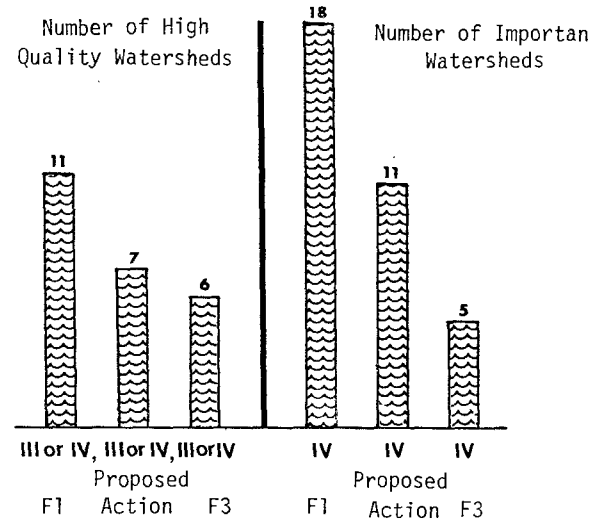
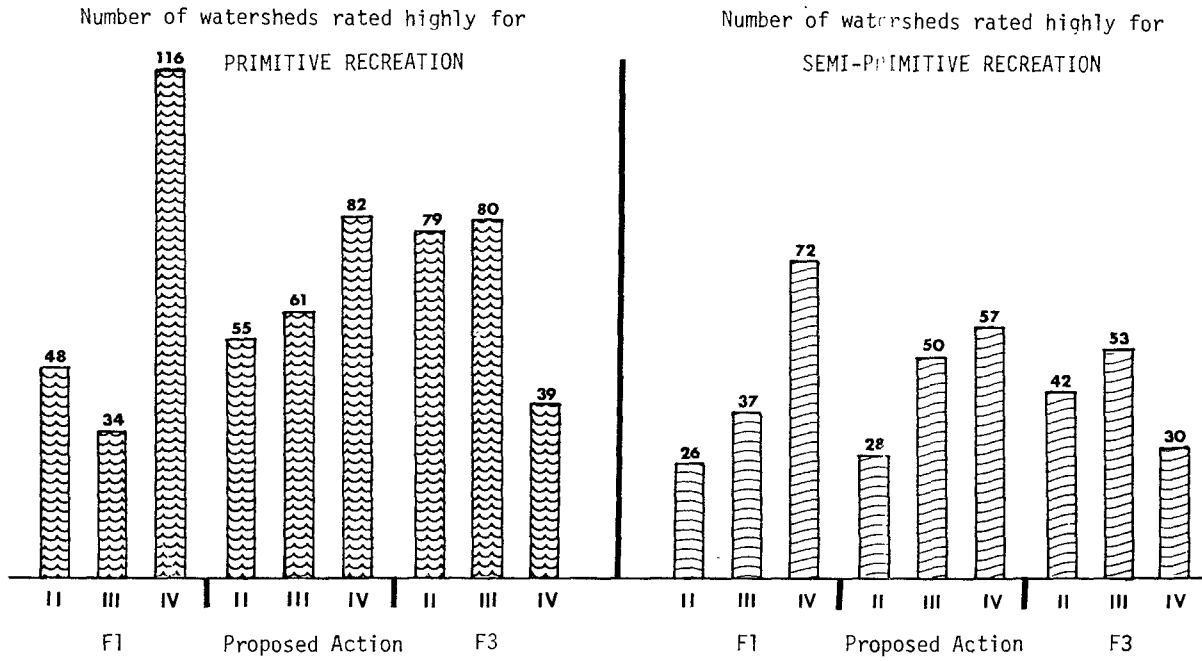


Figure E



under designation IV could produce the greatest modification of these values through allowed physical and aesthetic changes. Management under designation III would have similar physical impacts as under IV, but there would be a greater latitude for protection of physical and aesthetic values, especially as related to specific recreation sites and use areas.

Opportunities for hunting and fishing will largely parallel the impacts on the fish and wildlife resources themselves. The quality of the experience may vary considerably however. For example, management under designations III and IV will normally fully protect the biological productivity of the streams and wildlife habitat but may have a greater adverse impact on the physical appearance of the surrounding landscape and the perceived quality of the sport fishing streams. However, access to these streams will be improved where road systems are established. Land use designation II would normally provide full protection to the aesthetic environment.

Some idea of the impact on existing recreation uses can be seen by analyzing how a number of the areas judged to be important areas for primitive recreation use would be allocated by the Proposed Action and the two variations. Table A lists a number of these areas and indicates which would be kept in a roadless and undeveloped state.

Visual Resources

The greatest opportunity for manipulation of visual resources occurs under designations III and IV. Effects under designation III could be less because of the increased latitude in retaining timber for protection of the visual resource. It appears that the greatest impact could be in areas viewed from communities, along the Alaska Marine Highway (ferry) route and around high use recreation areas. The Proposed Action allocates more of the high visibility lands to designations I, II and III and, thus, provides more protection than variation F-1. Additionaly, in the Proposed Action a greater portion of these areas are allocated to designations III and IV than F-3 and, therefore, will make more timber available throughout the life of the plan.

Transportation and Minerals

Wilderness is the only allocation which would preclude development of major transportation and utility corridors and makes prospecting and development of minerals much less likely. Wilderness areas are also withdrawn from mineral entry after December 31, 1983 by the Wilderness Act. The effects on these items are the same in the Proposed Action and variations F-1 and F-3 since the wilderness allocations are also the same in them.

Timber

A measure of the effect of a management option on timber is the number of acres of commercial forest land (CFL) which is available for harvest. Designations III and IV provide harvest options. In designation II the timber would be retained for the protection of the other resources.

In variation F-1, 2,203,000 acres of CFL would be available for harvest; in F-3 there would be 1,989,000 available. The Proposed Action makes 2,127,000 acres of CFL available for harvest while retaining 219,000 in designation II. Approximately 1.5 million acres of CFL (in total) are recommended for wilderness designation, of which about half would have been available for harvest.

Table A

Important Areas Allocated to LUD II

AREA NAME	WATERSHEDS (VCU#s)	F1	PROPOSED ACTION	F3
Berner's Bay	16	No	Yes	Yes
Farragut Bay	90	No	Yes	Yes
Idaho Inlet	190	No	Yes	Yes
Mud Bay	191,192,193	No	No	Yes
Kadashan Cr.	235	No	No	Yes
Long Bay	228	No	Yes	Yes
Seal Bay	229	No	Yes	Yes
Lake Eva	295	No	Yes	Yes
N. Kruzoff	305	No	No	Yes
Mt. Edgecombe	308	No	No	Yes
Bay of Pillars	403	No	Yes	Yes
Rocky Pass	427,428	No	Yes	Yes
Upper Duncan Canal	441	No	Yes	Yes
Eudora Mt.	684	No	Yes	Yes
Helm Bay	713-716	No	No	Yes
Naha River	742	No	Yes	Yes
16 Areas	Total	None	Eleven	All

Employment

Because the job-related results of managing the forest amenities are hard to quantify, it is difficult to estimate their employment effect. Although there is no economic data to support it, it is assumed that management which features fisheries, recreation, and wildlife will aid the fisheries and tourism industries to a greater degree than commodity-oriented management. The Proposed Action would fall between F-1 and F-3 in opportunities for amenity-oriented employment (tables B and C).

It is easier to estimate the effect of commodity production on employment than the effects of an emphasis on amenities. The analysis considered the Proposed Action and its two variations, F-1 and F-3. Tables B and C depict the results of this analysis, and are based upon an expected average harvest level by the end of the plan period (1990) of 150 MM bm per year from private lands and 10 MM bm per year from State of Alaska lands. In table C one set of analyses assumes an average Tongass National Forest harvest of 450 MM bm per year. The other analysis in table C was based on a National Forest harvest of 412 MM bm per year. The 412 MM bm harvest level would require $6.8 million annual investment less than the 450 MM bm in the Proposed Action.

Table B

Timber Harvest and Related Employment

Tongass National Forest and 150 MMBM/Year Private and 10 MMBM/Year State Harvest

	450 MMBM Tongass Harvest				412 MMBM Tongass Harvest			
	1970-1976	F1	F3	Proposed Action	1970-1976	F1	F3	Proposed Action
Available Sawlog Harvest (MMBM)								
Tongass		450	450	450		412	412	412
State		10	10	10		10	10	10
Private		150	150	150		150	150	150
Total		610	610	610		572	572	572
Sawlog Consumption (MMBM)								
Export								
Tongass		18	18	18		18	18	18
Private		114	114	114		97	97	97
State		0	0	0		0	0	0
Total		132	132	132		115	115	115
Pulp 1/								
Tongass		203	203	203		197	197	197
Private		36	36	36		36	36	36
State		5	5	5		5	5	5
Total		244	244	244		238	238	238
Cant/Lumber								
Tongass		236	236	236		199	199	199
Private		0	0	0		17	17	17
State		5	5	5		5	5	5
Total Cant/Lumber		241	241	241		221	221	221
Total Consumption		610	610	610		572	572	572
Timber-Related Direct Employment (12 Month Average)								
Logging	1230	1350	1360	1370	1230	1270	1270	1290
Lumber	565	460	450	460	565	410	410	410
Pulp	1095	1180	1180	1180	1095	1180	1180	1180
Timber Transportation	115	110	120	120	115	120	110	120
Total Primary Employment	3005	3100	3110	3130	3005	2980	2970	3000

1/ Sufficient utility logs and residual chips are available to provide additional raw materials necessary to operate both pulp mills at full capacity.

Table C illustrates that the National Forest harvest level of 450 MM bm in the Proposed Action would result in a slight net gain in timber-related employment while the National Forest harvest of 412 MM bm per year retains employment near the 1970-1976 average. In both cases there is an increase in total logging jobs and a decrease in total sawmilling jobs. With harvest levels of 412 and 450, total jobs in the Ketchikan area would increase, however, sawmill jobs would decrease. A shortage of available sawtimber could cause the sawmill at Metlakatla to close or reduce volume unless other sources such as Canadian timber are obtained. There would also be an increase of total jobs in the Stikine area at both levels of output but shifts could occur among communities.

Table C

Change of Primary Employment Relating to Tongass Timber Harvest and 150 MMBM/Year From Private Land and 10 MMBM/Year from State Land

Management Area	Occupation	Employment 1970-1976	Change in Employment Tongass Harvest 450MMBM			Tongass Harvest 412MMBM		
			Proposed Action	F1	F3	Proposed Action	F1	F3
Chatham	Logging	404	-94	-94	-94	-114	-124	-124
	Lumber/Cant	120	-80	-80	-80	-90	-90	-90
	Pulp 1/	486	+44	+44	+44	+44	+44	+44
	Timber Transport	28	+2	+2	+2	+2	+2	+2
	Total	1038	-128	-128	-128	-158	-168	-168
Stikine	Logging	190	+70	+50	+110	+50	+30	+70
	Lumber/Cant	189	+11	+1	+41	-9	-19	+11
	Pulp	0	0	0	0	0	0	0
	Timber Transport	20	+10	0	+10	+10	+10	+10
	Total	399	+91	+51	+161	+51	+21	+91
Ketchikan	Logging	63	+164	+164	+114	+124	+134	+94
	Lumber/Cant	255	-35	-25	-75	-55	-45	-75
	Pulp 1/	609	+41	+41	+41	+41	+41	+41
	Timber Transport	66	-6	-6	-6	-6	-6	-6
	Total	1566	+164	+174	+74	+104	+124	+44
Total Tongass	Logging	1230	+140	+120	+130	+60	+40	+40
	Lumber/Cant	565	-104	-104	-114	-154	-154	-154
	Pulp 1/	1096	+85	+85	+85	+85	+85	+85
	Timber Transport	115	+6	-4	+6	+6	+6	-4
	Total	3003	+127	+97	+107	-3	-23	-33

1/ Increase in pulp-mill employment reflects the difference between full capacity employment and average employment, which is somewhat lower due to periodic closures over the seven-year base period.

It should also be noted that the movement of logs from the southern part of the Tongass northward is expected to supply Sitka with sufficient raw materials to operate the pulp mill at full capacity. The unavailability of sawtimber in the northern part of the National Forest is likely to make the re-establishment of a sawmill industry in Haines even more difficult. Transfer of logs may be possible throughout southeast but greater inefficiencies are implied.

It is recognized that the Proposed Action and variations F-1 and F-3 could result in displacement or substitution of jobs between the logging and sawmilling sectors with the assumption that the private sector would be exporting most of its timber in unprocessed log form. This analysis assumes that only 36 MM bm of low quality sawtimber from all of the private timber harvested will be processed locally.

It is reasonable to assume harvest from private and State lands. However, if the private harvest were not available, the Proposed Action would result in a loss of jobs in all areas except the Wrangell-Petersburg-Kake vicinity. If the National Forest harvest were 450 MM bm and there is 10 MM bm annual harvest from State lands, there would be a net loss of about 290 jobs in southeast Alaska. The National Forest harvest of 412 MM bm would cause a 450 job loss. Variations F-1 and F-3 would have corresponding losses.

Thus, this analysis recognizes the possible movement of people between types of jobs and between communities. Another consequence is likely to be greater seasonal changes in employment as logging makes up a greater proportion of total timber-related employment.

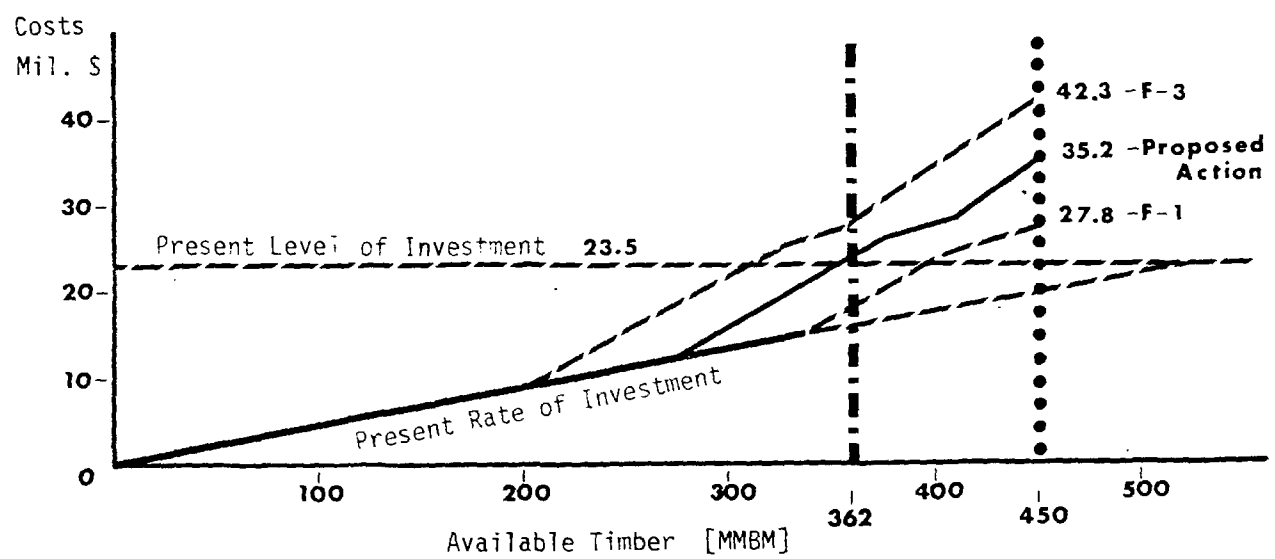
Related Costs and Outputs

Management of the Tongass National Forest under terms of the Proposed Action, or either of the two variations F-1 or F-3, can result in an annual timber harvest of 450 MM bm, environmental sensitivity, and the desired wilderness designations. The amount of investment required to attain these objectives varies with the management pattern specified.

There is now a basic investment of $43.80/MM bm for interdisciplinary team work on potential timber sales, sale preparation, and road investment. Additional investments in precommercial thinning, road construction, and use of advanced logging technology can add to the amount of available timber.

Figure I displays the timber harvest available at different investment levels for the two comparisons and the Proposed Action.

Figure I-- Tongass National Forest Investment Opportunities



Implementation of the Timber Management Program

The planned timber management program will be implemented as rapidly as possible. However, it cannot be accomplished immediately because of the time required to study potential timber sales, comply with the NEPA process, plan the road system, and expand the pre-commercial thinning program.

The fiscal year (FY) 1980 Tongass timber program is for 520 MM bm with a transition to 450 MM bm by about FY 1982 or 1983. The timber program will fluctuate during the plan period but the annual averages during the 10-year period will not exceed 450 MM bm. Comparison of the FY 1980, the transition program, and the planned timber management program is shown in Figure J.

Figure J

	Budgeted Fiscal Year 1980 Program		First Year of Transition		Average TLMP Program 1980-1989	
	Volume (MMBM)	Cost ($MM)	Volume (MMBM)	Cost ($MM)	Volume (MMBM)	Cost ($MM)
Volume Available Without Additional Investment	520	22.8	464.8	20.4	267.3	11.7
Added Program						
			*		**	
Precommercial Thinning	-	-	10.2	0.9	34.0	3.0
Preroading	-	0.5	40.0	8.2	131.0	17.7
Advanced Logging Technology	-	-	5.0	1.2	17.7	2.8
Total Added Program			55.2	10.3	182.7	23.5
Total Program	520	23.3	520.0	30.7	450.0	35.2
Current Investment Level (FY 1978)		23.5	-	23.5	-	23.5
Additional Investment FY 1978 Level		(0.2)		7.2		11.7

* Based on Thinning an Additional 1900 Acres Above Present Level.
** Based on Thinning an Additional 6300 Acres Above Present Level.

These estimates of needed annual investments are based on average market conditions. Markets for Tongass timber products are cyclic. The investment levels required for any specific year will be determined by future market conditions. During periods of high selling values less government investment will be necessary.

Assuming constant market conditions, a sustained Tongass timber management program of 450 MM bm per year can only be attained during the plan decade if an annual additional investment (based on current prices) of $11,700,000 is made. If this additional investment is not made annually, the Tongass timber program would drop below 450 MM bm. With the current level of investment, the annual Tongass timber program would be 362 MM bm (fig. I).

From 1970 to 1976, the timber harvest on the Tongass has averaged about 520 MM bm. In more recent years the harvest has averaged 450 MM bm. Moreover, reduction in the area of the Tongass caused by Native and State selections and management prescriptions in the Proposed Action indicate the National Forest proposed level should be 450 MM bm. For 1980, the 520 MM bm level was used to develop the national timber output from the National Forest System. Beyond 1980, the proposed 450 MM bm from the Tongass will result in a 70 MM bm national shortfall. However, because timber products from the Tongass reach different markets, the reduction caused by the proposed Tongass program will not seriously effect the United States domestic supply.

IV. Consultation With Others

Comments were received from a broad spectrum of the public. They included local and State government officials; Federal agencies; environmental groups; labor unions; outdoor sports associations; representatives of the timber, mineral and fishing industries; Native corporations; and interested individuals.

The State of Alaska indicated that it could not and would not support a plan which would result in a loss of timber industry employment. The State emphasized that it is equally important that the Proposed Action recognize and protect southeast Alaska's high value wilderness and roadless areas.

The issue of economic stability, protection, and preservation; the unique Alaskan lifestyles; and protection and enhancement of the outstanding wilderness opportunities in Alaska were the primary concerns expressed by those who commented.

From the local standpoint, the issues of economic stability versus the continued opportunities for the unique Alaskan lifestyle were discussed in many of the responses from communities and individuals. Loss of local influence in the decision process, community identity, housing, and community services were also addressed.

Responses varied between individuals in the communities, but it was often possible to identify a consensus. Generally, the smaller towns were most interested in preservation of their lifestyles. Native groups were concerned with preserving subsistence uses and economic options, and towns with timber-related employment stressed the need to maintain or increase this employment.

Some areas near Tenakee Springs, Holkham Bay, Lake Eva, and the Bay of Pillars were allocated to a roadless designation because of the recreation and wildlife desires of the local publics. Part of the Chilkat Peninsula, including the mouth of the Endicott River, is now proposed as an area where roads are permitted instead of for a roadless classification. Thus, the action would not preclude development and road access south from Haines.

The Proposed Action, with a strong group of wilderness recommendations, an emphasis on the amenity values of the forest, and a recommended timber-related investment program, is designed to be as responsive as possible to these many concerns.

To page xix

In comparison to F-1 and F-3, the Proposed Action more nearly balances the four goals. It provides for a diversity of management approaches, provides for a balance of recreation opportunities, and limits, to some extent, high costs at the margin. It is reasonably sensitive to a wide range of environmental needs, provides for a fairly stable economy, and meets local and National goals for wildland use opportunities. The decision was based on its ability to serve a large range of desires of local communities and the National publics.

Written comments have been received from the following sources:

National and State elected officials:

T. Stevens, U.S. Senator
D. Young, U.S. Representative
P. Meland, State Senator
B. Ray, State Senator
T. Gardiner, State Representative

State and Federal agencies:

State of Alaska
U.S. Department of Commerce, National Ocenaic and Atmospheric Administration
U.S. Department of Energy, Alaska Power Administration
U.S. Department of Housing and Urban Development
U.S. Department of Agriculture, Office of Equal Opportunity
U.S. Department of the Interior, Office of the Secretary
U.S. Department of Interior, Bureau of Mines
U.S. Environmental Protection Agency, Region X

Elected officials of Alaska communities (by area):

Chatham Area--
Angoon
Game Creek
Gustavus
Haines
Hoonah
Juneau
Pelican
Port Alexander
Sitka
Skagway
Tenakee Springs
Yakutat
Chugach National Forest--
Anchorage
Ketchikan Area--
Craig
Kasaan
Ketchikan
Klawock
Metlakatla
Stikine Area:
Hydaburg
Kake
Kupreanof
Petersburg
Wrangell

Sports associations:
Alaska Wildlife Federation and Sportsmens Council (eight affiliate groups)
Sitka Sportsmen's Association
Territorial Sportsmen, Inc. (Juneau)
Far West Ski Association (Los Angeles)
California Association of 4 Wheel Drive Clubs, Inc. (Sacramento)
United Four Wheel Drive Association (Montana)
Montana Snowmobile Association

Labor organizations:
International Longshoremen's and Warehousemen's Union (Wrangell)
International Woodworkers of America (Ketchikan)
International Brotherhood of Electrical Workers (Anchorage)
Labors International Union of America (Juneau)
United Brotherhood of Carpenters and Joiners of America (Juneau)
Building and Construction Trades Council, Inc. (Juneau)
Wrangell Joint Central Labor Council
Ketchikan Joint Central Labor Council

Native corporations:
- Shaan Seet
- Haida Corporation
- Huna Totem
- Sealaska
- YAK-TAT KWANN, Inc.
- Shee-Atika, Inc.
- KAVILCO
- Goldbelt
- Cape Fox Corporation
- Kootznoowoo

Timber industries:
- Louisiana-Pacific
- Alaska Lumber and Pulp (Sitka)
- National Forest Products Association
- Nichimen Company, Ltd. (Tokyo)
- Alaska Loggers Association
- Western Forest Industries Association
- White Lumber Sales, Inc.
- Alaska Timber Company (Klawock) priorities 1,2,3
- Soderburg Logging (Sitka)
- Alaska Wood Products
- Mitkof Lumber (Petersburg)
- Southeast Stevedoring Corporation

Fishing industries:
- Northern S.E. Alaska Aquaculture Association
- Southern S.E. Alaska Aquaculture Association
- Dry Bay Fish Company (Yakutat) priorities 1,2
- Fishermen for Compatible Development
- United Fishermen of Alaska
- Alaska Trollers Association
- Southeast Seiners Association

Environmental groups:
- Southeast Alaska Conservation Council (SEACC)
- Alaska Center for the Envrionment
- Isaak Walton League
- Sierra Club (Rio Grande Chapter, Juneau Chapter, Southwest Representative)
- Friends of the River
- Audubon Society (Cape Henry, Anchorage, Juneau, National)
- National Park and Conservation Society
- New Mexico Wilderness Study Committee
- Lynn Canal Conservation
- Friends of Alaska

Mineral industries:
- WGM
- Alaska Miners Association, Inc.
- Simmons Associates
- U.S. Borax
- Phil Holdsworth
- MAPCO
- Apex El Nido Mining Company
- Days Mines, Inc.
- NRG Associates
- AMOCO Mineral

Vumex
Nuclear Minerals Exploration
Noranda (Arizona, Montana, Anchorage, Colorado)
Resource Association of Alaska, Inc.
Inspiration Development Company
Atlantic Richfield Company
Northwest Mining Association
Inspiration Consolidated Copper Company

Other organizations:
Citizens for Management of Alaska Lands (CMAL)
West Humanist Society (Illinois)
Southeastern Conference
Northwest Public Power Association
Chairman of the Guide Licensing and Control Board

Conclusion

The priority goals for the Tongass Land Management Plan include quality additions to the National Wilderness Preservation System, environmentally sensitive nonwilderness management, maintaining the present employment levels in the forest products industry, and accomplishing the goals in a cost effective manner.

Variation F-1 is the least costly. However, based on the effects analysis above, it is the least sensitive in meeting environmental goals including wildlife, recreation, and watershed protection.

Variation F-3 is the most costly but also the most environmentally sensitive. It could result in the greatest displacement of workers with 75 jobs being lost in sawmilling in the Ketchikan area as compared to 25 in F-1 and 35 in the Proposed Action.

Insert from page xvi

CONTENTS

Page

Summary iii
I. Introduction 1
- Planning Approach
- Relationship of TLMP Process to RARE II Process

II. Affected Environment 8
- Forest Overview
  - Physical Conditions
  - Biological Conditions
  - Social Aspects
  - Economic Aspects
  - Land Status
  - Data Used in TLMP
  - Land Capability and Suitability
  - Resource Elements
- Major Issues, Concerns and Opportunities

III. Evaluation Criteria 56
IV. Alternatives Considered 60
- Process Used in Formulating the Alternatives
  - Assumptions
  - Alternative Development Process
- Description of Alternatives
- Relationship of Alternatives to RARE II Alternatives

V. Effects of Implementing Alternatives 80
- Effects on Forest Composition
- Effects on Timber
  - Relation to Long-term Contracts
  - Acre Allocations by LUDs
- Effects on Wildlife
- Effects on T & E Species
- Effects on Research Natural Areas
- Effects on Fisheries
- Effects on Recreation
- Effects on Cultural Resources
- Effects on Wilderness
- Effects on Soils and Productivity
- Effects on Water
- Effects on Mineral Development
- Effects on Transportation and Utility Developments
- Economic Effects
  - Timber
  - Fisheries
  - Mineral Exploration and Development
  - Government Employment
  - Changes in Gross Regional Product
  - Tourism and Recreation
- Social Effects
  - Introduction
  - Social Effects on Communities

VI. Evaluation of Alternatives 144
VII. Identification of Proposed Action 150
- History and Sequence of Events
- Procedure Used to Define Proposed Action
- Rationale for Proposed Action
- Effects of Implementing the Proposed Action

Page

Economic Effects
Timber
Fisheries
Mineral Exploration and Development
Tourism and Recreation
Changes in Gross Regional Product
Social Effects
Effects on Forest Composition
Effects on Timber
Relation to Long-term Contracts
Effects on Wildlife
Effects on T & E Species
Effects on Flood Plains or Wetlands
Effects on Research Natural Areas
Effects on Fisheries
Effects on Recreation
Effects on Cultural Resources
Effects on Wilderness
Effects on Soils
Effects on Water
Effects on Air Quality
Effects on Mineral Development
Effects on Transportation and Utility Development
Relation of Proposed Action to Evaluation Criteria

Tongass Land Management Plan [NOTE: This section is displayed in the companion document entitled "Tongass Land Managment Plan Final Environmental Impact Statement, Part 2."]

VIII. Consultation With Others..... 218
Introduction
Process Used to Involve the Public
Analysis of Public Comment
Interpretation of Key Issues Raised Through Public Comment
Responses of Elected Officials
Responses of Native Corporations
Responses of the Fishing Industry
Responses of the Timber Industry
Responses of the Minerals Industry
Responses of Environmental Groups
Responses of Outdoor Sports Associations
Responses of Labor Organizations
Responses of Other Organizations
Responses of the Southeast Alaska Communities
Responses from Outside Alaska
Responses from Unknown Origins
Key Questions and Answers
State of Alaska and Federal Agency Responses
IX. References..... 294
X. Glossary..... 298
XI. Index..... 303
XII. Principal Participants Involved in Planning Process..... 308
XIII. Appendices..... 314
A. VCUs Unsuitable for Timber Management
B. Allocation Constraints
C. VCU Matrix

D. LUD Related Management Information Handbook (MIH) Activities
E. Previous Recommendations
    Original IDT Recommendation
    Modified IDT Recommendation
    Regional Forester's Recommendation
F. September 14, 1978 Letter from Agriculture Secretary Bergland to the Chairman of the Senate Energy and Natural Resources Committee
G. Off-Admiralty Land Selections

H. Techniques and Assumptions Used for Calculating Timber-related Investment Needs

MAPS:

IDT Recommendation
Regional Forester Recommendation
Proposed Action: Tongass Land Management Plan

Other maps (previously included in the Draft Environmental Statement) were sent only to new addresses who did not recieve the Draft. These are:

Alternative A
Alternative B
Alternative C
Alternative D
Alternative E
Alternative A-1
Alternative A-2
Alternative A-3
Current Program
SEACC Wilderness Proposals
Attractive Features (Natural)
Recreation Use Areas and Related Features

A limited number of these maps are available upon request from the Program Planning and Budgeting Office, USDA Forest Service, Alaska Region, P.O. Box 1628, Juneau, Alaska 99802.

1.
Introduction

TONGA[illegible]MENT PLAN

ENVIRON[illegible]TATEMENT,

Introduction

This is the Final Environmental Impact Statement and Forest Land Management Plan for the Tongass National Forest. The Plan covers three Administrative Areas, the Chatham, Stikine, and Ketchikan, which have been divided into a total of 141 Management Areas that include all of the Forest's 15,189,193 acres (exclusive of freshwater body acreages).

The package is composed of two parts, the Final Environmental Impact Statement and the Forest Land Management Plan. Although the two books complement one another, they can be used independently.

The overall emphasis of the Forest Land Management Plan and Environmental Impact Statement is on the allocation of land areas to provide differing land use opportunities, rather than on the specific levels of resource yields or use benefits that can be expected from the allocated areas.

The Forest Service has spent more than two years gathering information and trying to determine how the public wishes the Forest to be managed.

Planning Approach

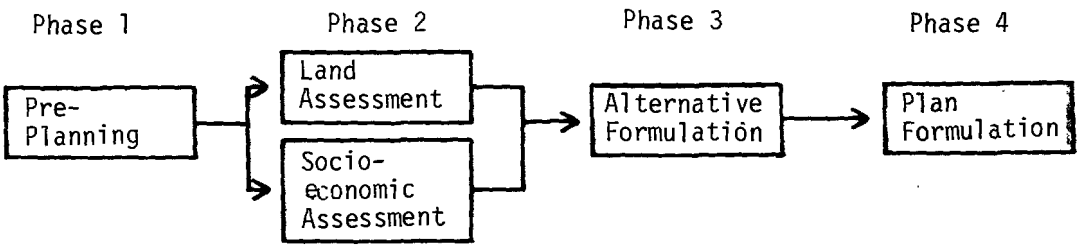
Land management planning is simply a systematic attempt to answer three basic questions:

1. How can the land be used based on its inherent characteristics and the various laws governing its use?

2. How should the land be used to reflect people's needs and desires?

3. How will the land be used in light of both its potential and the public will?

The job of answering these questions for the Tongass began in September 1976. The planning process was divided into four phases:



During the preplanning phase, a study plan was written to outline the planning approach, define the data needed, assign planning tasks, and set time frames for completion.

During the fall of 1976, five task forces were assembled to compile information on the forest and its resources. A sixth task force assessed socioeconomic conditions in southeast Alaska. Members included specialists from the Forest Service, the State of Alaska, U.S. Bureau of Mines, the U.S. Fish and Wildlife Service, the National Marine Fisheries Service and the University of Alaska. By May 1978, the task forces had published working reports on their assigned topics: landtype/timber, recreation/wilderness, fisheries, wildlife, minerals, and socioeconimic aspects.

As the new information became available an interdisciplinary team began using it to consider land allocations. Planners, wildlife biologists, geologists, foresters, landscape architects, and others worked together to develop 10 basic allocation alternatives that would address various issues raised by the public. These alternatives, three subsequent recommendations and a Proposed Action are presented in this document.

Planning Objectives

Throughout this planning process, we have been guided by certain key objectives, including these:

1. To include the public in developing and reviewing the plan.
2. To gather data needed for an impartial consideration of all resources on the Tongass.
3. To assess the local, regional, and national significance of those resources and to estimate expected demands for them.
4. To resolve land use issues by analyzing different allocation alternatives and then to prepare an equitable land management plan.
5. To link land allocation to programming and budgeting so that planned activities can be carried out.

A full description of the planning approach and objectives is given on pages 256-275 of the Southeast Alaska Area Guide.

Land Use Designations

In forming land allocation alternatives, the interdisciplinary team used four Land Use Designations, or LUDs. These LUDs describe the broad purpose of management for each area of the National Forest, and establish specific management constraints. A listing of the compatible management activities permitted within each of the different LUDs is presented in Appendix D. The major management implications of each LUD are presented below.

LUD I: Purpose

All areas allocated to LUD I will be either recommended for wilderness designation or will be studied for such a designation. LUD I is usually applied to undeveloped lands which provide opportunities for solitude and primitive types of recreation and contain unaltered habitats for plant and animal species. If an area allocated to LUD I is added to the National Wilderness Preservation System by Congress, certain management implications would apply.

LUD I: Management Implications (see pages 323-326)

(In order to minimize repetition within this document, and because of the topical nature of questions on wilderness use, LUD I implications are not cited here. A comprehensive description of the management implications for Wilderness Areas is presented in Section VIII, Consultation with Others, pages 323-326.)

LUD II: Purpose

This designation provides greater management flexibility than LUD I while still retaining the primitive wildland environment. Primitive recreational facilities can be built, and habitat improvements for fish and wildlife are also permitted.

LUD II: Management Implications

1. Timber harvesting is not permitted. Timber can be salvaged only to prevent significant damage to other resources. Examples are removal of windfall in an important fish stream or control of an epidemic insect infestation.

2. Personal use of wood is allowed for cabin logs, firewood, float logs, trolling poles, and other similar uses.

3. Water and power developments are permitted if they can be designed to retain the overall primitive characteristics of the allocated area.

4. Roads will not be built except to serve authorized activities such as mining, power and water developments, aquaculture developments, transportation needs determined by the State of Alaska, and vital forest transportation system linkages.

5. Use of float planes and motor boats on freshwater is permitted; however, restrictions may be imposed on a case-by-case basis if such use becomes excessive.

6. Permanent improvements such as fishways, fish hatcheries, or aquaculture sites may be built. Appropriate landscape management techniques will be applied to minimize impacts on recreation resources.

LUD III: Purpose

LUD III areas are managed to provide a combination of both amenity and commodity values. The goal is to achieve compatibility among competing resource uses within the same area.

LUD III: Management Implications

1. Potential timber yields will be reduced to the extent needed to protect important biological and aesthetic values.

2. Both permanent and temporary roads are allowed.

3. Roads are located and designed so as to retain important recreational and scenic qualities.

4. Needed trails can be provided.

5. A full range of recreational facilities is permissible.

6. A full range of fisheries improvements projects is permitted.

LUD IV: Purpose

In LUD IV the goal is to provide opportunities for intensive development of resources. Emphasis is primarily on commodity, or market, resources and their use. Amenity values are also provided for. When conflicts over competing resource uses arise, however, these conflicts would most often be resolved in favor of the commodity values than would be the case in LUD III.

LUD IV: Management Implications

1. Timber will be harvested primarily by clearcutting.

2. Potential timber yields will be reduced only to the extent necessary to protect key biological and esthetic values.

3. Mineral development is subject to existing laws and regulations.

4. Permanent or temporary roads may be built.

5. Motorized use is permitted.

6. A full range of fisheries improvement projects is permitted

7. Needed trails will be provided.

Relationship of TLMP Process to RARE II Process

The planning process for the Tongass was initiated prior to the advent of RARE II. Well before the RARE II process became operational, a detailed study plan

for the TLMP effort had been completed and six multi-agency task forces were active in assembling the information from which the Plan would evolve. Instead of delaying this effort until the RARE II process could be completed, it was decided that the TLMP process should resolve the issues that pertained to the Tongass and satisfy the intent of the RARE II process as well.

Current Relationships

The Department of Agriculture's wilderness recommendations for the Tongass, which are contained in the RARE II Final Environmental Statement, are reflected in the Proposed Action presented in this document. The analysis which was included in the TLMP Draft Environmental Statement (issued June 28, 1978), the subsequent comments received, and the evaluations which are herein contained, have all been used to reach the Department's recommendations.

The events that influenced these recommendations, the rationale for them, and the influence the recommendations have had on allocations over the remainder of the Tongass, are presented in this document.

Similarities and Differences

Goals: The purpose of RARE II is to determine the future use of the remaining National Forest undeveloped areas. The end product of the RARE II process is the categorization of all inventoried roadless areas into (1) those to be recommended for wilderness designation, (2) those to be made immediately available for non-wilderness uses and (3) those to be allocated to further planning for all uses, including wilderness.

The TLMP process also accomplishes these ends. However, the process will result in a forest land-management plan. Non-wilderness uses will be specified for roadless areas as well as for areas already developed. Additionally, we will specify which areas will be available for development during the life of the plan (1980-1990). Since the process is subject to revision at periodic intervals, undeveloped areas (as well as those that are) will be subject to further planning for all uses in the future. Thus, while we do not use the third category of the RARE II process, we do have a correlary mechanism for reconsidering the management of non-wilderness areas.

Roadless areas: Eighty-three percent (12.7 million acres) of the Tongass is still in a roadless state. One contiguous area is more than 350 miles long and contains more than five million acres; others exceed a million acres. Consideration of areas of this magnitude for analysis and allocation greatly limits our ability to formulate land-management alternatives that consider all the issues. To satisfy our need for examining the resource values and other characteristics of discrete geographic areas as well as the values of large, contiguous roadless areas, we divided the forest into 867 value comparison units (VCUs). Each VCU encompasses one or more large stream system and averages 18,000 acres in size.

In using this approach, aggregations of contiguous roadless and partially roadless VCUs can be formed to consider the merits of moderate, large or very large roadless areas for wilderness or other types of land management.

Evaluation and Analysis

By agreement with the Chief, evaluation and analysis of the roadless areas on the Tongass are being handled by the TLMP process, using data and methods closely compatible with those being used for the rest of the National Forest System in RARE II.

Any procedural differences between the TLMP and the RARE II processes are attributable to their differing goals. Since the TLMP process is to result in a management plan for the Tongass, all of the lands--roaded and roadless--are taken into consideration. Where RARE II dealt with individual roadless areas, the TLMP process considers the relationship of such areas to a whole forest. Making an allocation for any one area has a bearing on how other areas can be allocated. Data-gathering efforts and analysis techniques were directed toward this end. Where the RARE II process results in a three-way categorization of all inventoried roadless areas, the TLMP process will result in the allocation of all Tongass National Forest lands to four different land-use designations (LUDs), along with accompanying land-management direction.

The RARE II and TLMP processes are synonymous in their overall intent: they both seek to resolve major land-management issues. They both utilize procedures that are similar from an analysis standpoint, but different in scope and orientation.

II.
Affected Environment

II. Affected Environment

Forest Overview

The planning area encompassed by the Tongass Land Management Plan includes essentially all of southeast Alaska, from Dixon Entrance to Yakutat (fig. 1). The Tongass National Forest comprises 64 percent, or 15.2 million acres, of this area. To the west, the area is bounded by the Gulf of Alaska. The Canadian border, which coincides with a natural barrier of mountains and ice fields, forms the eastern and southern boundaries. Yakutat, generally recognized as the northern limit of southeast Alaska, was chosen as the northern boundary of the planning area.

Physical Conditions

The following is only a brief overview of the physical conditions in this extremely diverse region. For a more detailed discussion, see the Area Guide and The Forest Ecosystem of Southeast Alaska: 1. The Setting.

Geography

An intricate system of fiords dissects the mainland of southeast Alaska, forming a complex of mountainous islands. This fiord system was formed as glaciers eroded and deepened drainage courses during the Pleistocene. Many of the inter-island waterways, major fiords, and river valleys occupy long, linear depressions, the most prominent being Chatham Strait. The major rivers of the region originate in Canada, probably as streams that maintained their courses when the coastal mountains uplifted. Many of these river systems rise from permanent glaciers or ice fields. Freshwater lakes in the area vary in size from a few acres to several thousand acres and in type from coastal marshes to high alpine cirque lakes.

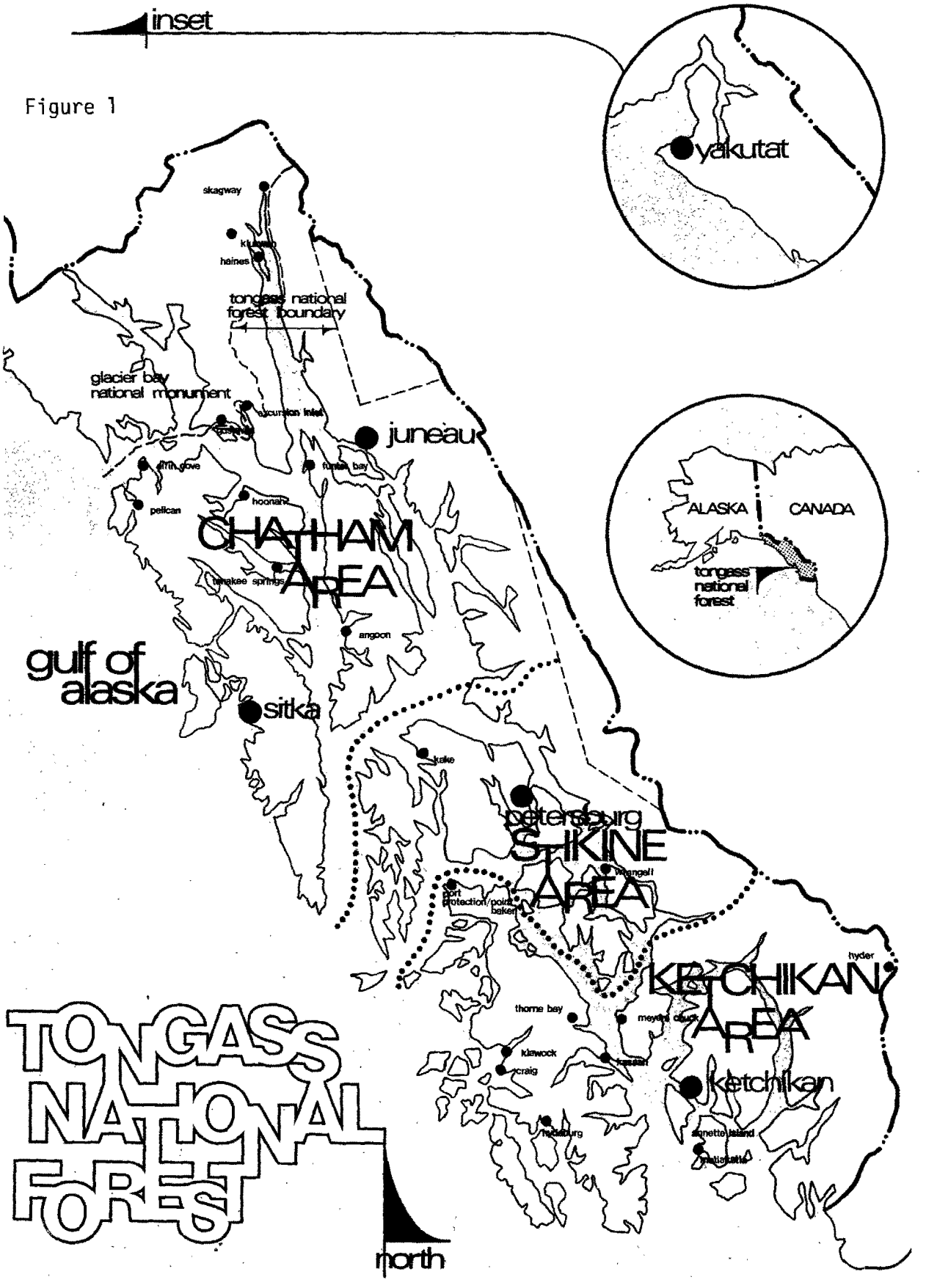
Climate

Maritime weather dominates southeast Alaska. Normal temperatures range from the 40s to mid 60s F in summer and from the high teens to low 40s F in winter. In summer cooler temperatures occur on or near the outer coasts while warmer temperatures prevail farther inland; in winter the reverse is true. Extreme temperatures occur in both winter and summer when air masses from Canada override the coastal mountains, bringing clear skies and continental air to the archipelago.

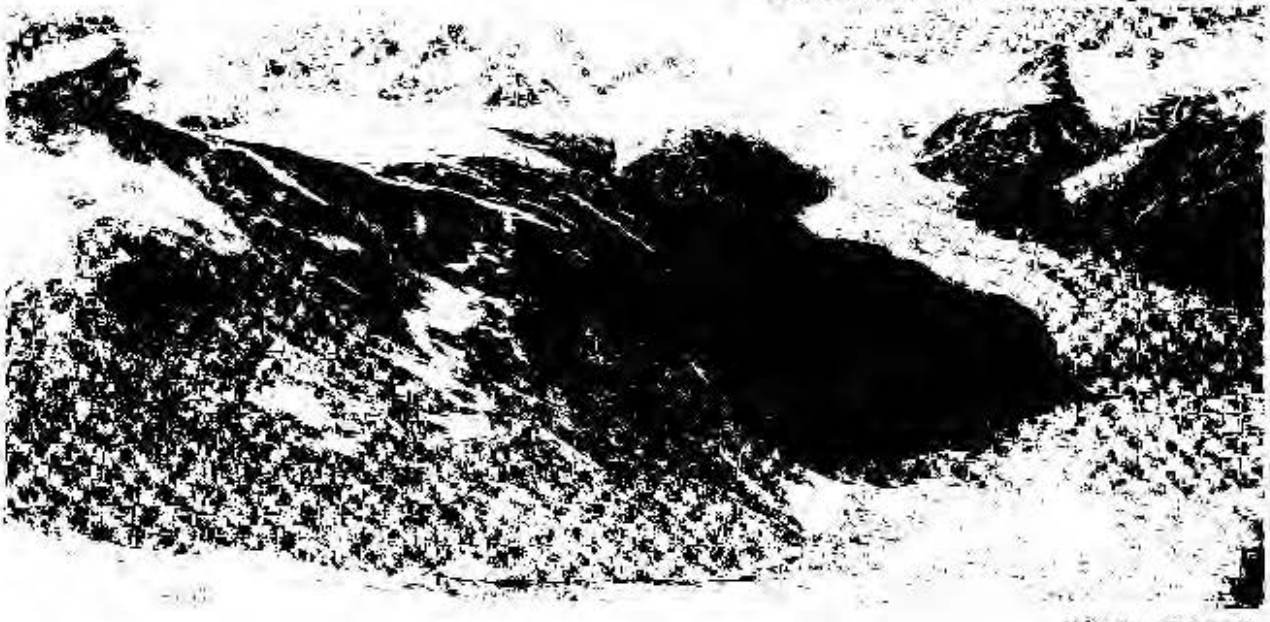
Storms and moderate to heavy precipitation occur throughout the year; however, storms are most frequent and precipitation is heaviest from September through November. In winter, snow falls frequently throughout the region, but it usually melts after a few days at lower elevations in the southern third of the area. Accumulations of 60 to 100 inches or more are not uncommon in the northern two-thirds of the region. At higher elevations and around glaciers, more than 200 inches of snow may fall and accumulate each year, thus perpetuating the ice fields and resulting glaciers. Water storage occurs principally as glacial ice and winter snowpack.

Surface winds are moderate to strong throughout southeast Alaska. Prevailing winds generally blow from the south or southeast except where local topography influences wind direction. Certain conditions of temperature and pressure gradient may also substantially increase winter wind velocities.

Figure 1


inset
yakutat
skagway
haines
tongass national forest boundary
glacier bay national monument
juneau
pelican
hoonah
CHATHAM AREA
angoon
gulf of alaska
sitka
kake
petersburg
STIKINE AREA
wrangell
port protection/point baker
KETCHIKAN AREA
hyder
thorne bay
meyers chuck
klawock
craig
ketchikan
ALASKA
CANADA
tongass national forest
TONGASS NATIONAL FOREST
north

West side of Admiralty Island



Misty Fiords

Soils

In southeast Alaska, high precipitation and cool temperatures slow decomposition of organic matter and result in soils covered by a thick, constantly moist, organic duff layer, high in nutrient content. Below this organic layer, soil fertility is commonly low.

Present conditions. Soils are commonly thin or absent where relief is steepest. In V-notched drainages, for example, the steep slopes and excessive soil moisture often result in downslope soil movement. Vegetative cover influences the amount of water that infiltrates and is stored in the ground; therefore, slide potential must be evaluated before removing vegetation. Further details are contained in The Forest Ecosystem of Southeast Alaska: 5. Soil Mass Movement.

Future conditions. Road construction, continued timber removal, and increased development of other resources, such as minerals and hydroelectric sites, will increase the dangers from steep slopes and unstable soils. As such activities increase, intensive management will be required to reduce erosion and changes in soil productivity. Soils disturbed by these management activities can be rehabilitated to restore productivity and reduce erosion.

Water

Water is an important resource both as a potential source of hydroelectric power and as habitat for fish. The majority of the waters in the Tongass National Forest have not been impacted by human activity.

The tremendous volume of water that falls as precipitation across southeast Alaska is difficult for most people to comprehend: one inch of rainfall distributed over one square mile amounts to 17.4 million gallons of water. Southeast Alaska receives an average of about 100 inches of precipitation annually. About 35 percent of this falls as snow. On the islands, most of the snowpack melts during the summer. At higher elevations on the mainland, however, much of the snow is retained and accumulates to form permanent snowfields and glaciers.

In spite of the abundant amount of precipitation in this region, groundwater is generally scarce; extensive areas of shallow or poorly drained soils and the presence of bedrock close to the soil surface inhibit deep aquifer formation. The majority of the precipitation is rapidly returned to the ocean via the large number of streams present throughout the area.

Streamflows vary greatly, even over short periods of time. Daily flows in all streams are lowest from December through March. During the winter and early spring months, precipitation accumulates as snow in the high basins. When temperatures rise in the late spring, snowmelt causes runoff to increase rapidly. High rates of flow usually occur during July, August, and September. By mid-November flows begin to recede to prevailing winter lows. More detailed information may be found in The Forest Ecosystem of Southeast Alaska: 8. Water.

Present conditions. Impacts to water quality from timber harvest activities can usually be attributed to inadequately administered controls and the notable lack of qualitative information for southeast Alaska streams. The Forest Service is conducting an extensive water quality monitoring program. The State of Alaska, Department of Enviromental Conservation, is revising its water quality standards and developing best management practices for control of nonpoint source pollution. Administrative control and implementation of watershed protection measures are increasing through hydrologic and fisheries input to the planning process.

Future conditions. The topography of southeast Alaska, combined with the heavy precipitation, provides many potential hydroelectric power sites. The Alaska Power Administration (APA), in cooperation with the Army Corps of Engineers, is studying the feasibility of connecting most southeast Alaskan cities with one or two hydroelectric grids. About 200 potential power sites could produce an estimated total of one million horsepower.

Any land use activity that might reduce water quality must be carefully monitored. Many watershed problems are associated with landforms or slopes where geologic erosion and sediment production are naturally high. These areas are frequently sensitive to activities such as logging and road construction. Water temperature and flow may also be affected by land management practices. For example, research indicates that water temperatures sometimes increase after streamside timber removal on temperature-sensitive streams.

Although implementing current Forest Service policies for water quality protection will reduce adverse effects from logging and other activities, stricter and broader application of these controls will be needed as the utilization of more resources increases. Growth in mineral exploration and development and the demand for hydroelectric power will require land management plans directed specifically toward maintaining water quality. Enforcement of the State water quality standards and best management practices will become an issue.

Minerals and Allied Resources

The first mineral location in southeast Alaska was recorded in 1867, when Charles V. Baranovich, a Russian trader, found copper near New Kasaan on Prince of Wales Island. In 1880, Joe Juneau and Richard Harris discovered placer gravels near the mouth of Gold Creek near the present city of Juneau. They later discovered the lode deposits from which the Alaska-Juneau Gold Mining Company extracted about $80.8 million in gold, silver, and lead between 1889 and 1944. The year after the Juneau-Harris discovery, the Paris lode on Douglas Island was sold by "French Pete," the original locator, to John Treadwell for $5. This lode mine and adjacent claims yielded more than $67.5 million in gold and silver during its 37 years of production.

Mineral production in the Chichagof-Yakobi area has also been almost entirely from lode gold mines. In 1905, the Chichagof gold lode on Chichagof Island was found; during the next 33 years, it yielded more than $13.5 million in gold from mines near Klag Bay and Kimsham Cove.

The Ross-Adams uranium deposit on Prince of Wales Island was discovered on Bokan Mountain in 1955 and was brought into production in 1958. After a period of closure, production resumed briefly from 1971 to 1974. The total yield to date is reported as 115,000 tons of relatively high-grade uranium-thorium ore.

A substantial quantity of nonmetallic minerals has come from southeast Alaska. Marble has been shipped from Calder and Tokeen at various times, and over 500,000 tons of gypsum has been produced on Chichagof Island. Over 600 tons of coal were mined at Kanalku Bay, Admiralty Island. The barite deposit at Castle Island was discovered by Ernest F. Burchard, a U.S. Geological Survey geologist, in 1913. The property remained idle until 1966, when Alaska Barite Company acquired the claim titles. In 1974, Chromalloy Mining and Mineral Corporation purchased the mine and modified the facilities to produce a ground barite product for the oil industry. The Castle Island barite operation produces 20,000 tons of bagged barite per year and is the only operating underwater lode mine where drilling, blasting, and ore recovery are accomplished from the water surface.

Present conditions. Mining has not provided many jobs in southeast Alaska during recent years. However, exploration is on the upsurge. In the past century, an average of 130 mining claims were filed each year on the Tongass National Forest. In the first seven months of 1977, more than 480 claims were filed. Modern methods have led to the discovery of several ore bodies that appear potentially profitable.

In the past, gold and coal were the only minerals produced on Admiralty Island; deposits of various minerals are now being reported from many locations on the island. Chief among these are the Big Sore zinc-silver-lead-copper-gold deposits on Greens Creek near Hawk Inlet. Preliminary exploration indicates ore reserves totaling 2.2 million tons. A mining and milling operation capable of handling 500 tons per day would have a minimum productive life of 15 years and would employ 200 people.

A major molybdenum discovery at Quartz Hill near Ketchikan shows ore reserves totaling at least 250 million tons. This ore could possibly be removed by open pit mining and processed in a mill with a capacity of 35,000 tons per day and a minimum life span of 25 years. Secondary exploration to delineate the ore body would require four to five years. Preproduction mine development and construction of mining and milling plants would require an additional two years. Actual production could begin by 1985, when a substantial number of permanent employees would be on the payroll.

Preliminary exploration of ore deposits on the east side of Yakobi Island in Bohemia Basin indicates reserves containing 160 million pounds of nickel, 80 million pounds of copper, and eight million pounds of cobalt. This deposit is known as the Takanis ore body. Here, a mining and milling operation capable of handling 4,800 tons of ore per day would have a productive life of 20 to 25 years and would employ 400 people.

Future conditions. Actual development of any of these deposits will depend upon many factors, including the location of designated wilderness, the ability of mining companies to meet government permit requirements, and future world markets.

An important consideration is employee housing. The State of Alaska prefers that new communities not be created solely to support resource extraction. The mineral industry also is becoming more inclined to utilize established communities as the costs of remote construction projects increase. Thus, Ketchikan, Juneau, and possibly Pelican would experience population increases if the known deposits are developed.

Sand and gravel will continue to be important building materials in southeast Alaska. However, usable sand and gravel deposits are scarce or inaccessible here, mainly because of the past intensity of alpine glaciation and the steep gradients of the many small streams.

Geothermal potential exists at several locations throughout southeast Alaska. Hot spring locations are grouped along the Stikine River near Wrangell, Behm Canal near Ketchikan, on central Baranof Island near Sitka, on the west side of Chichagof Island, and near Hoonah and Tenakee on Chichagof Island. Adjacent settlements could draw power and heat from these hot water systems. More research is needed to determine the full potential of the geothermal resources.

Biological Conditions

Flora

The major floral associations of southeast Alaska are true forest, grass-sedge meadows, muskeg, and alpine tundra.

The region's forest is part of the cool, very moist rain forest that extends along the Pacific coast from northern California to Cook Inlet. Most of the forest is old-growth. It usually extends from sea level to an altitude of about 3,000 feet in the south and to 2,500 feet farther north.

In the southern part, the coastal forest is composed primarily of western hemlock and Sitka spruce with a scattering of mountain hemlock, western redcedar, and Alaska cedar. Red alder is common along streams, beach fringes, and on soils recently disturbed by logging and landslides. Black cottonwood grows on the flood plains of major rivers and recently deglaciated areas on the mainland. Subalpine fir and Pacific silver fir occur occasionally at tree-line and near sea level but are not abundant enough to be of commercial value. The same species occur farther north, except that western redcedar is not found north of Frederick Sound. Also, in the north, black cottonwood is extensive along some of the glacial outwash rivers, becoming commercially important in the Haines area.

Blueberries, huckleberry, copperbush, devilsclub, and salal are the most important shrubs in these forests. Because of the high rainfall and resulting high humidity, mosses grow in great profusion on the ground, on fallen logs, on the lower branches of trees, and in forest openings.

Grass-sedge meadows usually lie at low elevations, often along the coast. The Yakutat Forelands, a glacial outwash plain dissected by numerous stream channels, is an example. Vegetation consists mainly of grasses, sedges, and other herbaceous plants. Stands of willow border many of the stream channels. Interspersed throughout the forest are muskeg, or bog plant communities dominated by sphagnum mosses and sedges. These openings also support low shrubs, forbs, and a few scattered hemlocks and lodgepole pines. Muskegs vary greatly in size from small pockets where drainage has been retarded to broad expanses such as portions of the Yakutat Forelands. Muskeg may even occur on fairly steep slopes. The underlying substrate is highly organic and ranges from about 1.5 feet to 40 feet thick. These openings create variety in the unbroken coastal forest and add to its value as wildlife habitat. Shrubs growing at the edge between the forest and muskeg provide further habitat variety.

The alpine tundra usually lies above 2,500 to 3,000 feet. Thus, it occupies the region above the coastal forest and is separated from the forest by a subalpine or transition zone. Soils are generally thin, but gravelly and stony organic soils may form locally in depressions. Snow remains in some glacial basins year-round, particularly on north-facing slopes. Resident plants have adapted to snowpack and wind abrasion by evolving low growth forms. Low, mat-forming vegetation covers most of the tundra, and cushion-like plants occupy crevices on exposed rock outcrops and talus slopes.

For a more detailed description of the floral characteristics of southeast Alaska, see the Area Guide and The Forest Ecosystem of Southeast Alaska:1. The Setting.

Present conditions. Forests cover an estimated 10.3 million acres of southeast Alaska, or almost half the entire land area. However, only about five million acres support stands of commerical value. The forest is composed primarily of western hemlock (62 percent) and Sitka spruce (30 percent) with minor amounts of western redcedar and Alaska cedar. Some 4.6 million acres, or 92 percent of the commercial forest lands, are old-growth sawtimber more than 150 years old. An estimated 29 percent of these stands occurs in small, isolated tracts or on slopes where timber removal would cause environmental damage or where access costs are prohibitive.

In recent years the Tongass National Forest has supplied 520 MM bm of the average annual cut of 535 MM bm removed from southeast Alaska. Over 95 percent of the total timber harvested is manufactured into sulphite pulp or into cants. The rest is cut into dimension lumber or left in round logs. Slightly over half the pulp and all the cants are exported to Japan; the rest of the pulp goes to domestic markets in the contiguous United States. Dimension lumber is milled primarily for local use.

The timber industry in southeast Alaska is dominated by two companies, each having integrated pulp and cant processing facilities. Louisiana Pacific Ketchikan operates the Ketchikan Spruce Mill at Ward Cove just outside Ketchikan and the Annette Hemlock Mill at Metlakatla. Alaska Pulp America operates the Alaska Lumber and Pulp Mill in Sitka, the Wrangell Mill, and Alaska Wood Products in Wrangell. A more thorough analysis of the current timber industry may be found in the Socioeconomic Overview.

Future conditions. Two factors will probably shape the future of the timber industry in southeast Alaska. The first is the world market for pulp and the Japanese market for cants. The second is the availability of timber to supply the region's mills after National Forest land is removed for State and Native land selections and wilderness designations.

A rise in world pulp prices could not materially affect output from the region's two pulp mills. They are now operating near full capacity. A price increase would also be unlikely to induce the construction of a third pulp mill within the region, even if timber was available to supply such a mill. However, a price increase would raise the value of timber cut, thereby making it profitable to harvest stands now considered marginal and strengthening the local logging industry.

The Japanese import cants primarily from the Pacific Northwest. This supply may be reduced as private sources are depleted and public support builds to withhold public-lands timber from export. If there is a significant demand for cants, logging and lumber mill employment in southeast Alaska could be expected to increase from the current 450 people to approximately 700, similar to the peak year of 1974.

However, if future land allocations reduce the amount of commercial forest available for harvest, the industry will have to log a larger percentage of its timber from stands that cost more to log. Cants from this high-cost timber would not be competitive unless the cant market improves. So, this timber would probably be diverted to the pulp market.

The Native regional and village corporations will select about 550,000 acres from the Tongass National Forest. Of this, probably about 400,000 to 450,000 acres will be commercial forest land. Under sustained yield management, these lands could produce a maximum of 150 MM bm per year. If the Native harvest reaches 150 MM bm annually, about 400 logging jobs would be created.

For a more detailed analysis, see the Socioeconomic Overview and the Timber Supply/Demand Analysis.

Fauna

Fish and wildlife resources of the Tongass National Forest are major commercial, subsistence, recreational, and aesthetic assets. The commercial and sport fisheries depend upon the forest ecosystem to provide spawning and rearing habitat as well as a quality source of fresh water entering the estuarine environment.

Present condition of fish resources. The major contributor to southeast Alaska's commercial fishery is salmon. In terms of wholesale value, canned and frozen salmon accounted for 72 percent of all fish product value for 1970-76.

Since the peak harvest of 67.8 million fish in 1941, the salmon catch has dropped to about nine to 10 million. The apparent causes are overexploitation and periodic high mortality due to climatic conditions. Even the abolishment of fish traps and the marked expansion of research and management programs that followed statehood have not yet reversed this decline, although catches in 1976 and 1977 were better than the low 1975 harvest. A limited entry program was launched in 1974 to restrict the number of fishermen in key areas and thus provide a more economically viable fishery. It is still too soon to assess the success of this program.

In 1974, the Commissioner of the Alaska Department of Fish and Game was given statutory authority to issue permits to qualified nonprofit corporations to construct and operate salmon hatcheries. One of the first such hatcheries to begin operation, a facility of Sheldon Jackson College in Sitka, enjoyed a substantial return of adult pink salmon in 1976 from its first fry release in 1974 and an exceptional return in 1977 from its 1975 release. This program, coupled with a state-owned hatchery system, may prove useful in enhancing the depleted salmon runs; but it is too soon to tell.

Other commercial fish and shellfish, particularly king salmon, Dungeness and tanner crabs, shrimp, and juvenile flatfishes, depend upon the estuarine habitat during certain life stages. Catches of these species in recent years show a modest but relatively consistent level of harvest, except for the tanner crab catch, which increased markedly in 1974, over previous years.

Sport fishing also represents a considerable recreational and economic resource in southeast Alaska. During 1974 residents of the three largest cities, Juneau, Sitka, and Ketchikan, spent almost 200,000 hours fishing from some 6,000 boats on about 45,000 separate fishing trips. For the Juneau area alone, the estimated contribution to the economy from saltwater sport fishing for salmon is over $2 million annually. Many additional salmon are taken in sport and subsistence fisheries around the numerous small villages and logging camps scattered throughout the region. Other species of salmonids also contribute substantially to the sport fishery. Steelhead, rainbow and cutthroat trout, and Dolly Varden char are taken by anglers fishing freshwater lakes, streams, and along coastal beaches.

Future condition of fish resources. Recent trends in salmon catches suggest no expansion in commerical fisheries. The future of the salmon fishery depends upon both natural levels of production and the various public-supported enhancement programs, especially the salmon hatchery program. This program has not yet developed to the point where it can guarantee major increases in salmon production. Since a significant increase in salmon catches is not imminent, employment levels should change little during the next few years.

Since land use decisions will directly and indirectly affect salmon habitat and estuarine environments, careful consideration must be give to the requirements of the affected species.

For a more complete discussion of these issues, see the Area Guide, the Fisheries Task Force Report, the Socioeconomic Overview, and The Forest Ecosystem of Southeast Alaska: 3. Fish Habitats.

Present condition of wildlife resources. Some 53 species of mammals, 269 species of birds, and seven species of amphibians and reptiles are found in the Tongass National Forest. Although other areas in the United States may contain a greater

variety of species, few, if any, contain as many unusual species as the Tongass. Here are large populations of mountain goat, brown bear, black bear, moose, sea lion, harbor seals, marten, wolf, wolverine, river otter, bald eagles, and trumpeter swans. In addition, a variety of sea mammals use the saltwater bays and passages of the region. Killer whales, humpback whales, and Dall porpoises are common in the area.

These species need a variety of habitats; and they use the forest, muskeg, grass-sedge meadows, and alpine tundra to varying extents. Because of the close proximity of the major habitat types, the region can support animals that need more than one vegetation zone. The western hemlock-Sitka spruce forest, for example, is more conducive to wildlife when associated with other types such as the alpine tundra. Grass-sedge meadows and muskeg also create diversity and greatly enhance the forest's productivity for wildlife.

Some species are adapted to a wide range of conditions and may occupy two or more habitat types. Bald eagles, for example, scavenge the beaches and salmon streams, nest in tall old-growth timber near shorelines, and soar over alpine tundra hunting for food. Sitka black-tailed deer, which depend on the highly nutritious vegetation of the alpine tundra for building energy reserves, descend in winter to seek shelter in the less productive coastal forest.

Other species have narrower habitat requirements. The red squirrel depends entirely on coniferous forest for food and shelter and is seldom found in any other type. Pine marten, shrews, voles, and many other small species tend to remain in one habitat.

Future condition of wildlife resources. All uses of wildife will increase in the next 25 years as the human population increases. The expanding tourism and recreation industries are enhanced by the presence of wildlife attractions. Moreover, a growing spirit of conservation means that public attention will continue to focus on how forest activities affect wildlife and its habitat.

At the same time, increased use of forest resources will mean greater impact on wildlife. Timber removal and accompanying road construction will most directly affect habitat. The uneven-aged, old-growth forest not only contains a greater variety of plants than the even-aged stands that develop after clearcutting; it also provides some of the best winter food and cover for deer. Throughout southeast Alaska, excessively deep snow can deprive deer of habitable range and thus limit deer populations. Large, old trees with broad, dense crowns most effectively reduce snow accumulation on the ground. These old stands also tend to have irregular openings and support more of the understory vegetation more useful to deer than younger stands. Unfortunately, the same stands that constitute prime winter habitat for deer also provide the most timber, sometimes well over 30 MM bm per acre. Clearcutting will reduce deer populations unless sufficient old-growth forest is maintained. However, properly designed clearcuts can create desirable openings and improve habitat for certain species, particularly songbirds; and timing and placement of cuts can lessen impacts on species requiring uneven-aged, old-growth forest. This is one area where additional research is needed. Proper application of forest management practices and protection of critical wildlife habitat is quite possibly the most complex and challenging task on the Tongass National Forest.

Timber management goals and policies concerning wildlife appear in the Area Guide. The Forest Ecosystem of Southeast Alaska: 4. Wildlife Habitats and the Wildlife Task Force Report provide further information on wildlife habitat.

Cultural Resources

Today southeast Alaska lays heir to the rich cultural heritage of the Tlingit and Haida Indians, those peoples who resided here at the time European explorers first reconnoitered the region. Initially Europeans came to exploit southeast Alaska's fur resources; later, as settlement progressed and the sea otters were killed off, attention shifted to the region's salmon and mineral wealth. As the European and American influence increased, Native cultures correspondingly became more and more affected: many elements of Native culture underwent modification or became totally lost as new ways of life and new values were adopted. For the most part, Natives abandoned their historic village sites as individuals and entire families moved to the new cities and towns that sprang up as the white population became established near centers of mining and fishing activity. The Native styles and techniques of resource exploitation changed with the introduction of new foods, clothing and building materials; as new tools and firearms became available; as entirely different job opportunities arose and as a money-based economy became increasingly predominant.

The historical and cultural richness of southeast Alaska manifests itself in the high concentration of sites having received National recognition. The southeast region contains nearly 40 percent of all Alaskan entries in the National Register of Historic Places. Representative of the Tlingit-Haida culture are Chief Shakes' Island at Wrangell and Totem Bight near Ketchikan. The Baranof Castle Hill Site in Sitka and the New Russia Archaeological Site near Yakutat commemorate the period of Russian occupation. Days of the Klondike Gold Rush and early military establishment are relived in the original structures at Skagway and Ft. William H. Seward at Haines. In addition to these and other sites listed in the National Register, literally hundreds of other sites and historic places may be found scattered throughout the entire Tongass National Forest.

To date approximately 350 historic and archeological sites on the Tongass National Forest are registered with the Alaska Heritage Resource Survey (the State's master list of sites). These sites include such diverse items as petroglyphs, fish traps, Native village sites, garden sites, prehistoric archeological sites, cannery towns, mines and historic buildings. Sealaska Corporation has collected information on 1,060 historic and archeological sites through an archeological reconnaissance contract with an independent firm. The existence of 387 of the 1,060 sites has been confirmed by an on-the-ground investigation. Some duplication exists between the Sealaska catalog and the Alaska Heritage Resource Survey list. Of the 387 confirmed sites, Sealaska Corporation has selected 96 historic and cemetery sites under provisions of Section 14(h)(i) of the Alaska Native Claims Settlement Act.

The cultural heritage of southeast Alaska is not limited to the realm of Native occupation. It also includes past traces of white influences on the land such as canneries, salteries, fish traps, fur farms, sawmills, mines and prospects, whaling stations and former military installations. All these remains of former use and occupation, Native and white alike, enhance present experiences for both residents and visitors by serving as reminders of the region's dynamic past.

Social Aspects

The Forest Service is well equipped to assess resource information. Rather exact projections can be made on how a specific action will affect the physical and biological environment. Resource decisions, however, affect people as well as the environment; and measuring social effects is far more difficult than measuring the growth of a tree or the quality of water. But it is just as essential.

Since the Forest Service has few social scientists, our staff has been supplemented by universities, private consultants, and state agencies, who provided much of the information used in the social assessment. This coordinated effort produced a socioeconomic analysis which was tested extensively during public and community meetings following publication of the Draft Tongass Land Management Plan. The following is a brief summary of national, regional, and local concerns about management of the Tongass:

National Perspective

National debate over wilderness designation in Alaska has focused much attention on southeast Alaska. This attention has been expressed through Congressional hearings, media coverage, books, films, television programs, and comments by individuals and organizations to the Forest Service.

In general terms, the dominant national preference for southeast Alaska is to limit development and preserve the region's fish, wildlife, and other wildland values through legislated wilderness. This view is often expressed by people who voice frustrations about expanding population, overcrowding, pollution, traffic congestion, loss of local wildland values, and other social ills. Those who advocate preserving Alaska often qualify their statements by explaining that it is not important whether these wilderness areas are visited; their chief importance lies in the fact that people know they exist now and will exist later for future generations. Particular emphasis is often placed on the need to save unique wildlife species such as the brown bear and the bald eagle. Wilderness designation is seen as the way to assure that these animals are protected.

Wildlands have strong social and cultural values, and these have been expressed many ways be many people. Wendell Berry, in his book The Unsettling of America (1977, p. 29-30), summarized:

> Our biological roots as well as our cultural roots are in nature. We began in a world that was pristine, undiminished by anything we had done, and at various times in our history the unspoiled wilderness has again imposed itself, its charming and forbidding invitation, upon our consciousness. It is important that we should preserve this memory....
>
> We need wilderness as a standard of civilization and as a cultural model. Only by preserving areas where nature's processes are undisturbed can we preserve an accurate sense of the impact of civilization upon its natural sources.
>
> As a cultural model, the wilderness is probably indispensable.

Another view is that the national interest can be served by extracting the region's mineral and timber resources to help satisfy the growing needs of the United States. National interest in southeast Alaska's minerals is focused on decreasing dependency on foreign countries for our growing demand for raw materials. Concerns about the timber industry center on the issue of jobs and community stability. On a national scale people seem far more interested in the number of people employed than in the actual value of timber harvested and processed. There is a strong national concern not to put people out of work.

Regional Perspective

Southeast Alaska is a fairly cohesive unit, not only environmentally but socially as well. Geographically the area is rather isolated, cut off from the rest of the

continent by an almost impenetrable range of mountains. Communities, both large and small, cling to the narrow coastal shores. Inhabitants engage in similar livelihoods throughout the region.

Not only are physical conditions markedly similar from place to place, but the people of the region also share many values as well. Choosing to live in southeast Alaska means giving up many conveniences which residents of other areas of the country take for granted. Such amenities as convenient transportation, well-stocked markets, readily accessible medical facilities, reliable communications, and entertainment, cultural, and educational opportunities may be limited or nonexistent in small Alaskan communities. Many people, however, are willing to sacrifice these amenities for such advantages as a slower pace of life; a cleaner, quieter and more aesthetically pleasing environment; abundant outdoor recreational opportunities; a friendlier atmosphere; and greater independence. A public meeting held early in the development of the Tongass plan brought together people of varied interests and from varied communities. When participants were asked why they lived in southeast Alaska, the responses were surprisingly similar. In short, many people choose to live in southeast Alaska because they believe the region offers them opportunities to enjoy a way of life unattainable elsewhere.

Now, however, growth and development demand that choices be made. People are divided as to the course of action that will best meet their needs and desires. Native communities, in particular, are in a state of transition as a result of the Alaska Native Claims Settlement Act (ANCSA). Native communities that for years had similar economies and lifestyles are now evolving in different directions. Under ANCSA, Natives have become the largest group of private landowners in southeast Alaska; about 500,000 acres will be under their jurisdiction. The management of these lands will have a considerable economic and social impact in a number of villages as Natives become a major political and economic force in southeast Alaska. At the same time, many Natives wish to preserve the cultural and subsistence values of the past.

Management decisions on lands selected by Native corporations may soon begin to affect community and regional employment and land use options. As Native selections become more certain, so does the anticipated management. We had assumed earlier, a sustained annual timber harvest from private lands of 150 MM bm, which would involve harvest of some 5,000 acres annually. However, if recent harvest proposals from the Cape Fox Corporation, and discussions with Hoonah Totem Corporation are indicative of most other corporate intentions, then an accelerated harvest greater than 150 MM bm is suggested. This possibility is further supported by the very real need of the corporations to overcome financial hardships created by the delay in land transfers, legal and legislative complications brought about by d-2 legislation, and some challenges to Native selections.

Native timber harvest options (except off-Admiralty selections) are near Hoonah, Juneau, Kake, and Ketchikan, with concentrations on Prince of Wales Island. If timber harvest (especially accelerated harvest) takes place on all or some of these lands, immediate employment and economic benefits could be realized by these communities. Increased demand for services could also result. Community land uses may be altered, especially in areas now used (as National Forest land) for recreation, sport and subsistence hunting and fishing, and as scenic backdrops. Some of these uses may have to be shifted (at least during development activities) to other public lands, creating greater pressures on the adjacent public lands to accommodate increased recreational and subsistence demands.

Although many changes in the region are resulting from actions outside the Forest Service's sphere of influence, management of the National Forest will affect a significant portion of the population. Forest managers must be responsive to the social impacts their actions have on all those communities and individuals concerned

with resource allocations and development. Among the areas most directly affected by forest management are recreation, transportation, and subsistence.

Recreation. Many people come to southeast Alaska to visit or live because of the outdoor recreational opportunities the region offers. Recreation in its broadest sense may run the gamut from augmenting food supplies by hunting and fishing to purely esoteric pursuits like technical mountaineering.

Decisions affecting land and water resources, especially those adjacent to key fish and wildlife areas, steamer lanes, and communities, will have a significant impact on the quality of recreation experiences. Since most visitors to southeast Alaska enter the area by sea, the scenic quality of the area through which they pass directly affects their overall experience. Significant alteration of the environment through widespread or indiscriminate clearcutting could limit the desirability of the southeast as a visitor destination or place of residence.

National trends in recreation show a greater focus upon scenic values and dispersed recreational opportunities, both of which are readily available in southeast Alaska. At the same time, the use of visitor centers and interpretive sites is steadily increasing. This increase is attributed to a growing awareness among the American people of the importance of natural resources and the problems associated with their effective management. In general, the popularity of outdoor recreation has grown dramatically as population, affluence, mobility, and leisure time all increase. However, the Nation's supply of land suitable for outdoor recreation activities, particularly dispersed recreation, is steadily decreasing.

The demand for dispersed recreation is expected to increase in southeast Alaska, partially because supply creates demand but also because of promotional efforts and national publicity resulting from the d-2 lands debate. The Alaska Division of Tourism indicates that short adventure or wilderness touring on National Parks or National Forests is the fastest growing segment of the visitor market in southeast Alaska. Fishing and, to a lesser extent, hunting are also attracting an increased share of visitors to the region. The five recreational activities with the greatest economic impact are, in order of decreasing importance: charter fishing, yachting, unassisted fishing, unassisted hunting, and, tied for fifth place, guided hunting and ferry touring. With the continuing decline in the value of the dollar in world markets, trips to Alaska become a better buy for both Americans and foreign visitors.

Transportation. Travelers within the region depend primarily on air and water transportation. Community road systems range from a few miles to over 50 miles. However, only three communities, Craig, Klawock, and Thorne Bay, are connected by road. In addition, Haines, Skagway, and Hyder are linked to the Alaska Highway. The lack of an interconnected road system is in marked contrast to the rest of the Nation's high dependency on highway systems. However, the absence of a highway system has limited development between established communities and has helped maintain the individual character of these communities. The expanding Alaska Marine Highway system gives southeast Alaska communities an additional travel option. Whether a community desires to be connected by road or by the Alaska Marine Highway to other communities often generates major debates within the region and within individual communities. Some communities have clearly agreed they do not desire road access; opinions within other communities vary.

Subsistence. Traditionally, Native life was based upon subsistence activities, and such activities are still part of the lifestyle of present generations. They are most often practiced by residents of the traditional villages, where alternative economic options are lowest. For about 2,000 of the region's Native people, subsistence activities are and will continue to be important sources of material support and a partial substitute for earned cash income. For these people, reducing

or eliminating any of the resources drawn upon would mean a basic reduction in their standard of living.

To the Native, subsistence is not only a means of physical survival; it is also a means of perpetuating a traditional manner of living with the environment. To others, it is a means of devising an individualistic and self-sufficient way of life that provides desired alternatives to the dominant systems available.

Natives who move to urban centers often continue to hunt and fish both for recreation and as a supplemental source of desirable food. All indications are, however, that this shift toward an urban social and economic framework will continue in the future and will cause an accompanying decline in subsistence dependence.

The typical non-Native resident who hunts and fishes also considers the catch a desirable addition to a diet largely dependent upon imported foods. The region includes a few small communities with predominately non-Native population where subsistence hunting and fishing is an economic necessity.

Local Perspective

The land management plan may have significant impact on small communities, where relatively minor shifts in forest programs can cause major changes in the local economy. None of these communities can be characterized by a single set of values, for the people of each community show diversity in their beliefs and opinions. Community goals are often expressed in countervailing values concerning the number of jobs available, recreational opportunities, options for community growth and development, and opportunities for subsistence hunting and fishing.

Each Native community in southeast Alaska is unique. Each is going through a transition period that will lead to self-determination. Most stand to gain economically through management of resources on their recently selected lands; however, residents are concerned about keeping their language and culture alive while courting a variety of options for community improvement. Because many people hunt and fish to supplement their food supply, they are anxious to preserve fish and wildlife habitat and to keep their ties with the land.

Some pertinent facts about the various southeast communities and their concerns are summarized in table 1. These community profiles should be of help in evaluating how residents might react to various land management alternatives.

Economic Aspects

Forest Development Roads

Forest development roads are constructed to provide access to National Forest lands for their use, administration, and protection. As management of National Forest lands in most situations is for multiple use, any development road constructed serves more than one resource. This is true even though it may have been constructed initially to serve one particular resource. For example, the initial entry into a roadless area provides access to harvest timber. This access is then available for silviculture activities, wildlife and fisheries habitat improvements, recreation, and improved protection capabilities. The overall intent of the development of the Forest's transportation system is to provide access facilities so that all the resources within a given area can be effectively managed.

TABLE 1 --Profiles of southeast Alaskan communities

Forest area and community	Estimated population 1976	Estimated population 2000	Native pop. (% of 1970 population)	Marine Highway	Importance of subsistence to residents	Employment options	Orientation and outlook
CHATHAM AREA							
Angoon	500	700	74.9	Feeder line	Major	Primary: village corp. and city gov't. Secondary: fishing.	Strongly antilogging. Prefer fishing and maintenance of subsistence. Some would like to encourage tourism.
Elfin Cove	35*	50	5	None	Moderate	Fishing.	Would like to see situation remain as it is.
Funter Bay	15	25	?	None	Major	Fishing and subsistence.	Oppose much change, Some have an interest in mining.
Game Creek	75	150	-	None	Major	Agriculture and subsistence.	Strong group attachments: oppose change in lifestyles. Favor employment and road opportunities. Some employment found in Hoonah.
Gustavus	80	100	10	None	Major	Some local service and also subsistence.	Strong association with Glacier Bay National Monument. Oppose growth; want to keep subsistence and recreation as they are.
Haines	1850	4,000	5	Main line	Minor	Both lumber and cant mills are closed. High unemployment. Tourism.	Some mixed feelings on development. Strongest expressions are for community economic stability and most would like to see the mill reopen. Either national forest or State timber harvesting could help.
Hoonah	848	1,500	90	Feeder line	Major	Fishing and fish processing. Some tourism. Guides.	Native timber harvesting or tourism--mixed feelings as to which way to go. Greater percentage of non-Natives are moving into community.

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TABLE 1 --Profiles of southeast Alaskan communities--Continued

Forest area and community	Estimated population 1976	Estimated population 2000	Native pop. (% of 1970 population)	Marine Highway	Importance of subsistence to residents	Employment options	Orientation and outlook
CHATHAM AREA--continued							
Juneau	19,500*	43,000 or 10,000***	6.9	Main line	Very Minor	Government and some tourism.	Strong interest in adjacent recreational areas. Mixed environmental and development feelings. If capital moves, pressures will increase for economic opportunities in recreation, logging, and mining activities.
Pelican	200	400	30	Feeder line	Moderate	Fishing and fish processing.	Oppose major changes. Yakobi mining would cause change.
Port Alexander	76*	150	20	None	Moderate	Troll fishing.	Oppose change and favor nearby Wilderness Areas. Oppose shift to net fishery, which aquaculture nearby may cause.
Sitka	7,000	9,400	20	Main line	Minor	Logging, fishing, pulp mill, government, and tourism	Mixed feelings about growth. Many think capacity has been reached.
Skagway	858	1,381	4.1	Main line	Minor	Railroad and tourism.	National forest management has little effect.
Tenakee Springs	109	150	6.9	Feeder line	Major	Retirement, subsistence, fishing, and crabbing.	Oppose change. Logging nearby is changing. Employment options.
Yakutat	550	1,795	71.4	None	Major	Fishing, subsistence and tourism.	Oppose much change. Want to presume fisheries. Oppose logging.
STIKINE AREA							
Kake	550	1,200	95.6	Feeder line	Major	Logging, fishing, and fish processing	Favor logging, but strong desire to maintain subsistence and fishing activities.

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TABLE 1 --Profiles of southeast Alaskan communities--Continued

Forest area and community	Estimated population 1976	Estimated population 2000	Native pop. (% of 1970 population)	Marine Highway	Importance of subsistence to residents	Employment options	Orientation and outlook
STIKINE AREA--Con.							
Kupreanof	45	?	?	None	Moderate	Fishing, fish processing, logging, and wood processing.	Favor little, if any, growth. Prefer a simple, self-sufficient type of lifestyle.
Petersburg	2,200	3,544	20	Main line	Minor	Fishing, fish processing, logging, and wood processing.	Mixed feelings, but strong preference to maintain or increase fishing and tourism.
Wrangell	3,200	4,740	20	Main line	Minor	Mainly logging and wood processing. Fishing and some fish processing.	Strong desire to maintain dependency on wood industry. Strong feelings about keeping access to Stikine River open.
KETCHIKAN AREA							
Craig	503*	732	32.7	Feeder line	Moderate	Fishing, fish processing, and wood processing.	Prefer to maintain current lifestyle and have full employment.
Hydaburg	384	700	95	None	Major	Fishing and fish processing.	Perfer to maintain existing lifestyle. Some desire to open a small mill.
Hyder	55*	?	?	None	Minor	Mining service and tourism.	Desire to maintain existing lifestyle.
Kasaan	56	?	0	None	Major	Fishing.	Recently revitalized Native community with timber and tourism opportunities.
Ketchikan	11,394*	14,500 to 16,150	11	Main line	Minor	Wood processing and logging. Some fishing and fish processing.	Strong desire to maintain wood processing and to increase community's role in U.S. Borax mine.

Continued

TABLE 1 --Profiles of southeast Alaskan communities--Continued

Forest area and community	Estimated population 1976	2000	Native pop. (% of 1970 population)	Marine Highway	Importance of subsistence to residents	Employment options	Orientation and outlook
KETCHIKAN AREA--Con.							
Klawock	281	454	75.5	Feeder line & road	Major	Wood processing, fishing, and fish processing	Prefer to maintain the local mill. Would like to see growth in fishing and tourism.
Metlakatla	1,291	2,025	80	Feeder line	Major	Mainly wood processing, fishing, and fish processing.	Want to maintain mill employment. Prefer expansion in fishing and tourism.
Meyers Chuck	50	?	3	None	Major	Fishing.	Want to maintain lifestyle as it is. Subsistence is important.
Port Protection Port Baker	80	?	?	None	Major	Fishing and some logging.	Mixed feelings but most prefer to maintain fishing and subsistence activities. Prefer no growth.
Thorne Bay	550	?	?	Feeder line & road	Minor	Logging and related services.	A logging camp that hopes to become a permanent community and service center for other logging areas on Prince of Wales Island, plus providing some services for tourists.

* 1977 estimate. ** 1975 estimate. *** If the State Capital is moved, this population total is projected.

Any forest development road constructed is a capital investment that is financed by the government. Congress has given the Forest Service through the Secretary of Agriculture several authorities by which to construct forest development roads. These include construction by:

1. Utilizing appropriated Forest Roads and Trails funds;

2. Requirements on purchasers of National Forest timber and other products, including provisions for amortization of road costs in contracts;

3. Cooperative financing with other public agencies and with private agencies or persons; or

4. A combination of these methods.

Constructing the initial access by purchasers of Forest products is normally the most economical, as overhead, mobilization, and other costs are spread over the entire operation.

In most LUD IV areas, timber values available for road construction should be sufficient to cover the road construction costs associated with initial-entry timber sales.

In many areas designated as LUD III the available timber volumes are not as great and the option of using the initial-entry sale for road construction may be removed. We then must use appropriated funds to provide access in advance, by constructing the road with a public works contract. Once access has been gained future entry to the area will not require additional major investments for road construction.

Timber Industry

Southeast Alaska is one of the few areas of the world capable of producing far more softwood timber than it consumes. Nevertheless, as a wood supplier, Alaska must compete with other areas, many of which have both geographical and cost advantages. Within southeast Alaska, the local market is too small to justify developing a diversified wood products industry. In the rest of the State, the southeast region cannot compete with either the Puget Sound wood products or locally-sawn green lumber. Alaska has not been competitive in markets within the continental United States for most wood products. The potential of Alaska to become competitive in the domestic United States lumber and plywood markets appears dim except for the possible exportation of round logs or cants to the Puget Sound area. Even the Pacific Northwest, which has both geographical and cost advantages over Alaska, is not competitive in many of the wood-deficit areas of the Nation.

Alaska timber products have been most competitive in the Pacific Rim market, notably Japan, and this situation is likely to continue. Of the timber products manufactured in southeast Alaska, pulp appears to have the greatest potential for growth, but supply is currently constrained by mill capacity. The future of the cant market is somewhat uncertain since it is likely that round log exports from private lands will replace some cant exports. Both cants and round logs are used to produce the same final products, but the Japanese prefer round logs. The chip market in the Pacific Rim appears saturated, a situation that is expected to improve over time.

The advantages of round log exports over either cant or lumber manufacturing can be clearly demonstrated. To illustrate, it can be assumed that future species and grade distribution will approximate that recovered from past cuts. Regardless of a firm's intent, only a certain proportion of the timber it harvests will be suitable for its primary product. Outputs reflecting the product mix likely per million board

feet of timber have been developed for lumber manufacture, cant manufacture, and round log exports. Based on production cost estimates and current prices, net returns for these output packages were developed. The results indicated that a million board feet of timber harvested for round log export would yield nearly $88,000 in net revenues. However, a similar quantity of wood used to produce cants would yield only $22,000 in net returns. If this same quantity of timber was manufactured into lumber, the total package would lose an estimated $44,810. Stumpage costs were not included in this calculation so further reduction may be appropriate in some cases.

The market for timber products in southeast Alaska varies significantly from the purely competitive state. For the buyer, the stumpage market is characteristically dominated by two firms. However, when it comes to selling its final product, the timber industry faces a far different situation, one in which it has little influence over the price received or the quantity sold.

The costs of road construction, logging, and transportation to the mill account for over 70 percent of the total cost of manufacturing cants and related products. These costs vary with the characteristics of the particular stands of timber being harvested. When industry moves into timber stands that are more costly to harvest per unit of volume, the high inelasticity of demand reduces its ability to shift production quantity in response to changes in costs. There is a point where a given mill would likely cease operation if prices were reduced to the extent that it would not receive net revenues in the long run.

These factors are further complicated by the allowance for profit and risk included in the National Forest timber appraisal process. This allowance gives a specified return, based on average costs and returns, for the various products manufactured from National Forest timber. Stumpage prices are determined by subtracting all production costs, including the allowance for profit and risk, from anticipated final product prices. Stumpage prices tend to decline as less favorable stands of timber are harvested to a point where an administratively set minimum stumpage fee is reached. Timber more costly to extract than this minimum fee is referred to as marginal; that is, it cannot be harvested at the minimum stumpage fee and still yield the specified allowance for profit and risk. However, a firm operating in imperfect market conditions is likely to find its point of maximum net revenues at an output level that does not require marginal timber. As a result, industrial output will tend toward the level where maximum net returns will be received rather than utilizing the full quantity of timber made available to it. Since employment is closely related to output, it follows that merely making a given volume of timber available will not assure employment at a desired level. The important consideration will be the availability of timber in stands characterized by recovery costs low enough to induce the industry to utilize them.

The relatively weak position of southeast Alaska products in the international timber products market is reflected in the demand for stumpage. Because of a highly inelastic demand curve or administered prices and quotas, and the allowance for profit and risk acting as buffers, many factors influencing costs will likely have little impact on industrial output. For example, a reduction in logging costs might merely be shifted to higher stumpage costs and thus not affect the demand-supply situation for the industry. However, shifts in demand can have considerable influence over industrial output and thus employment.

The Forest Service began efforts to attract the paper industry to Alaska soon after the First World War. There are currently three long-term timber sales on the Tongass National Forest all of which originally required construction of a pulp mill. One sale, the Pacific Northern Timber Company Sale, was reduced in size when the pulp mill was not built. The present status of these sales is shown in Table 2.

TABLE 2--Tongass National Forest Long-term timber sales

Sale name	Contract date	Expiration date	Contract timber volume	Timber Volume remaining 1/1/78
			------MM bm---------	
Ketchikan Pulp Co. (KPC)	7/26/51	6/30/2004	8250.0	4,600
Pacific Northern Timber Co. (PNT)	6/9/54	12/31/1981	693.1	190
Alaska Lumber and Pulp Co. (ALP)	1/25/56	6/30/2011	4974.7	3,400

These timber sale contracts include measures to protect the other resources of the area. The ALP sale specifies that up to 237 MM bm of timber may be made unavailable for harvest in allotments in the primary sale area for scenic purposes, salmonid protection, and purposes incompatible with the contract. Under the PNT contract, up to 46 MM bm of timber can be made unavailable for similar reasons in the primary sale area. There are no limitations on the amount of timber that may be retained for other uses in the KPC contract or on the PNT and ALP contingency areas.

Timber harvest on these three sales is based on five-year operating plans. Current five-year plans call for an average timber harvest of about 370 MM bm.

To facilitate the development of competitive enterprises and markets for timber resources, the Forest Service and Small Business Administration, in 1977, agreed to an annual set-aside program of approximately 80 MM bm for the Tongass National Forest. This decision applies to the remainder of the 1976-80 period and represents a commitment to sell at least 80 MM bm annually in addition to the volume of the three long-term sales. Mills qualifying for the Small Business set-aside program are distributed throughout southeast Alaska. From 1966 to 1975, small business companies purchased on the Tongass an average of about 16 MM bm per year.

Timber harvested from the Tongass during the past four years has been obtained from the standard, special, and marginal components as follows:

Component	Percent of harvest
Standard	90
Special	9
Marginal	1
Total	100

Employment in the timber industry tends to fluctuate seasonally and from year to year. In the period from 1970 to 1976, timber-related employment in southeast Alaska ranged from 2,566 in 1971 to 3,399 in 1974. Average employment for this seven-year period was ~~2,831~~ 3005. The average timber harvest from the Tongass was 520 MM bm per year over this period.

Three sets of projections were developed to assess the future market for timber from the Tongass. A major factor in these projections is the availability of timber from privately owned lands. Because round logs, preferred by the Japanese, may be exported from private lands, round log export from private holdings in southeast Alaska may supplant, at least to some degree, cants manufactured from National Forest timber.

Therefore, projections through 1990, or the duration of the land-management plan, were based on three assumptions:

1. A sustained-yield harvest of 150 MM bm per year from privately owned lands in southeast Alaska.
2. An accelerated harvest of 225 MM bm per year from privately owned lands in southeast Alaska.
3. The same sustained-yield harvest but with the addition of a small pulp mill or an increase in existing mill capacity equivalent to 65 MM bm per year.

If privately owned lands are managed on the sustained yield basis, the total cut in southeast Alaska would be about 600 MM bm per year. (Adjustments were made for round log exports displacing a portion of cant production.) As a result, about 450 MM bm per year would be required from the Tongass to support the industry. Under this set of circumstances, total employment in the timber industry in southeast Alaska would remain slightly above the past seven-year average. However, some jobs would shift from sawmilling to logging, thereby displacing some people from their present jobs while providing work opportunities for others.

If privately owned timber lands are harvested on a moderately accelerated level of 225 MM bm per year, the total southeast Alaska timber cut increases to 625 MM bm annually. However, only 400 MM bm of this would come from the Tongass. Employment would be about the same as in the sustained-yield alternative but there would be a further shift from cant manufacturing to logging.

A set of projections was also developed to depict moderate growth in the southeast Alaska timber industry. In this case it was assumed that the pulp capacity of the region will increase by the equivalent of 65 MM bm per year and private lands will be managed on a sustained-yield basis. The increase in pulp capacity was based on the assumed development of a thermomechanical pulp mill with a 500-short-ton-per-day capacity, but a similar situation could develop through the expansion of existing mills. Under this assumption, total timber harvest would increase to 680 MM bm per year, of which 530 MM bm would come from the National Forest. This production level would approximate the average harvest over the past seven years. If private lands are harvested on an accelerated basis, the timber cut from the Tongass would decline. With sustained yield from private land and the added pulp capacity, total employment in the timber industry is projected to reach 3,300.

Cant production, which provides an outlet for higher quality logs procured by the pulp mills would increase in the future were it not for the anticipated private round log export to Japan. Should a profitable Puget Sound market for hemlock cants be developed, cant production is projected to increase.

Fisheries

Largely because of its salmon harvest, Alaska is the leading state in terms of total value of fishery landings. Between 1970 and 1975, the average annual salmon harvest in southeast Alaska was 62 million pounds valued at $21 million to the fishermen. Southeast Alaska's contribution to the State's total salmon harvest varies

from year to year, ranging from less than one-fifth to almost one-half of the total catch since 1970.

In southeast Alaska, commercial fishing for salmon and other species provided an average annual employment of 1,430 for the seven-year period ending in 1976. Over this same period, an additional annual average of 671 individuals were employed in fish processing.

Together, pink and chum salmon account for about three-fourths of the total weight of salmon commercially taken in southeast Alaska. Less chinook salmon is harvested than any other species, but it commands the highest price per pound. Over 80 percent of the salmon taken in the region is canned; the rest is processed into several other products. Salmon prices have increased sharply in the last few years, partly in response to a reduced supply. It is generally concluded that a healthy market situation exists for salmon and the future consumption will be determined to a large extent by the physical supply.

Therefore, means of increasing production are being considered. Natural stocks in southeast Alaska appear to be fully harvested, but the area could support larger salmon populations, as it has in the past. Populations could be increased by enhancing native stocks through habitat improvement or by artificially propagating salmon. The latter method has the potential for increasing the harvestable population most rapidly, but there are some concerns about its biological consequences and economic feasibility. A study in Prince William Sound (Orth 1977) indicated that private, nonprofit salmon hatcheries probably will not be economically viable without assistance in the form of assessments or grants. It also concluded that the additional salmon take would be sufficiently high to warrant such assistance and that consideration of all returns and costs would justify the establishment of hatcheries by the public sector.

Several major factors may markedly influence the future of artificial salmon propagation. The matter of who should finance hatchery construction and operation--the public or private sector--is still largely unresolved. Problems exist over the harvest of artificially propagated salmon, particularly when they are mixed with wild stocks. Property rights are poorly defined once salmon leave the hatchery. A means of handling "free riders," that is, fishermen who make no contribution to a hatchery but share in the added harvest, has not been found. Nevertheless, salmon propagation through artificial means has been successful in other nations and is likely to expand in Alaska if not institutionally constrained.

Tourism, Recreation, and Subsistence

The number of visitors entering southeast Alaska as tourists via cruise ship, ferry, airline, and highway has increased from a total of 129,000 in 1970 to 236,600 in 1974. This general trend in tourism is confirmed by increased use of recreational facilities, numbers of fish and hunting licenses, etc. (Clark and Lucas 1978). However, translating changes in the size and nature of tourism into employment impacts is difficult as there is no statistically identifiable tourist industry. The "products" provided are diverse, and employment data are classified by the type of goods and services provided, such as transportation, trade, and hotel services, rather than by the purchaser. The Alaska Department of Commerce surveyed all firms providing goods and services to tourists in 1975 and devised factors for calculating the amount of visitor-related employment in these firms. Using differences between total summer and winter employment during 1975 as an index of trends in tourist-related employment, Rogers and Hart (1978) estimated annual employment for 1970-76. These calculations indicated that tourism employment increased from a monthly average of 480 in 1970 to 920 in 1976. (The summer peak, of course, would be considerably higher.)

The future of tourism depends not only upon the availability of a wide range of high-quality recreational resources but also upon factors external to the region (national income and demographic trends, development of access, etc.). Rates of future changes will probably decline progressively because of economic limits to future investment in transportation access. The composition of tourists will probably shift from those on package cruise trips to independent travelers in camper and backpacker categories. Both these changes would tend to stabilize the levels of regional employment oriented to tourism.

Outdoor recreation trends can be identified from statistics on means of access to recreational resources (such as licenses, inventories of privately owned and operated boats and airplanes). Changes in levels of resident use are a function of changes in population. Population changes resulting from the alternatives considered here and from other future events, such as the capital move, will have direct impacts upon the intensity and general location of recreation resource use. The amount of employment generated directly by these activities (recreation equipment suppliers, transportation, etc.) is probably a part of the estimated tourism employment. Availability of a range of high-quality resources and means of access also has a very important influence on the development and maintenance of the region's general labor force.

Subsistence has several links with outdoor recreational use, most particularly sport hunting and fishing. Census data indicate family incomes for rural areas of the region are low in comparison to the national minimum income required for survival. Often subsistence goods subsitute for items that would have been purchased for cash. This conclusion was confirmed by a 1976 survey of the village of Angoon, which indicated that 70 percent of the families depended upon subsistence for 10 to 50 percent of their food budgets and four percent depended upon subsistence for more than 75 percent of their food budgets. An estimated 2,000 of the region's Native people depend upon subsistence activities as a partial alternative to wage employment and as an essential element in a desired way of life. Review of past population data suggests that the number of subsistence-related residents has been relatively constant over time, and it is assumed that it will continue to be so in the immediate future. Continued access to subsistence resources, therefore, is essential to these people.

Mineral Exploration and Development

Mineral exploration has increased in southeast Alaska during the past four years, as it has throughout the State. However, future prospects are difficult to forecast, and the picture is expected to remain cloudy until State and Native land selections are resolved and land use designations are established for the Tongass.

In 1974, nearly $3.4 million was spent in southeast Alaska on mineral exploration programs and on the established barite operation at Castle Island. During that year at least eight companies conducted core drilling or geologic reconnaissance work. Exploration-related employment equaled 50 man-years at a wage cost of $886,515 (figures from the Alaska Department of Labor).

In 1975, the exploration effort for hard minerals continued at about the same level as the previous year. The same companies continued reconnaissance, exploration, and development. The employment average dropped to about 42 persons at a wage cost of $641,033 (Alaska Department of Labor).

In 1976, more than $6 million was spent on mineral exploration and development in southeast Alaska. Department of Labor statistics show the equivalent of 41 man-years devoted to mineral exploration at a wage cost of $808,759. During that year, U.S. Borax and Chemical Corporation announced discovery of a major molybdenum deposit 45 miles west of Ketchikan at Quartz Hill. The mineralized area was reported to cover

more than one square mile. If brought into production, the project would employ 700 to 1000 people during construction and about 500 full-time workers thereafter, according to company estimates. Also in 1976, Pan Sound Joint Venture (Noranda) reported finds of copper, lead, and silver on Admiralty Island.

In 1977, exploration increased considerably; more than $8 million was spent on mineral exploration and development (including the barite operation on Castle Island). U.S. Borax at Quartz Hill conducted extensive drilling operations. Noranda stepped up operations on its Greens Creek prospect on Admiralty, conducting geological, geophysical, and geochemical surveys and a drilling program that produced favorable findings. W.G.M. set up a base camp near Gambier Bay on Admiralty Island, housing 12 to 20 persons involved in extensive helicopter-supported prospecting and exploration. Inspiration Development Company continued operations at its nickel-copper deposits on Yakobi Island and filed for patent on nine claims.

The recent and rapid rise in mineral exploration activity may stabilize over the next few years, as some major companies await land use and ownership decisions before committing additional funds and as other companies enter southeast Alaska for the first time.

Mapco, initiating mineral exploration in the southeast in 1978, used a 70-foot vessel, a portable laboratory at Ketchikan, and helicopter support for its 20-person crew during the 1978 field season. U.S. Borax, if permitted to continue project development at Quartz Hill, plans to have a production-phase payroll of $24 million by 1980. Inspiration Development estimates that its Yakobi Island claims, once operational, could generate production revenues of about $30 million per year while creating 400 jobs and an annual payroll of about $10 million. Noranda Exploration, with development of one of its Admiralty Island prospects, estimates gross production of about $15 million a year, an employment level of 200, and an annual payroll of $5 million. Actual development of these projects is uncertain, and development timing could be delayed indefinitely pending legal and political decisions associated with these mineral prospects.

In addition to these high-value minerals, construction minerals are a prime concern in southeast Alaska. Sand, gravel, and rock are generally considered low unit-value construction minerals because they are very common geologically. In southeast Alaska, however, deposits are geologically scarce, transportation costs are high, and many of the more satisfactory deposits are physically inaccessible. Local prices for construction minerals vary considerably, depending on haul distance and quantities available. In some southeast Alaska communities, prices for construction minerals have doubled in the past three to five years. Future development costs and consumer prices may follow a similar pattern, as sources of suitable materials are depleted and as land use constraints make otherwise acceptable deposits unavailable.

Land Status

The Tongass National Forest is not one uninterrupted block of land in Federal ownership. Since the National Forest was created, scattered areas have been removed as needed to provide homesites, townsites, etc. Now major portions of the forest are being shifted to State or private ownership as the State of Alaska and the various Native corporations select the acreages awarded to them by recent laws.

Current Situation--Private land holdings totaling some 29,700 acres are widely scattered throughout the Tongass. They include lands patented or excluded as trade and manufacturing sites, homesites, homesteads, mining claims, Native allotments, and conveyances resulting from the ANCSA. These private holdings plus the townsite withdrawals total about 140,000 acres in State, private, and community ownership within the Tongass boundaries.

The State's share will soon increase. The Alaska Statehood Act of 1958 authorized the State to select up to 400,000 acres from the two National Forests in Alaska. To date, the Forest Service has approved the selection of approximately 130,000 acres from the Tongass and 70,000 acres from the Chugach, and those are now being examined for compliance with the Act. Isolated selections totaling 10,114 acres on the Tongass were recently disaproved by the Regional Forester. There remain some 64,000 acres selected but not acted on by the Forest Service. Action is scheduled for the immediate future. The balance of the acres authorized by the Act have not yet been selected.

Under the Alaska Native Claims Settlement Act of 1971 (ANCSA), about 44 million acres throughout the State will be transfered from Federal to private ownership. The Native corporations have selected over 500,000 acres from the Tongass National Forest to date, but less than 3,700 acres have been conveyed to them. The selected lands thus remain in a state of suspension, unavailable for corporation management yet severely restricted from public management by ANCSA regulations and proprietary Native interests.

On December 1, 1978, two administrative actions took place that significantly changed the status of the Tongass National Forest. First was the Proclamation by President Carter that established a 1.1 million acre* Admiralty Island National Monument and a 2.28 million acre Misty Fiord National Monument. These Monuments were established to protect the historic, scientific and biological values in these areas. This action withdrew the lands from further location or selection under the public land laws, including State and Native selections, and the location of mining claims. Fish and game resources of the National Forest Monuments will continue to be managed by the State of Alaska.

The Monuments will be administered to meet the public purposes of recreational, scenic, scientific, educational, natural and historic uses consistent with the overall objective of preserving and protecting their natural character. Valid existing rights are protected under terms of the proclamations.

The second action was taken by Secretary of Agriculture Bergland, who requested the Secretary of Interior to withdraw 6.4 million acres of the Tongass, including the two National Monuments and some portions of proposed National Forest additions, from location and entry under the land laws. Like the Monument proclamations, this action precludes further State and Native selections and location of mining claims. Valid existing rights, including State and Native selections and mining claims are protected. This withdrawal was made as authorized under Section 204(b) of the Federal Land Management Policy Act and will expire in two years unless Congress acts on formal classification of all or portions of the withdrawn areas.

Future Situation--The land status situation on the Tongass will not be fully resolved until at least 1984. By that year the State must complete its selections. Three other major uncertainties exist: overselection by Natives, substitutions for Native selections on Admiralty Island, and possible exchange of land for Sealaska's Yakutat selection.

As selections by village and urban corporations are adjudicated and conveyed, overselections will be identified and dropped. Sealaska, the southeast Alaska regional corporation, has purposely overselected. A 1976 amendment to ANCSA allows

* Proclaimed acreage: measured National Forest acreage within the proclaimed boundaries is approximately 940,500 acres.

Sealaska to choose from the unused portion of a two-million-acre set-aside. (Demands for cemeteries, historical sites, Native groups, Native urban and village corporations, allotments, and primary places of residence must be met first.) The regulatory deadline for Sealaska's application comes before the time when the final distribution of land can be made. Therefore, to protect itself against loss of selection opportunity, Sealaska has applied for more land than it will probably receive: about 370,000 acres. If current estimates are correct, about 100,000 acres will be excess and will return to full, unrestricted National Forest management.

Part of Sealaska's priority selection lies adjacent to the Yak-Tat Kwaan selection near Yakutat. The 1976 amendment grants Sealaska selection rights near Yakutat only after concurrence by the governor of the State of Alaska. The State feels strongly that the selected area, which encompasses portions of the Situk River drainage, should be managed by a public agency. Therefore, the governor has agreed to approve Sealaska's selection only if the corporation and the Forest Service agree to exchange these Yakutat lands for lands elsewhere on the Tongass.

Similar exchanges may be necessary for selections on Admiralty Island. The three Native corporations--Kootznoowoo (Angoon), Shee Atika (Sitka), and Goldbelt (Juneau)--have chosen a total of over 60,000 acres on Admiralty. As the island is now designated a National Monument and has been proposed for Wilderness, the Natives' selections could be exchanged for other parts of the forest. This question is discussed more fully in Appendix G.

At one time, the Chugach regional corporation, Chugach Natives, Inc., considered selecting lands on the Tongass to compensate for certain other land selections that may be included in the proposed Wrangell Mountain Naional Park. The Forest Service does not favor any selections on the Tongass by Native corporations located outside southeast Alaska. Recent information, however, indicated that Chugach Natives, Inc., has decided against making any selections on the Tongass and legislation nearly passed last congressional session indicates that they desired no such settlement to be made on the Chugach National Forest.

Native and State selections will reduce the size of the Tongass National Forest. On the other hand, some 1.4 million acres will probably be added to the Tongass. These proposed additions appear in pending legislation. The areas are now unreserved public domain largely comprised of glaciers, ice fields, and rock; they will add little to the commodity resource values of the forest.

Data Used in TLMP

The basic data required for this planning effort were identified in the TLMP study plan (Area Guide, p. 254-278). The six task forces formed to compile these data then defined exactly what information they could provide in separate study plans. Some modifications to the basic data needs were made because of projected time limitations or lack of baseline information.

To provide a common set of areas for inventorying and intepreting resource values, the forest was divided into 867 Value Comparison Units (VCUs). Each VCU is a distinct geographic area that generally encompasses a drainage basin containing one or more large stream systems. Boundaries usually follow easily recognizable watershed divides. In some cases, an island or a group of small islands comprise a single VCU. These VCUs average about 18,000 acres in size.

The VCU delineation tends to encompass all the resource values of a specific area rather than emphasizing any single resource. Thus, the interpretation of each VCU's multiple values was not biased at the outset by any particular resource orientation.

For each VCU, the five land assessment task forces provided data and interpretations about the following resource values:

Timber supply qualities
Mineral values
Wilderness attributes
Opportunities for dispersed primitive recreation
Opportunities for dispersed semiprimitive recreation
Opportunities for concentrated recreation
Sport fisheries values
Commercial fisheries values
Wildlife values
Estuarine sensitivity.

All these values were rated on a scale of 0 to 5 (lowest to highest) for comparative purposes and to assure that all resources would be considered on an equal basis. A great number of variables were assessed in developing the interpretations. These variables, along with descriptions of how they were used in defining resource values, are contained in the five task force working reports.

These working reports also point out data deficiencies and limitations. During subsequent planning, the existing information will be refined through onsite analysis by interdisciplinary teams. Where serious discrepencies are encountered between the original data used to make allocations and actual field conditions, the field data will be used to improve the plan that is implemented.

In addition to the resource evaluations for the forest, the socioeconomic task force and the University of Alaska's Institute of Social and Economic Research provided the following assessments of pertinent characteristics of southeast Alaska:

Socioeconomic overview: Regional and local dimensions
Supply-demand situation for southeast Alaska timber
Supply-demand situation for southeast Alaska salmon
Supply-demand assessment of transportation and community development
National demand for developed recreation and tourism in southeast Alaska: an overview
An assessment of recreational and subsistence demands in southeast Alaska
Socioeconomic variables that may affect wilderness use in southeast Alaska
Wilderness use projection: the state of available techniques
The Wilderness Act: an overview
Southeast Alaska water resources
Community attitudes: interviews and case studies.

Finally, other information used to develop and assess the land management alternatives included:

Data on previous public involvement
Effects of past use
Patterns of existing use
Proposed uses
Salmon enhancement sites
Sensitive visible areas
Use proposals for State land selections
Wildlife habitat management proposals by the Alaska Department of Fish and Game

Cultural resources (archeological and historical)
Timber-related transportation system (existing and potential)
Special recreation resources.

LAND CAPABILITY AND SUITABILITY

Land capability refers to the ability of a unit of land to produce resources or provide land use opportunities under an assumed set of management practices or a given level of management intensity. Capability depends upon those land characteristics that are relatively stable over time. The capabilities of a given land unit can be increased or decreased by how it is managed.

To determine the forest's capabilities for various elements, each VCU was rated for each resource on a 0 to 5 scale. VCUs rated 0 for a particular resource are considered incapable of producing that resource or providing land use opportunities related to it. VCUs rated 5 have the highest relative capability. The forest's overall capability for each resource element is expressed in terms of the number of VCUs with high ratings for that element, the total acreage associated with VCUs of high ratings, or the cumulative resource yields that can be expected from the VCUs.

Since similar data were compiled for each VCU, the task forces were able to define the capabilities of any single VCU in relation to all other VCUs. The procedures for doing this are explained in the task force working reports. Individual acreages and resource ratings for each of the 867 VCUs are presented in the VCU matrix (see Appendix C).

Suitability refers to the appropriateness of certain management activities to a given unit of land in relation to environmental and economic consequences and the effects on land use opportunities. Suitability is, by definition, variable. What would be considered appropriate for that VCU in one land allocation alternative might not be appropriate in another since the goals and objectives for the alternatives differ considerably. For example, a VCU that rates moderately low in wilderness attributes but high in timber values might be appropriately allocated to LUD IV in an alternative that emphazises timber development opportunities. In an alternative that emphasizes wilderness, that same VCU might be considered suitable for LUD I. VCUs rated 0 for a particular resource are considered unsuitable for providing related land use opportunities, however. (See Appendix A, for example.) In other cases, areas of land are made unsuitable for the application of various LUDs because of existing human settlements, past land allocation decisions, or past land use effects. (See Appendix B.)

Resource Elements

Timber

The Tongass National Forest contains more than five million acres[1/] of commercial forest land, or land capable of growing more than 20 cubic feet of wood fiber per year. Of this total acreage, 59 percent can be logged with methods in common use today. These techniques include high lead, tractor, single-span skyline (reach of up to 2,600 feet), and A-frame logging from the beach. These commercial forest lands are, therefore, suitable for timber management under existing conditions.

1/Adjustments have been made in the calculation of commercial forest land to coordinate the latest TLMP task force data with the Forest Survey inventory, which has statistical accuracy for the forest as a whole.

An additional 22 percent could become available for harvest if less common, more expensive systems such as multispan skyline, helicopter, and balloon techniques were employed. The maximum yarding distance for helicopters is assumed to be 6,000 feet. The other 19 percent of the forest land is inoperable and therefore is unsuitable for timber management (see Appendix A for a list of these VCUs).

The commercial timber on the Tongass was classified into several categories based on the above operability criteria, the inventoried stand conditions, economic factors, and the protection of other values. These classifications are standard, special, marginal, unregulated, and reserved. Standard timber is that which can be economically harvested with commonly available equipment and techniques. Special timber can be harvested with commonly available equipment, but it lies in areas where special consideration is needed to protect other resources. All volumes shown for the special component throughout this document have been reduced to account for that portion placed in reserve. Marginal timber[2/] cannot be economically harvested because of constraints to protect other resources, the need for special logging techniques, or very low volumes of timber. Unregulated timber includes areas where no harvest will be scheduled, such as experimental forests, municipal watersheds, and slopes too steep to harvest without damaging other resources. Reserved timber is primarily in designated scenic areas, research natural areas, areas kept in old growth to protect other resource values, and areas allocated to LUDs I and II.

As estimated in the DES, the total sustained yield from all classifications would be 1,180 MM bm. There is a small acreage of commercial forest land in the reserved classification; however, no yield calculations were made for this portion. Timber Yield calculations in the Draft Environmental Statement were made on the assumption that yields could be increased by commercial thinning. Data developed since the Draft was published indicates that commercial thinning cannot be programmed to increase the timber yield during the life of the Tongass Land Management Plan (to 1990). During the 10-year life of the plan, very few previously harvested areas would contain timber stands in the 70 to 90 year age class which are suitable for commercial thinning. Also, no commercial thinning has been done in southeast Alaska to date, and very little has been done in the hemlock-spruce timber areas of Washington and Oregon. The lack of suitable stands and practical experience with this method precluded any yield from commercial thinning. However, commercial thinning will be done, where practical, in order to improve stand conditions and gain information for future potential yield calculations.

Subtracting the effects of commercial thinning that were expressed in the Draft, the total sustained yield from all classifications (except reserved) is 1,114 MM bm per year. (See Table 3.) This change is reflected in the yield calculations for the Regional Forester's recommendation (Appendix E) and the Proposed Action.

The amount of old-growth timber that must be left uncut to meet Area Guide policies for protecting other resources was estimated based on the experience gained to date in applying these policies. Retention factors were developed separately for LUD III and LUD IV. On the average, areas allocated to LUD III management (at the time of the DES) were assigned a 40 percent retention; LUD IV management called for an 18 percent retention of the operable commercial forest. These retention factors were not considered fixed policies but rather a method of allowing planning teams and forest supervisors the flexibility to protect other resource values. They enable forest managers to protect fish streams, eagle habitat, bear, wolf, water birds, deer, furbearers, and sensitive visual areas near recreation sites and along travel routes. Because many of these needs overlap along the beach fringe, retention of existing old-growth stands occurs extensively along the beaches.

2/Refer to Forest Service Manual, June 1975 supplement, p. 2412.

TABLE 3--Amount of timber that can be cut each year on a sustained yield basis from each classification of commercial forest land. The sum of all classification volumes constitutes the total timber base.

Classification	DEIS Volume	Current Volume
	MM bm	MM bm
Standard and special	711	647
Marginal		
One--economic constraints 1/	20	18
Two--technological constraints 2/	159	159
Unregulated, deferred, and reserved	290	290
Total	1,180	1,114

1/ Timber in the normal operability category that cannot be harvested economically because of constraints to protect other resources.

2/ Timber that would require special logging techniques such as helicopters to be removed.

It was recognized that much of the needed protection for other resources is provided in non-commercial forest lands, reserved forest lands, cutover lands, and areas not scheduled for harvest during the first 100 years.

After the DES was issued, the Regional Forester re-evaluated the retention factors in light of:

1) The protection provided by lands not scheduled for harvest (as described above);
2) The need to protect certain key forest values in LUD I and LUD II;
3) The time frame involved (in most cases the effect of the retention factors will not be seen until the rotation is nearly complete, and there is ample opportunity to revise the factors at least every 10 years);
4) The degree of overlap provided by the retention factors in protecting more than one resource.

With these points in mind, the retention factors were adjusted to provide an average retention of 13 percent of the operable CFL in VCUs allocated to LUD IV (to meet minimum Area Guide policy requirements), and an average of 30 percent retention in VCUs allocated to LUD III (providing greater latitude to satisfy Guide policies in especially sensitive areas). The effects of these changes on timber yield calculations is reflected in the Regional Forester's Recommendation and the Proposed Action.

It is important to understand that these retention percentiles are only valid when applied to all of the VCUs that comprise the forest. When fewer than all VCUs are considered, these percentiles will change, since the proportion of the CFL acres that are coincident with wildlife habitats, fisheries and sensitive visual areas is variable by VCU. Thus, the retention factors should not be viewed as fixed "ceilings" or "bottom lines".

Timber yield calculations, including allowances for these retention factors, were made for each alternative with the Timber Resource Allocation Model (RAM). Yield tables were developed for each site index based on existing research in southeast

Alaska. A 100-year rotation was used for site indexes of 100 or more; a 120-year rotation, for site indexes of 90 or less.

Intensive timber management practices can be used to increase the available Tongass timber harvest. Among these are: financial assistance with road costs; financial assistance with advanced logging techniques to harvest currently inaccessible areas and to protect other resources; and pre-commercial thinning. Pre-commercial thinning involves the removal of trees too small to be sold. Increased utilization of harvested trees and the salvage of windthrown timber can also lead to increased timber yields.

Wildlife

The various kinds and qualities of wildlife habitat on the Tongass were mapped and rated by the wildlife task force. About 6.4 million acres, or 41 percent of the forest, provide high-quality habitat for one or more big game species (bear, deer, moose, mountain goat). Intermediate deer winter range alone accounts for about 5.3 million acres, or 34 percent of the total land mass within the forest. Furbearers may be found over 8.5 million acres, land bird habitat includes about 7.2 million acres, and bald eagles use almost one million acres of forest land as habitat. Since the ranges of these species overlap considerably, acreage figures are often duplicated when more than one species is being considered. A more detailed breakdown of species habitat may be found in the Landtype/Timber Task Force Report.

In addition, 11 wildlife species or species groups were inventoried. Two, furbearers and land birds, are present in every VCU (table 4). Seven more occur in 60 percent of the VCUs. Only two species have fairly restricted distributions: moose are found in only 13 percent of the VCUs, and mountain goats are present in just 35 percent.

To rank each VCU's importance to wildlife, it was assigned a value based on the type of habitat it provides and the number and kinds of wildlife found there. Consequently, species diversity contributed greatly to the final VCU rating, as did the presence of critical habitat such as deer winter range or estuarine beach fringe used by bear and waterfowl.

Of the 867 VCUs, 34 percent fell into the high- or very-high-value group, and 40 percent were considered of at least moderate value as wildlife habitat. Only 26 percent rated low or very low.

Fish

Habitat availability for salmonids was estimated by tabulating total stream miles on 1:63,360 scale U.S. Geological Survey maps. Stream mileage above known or suspected barriers to fish migration was added to compensate for extensive tributary stream systems not shown on the maps.

The 21,000 miles of salmonid-producing streams were then rated by VCU on a scale of 1 to 5 from lowest to highest in habitat quality and production potential (see Fisheries Task Force Working Report for details). Because of the depressed state of today's salmon stocks, streams with low escapements were rated on the basis of their historic production rather than on current production. Nearly 10,000 miles showed high potential and were rated 3, 4, or 5. The rest were rated 1 or 2. A 2 rating indicated that the stream has at least been catalogued by the Alaska Department of Fish and Game as a salmonid stream; a rating of 1 was given to remaining stream systems. On all these streams, production capability can be enhanced through stream

TABLE 4 --Number of VCUs containing habitat for each of the 11 wildlife species inventoried.

	Habitat rating for individual species or group 1/			
Species	Absent	Low value	Moderate value	High value
Brown bear	322	250	124	171
Black bear	230	234	285	118
Wolf	269	471	113	14
Deer	137	151	206	373
Moose	769	34	27	37
Mountain goat	563	66	73	165
Furbearers	0	69	151	647
Marine mammals	144	240	291	192
Land birds	0	206	218	443
Water birds	30	216	361	260
Bald eagle	67	212	454	134

1/ For detailed explanation of habitat ratings, see Wildlife Task Force Working Report.

habitat improvement and aquaculture facilities. Such actions could at least double the present level of salmonid production on the Tongass.

Only three VCUs were judged as unsuitable for any type of fishery management. These VCUs are located in icefields with no flowing water. All other VCUs are suitable for varying degrees of sport, commercial, or estuarine fisheries management.

Recreation

The Tongass National Forest's remarkable combination of natural and cultural features attracts both local and non-local recreationists. The great size of the forest, its predominantly undeveloped character, and its low population density impart a feeling of vastness, wildness, and solitude that is difficult to find in today's world.

The Alexander Archipelago, most of which is encompassed by the Tongass, is typified by intricate inland waterways, more than a thousand islands, huge glaciers, fiords, rugged mountains, lakes, rivers, primeval forests, large or unusual fish and wildlife populations, and striking Native art forms. These features, which are distributed throughout the forest, provide the basis for a wide range of outstanding recreation opportunities.

The forest is exceptionally well suited for dispersed recreation activities. The many sheltered marine waterways and numerous inland lakes allow boat or aircraft access to most areas of recreational interest. The only real limitation is the relatively high cost of transportation to areas removed from population centers.

Access is difficult over much of the land because of its steepness and dense vegetation. Consequently, most recreation use occurs within a mile or so of the beach, along the rivers and streams, around fly-in lakes, and on other lands accessible by road or trail. Extensive alpine lands also offer considerable recreation opportunities where they are accessible.

For inventory purposes, recreational uses were divided into three broad categories: dispersed primitive, dispersed semiprimitive, and concentrated recreation.

Dispersed primitive. Recreational pursuits involve isolation and an appreciation of the natural environment. They provide considerable challenge and risk, and they require a high degree of self-reliance and outdoor skills. Major activities include fishing, hunting, backpacking, and watching or photographing wildlife. Nature is met on its own terms without convenience facilities, except for access by boat or air.

Opportunities for dispersed primitive recreation are abundant because of the large amount of roadless area and the small number of users. Of the 867 VCUs on the forest, 316 rated high or very high for dispersed primitive recreation, 339 were rated moderate, and 212 received low ratings (fig. 2). A full description of the rating system appears in the Recreation/Wilderness Task Force Working Report.

Dispersed semiprimitive. Recreational pursuits require a moderate to high degree of self-reliance and basic outdoor skills. Activities are often oriented toward the taking of fish, wildlife, and edible plants. The natural environment dominates, but some modifications for human convenience are allowed. Rudimentary roads or trails, as well as air and small boat access, may be available.

Opportunities for dispersed semiprimitive recreation are abundant because of the large amount of relatively undeveloped forest land, air and water access, primitive trails, both public and special-use cabins, and old logging roads. These opportunities were rated high in 194 VCUs, moderate in 266, and low in 407 (fig. 2).

Concentrated. Recreational pursuits include group learning and structured activities such as downhill skiing and organized sports. A moderate to high level of sport skills is required. Although the natural environment is important, modifications for comfort, convenience, and participation are emphasized.

National Forest lands surrounding the communities are often highly suitable settings for concentrated recreation and provide good potential for facility development. However, opportunities for concentrated recreation are the least abundant of the three major types, primarily because large numbers of users are necessary to justify the expense of development. Consequently, those developments that do exist are found near urban centers such as Ketchikan, Sitka, and Juneau. Only 14 VCUs rated high, 32 rated moderate, and 821 scored low for this type of recreation opportunity (fig. 2).

Special Features

Throughout the Tongass lie a wealth of unusual scientific and natural features that merit special attention and management. These include unusual geologic occurrences, salt chucks, unique water features, unusual plants or vegetative associations, unique animal species, and others.

Many of these features are isolated or occupy a limited area. The inventory of special features (see DES Special Features Map) relied on local knowledge and is by no means complete. As other features are discovered or made known to land managers, they will be added to the inventory and taken into account during management planning.

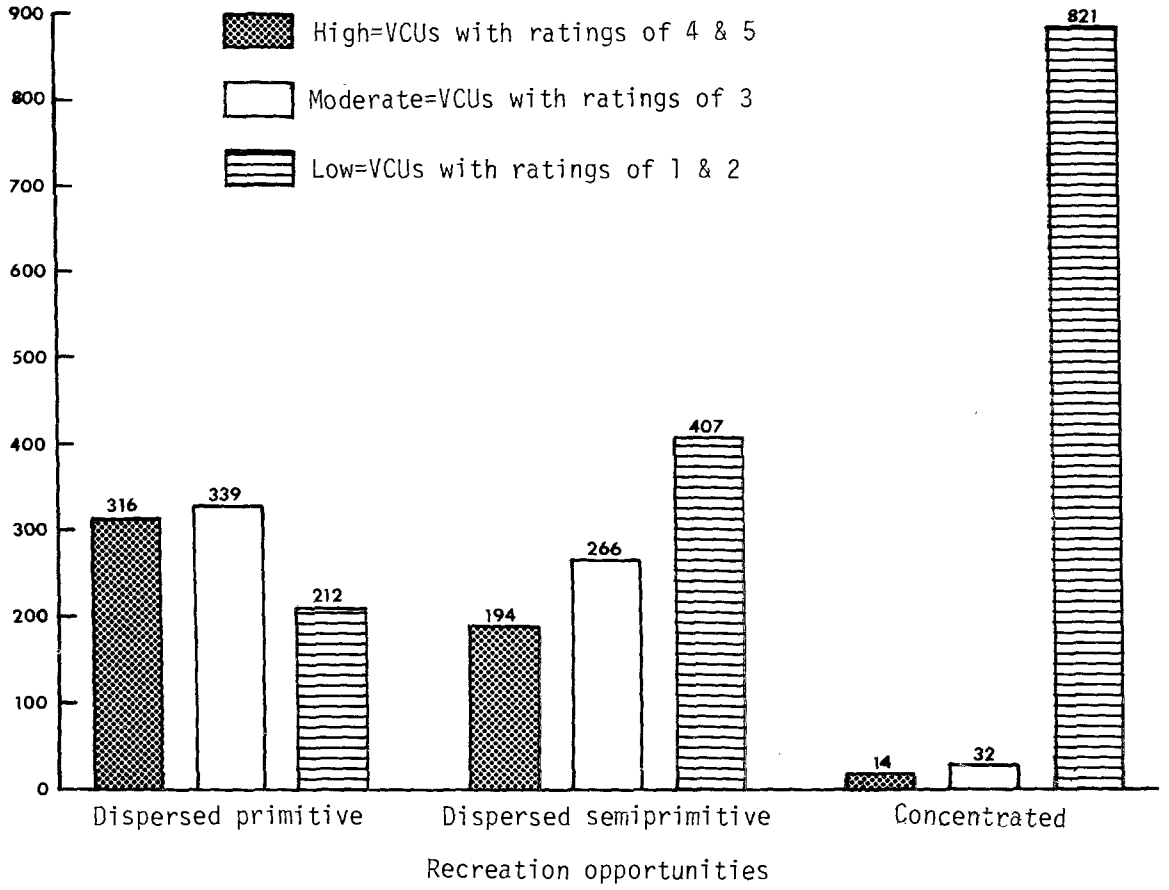


Figure **2**--Distribution of dispersed primitive, dispersed semiprimitive, and concentrated recreational opportunities on the Tongass National Forest by number of VCUs rated for each type.

WILDERNESS

The only designated wilderness areas 1/ in southeast Alaska are three small national wildlife refuges administered by the U.S. Fish and Wildlife Service. They are St. Lazaria Island (62 acres), Hazy Islands (42 acres), and Forester Island (2,630 acres). In addition, two areas on the Tongass have been designated recently as National Monuments. Misty Fiords, totaling 2,284,560 acres, and Admiralty Island, totaling 920,860 acres, will be managed by the Forest Service as National Monuments. These lands, along with an additional 2,208,064 acres, are being considered for wilderness recommendation in the RARE II process.

The Tongass National Forest contains about 12.7 million acres of roadless and undeveloped lands. If all these lands were designated wilderness, the present amount of national wilderness (15.7 million acres) would be increased by 81 percent. Existing Alaskan wilderness (76,235 acres) would be increased by over 2,000 percent.

The roadless areas vary greatly, and some are better settings than others for high-quality wilderness and primitive recreation experiences. The RARE II wilderness attribute rating system was used to evaluate these differences.

All 720 VCUs that are either roadless or partially roadless were rated, regardless of any planned developments or activities. Four primary attributes were assessed: natural integrity, apparent naturalness, outstanding opportunities for solitude, and opportunities for primitive recreation. The first three were rated according to the RARE II system. Primitive recreation opportunities were rated by the system used for the Tongass recreation inventory (see Recreation/Wilderness Task Force Working Report). The task force felt this approach would more accurately portray available opportunities for primitive recreation on the Tongass than the technique outlined in the RARE II system. Ratings for recreational opportunities were also used to assess supplementary attributes, including ecological values, special features, and cultural features.

All 720 VCUs containing substantial roadless area are considered suitable for wilderness consideration. Under the RARE II system, the highest rating an area can receive is 28 points, and the lowest is 0. On the Tongass, 82 VCUs were rated 26 or higher; 277 fell within the 23 to 25 rating range; 369 were within the 18 to 22 range; and 15 received ratings of 17 or less.

Landtype

The land of the Tongass has been divided into six broad classes termed landtypes. They are (1) estuarine, (2) muskeg (bog), (3) alluvial, (4) valley bottoms and lowlands, (5) glaciated valley walls, and (6) alpine tundra and permanent fields of ice and snow (table 5).

These divisions formed the basis for the landtype/timber inventory compiled during this planning effort. Each landtype/timber class possesses characteristics that allow specific management practices and preclude others. Valley bottoms, lowlands, and glaciated valley walls support the majority of the forest in the Tongass. Glacial deposits cover most bedrock except on the upper valley walls. Steep slopes are the major limitations to logging on the glaciated valley wall landtypes. First and second bottom floodplains comprising the alluvial landtype also are generally excellent forest sites but their use is limited because channel movements make them prone to erosion.

Soils

Both mineral and organic soils occur within the six landtypes; most are Histosols or Spodosols. Histosols are dominately organic soils and are saturated with water most of the year. They are the muskeg soils (also called peat or muck soils). In southeast Alaska Histosols support a scrubby or reduced forest growth because of the high water table and the lack of a firm root base. The engineering characteristics of low bearing strength and high water table are the primary limitations to forest management on Histosols.

1/ Areas designated for wilderness study in 1970-71 have been protected and managed as wilderness. The U.S. Geological Survey completed studies for Granite Fiords and Tracy Arm-Fords Terror in 1977.

TABLE 5 --The area encompassed by each of the six characteristic landtypes and by freshwater in the Tongass National Forest.

Landtype	Acres	Percent of Tongass
Estuarine	66,167	0.4
Muskeg	1,418,535	9.1
Alluvial	196,622	1.3
Valley bottoms and lowlands	2,247,579	14.5
Glaciated valley walls	6,338,216	40.9
Alpine tundra and ice fields:		
Alpine	3,649,346	23.5
Ice fields	1,363,947	8.8
Freshwater (lakes, streams)	229,625	1.5

Spodosols comprise most of the mineral soils of the Tongass. A spodic horizon in which organic matter and aluminum have accumulated is common to all Spodosols. In addition to this subsurface spodic horizon, Spodosols of the Tongass usually have several inches to a foot of organic material accumulated on the surface. Spodosols are the dominant soils of the valley bottom, lowland, and glaciated valley wall landtypes. These soils support the bulk of the Sitka spruce-western hemlock forest from sea level to about 1,500 feet. The primary limitation to forest management is landslides on steep glaciated valley walls. High water tables, hard pans, and forest regeneration also present problems for some Spodosols, but these can be overcome with good management.

Soil erosion. Natural soil erosion occurs wherever running water, wind, or gravity comes into play with mineral or organic soils. The rate of erosion depends primarily on the amount of vegetative ground cover and the steepness of slope. Erosion rates are also influenced by soil texture (percent of sand, silt, and clay), amount and size of coarse fragments, soil moisture content, and soil depth.

On the Tongass, the dense ground cover of matted roots, mosses, forbs, and shrubs prevents excessive soil loss from wind or the overland flow of water. However, where this overland flow is concentrated in valley bottoms or gullies (V-notches), soil loss can be great. This type of erosion is most pronounced in volcanic soils.

Another type of soil erosion may occur in braided (multiple channel) stream courses. In broad valleys with gentle gradients, streams sometimes agrade and periodically change course. Most often the abandoned stream channels soon revegetate and then remain relatively stable. However, periodic flooding can tear away the new bank vegetation and cause considerable soil loss.

The most common type of erosion on the Tongass is mass soil movement (landslides). Over 3,800 large-scale landslides of various ages have been identified

on the Tongass. A number of conditions contribute to the occurrence of landslides. Among these are water saturated soils; earth tremor (natural or caused by rock blasting); soil material overlying slick rock, compact basal till, or clayey sediment layers (slip planes); the decreased soil-holding power of tree roots decaying after timber harvest; and windthrow.

Soil productivity. Site index, or tree height at a specified age, is the usual expression of forest land productivity. However, accurate site indexes are hard to determine in southeast Alaska because many of the dominant trees in natural stands were suppressed for various periods of time (Stephens and others 1968) and because the even-aged regrowth in logged stands is still too young. Fortunately, soil productivity can be predicted reasonably well from soil type characteristics, as follows:

Soil	Productivity
Good drainage, over 10 inches deep	High
Good drainage, two to 10 inches deep	Moderate
Poorly drained organic soils	Poor

Excessive wind reduces growth. In timber stands exposed to frequent, excessively high winds, the soil productivity is about 70 percent of that normal for the soil (Stephens and others 1968).

Water

Although both glacial and nonglacial stream systems occur on the Tongass, this discussion is limited to nonglacial streams since they contain most of the prime fish habitat.

The water quality in southeast Alaska's nonglacial streams is generally superior, in terms of sediment levels, temperature, dissolved oxygen concentrations, and chemical content.

Concentrations of suspended sediments normally are less than 10 milligrams per liter (mg/l) in winter, four to 30 mg/l in summer, and occasionally over 100 mg/l in fall during storm runoff. These low levels are attributed to the dense vegetative ground cover. Usually the only natural sources of sediment are landslides or eroding stream channels. Landslides probably cause large but temporary increases in suspended and bedload sediments. Channel erosion, on the other hand, probably is a more consistent contributor to sediment loads.

Summer temperatures in main channel streams normally range from 37° to 52° F but may occasionally exceed 60° F; winter temperatures typically range from 32° to 37° F. Small tributaries, however, probably undergo larger fluctuations.

Dissolved oxygen is typically at or near saturation because of the streams' self-aeration characteristics. Concentrations may drop below saturation when streams with laminar (smooth) flow are low. Such decreases usually occur in summer dry periods when natural demand biochemical oxygen is at its peak.

Chemical water quality is high. Total dissolved solids concentrations are typically less than 100 mg/l.

In addition to high water quality, southeast Alaska produces a large volume of water per unit area of land, Average annual runoff exceeds 94 inches. Total runoff is distributed seasonally as follows: winter, seven percent; spring, 28 percent; summer, 45 percent; and fall, 20 percent. The large volume of summer runoff is due to snowmelt. Peak flows, however, normally occur during September and October, when precipitation is heaviest. Low flows normally occur during January and February or during late summer dry periods. Rapid runoff and lack of groundwater systems limit water storage and availability for domestic purposes.

Minerals

Although southeast Alaska was one of the earliest regions in the State to be settled, much of its mineral potential is still not well known. Geology, physiography, climate, and vegetative cover have hampered prospecting and exploration activities, which commonly begin when minerals are spotted on the earth's surface.

Gold nuggets in creek beds, well-defined mineral outcrops, oil seeps, and other surface evidence led to the major historic mineral discoveries, which began in southeast Alaska little more than 100 years ago. Recent discoveries, although sometimes involving minerals not historically sought, have almost always been made within the bounds of already identified mineralized areas.

Since 1867, nearly 15,000 claims have been filed on areas encompassed by the Tongass National Forest, and several hundred new claims are being filed each year. However, the search for "blind" deposits of hard rock minerals is both expensive and time-consuming; so vast areas of the Tongass remain relatively unexplored by the mineral industry, the U.S. Geological Survey, or the Bureau of Mines.

A minerals task force was formed to assess the mineral values of the forest by assembling all available data. Known mineral and metal deposits, including petroleum, were inventoried by the task force, based on official documents, trade publications, and individual contacts. Information gathered included geologic occurrences, mineral deposits, prospects, and claims dating from the earliest filing in 1867 to the present. A final check was made on the current standing of mining claims in the State's records on December 15, 1977.

The mineral commodities addressed in this planning document are primarily those considered by the U.S. Bureau of Mines to be of critical or significant value to the domestic economy, international trade balance, and national security (see Glossary).

Inventory data were used to develop mineral value ratings for each VCU on the forest (for details, see the Minerals Task Force Working Report). Below is a summary of those ratings:

Rating	Description
0 --	Lacks patented claims and generally lacks promise for future mineral development.
1 --	May contain known mineral deposits but lacks the quantity or quality needed for commercial development.
2 --	Lacks recorded exploration data and may or may not contain deposits of commercial value. (It is assumed that most new discoveries will come from these VCUs.)

3 -- Contains known mineral deposits which, to date, have not proven of economic importance.

4 -- Contains minerals with significant commercial potential as indicated by records of prospecting, exploration, and historic development.

5 -- Contains known mineral deposits of proven economic quality and quantity.

Only 10 VCUs on the forest received minerals ratings of 5, and 71 were rated 4 (table 6).

TABLE 6 --VCUs of proven or potential commercial value and the mineral commodities they contain

Area	VCU	Rating	Commodity
Berners Bay	16C	4	Lead, zinc, and gold
	17C	4	Iron ore, and gold
	19C	4	Gold
	20C	4	Gold
Juneau-Douglas	28C	4	Lead, zinc, and gold
	32C	4	Lead, zinc, gold, and silver
	33C	4	Lead, zinc, gold, and silver
Snettisham	55C	4	Iron ore
Windham Bay	71C	4	Lead, zinc, copper, and gold
William Henry Bay	107C	4	Uranium, lead, and copper
N. Admiralty Island	126C	4	Uranium, lead, copper, gold, silver and cobalt
	128C	4	Gold
	133C	4	Lead, zinc, copper, gold, and silver
	144C	5	Lead, zinc, copper, gold, and silver
S.E. Admiralty	168C	4	Lead, zinc, copper, gold, and silver
	170C	4	Copper, gold, and silver
	182C	4	Lead, zinc, gold, and silver
W. Chichagof	254C	5	Nickel, lead, zinc, copper, gold, and silver
	256C	5	Nickel, copper, and gold
	257C	5	Nickel and copper
	258C	5	Nickel and gold
	260C	4	Zinc, lead, gold, and silver
	265C	4	Lead, copper, and gold
	268C	4	Nickel, copper, gold and silver
	271C	4	Lead, zinc, copper, gold, and silver
	275C	4	Lead, zinc, copper, gold, and silver
Green Lake (Sitka)	324C	4	Lead, zinc, chromium, tungsten, gold and silver
Castle Island	435S	5	Barite, zinc, gold, and uranium
Woewodski Island	448S	4	Lead, zinc, gold, silver and molybdenum
Stikine R.	497S	4	Garnet
Virginia Lake	502S	4	Lead, zinc, gold, and silver
Aarons Creek	503S	4	Lead, zinc, copper, gold, and silver

Continued

TABLE 6 --VCUs of proven or potential commercial value and the mineral commodities they contain--Continued

Area	VCU	Rating	Commodity
N. Bradfield	512S	4	Uranium, copper, iron ore, gold, and silver
Deer Island	525S	4	Copper
N. Prince/Koskiusko Isls of Wales/	531K	4	Copper, iron ore, molybdenum, and gold
	536K	4	Copper, iron ore, and molybdenum
	546K	4	Lithium
	555K	4	Marble
Coronation Island	564K	4	Lead, zinc, and antimony
Noves Island	567K	4	Molybdenum
Baker Island	569K	4	Lead, zinc, molybdenum, copper and gold
Central Prince of Wales Island	597K	4	Copper, iron ore, and gold
	598K	4	Lead, zinc, copper, iron ore, and molybdenum
	607K	4	Lead, copper, gold, and silver
	610K	4	Lead, zinc, copper, gold, and silver
	622K	4	Lead, copper, gold, and silver
	625K	4	Zinc, copper, gold, and silver
Dall Island	645K	4	Lead, copper, molybdenum, gold, and silver
	648K	4	Lead, copper, and gold
	666K	4	Lead, copper, and gold
S. Prince of Wales Island	673K	4	Copper, iron ore, and gold
	681K	4	Lead, copper, iron ore, gold, and silver
	682K	4	Lead, copper, iron ore, gold, and silver
	683K	4	Copper, lead, gold, and silver
	684K	4	Copper, gold, and silver
	692K	5	Uranium
	696K	4	Uranium, copper, lead, and gold
	699K	4	Uranium, copper, lead, iron ore, and gold
	701K	4	Copper, iron ore, and gold
	702K	4	Uranium, molybdenum, copper, and gold
Cleveland Peninsula	715K	4	Lead, zinc, copper, gold, and silver
	716K	4	Lead, zinc, copper, gold, and silver
	719K	4	Gold
	720K	4	Iron ore and gold
Revilla Island	748K	4	Lead, zinc, iron ore, copper, gold, and silver
	755K	4	Lead, zinc, and gold
	759K	4	Lead, zinc, copper, and gold
Gravina	761K	4	Lead, zinc, copper, platinum, iron ore, antimony, gold and silver
	762K	4	Lead, zinc, gold, and silver
	763K	4	Lead, zinc, copper, gold, and silver

Continued

TABLE 6 --VCUs of proven or potential commercial value and the mineral commodities they contain--Continued

Area	VCU	Rating	Commodity
Mainland east of Ketchikan (Misty Fiord)	795K	4	Molybdenum
	796K	4	Lead, zinc, copper, gold, and silver
	804K	4	Copper, lead, zinc, molybdenum, barite, gold, and silver
	805K	4	Copper, lead, zinc, and gold
	806K	4	Molybdenum, iron, gold, silver, copper, lead, and zinc
	815K	4	Molybdenum
	818K	5	Molybdenum
	826K	4	Molybdenum
	841K	5	Molybdenum
	842K	5	Molybdenum
	864K	4	Copper, iron ore, and gold

Major Issues, Concerns and Opportunities

Role of Issues in Planning

Certain issues underlie the entire planning process for the Tongass. In fact, comprehensive planning starts by clearly identifying the issues, which then become translated into objectives. Alternatives for achieving these objectives are developed and judged against evaluation criteria. The preferred alternative is ultimately the one that best resolves the issues. Thus, clear issue identification plays a key role in any successful planning process.

The Forest Service cannot identify and deal with issues entirely from its perpective. The various publics as well as other Federal and State agencies were involved in identifying issues, in developing evaluation criteria, and in formulating and evaluating alternatives. (Additional discussions of issues can be found in the Consultation With Others section.)

Allocation Issue

When the Southeast Alaska Area Guide was written, available information suggested the Tongass could provide 3.5 to 7 million acres of wilderness and roadless areas; could supply an annual timber harvest of 535 to 660 MM bm; and could satisfy Area Guide policies for protecting fish and wildlife habitat and recreation and scenic values.

However, the data base has now been refined and enlarged. A more accurate timber inventory has been provided; wildlife habitat has been determined more accurately; and a more complete analysis of social and economic factors has been developed.

The sum of this new information clearly indicates less allocation flexibility than originally projected in the Area Guide. The Tongass National Forest cannot accommodate all that is being asked of it. Compromises are needed.

Resource demands can be negotiated, and compromises can be made in several spheres. For example, the amount of wilderness allocated in timber-producing areas can be negotiated. Conversely, the amount of timber harvested and the level of timber-related employment can be reassessed or adjusted using supplemental expenditures. Finally, the amount of deer winter habitat maintained and the number of areas managed for visual and recreation values can be varied. Different interest groups may consider one or more of these variables as nonnegotiable. On the other hand, the Forest Service views the biological productivity of fish streams as a value which cannot be compromised. Therefore, under any alternative, productivity of fish streams will be maintained.

The task of the planning process is to provide the most accurate information to agencies, publics and Congress to set the stage for solutions to these issues.

The Issue of Community Lifestyles

In southeast Alaska the land directly shapes the quality of life. First, the geographical environment and lack of development isolate communities from one another, from the rest of Alaska, and from the "south 48." In all the southeast region, only three communities, Thorne Bay, Craig, and Klawock, are linked by roads. In addition, Haines and Hyder are linked to the Alaska Highway. Otherwise, accessibility depends upon water and air travel. The result is a community lifestyle characterized by neighborliness, self-sufficiency, and a willingness of individuals to get involved. The banes of modern life--crime, overcrowding, and excessive regulation--are largely unknown. This simple and unhurried atmosphere is the key reason many individuals choose to reside in southeast Alaska.

The land also is the chief source of recreation. Many residents and most communities organize the annual rhythms of life about key events such as the summer salmon derby and the fall deer hunt. Fishing, hunting, hiking, mountain climbing, boating, skiing, camping, photography, and other outdoor pursuits fill the leisure hours and the art of Alaska residents.

Most important, the land is a source of livelihood for Alaskans, both Native and non-Native.

In some of the outlying villages, Natives still depend upon hunting and fishing as vital sources of food. Such subsistence activities supplement low incomes. In Angoon, for example, 97 percent of the families have incomes below the national poverty level. At the same time, the subsistence lifestyle is valued as a cultural and traditional practice. Thus, protecting Native subsistence rights is tantamount to preserving the historical and cultural character of southeast Alaska. In addition, many non-Native residents consider themselves subsistence users of the land.

Dependency on the land is simply an economic fact of life in southeast Alaska. Except for Juneau, where government employment is a mainstay, most communities depend upon the timber industry, commercial fishing, subsistence, or tourism.

To the resident of southeast Alaska, then, Tongass management is crucial, for it affects almost every element of his daily life and shapes his future. The question is, can economic stability be sustained while preserving the wildland values prized in southeast Alaska? How much land is enough to sustain the economics of the Alaskan lifestyle? How much land will preserve its natural wilderness value? Measuring these boundaries is not a simple, objective task, for the lives of people are involved. The Forest Service and the public must attempt to reach decisions that consider both quantitative and qualitative values.

The Issue of Community Stability and Jobs

In recent years, southeast Alaska has depended primarily on the government and the timber industry to supply jobs and economic stability. A secondary source of employment is the fishing and fish processing industry. Mineral production, construction, and tourism, while holding some future promise, are of lesser importance to the present economic stability of the region.

The complex relationships between land allocation and employment are traced more fully in "Economic Aspects" and "Economic Effects", but it is important here to recognize the key concerns expressed by southeast Alaskan communities. These can be divided into questions about the timber industry and questions about other sources of employment:

Timber employment. Will the National Forest supply enough timber to maintain current production at both pulp mills after wilderness areas are withdrawn? If not, which mill will be affected? What are the resulting impacts on jobs in logging or pulp and cant processing? Will the timber from lands selected by Natives reduceharvests from the Tongass?

Other employment. Will land allocation affect the commercial fishery? Will tourism provide a meaningful alternative to communities that might experience job cutbacks in other spheres? What is the potential for reviving the minerals-based economy of earlier years?

Future management of lands selected by Natives will have a decided though still uncertain effect on the regional opportunities for recreation, subsistence, and timber harvest.

The fishing and fish processing industry shows little sign of expanding. Although programs such as limited entry may help, specific enhancement projects have to date shown only limited results. Since the Forest Service regards stream productivity as a value which must be protected, allocation decisions should not be a key factor in reducing fish production.

Tourism and minerals development, though a potential source of economic stability, offer southeast Alaska communities uncertain opportunities for major economic diversification.

The overall picture, therefore, promises little, if any, economic or population growth as a direct result of National Forest management decisions. Some communities, however, may experience a gradual economic change, perhaps resulting in population shifts within the region and probably representing a gradual alteration from timber to alternate bases of economy.

Wilderness Preservation Issue

The Tongass contains 12.7 million acres of some of the finest roadless and undeveloped lands in the Nation. National, regional, and local groups express either strong support or firm opposition to substantial allocation of these undeveloped areas to wilderness management. Most groups agree, however, that wilderness designation is proper for some areas of the Tongass. The issue centers on which areas and how much.

A major portion of the national public contends that lands offering solitude, natural beauty, and the opportunity for wildland recreation must be maintained as a relief to mounting population and urban pressures. Some groups consider Alaska the Nation's last opportunity to show its maturing commitment to values other than growth and economic prosperity. These groups also point out the critical importance some

portions of Alaska have for migrant and resident wildlife species. To many wilderness advocates, congressional wilderness designation is the only long-term guarantee against development. Therefore, they may sometimes support wilderness designation for areas with no outstanding wilderness qualities simply to protect them from what they deem unwarranted activities.

Others object to a "lock-up" of valuable Alaskan resources. Stressing Alaska's storehouse of minerals and timber, these groups feel that development of these resources should be permitted.

Ultimately, the question of how much wilderness must be judged in relation to costs and benefits. Wilderness values, although difficult or impossible to quantify, are being measured against the board feet of timber, the tonnage of minerals, and the jobs and dollars the land could supply. In other words, what is society willing to forego to have X acres of wilderness?

The uses that will be permitted in a wilderness have also been a major source of contention. However, most agree that wilderness management on the Tongass should allow established airplane and boat access and public cabins or other types of primitive shelter. The Forest Service recognizes these uses as legitimate needs and will consider such uses on a case-by-case basis.

Admiralty Island Issue

Of all areas proposed for wilderness on the Tongass, Admiralty Island is the focus of greatest concern and controversy. Its rich resources, the many ownership claims upon it, its value as an undisturbed ecosystem, and its historical and cultural significance all contribute to the intense concern expressed by divergent interest groups.

The first claimant to Admiralty is the village of Angoon, where Tlingit natives have for several centuries resided in close harmony with the natural environment. Concerned that proposed timber harvests would disturb traditional subsistence use of the area, Angoon has joined a national drive to preserve the island in its present state. Goldbelt, Juneau's Native corporation, also has historical claims to Admiralty and, along with Shee Atika, Sitka's Native corporation, has made land selections on Admiralty through the Alaska Native Claims Settlement Act. But they planned to develop Admiralty's timber resources. In response to Administrative and legislative proposals that selections be made elsewhere on the forest, these corporations, with Angoon's Kootznoowoo, are now examining other areas. This option, would maintain Admiralty's potential for wilderness, but it has also inspired concern among other Native groups such as the Huna Totem. These groups fear that displacement of ANCSA claims on Admiralty could move development closer to their communities elsewhere in southeast Alaska. (For additional details see The Proposed Action, Land Status, and Appendix G.)

Much of the doubt over Admiralty's future has been removed with the President proclaiming National Monument Status. The island is also proposed for wilderness, and has been withdrawn from entry. In reconciling this key national issue other regional issues are raised. Answers need to be found to such concerns as what uses will be allowed on Admiralty? What will be the future of existing special use cabins? What are the future options of the Noranda mining operation? And how can increased pressures for resource development on other lands off of Admiralty be best accomodated?

The values of Admiralty and also Misty Fiords are of special national significance. The Forest Service faces a challenge to manage these new National Forest Monuments in a creative and sensitive way.

Fish and Wildlife Issues

Wildlife and fish represent key values on the Tongass, both as renewable resources of significant commercial and recreational value and as a natural index of ecological well-being. In a sense, this is a "motherhood issue," for it is the rare individual who argues in favor of activities which he recognizes as seriously destructive to fish or wildlife. Conflicting views arise, however, from the contradictory information available concerning the impact of various forest activities on wildlife and fish.

To some degree, concerns about fish and wildlife are properly addressed through management policy, as embodied in the Area Guide, rather than through allocation decisions, which are being made in the Tongass land management planning process. However, because research is often lacking or contradictory, some individuals feel that protective allocation provides the best way to avoid even the possiblity of habitat damage or destruction.

Thus, one concern is that timber harvesting may degrade wildlife habitat. For example, the long-standing belief that clear-cuts provide valuable browse for deer is challenged by recent research. Studies now suggest that in southeast Alaska the removal of old-growth forest canopy eliminates essential winter cover and thus decimates deer populations long before browse is naturally regenerated. This critical winter habitat may be protected either through management policies that retain adequate old-growth canopy and restrict cutting unit size or through land use designations that prohibit timber harvest altogether.

Similar concerns are voiced about fish habitat. Lowered water quality caused by mineralized leaching, stream damage caused by log transport and inadequate buffer strips, and impaired crab fisheries caused by log dump facilities are some of the concerns expressed by commercial and sport fishermen, conservationists, and others involved with forest management. Again, resolution can be achieved either through management restrictions placed upon development activities or through land allocations that prevent development.

In addition to concerns about habitat protection, however, the issue incorporates concern about species enhancement. Because southeast Alaska's salmon fisheries are depleted, some individuals and groups stress that key locations for hatcheries and other enhancement facilities be determined and provided for in all allocation decisions. Some enhancement activities would not distrub the wilderness character of the land; others, such as major rearing facilities, would introduce noticeable changes on the land. Additional concerns are the effects of allocations upon wildlife research facilities, predator control, and other activities important to a vigorous wildlife management program.

Fish and wildlife concerns are thus a vital factor in balancing the use demands upon the forest. Forest Service policy is that the biological productivity of fish streams will be protected in all allocation and management decisions. Similarly, all national legislation concerning threatened and endangered species will be enforced. However, issues such as the amount of deer winter range to be preserved and the emphasis to be placed on enhancement and research programs are to be negotiated through the planning and public involvement process, where wildlife and economic values are weighed.

Aquaculture Issue

Rehabilitation of the salmon runs of southeast Alaska, whether through habitat improvement or hatcheries, has become a major resource issue. Complicating the issue is the fact that aquaculture, on the scale it is now being viewed, is new to Alaska.

There has been a proliferation of agencies and private organizations with a role to play in aquaculture. Those roles, in most cases, have not been agreed to or well defined. In addition to the administration problems there are expressed concerns over the state of the art. Of particular concern are:

1) High capital and operating costs;

2) The harvesting of hatchery fish without overharvesting wild stocks, which intermingle in saltwater;

3) Potential disease problems both within the hatchery (i.e. Crystal Lake Hatchery, 1977) and by contamination of wild stocks; and

4) "The high probability of creating major genetic changes both within the hatchery stock and through their interbreeding with wild stocks." (Narver, 1973)

Concern has also been expressed over the role aquaculture should play in fisheries management. Some are concerned that too much reliance may be placed on the ability of aquaculture to correct the errors of man that may result in habitat damage from roading and timber harvest, or in stock depletion from overfishing. Some claim that heavy reliance on aquaculture may promote a less careful resource management approach, with the expectation that if there are problems in natural production, aquaculture can correct them. On the other hand, aquaculture proponents claim that fisheries management through habitat protection alone is too conservative an approach, and that aquaculture has far greater ability to mitigate management and development problems than it is being credited with.

Another problem area concerns the limits to aquaculture that may be imposed by wilderness designation. There is a strong feeling expressed that aquaculture developments should be allowed in designated wilderness areas. However, an opposing view points out that one major intent of wilderness is to minimize man's impact on the land and its resources, so that wilderness can provide a "benchmark" for comparison with developed areas. Therefore, extensive aquaculture developments and the resulting changes in native salmon stocks are seen as violating (or at least diluting) the intent of wilderness.

The Minerals Issue

The projected value of current mineral claims makes mineral develoment an important issue here. Interest is focused upon nickel, copper, and cobalt deposits on Yakobi Island; zinc, silver, barite, and other minerals found in several deposits on Admiralty Island; and the molybdenum deposit at Quartz Hill near Ketchikan. A fourth area which may promise development is the uranium deposit near Kendricks Bay on Prince of Wales Island. Potential conflict arises from the fact that three of these four claims are in areas with high wilderness values.

In addition, controversy surrounds the issue of minerals assessment in southeast Alaska. Those who favor mineral development point out that no thorough minerals inventory has been completed for most areas being considered for wilderness

designation; and further study is recommended. Others feel that wilderness designation is a way to reserve resources until national demand increases. They suggest that minerals assessment can be completed at any future date when real demand exists.

A third conflict concerns the impact which wilderness designation would have on the mining industry. The industry claims that on lands managed under the Wilderness Act of 1964 applied standards for access and development have been so restrictive that operations become prohibitively expensive. Moreover, beginning on January 1, 1984, the Act will prohibit prospecting and filing of new claims on legislated wilderness areas. Development may continue on valid claims but only under strict controls. Consequently, the industry considers wilderness areas unavailable for mineral development.

Ford's Terror

III.

Evaluation Criteria

III. Evaluation Criteria

Purpose of Criteria

Evaluation criteria are predetermined rules for appraising alternatives. They form a yardstick against which each management alternative can be measured objectively. Most importantly, they establish a common ground for comparing all alternatives, each of which is based on a different set of goals. The alternative that best fits the criteria provides the foundation for building a preferred alternative, which may also incorporate aspects of other alternatives.

These criteria were developed before preparing management alternatives but were refined as planning proceeded in response to changing conditions. Ideally, whether an alternative meets any particular criterion would be answered by a simple "yes" or "no." Often, however, an alternative will meet a criterion only partially; it is then ranked according to some predetermined scale used for measuring all alternatives against that criterion. How well an alternative satisfies the total set of criteria determines its desirability.

Evolution of Criteria

Preliminary evaluation criteria were introduced in the Draft Tongass Guide published in August 1976. These were further refined in the Area Guide, part B, which was issued as a draft environmental impact statement in April 1977. Next, public comment was requested during workshops held throughout southeast Alaska as part of the Roadless Area Review and Evaluation (RARE II) and the Tongass land management planning process. Participants were given a workbook entitled Tongass Alternatives, which contained a response form for comments on the criteria. This workbook was also widely distributed throughout Alaska and in the lower 48.

The input received from the workbook response forms, letters, and comments from the public was analyzed and published in Public Responses to the Tongass Alternatives: An Analysis in November 1977. Public response to this publication was incorporated in the evaluation criteria presented for final review in the newsletter Tongass Update released in April 1978.

Criteria

Alternatives are judged on their ability to do the following:

Provide for coordinated land management on the Tongass National Forest and adjacent Native, State, and municipal lands. The source of this criterion is the National Forest Management Act of 1976.

Provide continuity among national, regional, and local programs. How does the alternative affect existing programs and commitments? The source of this criterion is Forest Service national and regional program direction.

Provide opportunities for developing transportation modes that best meet the land management goals as well as the needs of the people. Does the alternative preserve the transportation options identified in the Southeast Alaska Multimodal Transportation Study? The source of this criterion is input from State and local governments.

Assist southeast Alaska communities and residents in meeting their diverse resource and land use needs. How well does the alternative meet the communities' desires as expressed by community plans, elected officials, agencies, and residents?

The sources of this criterion are comments received from State and local governments and the public.

Manage the Tongass National Forest to accomodate the lifestyles and well-being of southeast Alaska residents and communities while being responsive to national goals and concerns. Will the alternative provide for desired lifestyle options? Will it accommodate changes in use patterns, populations, income, isolation, subsistence, and services? The source of this criterion is input from State and local governments and the public.

Comply with the Administration's position on wilderness in southeast Alaska. The source of this criterion is current Administration policy.

Include a wide range of ecotypes representative of southeast Alaska in Land Use Designations (LUDs) that emphasize the preservation of primitive wildlands. The six major ecotypes are Coast Range, Coastal Hills, Kupreanof Lowlands, Yakutat Forelands, Admiralty/Chichagof, and Baranof Highlands. Does the alternative place representative examples of these ecotypes in LUD I or LUD II? The sources of this criterion are the Area Guide and public input.

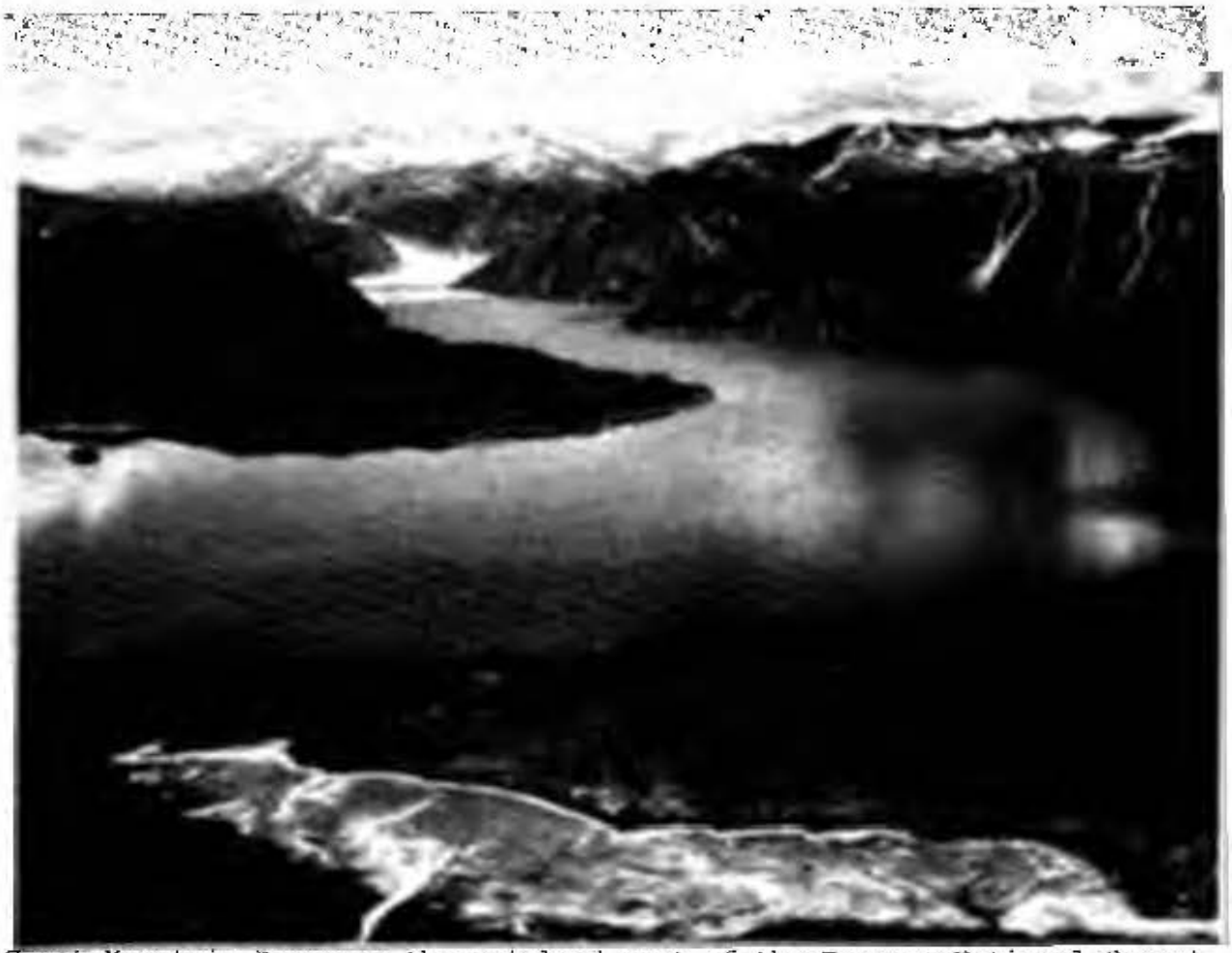
Designate at least three million acres of wilderness on the Tongass National Forest. Does the alternative place at least 15 percent of the total land area of the Tongass in LUD I? The source of this criterion is the Area Guide.

Provide for a variety of dispersed recreation on lands with significant fish, wildlife, scientific, scenic, historic, or other recreational qualities. Recognize that many recreational assets exist on the Tongass that are in short supply and high demand elsewhere in the United States, such as wildlands, shoreline, and abundant fish and wildlife populations. Does the alternative include allocations specifically intended to provide dispersed recreational opportunities? The sources of this criterion are the Area Guide and public input.

Insure the most effective management of the Tongass National Forest. Does the alternative provide a favorable cost/benefit relationship in terms of both tangible and intangible values? The source of this criterion is the National Forest Management Act of 1976.

Direct allocations to the areas of best supply. For inventory purposes, the Tongass is divided into watersheds, or Value Comparison Units (VCUs). What percentage of the VCUs with high resource ratings does the alternative allocate to the following uses: commercial timber (LUDs III and IV, resource use), commercial fish and wildlife (LUDs I, II, and III), remote recreation and sport fishing (LUDs I,II, and III), and wilderness (LUDs I and II)? This criterion stems from national and regional Forest Service program direction, the Area Guide, and public input.

Provide for growth, stability, and diversity in the local and regional economy. Does the alternative maintain existing levels of timber-related employment? What opportunities does it offer for future increases? Does the alterative provide for a small timber business set-aside program? Will the alternative increase employment opportunities in recreation and tourism? Does it provide for habitat enhancement and aquaculture developments? Does the alternative allow proposed energy development, such as hydroelectric or fossil fuel developments? What receipts to the State will the alternative generate? (The State receives 25 percent of timber sales and special use receipts.) The source of this criterion is input from State and local governments and the public.



Coast Mountain Range on the mainland part of the Tongass National Forest

IV.
Alternatives Considered

IV. Alternatives Considered

An almost infinite number of alternatives might have been developed for managing the Tongass National Forest. To cover the major choices available, a Forest Service interdiciplinary team developed a basic set of five alternatives (A through E). Two "single-focus" options were then added solely to show the forest's highest potential for development or for wilderness. Also, proposals submitted by interest groups or individuals were used to form variations of the five basic alternatives. Thus, a total of 10 alternatives were presented for consideration in the DES.

Process Used in Formulating the Alternatives

Assumptions

Before formulating individual alternatives, the interdisciplinary team agreed to several basic assumptions regarding the availability of land areas and the implementation of management plans. The following assumptions provided a common starting ground for Alternatives A through E.

1. As much as possible, forest areas adjacent to or near communities should be allocated to LUDs that are compatible with the community's present use of the area.

2. Complementary land uses should be allowed on forest areas adjacent to State or Native lands. Where management direction for the adjacent land has not yet been established, it was assumed Native timber lands would be harvested (except those owned by Kootznoowoo, Inc.) and all State lands would be used for community development or recreation.

3. Areas covered by valid plans (that is, those with final environmental statements) will not be reallocated unless new data warrant the change.

4. Existing contracts, permits, and other valid agreements will be honored by the new plan; or changes will be made by mutual agreement of the parties involved.

5. Areas not already committed to timber harvest within the long-term timber sales areas will be considered for all possible land uses.

6. Existing wilderness study areas will be considered for all possible land uses.

7. LUDs III and IV allow future development of roads and transmission corridors. LUD II permits road development only if the need arises and if the road is specifically included in the final plan. LUD I excludes any future development of roads or transmission corridors.

8. Access roads for mineral exploration and development can be built in LUDs II, III, and IV, except as specifically excluded by act of Congress or by formal minerals withdrawal. If mineral development occurs in LUD II, special requirements are imposed to mitigate the effects on adjacent lands.

9. All areas included in LUD I will be recommended for immediate designation as wilderness. The only exceptions would be areas where additional data collection, such as a U.S. Geological Survey minerals examination, is needed. These areas will be managed as wilderness until the data are obtained. Then, the study area is either recommended for inclusion in the National Wilderness Preservation System, or it becomes a LUD II.

10. All LUD I areas will be managed under established Forest Service policy on wilderness. This policy provides that

(a) Motorized access will not be permitted except where prior use is established and special permission is obtained.

(b) Aquaculture or fish habitat developments that require site modification or facility construction are prohibited. Habitat improvement is limited to removal of stream blockages with hand tools. Congress, however, can make specific allowances for aquaculture in the legislation designating each wilderness area.

(c) Cabins may be permitted as needed for safety.

(d) Hunting and fishing are permitted subject to local laws and quotas.

11. Management policies established in the Area Guide apply to all LUDs.

12. If an alternative reduces the annual timber yield below present levels, a gradual reduction to the new harvest level could be spread over the 10-year plan period. This gradual decline in harvest would have less drastic effects on the regional economy than an immediate and abrupt change in volumes offered for sale from National Forest lands.

13. Information used in developing the land management plan will be verified by subsequent review as the plan is implemented.

Development Process

After defining the assumptions common to all alternatives, the interdisciplinary team established a systematic process for developing its five basic options (A through E). All these alternatives were based on inventory data gathered by the task forces and on information supplied by the public and by other agencies. However, each alternative addressed different management issues. Therefore, the first step in the development process was to set goals and objectives for each alternative.

1. Define goals and objectives. A different set of goals and objectives was defined for each alternative. These goals and objectives specify how the alternative is related to the management issues. They provide a focus for the actual allocation of land areas by stating how the overall supply of forest resources should be managed. By adhering to these guidelines, the interdisciplinary team was able to choose among competing forest values on the basis of the alternative's intent, regardless of team members' personal preferences.

2. Identify land allocation criteria. In this step, the team established basic criteria for allocating each VCU to either LUDs I and II or LUDs III and IV. The criteria vary for each alternative and reflect the goals and objectives of that alternative. They specify which resources will be compared and how high the relative values of those resources must be before the VCU is allocated to one LUD group or the other. In general, the team attempted to define criteria that would allocate VCUs with the highest amenity and lowest commodity values to LUDs I and II and VCUs with the highest commodity and lowest amenity values to LUDs III and IV.

3. Select VCUs for allocation. The VCU matrix (Appendix C) was then scanned by computer to identify the VCUs that qualify for allocation to the two LUD groups on the basis of the criteria for that alternative. Reports of how many acres and what resource values the qualified VCUs contained were generated by the computer.

4. Map and analyze selected VCUs. The VCUs that qualify for each of the LUD groups were portrayed on working maps to analyze the resulting allocation patterns for each alternative. Where these patterns proved to be illogical from a management standpoint (for example, isolated VCUs from one LUD group intermixed with VCUs from the other LUD group), substitutions were made. Some VCUs could not be allocated to the indicated group because they were physically unsuitable or previously allocated (see "Allocation Constraints" in Appendix B). In these cases substitutions were made. Once these adjustments were made, the allocations were compared with the alternative's goals and objectives.

5. Assign individual LUDs. The allocation of VCUs to the two LUD groups was then refined by placing them in the four specific Land Use Designations. Assignment to a LUD was based on consideration of the VCU's resource values and the following factors: accessiblity, identified transportation corridors, relation to other ownerships (Native, State, private), principle community use areas, past use effects, present uses, special recreation resources, cultural resources, special wildlife areas, salmon enhancement sites, quality fisheries, and others. The emphasis placed on each of these factors varies considerably among alternatives. The new allocation patterns were displayed on a second set of working maps.

6. Summarize information. Listings of every VCU and its land use designation were processed by computer to provide information summaries for each alternative. These summaries, which include the areas allocated to each LUD and statistics about the kind of resource values present, formed a basis for estimating the probable effects of implementing the alternatives. If preliminary analysis of these effects indicated considerable deviations from stated goals and objectives, allocations were readjusted. To further clarify where substantial physical changes are likely to occur, VCUs proposed for timber harvest were highlighted on the maps.

7. Analyze effects. After allocations for each alternative were completed, final information summaries and yield calculations were generated. Information on the factors considered in step 5 was compiled. The interdisciplinary team then analyzed this information to determine how each alternative would affect the environment, and documented these effects through preparation of an environmental impact statement.

Development of Alternative A-2:

The Administration's February, 1978, proposal would set aside five areas on the Tongass as immediate wilderness and five as wilderness study areas. Specific allocations for the non-wilderness areas of the Tongass were not made. However, the Administration had stated a desire to maintain the timber industry in southeast Alaska at its current level of production and employment.

Therefore, to develop the Administration's proposal into a complete management alternative for the DES, the proposed wilderness areas were superimposed on the allocations in Alternative A. These substitutions allowed a realistic estimate of how the wilderness designations would affect timber yields.

Actually, a series of Administration alternatives could have been generated by superimposing the wilderness areas on each of the five basic alternatives. But the Administration's wilderness designations so reduced timber yields that only Alternative A could provide enough timber to keep employment near current levels. The altered version of Alternative A, designated A-2, was therefore selected as the best representation of the Administration's February, 1978, position.

The effects of implementation were analyzed in the same manner for Alternative A-2 as for Alternatives A through E.

Development of CMAL and SEACC Alternatives

The Citizens for Management of Alaska Lands and the Southeast Alaska Conservation Council both submitted proposals designating wilderness, wilderness study, and other forms of management for portions of the Tongass. Both proposals included a set of goals for the rest of the forest and its resources. CMAL specified how these lands should be managed on an area-by-area basis; SEACC did not.

The Forest Service interdisciplinary team worked with these groups to translate their proposals into comprehensive alternatives. This process involved altering the LUD allocations in one of the basic alternatives whenever they conflicted with the group's proposed allocations. Allocations made by the basic alternative remained intact where the group did not desire changes. The two resulting allocation patterns were then analyzed in the same manner as the basic alternatives.

Description of Alternatives

Alternative A

Alternative A seeks to foster economic growth and increased employment in southeast Alaska by providing opportunities for development on the Tongass National Forest. Thus, it allows a large timber harvest, facilitates access to mineralized areas, encourages tourism, and promotes the building of roads, hydroelectric plants, and fish enhancement projects. Specific goals and objectives for protecting development opportunities are:

Timber. The goal is to make enough timber available to allow the timber industry to expand. The objective requires allocating enough operable commercial forest land to LUDs III and IV to ensure an annual allowable harvest of 575 MM bm or more.

Minerals. The goal is to provide access to areas where mining exploration and development are likely to occur by 1990. The objective requires allocating areas that are being considered for immediate mineral development to LUDs III and IV. Areas being considered for future exploration and development would be allocated to LUD II, III or IV.

Road corridors. The goal is to insure that areas containing potential road corridors remain available for that purpose. The objective requires allocating areas in which potential road corridors have been identified by the Southeast Alaska Multimodal Transportation Study to LUD II, III, or IV. If corridor development is likely by 1990, the areas would be allocated to LUD III or IV.

Hydroelectric power sites. The goal is to faciliate the development of identified hydroelectric power sites. The objective requires allocating areas with proposed power plants or transmission lines to LUD II, III, or IV. Areas scheduled for development by 1990 would be allocated to LUD III or IV.

Salmon enhancement sites. The goal is to facilitate the development of identified salmon enhancement sites. The objective requires allocating areas where facilities are proposed to LUD II or III.

Tourism. The goal is to improve recreation facilities and attractions near communities to encourage tourists to lengthen their stay in southeast Alaska. The objective requires allocating areas adjacent to communities to LUD III to permit the development of recreation facilities. These areas will be placed in the unregulated component of the timber base. No timber harvest will be planned within them.

These development-oriented goals take precedence, but within the constraints they impose Alternative A also seeks to provide wildlands for recreational use. Specific goals and objectives for protecting amenity values are:

Wilderness. The goal is to create a wilderness system with areas containing significant wilderness attributes but low-value commodity resources. The objective requires allocating roadless areas in each of the six landscape character types to LUD I to ensure that 15 percent of the forest is recommended for wilderness designation.

Recreation. The goal is to provide recreation opportunities in natural areas or areas with little development. The objective requires allocating at least 3.2 million acres to LUD II. This allocation would include as many areas with prime wildlife, fish, and dispersed recreation assets as possible. The visual quality of existing ferry lanes and small boat routes would be maintained by allocating adjacent areas to LUD III to the extent possible while still meeting the objectives for development.

Fish. The goal is to maintain the productivity of fish resources. The objective requires that prime fish areas not allocated to LUD I or II be allocated to LUD III where possible.

Wildlife. The goal is to maintain the productivity of wildlife resources. The objective requires that high-value wildlife areas not allocated to LUDs I or II be placed in LUD III whenever possible.

Alternative A-1: CMAL Proposal

Citizens for the Management of Alaska Lands (CMAL) developed an alternative using data supplied by the Forest Service as well as additional material provided by CMAL. This alternative and the goals listed below are a concensus position by CMAL's board of directors. The summary and effects analysis presented here, however, were prepared by the Forest Service.

Goals

Manage the Tongass National Forest so as to:

1) Provide for diversification of the product base and increased employment in the private sector;

2) Protect existing jobs in the timber industry and provide opportunities for moderate growth in the industry;

3) Provide the opportunity to realize potential for jobs and employment in the mineral industry;

4) Preserve opportunities for transportation corridors;

5) Preserve opportunities for hydroelectric development;

6) Reduce conflict between the Clean Air and Clean Water Acts with development on Native land;

7) Promote fish and wildlife opportunities and minimize impacts on fish and wildlife values where development takes place;

8) Provide developed recreation opportunities and combined developed recreation/wilderness opportunities where appropriate;

9) Protect community lifestyle preferences, including community growth;

10) Apply scientific management to all resources, making tradeoffs among resources where necessary.

11) Insure the right of Goldbelt, Shee Atika, and Angoon to select land on Admiralty Island.

The following prescriptions accompany this proposal:

1) LUD III areas that are crosshatched shall not be logged (DES map for Alternative A-1).

2) The areas necessary for hydroelectric development and fisheries enhancement projects (including hatcheries) and related access facilities shall be withdrawn from LUD I areas and reclassified as appropriate.

Alternative B

Alternative B seeks to maintain economic stability in southeast Alaska by providing continued opportunities for development on the Tongass National Forest. It provides a sufficient timber harvest to maintain the current industry, facilitates access to mineralized areas, encourages tourism, and promotes the building of roads, hydroelectric plants, and fish enhancement projects. Specific goals and objectives for protecting development opportunities are:

Timber. The goal is to make enough timber available from National Forest lands alone to maintain current levels of timber-related employment. The objective requires allocating enough operable commercial forest land to LUDs III and IV to insure an annual allowable harvest of about 500 MM bm. (Additional volumes supplied from private timber lands or currently marginal areas would permit an expansion in employment opportunities.)

Minerals. The goal is to facilitate access to areas where mining exploration and developments are likely to occur by 1990. The objective is to allocate areas that are being considered for immediate mineral development to LUDs III and IV. Areas being considered for future exploration and development would be allocated to LUD II, III, or IV.

Road corridors. The goal is to insure that areas containing potential road corridors remain available for that purpose. The objective is to allocate most areas in which potential road corridors have been identified by the Southeast Alaska Multimodal Transportation Study to LUD II, III, or IV. If corridor development is likely by 1990, the areas would be allocated to LUD III or IV.

Hydroelectric power sites. The goal is to facilitate the development of identified hydroelectric power sites. The objective requires allocating areas with proposed power plants or transmission lines to LUD II, III, or IV. Areas scheduled for development by 1990 would be allocated to LUD III or IV.

Salmon enhancement sites. The goal is to facilitate the development of identified salmon enhancement sites. The objective entails allocating areas where facilities are proposed to LUD II or III.

Tourism. The goal is to improve recreation facilities and attractions near communities to encourage tourists to lengthen their stay in southeast Alaska. The objective requires allocating areas adjacent to communities to LUD III to permit the development of recreation facilities. These areas will be placed in the unregulated component of the timber base. No timber harvest will be planned within them.

These development-oriented goals take precedence; but, within the constraints they impose, Alternative B also seeks to provide wildlands for wilderness, recreational, fish and wildlife uses. Almost half the forest would remain unmodified. Specific goals and objectives for protecting amenity values are:

Wilderness. The goal is to create a wilderness system with areas containing high wilderness value but low to moderate commodity values. The objective requires allocating roadless areas in each of the six landscape character types to LUD I to insure that about 20 percent of the forest is recommended for wilderness designation.

Recreation. The goal is to provide recreation opportunities in natural areas or areas with little development. The objective requires allocating at least 3.8 million acres to LUD II. This allocation would provide as many areas with prime wildlife, fish, and dispersed recreation attributes as possible. The visual quality of some major existing ferry lanes, tour ship routes, and small boat routes would be

maintained by allocating adjacent areas to LUD III to the extent possible, while still meeting the objectives for development.

Fish. The goal is to maintain the productivity of fisheries resources. The objective requires that prime fish areas not allocated to LUD I or II be allocated to LUD III wherever possible.

Wildlife. The goal is to maintain the productivity of wildlife resources. The objective requires that high-value wildlife areas not allocated to LUD I or II be placed in LUD III whenever possible.

Alternative C

Alternative C seeks to keep many areas of the forest in a natural, unmodified state. Over half the forest would be managed to provide wilderness and opportunities for dispersed recreation, and to safeguard fish and wildlife habitat. Specific goals and objectives for protecting these amenity values are:

Wilderness. The goal is to create a sizeable wilderness system from existing roadless areas. The objective requires allocating representative areas in the six landscape character types to LUD I. At least 25 percent of the forest would be recommended for wilderness.

Recreation. The goal is to maintain existing recreation opportunities in areas not allocated to LUD I. The objective is to allocate at least four million acres to LUD II. This allocation would include many of the areas of high value for wildlife, fish, and dispersed recreation. The visual quality of major ferry lanes, tour ship routes, and small boat routes would be maintained by allocating adjacent areas to LUD III.

Fish. The goal is to maintain the productivity and esthetic appeal of the fisheries resource. The objective is that high-quality sport fisheries not already allocated to LUD I or II be placed in LUD III.

Wildlife. The goal is to maintain the productivity of wildlife resources. The objective is that high-value wildlife areas not already allocated to LUD I or II be placed in LUD III whenever possible.

These amenity-oriented goals and objectives take precedence; but, within the constraints they impose, Alternative C also seeks to maintain economic stability in southeast Alaska. Specific goals and objectives for protecting development opportunities are:

Timber. The goal is to make enough timber available to maintain current levels of timber-related employment. The objective requires allocating enough operable commercial forest land to LUDs III and IV to ensure an annual allowable harvest of about 425 MM bm. (Additional needed volumes would have to be supplied from private timber lands and commercial forest lands now considered marginal.)

Minerals. The goal is to facilitate access to areas where mining exploration and developments are likely to occur by 1990. The objective is to allocate areas that are being considered for immediate mineral development to LUD III or IV if they contain few amenity values. Areas being considered for future exploration and development would be allocated to LUD II, III or IV.

Road corridors. The goal is to maintain the availability of some areas containing potential road corridors. The objective is to allocate areas where important road developments are planned and amenity values are low to LUD II, III, or IV.

Hydroelectric power sites. The goal is to facilitate the development of identified hydroelectric power sites, within the constraints imposed by the goals and objectives for amenity values. The objective requires allocating areas with proposed power plants and transmisson lines to LUD II, III or IV.

Salmon enhancement sites. The goal is to facilitate development of salmon enhancement sites. The objective is to allocate areas where enhancement sites are

proposed to LUD II or III, if they are not already allocated to LUD I.

Tourism. The goal is to maintain opportunities for dispersed recreation and to improve recreation facilities and attractions near communities in order to encourage tourists to lengthen their stay in southeast Alaska. The objective requires allocating areas adjacent to communities to LUD III to permit the development of recreation facilities. These areas will be placed in the unregulated component of the timber base. No regular timber harvests will be planned within them. The above goals and objectives for wilderness and recreation will provide opportunities for dispersed recreation.

Alternative A-2

The Administration's February, 1978, proposal set very specific goals for wilderness areas on the Tongass. Under this alternative, the following areas would be designated as immediate wilderness:

Area	Acres
Misty Fiords	2,282,000
Admiralty Island	1,100,000
Stikine - Le Conte	468,000
Russell Fiord	306,000
West Chichagof - Yakobi	237,000

The following would become wilderness study areas:

Area	Acres
Yakutat Forelands	247,000
Duncan Canal	163,000
Endicott River	124,000
Tebenkof Bay	67,000
Karta River	39,000

No specific goals and objectives were set for the nonwilderness areas of the Tongass. However, in his position paper of February 1, 1978, Secretary of Agriculture Bergland advocated maintaining the timber industry in southeast Alaska at its current level of production and employment.

Alternative D

Alternative D seeks to keep large portions of the forest in a natural, unmodified state. Almost two-thirds of the forest would be managed to provide wilderness and opportunities for dispersed recreation, and to safeguard fish and wildlife habitat. Specific goals and objectives for protecting these amenity values are:

Wilderness. The goal is to create a substantial wilderness system from existing roadless areas. The objective requires allocating representative areas in the six landscape character types to LUD I. At least 30 percent of the forest would be recommended for wilderness.

Recreation. The goal is to maintain many of the existing recreation opportunities in areas not allocated to LUD I. The objective requires allocating about 4.5 million acres to LUD II. This allocation would include many of the high-value wildlife, fish, and dispersed recreation areas. The visual quality of most existing ferry lanes, tour ship routes, and small boat routes would be maintained by allocating adjacent areas to LUD III.

Fish. The goal is to maintain the productivity and aesthetic appeal of the fisheries resources. The objective is that roadless areas not already allocated to LUD I or II be placed in LUD III if they contain high-quality sport fisheries.

Wildlife. The goal is to retain the productivity of wildlife resources. The objective is that high-value wildlife areas not allocated to LUD I or II be placed in LUD III whenever possible.

These amenity-oriented goals take precedence; but, within the constraints they impose, Alternative D insures economic stability by maintaining most current employment opportunities and by increasing the basis for strong tourism and fishing industries. Specific goals and objectives for protecting development opportunities are:

Timber. The goal is to make enough timber available to insure that existing contractual commitments are met. The objective requires allocating enough operable commercial forest land to LUDs III and IV to ensure an annual allowable harvest of about 370 MM bm or more. (Additional volumes needed to sustain the timber industry would have to be supplied from private timber lands and from commercial forest lands now considered marginal.)

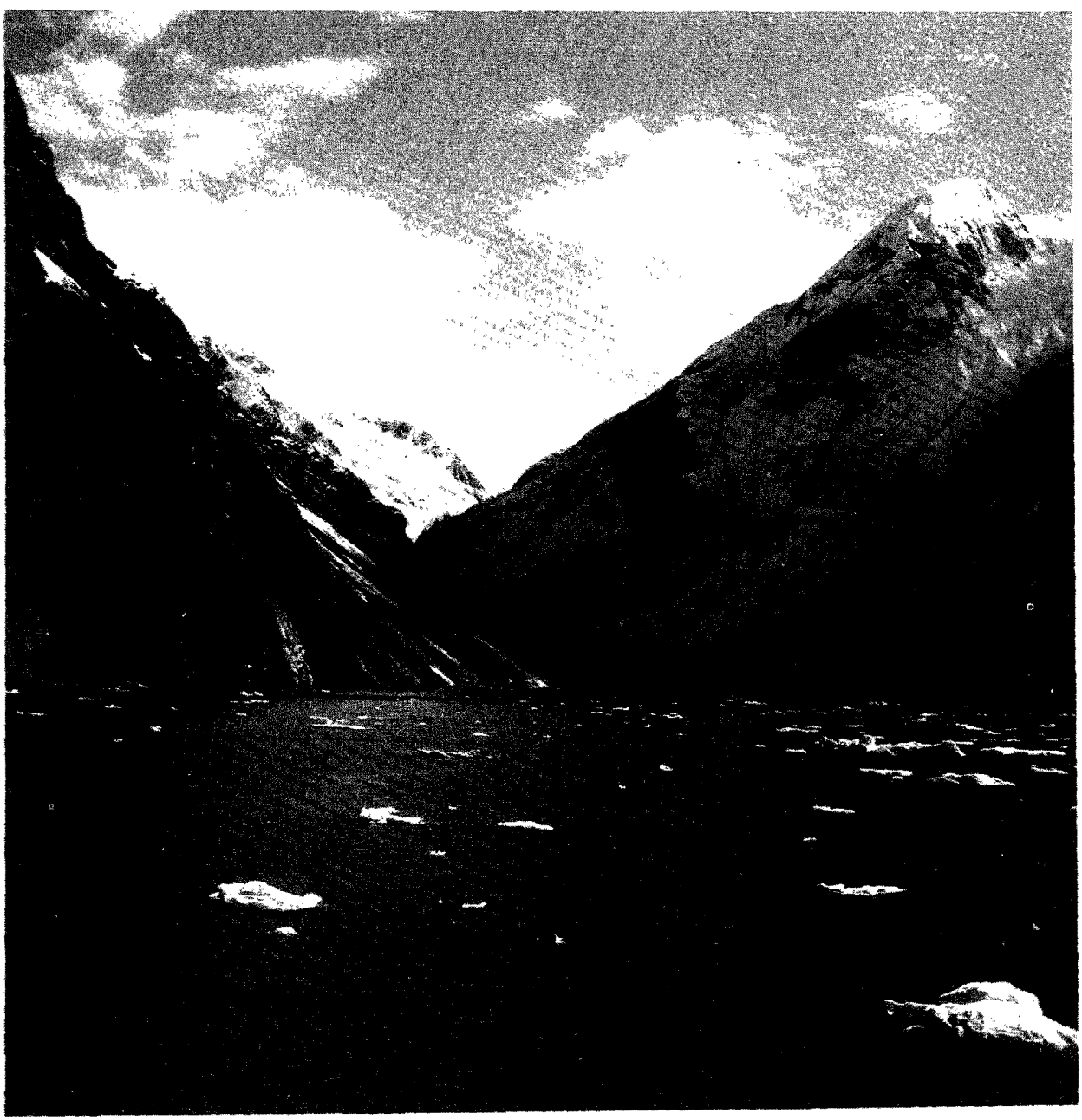
Minerals. The goal is to provide access to areas where mining exploration and development are likely to occur by 1990. The objective is to allocate areas that are being considered for immediate mineral development to LUD III or IV, if they contain few high amenity values. Areas being considered for future exploration and development would be allocated to LUD II, III, or IV, if they do not warrant consideration for LUD I.

Road corridors. The goal is to maintain the availability of some areas containing road corridors while relying on expanded water-based transportation to meet additional needs. The objective is to allocate areas where important road corridors are planned and amenity values are low to LUD II, III, or IV.

Hydroelectric power sites. The goal is to facilitate the development of identified hydroelectric power sites, within the constraints imposed by the goals and objectives for amenity values. The objective requires allocating areas with proposed power plants and transmission lines to LUD II, III, or IV, if they are not already allocated to LUD I.

Salmon enhancement sites. The goal is to facilitate development of salmon enhancement sites. The objective requires allocating areas where enhancement sites are proposed to LUD II or III, if they are not already allocated to LUD I.

Tourism. The goal is to maintain opportunities for dispersed recreation and to improve recreation facilities and attractions near communities in order to encourage tourists to lengthen their stay in southeast Alaska. The objective is to allocate areas adjacent to communities to LUD III to permit the development of recreation facilities. These areas will be placed in the unregulated component of the timber base. No regular timber harvests will be planned within them. The above goals and objectives for wilderness and recreation will insure opportunities for dispersed recreation.



Alternative A-3 SEACC Proposal

SEACC Goals

1. The protection and preservation of the finest wildlife, fisheries, and recreation areas in the Tongass National Forest implemented through a system of reserves, administered under Wilderness and Special Area classifications, which will span the Forest and include whole ecosystems like islands, watersheds, and estuaries.

2. The growth of a prosperous fishing and tourism industry in Southeast Alaska.

3. The maintenance of a viable and diversified timber industry.

SEACC proposals for Forest Service planning and decision making this year

A. For several decades the public has sought protection of the finest natural areas in the Tongass. Until this Congressional session the prospects for Wilderness preservation in the Tongass appeared doubtful. The Forest Service should pursue the opportunity before the agency now to create the basis for a good Wilderness System in Southeast by proposing in the EIS for the Tongass Land Management Plan a Congressional designation of Wilderness for the following key areas:

Admiralty Island
West Chichagof-Yakobi Island
Yakutat Forelands
Misty Fjords
Karta River
Stikine River
Naha River
Etolin Island (southwest)
Tebenkof Bay
Duncan Canal
Petersburg Creek
Idaho Inlet-Mud Bay

B. Complying with RPA (Resources Planning Act) regulations, 10 year timber cutting proposals should be developed which show cutting area locations and expected cut volume, not to exceed an average of 425 million board feet per year from "normal" commercial forest land acres. The following areas proposed by SEACC for protection should not be included in these cutting plans but could be a part of the sustained yield calculation:

Anan Creek
Beecher Pass
Berners Bay
Endicott River
So. Prince of Wales
Harding River
Skagway
Lake Eva
Swanson Harbor
Port Stewart
Rocky Pass
Russell Fiords
Rynda-Greys Islands
Salmon Bay
Sarkar Lakes
Situk River
St. James Bay
North Kruzof
Taku River
Thoms Creek

Red Bluff Bay-Nelson Bay	Tracy Arm
Redoubt Lake	Whale Bay-Sandy Bay
Bay of Pillars	Yes Bay
Essowah Lakes	

Additional areas proposed by the Alaska Department of Fish and Game for no logging should also not be included in the 10 year timber cutting plan.

C. Areas identified by SEACC above and the Alaska Department of Fish and Game proposals for preservation which are not included in the Forest Service wilderness proposal should be considered for a protective classification (wilderness or administrative) during the life of the 10 year plan as the following information or analyses becomes available:

1. A determination of the real expected annual Native timber harvest in Southeast Alaska.
2. A determination of whether the long term contract areas can satisfy the contract volume commitments.
3. The historical timber management intensity.
4. The projected timber management intensity based on new techniques for increasing tree growth, harvest levels, and wood utilization.
5. The expected future demand for Tongass National Forest timber.
6. A mapping of those areas of commercial forest land which are not economical to cut now which will likely be economical, if projected harvest techniques and market conditions occur.
7. The willingness of the timber industry to use technology available for increasing the harvest of marginal and special timber.
8. The development of timber inventory data which is based on "on the ground" samples rather than just photographic interpretation.
9. An economic analysis which compares all costs of Tongass logging activities to the benefits.
10. The desirability of increased government subsidization of the southeast Alaska timber industry.
11. The economic effects of liquidating quickly the finest old growth Sitka Spruce.
12. A determination of the expected deficit timber sales over the next two decades.
13. An analysis of the conflicts between the maintenance of Sitka deer populations and clearcut timber harvest in Southeast Alaska.
14. A mapping of all important wildlife habitats in Southeast Alaska.
15. A thorough determination of the long term effects of watershed disturbance from logging on the fisheries resource.
16. The development of alternative management programs designed to promote and encourage tourism and primitive recreation.

To evaluate this proposal in terms of a complete management plan, the following assumptions were made:

1. The areas listed in category A and B are unavailable for timber harvest and are not included in calculations of timber yield.

2. The remaining areas are to be managed as shown in Alternative A.

Alternative E

Alternative E seeks to keep the majority of the forest in a natural, unmodified state. Thus, it proposes an extensive wilderness system, emphasizes opportunities for dispersed recreation, and safeguards fish and wildlife habitat. Specific goals and objectives for protecting these amenity values are:

Wilderness. The goal is to create a large and varied wilderness system from suitable areas regardless of the commodity resources they may contain. The objective requires allocating the majority of the roadless areas in the six landscape character types to LUD I. At least 50 percent of the forest would be recommended for wilderness. Developed lands would be included in the wilderness areas if needed to create logical boundaries.

Recreation. The goal is to maintain existing recreation opportunities in areas not allocated to LUD I. The objective requires allocating about three million acres to LUD II. This allocation would include as many as possible of the high-value wildlife, fish, and dispersed recreation areas not allocated to LUD I. The visual quality of existing and potential ferry lanes, tour ship routes, and small boat routes would be maintained by allocating adjacent areas to LUD III.

Fish. The goal is to maintain the productivity and aesthetic appeal of the fish resource. The objective requires that roadless areas not already allocated to LUD I or II be placed in LUD III if they contain high quality sport fisheries and in LUD IV if they contain high quality commerical fisheries.

Wildlife. The goal is to retain the productive potential of wildlife. The objective requires that roadless areas not already allocated to LUD I be placed in LUD II if they contain high wildlife values. Other lands on which wildlife values could be affected by developmental activities would be allocated to LUD III.

These amenity-oriented goals take precedence, but within the constraints they impose, Alternative E also seeks to encourage the tourism and fishing industries as the major sources of jobs and economic stability in southeast Alaska. Specific goals and objectives for protecting development opportunities are:

Timber. The goal is to make enough timber available to sustain at least one of the two major pulp mills. The objective requires allocating enough operable commercial forest land to LUDs III and IV to insure an annual allowable harvest of 200 MM bm or more. These allocations would be concentrated on areas that already contain roads and other developments. Areas with moderate to high amenity values would be placed in LUD III; and areas with low amenity values, in LUD IV.

Minerals. The goal is to provide access to areas where mining exploration and development are likely to occur by 1990. The objective requires allocating areas that are being considered for immediate mineral development to LUD III or IV if they contain few amenity values. Areas being considered for future exploration and development would be allocated to LUD II, III, or IV, if they do not warrant consideration for LUD I.

Road corridors. The goal is to maintain and improve existing road systems while relying on expanded water-based transportation to meet projected needs. The objective requires allocating areas with existing roads to LUD III or IV. Areas where important road corridors are planned and amenity values are low would be placed in LUD II, III, or IV.

Hydroelectric power sites. The goal is to facilitate the development of identified hydroelectric power sites, within the constraints imposed by the goals and objectives for amenity values. The objective requires allocating areas with proposed power plants and transmission lines to LUD II, III, or IV, if they do not warrant consideration for LUD I.

Salmon enhancement sites. The goal is to facilitate development of salmon enhancement sites. The objective requires allocating areas where enhancement sites are proposed to LUD II or III, if they do not warrant consideration for LUD I.

Tourism. The goal is to maintain opportunities for dispersed recreation and to improve recreation facilities and attractions near communities to encourage tourists interested in either type of vacation to lengthen their stay in southeast Alaska. The objective requires allocating areas adjacent to communities to LUD III to permit the development of recreation facilities. These areas will be placed in the unregulated component of the timber base. No regular timber harvests will be planned within them. The above goals and objectives for wilderness and recreation will insure opportunities for dispersed recreation.

"Single-Focus" Alternatives

Two additional alternatives were developed, one weighted almost entirely toward development and the other weighted almost entirely toward wilderness preservation. Allocation constraints imposed when formulating Alternatives A through E were ignored by these "single-use" options. The purpose of the two alternatives was just to show the forest's maximum capabilities. Actually, they are not viable alternatives since implementing either one may violate the Multiple Use-Sustained Yield Act of 1960. Therefore, they were not analyzed as thoroughly as the other alternatives.

A+ All Areas to LUD IV

This alternative places all VCUs with operable timber in LUD IV and thus represents the highest timber yield possible under minimal Area Guide restraints. The annual harvest would total 784 MM bm. The forest's true potential is 890 MM bm. Thus, adhering to the Area Guide's minimum protection levels for other resources reduces the annual timber yield by 126 MM bm.

E+ All Roadless Areas to LUD I

This alternative places all roadless lands (12,682,585 acres) in LUD I and recommends them for inclusion in the National Wilderness Preservation System. The potential timber yield from the remaining lands would be 114 MM bm.

"No Action" Alternative

The Draft Environmental Impact Statement included a map and information on The Current Program of resource management on the Tongass Forest. The continuation of this Current Program, with no decision on land allocation, would represent the "No Action" Alternative. However, since the purpose of the Land Management Plan is to resolve issues through the allocation of land areas on the Tongass, the No Action Alternative was not further evaluated.

The interdisciplinary team attempted to describe the No Action Alternative on a basis similar to the other alternatives (i.e. using LUD allocations), and found that it was not possible. Lands on the Tongass Forest had not been previously assigned use designations on a comparable basis. It was determined that displaying the Current Program as an allocation pattern would, in fact, misrepresent the No Action Alternative.

Relationship of Alternatives to RARE II Alternatives

As explained in the introduction, both the Roadless Area Review and Evaluation (RARE II) and the Tongass Land Management Plan (TLMP) presented alternatives for placing National Forest land in the wilderness system. Since RARE II dealt with the entire nation and TLMP deals specifically with one forest, the information in TLMP is more detailed than that in RARE II. Nevertheless, the alternatives proposed by both documents are comparable because similar data and analytical methods were used in formulating them. Moreover, each TLMP alternative was analyzed for its conformity to RARE II guidelines.

The main intent of each RARE II alternative was stated in the RARE II Draft Environmental Statement as follows:

> Alternative A: No action is be be taken at the present time; allocation decisions for the inventoried roadless areas will continue to be made through the Forest Service land management planning process.
>
> Alternative B: All inventoried roadless areas are allocated to nonwilderness uses.
>
> Alternative C: Output of commodities is emphasized by allocating roadless areas with high resource values to nonwilderness uses, but consideration is also given to areas with particularly high wilderness attribute ratings.
>
> Alternative D: Quality wilderness is emphasized through allocation of roadless areas with high attribute ratings to wilderness, but consideration is also given to areas with especially high resource values.
>
> Alternative E: Low-level target assignment for characteristics of landform, ecosystem, wildlife, and accessibility representations is achieved.
>
> Alternative F: A moderate-level target assignment for the same characteristics as alternative E is achieved; further planning is proposed for those areas with high wilderness ratings.

Alternative G: A high-level target assignment for the same characteristics as alternatives E and F is achieved.

Alternative H: Appropriate roadless areas are allocated to both wilderness and nonwilderness uses, reflecting the Forest Service's perception of regional and/or local issues.

Alternative I: Quality wilderness is emphasized by allocating roadless areas with high attribute ratings to wilderness while giving secondary consideration to extremely high resource outputs.

Alternative J: All of the inventoried areas are allocated to wilderness.

These RARE II alternatives correspond to the Tongass alternatives as follows:

RARE II alternative	TLMP alternative
A	Current Program
B	All areas to LUD IV
C	A
D	D
E	All areas to LUD IV
F	C
G	A
H	C
I	D
J	All roadless area to LUD I

Final decisions on RARE II are reflected in the Tongass Land Management Plan.

V.
Effects Of Implementing Alternatives

V. Effects of Implementing Alternatives

Effects on Forest Composition

For the forest as a whole, timber removal changes the forest composition on more acres than any other management activity. Once an acre is logged, a succession of vegetative changes begins. Soil type, extent of soil disturbance during logging, degree of canopy removal, and the kind of understory present before logging all affect plant succession. Other activities, such as mining, road and community development, cause vegetative changes too, but the total acreage affected is much less than in logging.

Three major climax soil-vegetative combinations occur in southeast Alaska:

1. Gentle-to-steep, timbered valley slopes. This category encompasses most commercial timber lands in southeast Alaska with slopes of less than 60 percent. Existing old-growth stands typically are 70 to 90 percent western hemlock and five to 20 percent Sitka spruce; the rest of these stands is western red cedar (south of about latitude 56 to 30 N) or Alaska cedar (to the north). Overstory canopy closures range from 50 to 80 percent, depending on site productivity and stand age. The shrub layer consists of blueberry, huckleberry, rusty menziesia, and occasional hemlock and cedar saplings. Devilsclub is a significant shrub component on the mainland and on islands north of Sumner Strait. The shrub layer is densest and most diverse south of Sumner Strait. Shrubs become increasingly associated with openings in the overstory as one progresses northward. A variety of mosses, forbs, and ferns forms a complete ground cover.

2. Steep, timbered valley slopes. On slopes greater than 60 percent, especially in interior valleys of islands and on wetter sites, overstory stands are often poorly stocked and interspersed with large openings. Canopy closure averages 30 to 50 percent. Because of the openings, a dense shrub layer of salmonberry, thimbleberry, blueberry, huckleberry, copper bush, and devilsclub occurs. Mosses and forbs are similar to those found on the more gentle landforms.

3. Youthful alluvial terraces and fans. These sites usually support stands that are predominately spruce and have a 50 to 70 percent canopy closure. Shrub layers consist of either dense devilsclub or a complex of salmonberry, stink current, Sitka alder, and grasses. The forb layer is sparse, with only a thin moss cover.

The effect of logging is much the same on all three soil-vegetative types. Immediately after logging (year zero), the vegetation consists of occasional small hemlock trees (less than 10 inches in diameter), a few hemlock seedlings and saplings, and the existing shrubs and forbs.

During years one through five, additional light and heat reaching the forest floor cause a proliferation of shrubs and forbs, primarily blueberry, huckleberry, salmonberry, elderberry, devilsclub, current ferns, and rusty menziesia. On sites with less than a 60 percent slope, small spruce and hemlock seedlings appear along with the shrubs. By the fifth year there are normally at least 1,000 seedlings per acre and sometimes as many as 20,000. On the alluvial lands and the steep upper slopes, devilsclub, salmonberry, and other shrubs often become so thick they prevent adequate conifer regeneration. When such areas are logged, conifer regeneration should be accomplished by controlling competing species or by planting or seeding conifers.

From year five through 15, shrubs still dominate the stand. However, the tree seedlings begin to appear above the brush. By 15 years trees average about 13 feet high.

Spruce and hemlock saplings begin to dominate the stand after 15 to 30 years. The tree canopy normally closes by about the 25th year, shading out the thick underbrush. At this time stands usually average about 50 percent hemlock and 50 percent spruce although in small areas (one to 20 acres) the stand may be almost all one species or the other. By 30 years the average tree is 35 feet high.

Continued growth during the next 70 years or so thins the stand to 100 to 300 trees per acre. Generally very little understory vegetation develops during this time although occasional openings in the canopy allow some shrub growth. The average 100-year-old tree is 110 feet high, and the average volume per acre is about 52 M bm.

This sequence of events describes the most common natural plant succession after logging. Variations in this sequence occur when heavy ground disturbance leads to alder regeneration. Alder grows rapidly and usually shades out shrubs within 10 to 15 years. It takes 20 to 50 years before spruce overtop the alder and dominate the stand. Adequate conifer establishment is prevented altogether in very dense alder stands.

Thinning also changes the plant succession. Because it increases growth rates, thinning allows each stage to occur sooner. Also, more open stands encourage earlier understory development. Maintenance of this understory will depend on the frequency and intensity of thinning.

As each unit is logged, the sequence of vegetative changes begins. Normally 20 to 40 percent of the operable timber in an area is removed within three to five years. Harvest units range from a few to 160 acres and average 60 yo 70 acres. Such a cutting pattern means that within the 10-year life of the plan part of the area will be in old-growth forest, part will be in the one-to-five year stage of plant succession, and part will be in the five-to-15 year stage. Eventually, areas designated for logging would contain a mixture of age classes from zero to 100 years plus old-growth trees.

Staggered harvests also allow additional sunlight to enter the adjacent stands, increasing production of shrubs and forbs for about 150 feet within the stand. This edge effect would be most beneficial in the long term, when stands in the zero-to-30 year successional stages would border stands between 30 and 100 years old. Openings along the edge would significantly increase the understory vegetation in those tightly closed, older stands.

The number of acres changed by timber harvest would vary under the different alternatives (Table 7). Alternative A would start the cycle of vegetative change on more acres each year than any other alternative. Alternative E would have the least effect. Under each alternative an estimated 2,000 to 5,000 acres would be precommercially thinned each year, and plant succession on these areas would be accelerated as described above.

TABLE 7--Area on which vegetative change begins each year because of timber harvest.1/

Alternative2/	Acres
A	18,500
B	16,500
C	14,000
A-2	13,700
D	12,300
E	6,700

1/ These figures are for the 10 year life of the plan. In the long run, the acreage cut each year will increase somewhat as logging moves into areas with less volume per acre.

2/ Alternative A-1 would fall between A and B. Alternative A-3 would fall between D and E.

Effects on Timber

Alternative A. This alternative allocates 737,000 acres of commercial forest land (CFL) to LUDs I and II and 4,300,000 acres of CFL to LUDs III and IV. Of this latter acreage, 2,727,000 acres fall within the normal operability category. Alternative A takes advantage of the VCUs with high timber ratings by placing 95 percent of them in LUDs III and IV (Table 8).

Alternative A-1. The CMAL alternative allocates 1,102,000 acres of commercial forest land to LUDs I and II and 3,995,000 acres to LUDs III and IV. Of this latter acreage, 2,769,708 acres fall within the normal operability category. Eighty-eight percent of the VCUs with high timber ratings are placed in LUDs III and IV.

Alternative B. This alternative allocates 1,208,000 acres of commercial forest land to LUDs I and II and 3,829,000 acres to LUDs III and IV. Of this latter acreage, 2,538,000 acres fall within the normal operability category. Eighty-nine percent of the VCUs with high timber ratings are placed in LUDs III and IV.

Alternative C. This alternative allocates 2,000,000 acres of commercial forest land to LUDs I and II and 3,037,000 acres to LUDs III and IV. Of this latter acreage, 2,170,000 acres fall within the normal operability category. Seventy-seven percent of the VCUs with high timber ratings are placed in LUDs III and IV.

Alternative A-2. This alternative allocates 1,933,000 acres of commercial forest land to LUDs I and II and 3,104,000 acres to LUDs III and IV. Of this latter acreage, 2,092,000 acres fall within the normal operability category. Sixty percent of the VCUs with high timber ratings are placed in LUDs III and IV.

TABLE 8--Allocation of Value Comparison Units with high timber ratings by each alternative[1/]

Alternative and timber rating	Number of VCUs allocated to--			
	LUD I	LUD II	LUD III	LUD IV
Alternative A:				
5	1	2	15	55
4	2	3	37	109
3	7	6	51	135
Alternative A-1:				
5	3	5	6	60
4	5	11	30	105
3	1	25	45	129
Alternative B:				
5	3	1	23	47
4	11	6	57	77
3	13	13	74	100
Alternative C:				
5	5	2	26	41
4	16	5	52	68
3	19	41	73	67
Alternative A-2:				
5	20	0	10	44
4	43	1	26	81
3	52	2	38	108
Alternative D:				
5	5	7	20	42
4	17	25	45	63
3	25	66	59	50
Alternative A-3:				
5	22	0	7	45
4	49	2	22	78
3	73	2	32	93
Alternative E:				
5	21	4	48	1
4	68	12	70	1
3	86	48	71	0

1/ Timber ratings range from 0 to 5. For a full explanation, see Landtype/Timber Task Force Report.

Alternative D. This alternative allocates 2,494,000 acres of commercial forest land to LUDs I and II and 2,543,000 acres to LUDs III and IV. Of this latter acreage, 1,880,000 acres fall within the normal operability category. Sixty-six percent of the VCUs with high timber ratings are placed in LUDs III and IV.

Alternative A-3. The SEACC proposal allocates 2,319,000 acres of commercial forest land to LUDs I and II and 2,778,000 acres to LUDs III and IV. Of this latter acreage, 1,907,000 acres fall within the normal operability category. Sixty-five percent of the VCUs with high timber ratings are placed in LUDs III and IV.

Alternative E. This alternative allocates 3,317,000 acres of commercial forest land to LUDs I and II and 1,720,000 acres to LUDs III and IV. Of this latter acreage, 1,248,000 acres fall within the normal operability category. Forty-five percent of the VCUs with high timber ratings are placed in LUDs III and IV.

The anticipated annual harvests range from 209 MM bm under Alternative E to 545 MM bm under Alternative A (Table 9). Opportunities for increasing timber yields through investment will be analyzed. Two possible means of accomplishing this are:

1. Potential yield from areas that are marginal because of economic factors might be included in sales if sufficient Federal funds were available to construct access roads and log transfer sites.

2. Potential yields from standard timber land might be increased through investments in intensive culture of young stands. Precommercial thinning is an example.

The costs and effects of these investments over time will be evaluated.

In addition, departures from limitations on allowable sale quantities as authorized by the National Forest Management Act of 1976 will be analyzed for those alternatives which fall short of present harvest levels.

Relation to Long-Term Contracts

These alternatives reserve from harvest varying amounts of land within areas included in present timber sale contracts. Withdrawal of this timber could result in litigation if the timber sale purchasers believe these reservations infringe upon their contract rights. Of particular concern are the contracts with Alaska Lumber and Pulp Company (ALP) and Pacific Northern Timber Company (PNT) since these contracts specifically limit timber reservations to 236,890 M bm (ALP) and 46,202 M bm (PNT). Present information indicates that most TLMP alternatives being considered will exceed the withdrawal limit in the ALP contract. If a TLMP alternative is selected that may exceed the contract withdrawal limits, negotiations with the timber sale purchaser may be necessary to modify the contract.

TABLE 9--Potential timber yield from various components, by alternative 1/, 2/ (Total volume for all components is always 1,180 MM bm)

Alternative	Regulated component					Programmed Harvest anticipated	Unregulated reserved deferred
			Marginal				
	Standard	Special	Uneconomic	Technology not available	Total regulated		
	MM bm (Scribner)						
Base	3/ 711		20	159	890		290
A+ all areas to LUD IV	413	167	25	139	764		416
A	413	114	57	119	703	545	477
B	383	90	50	101	624	488	556
C	336	64	37	81	518	412	662
D	298	59	33	65	455	367	725
E	163	32	30	36	261	202	919
A-1 (CMAL)	388	112	50	112	662	516	518
A-2	306	92	42	82	522	410	658
All Roadless to LUD I	149	56	11	32	248	209	932
A-3 (SEACC)	281	82	40	75	478	375	702

NOTE: See TABLE V in Appendix H for information on yield variations due to changed retention factors and the absence of thinnings.

1/ This figure includes standard, special and a minor amount of uneconomic marginal which has not been disaggregated for the base. Commercial thinnings are included in the yield calculations.

2/ All figures are scaled volume Scribner. To convert to approximate inventory volume, multiply the above figures by 1.3. Over time, increased utilization will tend to move the scaled volumes closer to the inventory vloumes.

3/ This figure includes standard, special and a minor amount of uneconomic marginal, which has not been disaggregated for the base.

Effects on Wildlife

The uneven-aged, old-growth forest of southeast Alaska provides ideal habitat for a multitude of wildlife species. Clearcutting part of the old growth forest will reduce its attractiveness for some species of wildlife, though it may provide an increased food source for certain songbirds, rodents and bears. The species composition will probably remain the same, but populations within species may rise or decline as a result of old-growth harvest, and subsequent regeneration.

Since timber harvesting in southeast Alaska is concentrated in high volume areas (25 to 30 MM bm per acre) on moderate slopes (less than 60 percent), it has a disproportionate effect on the species adapted to this type of habitat. Biologists generally agree that deer are especially dependent on these high-volume lands during critical times of the year. Studies are in progress to provide better management guidance.

Current research indicates that deer are among the species most sensitive to clearcutting. Studies on Vancouver Island indicate that in extensively logged areas deer populations may decline by about 80 to 90 percent (Hebert 1978).

Immediately after logging, tree seedlings, ground forbs, and shrubs such as blueberry, huckleberry, and salmonberry sprout profusely on good sites. However, the food provided is available to deer only when there is little or no snow; and even in winters without much snow, cutovers apparently receive only about 10 to 15 percent as much use by deer as the surrounding old-growth (Schoen and Wallmo 1978).

This lush new growth of vegetation, combined with slash and other debris accumulations, greatly impedes deer movement. As trees overtop the shrubs, the latter begin to die out, but tree branches plus dead or dying shrubs may still impede deer travel for about 30 years.

Beyond age 30, natural pruning and thinning occur rapidly. For example, on areas with a site index of 110, the average density of trees equal to or greater than 0.6 inches dbh (diameter at breast height) drops from 2,900 to 830 per acre between age 30 and 60. Meanwhile, slash settles and decays. Thus, the site eventually becomes negotiable for deer; but by this time the canopy cover is so complete that the forest floor is largely devoid of the vascular plants deer feed upon.

This condition apparently prevails for the rest of the 100-year rotation and beyond. Thus, clearcuts and unmanaged second-growth stands constitute degraded deer habitat.[1/]

Forest Service scientists are searching for ways to reduce logging's adverse impact on deer. For example, certain cutovers are being thinned periodically to keep them accessible to deer; whether this tactic is actually benefical will require long-term evaluation. In addition, research is under way to provide badly needed information on the nutritional and habitat needs of Sitka black-tailed deer. Meanwhile, current wildlife management programs and planning efforts strive to identify and protect important winter habitat from cutting.

Clearcutting affects mountain goats in much the same ways it affects deer.

1/Wallmo, O.C. 1978. April 24 letter to D.C. Schmiege, For. Sci. Lab., USDA-Forest Service, Juneau, Alaska.

However, in some areas mountain goats have a ready supply of winter food on the wind-cleared alpine ridges, and they rely on the forest only for cover. In those areas the impact of harvesting is less severe.

Bears, some rodents, and presumbably moose will benefit from the increase in forbs and shrubs that thrive in cutover areas for up to 30 years after harvest. Thus, black bear and moose populations will probably change little as long as areas are maintained in early successional stages. However, species more sensitive to human intrusion such as brown bear, wolves, and wolverines can be expected to decline. Of the fur species, marten will probably be affected most by old growth removal. Other fur species, as well as eagles, can probably be maintained if undisturbed beach habitat is kept near current levels.

Cavity-nesting birds such as woodpeckers and certain owls will decrease dramatically in harvested areas, as will flying squirrels and other animals that require hollow trees for denning.

On the other hand, certain songbird populations will increase in young clearcuts (Gibson 1976). Species such as rufous hummingbird, flycatchers, swallows, wrens, warblers, sparrows, and certain hawks will be plentiful as long as the early successional vegetation is present.

In general, the more logging is permitted the greater the effect on wildlife. Moreover, whether logging is allowed under a LUD III or LUD IV designation is an important consideration. Using current retention factors, LUD III generally allows an average of 30 percent of the operable old growth to be retained for fish, wildlife, and visual quality. LUD IV allows an average retention of 13 percent. Thus, LUD III offers much more latitude to protect important wildlife habitat than LUD IV. In LUD IV areas where most or all of the old growth is in the operable category and would be cut during the rotation, the impact on most wildlife species would be considerable.

In terms of deer habitat, Alternative A allocates about 3.6 million acres of commercial forest with intermediate (category 2) and key winter deer range (category 3) to LUDs III and IV, where logging is permitted (Table 10). This amount represents 88 percent of all commercial forest land in categories 2 and 3 (that is, 4,027,000 acres). Since Alternative A allows an annual harvest of 17,800 acres in the standard and special components, 4.4 percent of the land in these habitat categories could be harvested during the 10-year life of this plan, and 44 to 52 percent could be harvested during the 100 to 120 years needed to grow a crop of mature trees. Most of this timber harvest will occur in the high-volume stands that current research is showing to be most important to deer. However, when implementing projects, interdisciplinary teams will attempt to minimize impact on critical habitat through size, design, and dispersion of cutting units.

In Alternative A and all other alternatives, the number of acres harvested will probably increase somewhat as logging moves into areas with less volume per acre. In addition, some timber (perhaps 10 percent of the total volume) may be harvested from the marginal component.

Alternative A-1 would have similar effects on wildlife as A.

Alternative B allocates about 3.3 million acres of commercial forest with intermediate and key winter deer range to LUDs III and IV. This amount represents 82 percent of all commercial forest land in categories 2 and 3. Since Alternative B allows an annual harvest of 16,000 acres in the standard and special components, four percent of the land in these habitat categories could be harvested during the 10-year life of the plan, and 40 to 47 percent could be harvested during a typical 100-year rotation.

TABLE 10--Amount of critical deer winter range allocated to LUDs III and IV by each alternative 1/, 2/

Alternative and habitat category 3/	Commercial forest land allocated to LUDs III and IV	
	Acres	Percent of total in category
Alternative A:		
2	2,942,437	89
3	614,413	85
2&3	3,556,850	88
Alternative B:		
2	2,723.534	82
3	572,958	80
2&3	3,296,492	82
Alternative C:		
2	2,254,633	68
3	438,140	61
2&3	2,692,773	67
Alternative A-2:		
2	2,289,783	69
3	442,745	62
2&3	2,732,528	68
Alternative D:		
2	1,970,269	60
3	350,813	49
2&3	2,321,082	58
Alternative E:		
2	1,367,106	41
3	226,902	32
2&3	1,594,008	40

1/ Alternative E makes no allocations to LUD IV.
2/ Category 2 is intermediate deer winter range; category 3 is key winter range.
3/ Total acreages for each of the categories were complied by the Wildlife Task Force and are summarized in the "Landtype/Timber Task Force Working Report."

TABLE 11--Number of Value Comparison Units with high wildlife ratings by each alternative[1/,2/]

Alternative and wildlife rating	Number of VCUs allocated to LUD I	LUD II	LUD III	LUD IV
Alternative A:				
5	4	11	5	8
4	18	31	51	170
3	30	44	57	210
Alternative B:				
5	7	8	6	7
4	31	42	78	119
3	42	52	92	155
Alternative C:				
5	9	9	8	2
4	38	78	74	80
3	56	81	91	113
Alternative A-2:				
5	14	2	4	8
4	85	19	39	127
3	118	26	41	156
Alternative D:				
5	9	11	6	2
4	46	104	53	67
3	72	94	75	100
Alternative E:				
5	18	6	4	0
4	158	47	65	0
3	159	54	128	0

1/ Wildlife ratings range from 0 to 5; they are explained in Wildlife Task Force Working Report.

2/ Alternative A-1 would have similar effects on wildlife as A. Alternative A-3 would fall between B and C.

of the VCUs rated 4 and 40 percent of those rated 3 are allocated to LUDs I and II. The amount in LUD IV drops to 30 percent for those rated 4 and 33 percent for those rated 3.

Alternative A-2 places 57 percent of the VCUs rated 5, 38 percent of those rated 4, and 43 percent of those rated 3 in LUDs I and II. LUD IV has 28 percent of the VCUs rated 5, 47 percent of those rated 4, and 46 percent of those rated 3.

Alternative D places slightly more VCUs rated 5 in LUDs I and II (71 percent) and the same amount in LUD IV (7 percent) as Alternative C. Under D, LUDs I and II contain 56 percent of the VCUs rated 4 and 49 percent of those rated 3. Only 25 percent of the VCUs rated 4 and 29 percent of those rated 3 are put in LUD IV.

Alternative E allocates more high-value VCUs to LUDs I and II than any other alternative. Eighty-five percent of the VCUs rated 5, 76 percent of those rated 4, and 63 percent of those rated 3 are in LUDs I and II. No VCUs valued for wildlife are placed in LUD IV.

Effects on Threatened or Endangered Species

There are few threatened or endangered species in Alaska. The Federal Register, October 1976, lists only the Eskimo curlew, the American and Arctic peregrine falcons, the Aleutian Canada goose, and the Diomedea albatross. The Alaska Department of Fish and Game also consideres the short billed albatross as endangered. Of these species, only the peregrine falcon is likely to occur in the southeast and then only as a migrant. No known nesting of the endangered peregrines occurs on the Tongass.

None of the threatened or endangered plant species in Alaska are known to occur within the Tongass National Forest. Therefore, any of the alternatives could be implemented without affecting these species.

Effects on Flood Plains or Wet Lands

Any management activities under the Proposed Action that are located in or adjacent to flood plains or wet lands will conform to the directives of Executive Orders 11988 and 11990, which pertain to such areas. Compliance with the policies set forth in the Southeast Alaska Area Guide for water, fish, estuaries and wetlands resources will also act to minimize any potential adverse effects.

Effects on Research Natural Areas

Under all alternatives, existing research natural areas will be protected. Proposed areas will be evaluated before allowing any development.

Effects on Fisheries

Impacts on Habitat

Fish-related resource issues center around the protection of spawning and rearing habitat and the aesthetic concerns of recreation fishermen.

The Forest Service's goal is to "protect and/or enhance fish resources and their habitat" (Area Guide, p. 79). Stated another way, the goal is to preserve the biological productivity of every fish stream on the Tongass. (Aesthetic concerns are directly addressed through recreation goals and management direction.)

The present reduced levels of the salmon populations in southeast Alaska can be attributed to several factors. Among these are included: unfavorable climatic conditions, overharvesting and timber harvesting. Of the timber harvesting impacts, road building and harvest activities are the two primary man-caused sources of fish habitat damage. Two general management options are available: (1) to protect fish habitat through land use constraints that preclude roading and timber development (LUDs I and II); or (2) to protect habitat through management prescriptions that control development activities, monitor effects, and provide for rehabilitation of unforeseen man-caused or natural habitat damage (primarily LUDs III and IV).

As an approximation of one of the measures necessary to meet fishery goals, timber retention factors were developed for LUDs III and IV by the interdisciplinary team. The team concluded that to meet goals for fish stream productivity, as well as those basic to wildlife and recreation, it would be necessary in LUD IV to reserve from harvest about 13 percent of the normal operable timber (as a forest-wide average). Although the same figure applies to the protection of basic resource values in LUD III areas, additional wildlife, recreation, and aesthetic considerations are expected to drive the retention factor in LUD III up to a forest-wide average of about 30 percent.

These retention factors will provide the latitude necessary to develop specific prescriptions at the project planning level, where each stream and watershed will be considered individually.

Among those stream systems likely to receive more intensive prescriptive management are 84 identified by the Alaska Department of Fish and Game (ADF&G) as highly important sport fishing areas. Most of these same streams are also important for commercial fish production. This listing has been separated into 19 "high quality" recreation watersheds, recommended by ADF&G for LUD I or II classification, and 65 "important" recreation watersheds, recommended for LUD I, II, or III classification.

It is assumed that even under LUD IV the biological productivity of these streams will be maintained through protective and rehabilitative prescription management. But the more amenity-oriented LUD III classification would provide greater latitude to avoid or mitigate unintentional biological damage. LUD III would also provide more flexibility in project design to retain aesthetic values.

The alternatives' potential effects on fisheries can be judged by comparing their allocations of 490 VCUs with high sport fish value (table 12). These VCUs were rated 3, 4, or 5 on a scale of 1 (low) to 5 (high) for sport fish value; all but seven of them were given similar ratings for commercial fish value.

Within these 490 VCUs are located the 19 "high quality" and 65 "important" fish stream systems identified by ADF&G. How an alternative allocates these streams is another indication of its potential effects (table 13).

TABLE 12--Allocation of 527 VCUs with high values for commercial and/or sport fish and number scheduled for logging during 10-year life of the plan.

Alternative	Number of VCUs			
	Allocated to			Scheduled for entry during next 10 years
	LUDs I-II	LUD III	LUD IV	
A	130	95	302	188
A-1	93	128	306	--
B	173	137	217	181
C	236	136	155	159
A-2	225	74	228	144
D	285	106	136	137
A-3	--	--	--	--
E	367	160	0	89

-- = data not available

TABLE 13--Allocation of fish stream systems identified as "high quality" or "important" by the Alaska Department of Fish and Game

Alternative	19 "high quality" systems ADF&G recommends for LUD I or II		65 "important" systems ADF&G recommends for LUD I, II or III	
	Numbers of the two systems allocated by TLMP to--			
	LUDs I-II	LUDs III-IV	LUDs I-II-III	LUD IV
A	9	10	38	27
A-1	6	13	34	31
B	12	7	54	11
C	15	4	59	6
A-2	13	6	53	12
D	17	2	61	4
A-3	--	--	--	--
E	16	3	65	0

-- = data not available

Impacts on Enhancement.

Present Forest Service policy requires that designated wilderness areas be managed under a strict interpretation of the 1964 Wilderness Act. This management

philosophy precludes construction of fish enhancement facilities and prohibits the use of mechanized equipment to clear streams or remove barriers. Areas immediately adjacent to potential aquaculture sites could possibly be excluded from these restrictions, but such exclusions are unlikely. Three enhancement activities, hand cleaning of streams, utilization of saltwater upwelling areas, and lake rearing areas have been determined to be compatible with the intent of the Wilderness Act.

Considering the probable constraints under wilderness classification, the most reasonable analysis of alternative impacts can be made by listing the areas of potential aquaculture interest that would be allocated to LUD I. The more areas that fall under a LUD I allocation, the greater will be the impact upon fisheries enhancement activities (table 14).

TABLE 14 --Number of fisheries enhancement opportunities falling in LUD I designation by alternative.

Fisheries enhancement opportunities (total on forest)	Alternative							
	A	A-1	B	C	A-2	D	A-3	E
Existing federal hatchery sites (3)	0	1	0	1	0	1	0	1
Existing State hatchery sites (8)	0	1	0	0	0	0	0	1
Proposed State hatchery sites (18) 1/	0	1	0	1	3	1	2	5
Private hatchery sites, permits issued (9)	0	1	0	1	0	2	2	2
Private hatchery sites, permits pending (11)	0	1	0	1	1	1	1	2
Potential private hatchery sites (22)	2	4	2	6	3	6	3	12
Identified stream barriers (80)	5	5	7	15	24	18	23	42
Exsisting enhancement sites (10)	0	1	0	1	2	3	3	4
Potential spawning channel sites (5)	0	0	0	0	2	0	1	3
Potential marine rearing sites (14)	2	0	2	2	6	2	7	9
Total sites (180)	9	15	11	28	41	34	42	81

1/ The majority of these sites are located within pending State selections; thus their allocation by the various alternatives is not a point of conflict.

Effects on Recreation

VCUs allocated to LUD I or II will be managed to maintain or enhance their long-term recreation uses and opportunities (that is, in LUD II for the life of the plan and in LUD I on a permanent basis if designated by Congress as wilderness).

VCUs that are allocated to LUDs III and IV and are not scheduled for management activities will continue to provide their present recreation opportunities for at least the life of the plan. VCUs scheduled for development will continue to provide their present recreation opportunities until they are entered for management activities, at which time opportunities will be altered. Some activities, such as wilderness or wildland experience, may be eliminated in the units developed, depending on the type and extent of that development. Other activities may be enhanced if they are facilitated by roads and other modifications. Each VCU is a somewhat isolated entity, and activities in one VCU would not normally affect potential recreation experiences in adjacent VCUs.

Timber harvest in a roadless VCU can have a profound effect on the recreation opportunities that area can provide, both during the operation itself and for many years after. Activities associated with camp life, road building, logging, hauling and rafting of logs, all tend to displace recreation uses requiring solitude and a natural environment. The logging camps themselves may exist for two to 10 years or more, developing into small communities that generate their own recreation demands on surrounding lands. Increased human activity and the potential conflict with established wildland use patterns thus may spread beyond the actual camp and logging locations to nearby bays and islands. After harvesting is completed, solitude returns to the area as the people and facilities are removed. Those recreation activities that are facilitated by the remaining roads and vegetative changes are then available in a relatively isolated environment. As revegetation of cutting units and spur roads occurs and the physical logging effects are healed, more of the semiprimitive recreation qualities return. With crown closure of the cutover areas occuring some 15 to 30 years after harvest, the areas may once again approach a natural setting, except for the main gravel roads. However, if the VCU is being managed on a multiple-entry concept, the second entry may be scheduled at about this time, and the sequence would repeat itself.

The greatest impacts will be on opportunities for dispersed primitive recreation in roadless VCUs allocated to LUD III or IV. The introduction of roading, noise, and discordant visual effects will alter the opportunity for recreation in an isolated environment. These activities can lower the VCU's rating for dispersed primitive recreation by one or two rating points, depending on the type and standard of roads built and the number and size of harvest units. For example, a VCU presently rated 4 for dispersed primitive recreation could be lowered to a 3 or 2. Figure 5 shows how well each alternative takes advantage of the forest's potential to provide primitive recreation opportunities by allocating VCUs with high recreation values (4 or 5 ratings) to LUD I or II.

Opportunities for dispersed semiprimitive recreation will also change in roadless VCUs allocated to LUD III or IV. An allocation to LUD III or IV may lower the rating for dispersed semiprimitive recreation by as much as one point, depending on the number, type, and standard of roads built, and the number and size of harvest units. Figure 6 shows how well each alternative takes advantage of the forest's potential to provide semiprimitive recreation opportunities by allocating VCUs with high recreation values (4 or 5) to LUD I or II.

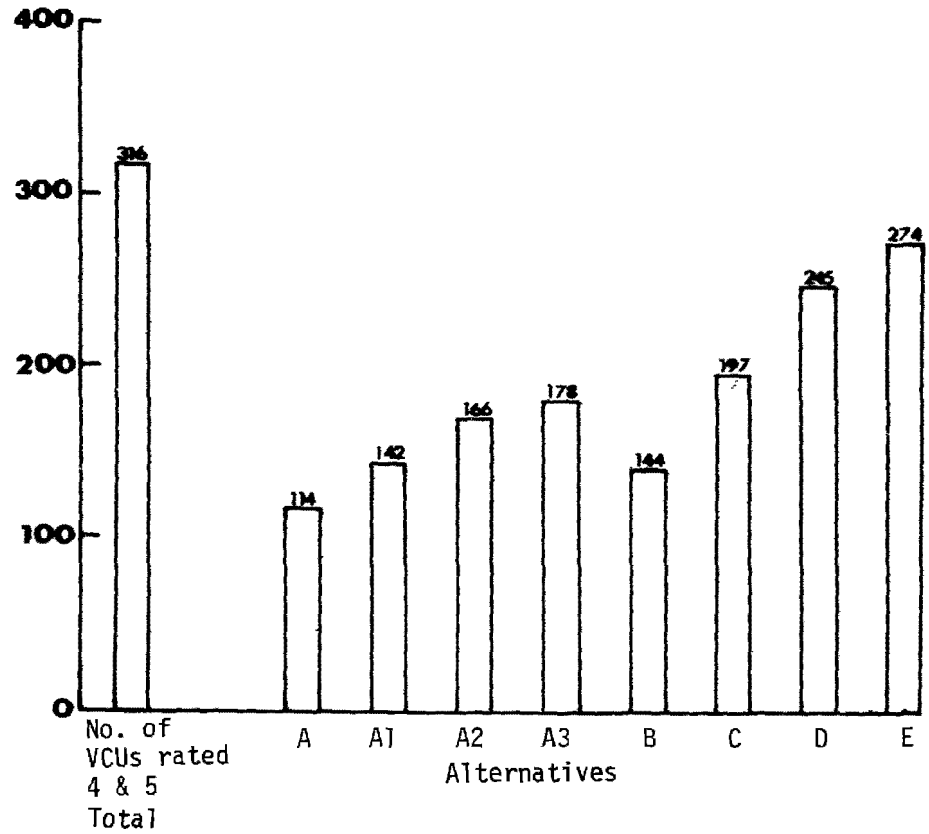


Figure 5--Dispersed primitive recreation: Total number of 4 & 5 rated VCUs allocated to LUDs I and II by alternative

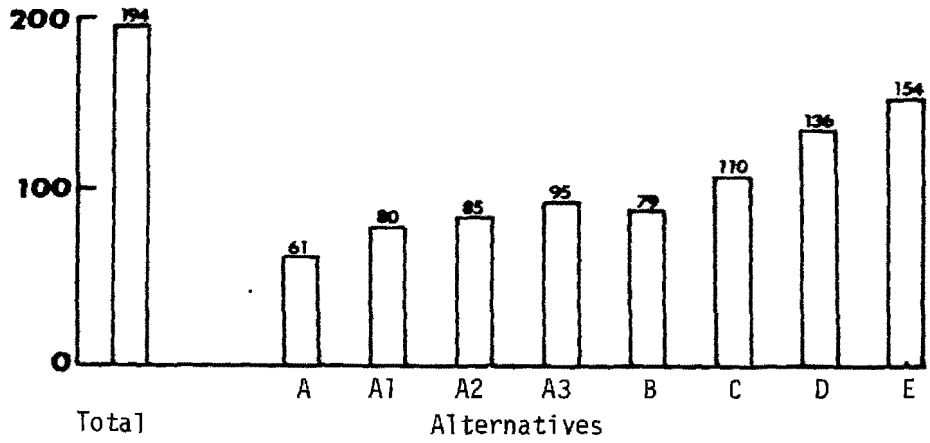


Figure 6--Dispersed semiprimitive recreation: Total number of 4 & 5 rated VCUs allocated to LUDs I and II by alternatives

Opportunities for concentrated recreation will change slightly in those roadless VCUs that are allocated to LUD III or IV. Timber harvest will introduce roading, which will facilitate concentrated recreation opportunity, but it will also introduce discordant elements and visual effects that may detract from this type of recreation. The introduction of facilities such as picnic grounds, campgrounds, public visitor sites, commercial service sites, and roads would increase the supply of concentrated recreation opportunities. VCUs with a rating of 3 for concentrated recreation could change to a 4 with the introduction of roads and visitor facilities.

The impact on visual resources is also an important consideration. VCUs allocated to LUD I or II will be managed to retain visual resources in a natural state. VCUs allocated to LUD III or IV may be subject to visual quality changes in varying degrees. Vegetative and landform alterations may dominate the landscape, depending on the magnitude of the management activity, the character of the landscape, and the position from which the activity is viewed. Figure 7 displays the allocation of VCUs with visual resource value ratings of 4 and 5 to LUDs I and II in each alternative and compares it to the total number of VCUs rated 4 or 5 for the forest.

Sensitive visual areas allocated to LUD I or II will be managed to retain scenic quality. VCUs allocated to LUD III may remain visually unaffected by management activities along sensitive travel routes and in high-use areas because of the relatively high volumes of commercial timber which will be retained to protect fish, wildlife, and recreation (including scenic) values. Areas allocated to LUD IV may exhibit a modified appearance from resource development because of more intensive management. These activities may dominate the landscape in varying degrees, depending on slope, vegetative pattern, and other physical characteristics; in some cases the negative effect on sensitive scenic values will be cumulative, depending on the magnitude of development and the frequency of management entries.

About 500,000 acres of operable commercial timber were rated highly sensitive in the inventory, and about 1,147,000 acres were rated moderately sensitive. Figure 8 displays how these lands were allocated in each alternative.

Special features which occur in VCUs allocated to LUD I will be preserved in a natural state wherever possible. The intent of management for those in LUD II will be protection in an undeveloped state. However, trails may be developed to some features, which would improve access and increase use.

In VCUs allocated to LUD III, the retention of a high percentage of undisturbed forest land for fish, wildlife, and recreation may adequately protect these features from intrusion. Management activities in the vicinity may result in noise or other disturbances, changes in the visual quality of adjacent view areas, or loss of solitude caused by increased access.

Some special features in VCUs allocated to LUD IV may be affected by management activities because of the lower percentage of forest land that will normally be retained for fish, wildlife, and recreation values. In general, however, the direction for managing special features in VCUs allocated to LUD III or IV will be to protect them from modification. In some cases, they may be developed to some degree as recreation attractions.

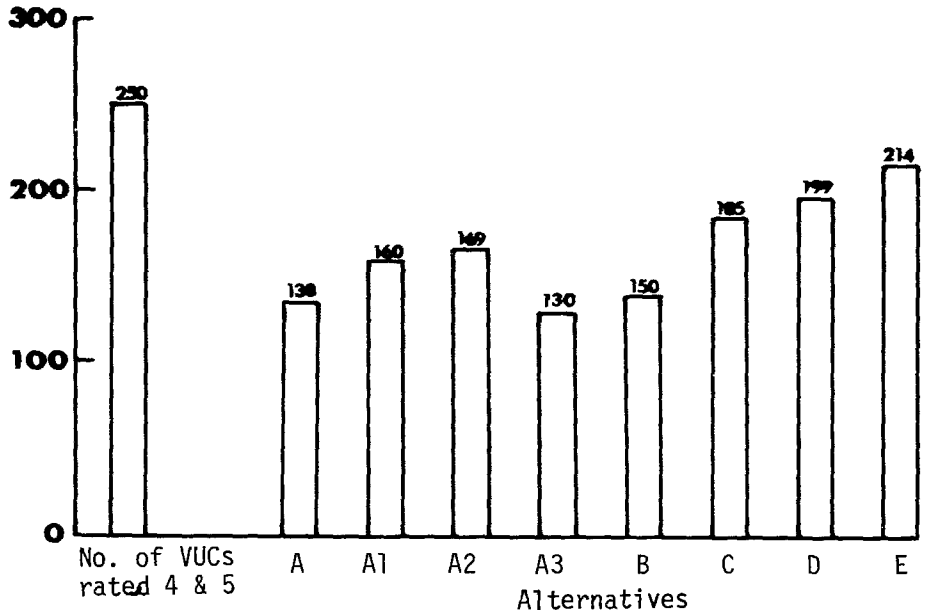


Figure 7--Visual resources: Number of 4 & 5 rated VUCs allocated to LUDs I and II by alternatives

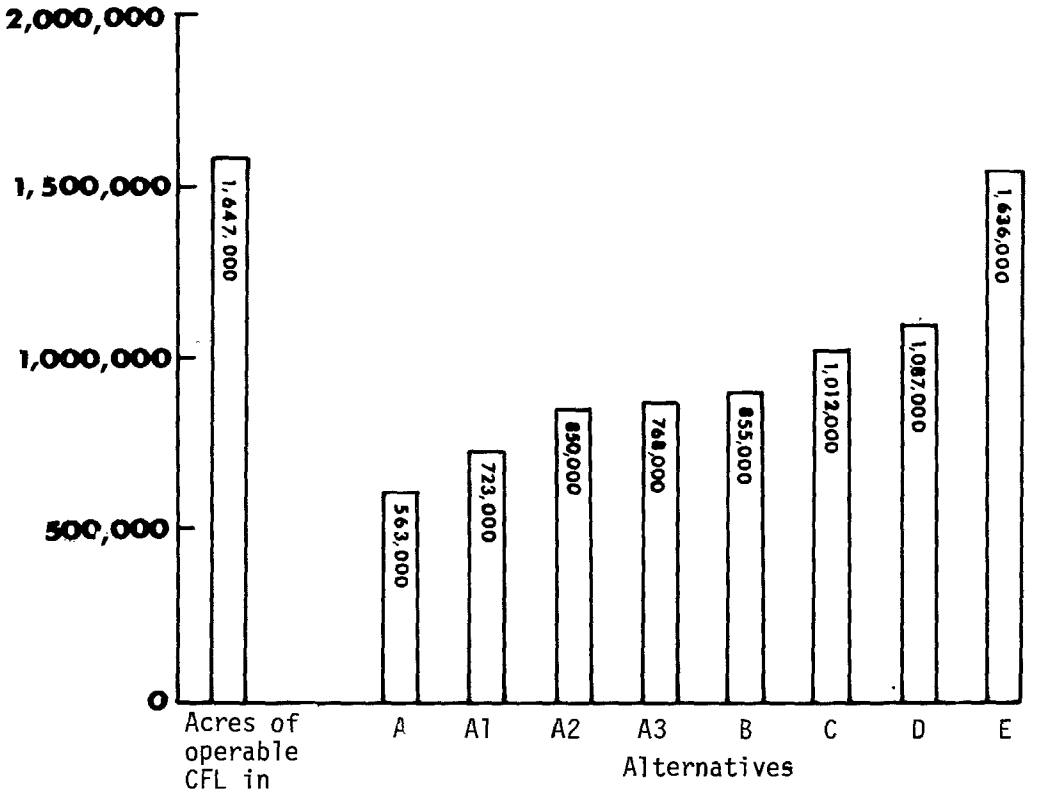


Figure 8--Areas of operable CFL with high and moderate visual sensitivity allocated to LUDs I, II, and III by alternative

Alternative A

Much of the existing recreation use is associated with saltwater, the shoreline, accessible lakes, rivers, and fishing streams. Hunting most often occurs within a mile or so of the beach or other point of access, and roads eminating from communities generally receive high day use.

These use patterns would be altered to varying degrees under this alternative. Some of the high-use roadless VCUs, such as Admiralty Lakes, are allocated to LUD I. This allocation may constrain some existing nonconforming uses, but most traditional uses could continue. Other heavily used areas, such as Petersburg Creek and the Stikine River, were allocated to LUD II, which would allow most existing uses to continue and would allow enhancement of primitive and semiprimitive recreation opportunities.

Some VCUs immediately adjacent to the larger communities were allocated to LUD III to allow concentrated recreation development as needed, but special restrictions were placed on timber harvest and other activities that may not be compatible with desired recreation use patterns.

Under Alternative A many areas around communities and many areas of high recreation attraction and use were allocated to LUD III. Over time, these VCUs will be at least partially roaded, and although specific use sites and attractions will be protected, there will undoubtedly be some conflicts with established use patterns and some changes in recreation environments.

Many areas of high recreation attraction and at least moderate use are allocated to LUD IV in this alternative. As these areas are roaded and developed, significant conflicts with existing use patterns and changes in the recreation environments are highly likely. Roading will undoubtedly increase access, particularly into the interior of the islands, creating new and different recreation use patterns and activities on these lands. For instance, increased access will offer new opportunities to hunt and fish, but it may also change the experience levels available and increase the pressures on specific wildlife populations.

Based on the premise that timber harvest may have a negative effect on deer and furbearer habitat, production of these animals may decrease generally throughout the forest over the long term, primarily in LUD IV areas. The result would be a general reduction in hunting and trapping opportunities.

A high percentage of roadless VCUs allocated to LUD III and IV will probably be developed to some degree during the next 10 years as indicated on the Alternative A map.

Alternative A-1

Existing recreation use patterns would be altered to varying degrees under this alternative. Some of the high-use roadless VCUs, such as Petersburg Creek and Admiralty Lakes, are allocated to LUD I. This allocation may constrain some existing nonconforming uses, but most traditional uses could continue. Other heavily used areas, such as Granite Fiords and Seymore Canal, were allocated to LUD II, which would allow most existing uses to continue and would allow enhancement of primitive and semiprimitive recreation opportunities.

Under Alternative A-1, many areas around communities and many areas of high recreation attraction and use were allocated to LUD III. Over time these VCUs will be at least partially roaded, and although specific use sites and attractions will be protected, there will undoubtedly be some conflicts with established use patterns and some changes in recreation environments.

Many areas of high recreation attraction and at least moderate use are allocated to LUD IV in this alternative. As these areas are roaded and developed, significant conflicts with existing use patterns and changes in the recreation environments are highly likely. Roading will undoubtedly increase access, particularly into the interior of the islands, creating new and different recreation use patterns and activities on these lands. For instance, increased access will offer new opportunities to hunt and fish, but it may also change the experience levels available and increase the pressures on specific wildlife populations.

Based on the premise that timber harvest may have a negative effect on deer and furbearer habitat, production of these animals may decrease generally throughout the forest over the long term, primarily in LUD IV areas. The result would be a general reduction in hunting and trapping opportunities.

A high percentage of roadless VCUs allocated to LUD III and IV will probably be developed to some degree during the next 10 years as indicated on the Alternative A-1 map.

Alternatives B and C

In Alternatives B and C, effects on existing use patterns would be similar, although slightly more impacts would be expected generally in B. Some of the high-use roadless VCUs are allocated to LUD I. This allocation may constrain some existing nonconforming uses, but most traditional uses could continue. Most of the highest used recreation areas, such as Rocky Pass, the Stikine River Flats, Sarkar Lakes, and Berner's Bay, were allocated to LUD II, which would allow most existing uses to continue and would allow enhancement of primitive and semiprimitive recreation opportunities.

Some VCUs adjacent to the larger communities were allocated to LUD III, which would allow concentrated recreation development but would restrict timber harvest and other activities that may not be compatible with desired recreation use patterns.

The DES alternative maps indicate that most areas near communities, along major travel routes, and around many commonly used recreation areas are allocated to LUD III. These VCUs will be at least partially roaded, and although specific use sites and attractions will be protected, there will be some conflicts with established use patterns and some changes in recreation environments.

Although some areas of high recreation attraction were allocated to LUD IV, most of these areas are not heavily used at present. Roading in both LUDs III and IV will increase access, particularly into the interior of the islands, creating new and different recreation use patterns on these lands. In areas of timber harvest, some wildlife habitat reduction is expected, especially for deer and furbearers, which will result in a general decline in numbers over time, at least in the developed areas. The maps indicate which of these VCUs might be developed during the next 10 years.

Alternatives A-2 and A-3

The effects on existing recreation use patterns would be very similar in Alternatives A-2 and A-3. Since most of the high-use roadless VCUs were allocated to either LUD I or II, existing use patterns would remain largely unchanged. Management of LUD I areas may constrain some existing nonconforming uses, but most could continue. LUD II management would continue to allow most existing recreation uses and would emphasize maintaining or improving primitive or semiprimitive recreation opportunities.

Most VCUs scheduled for timber management in areas near communities were allocated to LUD III, which would allow greater protection for existing recreation use areas than LUD IV. Much of the LUD IV area is located in areas that have not traditionally had high recreation use. Over time, both LUD III and IV areas will be roaded to varying degrees; these roads will increase access, particularly into the interior of the islands, creating new and different recreation use patterns and activities on these lands. Increased access will offer new opportunities to hunt and fish, but it also may change the experience levels available and increase the pressures on specific wildlife populations.

Based on the premise that timber harvest may have a negative effect on deer and furbearer habitat, production of these animals could be expected to decrease generally throughout the forest over the long term, especially in LUD IV areas. Much of Revillagigedo, Prince of Wales, Wrangell, Zarembo, Mitkof, Kupreanof, and Chichagof Islands would be roaded over the long term. The alternative maps indicate which areas are likely to be developed during the life of this plan.

Alternative D

Existing recreation use patterns would be protected to a high degree in this alternative. Most of the high-use roadless VCUs were allocated to either LUD I or II. Management of LUD I areas may constrain some existing nonconforming uses, but most uses would continue. LUD II management would continue to allow most existing recreation uses and would emphasize maintaining or improving primitive or semiprimitive recreation opportunities.

Some VCUs adjacent to Juneau, Sitka, Petersburg, Wrangell, and Ketchikan were allocated to LUD III, which would allow concentrated recreation development but would restrict timber harvest and other activities that may not be compatible with desired recreation use patterns.

Most VCUs scheduled for timber management in areas near communities were allocated to LUD III, which would allow greater protection for existing recreation use areas than LUD IV. Much of the LUD IV allocation is located in areas that have not traditionally had high recreation use. Over time, both LUD III and IV areas will be roaded to varying degrees; these roads will increase access, particularly into the interior of the islands, creating new and different recreation use patterns and activities on these lands. Increased access will offer new opportunities to hunt and fish, but it also may change the experience levels available and increase the pressures on specific wildlife populations.

Based on the premise that timber harvest may have a negative effect on deer and furbearer habitat, production of these animals could be expected to decrease generally throughout the forest over the long term, especially in LUD IV areas. Much of Revillagigedo, Prince of Wales, Wrangell, Zarembo, Mitkof, Kupreanof, and Chichagof Islands would be roaded over the long term. The Alternative D map indicates which areas are likely to be developed during the life of this plan.

Alternative E

Existing recreation use patterns would not be significantly altered by the allocations proposed in this alternative. Most of the roadless lands are allocated to LUD I or II. Management of LUD I areas may constrain some existing nonconforming uses. LUD II management would continue to allow most existing recreation uses and would emphasize maintaining or improving primitive or semiprimitive recreation opportunities.

Timber harvest activities would continue in VCUs that have already been developed or committed for development by timber sales, but harvests would not be allowed in most of the existing roadless area. Since all the areas to be developed are allocated to LUD III, significant constraints would be imposed for the protection of wildlife, recreation use, and other resources. Access into the interior of the major islands would not change significantly since most of these areas would remain roadless.

Effects on Cultural Resources

No adverse effects are anticipated on existing cultural resources under any of the alternatives. Were any of the alternatives to be implemented, existing management policies, which assure compliance with Federal Antiquities Legislation, and the American Indian Religious Freedom Act, will be adhered to (see Area Guide). The most significant cultural and historical sites have been identified and selected under the Alaska Native Claims Settlement Act. However, the possibility of inadvertent disturbance to presently unknown historical and archeological sites would be proportional to each alternative's emphasis on resource development.

Effects on Wilderness

Those VCUs allocated to LUD I in the Tongass Land Management Plan will be recommended for Wilderness by the Secretary of Agriculture. LUD I recommendations not classified by Congress as wilderness will be considered for other classifications under authority of the Secretary of Agriculture.

Former Wilderness study areas established before this plan (such as Tracy Arm) are included in the general analysis and will be recommended for allocation through the TLMP planning process.

The areas that were withdrawn from entry for two years will remain in their present roadless condition until Congress decides on whether to include them in the Wilderness System. If they are not designated for special management they will be managed as indicated in the Proposed Action after the two year period.

VCUs allocated to LUDs III and IV for which no management activities are scheduled, will continue to retain their present wilderness values for the life of this plan. VCUs scheduled for development will continue to provide wilderness oportunities until they are entered for management, at which time these opportunities will be altered. The degree of alteration will depend on the type and extent of development within each affected VCU.

In addition to Forest Service timber activities, proposed mineral and power developments may affect at least seven roadless VCUs during the life of the plan. these are: VCU 324C, involving the proposed Green Lake power generation site near Sitka; VCU 446S, part of the proposed Thomas Bay power transmission route near

Petersburg; VCUs 745K, 748K, and 776K, forming portions of the proposed Swan Lake power transmission route near Ketchikan; and VCUs 841K and 842K, proposed for partial roading in connection with mineral exploration and development near Ketchikan. Unforeseen mineral discoveries or power demands may precipitate other proposals involving roadless VCUs. Assessment of these proposals will be made through the NEPA process as they occur.

Since each VCU is a somewhat isolated entity it is assumed that activities in one VCU would not normally affect potential wilderness experiences in adjacent VCUs.

Another major consideration was the development of a balanced distribution of LUD I areas among the six southeast Alaska landscape character types: Yakutat Forelands (YF), Admiralty-Chichagof (AC), Baranof Highlands (BH), Kupreanof Lowlands (KL), Coast Range (CR), and Coastal Hills (CH). These six types represent discreet geographic units of land, each having distinguishing characteristics of landform, waterform, and vegetative pattern. Figure 9 indicates how these landscape character types are allocated to LUD I by each alternative.

Figures 10 to 12 and table 15 show how well each alternative takes advantage of the forest's potential to provide wilderness recreation opportunities by allocating high-value VCUs to LUD I.

Alternative A

Under Alternative A, the following areas and acreages are allocated to LUD I and would be proposed for wilderness classification:

Name	Approximate acres	Landscape character type
Russell Fiord	255,236	CR
W. Chichagof/Yakobi	153,627	AC
S. Baranof	157,038	BH
Admiralty	100,379	AC
Tracy Arm	402,133	CR
Endicott Arm	208,292	CR
S. Kuiu	99,902	KL
Coronation	19,122	KL
Warren	11,353	KL
LeConte	78,300	CR
Misty Fiords	699,755	CR
S. Prince of Wales	97,033	CH
Total	2,282,170	
Percent of forest	15%	

This alternative meets the stated wilderness goals by allocating 69 VCUs (approximately 2,280,000 acres) to LUD I, 56 of which have high or very high wilderness attribute ratings. Only three of the VCUs allocated to LUD I have high timber ratings; seven have high mineral ratings, and 33 have commercial fish ratings. The stated objective of 15 percent of the forest allocated to LUD is met, with representative areas in five of the six character types. Approximately 72 percent of the LUD I is located in the Coast Range character type, 11 percent in Admiralty/Chichagof, none in Yakutat Forelands, seven percent in Baranof Highlands, four percent in Coastal Hills, and six percent in Kupreanof Lowlands.

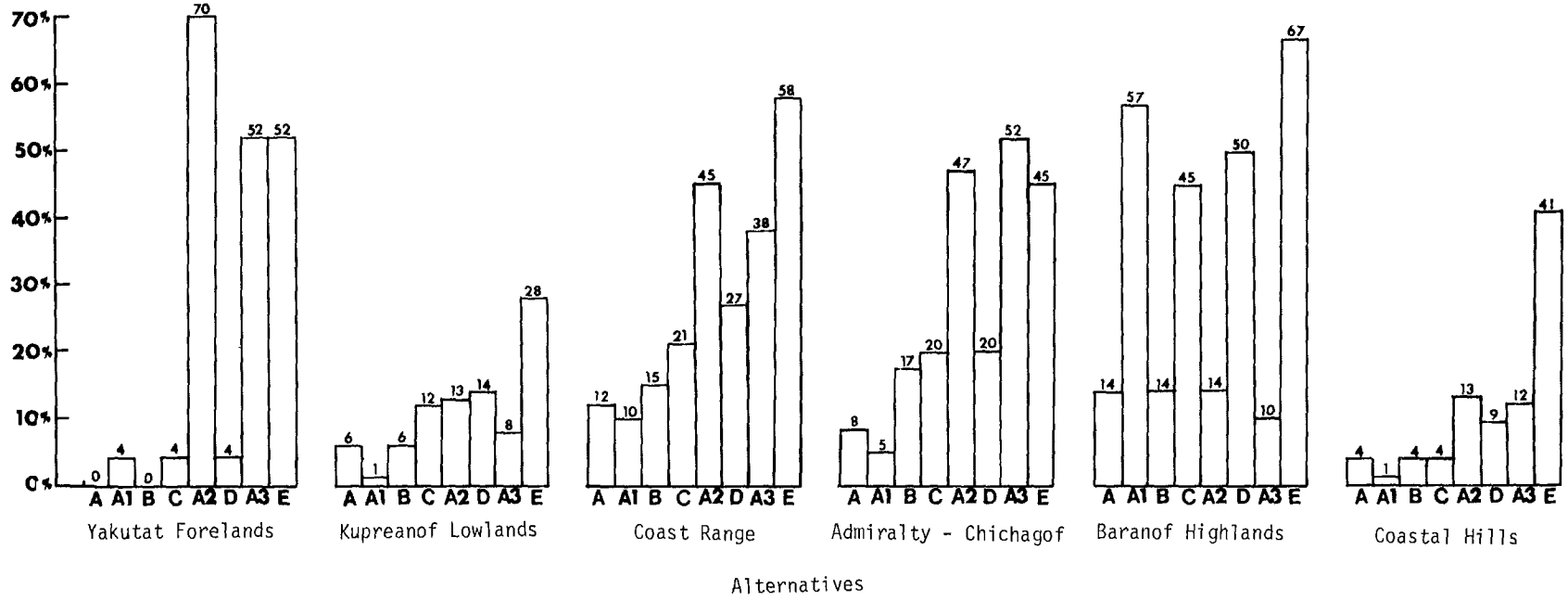


Figure 9--Percentage of VCUs in each landscape character type allocated to LUD I by alternative

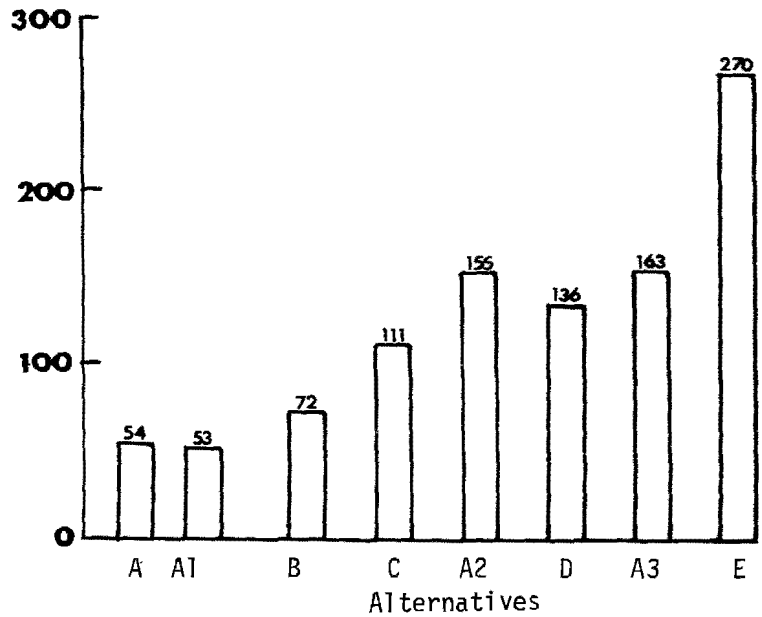


Figure 10--Number of VCUs rated 23-28 for wilderness attributes (all character types) allocated to LUD I, by alternative (the total of VCUs rated 23-28 for the whole forest is 353.)

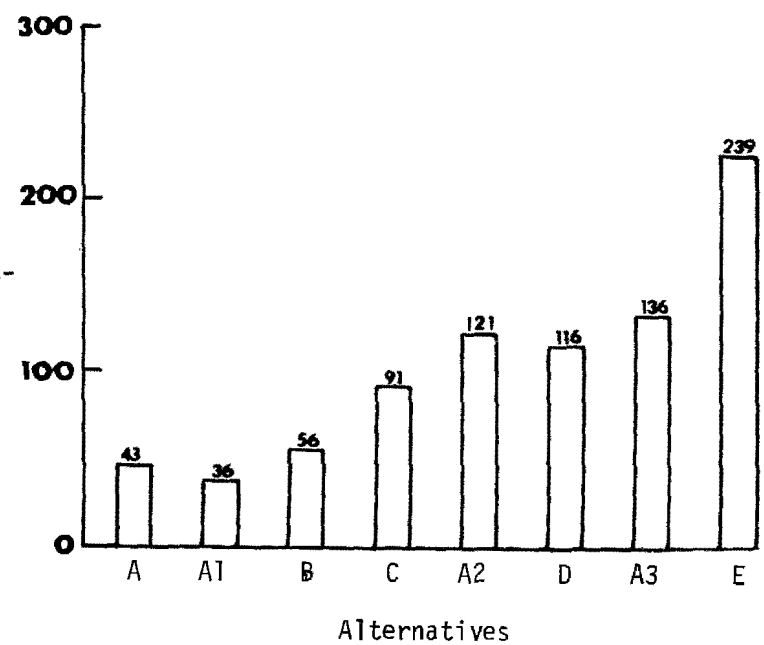


Figure 11--Number of VCUs rated 4 or 5 for dispersed primitive recreation (all landscape character types) allocated to LUD I, by alternative. (The total of VCUs rated 4 or 5 on the forest is 316.)

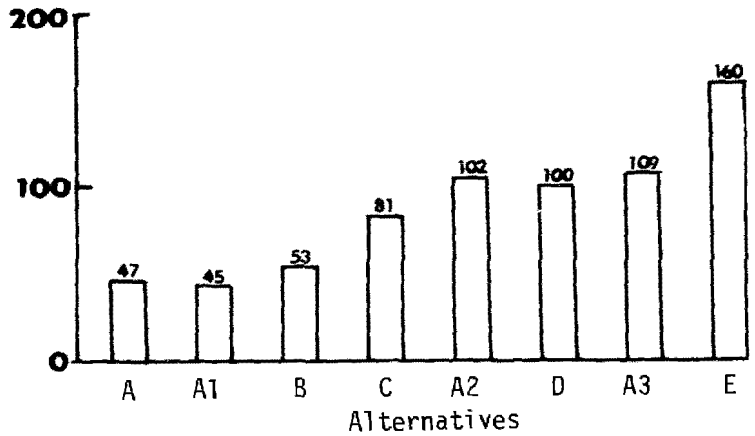


Figure **12**--VCUs rated 4 or 5 for scenery (all character types) allocated to LUD I, by alternative. (The total of VCUs rated 4 or 5 on the forest is 250.)

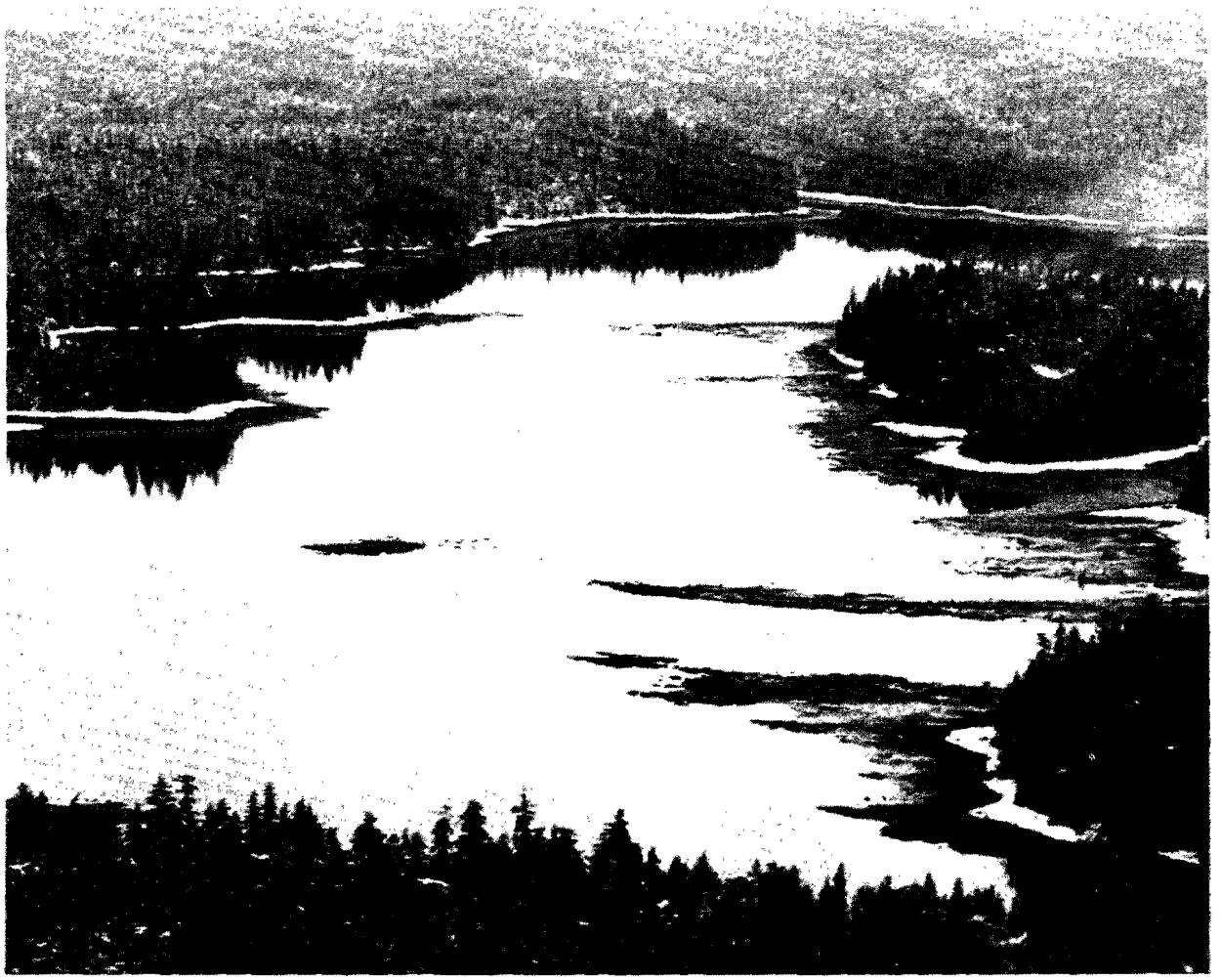


TABLE 15--Percentage of VCUs allocated to LUD I, by character type and by rating for wilderness and for primitive recreation[1/]

Landscape character type and rating[2/]	Total number rated	Percent of VCUs allocated to LUD I by alternative					
		A	B	C	A-2	D	E
YAKUTAT FORELANDS							
Wilderness							
Very high & high	10	0	0	10	80	10	80
Moderate	15	0	0	0	47	0	20
Low	2	0	0	0	50	0	0
Primitive recreation							
High	15	7	7	13	75	47	93
Moderate	22	36	41	3	67	50	64
Low	6	0	0	0	50	0	17
KUPREANOF LOWLANDS							
Wilderness							
Very high & high	37	11	14	27	30	35	65
Moderate	32	9	13	13	16	13	25
Low	48	0	0	0	0	0	2
Primitive recreation							
High	44	9	14	20	23	27	36
Moderate	27	0	0	0	7	0	4
Low	46	7	7	11	11	11	13
COAST RANGE							
Wilderness							
Very high & high	132	20	23	42	65	45	83
Moderate	121	5	7	11	31	12	32
Low	10	0	0	0	0	0	10
Primitive recreation							
High	81	17	22	37	57	46	98
Moderate	108	8	9	3	46	19	39
Low	61	0	3	5	11	7	16
ADMIRALTY-CHICHAGOF							
Wilderness							
Very high & high	52	25	36	50	60	44	81
Moderate	109	3	11	13	35	13	39
Low	27	0	0	0	4	0	4
Primitive recreation							
High	69	19	32	38	49	38	67
Moderate	68	4	9	10	31	10	35
Low	51	0	6	8	29	8	29
BARANOF HIGHLANDS							
Wilderness							
Very high & high	28	18	21	64	21	68	89
Moderate	6	0	0	17	0	33	33
Low	8	0	0	0	0	0	0
Primitive recreation							
High	26	23	23	62	23	69	96
Moderate	9	0	0	33	0	33	33
Low	7	0	0	0	0	0	0
COASTAL HILLS							
Wilderness							
Very high & high	87	8	11	11	15	18	71
Moderate	89	1	1	1	16	3	31
Low	43	0	0	0	0	0	9
Primitive recreation							
High	80	6	10	10	15	20	86
Moderate	96	2	2	2	8	2	23
Low	43	2	2	2	16	2	26

[1/] Data for analysis of A-1 and A-3 not available. [2/] Wilderness ratings: very high & high = 23-28; moderate = 18-22; low = 17 or less. Primitive recreation ratings: high = 4 or 5; moderate = 3; low = 1 or 2.

Under this alternative, the Forest Service could conduct timber management activities in as many as 265 VCUs during the life of this plan, 133 of which are presently roadless. Six others are considered only partially roaded, that is, less than 25 percent developed. Those VCUs to be entered are shown on the DES alternative map. Of the total 4,422,000 acres in these VCUs, about 178,000 acres might be affected by management activities. Some of this acreage is already considered developed.

Alternative A-1

Under Alternative A-1, the following areas and acreages are allocated to LUD I and would be proposed for wilderness classification:

Name	Approximate acres	Landscape character type
Russell Fiord	236,448	CR
Taku Inlet	222,301	CR
W. Chichagof/Yakobi	19,506	AC
S. Baranof	507,088	BH
Admiralty	174,638	AC
Tracy Arm	392,292	CR
Endicott Arm	167,291	CR
Warren	11,353	KL
LeConte	95,720	CR
Misty Fiords	169,467	CR
Thomas Bay	12,249	CR
Petersburg Creek	27,277	CH
Total	1,878,592	
Percent of forest	12%	

No specific wilderness goals were stated by CMAL for its alternative. Those LUD I areas proposed encompass 63 VCUs (about 1,800,000 acres) including 53 having high or very high ratings for wilderness attributes, eight with high timber ratings, 29 with high commercial fish ratings, and none with high ratings for minerals. The total LUD I is about 11 percent of the forest, distributed by character type as follows: Coast Range, 79 percent; Admiralty/Chichagof, 12 percent; Coastal Hills, two percent; Baranof Highlands, six percent; Yakutat Forelands, zero percent; Kupreanof Lowlands, one percent. Because of the nature of this alternative, those VCUs which might be entered for timber harvest during the life of the plan were not determined.

Alternative B

Under Alternative B, the following areas and acreages are allocated to LUD I and would be proposed for wilderness classification:

Name	Approximate acres	Landscape character types
Russell Fiord	265,749	CR
W. Chichagof/Yakobi	199,442	AC
S. Baranof	157,038	BH
Admiralty	310,694	AC
Tracy Arm	402,133	CR
Endicott Arm	208,292	CR
S. Kuiu	145,904	KL
Coronation	19,122	KL
Warren	11,353	KL
Stikine-LeConte	215,989	CR
Misty Fiords	713,859	CR
S. Prince of Wales	145,750	CH
Total	2,795,325	
Percent of forest	18%	

This alternative meets the stated wilderness goals to the extent that 97 VCUs (about 2,800,000 acres) were allocated to LUD I. Seventy-two of the allocated VCUs have high or very high wilderness ratings, 14 have high timber ratings, 15 have high minerals ratings, and 52 have high ratings for commerical fish. Only 18 Percent of the forest is allocated to LUD I; the stated objective is 20 percent. All character types except Yakutat Forelands are represented; about 62 percent of the total occurs in the Coast Range, 11 percent in Admiralty/Chichagof, six percent in Baranof Highlands, five percent in Coastal Hills, and six percent in Kupreanof Lowlands.

Under Alternative B, the Forest Service could conduct timber management activities in as many as 257 VCUs during the life of this plan, 126 of which are presently roadless. Six others are considered only partially roaded, that is, less than 25 percent developed. Those VCUs to be entered are shown on the DES alternative map. Of the total 4,286,000 acres in these VCUs, about 160,000 acres might be affected by management activities. Some of this acreage is already considered developed.

Alternative C

Under Alternative C, the following areas and acreages are allocated to LUD I and would be proposed for wilderness classification:

Name	Approximate acres	Landscape character type
Russell Fiord	275,615	YF & CR
Idaho Inlet	53,395	AC
W. Chichagof/Yakobi	226,876	AC
S. Baranof	410,036	BH
Admiralty	333,356	AC
Tracy Arm	402,133	CR
Endicott Arm	298,387	CR
Tebenkof Bay	64,528	KL
S. Kuiu	122,784	KL
Coronation	19,122	KL
Warren	11,353	KL
Stikine-LeConte	231,055	CR
Etolin Island	52,395	CH
Unuk River	321,062	CR
Misty Fiords	818,566	CR
Anchor Pass	11,954	CR
Petersburg Creek	27,277	CH
S. Prince of Wales	145,750	CH
Total	3,825,644	
Percent of forest	25%	

This alternative meets the stated wilderness goals by allocating 143 VCUs (about 3,800,000 acres) to LUD I. One hundred and eleven of these VCUs have high or very high wilderness attributes ratings, 21 have high timber ratings, 17 have high minerals ratings, and 85 have high ratings for commerical fish. The stated objective of 25 percent of the forest allocated to LUD I is met with representative areas in five of the six character types. About 61 percent of the LUD I area is located in the Coast Range, one percent in Yakutat Forelands, 16 percent in Admiralty/Chichagof, 11 percent in Baranof Highlands, six percent in Coastal Hills, and six percent in Kupreanof Lowlands.

Under Alternative C, the Forest Service could conduct timber managment activities in as many as 228 VCUs during the life of this plan, 98 of which are presently roadless. Six others are considered only partially roaded, that is, less than 25 percent developed. Those VCUs to be entered are shown on the alternative map. Of the total 3,768,000 acres in these VCUs, about 135,000 acres might be affected by management activities. Some of this acreage is already considered developed.

Alternative A-2

Under Alternative A2, the following areas and acreages are allocated to LUD I and would be proposed for wilderness classification:

Name	Approximate acres	Landscape character types
Russell Fiord	328,840	CR
Yakutat Forelands	241,775	YF & CR
Situk River	12,446	YF
W. Chichagof/Yakobi	226,876	AC
Endicott River	102,852	CR
S. Baranof	157,038	BH
Admiralty	1,014,956	AC
Tracy Arm	402,133	CR
Endicott Arm	208,292	CR
Tebenkof Bay	64,528	KL
South Kuiu	99,902	KL
Coronation	19,122	KL
Warren	11,353	KL
Stikine-LeConte	248,856	CR
Karta River	38,671	CH
Misty Fiords	2,262,830	CR & CH
Anchor Pass	11,954	CR
Duncan Canal	168,416	KL & CH
S. Prince of Wales	97,033	CH
Total	5,717,873	
Percent of forest	37%	

This alternative meets the wilderness goals by allocating to LUD I both the immediate wilderness and wilderness study areas proposed by the Carter Administration in February, 1978. The acreages shown may be slightly different from those proposed because the allocations were made along VCU and National Forest boundaries. Two hundred sixty-nine VCUs were allocated to LUD I (about 5,700,000 acres), distributed by character type as follows: Coast Range, 52 percent; Admiralty/Chichagof, 22 percent; Yakutat Forelands, 10 percent; Baranof Highlands, three percent; Coastal Hills, eight percent; Kupreanof Lowlands, five percent.

Under Alternative A-2, the Forest Service could conduct timber management activities in as many as 242 VCUs during the life of his plan, 112 of which are presently roadless. Six others are considered only partially roaded, that is, less than 25 percent developed. Those VCUs to be entered are shown on the alternative map. Of the total 4,057,000 acres in these VCUs, about 133,000 acres might be affected by management activities. Some of this acreage is already considered developed.

Alternative D

Under Alternative D, the following areas and acreages are allocated to LUD I and would be proposed for wilderness classification:

Name	Approximate acres	Landscape character type
Russell Fiord	275,615	CR
Berner's Bay	188,173	CR
Idaho Inlet	53,395	AC
W. Chichagof/Yakobi	226,876	AC
East Baranof	42,203	BH
S. Baranof	410,036	BH
Admiralty	363,138	AC
Tracy Arm	402,133	CR
Endicott Arm	315,411	CR
Tebenkof Bay	64,528	KL
South Kuiu	122,784	KL
Coronation	19,122	KL
Warren	11,353	KL
Stikine-LeConte	231,055	CR
Harding River	66,501	CR
Etolin Island	117,697	CH
Unuk River	321,062	CR
Misty Fiords	958,852	CR
Revillagigedo Island	31,926	CH
Eagle River	43,783	CR
Rocky Pass	49,555	KL
Petersburg Creek	27,277	CH
Sarkar Lakes	32,438	KL
S. Prince of Wales	204,252	CH
Total	4,579,165	
Percent of forest	30%	

This alternative meets the stated wilderness goal by allocating 174 VCUs (about 4,600,000 acres) to LUD I. One hundred thirty-six of these VCUs have high or very high wilderness attribute ratings, 22 have high timber ratings, 21 have high minerals ratings, and 110 have high ratings for commercial fish. The stated objective of 30 percent of the forest allocated to LUD I is met, with representative acres in five of the six character types. About 61 percent of the LUD I area is located in the Coast Range, none in Yakutat Forelands, 14 percent in Admiralty/Chichagof, 10 percent in Baranof Highlands, seven percent in Kupreanof Lowlands, and eight percent in Coastal Hills.

Under Alternative D, the Forest Service could conduct timber management activities in as many as 206 VCUs during the life of this plan, 83 of which are presently roadless. Six others are considered only partially roaded, that is, less than 25 percent developed. Those VCUs to be entered are shown on the alternative map. Of the total 3,347,000 acres in these VCUs, about 120,000 acres might be affected by management activities. Some of this acreage is already considered developed.

Alternative A-3

Under Alternative A-3, the following areas and acreages are allocated to LUD I and would be proposed for wilderness classification:

Name	Approximate acres	Landscape character type
Russell Fiord	255,236	CR
Yakutat Forelands	101,083	YF & CR
Yakutat Beach	22,066	YF
Idaho Inlet	53,395	AC
Mud Bay	55,522	AC
W. Chichagof/Yakobi	417,141	AC
S. Baranof	157,038	BH
Admiralty	1,014,956	AC
Tracy Arm	402,133	CR
Endicott Arm	208,292	CR
Tebenkof Bay	64,528	KL
S. Kuiu	99,902	KL
Coronation	19,122	KL
Warren	11,353	KL
Stikine-LeConte	275,485	CR
Etolin Island	117,698	CH
Unuk River	321,062	CR
Misty Fiord	1,941,768	CR & CH
Revillagigedo Island	34,605	CH
Anchor Pass	11,954	CR
Upper Duncan	48,649	KL
Petersburg Creek	27,277	CH
Karta River	38,671	CH
Duncan Canal	81,465	KL
S. Prince of Wales	97,033	CH
Total	5,878,434	
Percent of forest	38%	

This alternative meets the stated wilderness goals by allocating to LUD I those areas proposed by SEACC for wilderness. Additional lands with high wilderness attribute ratings and low timber ratings which were displayed in Alternative A were also allocated to LUD I. The total LUD I allocation of 228 VCUs (about 5,900,000 acres) contains 163 VCUs with high wilderness attribute ratings, 62 with high timber ratings, 29 with high minerals ratings, and 170 with high ratings for commercial fish. The distribution by character type is approximately as follows: Coast Range, 53 percent; Coastal Hills, six percent; Yakutat Forelands, six percent; Admiralty/Chichagof, 26 percent; Baranof Highlands, three percent; Kupreanof Lowlands, six percent. The total LUD I allocation represents about 38 percent of the forest. Because of the nature of this alternative, those VCUs which might be entered for timber harvest during the life of the plan were not determined.

Alternative E

Under Alternative E, the following areas and acreages are allocated to LUD I and would be proposed for wilderness classification:

Name	Approximate acres	Landscape character types	Name	Approximate acres	Landscape character types
Russell Fiord	296,682	CR	Lake Eva	12,100	AC
Yakutat Forelands	170,164	YF & CR	Redoubt Lake	22,732	AC
Yakutat Beach	22,066	YF	E. Baranof	135,276	BH
Situk River	12,446	YF	S. Baranof	423,334	BH
Point Couverton	933	CR	Admiralty	928,083	AC
Berner's Bay	188,173	CR	Port Snettisham	51,720	CR
Taku Inlet	133,117	CR	Tracy Arm	414,427	CR
Idaho Inlet	53,395	AC	Endicott Arm	434,713	CR
Mud Bay	55,552	AC	Cape Fanshaw	18,647	CR
Upper Tenakee	91,213	AC	Farragut Bay	28,300	CR
Saltery Bay	18,517	AC	Bay of Pillars	28,227	KL
Kadashan	33,641	AC	Tebenkof Bay	64,528	KL
W. Chichagof-Yakobi	238,699	AC	S. Kuiu	164,074	KL
Mt. Edgecumbe	52,882	AC	Coronation	19,122	KL
Stikine-LeConte	239,041	CR	Warren	565	KL
Harding River	146,166	CR	Rocky Pass	82,298	KL
Etolin Island	195,687	CH	Upper Duncan	48,649	KL
Wrangell Island	21,141	CH	Petersburg Creek	27,277	CH
Spacious Bay	38,446	CH	Beecher Pass	20,944	KL
Port Stewart	21,502	CH	Salmon Bay Lake	24,606	KL
Cleveland Peninsula	177,463	CH	Sarkar Lakes	32,438	KL
Anan Creek	37,331	CH	Davidson Inlet	6,350	KL
Unuk River	321,062	CR	Honker Divide	60,677	KL
Misty Fiords	2,022,481	CR & CH	Tonowek Bay	66,889	KL & CH
Revillagigedo Island	76,315	CH	Karta River	38,671	CH
Thomas Bay	70,272	CR	King Salmon Capes	50,463	CH
Yes Bay	42,566	CR	Kasaan	19,258	CH
Eagle River	43,783	CR	S. Prince of Wales	350,606	CH
Anchor Pass	67,390	CR	Essowah Lakes	11,175	CH
			Total	8,474,245	
			Percent of forest	55%	

This alternative meets the stated wilderness goal by allocating 402 VCUs (about 8,490,000 acres) to LUD I. A majority of the presently roadless acres in each character type were allocated to LUD I, thus providing a good representation not only of the broad diversity among character types but also the diversity within the character types. The stated objective of at least 50 percent of the forest allocated to LUD I is met. Approximately 50 percent of the LUD I area is located in the Coast Range, 18 percent in Admiralty/Chichagof, 13 percent in Coastal Hills, seven percent in Kupreanof Lowlands, six percent in Baranof Highlands and six percent in the Yakutat Forelands character type.

Under Alternative E, the Forest Service could conduct timber management activities in as many as 135 VCUs during the life of this plan, 29 of which are presently roadless. Four others are considered only partially road, that is, less than 25 percent developed. Those VCUs to be entered are shown on the alternative map. Of the total 2,073,000 acres in these VCUs, about 65,000 acres might be affected by management activities. Some of the acreage is already considered developed.

Effects on Soils

Soil Erosion

Certain management activities can greatly increase the frequency and magnitude of soil erosion. Logging and road construction pose the greatest threats since the amount of land disturbed for other developments (for example, prospecting, mining, campground and trail construction) is small in comparison.

Landslides can be triggered by removing vegetation or by altering mechanical support (making cutbanks along road alignments). The chance of stream-caused erosion increases greatly when braided stream channels are logged or crossed with roads.

Road construction produces, by far, the greatest opportunity for soil loss and sedimentation. About 90 percent of this soil loss occurs during the first three years after construction. Then the rate of soil loss decreases as vegetative cover is reestablished on slopes and as less soil is readily available to erode.

For the most part, logging and roading will occur in only three landtypes: alluvial lands, valley bottoms and lowlands, and glacial valley walls. These landtypes comprise 8,782,417 acres of the forest and encompass the major valley floors, adjacent lower slopes, and other low local relief lands where soils are deepest and generally most productive. These lands produce the majority of the harvestable timber.

In fact, all the five million acres of commercial forest land fall within these landtypes. Of this total, about three million acres possess no significant soil hazards. A moderate hazard exists on about one million acres, where the potential exists for landslides and stream channel shifts resulting from disturbance and removal of vegetation. Almost one million acres exhibit extreme soil hazard potential. In these areas V-notches occur at frequencies of less than 1/2 mile, a high amount of natural downslope movement exists, and slopes are in excess of 75 percent. Most of these hazardous lands have been placed into the unregulated component, for which no timber harvest is planned.

In the future, logging restrictions aimed at protecting other resources may actually increase the dangers of soil disturbance and erosion. For example, as prime timber lands are set aside for purposes such as recreation, loggers will be forced to harvest a higher proportion of stands on steep slopes. Also, future timber sales will require smaller, more dispersed cutting units and will utilize stands with lower volumes. Thus, more roads will be needed to harvest a given amount of timber. To avoid erosion and sedimentation, the Area Guide policies on soil protection will be strictly enforced.

The possible effects of each alternative on soil erosion can be estimated by comparing the amount of land disturbed by logging and road construction (table 16). In this analysis, each mile of road is assumed to alter 6.75 acres of right-of-way and 1.5 acres for borrow. The projected harvest from the standard and special components will undoubtedly be logged, but only a small fraction of the marginal component is likely to be cut in any alternative.

Alternative A has the greatest potential for increasing soil erosion and sedimentation to lakes, streams, and estuaries. Alternatives A-1, A-2, B, C, D, and E, with their decreasing amounts of projected timber harvest, increased protection of sensitive areas, and subsequent decrease in road construction, afford progressively less opportunity for soil disturbance.

TABLE 16. The amount of soil disturbance, by alternative, that will result from road construction and logging.

Alternative	Roading	Timber component	
		Standard & special	Marginal
	Miles	Acres	
A	351	2,550	17,800	7,500
A-1	345	2,505		
B	312	2,266	16,000	5,000
C	271	1,967	13,500	4,000
A-2	272	1,978	13,300	4,100
D	238	1,724	12,000	3,300
A-3	---	--	--	--
E	92	674	6,500	2,200

-- = data not available

Soil Productivity

Soil productivity can be influenced in a number of ways. Removing the canopy in an old-growth forest allows increased solar radiation to penetrate and warm the soil. The result is a proliferation of rapidly growing forbs, shrubs, and tree seedlings. The total annual biomass production is greater than it was in the slow growing forest. Thus, total soil productivity increases, at least temporarily, after logging.

However, logging may reduce soil productivity in those areas entirely covered with debris (logs, branches, stumps) and in those areas used for roads, landings, borrow sites, etc. In such areas, compaction can reduce aeration and water infiltration and percolation rates. Water then tends to stand on the surface. How long these soils remain unproductive depends upon a number of factors. Thorough cleanup can significantly reduce the damage.

Logging can also alter the soil's nutrient status. Many soils hold a high percentage of their stored plant nutrients in the duff (organic humus) layer on or within a few inches of the surface. Removing or even mixing the duff layer can reduce the supply of available plant nutrients and soil productivity. Without the trees to recycle nutrients, some are lost through leaching; but because of the large accumulations of surface organic matter and the rapid regrowth of vegetation, such losses are negligible. On the other hand, with the increased solar penetration and higher soil temperatures after a clearcut, litter and logging debris decompose faster. This process leads to a temporary rise in available soil nutrients, particularly nitrogen.

The impact each alternative has on soil productivity is directly related to the amount of timber removed and miles of road built. However, the effects will vary widely from location to location, depending on such factors as the kind of yarding system employed (which bears directly on the amount of soil disturbance), soil type, etc. It is, therefore, impossible to predict changes in soil productivity until logging plans and detailed soil maps are available for individual timber sales.

Effects on Water

Timber harvests can affect both water quality and quantity. In southeast Alaska the primary impact is increased sedimentation. Many stream systems are susceptible to increased sediment loads caused by harvest activities. The most sensitive streams are those which naturally produce the greatest amount of sediment, namely V-notch drainages, alluvial fans, and braided stream systems. Roads pose the greatest threat for increased sedimentation from road pioneering work, culvert and bridge construction, cut and fill slopes, road surfaces, and borrow pits.

In general, southeast Alaska streams are not considered to be highly sensitive to temperature changes resulting from timber harvest. Low air temperatures, steep channel gradients, and frequent precipitation tend to keep steam temperatures below the range considered harmful to fish. However, stream temperature may be increased if long strips of shade-producing vegetation are removed from along the southeast to southwest banks of temperature-sensitive streams. The streams most likely to be temperature-sensitive contain organically-stained water or have low channel gradients and southeast to southwest exposures.

The same natural characteristics that keep stream temperatures low also act to maintain high concentrations of dissolved oxygen (D.O.). Dissoved oxygen levels and biochemical oxygen demand may be affected if logging slash is allowed to accumulate in streams; but generally southeast Alaska streams are not considered highly sensitive to D.O. depletion from timber harvest activities.

Nutrient concentrations, particularly nitrogen, have been shown to increase temporarily after timber harvest, but this increase is usually associated with extensive slash burning.

Although temporary changes in water quality can be expected from timber harvest activities, all anticipated changes can be reduced to acceptable levels through proper planning, and enforcement of watershed protection measures during and after logging activities.

Changes in streamflow would probably be negligible. Normally, restrictions on cutting design eliminate the potential for measurably increased streamflow.

In general, the larger the area affected by roading and logging, the greater is the potential for impaired water quality. Thus, Alternatives A and A-1 would have the greatest potential impact on water quality. Alternatives B, A-2, C, D and E, with their decreasing miles of road and acres cut, would have progressively less potential impact.

However, the actual impact is impossible to predict since it will depend on many varied factors such as road location, sources of road building material, operator efficiency, and administrative control. In all alternatives, onsite investigations and development of specific watershed protection measures will be required whenever sensitive landforms and channel systems are encountered. Presently, an active program for monitoring water quality is being conducted to help quantify impact under various natural and man-made conditions. In all alternatives, either the "best management practices" developed by the Alaska Department of Environmental Conservation or equivalent measures developed by the Forest Service will be implemented to control nonpoint pollution from timber harvest activities. The effectiveness of these measures will be evaluated through the monitoring program, and results will be used to determine compliance with existing State water quality standards.

Effects on Mineral Development

An alternative's effect on mineral development is directly related to the amount of wilderness it proposes in key mineral areas. Legally, mineral exploration and development are now allowed in designated wildernesses. According to the mining industry, however, the standards imposed for access and development are so restrictive that what would otherwise be a profitable deposit becomes prohibitively expensive. As a result, financing of mineral operations in wilderness areas has become more and more uncertain, and the industry now considers such areas unavailable for development.

In addition, restrictions will tighten after midnight December 31, 1983. Beginning then, the Wilderness Act of 1964 will prohibit prospecting and filing of new claims on legislated wilderness areas. The mining industry claims this provision will severely limit the discovery of commerical mineral deposits in promising areas where complete mineral data are lacking. On claims established before 1984, mineral investigation and development may continue but under strict control by the responsible State and Federal agencies.

Tongass wilderness areas could possibly be established under enabling legislation more permissive toward mineral development than the 1964 Act. However, in developing the land management plan, it can not be assumed that such special legislation will be either initiated or enacted.

Therefore, a LUD I designation is assumed to place the area under the restraints of the Wilderness Act of 1964. Mineral development in LUD I areas will be severely restricted and may be considered economically unfeasible by the mining industry. In LUD II areas, only the most economically viable discoveries are likely to be developed since this designation, though somewhat more permissive than LUD I, imposes strict controls on road construction and mining. In LUDs III and IV, deposits of commercial value are generally available for development under the guidelines of multiple-use management.

The key question then is, does the alternative allocate highly mineralized areas to LUD I or to LUDs II, III and IV? Of chief concern are the 13 VCUs comprising the best prospects in southeast Alaska: Noranda (VCUs 128C, 133C, 144C) includes deposits of zinc, silver, lead, copper, and gold on north Admiralty Island; Inspiration Development (VCUs 254C, 256C, 257C, 258C) includes deposits of nickel, copper, and cobalt in the Yakobi Island-Bohemia Basin; Chromalloy (VCU 435S) includes barite deposits on Castle Island; Ross-Adams (VCU 692K) has uranium-thorium deposits on Bokan Mountain; and U.S. Borax (VCUs 815K, 818K, 841K, 842K) has molybdenum deposits on Quartz Hill. 1/ In addition, 68 other VCUs are also known to contain minerals of critical or compelling domestic significance (see Minerals Task Force Working Report for details).

1/ Recent claims and exploration on Admiralty Island by W.G.M. Corporation are not discussed since information is not available because of the early stage of exploration.

Alternative A. Only 10 percent of the highly mineralized VCUs are placed in LUD I; and only eight percent, in LUD II (table 17). All 13 VCUs comprising the high-value prospects of Noranda, Inspiration, Chromalloy, Ross-Adams, and U.S. Borax are in LUDs III or IV and thus are available for development. Therefore, Alternative A would probably be acceptable to the mineral industry.

Alternative A-1. None of the 81 high-value VCUs are in LUD I, and only two percent are in LUD II (table 18). A portion of the Noranda prospect, one VCU, is in LUD II; however, the rest of the Noranda claims and all of the other prime prospects are placed in LUD IV. Thus, Alternative A-1 may be preferred by the mineral industry.

Alternative B. Eighteen percent of the highly mineralized VCUs are placed in LUD I; and 14 percent, in LUD II (table 19). None of the prime commerical prospects are allocated to LUD I. However, portions of the Inspiration Development and U.S. Borax claims are in LUD II. Along with Alternatives A and A-1, B might be considered most acceptable by the mineral industry.

Alternative C. Twenty-one percent of the high-value VCUs are placed in LUD I, and 27 percent, in LUD II (table 20). One VCU from the Inspiration claims and one from the U.S. Borax prospect are in LUD I. Another VCU from the Borax claims is in LUD II. Thus, Alternative C would probably be undesirable from the viewpoint of the mineral industry.

Alternative A-2. Thirty-one percent of the high-value VCUs are allocated to LUD I; and five percent, to LUD II (table 21). The Noranda, Chromalloy, and U.S. Borax prospects would be severely curtailed since they are placed totally in LUD I. Inspiration Development, with one VCU in LUD I and three in LUDs III and IV, would be affected to a lesser degree. Only the Ross-Adams claims (LUD IV) are free of severe restrictions. Therefore, the mineral industry would probably oppose Alternative A-2.

Alternative D. Twenty-five percent of the high-value VCUs are allocated to LUD I; and 29 percent, to LUD II (table 22). Prime prospects of U.S. Borax are all in LUDs I and II; Chromalloy's claims are in LUD II; and one of the VCUs from Inspiration Development's claims is in LUD I. Thus, the mineral industry would probably be highly opposed to Alternative D.

Alternative A-3. Thirty-five percent of the high-value VCUs are placed in LUD I; and five percent, in LUD II (table 23). Of the 13 VCUs comprising prime prospects, 12 are in LUD I, leaving only the Ross-Adams uranium deposits (LUD IV) free of severe development limitations. Thus, Alternative A-3 is extremely unfavorable to the mineral industry.

Alternative E. Fifty-four percent of the high-value VCUs are placed in LUD I; and 25 percent, in LUD II (table 24). Among the LUD I allocations are all the VCUs comprising the U.S. Borax and Ross-Adams claims, two of the four VCUs containing Inspiration Development claims, and one of the three VCUs encompassing Noranda prospects. Alternative E would probably be considered least desirable by the mineral industry.

TABLE 17--Allocation of the 81 highly mineralized VCUs by Alternative A (Asterisks indicate VCUs comprising the prime prospects in southeast Alaska).

LUD I	LUD II	LUD III	LUD IV
265C	19C	16C	71C
268C	20C	17C	144C*
271C	107C	28C	168C
564K	497S	32C	254C*
696K	512S	33C	256C*
795K	805K	55C	257C*
796K		126C	275C
		128C*	502S
		133C	503S
		170C	525S
		182C	531K
		258C*	536K
		260C	546K
		324C	555K
		435S*	567K
		448S	569K
		607K	597K
		682K	598K
		683K	610K
		684K	622K
		716K	625K
		748K	645K
		755K	648K
		761K	666K
		763K	673K
		806K	681K
		818K*	692K*
		864K	699K
			701K
			702K
			715K
			719K
			720K
			759K
			762K
			804K
			815K*
			826K
			841K*
			842K*

TABLE 18--Allocation of the 81 highly mineralized VCUs by Alternative A-1 (Asterisks indicate VCUs comprising the prime prospects in southeast Alaska).

LUD I	LUD II	LUD III	LUD IV
	133C	16C	55C
	607K	17C	71C
		19C	128C*
		20C	144C*
		28C	254C*
		32C	256C*
		33C	257C*
		107C	275C
		126C	435S*
		168C	502S
		170C	503S
		182C	525S
		258C*	531K
		260C	536K
		265C	546K
		268C	555K
		271C	597K
		324C	598K
		448S	610K
		497S	622K
		512S	625K
		564K	645K
		567K	648K
		569K	666K
		682K	673K
		683K	681K
		684K	692K*
		696K	699K
		715K	701K
		716K	702K
		761K	719K
		762K	720K
		763K	748K
		795K	755K
		796K	759K
		804K	818K*
		805K	826K
		806K	841K*
		815K*	842K*
			864K
			525S

TABLE 19---Allocation of the 81 highly mineralized VCUs by Alternative B. (Asterisks indicate VCUs comprising the prime prospects in southeast Alaska).

LUD I	LUD II	LUD III	LUD IV
168C	16C	17C	144C*
170C	19C	28C	256C*
182C	20C	32C	257C*
265C	107C	33C	258C*
268C	254C*	55C	260C
271C	512S	71C	503S
275C	607K	126C	525S
497S	666K	128C*	531K
564K	763K	133C	536K
682K	805K	324C	546K
683K	815K*	435S*	555K
684K		448S	567K
696K		502S	569K
795K		692K*	597K
796K		715K	598K
		716K	610K
		748K	622K
		755K	625K
		761K	645K
		806K	648K
		818K*	673K
		826K	681K
		864K	699K
			701K
			702K
			719K
			720K
			759K
			762K
			804K
			841K*
			842K*

TABLE 20--Allocation of the 81 highly mineralized VCUs by Alternative C (Asterisks indicate VCUs comprising the prime prospects in southeast Alaska).

LUD I	LUD II	LUD III	LUD IV
168C	16C	17C	144C*
170C	19C	28C	256C*
182C	20C	32C	257C*
254C*	55C	33C	525S
265C	107C	71C	531K
268C	448S	126C	536K
271C	503S	128C*	546K
275C	512S	133C	555K
497S	607K	258C*	567K
564K	666K	260C	597K
682K	699K	324C	598K
683K	701K	435S*	610K
684K	702K	502S	622K
696K	715K	692K*	625K
795K	716K	719K	645K
796K	759K	748K	648K
815K*	763K	755K	673K
	805K	762K	681K
	818K*	804K	761K
	826K	806K	569K
	864K	841K*	
		842K*	
		720K	

TABLE 21--Allocation of the 81 highly mineralized VCUs by Alternative A-2 (Asterisks indicate VCUs comprising the prime prospects in southeast Alaska).

LUD I	LUD II	LUD III	LUD IV
126C	19C	16C	71C
128C*	20C	17C	256C*
133C	107C	28C	257C*
144C*	512S	32C	502S
168C		33C	503S
170C		55C	525S
182C		258C*	531K
254C*		260C	546K
265C		324C	555K
268C		448S	567K
271C		682K	569K
275C		683K	597K
435S*		684K	610K
497S		716K	622K
564K		748K	625K
607K		761K	645K
696K		763K	648K
755K		805K	666K
795K		806K	673K
796K		864K	681K
815K*			692K*
818K*			699K
826K			701K
841K*			702K
842K*			715K
			719K
			720K
			759K
			762K
			804K
			536K
			598K

TABLE 22--Allocation of the 81 highly mineralized VCUs by Alternative D (Asterisks indicate VCUs comprising the prime prospects in southeast Alaska).

LUD I	LUD II	LUD III	LUD IV
16C	19C	17C	144C*
168C	20C	28C	256C*
170C	71C	32C	257C*
182C	107C	33C	525S
254C*	206C	55C	531K
265C	324C	126C	536K
268C	435S*	128C*	546K
271C	512S	133C	555K
275C	607K	258C*	567K
448S	645K	502S	569K
497S	666K	692K*	597K
503S	699K	719K	598K
564K	701K	720K	610K
682K	702K	748K	622K
683K	715K	755K	625K
684K	716K	762K	648K
696K	759K	804K	673K
795K	763K	806K	681K
796K	805K		761K
815K*	818K*		699K
	841K*		
	842K*		
	864K		
	646K		
	826K		

TABLE 23--Allocation of the 81 highly mineralized VCUs by Alternative A-3 (Asterisks indicate VCUs comprising the prime prospects in southeast Alaska).

LUD I		LUD II	LUD III	LUD IV	
126C	815K*	19C	16C	71C	719K
128C*	818K*	20C	17C	502S	720K
133C	826K	107C	28C	503S	759K
144C*	841K*	512S	32C	525S	762K
168C	842K*		33C	531K	804K
170C			55C	536K	
182C			324C	546K	
254C*			448S	555K	
256C*			682K	567K	
257C*			683K	569K	
258C*			684K	597K	
260C			716K	598K	
265C			748K	610K	
268C			761K	622K	
271C			763K	625K	
275C			806K	645K	
435S*			864K	648K	
497S				666K	
564K				673K	
607K				681K	
696K				692K*	
755K				699K	
795K				701K	
796K				702K	
805K				715K	

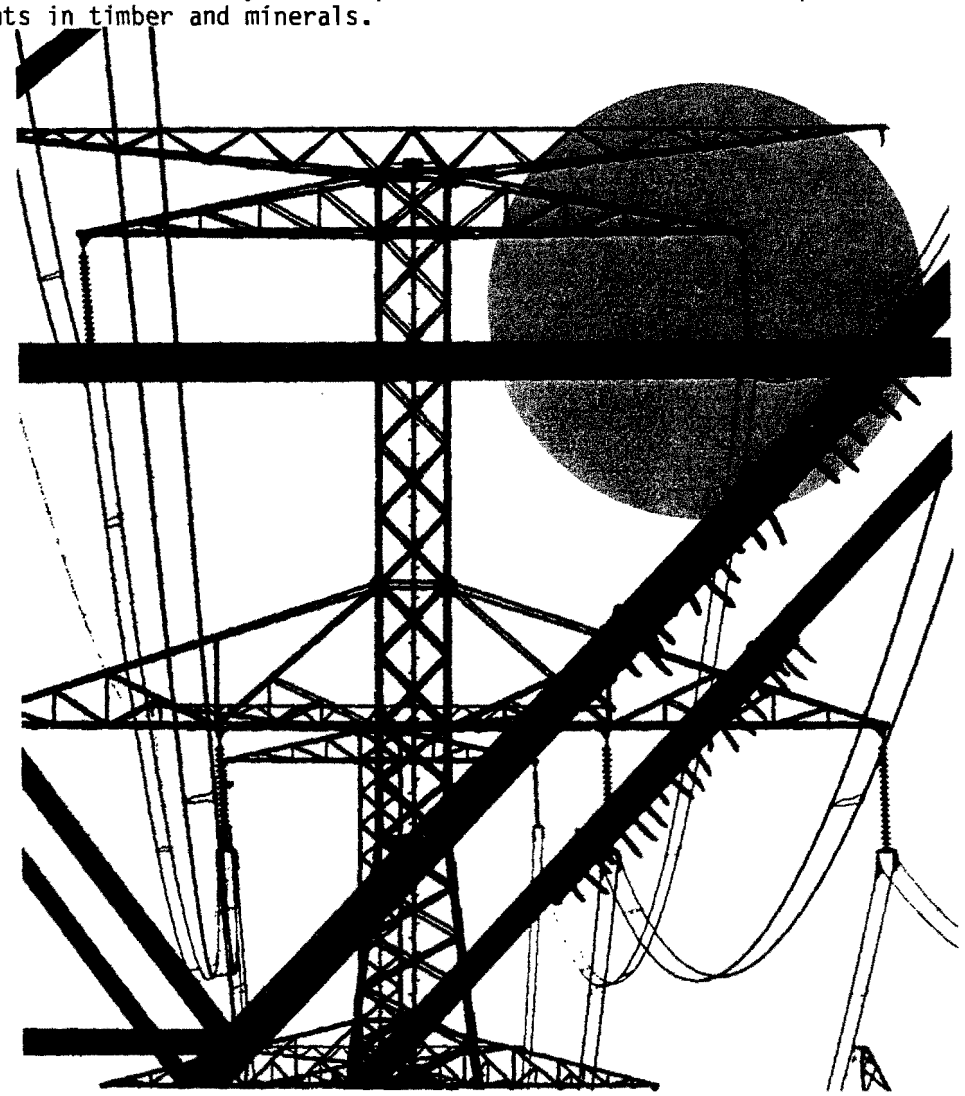
TABLE 24--Allocation of the 81 highly mineralized VCUs by Alternative E. (Asterisks indicate VCUs comprising the prime prospects in southeast Alaska).

LUD I		LUD II	LUD III	LUD IV
16C	795K	17C	32C	257C*
55C	796K	19C	33C	
71C	815K	20C	126C	
144C*	818K*	28C	128C*	
168C	826K	107C	133C	
170C	841K*	260C	258C*	
182C	842K*	435S*	525S	
254C*	864K	497S	531K	
256C*		502S	536K	
265C		512S	546K	
268C		567K	597K	
271C		645K	598K	
275C		666K	610K	
324C		699K	622K	
448S		761K	625K	
503S		762K	648K	
555K		763K	806K	
564K		804K		
569K		805K		
607K				
673K				
681K				
682K				
683K				
684K				
692K*				
696K				
701K				
702K				
715K				
716K				
719K				
720K				
748K				
755K				
759K				

Transportation and Utility Developments

The main transportation system in the region is the waterways now used by ferries, cruise ships, and work boats. Except for possible shore-based facilities, none of the alternatives will affect this basic system of transportation. Each of the alternatives will have different effects, however, on available road extensions and development options, which could in turn block or modify land access to areas of commercial development, subsistence activity support, and local recreational use. At the two extremes, Alternative A would not affect any known road options; Alternative E eliminates virtually all known options (the two exceptions would be the Sitka-Rodman Bay and the Hollis-Hydaburg roads). A-1 would block access up the Unik River, and all other remaining alternatives would in addition block the Stikine River access. Alternative D would additionally block the east side of the Lynn Canal road corridor, and A-2 would block the Petersburg-Kake route.

Alternatives A and B would have no effects on hydroelectric power sites and transmission corridors; E would eliminate four power transmission options and three sites (lakes Grace, Green, and Mahoney). Alternative A-2 and A-3 would eliminate the Lake Grace site for power development and transmission lines of east Stephens Passage, Lynn Canal, and Petersburg to Baranof Island. Other alternatives would have minor impacts, which probably could be overcome. The effects of these impacts upon transportation and utility development would be to limit potential industrial developments in timber and minerals.



Economic Effects

The effects discussed in this section were determined by the Forest Service and the University of Alaska. More detailed information on these effects and the methodologies employed to calculate them is available in a supplemental economic impact report. 1/ In general, the physical data collected and analyzed in other sections of this document are given economic interpretations herein. A more detailed economic impact analysis will be performed on the Proposed Action.

Timber

Each alternative's impact on employment was determined by the University of Alaska based on the assumption that privately-owned timber lands will be harvested on a sustained-yield basis and that 10 percent of the marginal component of National Forest timber will be operable. It can be anticipated that for the first time privately-owned timber will have a profound influence over the southeast Alaska timber market within the next few years. Dictates of the free market system may compel private landowners to harvest timber at an accelerated basis or may reduce the quantity of marginal timber cut from the National Forest. The impact of either of these circumstances will be pursued in greater detail for any alternatives where such differences may be critical.

The effects of various timber harvests on employment throughout the region and within each forest administrative area were compared with the 1970-76 average for several employment sectors. Timber harvest during that period ranged from 408.4 MM bm in the lowest year (1975) to 588.5 MM bm in the highest year (1973). Annual harvests for each year, in other words, approximate the range of harvests under all the alternatives considered, except Alternative E.

For southeast Alaska, the alternatives differ considerably in their ability to retain employment at the 1970-76 average level (table 25). Three alternatives (A, A-1, and B) provide enough timber to increase employment although the market analysis described in "Economic Aspects" indicated that demand may not be sufficient to translate these volumes into additional employment. Alternatives A-2 and C provide enough timber from the National Forest to approximate the current level of employment. In both cases, there could be slight losses in employment if 10 percent of the marginal component cannot be harvested from the Tongass. On the other hand, an accelerated harvest from private lands would quite likely place some of this National Forest volume in surplus. The other three alternatives (D, A-3, and E) would all cause some employment losses if privately-owned timber is harvested on the sustained-yield basis. However, a moderatly accelerated harvest from private lands would maintain current employment levels under D and A-3. A strong acceleration in harvest from private lands could temporarily retain current levels of employment under Alternative E, but this situation would likely encounter marketing difficulties, capital constraints, and long-term implication of periodic timber scarcity. A reduction in construction employment occurs for all alternatives, and in all cases some shifts in employment between sawmilling and logging can be anticipated as round log exports replace cants to some extent.

1/ Preliminary estimates of economic impacts for Tongass alternatives. Rogers, G., and R. Glass.

TABLE 25--Effects of alternatives on timber harvest, timber consumption, and employment, assuming a sustained-yield harvest from private lands and utilization of 10 percent of the marginal timber from the national forest.

Item	1970-76 Average	Alternatives A	A-1	B	C	A-2	D	A-3	E
AVAILABLE HARVEST (MM bm)									
Tongass	520	545	516	488	412	410	367	375	202
Private lands	-	150	150	150	150	150	150	150	150
Total	520	695	666	638	562	560	517	525	352
CONSUMPTION (MM bm)									
Export 1/									
Tongass	N/A	18	18	18	18	18	18	18	18
Private lands	N/A	114	114	114	114	114	114	114	114
Pulp 2/									
Tongass	N/A	203	203	203	203	201	210	191	72
Private lands 1/	N/A	36	36	36	36	36	36	36	36
Cant/Lumber (Tongass)	N/A	324	295	267	191	189	139	166	112
Total	535	695	666	638	562	560	517	525	352
EMPLOYMENT (12-month-average)									
Primary employment 3/									
Commercial fishing	1,430	1,430	1,430	1,430	1,430	1,430	1,430	1,430	1,430
Fish processing	671	670	670	670	670	670	670	670	670
Construction	321	220	220	220	220	220	220	220	220
Government									
Federal	1,404	1,410	1,410	1,410	1,410	1,410	1,410	1,410	1,410
State	2,809	2,810	2,810	2,810	2,810	2,810	2,810	2,810	2,810
Timber									
Logging	1,230	1,590	1,520	1,450	1,290	1,280	1,170	1,200	800
Lumber	565	960	610	540	380	410	300	350	80
Pulp	1,096	1,180	1,180	1,180	1,180	1,180	1,180	1,180	530
Timber transportation	115	160	160	160	120	120	110	120	90
Tourism	683	680	680	680	680	680	680	680	680
Total	10,324	11,110	10,690	10,550	10,190	10,210	9,980	10,070	8,720
Induced employment 3/									
Government									
Federal	1,172	1,240	1,220	1,190	1,140	1,110	1,100	1,090	1,010
State	893	950	930	920	880	870	850	850	800
Local	2,429	2,560	2,510	2,480	2,390	2,390	2,340	2,350	2,180
Construction	605	630	620	630	590	600	580	580	550
Distributive	6,489	6,790	6,750	6,630	6,420	6,400	6,300	6,340	5,920
Total	11,588	12,170	12,030	11,850	11,420	11,370	11,180	11,210	10,460
Total employment	21,912	23,280	22,720	22,400	21,610	21,580	21,160	21,280	19,180
POPULATION	46,991	49,450	48,110	48,110	46,330	46,150	45,280	45,490	42,270

1/ Glass, Ronald J., An Assessment of the Demand-Supply Situation for Southeast Alaska Timber, Working Report, USDA Forest Service in cooperation with the Instituate of Social and Economic Research, University of Alaska, Juneua, Alaska, June 1978.

2/ These volumes refer to pulp logs only. The additional raw materials received in pulp manufacture are in the form of residual chips form cant manufacture.

3/ Employment is divided into primary and induced. Primary employment is created and sustained by forces located outside the region, whereas induced employment is driven by forces located within the region.

Each alternative is likely to affect employment in the forest's three administrative areas differently (principally because of the location of lands to be conveyed to the Native corporations) (table 26). Since much of the private landownership will be located in the Ketchikan Area, employment levels in this area remain at or above current levels for all alternatives except E. By contrast, only three alternatives (A, A-1, and B) maintain current levels of employment for the Chatham Area, and Alternative C is only slightly below the current level. In the Stikine Area, Alternatives D and E show declines in employment; C approximates the present level.

There will probably be a time lag before the private lands actually become productive and influence market conditions. During this period, only Alternatives A and A-1 will provide sufficient sustained-yield timber volumes to maintain employment at current levels (table 27). However, the National Forest Management Act allows flexibility to adjust harvest levels to the extent necessary to retain current employment until timber from private lands enters the market.

Fisheries

It is particularly difficult to assess the probable economic impact any of the alternatives might have on the salmon fishery because of uncertainties regarding future development of aquaculture projects. Since Area Guide policies adequately protect the present level of natural productivity regardless of other resource uses, there is no basis for differentiating the effects on natural salmon output by alternative. On the other hand, protective LUDs may preclude intensive salmon enhancement activities and, thus, may diminish the potential to increase salmon stocks through artificial means or some enhancement programs.

The Tongass alternatives range fom a loss of 35 percent of the potential hatchery sites under Alternative E to the retention of almost all sites under Alternative A. Since feasibility studies and potential financing have not been explored yet, there is much uncertainty regarding which, if any, of these sites might be developed. Nevertheless, the implication is that the removal of any of these sites from consideration before feasibility analysis reduces the opportunity to enhance salmon production in the region.

Although a larger commercial salmon harvest resulting form artificial propagation would likely benefit the region, several factors might act to temper the magnitude of these benefits. Increased salmon harvest will likely diminish the market price for salmon products. Although the gross value of outputs may increase, there could be some severe distributional problems relating to who gains or loses from such a price shift. Fishermen who rely on naturally produced salmon may see the price they receive decrease but find the additional harvests resulting from hatchery production inaccessible to them. This restriction would have a tendency to reduce their income. Employment for fishermen will not necessarily increase as long as the harvest of artificially propagated salmon is incidental to the harvest of wild stocks. Even under these circumstances, however, greater catches should increase employment in the processing sector.

Mineral Exploration and Development

From 1978 through 1980, the demand for mineral products is expected to increase over 1976-77 levels as business investment and construction activity increase. However, if the recovery in economic activity continues at the current pace through 1980, mineral products capacity should pose no problem. Worldwide capacity is increasing in several major commodities such as aluminum, copper, iron ore, nickel,

TABLE 26--Effects of alternatives on timber-related employment assuming a sustained yield from private lands and utilization of 10 percent of the marginal timber on the Tongass

Area	1970-76 average	Alternatives A	A-1	B	C	A-2	D	A-3	E
				(12-MONTH AVERAGES)					
SOUTHEAST REGION									
Primary employment 1/	3,003	3,890	3,510	3,330	2,970	2,990	2,760	2,850	1,500
Induced employment	3,706	4,410	4,240	4,090	3,650	3,590	3,390	3,440	1,920
TOTAL	6,709	8,300	7,750	7,420	6,620	6,580	6,150	6,290	3,420
Percentage of 7-year average empl.	100.	123.7	115.5	110.6	98.7	98.1	91.7	93.8	51.0
Related population	15,391	18,300	17,660	16,980	15,180	15,000	14,130	14,360	7,890
KETCHIKAN AREA									
Primary employment 1/	1,566	1,890	1,870	1,770	1,630	1,700	1,620	1,650	610
Induced employment	1,828	2,210	2,180	2,070	1,900	1,980	1,890	1,930	710
TOTAL	3,394	4,100	4,050	3,840	3,530	3,680	3,510	3,580	1,320
Percentage of 7-year average empl.	100.	120.8	119.3	113.1	104.0	108.4	103.4	105.5	38.9
Related population	7,800	9,420	9,320	8,830	8,120	8,470	8,070	8,220	3,040
STIKINE AREA									
Primary employment 1/	399	510	490	470	380	470	300	410	190
Induced employment	310	400	380	370	300	370	230	320	150
TOTAL	709	910	870	840	680	840	530	730	340
Percentage of 7-year average empl.	100.0	128.3	122.7	118.5	95.9	118.5	74.8	103.0	48.0
Related population	1,385	1,770	1,700	1,630	1,320	1,630	1,040	1,420	660
CHATHAM AREA									
Primary employment 1/	1,038	1,190	1,110	1,090	960	820	840	790	700
Induced employment	1,568	1,800	1,680	1,650	1,450	1,240	1,270	1,190	1,060
TOTAL	2,606	2,990	2,790	2,740	2,410	2,060	2,110	1,980	1,760
Percentage of 7-year average empl.	100.0	114.7	107.1	105.1	92.5	79.0	81.0	76.0	67.5
Related population	6,206	7,110	6,640	6,520	5,740	4,900	5,020	4,720	4,190

1/ Employment in logging, cant and lumber production, pulp processing, and timber transport.

TABLE 27--Effects of alternatives on timber harvest, timber consumption, and employment, assuming a no harvest from private lands and utilization of 10 percent of the marginal timber from the national forest.

	Alternatives							
	A	B	C	D	E	A_1	A_2	A_3
AVAILABLE HARVEST (MM bm)								
Tongass	545	488	412	367	202	516	410	375
CONSUMPTION								
Export	18	18	18	18	18	18	18	18
Pulp[1/]	239	239	239	239	114	239	239	227
Cant/lumber	288	231	155	110	70	159	153	130
TOTAL	545	488	412	367	202	516	410	375
EMPLOYMENT (12-month average)								
Primary Employment								
Commercial Fishing	1,430	1,430	1,430	1,430	1,430	1,430	1,430	1,430
Fish Processing	670	670	670	670	670	670	670	670
Construction	220	220	220	220	220	220	220	220
Government								
Federal	1,410	1,410	1,410	1,410	1,410	1,410	1,410	1,410
State	2,810	2,810	2,810	2,810	2,810	2,810	2.810	2,810
Logging	1,260	1,120	960	840	470	1,190	950	870
Lumber	870	460	300	220	80	560	320	270
Pulp	1,180	1,180	1,180	1,180	530	1,180	1,180	1,180
Timber Transportation	130	120	90	80	50	130	90	90
Tourism	680	680	680	680	680	680	680	680
TOTAL	10,660	10,100	9,750	9,540	8,350	10,400	9,760	9.630
Induced Employment								
Government								
Federal	1,210	1,160	1,110	1,060	980	1,180	1,070	1,060
State	900	870	840	810	760	880	820	810
Local	2,430	2,360	2,270	2,220	2,080	2.395	2,260	2.230
Construction	610	600	570	560	530	600	580	560
Distributive	6,500	6,340	6,120	6,000	5,680	6,450	6,120	6,040
TOTAL	11,650	11,330	10,910	10,660	10,030	11,500	10,850	10,700
TOTAL EMPLOYMENT	22,310	21,430	20,660	20,200	18,380	21,700	20,610	20,330
TOTAL POPULATION	47,200	45,860	44,130	43,080	40,430	46,560	43,910	43,310

1/ Includes pulp logs only. Chips processed by cant manufactures provide additional raw materials for pulp manufacturers.

zinc, chemicals, and steel. The United States proportion of world capacity is expected to remain about the same through 1980. Thus, failure to meet the demand for mineral materials through 1980 will occur only if there is an unexpected boom in economic activity or runaway inflation, or if political factors influence the market allocation of mineral raw materials and products. Nationalizations, international commodity agreements, and political unrest all have the potential to affect minerals availability.

The outlook beyond 1980 is less certain because of the timing of supply expansions; they must be neither premature nor late in relation to demand levels. For the consumer, late supply expansions are of more concern since these commonly increase the pressure to raise prices because of shortages. Events or trends that tend to increase uncertainty for investors in mineral production will tend to delay investments beyond the most desirable time to minimize shortages. Political unrest in mineral-rich areas, constraints on land availability for mineral exploration and development, changing tax and regulatory policies, legal uncertainties, and fluctuations in governmental policies all increase uncertainty for the investor and thus dampen investment incentives.

As a result of the Alaska Statehood Act and the Alaska Native Claims Settlement Act (ANCSA), virtually all the unleased Federal land area of southeast Alaska has been partly or in some cases wholly closed to further mineral location and leasing pending completion of land selections by the Native corporations and the State. Under its statehood act, Alaska may acquire up to 104.35 million acres of Federal land by 1984. The village and regional Native corporations are authorized to select 40 million acres under the settlement act. ANCSA also authorizes additional withdrawals of Federal lands for consideration by Congress for inclusion in national parks, wilderness, wildlife refuges, national forests, wild and scenic river systems. These withdrawn lands may be rich in mineral resources. A study by the Bureau of Mines concluded that every D-2 area either contained potentially valuable mineral deposits, was located within a favorable zone for mineralization, or was near such deposits. These are also areas of nationally significant natural, scenic, and cultural values.

Because of the significant time delays before these lands are open to development, the withdrawals constitute a major, but perhaps only temporary, constraint to development of southeast Alaska's mineral resources. As a result, some of the large exploratory concerns have stated that there will be a decline in their working force and efforts for 1978 and 1979 or until land decisions are made. Resource Associates of Alaska, Inc., has reduced its 1978 work force to less than half its 1977 level and anticipates further reductions in 1979. Inspiration Development Company has indicated that until the future of the area is decided, additional expense for further testing cannot be justified.

Some of this decline may be offset by the addition of new concerns entering southeast Alaska, such as Mapco.

Government Employment

Government at all levels (Federal, State, and local) plays an important role in the region's economy. For example, during the base period 1970-76 this category accounted for 39 percent of total employment. The percentage is so high because of the location of the State capital at Juneau and the continuing expansion in State and local government activities as a result of revenues from the oil and gas industry and induced tax revenue increases from other support industries.

In analyzing changes in government employment, it is necessary to classify employment into primary (Statewide function) and support (induced or local)

employment. The effects of implementing any of the alternatives will appear in the second category, support or induced government employment. The range of effects among alternatives is relatively narrow. Alternative A would generate the most employment. Assuming a sustained-yield harvest from Native lands, total government employment under alternative A would increase about five percent above the average level for 1970-76 (an increase of 440 jobs for the regions). Alternative E would have the greatest adverse effect upon employment levels. Assuming no harvest from Native lands, Alternative E would result in a six percent decrease in total governmental employment from the base period average (a loss of 490 jobs in the Region as a whole). 1/

On the other hand, the dynamics of change within the government sector itself would have a much greater effect upon levels of employment in this sector and in turn, upon land use requirements within the region. During 1970-76, Federal civilian employment declined at an average annual rate of 1.7 percent, and military employment declined at 6.7 percent. Primary State government employment increased at an annual average rate of 7.9 percent, and regional and local government employment rose at 5.4 percent. Assuming that for the immediate future Federal employment remains constant at its 1976 level, that central State employment increases at an annual rate of six percent (an assumption used in other studies of the future of the State), and that regional and local employment increases at four percent, the level of government employment would have increased by 1990 to 181.5 percent of 1976 levels. If induced employment in other categories is added, this calculation suggests that by 1990 a total of 5,730 jobs would have been added to the region with a related additional population of 12,300 persons. The addition of this many people to the population base, most of whom would be located within the Juneau area, has very important land use implications.

The situation would change dramatically if the State capital is moved from Juneau by 1990, and only regional and local government jobs remain. Assuming that a full capital move is made and the assumptions as to rates of change made above apply, total government employment for the region would decline by 37 percent between 1976 and 1990. Adding the related induced employment in other categories, this situation would result in a total loss by 1990 of 2,590 jobs and 5,560 persons from the region's population. Other possible resource-based economic developments would not begin to offset these losses.

Changes in Gross Regional Product

The most comprehensive measure of a region's income and productive output is the gross regional product.

This is the total value of all goods and services produced within the region over a specified period of time, or the sum of all factor costs used in production. The estimated past and projected future gross regional products were calculated for southeast Alaska by the University of Alaska, Institute of Social and Economic Research by using a regional economic model (identified under the Man In The Arctic Program "Map models"). Price changes because of inflation are intended to be removed by use of constant dollars (in this instance 1958 price deflators appropriate to each industry are used to render results directly comparable to the U.S. gross product calculations). During the 1970-76 base period, real gross product increased from $148.1 million in 1970 to $206.8 million in 1976, a 40 percent increase in real productive outputs. The categories of most rapid increase were State and local

1/ The above and all subsequent calculations of employment and population changes are based on the area models in Socioeconomic Overview p. 26-36, 60-61.

government and "distributive" industries (transportation, communications, public utilities, trade, services, etc.). Value added by lumber, wood, and pulp manufacturing rose from $38.1 million to $49.4 million, and value added by forestry and fisheries (harvesting only) rose from 7.1 million to 9.5 million in 1958 dollars.

Changes in the gross regional product resulting from the various alternatives would range from a decrease of 8.1 percent to an increase of 88.9 percent. The low case assumes that Alternative E is chosen, there is no harvest from Native lands, other primary industries do not expand, induced government employment increases at the projected rates for the State, and the full capital move occurs. The high case assumes development in forest products approximating the full utilization of the available harvest under alternaitve A, sustained-yield basis harvest from Native lands, one major mineral development, and no capital move. Projections were made for these two cases from 1976 to 1990. In the low case, 8.1 percent drop in gross product would include a 44.7 percent decrease in real value of wood and pulp output. In the high case, 88.9 percent increase in real gross product reflects an 18-fold increase in mining, a 72.5 percent increase in wood and pulp manufacture, and a 77.2 percent increase in State government.

An intermediate case was also made which assumes a timber harvest equal to the 1970-76 (approximating timber supply under Alternative A with no Native harvest or under Alternative C with Native harvest), no increases in mineral or other resource industries, and no capital move. The status quo scenario indicates an increase of 47 percent in real gross product between 1976 and 1990, primarily because of increased State government and induced activities (Rogers and Hart 1978, p. 72-77).

Tourism and Recreation

Estimated employment in tourism for the region rose from an annual 12-month average of 480 jobs in 1970 to 920 in 1976. These estimates are based on a survey of that portion of transportation, trade, and services that was directly attributable to tourists in 1975, and on the annual trend of increased summer employment in these firms between 1970-76. It is impossible to relate the effects of implementing the alternatives to probable future changes in this employment, as much of the present volume of tourism is made up of passive cruise activities. As long as the main steamer or ferry lanes and the principle destinations (Glacier Bay and the Forest Service visitor center areas) are not adversely affected by forest products and mineral developments, this portion of tourism will not be seriously affected. Rather, it is influenced primarily by the external forces of national income changes, leisure-time trends, demographic factors, development of alternative tourist areas, etc. The more active portion of the present tourist trade is represented by independent travelers on the ferry and airline systems who reach recreational destinations by campers, small boat, or backpacking. The availability and access to a wide variety of different recreational resources or opportunities will have a direct effect upon future trends in this sector of tourism.

Recreation at the local level has important amenity values. The existence of a large number of privately owned recreational vessels, as well as the availability of commercial vessels for off-season use, indicates the degree of local outdoor recreational activities as these vessels provide the most common means of access. Sales and services employment generated by the maintainance of this recreational fleet and employment that is identified with the maintenance of tourism (sporting goods, charter services, etc.) can be assumed to make significant contributions to local economies. The future trends in local recreation activities will be affected by the continued availability of recreational use areas and ready access to them in the form of trails, shelters, boat launching facilities, etc. More important, however, these activities are a direct functon of local population and, therefore, are determined by changes in local employment levels. Thus, how an alternative affects employment determines in large measure how it affect local recreational activities.

ANALYSIS OF SOCIAL EFFECTS

Introduction

Method of Collecting Data

To provide consistency with the RARE II process, the RARE II methodology for social analysis was used, with slight modifications, to analyze the social effects of TLMP alternatives. The RARE II analysis focuses on social effects resulting from individual roadless area classification as wilderness or as nonwilderness. The TLMP social analysis was modified to focus on communities and impacts upon them as a result of implementing the alternatives.

Data were developed at the local level to identify the social impacts that might be experienced by 28 southeast Alaska communities, or subgroups within these communities, as a result of alternative land management decisions. Information gathered by Forest Service personnel was supplemented by the University of Alaska Institute for Social and Economic Research. Through interviews with community residents, it was possible to obtain indications of citizen views: satisfaction with lifestyle, perceptions of the effects of the alternatives, and approval or disapproval of Forest Service programs.

This information was summarized in the draft environmental statement and recirculated to the communities. Reviewers of the document were encouraged to validate, modify, or correct the analysis. The resulting Analysis of Social Effects reflects the additional data provided through the review period. Space limitations preclude a lengthy presentation of this information, but the full social analysis data are on file for public inspection in the Forest Service regional office in Juneau.

Assumptions

Analysis of social effects was undertaken with two basic assumptions. First, until the management of Native land selections in southeast Alaska is fully determined, it is impossible to project a final land ownership pattern, the degree of resource development, or resulting social impacts which the communities may experience in the future. However, more decisions by the Native corporations are now known than were available at the time the draft ES was presented; this additional information is reflected in the analysis of social effects. Secondly, a combination of factors in southeast Alaska produces very close association of communities with the land and its resources. Livelihoods and lifestyles are intimately linked to the natural environment to a degree rarely found in communities adjacent to National Forests in the lower-48. This does not mean that all communities of southeast Alaska are dependent upon specific land allocation and management on the Tongass; in fact, several communities will remain largely unaffected regardless of decisions reached in the Tongass Land Management Plan. However, the close association of residents with public lands does mean that planning is viewed often with intense citizen interest. The following analysis of social effects of the alternatives discusses both the perceptions of the communities and the probable effects as projected from the data. In cases where perceptions of effects and conclusions from the data differ, the divergence is pointed out.

Data Collected

Social Variables: Four main social variables were considered: population change and public feeling about that change; the symbolic meaning attached to particular

geographic areas; recreation use patterns; and minority concerns. In some instances, Tongass allocation will also affect other social variables. Therefore, where appropriate, data were collected and analyzed on the following additional social variables: sense of local control, community identity, lifestyles, housing, and community services. These social variables are not meant to be all-inclusive; rather they indicate some social and human considerations that are relevant to the decisions being made through the TLMP process.

Transportation and Utility Development: It was recognized, also, that effects of Tongass management on transportation and utility development are of concern to all regional communities. The main transportation system in the region is the waterways now used by ferries, cruise ships, private recreation craft, and work boats. Except for possible shore-based facilities, none of the alternatives will affect this basic system of transportation. Each of the alternatives will have different effects, however, on available road extension and development options. This could, in turn, block or modify land access to areas of commercial development, subsistence activity, and local recreational use.

At the two extremes, Alternative A would not affect any known road options; Alternative E eliminates virtually all known options (the two exceptions are the Sitka-Rodman Bay and the Hollis-Hydaburg road corridors). A-1 would block access up the Unik River, and all other remaining alternatives would, in addition, block the Stikine River access. Alternative D would additionally block the east side of the Lynn Canal road corridor and A-2 would block the Petersburg-Kake route.

Alternatives A and B would have no effects on hydroelectric power sites and transmission corridors; E would eliminate four power transmission options and three sites (lakes Grace, Green, and Mahoney). Alternatives A-2 and A-3 would eliminate the Lake Grace site for power development as well as transmission lines on east Stephens Passage, Lynn Canal, and Petersburg to Baranof Island. Other alternatives would have minor impacts which probably could be overcome. The effects of these impacts upon transportation and utility development would be to limit potential industrial developments and minerals.

Social Effects on Communities

Chatham Area

The Chatham Area contains 14 communities that are addressed in the social analysis. They are Angoon, Elfin Cove, Funter Bay, Game Creek, Gustavus, Haines, Hoonah, Juneau, Pelican, Port Alexander, Sitka, Skagway, Tenakee Springs, and Yakutat.

Seven of these communities--Angoon, Elfin Cove, Funter Bay, Pelican, Port Alexander, Tenakee Springs, and Yakutat--exhibit certain similarities in lifestyle and, therefore, orientation to land management options. Although widely scattered in southeast Alaska and differing in historical backgrounds, these small villages are all fishing communities with strong subsistence use of surrounding areas. Recreation is usually indistinguishable from collecting food: hunting, fishing, setting crab pots, gathering herbs and berries, etc. Many residents prize the relative isolation of their communities, value local and personal independence, and generally oppose any major changes, particularly in the direction of increased development or population. Prime interest of these communities is in management of surrounding areas where use of the land often assumes symbolic importance to residents.

Angoon: The characteristic social values of Angoon are generally supported by Alternatives A-2, A-3, and E which propose wilderness classification for Admiralty

Island. Other alternatives, by permitting timber harvest on portions of the island, would negatively affect the expressed community values and lifestyle.

Elfin Cove: Alternatives A-3, B, C, D, and E introduce no major management changes to areas near the community and, therefore, would support expressed values. Alternatives A, A-1, and A-2, by proposing LUD IV designation of northern Chichagof and Yacobi Island, would be received negatively as impacting the fisheries resource, diminishing isolation, and damaging the wildlife and scenic values of areas significant to residents, such as Idaho Inlet and Mud Bay.

Funter Bay: Most residents draw their livelihoods from fishing and subsistence activities. Although little input from this community has been received, it is assumed that both intensive timber harvest on Admiralty (Alternative A-1) and extensive wilderness designation (Alternatives A-2, A-3, and E) would be perceived as restricting resident use of the island for hunting, fishing, and marine-oriented activities. Some residents favor minerals development on northern Admiralty and welcome this potential growth opportunity for the community; others express a no-growth perspective.

Pelican: Only Alternatives A-3 and E would avoid impacts to Pelican by limiting timber and mineral development in Lisianski Inlet and surrounding areas; even these, along with A-2, could increase Pelican's population slightly in response to additional tourism. Alternative C was endorsed by some residents and elected officials with one change, to place the southern entrance to the Inlet in LUD II. Alternatives A, A-1, and B appear to conflict most with Pelican's value system through timber and mineral development leading to population growth, fisheries impacts, and reduced wildlife.

Port Alexander: Social effects here are measured for impacts on isolation and the troll fishery. Alternatives A-1 and E give wilderness designation to all areas around this community. Other alternatives allow for fish hatchery development, and, if intruducing a net fishery, would encounter strong resistance by current residents. Providing that southern Baranof Island and Tebenkof Bay on Kuiu Island are retained in a roadless category, possible social impacts to Port Alexander are more likely to result from future decisions by the State of Alaska concerning such issues as: limiting hand trolling, use of State selected land adjacent to the community, or hatchery development nearby.

Tenakee Springs: Alternatives C, D, and E--particularly the latter two-- are most supportive of the quiet lifestyle in this predominantly retirement community. The majority of residents oppose Alternatives A, A-1, A-2, A-3, and B because of the amount of logging activity which they propose for Tenakee Inlet. Even those residents who depend upon the timber industry for employment (or indirectly feel this dependence through increased trade, stability to the school system, etc.) feel concern at the housing impacts which a population increase would present. All alternatives except E would theoretically permit construction of a road connection between Tenakee and Hoonah which is almost universally opposed by Tenakee Springs residents; but since there are no Forest Service plans to construct this road, this factor does not appear to be determinant in evaluating the merits of each alternative. Residents stress that their subsistence lifestyle is more than a conceptual commitment to a simplified way-of-life; subsistence is essential for many residents. An acceptable alternative must, therefore, pose minimal impacts to fishing and hunting resources in the Inlet.

Yakutat: Like the five communities previously discussed, Yakutat is a fishing-oriented community with heavy subsistence dependence on the land. Similarly, timber harvest is viewed by most residents as a negative influence on their community; they are quick to point out that previous logging in the Yakutat area provided no benefits, such as employment, to local residents. Consequently, Alternatives A, A-1, B, C, and D would be opposed in Yakutat because of the timber activities proposed. At the same time, Alternatives A-2, A-3, and E are unacceptable to the degree that they

might affect existing cabins which are used by subsistence hunters and fishermen. Alternative B bears some similarities to the community's own proposal for management of surrounding lands, prepared by the Citizen's Involvement Group in July, 1977. Their preferred alternative favors wilderness management of the Russell Fiord-Nunatak Fiord area to the north, with LUD II management of the Yakutat Forelands; many residents stress that fish camp special use permits, particularly at Dry Bay, should be allowed to continue, including traditional access by roads across the Forelands.

Four communities on the Chatham Area--Game Creek, Hoonah, Juneau, and Sitka--expressed support of alternatives which provide for substantial commodity development. For residents of Game Creek and Hoonah, timber employment promises economic opportunity which is strongly desired. For elected officials of Sitka and Juneau, as well as many residents, timber employment and other commodity development of the National Forest are viewed as crucial to the continued economic well-being of the community and the region. It is very important to note, however, that in most southeast Alaskan communities--and especially in the larger communities of Juneau and Sitka--there are a wide variety of interests, issues, and concerns to be addressed. Thus, while official endorsement of specific alternatives was received from each of these communities, many responses from individuals and organizations expressed other views and endorsed other alternatives.

Game Creek: The objectives of the Mt. Bether Bible Community at Game Creek result in several land dependencies. First, the group is seeking to establish an economic support base for missionary activity in Alaska. Agriculture is providing community subsistence and some produce for sale, particularly in nearby Hoonah. Similarly, fishing is now a subsistence activity but is viewed as a potential commercial enterprise. Many residents supplement these subsistence activities with jobs in Hoonah, at a variety of trades, and the community as a whole continues to seek employment opportunity. Logging jobs, road construction, fisheries enhancement, and continued use of National Forest timber for local construction and kiln-dried food processing would all be favored. At the same time, the community is seeking to establish a unique setting for family life and education of their children. A degree of isolation, described by residents as a "buffer", is required to meet this objective. The community has expressed endorsement of Alternative C as a balance of land uses which best meets their objectives. All other alternatives are viewed as too extreme, with unacceptably severe impacts either on employment in the region or on natural resources.

Hoonah: Anticipated future harvest of Native selection lands, combined with desire for increased employment and an expanded economy, lead community officials, corporation leaders, and the majority of Hoonah residents to favor alternatives which promote development on northern Chichagof Island. However, since all alternatives except E permit the road system and related development sought by many in the community, distinction between the alternatives is more appropriately based on differing impacts to fisheries values (still very important to this commercial fishing community); differing impacts on tourism development (sought by the community); and differing management of favored hunting and fishing areas, such as Mud Bay-Idaho Inlet to the northwest. Alternatives A, A-1, and A-2, by permitting intensive LUD IV harvest of Mud Bay-Idaho Inlet, would negatively impact this favored area. Alternatives A-3, B, C, and D, by providing LUD II, III, or IV management in Idaho Inlet-Mud Bay, along with resource protection (with or without logging) in areas adjacent to Hoonah come closer to meeting the expressed interests of Hoonah residents. The elected community officials have endorsed Alternative C while the Village Corporation endorsed the CMAL alternative.

Juneau: A similar mix of responses was received from Juneau. Here, too, the official response was in favor of the CMAL alternative, based on increased commodity use of the Forest (both timber and minerals development) and on the expressed desire

for more developed recreational opportunities. At the same time, organizations within the community express strong support of conservation goals and endorsed alternatives A-2, A-3, C, D, or E, for their additional resource protection throughout the Tongass. Proximity to Admiralty Island gives Juneau residents a particular interest in management of that area; responses were mixed between individuals strongly in favor of full wilderness status for Admiralty (best met by Alternatives A-2, A-3, and E) and those desiring continued uses of portions of Admiralty for recreation, minerals development, or other activities perceived as incompatible with wilderness management. Some responses expressed special concern for proposed road construction between Juneau and Haines (blocked by Alternative A-2) and in Taku Inlet (prohibited in Alternative E). It should be stressed that the ultimate impact of TLMP alternatives on Juneau will depend to a great extent on the final decision concerning the capital move. Should Juneau lose a substantial portion of its government-based economy, the need for diversification and new employment sources would be acute; at that point, decisions concerning minerals development on Admiralty Island, timber harvest on adjacent mainland areas, or facilities development to increase tourism would be of greater importance to Juneau than is now the case.

Sitka: Reflecting the current economic dependence of Sitka upon pulp mill employment, the elected officials, spokesmen for a number of community organizations, and many individual residents strongly supported Alternative A-1, the CMAL proposed alternative. Some who commented in support of this alternative indicated that their judgment was based on preference for the recreation management proposed by CMAL. At the same time, Sitka's economy is diversified, with a large number of commercial fishermen, a growing tourist and service-related industry, and substantial numbers of government employees. As a result, many residents and community organizations supported alternatives which were percieved as providing greater resource protection and/or more desirable recreation opportunities through roadless management. These Sitkans preferred Alternatives A-2, A-3, C, D, or E.

Three communities on the Chatham Area, because of their proximity to non-National Forest lands, will experience few impacts from any of the alternatives.

Gustavus: Adjacent to the Glacier Bay National Monument, Gustavus draws its support from tourism and utilizes, primarily, the Monument lands to the north for recreation. A few residents, because of their occupations as recreation guides, have expressed strong opposition to timber harvest throughout the Tongass. Residents might also be affected, and oppose timber harvest on Lemesurier Island or Mud Bay on Icy Straits, to the south of the community.

Skagway: Situated at the northern tip of Lynn Canal and adjacent to a new State Park, this community is developing a substantial tourist trade which will increase with road linkage to the interior in the near future. Decisions concerning the Tongass do not substantially affect this community although it is generally felt that roadless area management of Lynn Canal, traversed by many visitors to the community is compatible with Skagway's interests.

Haines: Like Gustavus and Skagway, Haines lies at some remove from National Forest lands and is unlikely to experience major effects from any of the alternatives. However, unlike the other two communities, Haines is now experiencing severe economic dislocation from the closure of both local mills. Opening of the State road to Skagway will probably reduce Haines' economy further as tourists are drawn to the new entry into interior Alaska. Thus, many residents, elected officials, and business organizations endorsed Alternative A-1, the CMAL proposal, and others supported Alternatives A, B, and C, with the anticipation that the slight increase in cant production through these alternatives might assist Haines. On the other hand, some residents--seeking options to develop a recreation and tourist-based economy--measured the alternatives for their potential to attract visitors; these responses supported

alternatives which permitted a road connection to Juneau and/or recreation management of the Endicott River drainage and Lynn Canal.

Stikine Area: The Stikine Area includes four communities addressed in the social effects analysis.

Kake: This community would experience some population increase through implementation of all alternatives except E. Because this growth implies increased employment and forestry training for local residents, the change is viewed favorably by most Kake residents. Plans by the village Native Corporation to develop its selected timber lands furthers local support for development of adjacent National Forest lands. Extensive subsistence use of south Admiralty and Kuiu Islands acquires special significance for Kake residents in the areas of Rocky Pass, Tebenkof Bay, the Bay of Pillars, and Port Camden. Expectation that Kake would favor special protection of these areas was not substantiated by comments on the DES; response indicates that the community considers management regulations and guidelines for LUDs III and IV developmental activities as adequate to protect resource values and historical sites in these special areas.

Kupreanof: This community is characterized by a desire for local control with special concern for areas with recreational and symbolic significance to residents. These areas--Petersburg Creek, Duncan Canal, Rocky Pass, Stikine-LeConte, Tebenkof Bay, and Lindenberg Peninsula--are given the protective status favored by Kupreanof in Alternatives A-2, A-3, C, D, and E. Alternatives A-3 and E are favored, as well, for roadless land allocation blocking a Kake-Petersburg road connection, opposed by Kupreanof.

Petersburg: Public perception of the TLMP alternatives varies in Petersburg because of the variety of interests and occupations of residents. Some, for example, favor Alternatives A and A-1 because they retain the option of a transportation corridor through the Stikine River drainage; others oppose these alternatives for the same reason. Similarly, many residents oppose Alternatives A-3, D, and E which would reduce logging-related employment and result in some population loss for Petersburg. Others, favoring a return to a simpler lifestyle and seeking enhancement of the fisheries resource, endorse these same alternatives. Comment by elected officials was strongly in favor of Alternative A-1, perceived as the best option to sustain local employment and economic standards.

Wrangell: Residents generally favor Alternatives A and A-1 as maximization of the timber industry and local employment. They also approve road development for recreational access, including a Stikine River road corridor. Facing the conclusion of the Pacific Northern Timber sale in 1981, the Wrangell mills will soon be dependent upon independent timber sales or sawmill quality logs from the Alaska Lumber and Pulp long-term sale. Consequently, the community opposes Alternatives A-3, D, and E which would restrict timber industry development and reduce future volumes offered.

Ketchikan Area

The social effects section analyzes ten communities located on the Ketchikan Area. They are Craig, Hydaburg, Hyder, Kasaan, Ketchikan, Klawock, Metlakatla, Meyers Chuck, Port Protection-Point Baker, and Thorne Bay.

Six of these communities, although differing is size and historical backgrounds, favored alternatives which provide sustained or increased timber employment. Some communities, such as Craig, Klawock, and Metlakatla, expressed intense concern about the capacity of the alternatives to provide timber for small local mills through the Small Business Administration sale program.

Craig: Dependent upon fishing and timber employment through the Annette Hemlock Mill at Klawock, Craig residents strongly endorsed Alternative A-1 as necessary to sustain employment. Elected officials, objecting to the assumption that fishing and timber interests might vary, state that adequate fisheries protection exists under developmental land use designations. The community expresses the view that timber harvest should be evenly distributed throughout the National Forest and not overly concentrated on Prince of Wales Island.

Hydaburg: Alternatives A, A-1, and B are perceived as most compatible with the community's interest in establishing a small local mill. Interest by the Haida Corporation in developing timber resources on selected lands is supported by these commodity-oriented alternatives which afford opportunity for cooperative development.

Ketchikan: Strong endorsement of Alternative A-1 was received from Ketchikan elected officials, organizations, and individuals. With heavy dependence upon the wood processing industry for employment, Ketchikan views all alternatives with amenity-emphasis as threatening to the present and future economy. A second major interest, development of minerals in the adjacent Misty-Fiords Area, is furthered by Alternative A-1. A third concern, maintenance of hydro power and transportation corridors is positively addressed by this alternative.

While Ketchikan is closely associated with timber and minerals concerns, many residents responded to the alternatives on the basis of other issues, e.g. effectiveness in supporting commercial fishing and tourism and in protecting wildland values. These residents preferred Alternatives A-2, A-3, C, D, or E for their protection of wildland and fisheries resources and as positive direction to the community objective of further economic diversification.

Klawock: Sustaining the local mill through a viable Small Business Administration set-aside program is the key issue in Klawock. Alternatives A, A-1, and B are supportive of this objective. Conversely, strong amenity-oriented alternatives, particularly A-3 and E, are viewed as unresponsive to the community's economic needs.

Metlakatla: This community, like Craig, Hydaburg, and Klawock, expresses intense concern that sufficient timber be made available to sustain local mill production through the SBA program. The community also shares the dependence of these other villages upon natural resources for subsistence. Comments on the DES indicate that most residents are assured that fisheries and wildlife resources can be adequately protected under existing regulations governing timber harvest.

Thorne Bay: As a logging camp and the third largest community on the Ketchikan Area, Thorne Bay expresses strong endorsement of Alternative A-1 for its provision of timber to support jobs. Some diversification is favored by residents who would like to establish support services for other logging areas on Prince of Wales and some tourist-oriented facilities. These additional interests are felt by residents to be best served by Alternative A-1.

Three communities on the Ketchikan Area--Hyder, Kasaan, and Port Protection-Point Baker--will experience minor or no impacts from any of the TLMP alternatives. The interests and concerns of these communities differ somewhat and, as a result, their perspective of the alternatives varies.

Hyder: Under all alternatives, the most significant effect on Hyder is the wilderness clasification assigned to areas of special interest to the community, particularly near the head of Chickamen and Soule Glaciers. Many residents still engage in recreational prospecting of these areas and oppose wilderness classification as presenting unwelcome access and use. Support of Alternative A-1 and strong opposition to Alternatives A-2, A-3, D, and E was voiced.

Kasaan: The DES anticipated that only Alternative A would pose significant effects on this community by permitting LUD IV timber activities in the Karta area where subsistence use is high. Response from the village Native Corporation was, however, an endorsement of Alternative A and opposition to all restrictive classification. Under all alternatives, except perhaps E, road access to Kasaan is possible; however, road access to the Prince of Wales road system is more likely under Alternative A, because of greater availabilty of route corridors between Thorne Bay, Tolstoi, Kasaan, and Hollis. A higher level of activity in the Hollis-Thorne Bay area under this alternative would enhance the likelihood of tieing Kasaan into the road system with feeder or mainland ferry service. Based on response to the DES, this connection is viewed favorably by the community.

Port Protection-Point Baker: Very few social effects on this area have been identified from the entire range of TLMP alternatives. Three areas of symbolic meaning -- Hole-in-the-Wall, Red Bay and Mt. Calder -- could be affected visually by timber harvest in all Alternatives. In addition, subsistence and recreation activities such as hunting and berry-picking would be shifted under all alternatives to increased use of young clearcuts. Comment on the DES by the Point Baker Association indicates that these effects are opposed, with maximum wilderness allocation through TLMP favored.

One remaining community on the Ketchikan Area, Meyers Chuck, is unique in that while increased population and development activity are likely under all TLMP alternatives, the community largely opposes these changes. Oriented toward fishing, residents do not welcome potential for logging camp development or an influx of outside timber-related employees. Analysis of the data suggests that Alternative E would avoid the aesthetic impacts on community recreation areas; Alternatives A, A-1, A-2, A-3, C, and D, while permitting logging, would extend protection to existing deer habitat under LUD III management.

National Effects: Response to the DES and extensive national debate of the Alaskan lands issue focus upon two broad national concerns. First, many individuals and organizations throughout the United States regard the Alaska wildlands as the nation's best opportunity to preserve wildlife, opportunities for wilderness solitude, and the independent lifestyle which characterizes most Alaskan communities. These concerns, often intensified by urban pressures in the South-48, frequently focus on specific areas of greatest interest, but many other areas have also achieved national prominence as larger numbers visit the region and the national media features spectacular areas of southeast Alaska. To this extensive and diverse national public, the amenity-oriented alternatives are regarded as the best land allocation.

Secondly, many national publics are most concerned that the National Forest yield valuable resources in support of both the nation's and the region's economics. Minerals, timber, and power sources on public lands -- as a portion of the nation's wealth -- should be managed for the best economic returns, in the view of these respondents. Perhaps even more strongly, this national public has identified with the issue of jobs in southeast Alaska, expressing strong concern not to put people out of work. These concerns are best met by the commodity-oriented alternatives.

For both groups, allocation of the Tongass represents largely indirect effects. The number of visitors to southeast Alaska is expected to increase in the future and markets for the region's products in the South-48 are being continually sought. But the majority of Americans will never see the Alaskan wilderness which they value so highly, and the nation's economy is unlikely to ever rely significantly on southeast Alaska's resources. Thus, the choice of alternative management options for the Tongass becomes, to a large degree, a national weathervane by which the directional winds of the country's future can be measured.

VI.

Evaluation Of Alternatives

VI. Evaluation of Alternatives

The preceding alternatives were evaluated by the interdisciplinary team, using a process that related each alternative to the defined issues, and to the physical, biological, social and economic effects likely to occur through implementation. This evaluation was facilitated by the consistent manner in which Alternatives A, A-1, B, C, A-2, D, A-3 and E were developed, described and analyzed. (See Evaluation Criteria, Alternatives Considered, and Effects of Implementing Alternatives.) The process of alternative evaluation and comparison led to the interdisciplinary team recommendation, presented in the Draft Environmental Impact Statement (see Appendix E).

Relation of Alternative to Issues

Prior to making its recommendation in the DEIS, the interdisciplinary team compiled information about Alternatives A+ (maximum commodity emphasis), A, A-1 (CMAL), B, C, A-2, D, A-3 (SEACC), E, and E+ (all roadless areas classified as wilderness), to compare the alternatives with the evaluation criteria listed earlier. Since many of the criteria proved to be fairly general from an evaluation standpoint, a more specific set of related issue factors was defined by the IDT. These are listed in table 28. The issue factors were grouped into those related to retention of amenity values; to the retention of growth and development opportunities; and to both of these. Each of the 10 alternatives was then rated on a relative scale of 1 to 10 (lowest to highest) to represent how well it could satisfy each issue factor. These ratings are based on the information presented in this document. Ratings for the Proposed Action have been added to the table to facilitate comparison of the Proposed Action with the previously-considered alternatives.

Relation to Physical, Biological, Social, and Economic Factors

Information about the physical, biological, social, and economic factors pertaining to each of the alternatives can be drawn directly from the preceding section, Effects of Implementing Alternatives. These factors were evaluated by the IDT in the process that led to its recommendation. Table 29 summarizes some of these factors. Table 30 portrays the allocation of the Tongass Forest land base to each of the four Land Use Designations (LUDs) under each alternative.

Proposed Action

The Proposed Action is presented in detail in Section VII. Since publication of the DEIS, the Secretary of Agriculture's recommendations for wilderness have been modified and presented in the RARE II Final Environmental Impact Statement. These wilderness recommendations and associated land management goals have limited the range of allocative options available. The Proposed Action was developed within these adjusted parameters, through a comparative evaluation described in the following section.

TABLE 28-Alternative ratings for issue factors

	ISSUE FACTORS	ALTERNATIVES										PROPOSED ACTION
		A+	A	A1	B	C	A2	D	A3	E	E+	
RELATED TO RETENTION OF AMENITY VALUES	Subsistence Use Area Retention in the Long Run	1	2	2	3	4	3	4	3	7	9	3
	Wilderness Values Representation	1	3	2	4	7	5	8	6	9	10	5
	Representation of Nationally Supported Wilderness Areas	1	1	2	4	5	8	5	10	9	10	7
	Retention of Undeveloped Areas in LUD I & II For Protection of Brown Bears and Eagles	2	4	3	5	5	6	6	6	7	8	5
	Protection of Deer Habitat in LUD I, II, III to Maintain Populations	3	4	4	5	6	4	7	4	8	9	5
	Maintenance of Key Sport Fisheries and Related Settings - 84 Streams	1	2	1	4	7	4	9	5	9	8	4
	Retention of High Quality Dispersed Primitive Recreation Opportunities	1	3	4	5	6	5	8	6	9	10	5
	Visually Sensitive Area and Recreation Use Area Protection (Travel Routes and Key View Points)	1	3	4	5	6	5	7	5	10	10	5
	Admiralty as Wilderness (Symbolic Meaning)	1	2	2	3	3	10	4	10	9	10	9
	Retention of Air Quality	8	9	9	10	10	10	10	10	10	10	10
	Retention of Water Quality	7	8	8	9	10	10	10	10	10	10	10
OTHER RELATED TO BOTH	Balance in Utilization of Prime Values (Timber Values in Relation to Recreation Values)	1	6	2	7	8	4	10	5	7	1	6
	Compatibility With Native Selections	8	9	8	9	8	6	8	5	4	3	7
	Compatibility with State Selections	1	2	1	2	3	2	3	3	5	3	2
RELATED TO RETENTION OF GROWTH AND DEVELOPMENT OPPORTUNITIES	Minimize Risk of Damage to Commercial Fisheries Habitat	0	2	1	3	4	4	6	5	8	9	4
	Maximize Opportunity for Salmon Enhancement	10	9	7	8	5	3	4	3	2	1	4
	Availability of Mineralized Land for Mineral Exploration and Development - Areas not in LUD I	10	9	9	5	5	4	4	2	2	1	4
	Maintaining Existing Level of Timber Related Employment	10	10	10	10	10	9	9	8	5	1	9
	Provide Opportunity for Increasing Total Employment Level Based on National Forest Resources	9	8	7	5	5	1	1	1	1	1	1
	Maintain Development Opportunities for Road Corridors identified in SEAMTS*	10	10	9	9	7	3	7	2	2	1	4
	Maintain Development Opportunities for Hydro Power (Corridor & Dam Site)	10	10	9	10	9	6	9	8	3	2	6
	Maintain Development Opportunities for Mineral Projects	10	10	10	9	7	4	6	3	2	1	5
	Retain Regional Employment Distribution	10	10	10	10	10	8	7	5	5	1	8

* Southeast Alaska Multimodal Transportation Study

TABLE 29--Comparison of alternatives by key factors

Key factor	Alternative-- A+	A	A1	B	C	A2	D	A3	E	E+
					Percent					
Allocation of areas by land use designation number-- 1/										
I	0	15	12	19	26	38	31	38	56	84
II	0	24	16	28	32	18	34	20	22	0
III	0	15	27	21	20	11	16	10	22	8
IV	100	46	45	32	22	34	19	32	0	8
Use of prime values:										
Amenity values 2/	0	35	23	46	63	54	82	57	87	95+
Commodity values 3/	100	95	89	89	79	70	73	70	50	20-30
					MM bm					
Programmed timber harvest 4/	596	545	516	488	412	410	367	375	202	199
					Percent					
Change in timber-related employment: 5/										
Total for southeast	(6/)	25	15	10	0	0	-10	-5	-50	(7/)
Chatham Area	(6/)	15	10	5	-5	-20	-20	-25	-30	(7/)
Stikine Area	(6/)	30	25	20	-5	20	-25	5	-50	(7/)
Ketchikan Area	(6/)	20	20	15	5	10	5	5	-60	(7/)
Minerals: Percentage of 81 highly mineralized value comparison units: allocated to land use designation I	0	10	0	18	21	31	25	35	54	(7/)
					Number					
Minerals: Number of value comparison units with 12 prime prospects allocated to land use designation I	0	0	0	0	2	9	2	12	7	(7/)
					Percent					
Deer Habitat: Percentage of winter and intermediate range areas affected by timber harvesting during the 10-year life of the plan	(6/)	4.4	4.4	4.0	3.4	3.3	3.0	(8/)	1.6	(9/)
Fisheries: Percentage of the 527 value comparison units with high values for commercial and sport fisheries allocated to land use designations I, II, III, and IV	(10/)	43	42	59	71	57	74	(11/)	100	100

1/ Expressed as a percentage of the total forest land base of 15,189,000 acres.
2/ Percentage of value comparison units with ratings of 4 or 5 for dispersed primitive recreational opportunities allocated to land use designations I and II.
3/ Percentage of value comparison units with rating of 4 or 5 for timber qualities allocated to land use designations III an IV.
4/ Includes 100 percent of the standard and special components and 10 percent of the marginal component.
5/ Assumes a sustained yield of 150 MM bm from private lands and use of 10 percent of the marginal timber component. All numbers are rounded to the nearest 5 percent. All numbers are related to the 1970-76 average employment level, which totaled 6,709 jobs throughout southeast Alaska (Chatham, 2,606; Stikine, 709; and Ketchikan, 3,394).
6/ Greater than Alternative A.
7/ Greater than Alternative E.
8/ Between Alternatives B and C.
9/ Less than Alternative E.
10/ Less than Alternative A.
11/ Data not available.

TABLE 30--Land Allocations by Land Use Designations 1/

Alternative	LUD I			LUD II			LUD III			LUD IV		
	M ACRES 2/	% 3/	# VCUs 4/	M ACRES	%	# VCUs	M ACRES	%	# VCUs	M ACRES	%	#VCUs
A	2,243	15%	69	3,700	24%	176	2,236	15%	152	7,032	46%	463
A1	1,802	12%	63	2,407	16%	108	4,127	27%	245	6,853	45%	443
B	2,874	19%	99	4,204	28%	196	149,000	21%	220	4,984	32%	344
C	3,909	26%	143	4,818	32%	258	3,053	20%	210	3,409	22%	248
A2	5,698	38%	269	2,676	18%	120	1,643	11%	120	5,173	34%	350
D	4,682	31%	174	5,164	34%	300	2,449	16%	169	2,915	19%	216
A3 5/	5,999	40%	283	2,750	18%	125	1,578	10%	115	4,863	32%	336
E	8,490	56%	402	3,412	22%	201	3,309	22%	256	0	0	0

1/ LUD I: Areas Recommended for Wilderness.
LUD II: Undeveloped area management.
LUD III: Mixed resource use emphasis (average 30% of operable CFL retained for non-timber resources, where applied)
LUD IV: Commodity oriented management (average of 13% of operable CFL retained where applied)
2/ Based on Forest Service acreage calculations (exclusive of proposed National Forest additions)
3/ Percentage of the whole forest (15,189,193 acres)
4/ Value Comparison Units (see maps. There are 859 VCUs averaging 17,500 acres each. These units are used to make resource value comparisons and allocations in the TLMP planning process.)
5/ Based on superimposing the SEACC wilderness proposals on Alternative A.

VII.

Identification Of Proposed Action

VII. Identification of Proposed Action

History and Sequence of Events

After the planning process was started in September of 1976, a number of events occurred which influenced the process and the nature of the Proposed Action that is identified in this section.

In January 1977, Congressman Morris Udall, Chairman of the House Committee on Interior and Insular Affairs introduced H.R. 39, the Alaska National Interest Conservation Act. H.R. 39 included Wilderness Area designations for National Forest lands in Alaska, thereby bringing existing National Forest lands within the scope of Congressional deliberations in Alaska.

President Carter, in May 1977, declared the Alaska lands legislation to be among the highest priority environmental actions to be achieved during his administration.

The House Subcommittee on General Oversight and Alaska Lands conducted an intensive hearing schedule for Alaska in preparing for consideration of H.R. 39 and related legislation.

The Administration held a series of Interdepartmental and Executive Office meetings in September 1977, to develop a position on the Alaska Lands legislation. It was agreed that the Administration would recommend most of Admiralty Island as wilderness. Other recommendations were deferred in the hope that additional information from the TLMP planning process would aid in making recommendations.

In order to be responsive to Congress in its request for advice, the Administration reviewed available data from the planning process and, in January 1978, recommended four additional wilderness areas and five wilderness study areas on the Tongass National Forest. (Recommendations for wilderness: Admiralty Island, Misty Fiords, Russell Fiord, Stikine-LeConte, and West Chichagof-Yakobi. Recommended for wilderness study were: Duncan Canal, Endicott River, Karta River, Tebenkof Bay, and Yakutat Forelands.) These were transmitted to Chairman Seiberling by Secretary Bergland on February 1, 1978. In this letter, the status of the land management plan was discussed and a continuing flow of information was assured. The House passed an amended H.R. 39 in May 1978, that included wilderness areas corresponding to the Administration's proposals for wilderness on Admiralty Island, West Chichagof-Yakobi, Stikine-LeConte, and Russell Fiord.

The TLMP Draft ES was issued in June, 1978. While this Draft did contain an interdisciplinary team recommendation (see Appendix E), a preferred alternative was not identified. An August supplement which would contain one was planned. In the meantime, the Senate Committee on Energy and Natural Resources began briefings and markup on Alaska Lands legislation and on June 2, 1978, Secretary Bergland reiterated the Administration's February position in a letter to Chairman Jackson.

In August 1978, after compiling and analyzing public comment and reviewing a modified IDT recommendation, Regional Forester Sandor submitted his recommendations to the Chief (see Appendix E). These, to a large extent, reflected the concerns of the Alaska Region Forest Service and the Alaska publics. These recommendations and accompanying data were reviewed by the Forest Service, the Department, the Administration, and the Senate Committee on Energy and Natural Resources.

After due consideration, it was decided that the original Administration position provided a strong wilderness package, and could, with additional investment, maintain

the current level of industry (at 450 MM bm annually). It was concluded that previous recommendations to the Senate need not be altered. This position was conveyed to the Senate Committee Chairman on September 14, 1978 (see Appendix F).

Because of the pending completion of Alaska lands legislation, the plan to issue a supplement containing a preferred alternative was abandoned. The Senate Committee, taking cognizance of the Administration's position, data from the TLMP planning process and other considerations, developed allocations for the Tongass National Forest which included the Administration's recommendations for wilderness in several special classifications. The Committee sent the substitute H.R. 39 to the full Senate on October 13, 1978.

The Senate did not enact the Alaska bill before adjournment on October 16, 1978. Efforts at compromise between the House and Senate in the final hours, held the Senate version virtually intact. Failing to enact a bill, the House passed an extension of the ANCSA Section 17 (d)(2) Withdrawal and included both House and Senate proposals for the Tongass in the further one-year withdrawal from entry and selection. While agreed to by the leadership of both parties in the Senate, it also failed enactment.

At the urging of some Congressional members, many organizations, and hundreds of letters from the public, the Secretary of Agriculture requested a two-year withdrawal of all areas considered by the House, Senate, or the Administration. This was requested on November 28, 1978. On December 1, 1978, to afford further protection to key areas, President Carter also proclaimed Admiralty Island and Misty Fiords as Forest Service managed National Monuments.

Taking into account its original position, the Senate Committee's action, and data contained in the TLMP DEIS, the Administration modified its position in the Final EIS for RARE II. Seventeen areas, including the two National Monuments, comprising 5.4 million acres of the Tongass National Forest were recommended for inclusion in the National Wilderness Preservation System. These include:

AREA NAME	ACREAGE
Misty Fiords National Monument	2,285,000
Admiralty Island National Monument	921,000
Russell Fiord	295,000
Endicott River	103,000
West Chichagof-Yakobi	227,000
Tracy Arm	506,600
Stikine-LeConte	275,500
South Baranof	305,000
South Prince of Wales Island	97,000
Coronation Island	19,100
Warren Island	11,400
Maurelle Islands	4,500
Karta	39,000
Tebenkof	65,000
Etolin Island	91,000
Petersburg Creek	27,000
Boundary Spires	128,300
TOTAL NATIONAL FOREST ACREAGE	5,400,400

Procedure Used to Define Proposed Action

Establishment of Admiralty Island and Misty Fiords as National Monuments, the Secretary of Agriculture's decisions in RARE II, and positions on the Alaska lands legislation have all become parameters for development of the Tongass Land Management Plan. RARE II action recommends 5.4 million acres of the Tongass Forest for wilderness, and clearly defines where nonwilderness use opportunities will become available. All roadless areas not recommended for wilderness were allocated to the nonwilderness category under RARE II. They are available for multiple resource uses other than wilderness under an approved Tongass Land Management Plan.

Two variations of the previously considered alternatives were analyzed to determine how much latitude existed for allocating the remaining 9.8 million acres to LUDs II, III and IV to resolve the identified land management issues. One aspect of this analysis was the amount of timber that could be yielded from the areas that were not recommended for wilderness. The Administration is on record to make 450 million board feet of National Forest timber available annually to maintain current timber-related employment opportunities in association with the wilderness recommendations. The other aspect centered on how the analyzed variations would have to be modified if this yield level could not be acheived.

The first variation, called F-1, was structured by reallocating to LUD I the VCUs in previously described alternative A that fell within the boundaries of the 17 recommended wilderness areas. Any VCUs that had been allocated to LUD I in the original alternative which lay outside of these 17 areas were initially reallocated to LUD II. All other allocations were held constant. The same procedure was followed for the second variation, F-3, which was structured from the modified IDT Recommendation (see Appendix E and accompanying map).

In its original configuration, Alternative A was the most commodity oriented of the eight alternatives that were actively considered. It sought to foster economic growth and increased employment in southeast Alaska by providing opportunities for development on the Tongass. The Modified IDT Recommendation, which was written to provide a focus for defining the preferred alternative in the August DEIS supplement, represented an alternative approach to the provision of amenity-oriented and commodity-oriented land use opportunities. It sought to maintain many of the Forest's most important wilderness, fish, wildlife, and recreation areas in a natural, unmodified state while also meeting the current needs of the timber industry, salmon enhancement programs, mining developments and community interests.

The emphasis of these two prior alternatives is reflected in variations F1 and F3 in the distribution of the acres and VCUs that are allocated to LUDs II, III, and IV. (See Table 31.) Variation F1 is characterized by a heavier emphasis on LUD IV in comparison to variation F3, which tends toward a more even distribution between the three nonwilderness LUDs.

TABLE 31--Distribution of Acres and VCUs in Alternatives F1 and F3

ALTERNATIVE	PARAMETERS	LUD I	LUD II	LUD III	LUD IV
F1	Nat'l Forest Acres	5.4 MM	2.8 MM	1.7 MM	5.3 MM
	% of Forest	35%	19%	11%	35%
	Number of VCUs	239	140	123	357
F3	Nat'l Forest Acres	5.4 MM	3.7 MM	3.1 MM	3.0 MM
	% of Forest	35%	25%	20%	20%
	Number of VCUs	239	180	213	227

Preliminary Potential yield calulations for variations F1 and F3 showed that respectively, approximately 400 and 340 MM bm of timber could be expected from them annually. These levels of programmed harvest were later revised to 407 and 316 MM bm on the basis of more accurate yield calculations. These volumes are based on the eventual harvest of all of the standard and special components of the CFL as well as 10 percent of the marginal component. Achieving these yields and the requisite volumes to reach the 450 MM bm level, however, would require additional yields from marginal lands and annual investments of about 7.5 and 18 million dollars, respectively. These investment levels were also refined at a later stage to 4.3 and 18.8 million dollars. (See Appendix H for how these investment requirements were calculated.)

Thus a timber yield deficit would exist even when the allocative pattern of the most commodity-oriented alternative was used to complement the recommended wilderness areas. Significant additional annual investments would be required in order to provide the opportunity or latitude to achieve the 450 MM bm yield level and to obtain an overall allocative pattern that is considerate of the important resource values and community concerns the Tongass Plan must accommodate.

Creating this latitude implied changing the wilderness recommendations, lowering the timber yield level or requesting additional investments at some level above the 4.3 million dollars associated with variation F1. Since the first options were assumed to be unchangeable, additional investment was considered further.

It was recognized that the resource and amenity values included in the recommended wilderness areas would remain unaltered in prepetuity when they are included in the National Wilderness Preservation System. The public would be assured that at least 35 percent of the Forest would continue to be affected primarily by natural forces and not subjected to man-caused changes. The information presented in this document has shown, however, that other areas which lie outside the recommended wilderness areas are in many cases equally deserving of special management consideration on the basis of their resource values or their importance to the public. A review of the VCU matrix (Appendix C) and the consistent recommendations for special consideration of certain areas by the IDT and the Regional Forester will attest to this (see Appendix E).

Analysis of variation F1 revealed that about 470 million board feet of timber could be yielded annually with an additional 12 million dollars of investment above current levels of funding. This indicated that reallocation of important areas from LUD IV to more compatible LUDs II or III could be considered to the extent that the total yield was not reduced by more than about 20 MM bm.

At this stage, the Forest Service and State IDT members who participated in this analysis and the subsequent steps considered the public responses that had been received from the different communities, interest groups and other sources (see Consultation With Others section). The IDT decided to use the allocation latitude to resolve some of the public concerns and to maintain a degree of consistency with the previous IDT and Regional Forester recommendations. (Appendix E).

Since the nonwilderness allocations in Alternative B were reflective of many of these recommendations and public concerns, it was used as the intermediate point for defining the Proposed Action. A number of further modifications to the allocations for nonwilderness areas were then proposed, and made part of the Proposed Action. These are listed in Table 32. These modifications generally expended the 20 MM bm of "extra" timber, bringing the Proposed Action into line with the desired 450 MM bm timber level. The resulting allocations are summarized and displayed on the attached map for the Tongass Land Management Plan, which is the Proposed Action.

TABLE 32--Modifications made to Alternative B

Area Name	Value comparison units	National forest area	Previous allocation	Current allocation	Reasons for modifications
	Number	Acres	LUD	LUD	
Port Snettisham	50	32,667	II	III	Consistent with previous modified IDT and Regional Forester's recommendations; increases timber yield which offsets timber yield losses in other modifications.
	56	12,294	II	III	
	58	17,172	II	III	
Whiting River	61	141,999	II	III	Protection of recreational resources along the river can be acheived under LUD III; increases timber yield.
Holkham Bay	64	9,270	I	II	Consistent with above recommendations.
	66	14,175	III	II	
Port Houghton	79	39,240	II	III	Anticipated development by private owners of inholdings not compatible with LUD II.
Faragut Bay	90	28,300	III	II	Consistent with previous modified IDT recommendation .
Northern Chilkat Peninsula	95	8,843	II	III	Consistent with previous modified IDT recommendation (will partly satisfy desire of Haines residents for nearby resources development opportunities).
	96	8,575	II	III	
	97	6,447	II	III	
	98	25,469	II	III	
	99	13,374	II	III	
	105(part)	2,409	II	III	
	107	7,418	II	III	
Lemesurier Island	186	3,511	III	II	Consistent with previous recommendations.
Idaho Inlet	190	53,395	III	II	High fisheries, wildlife, and recreational values; consistent with previous recommendations.
Mud Bay	193	36,554	II	III	Retention of fisheries and recreational values can be accomplished, since the timber sale area will be assessed from VCU 201.
Tenakee Inlet	228	18,659	IV	II	Consistent with previous recommendations and the expressed desires of Tenakee residents; allocation of the Kadashan drainage (VCU 235) is conditioned by a number of special management considerations (see Management Area C36 in the TLMP).
	229	23,231	IV	II	
	235	33,641	III	III	
Lake Eva	295	12,100	III	II	Consistent with previous recommendations.
Yakutat Forelands	379	40,655	IV	III	Consistent with previous recommendations. and closer to the expressed desires of Yakutat residents.
	382	27,391	IV	III	
	386	7,352	IV	III	
	387	12,800	IV	III	

--continued

TABLE 32--Modifications made to Alternative B--continued

Area Name	Value comparison units	National forest area	Previous allocation	Current allocation	Reasons for modifications
	Number	*Acres*	*LUD*	*LUD*	
Keku Straits	389	11,061	II	IV	Consistent with previous recommendations; Islets to be protected.
Pillar Bay	403	28.227	III	II	Consistent with previous recommendations.
South Kuiu Island	409	18,231	I	III	Tebenkof Bay wilderness proposal will
	410	12,829	I	III	adequately represent the Kupreanof Lowlands
	411	15,315	I	III	landscape character type in lieu of this
	413	8,891	I	III	area; no public support for wilderness; increases timber yield.
Thomas Bay	484	11,782	II	III	Consistent with previous modified IDT recommendation.
Bradfield River	516	55,743	II	IV	Active timber sale in this VCU is incompatible with a LUD II.
Sweetwater	573	23,763	IV	III	Consistent with previous recommendations.
Dall Island	642	5,411	II	IV	Consistent with previous modified IDT
	643	3,031	II	IV	recommendation.
	661	2,654	II	IV	
	663	3,954	III	IV	
Sunny Cove	675	3,967	IV	III	Consistent with previous recommendations.
Eudora	684	23,453	IV	II	Consistent with previous recommendations.
Lucky Point	760	12,453	IV	II	Potential road access route lies within boundary of Misty Fiords National Monument/Wilderness.
Gravina Island	762	8,944	IV	III	Consistent with previous modified IDT
	763	13,960	II	III	recommendation (area would be excluded
	764	3,666	II	III	from calculation of potential timber
	765	4,803	II	III	yield).

After finalizing the allocations, the IDT members documented the potential effects of implementing the Proposed Action and how it relates to the previously established evaluation criteria.

The Proposed Action also includes the decision to exchange land with Goldbelt, Inc. to relocate the corporation off of Admiralty Island.

A number of other methods for achieving the desired timber yield level which could lessen the need for additional investments were analyzed after the Proposed Action was defined. These are described in the Effects on Timber, which follows. Attaining the 450 MM bm through the additional investment of 11.7 million dollars annually remains the preferred method for the reasons that are stated.

Effects Comparison

Following are the effects which serve to differentiate between the Proposed Action and the two variations F1 and F3. Effects that are similar for all three are not included. A full description of the anticipated effects of implementing the Proposed Action follows the subsection on Rationale for the Proposed Action.

Wilderness

The Secretary's RARE II wilderness recommendations which were based on National concerns and data from the planning process were held as constants in the Proposed Action and the two variations. Consequently, there was no change in effects attributable to the wilderness allocations. Lands with high value wilderness resources which were not recommended for wilderness designation would be allocated as shown in Figure 13. Wilderness values would remain essentially intact under designation II but would be largely modified under designations III and IV when the areas so allocated are actually used to yield commodities.

Wildlife

The effects on wildlife can be gauged by assessing the extent and degree of potential impact on wildlife in general, and on three important species - Sitka blacktail deer, brown bear and the bald eagle.

Figure 14 indicates the extent of potential impact by displaying the number of high value watersheds designated for continued roadless management (II) and those which will be modified (III and IV).

The degree of effect is seen in the management differences between these designations. Designation II would provide essentially complete habitat protection, III would provide, on the average, approximately 2.5 times as many acres of habitat in an unchanged condition as would designation IV. It can be seen from figure 14 that the proposed action has the best mix of designations III and IV in balancing timber production and wildlife habitat protection.

Figure 15 gives a comparison of potential effects on the species mentioned above by displaying the amount of commercial forest land which is important for both these species and for timber, which is allocated to land use designations III or IV.

The Sitka blacktail deer is believed to be dependent on old growth spruce-hemlock forests for its key winter and intermediate range. There is greater latitude in designation III areas for locating and dispersing the timber harvest and greater

Fig. 13 - 353 Watersheds with High Wilderness Values

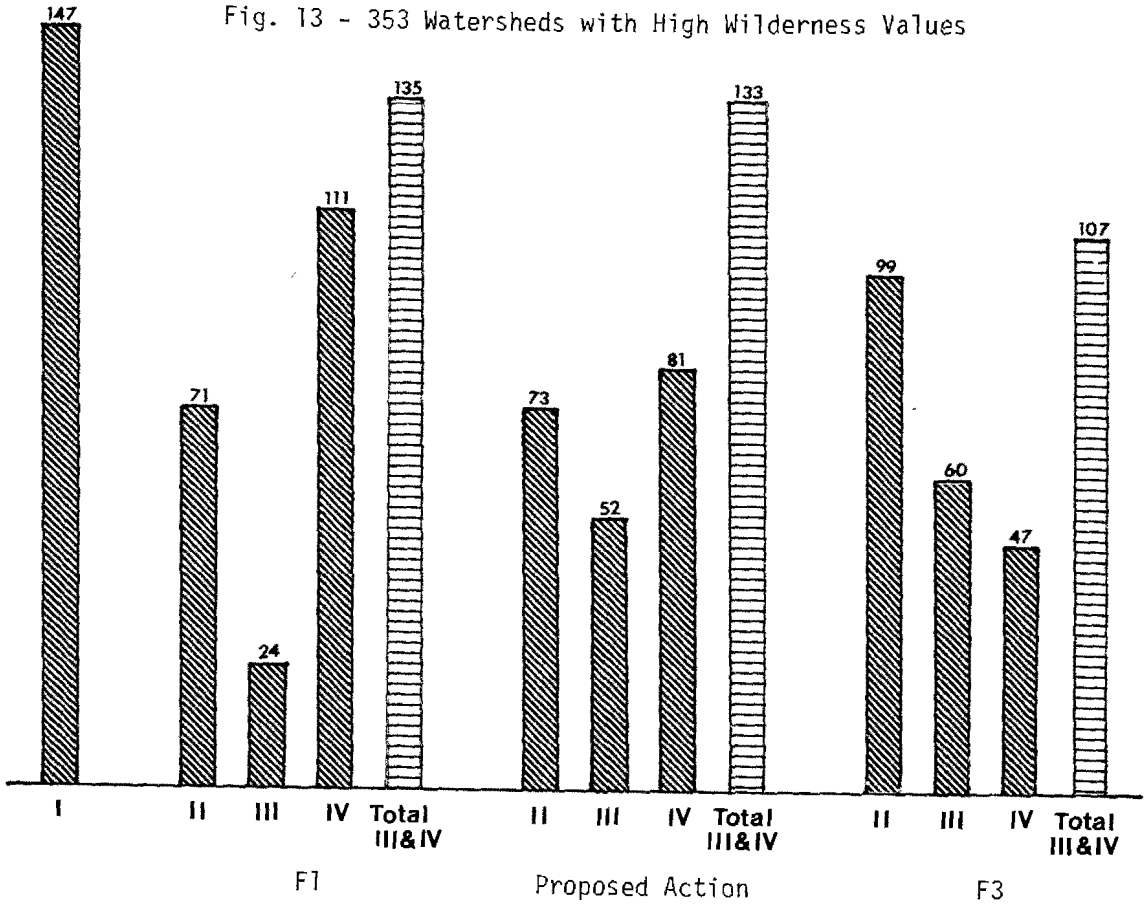


Fig. 14 - 298 Watersheds with High Wildlife Values

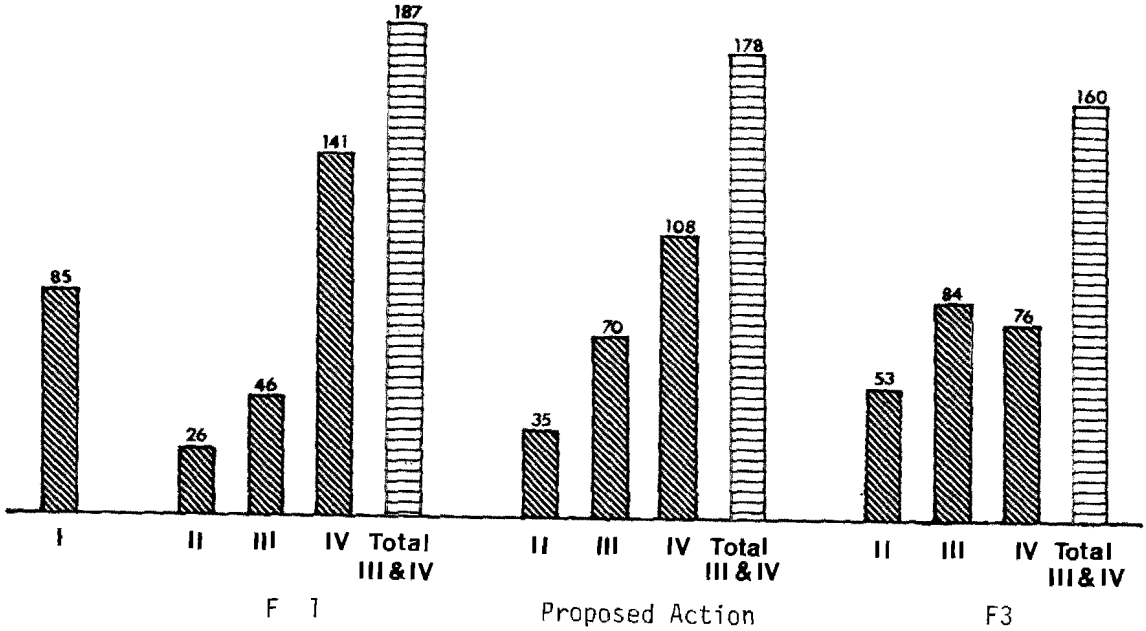
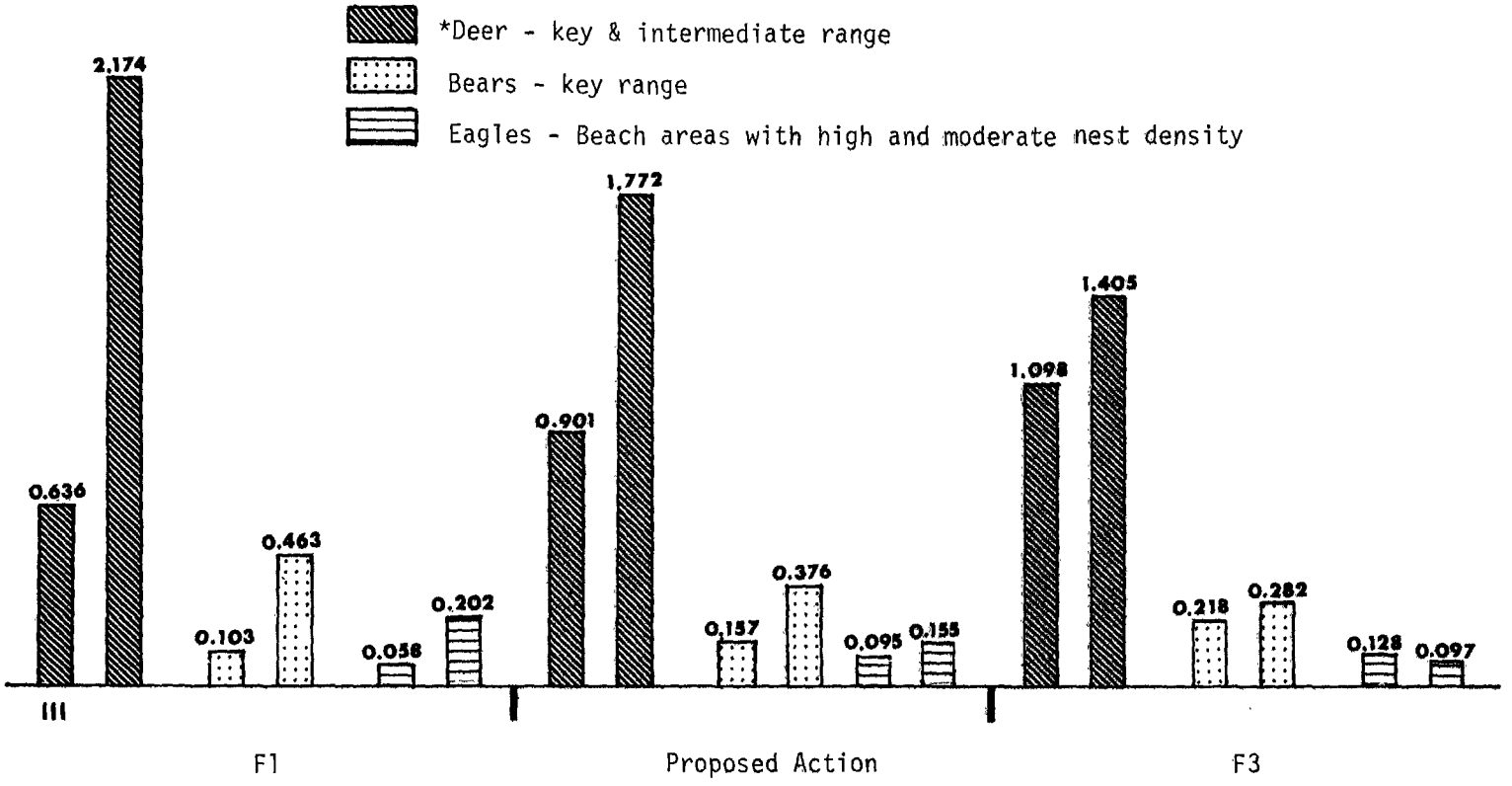


Fig.15 - Million Acres of commercial forest land which is also important wildlife habitat*



latitude in retaining more of the important old growth habitat than in designation IV areas. Figure 15 shows that, during the life of the plan, impact on an individual watershed basis will be greatest in F-1, least in F-3, and intermediate in the Proposed Action.

The northern bald eagle is not an endangered species in Alaska but it is the policy to protect all eagle nest trees. In designation IV the possibility exists for some perch trees to be lost and a greater potential for disturbance to the nesting birds when timber is harvested in their beach fringe habitat.

Only the migrating peregrine falcon is listed on the threatened or endangered species list for southeast Alaska. There are no known effects in any of the variations.

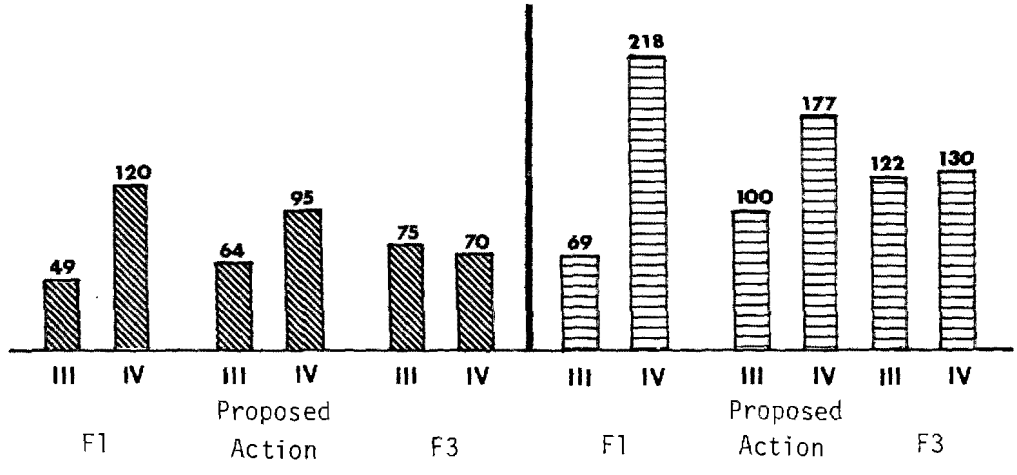
Fisheries

Forest Service management direction and activity standards stress full protection of the biological potential of streams.

Activities allowed under designation IV increase the possibility of unplanned disturbance and short-term disruptions that occur with culvert installation and other activities permitted in the streamside zone. The latitude for more selective spacing of cutting units in designation III allows for location selections that may be less critical and can eliminate some temporary disturbances to the aquatic environment.

Figure 16 illustrates the allocations of the 867 watersheds for both Sport Fish and Commercial Fish in the F-1, F-3, and the proposed Action.

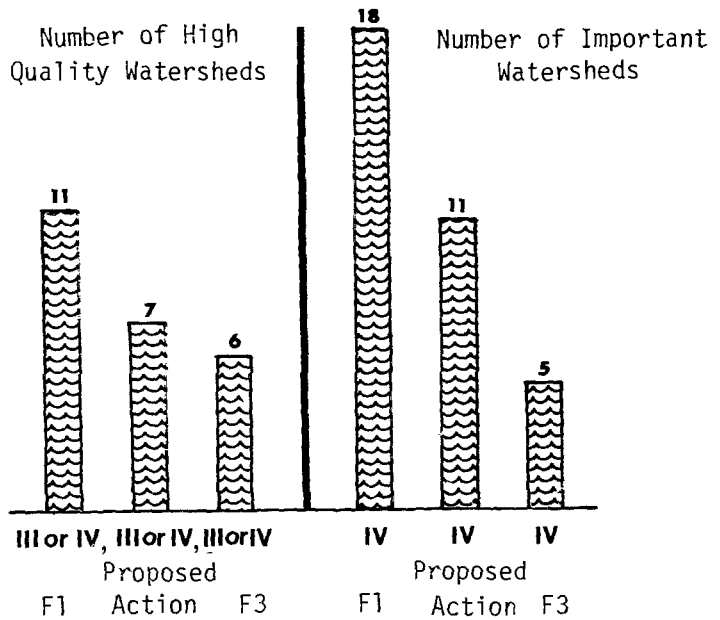
Sport Fish Fig. 16 Commercial Fish



The Alaska Department of Fish and Game identified 19 "High Quality Streams" and 65 "Important Watersheds." Figure 17 displays how these would be allocated to designations III and IV in the Proposed Action and the two variations.

Effects on fisheries enhancement opportunities would remain the same for the Proposed Action and the two variations because wilderness is the only allocation which would significantly restrict these developments. Thirty-three of the 180 identified potential enhancement sites are in areas recommended for wilderness and would not be available for development.

Fig. 17



Recreation

The greatest effects on recreation will occur through changes in existing opportunities for primitive and semi-primitive experiences. Opportunities in the Proposed Action for developed recreation are similar to those in the two variations. Figure 18 illustrates the number of watersheds with high values for primitive and semi-primitive recreation and how they would be allocated. Existing values would be essentially retained under land use designation II, while management under designation IV would produce the greatest reduction of these values through allowed physical and esthetic changes. Management under designation III would have somewhat similar physical impacts as under IV but with more latitude for protecting the physical and esthetic values, especially as related to specific recreation sites and use areas.

Impacts on opportunities for hunting and fishing will largely parallel the impacts on the fish and wildlife resources themselves. The quality of the experience may vary considerably however. For example, management under designations III and IV will normally fully protect the biological productivity of the streams but may have a greater adverse impact on the physical appearance of the surrounding landscape and the perceived quality of the sport fishing streams. However, access to these streams will be improved where road systems are established. Land use designation III would normally provide for protection of the esthetic values.

Some idea of the impact on existing recreation uses can be seen by analyzing how a number of the areas judged to be important for recreation use would be allocated by the Proposed Action and the two variations. Table 33 lists a number of these areas and indicates which would be kept in a roadless and undeveloped state.

Fig. 18

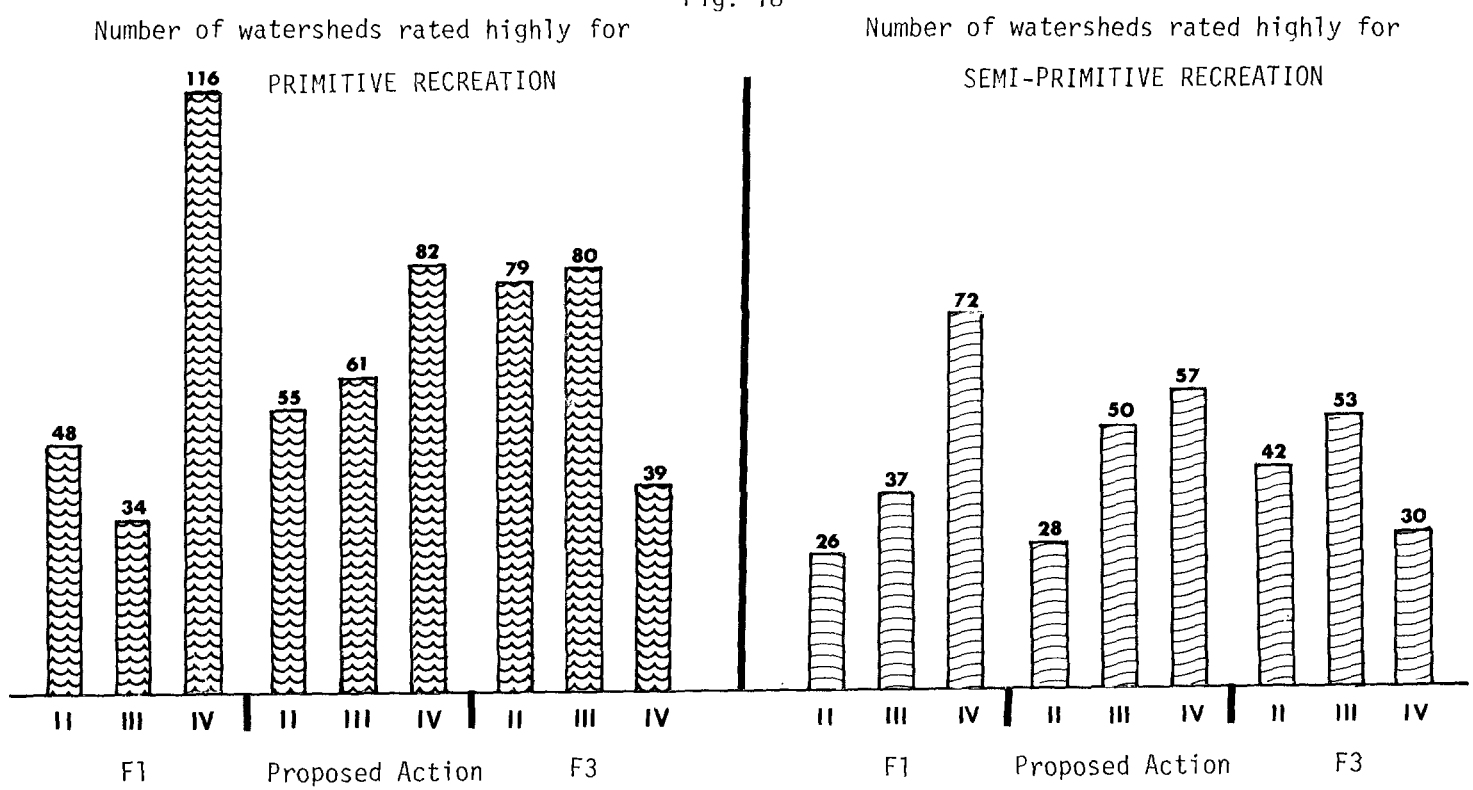

Number of watersheds rated highly for
PRIMITIVE RECREATION
48
34
116
55
61
82
79
80
39
II III IV II III IV II III IV
F1
Proposed Action
F3
Number of watersheds rated highly for
SEMI-PRIMITIVE RECREATION
26
37
72
28
50
57
42
53
30
II III IV II III IV II III IV
F1
Proposed Action
F3

Table 33

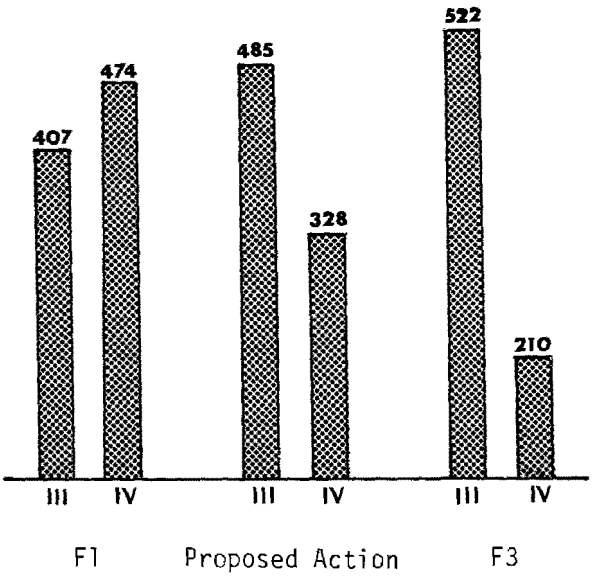
Important Areas Allocated to LUD II

AREA NAME	WATERSHEDS (VCU#s)	F1	PROPOSED ACTION	F3
Berner's Bay	16	No	Yes	Yes
Farragut Bay	90	No	Yes	Yes
Idaho Inlet	190	No	Yes	Yes
Mud Bay	191,192,193	No	No	Yes
Kadashan Cr.	235	No	No	Yes
Long Bay	228	No	Yes	Yes
Seal Bay	229	No	Yes	Yes
Lake Eva	295	No	Yes	Yes
N. Kruzoff	305	No	No	Yes
Mt. Edgecombe	308	No	No	Yes
Bay of Pillars	403	No	Yes	Yes
Rocky Pass	427,428	No	Yes	Yes
Upper Duncan Canal	441	No	Yes	Yes
Eudora Mt.	684	No	Yes	Yes
Helm Bay	713-716	No	No	Yes
Naha River	742	No	Yes	Yes
16 Areas	Total	None	Eleven	All

Visual Resource

The greatest effects on the visual resource will occur on commercial forest lands managed under designation IV, coincident with the greatest amount of landscape modification. Effects under designation III would be somewhat less because of the increased latitude in retaining timber for protection of the visual resource. The greatest impact of these effects will be in areas viewed from communities, along the Alaska Marine Highway, and around high-use recreation areas. Figure 19 illustrates the amount of commercial forest lands in highly sensitive seen areas which would be subject to harvest. The table shows that the Proposed Action would allocate more sensitive lands to designation III and thus provide them more protection than F-1. It also shows that the Proposed Action allocates more of the sensitive lands to designation IV, and thus provides more timber, than F-3.

Figure 19--Thousand Acres With High Visual Sensitivity



Transportation and Minerals

Wilderness is the only allocation which would preclude development of major transportation and utility corridors or, possibly, mineral deposits. The areas are also withdrawn from mineral entry December 31, 1983 by the Wilderness Act. The effects on these items are the same in the Proposed Action and variations F-1 and F-3 since the wilderness allocations are also the same.

Timber

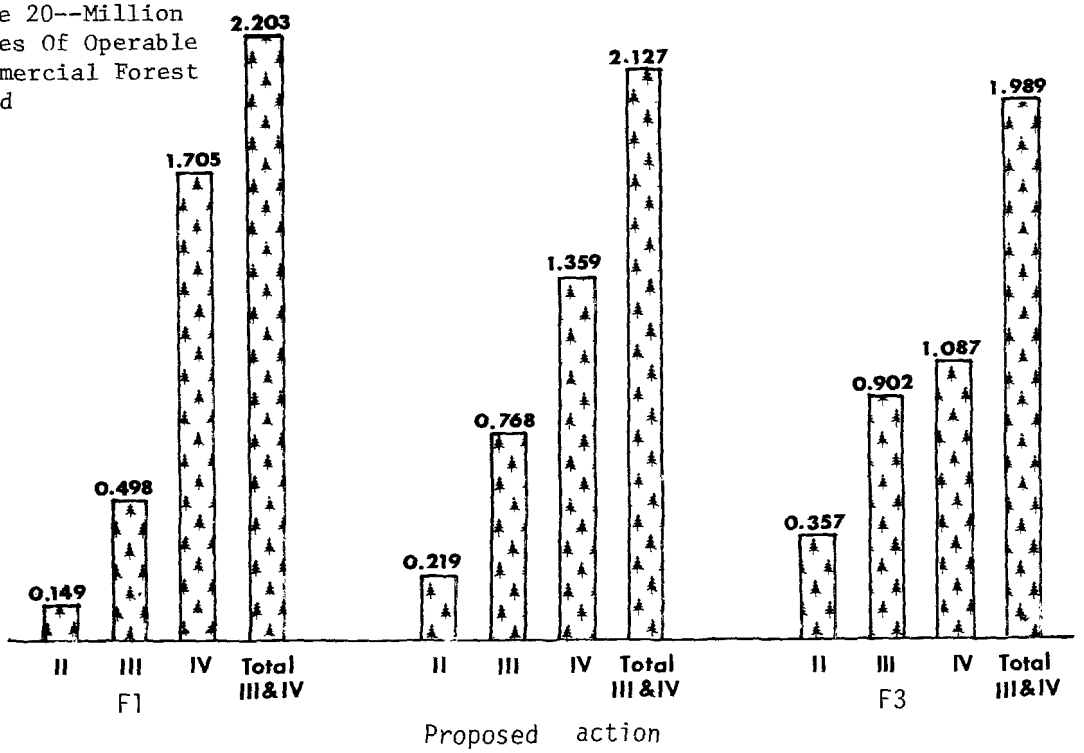
One measure of the effects on timber is the number of acres of commercial forest land which are available or unavailable for harvest. Figure 20 indicates the number of acres allocated to designation II, and thus not available for harvest, and designations III and IV under which much of the timber would be harvestable. Approximately 2.5 times as much timber would be retained in an uncut condition for protection of other resources in designation III than in IV. The chart shows that the Proposed Action would make more timber available than would the F-3 variation, and yet offer more protection for other resources than would variation F-1.

Employment

It is difficult to estimate the overall effects of the Proposed Action on employment in southeast Alaska, due to the uncertainties revolving around the interrelationships between amenity uses and related economic activity. There is no assurance that management directed towards enhancing sport fisheries, recreation and wildlife will stimulate greater recreation-related employment than management which is more commodity oriented. Timber-related employment is more clearly related to the Forest resource base (and quantities of output) than are most other forms of employment.

This analysis considers the proposed action and its two variations, F-1 and F-3. Tables 34 and 35 depict the results of this analysis, based upon an expected average harvest level by the end of the plan period (1990) of 150 MM bm per year from private

Figure 20--Million Acres Of Operable Commercial Forest Land



lands and 10 MM bm per year from State of Alaska lands. One set of analyses assumes an average Tongass National Forest harvest of 450 MM bm per year. Another analysis was based on a National Forest harvest of 412 MM bm per year. The 412 MM bm harvest level would require $6.8 million annual investment less than the 450 MM bm in the proposed action.

Table 35 illustrates that a National Forest harvest level of 450 MM bm in the Proposed Action would result in a slight net gain in timber-related employment while the National Forest harvest of 412 MM bm per year retains employment near the 1970-1976 average. In both cases there is an increase in total logging jobs and a decrease in total sawmilling jobs although there is some evidence to suggest that the latter might occur regardless of the level of Tongass timber output. With harvest levels of 412 and 450, total jobs in the Ketchikan area would increase, however, sawmill jobs would decrease. A shortage of available sawtimber could cause the sawmill at Metlakatla to close or reduce volume unless other sources are obtained. There would also be an increase of total jobs in the Stikine area at both levels of output but shifts could occur among communities.

It should also be noted that the movement of logs from the southern part of the Tongass northward is expected to supply Sitka with sufficient raw materials to operate the pulp mill at full capacity. The unavailability of sawtimber in the northern part of the National Forest is likely to make the reestablishment of a sawmill industry in Haines even more diffucult. Transfer of logs may be possible throughout southeast but greater inefficiencies are implied.

It is recognized that the proposed action and variations F-1 and F-3 could result in displacement or substitution of jobs between the logging and sawmilling sectors with the assumption that the private sector would be exporting most of its timber in unprocessed log form. This analysis assumes that only 36 MM bm of low quality sawtimber from all of the private timber harvested will be processed locally.

Table 34

Timber Harvest and Related Employment

Tongass National Forest and 150 MMBM/Year Private and 10 MMBM/Year State Harvest

	450 MMBM Tongass Harvest				412 MMBM Tongass Harvest			
	1970-1976	F1	F3	Proposed Action	1970-1976	F1	F3	Proposed Action
Available Sawlog Harvest (MMBM)								
Tongass		450	450	450		412	412	412
State		10	10	10		10	10	10
Private		150	150	150		150	150	150
Total		610	610	610		572	572	572
Sawlog Consumption (MMBM)								
Export								
Tongass		18	18	18		18	18	18
Private		114	114	114		97	97	97
State		0	0	0		0	0	0
Total		132	132	132		115	115	115
Pulp 1/								
Tongass		203	203	203		197	197	197
Private		36	36	36		36	36	36
State		5	5	5		5	5	5
Total		244	244	244		238	238	238
Cant/Lumber								
Tongass		236	236	236		199	199	199
Private		0	0	0		17	17	17
State		5	5	5		5	5	5
Total Cant/Lumber		241	241	241		221	221	221
Total Consumption		610	610	610		572	572	572
Timber-Related Direct Employment (12 Month Average)								
Logging	1230	1350	1360	1370	1230	1270	1270	1290
Lumber	565	460	450	460	565	410	410	410
Pulp	1095	1180	1180	1180	1095	1180	1180	1180
Timber Transportation	115	110	120	120	115	120	110	120
Total Primary Employment	3005	3100	3110	3130	3005	2980	2970	3000

1/ Sufficient utility logs and residual chips are available to provide additional raw materials necessary to operate both pulp mills at full capacity.

Table 35

Change of Primary Employment Relating to Tongass Timber Harvest and 150 MMBM/Year From Private Land and 10 MMBM/Year from State Land

Management Area	Occupation	Employment 1970-1976	Change in Employment					
			Tongass Harvest 450MMBM			Tongass Harvest 412MMBM		
			Proposed Action	F1	F3	Proposed Action	F1	F3
Chatham	Logging	404	-94	-94	-94	-114	-124	-124
	Lumber/Cant	120	-80	-80	-80	-90	-90	-90
	Pulp 1/	486	+44	+44	+44	+44	+44	+44
	Timber Transport	28	+2	+2	+2	+2	+2	+2
	Total	1038	-128	-128	-128	-158	-168	-168
Stikine	Logging	190	+70	+50	+110	+50	+30	+70
	Lumber/Cant	189	+11	+1	+41	-9	-19	+11
	Pulp	0	0	0	0	0	0	0
	Timber Transport	20	+10	0	+10	+10	+10	+10
	Total	399	+91	+51	+161	+51	+21	+91
Ketchikan	Logging	63	+164	+164	+114	+124	+134	+94
	Lumber/Cant	255	-35	-25	-75	-55	-45	-75
	Pulp 1/	609	+41	+41	+41	+41	+41	+41
	Timber Transport	66	-6	-6	-6	-6	-6	-6
	Total	1566	+164	+174	+74	+104	+124	+44
Total Tongass	Logging	1230	+140	+120	+130	+60	+40	+40
	Lumber/Cant	565	-104	-104	-114	-154	-154	-154
	Pulp 1/	1096	+85	+85	+85	+85	+85	+85
	Timber Transport	115	+6	-4	+6	+6	+6	-4
	Total	3003	+127	+97	+107	-3	-23	-33

1/ Increase in pulp-mill employment reflects the difference between full capacity employment and average employment, which is somewhat lower due to periodic closures over the seven-year base period.

It is reasonable to assume harvest from private and State lands. However, if the private harvest were not available, the Proposed Action would result in a loss of jobs in all areas except the Wrangell-Petersburg-Kake vicinity. If the National Forest harvest were 450 MM bm and there is 10 MM bm annual harvest from State lands, there would be a net loss of about 290 jobs in southeast Alaska. The National Forest harvest of 412 MM bm would cause a 450 job loss. Variations F-1 and F-3 would have corresponding losses.

Thus this analysis recognizes the possible movement of people between types of jobs and between communities. Another consequence is likely to be greater seasonal changes in employment as logging makes up a greater proportion of total timber-related employment.

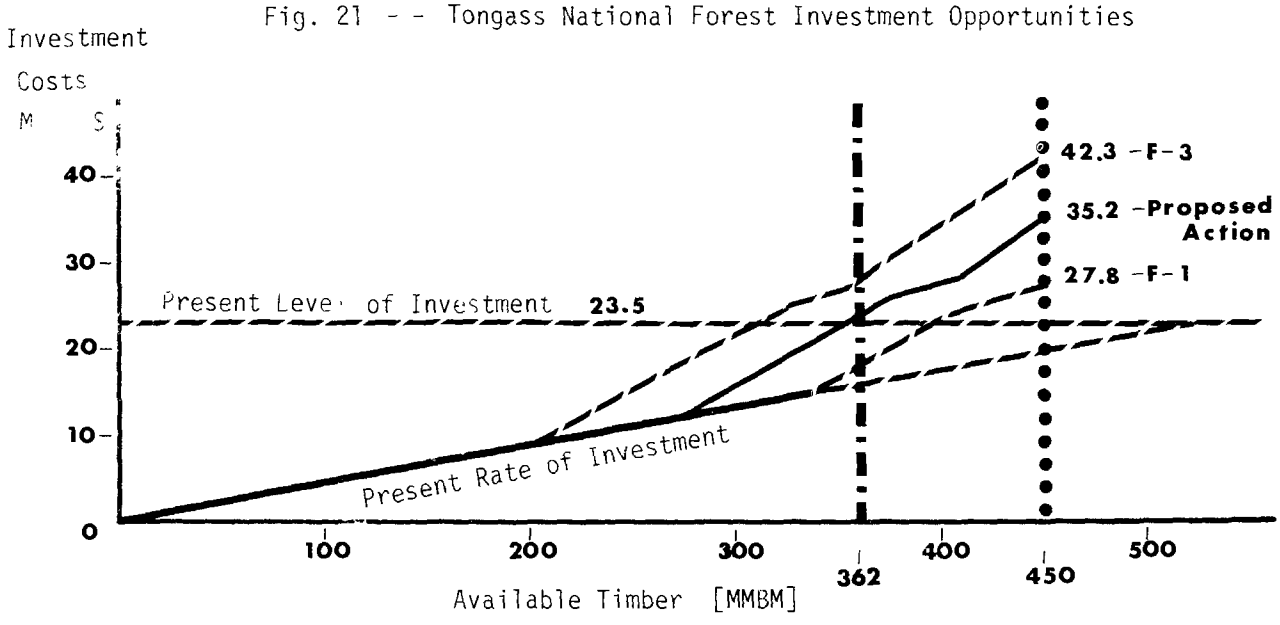
Timber Related Costs and Outputs

Management of the Tongass National Forest under terms of the Proposed Action, or either of the two variations, F-1 or F-3, can result in an annual timber harvest of 450 MM bm. The amount of investment required to attain this harvest varies with the management pattern specified.

There is now a basic investment of $43.80/M bm for interdisciplinary team work, timber sale preparation, and road investment. Additional investments in precommercial thinning, road construction before the timber sale, and use of advanced logging technology can add to the amount of available timber.

Figure 21 displays the timber harvest available at different investment levels for the two variations and the Proposed Action.

Fig. 21 - - Tongass National Forest Investment Opportunities



Rationale for Proposed Action

The Proposed Action was defined in an interrelated, but sequential manner. The Administration recommended wilderness areas were defined first in the general manner that was portrayed in the History and Sequence. The remaining National Forest areas were then allocated in accord with the procedure described above.

Collectively, the recommended wilderness areas will comprise about one third of the Tongass and one third of the total acreage that is to be added to the National Wilderness Preservation system under the RARE II process. These areas include some of the most beautiful and truly wild lands in the National Forest System. The opportunity to include Admiralty Island and Misty Fiords in the wilderness system is held to be of great significance to the Nation. To many, such areas are the symbolic cornerstones of a younger America. The other areas, although smaller in scale, will assure adequate representation of the many unique landscape characteristics that are to be found throughout southeast Alaska. Magnificent fiords, tidewater glaciers, rugged wave sculptured shorelines, rain forests, major and minor islands, protected waterways, habitats for bald eagles, brown bears, wolves, marine birds and mammals, prime salmon streams and rivers, alpine highlands, icefields and remote bays will be among the included features. The distribution of these areas, in combination with the neighboring 3.3 million acre Glacier Bay National Monument, will insure that all the significant aspects of this region of Alaska are amply represented. Forty-two percent of the 353 individual roadless areas that are rated highest in wilderness attributes will be included in the 5.4 million acres recommended for wilderness.

Eight of the 10 original Administration proposed wilderness areas cited in the above History and Sequence are included in the 17 areas that are now recommended. (The other two areas, Duncan Canal and the Yakutat Forelands were excluded in light of the other resource demands of the local population.) Many of these areas have consistently been proposed for allocation to LUD I in the TLMP planning process. Only the size and boundary configurations of some of the areas, particularly Admiralty Island and Misty Fiords have differed. These original Administration proposed areas, along with the other nine that were added when the Regional Foresters, the Chief and his staff, and the Department of Agriculture representatives met as a group in developing the proposed action for the RARE II, are considered as desirable additions to the National Wilderness Preservation System.

The wilderness values that will be preserved are considered to be equal or greater than the reductions in overall potential timber yields attributable to these wilderness recommendations, the associated 11.7 million dollar per year additional funding requirement which becomes necessary to increase yields to the desired 450 million board feet level, and other trade-offs. The projected shifts in timber-related employment (see Economic Effects) will not be attributable to a reduction in timber supply alone, but also to a decrease in the demand for timber cants due to the expected export of round logs from private lands. Providing the additional funding to make the 450 MM bm available will ensure that timber-related employment can be maintained near current levels. The "Subject to Valid Existing Rights" clause which pertains to the proclaimed National Monuments and the FLMPA withdrawals, provides for the continuation of valid existing mineral, timber and other development rights.

For the remaining two thirds of the Forest, the nature of the proposed allocations is strongly linked to decisions that were made for wilderness. This is described in the above Procedure section.

Table 36 lists some of the key areas that are allocated to LUD II in the Proposed Action. All of these areas contain significant amenity values which are important to their present users. These areas, in combination with almost a hundred areas that are allocated to LUD III, differentiate the Proposed Action from variation F1 (which used Alternative A as a starting point). Such differences are important from the standpoint of mitigating potential impacts in sensitive areas that lie outside of the areas recommended for wilderness and underpin the potential effects that are attributable to the implementation of the Proposed Action. Many of these areas are

TABLE 36--Key areas allocated to LUD II in Proposed Action which are included in LUDs III or IV in Alternative F1.

Area Name	VCU #	Selected Resource Value Ratings 1/ Wilderness Attributes Index	Primitive Recreation Opportunities	Sport Fisheries	Wilderness Values
Berner's Bay	16	23	5	4	3
Farragut Bay	90	26	4	4	5
Idaho Inlet	190	26	5	4	4
Long Bay	228	28	4	3	4
Seal Bay	229	23	4	4	5
Lake Eva	295	23	5	5	4
Bay of Pillars	403	23	5	4	4
Rocky Pass	427	26	5	4	4
	428	25	4	5	3
Upper Duncan Canal	441	24	5	5	4
Eudora Mtn.	684	25	4	5	4
Naha River	742	22	4	4	4

1/ Ratings range from 0 to 5 except for the Wilderness Attributes Index, which ranges from 4 to 28; these ratings are explained in related task force working reports.

also considered important by the Alaska Department of Fish and Game in furthering its management goals and objectives. Given the large amount of southeast Alaska that is contained in the Tongass (more than 60 percent), the Department is very much dependent upon our cooperation in managing Forest lands in ways that are compatible with its management plans. The Proposed Action tends toward such cooperation, even though it has compromised some previously recommended allocations to increase the potential timber yield.

Based on the above Effects Comparison, variation F-1 is the least costly. However, it is also the least sensitive in meeting environmental goals.

Variation F-3 is the most costly but also the most environmentally sensitive. It could result in the greatest displacement of workers, with 75 jobs being lost in sawmilling in the Ketchikan area as compared to 25 in F-1 and 35 in the Proposed Action.

Given the first priority goal for the stated wilderness area allocations, three key goals remain: 1) the environmental sensitivity of the non-wilderness management, 2) the maintenance of present employment levels in the wood products industry with a minimum of displacement, and 3) cost-effectiveness in reaching the other two goals. In comparison to F-1 and F-3, the Proposed Action more nearly balances the three goals. It provides for a diversity of management approaches; provides for a balance of recreation opportunities; and limits, to some extent, high costs at the margin. It is reasonably sensitive to a wide range of environmental needs; provides for a fairly stable economy; and meets local and National goals for wildland use opportunities. The decision was based on its ability to serve the larger range of demands of local communities and the National publics.

Based on the public interest served as expressed by the National Monument Proclamation and by the clear intent of Congress in legislative proposals by both houses, the Proposed Action is to proceed with the October 13, 1978 exchange offered by the Goldbelt Corporation. Further analysis and discription of this proposal is contained in Appendix G (Goldbelt option E5).

Effects of Implementing the Proposed Action

Economic Effects

Assessment of the economic effects of the Proposed Action must be made in the total context of the government's function in a mixed economic system such as that of the United States. While the Nation depends on the private market as its chief allocator of resources, there is a sizable public sector which provides certain kinds of goods and services. The public sector functions, as well, to maintain economic stability and to secure what are perceived to be socially desirable adjustments in the distribution of income. The latter of these two functions is largely achieved by taxing policies, out-payments, rules and regulations, but is also influenced by resource allocation. While the basic mission of the Forest Service is to provide goods and services, the interaction with the other functions of the public sector must also be considered when allocative decisions are being made.

It should be noted that the Forest Service is not mandated to provide goods and services at a "profit" to the agency, but is required to consider the cost effectiveness of its programs. This may be interpreted to mean that the overall benefits of a particular program should outweigh the costs, but many of these benefits defy measurement. Such measures of efficiency as benefit-cost ratios have limited value in determining the viability of producing goods and services that are not marketed. The use of unsubstantiated proxy figures as a substitute for market prices only confuses the issue. For those goods and services which are traditionally marketed, efficiency measures can provide useful information in alternative selection; however, conclusions must be tempered by consideration of other, non-marketed, returns to the public investment. In the following analysis, traditional economic measures are used to the extent possible but other factors of a less quantifiable nature are also brought into consideration.

Timber

The timber program in Region 10 demonstrates a case in which the public sector has been willing to forego net returns in order to secure regional economic stability. If the sole objective of the Forest Service was to maximize net revenues, it would sell its timber resources for the uses that yield the greatest returns for stumpage, i.e., round logs for export. On the sole basis of economic efficiency, it would also be most desirable to harvest the old growth timber on an accelerated basis rather than to practice sustained-yield forestry. However, the public sector is willing to forego maximum stumpage receipts in order to develop a stable wood-processing industry in southeast Alaska and, thus, provide regional employment. In this case, an adjustment in resource allocation is made in order to secure stability and, to some extent, a redistribution of income. In most cases, it has been difficult to measure the cost of providing an opportunity of this kind, but the situation in southeast Alaska provides a basis to make such a calculation: The opportunity cost is the difference between stumpage priced under the primary manufacture regulations and the price that could be received for round log exports.

An analysis of the fiscal year 1978 National Forest timber program for Alaska has recently been completed.1/ This analysis, which was limited to budgeting expenditures and revenues received by the Forest Service alone, concluded that the timber program

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1/ Dahl, J.R., Analysis of FY 1978 Timber Program: Alaska, USDA-Forest Service, Policy Analysis, Washington, DC, August 1978.

operated at a deficit if a 10 percent discount rate was used but benefits exceeded costs if a five percent rate was used. It also concluded that the program operated at a deficit if the costs of other activities associated with the timber program were included as costs.

It is interesting to note that benefits exceed costs in each of these cases if an imputed value for stumpage, recognizing the opportunity cost of the primary manufacture regulations, is considered. Based upon Bureau of Indian Affairs appraisals (minus the allowance for profit and risk included by the Forest Service) net stumpage rates appraised to round log export were calculated at $20,785,000--an increase of over $16.5 million above the stumpage fees received by the Forest Service for fiscal year 1978.

It is recognized that a more complete benefit-cost analysis would be appropriate to properly assess the optimum level of public investment in the timber program and such an effort is currently being undertaken. This analysis will include estimates of taxes paid and the cost of services received at all levels of government by the firms involved and their employees as well as estimates of induced effects. Due to the difficulty of developing this kind of information, particularly when consideration is given to the rights of privacy of both individuals and firms, it will be several months before this analysis is completed. However, some preliminary information indicates that the contribution of the timber industry in aggregate provides nearly 39 percent of Sitka's total assessed valuation for property tax purposes. Of course, the cost of providing services to both the industry and its employees must also be considered, as well as other taxes received by the community. Taxes paid and services received from the State and Federal governments must also be evaluated.

Although there may be some uncertainty regarding the returns to public investment in the Forest Service timber program in southeast Alaska, both National direction and a majority of public responses to the DEIS expressed concern for the stability of timber-related employment.

Employment levels have been estimated at an annual National Forest output of 450 MM bm as well as at a lower level of public investment which would yield 412 MM bm annually.

There appears to be sufficient low quality timber and residual chips from cant manufacture to operate both pulpmills at full capacity at either level of National Forest output providing that the mills utilize some output from the private sector. In fact, there is a surplus of pulpwood indicated at a National Forest output of 450 MM bm per year which may make it difficult for private owners to sell this entire pulpwood output locally. While chips are presently imported from British Columbia, this source of supply was not considered in the calculations and may reduce the utilization of low quality logs in southeast Alaska.

Under both the 450 and 412 MM bm levels of timber output from the National Forest, the quantity of wood suitable for cant manufacture falls below the average from 1971 to 1976. With a Tongass output of 450 MM bm per year, the total volume suitable for cant manufacture is 241 MM bm per year, as compared to the six-year average of 246 MM bm per year. The set of projections previously developed for a sustained-yield harvest from private lands indicates a derived demand of 236 MM bm annually for cant production. If the annual Tongass output is 412 MM bm, 221 million will be available for cant manufacture, a deficit of 25 MM bm a year when compared to the six-year average and 15 MM bm less than the derived demand estimates.1/

1/Glass, Ronald J., An Assessment of the Demand-Supply Situation for Southeast Alaska Timber.

Except for special cases, round-log exports from southeast Alaska have been primarily Western red-cedar and Alaska cedar which were exempt from the primary manufacture regulations. Since private landowners are not constrained by the primary manufacture regulations, it is anticipated that they will export approximately 110 MM bm of better quality logs annually. There will be a reduction in exports from the National Forest due to the reduced harvest and the anticipated requirement that red-cedar be locally processed.

The advent of private land owners in southeast Alaska is expected to increase total timber harvest since round log exports will quite likely open markets previously unavailable to local processors. At both levels of National Forest output, total timber harvest increases above current levels due to the additional private harvest. The implications are that logging employment will increase regardless of the markets that privately-owned timber enters.

Timber-related employment increases slightly over the 1970-1976 average at a 450 MM bm harvest from the National Forest plus State and private timber (TABLE 37). Since sufficient wood is available to operate both pulpmills at full capacity throughout the year, part of this increase can be attributed to the difference between full capacity employment and the 1970 to 1976 average which reflects some periodic pulpmill closures. The increase is in logging employment since sawmilling declines and pulp mills continue to operate at present full capacity. The decline in sawmill employment compared to the seven-year average is estimated at approximately 100 man-years annually, whereas logging increases are about 140 man-years.

With a 450 MM bm output from the National Forest, timber-related employment increases in both Ketchikan and Stikine Areas, but declines in the Chatham Area. Ketchikan continues to be the leading Administrative Area in terms of forest-related employment and gains about 164 man-years of employment. This increase results largely from the increased logging on private holdings in this Area with sawmill employment declining. The Stikine Area shows a gain in total timber-related employment of 90 man-years while the Chatham Area loses 130 man-years annually.

After examining the structure of the southeast Alaska timber industry, it appears that the communities most susceptible to reductions in sawmilling jobs are Haines, Metlakatla and Ketchikan. Such reductions might be caused by either the reduced timber supply or shifting market conditions.

With an annual harvest of 412 MM bm from the Tongass plus timber from the State and private lands, employment in the timber industry is retained at approximately current levels although there are distributional changes among the Administrative Areas and employment categories (TABLE 38). The man-years of employment do not change in pulp manufacture, but losses occur in sawmilling, while logging employment increases. Sawmilling employment drops by 150 man-years below the current employment level. While the market may not be adequate to accommodate these levels of cant output, the set of projections assuming sustained-yield from private lands which were previously developed indicate that cant manufacture could be maintained at a higher level than possible with the 412 MM bm of timber being made available.

At this level of timber output, timber-related employment increases in both the Ketchikan and Stikine Areas, but declines in the Chatham Area. Ketchikan continues to be the leading Administrative Area in terms of forest-related employment and gains about 100 man-years of employment. This increase results largely from the increased logging on private holdings in this Area with sawmill employment declining. The Stikine Area shows a gain in total timber-related employment of 50 man-years while the Chatham Area loses 160 man-years annually. Again, Haines, Metlakatla, and Ketchikan would be most susceptible to reductions in cant manufacturing jobs and the pressures for such a decline would be greater.

TABLE 37
Estimated Timber Harvest, Consumption, and Employment Assuming Sustained Yield for Private Lands and an Annual Harvest of 450 Million Board Feet from Tongass National Forest.

	Ketchikan Area	Stikine Area	Chatham Area	TOTAL Region
Available Sawlog Harvest (MMbm)				
Tongass	212	108	130	450
Private	150	-	-	150
State	-	-	10	10
TOTAL	362	108	140	610
Available Utility Logs and Residual Chips (MM bm)				
Tongass	42	Stikine	51	96
Private	18	Supply to	-	18
State	-	Chatham	2	2
TOTAL	63	-	53	106
TOTAL SUPPLY (MM bm)	425	108	193	726
Employment (12 month average)				
PRIMARY				
Logging	800	260	310	1,370
Lumber	220	200	40	460
Pulp	650	-	530	1,180
Timber Transportation	60	30	30	120
sub total	1,730	490	910	3,130
OTHER PRIMARY	1,390	1,160	4,900	7,450
TOTAL PRIMARY	3,120	1,650	5,810	10,580
Induced Employment	3,650	1,230	6,900	11,780
TOTAL EMPLOYMENT	6,770	2,880	12,710	22,360
Population	15,040	5,510	26,760	47,310

The shift of employment opportunities from sawmilling to logging can have some severe repercussions on specific communities that stand to lose employment. Whether a shift occurs as the result of a reduced timber supply from the National Forest or changing market conditions, several communities that have depended upon milling activities as an important element of their employment base can be adversely affected. While new opportunities for logging employment are anticipated, it is unlikely that they will occur in the same communities that are expected to lose sawmilling jobs. Logging jobs also generally require different skills and tend to be less stable than sawmilling employment. While previously unemployed or underemployed individuals may have greater opportunity to secure employment due to the increased logging, others who have benefited from mill employment in the past may face unemployment.

TABLE 38--Estimated Timber Harvest, Consumption, and Employment Assuming Sustained Yield for Private Lands and an Annual Harvest of 412 Million Board Feet from Tongass National Forest.

	Ketchikan Area	Stikine Area	Chatham Area	TOTAL Region
Available Sawlog Harvest (MMbm)				
Tongass	194	99	119	412
Private	150	-	-	150
State	-	-	10	10
TOTAL	344	99	125	572
Available Utility Logs and Residual Chips (MM bm)				
Tongass	44	Stikine	50	94
Private	18	Supply to	-	18
State	-	Chatham	2	2
TOTAL	62	-	52	114
TOTAL SUPPLY	406	99	181	686
Employment (12 month average)				
PRIMARY				
Logging	760	240	290	1,290
Lumber	200	180	30	410
Pulp	650	-	530	1,180
Timber Transportation	60	30	30	120
sub total	1,670	450	880	3,000
OTHER PRIMARY	1,390	1,160	4,900	7,450
TOTAL PRIMARY	3,060	1,610	5,780	10,450
Induced Employment	3,580	1,200	6,900	11,680
TOTAL EMPLOYMENT	6,640	2,810	12,680	22,130
Population	14,750	8,370	26,760	46,880

Fisheries

Since no changes in physical outputs have been identified to result from implementation of the Proposed Action, it follows that no fisheries employment impacts can be identified. Area Guide policies protect existing salmon spawning and rearing areas. While some potential aquaculture projects might be adversely affected, it has not yet been determined if these are biologically sound and/or economically feasible.

Mineral Exploration and Development

Demand for raw mineral materials will increase in 1979 and throughout the 1980's as the National trend toward growth and expanding economic activity continues. Mining in southeast Alaska is primarily a function of out-of-state demand. The future is promising but uncertain in terms of the magnitude, character and timing of growth.

The future growth rate of southeast Alaska's mining economy will continue to depend on outside forces--world markets in the case of manufacturing, National defense policy in the case of Federal Government employment, and decisions in the Federal and private sectors regarding mineral development.

Direct employment impacts are confined to those derived from the mineral development itself--for the construction phase, the hiring of engineers and designers, people who provide services such as assaying and metallurgical testing, and construction tradesmen; for the operation phase, supervisory operating and maintenance personnel for all facilities incorporated in the development. It is assumed that no new downstream industrial facilities will be established to use the output of the mine; concentrators are included in mine developments, and refining and further processing will be done in the Lower 48. Indirect employment impacts affect employees of the wide variety of industries supplying materials, equipment, and services for the construction and operation of the plant. Many of these impacts will not be experienced in southeast Alaska. Induced employment impacts are limited to those arising from increased consumer spending--in effect, a recirculation of the wages earned by the new employees.

Population increases normally follow employment growth in a region. The added jobs derived from the proposed mining and related construction would increase southeast Alaska's population. However, construction employment is temporary in nature, so the mining construction would have only a transitory impact on Alaska's population. To the extent that the jobs could be filled by the local construction labor force, they could be considered part of Alaska's permanent labor force and population.

Jobs created through mineral mining operations, however, are permanent. Thus, unless the local labor force can provide all of the required services, additions to the labor force and population will result. If developed, the three operations at Quartz Hill, Greens Creek, and Bohemia Basin could employ as many as 1,300 persons by 1985.

Projected continuing activity of these three prospective mines is:

Activity	Years	Mine
Construction initiated	1978 or before	Quartz Hill, Greens Creek, Bohemia Basin
Operation begins	1982	Greens Creek Operational
	1983	Bohemia Basin Operational
	1985	Quartz Hill Operational
Closing date	1992	Greens Creek and Bohemia Basin closed *
	Post 2000	Quartz Hill closed

* Assuming no additional reserves are defined during mine life.

It should be noted that construction activities would continue until 1985, when the third mine begins operation. For seven years all three mines would be in operation.

The potential development of these mineral holdings has been affected by two National decisions. On December 1, 1978, Assistant Secretary of Agriculture M. Rupert Cutler withdrew U.S. Borax's special use permit to build an 11.5 mile access road.

This decision was consistent with President Carter's designation of the Misty Fiords National Monument. This designation, along with the designation of Admiralty Island as a National Monument, make further development of the U.S. Borax Quartz Hill holding and the Noranda Greens Creek holding less likely since use of helicopters for bulk sampling is extremely costly.

These two actions thus have a negative effect on the mineral industry and the economic growth potential of southeast Alaska. They also affect the State and Nation's gross product. This effect on the mineral industry applies both to development of known deposits and to discovery of additional rich deposits since exploratory activity will be curtailed in protected Monuments.

Government Employment

No change in government employment has been identified as the result of the implementation of the Proposed Action. The specific programs developed for the future management of the Tongass National Forest can certainly affect government employment but this information is not yet available.

Tourism and Recreation

It is extremely difficult to assess employment changes related to resources other than timber or salmon. Alternative timber output levels, within the limits that the market will absorb, provide a basis to determine employment levels. In other cases, such as recreation, the relationship between land allocation and employment is not so clear. The establishment of two National Monuments in southeast Alaska undoubtedly will excite interest, but it is difficult to anticipate the impact on employment compared to some other alternatives. For example, an alternative which expands the timber or minerals industry and, thus, increases the resident population, also increases the demand for recreational activities by residents. This, in turn, contributes to the recreational employment base. The salient question is to what extent the creation of National Monuments is apt to stimulate recreational participation and related employment beyond that which would occur as the result of a greater resident population or an anticipated increase in tourism regardless of the Tongass land allocation. The number of non-residents vacationing in southeast Alaska is limited both by high costs of transportation and other goods and services and by the capacities of the existing ferry system, tour ships and commercial airlines. There is no clear evidence at this time that the establishment of the two National Monuments will increase recreation-related employment in southeast Alaska. On the other hand, restrictive land-use regulations could reduce the potential for employment in developed recreational facilities, although the distribution would probably be more affected than the absolute quantity.

Changes in Gross Regional Product

Three sets of projections were made for changes in gross regional product using the southeast regional economic model[1/]. The forest products sector of the model in the high case was calculated on the basis of a combined sawlog harvest from Tongass National Forest, State and private lands equaling 695 MM bm; the intermediate case, a sawlog harvest from the same sources of 562 MM bm; and the low case, a harvest of 202 MM bm from the Tongass alone. The assumed harvests in the Proposed Action fall

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1/ Socioeconomic Overview, April 1978, pp. 72-77; Tongass Land Management Plan Draft Environmental Statement, June 1978, Series R10-29, pp. 129-130.

between the high and intermediate (base) cases used in these original calculations. The Proposed Action which assumes a sawlog harvest of 572 MM bm (412 MM bm from Tongass) is only 1.8 percent higher than the assumed sawlog harvest in the intermediate case. Since the lumber and pulp sector of the model represents 17.5 percent of the gross regional product, the effect on that total would be minimal (less than a 0.5 percent increase). The Proposed Action which assumes a sawlog harvest of 610 MM bm (450 MM bm from Tongass) is 8.5 percent higher than the assumed sawlog harvest in the intermediate case and 12.2 percent lower than the high case. The model's lumber and pulp sector is 21.5 percent of the gross regional product for the high case. The effect of the 610 MM bm harvest level on total gross regional product would be an increase of approximately two percent above the intermediate case and approximately three percent below the high case gross regional product.

Social Effects

Analysis of the social effects of the Proposed Action draws primarily from the public involvement record. For a more complete understanding of the issues and effects of alternatives, as perceived by groups and communities, the reader is urged to consider, along with this analysis, The Summary of Public Response, Issues, and Social Effects of Alternatives. This social analysis is based primarily on subjective data and information since the public response does not represent a statistical sample of the public.

A social analysis is an effort to describe social benefits and costs that will accrue to society as a result of a specific action. The social analysis deals in terms of how groups and communities are affected by changes in population, life style, traditional uses, distribution of economic and political power and quality of public services. The analysis, although strongly based on public input, also depends on the more measurable elements of the economic analysis such as the nature and location of employment, goods and services produced, etc. In describing how a group or community is affected by a specific action it is helpful to be aware that within most groupings of people there exists a wide range of preferences which often conflict.

This analysis examines, in general terms, how the nation, southeast Alaska region and specific communities perceive changes in employment, population, lifestyle and self-determination as a result of the implementation of the Proposed Action.

Some population growth is being experienced by almost every community in southeast as a result of factors outside of Forest Service decisions. The general growth within other regions of the State results in an increase in government jobs in Juneau resulting in population growth. The dramatic shift to the Natives of economic and political power as a result of the Native claims settlement has resulted in the Native people gaining control of their own destiny and considerable wealth. Native corporations will control considerable natural resources that will, in turn, generate new jobs and stimulate a further increase in population.

The Forest Service Proposed Action will have little effect on changing the employment or population structure of the region. Some smaller communities may feel greater impacts than larger communities. The greatest change the Proposed Action will generate is in the area of land uses, which may effect some communities significantly. The social effects of the Proposed Action follow closely those described for Alternative A2 as updated in this final statement. Some additional specific effects are as follows:

Haines The proposed allocation pattern will not impact how the residents of Haines use the land. Haines is, however, struggling for economic stability

through the reopening of their wood processing mill. The National Forest timber available under the Proposed Action offers little promise that the Haines mill can compete for enough timber to supply the mill. The efforts of the State of Alaska to provide Haines a timber supply indicates that even if the timber were available in sufficient supply the present market situation seems to be the limiting factor for Haines. A significant number of people in Haines see the Tongass wilderness and Monument designations as major barriers to them in achieving economic stability. Additionally, they perceive their ability to influence National Forest decisions as greatly reduced.

Hoonah Proposed logging near Hoonah will most likely result in a logging camp adjacent to the community. This is generally viewed as a favorable impact by the community since it will increase both population and tax base. Public services such as the school are seen to benefit from such increases. Increased population may help existing services be better utilized, but at some point additional services will be required. Additional roads that would facilitate logging of Native lands and access to the community of Game Creek as well as road access to some favored fishing and hunting areas are generally viewed as favorable benefits.

Increased population and access will, however, increase the competition for fish and game resources as well as encouraging residents to aquire vehicles, the results of which may be viewed by some in the community as costs rather than benefits.

Sitka The Proposed Action will have little effect on Sitka's employment and use of local lands. There may be some future conflicts if logging immediately adjacent to the community becomes necessary in order to maintain local employment.

Tenakee Expected additional logging in Tenakee Inlet will continue to be judged as undesirable by most residents of Tenakee. Residents value their subsistence lifestyle and small community. Increased logging, population and roads are not viewed as benefits by Tenakee even though logging and road activities are being planned to comply with local preferences as much as possible. Some economic benefits are, however, realized from additional employment and business brought to the community.

Juneau The Proposed Action will have a minimal effect on Juneau. There may be additional tourism as a result of National Monument status for Admiralty. Wilderness designation for Admiralty will eliminate some 28 special use cabins in Seymour Canal used primarily for hunting and trapping. This loss will be viewed, by those permittees and friends who use the cabins, as a significant cost to them even though public cabins may be built to accommodate use of the area.

Angoon Monument and wilderness status for Admiralty are viewed by Angoon residents as significant benefits to their lifestyles, providing the management regulations for the island under these designations will not change their right to engage in traditional subsistence or recreation activities. If Mitchell Bay were to become wilderness rather than private land through an off-Admiralty selection by the village corporation, certain restrictions on developments may effect Angoon. The community has discussed the need for a reliable community water system, a desire for aquaculture, and commercial lodge facilities. Whether these developments would be constrained in any way would depend on the language in the wilderness legislation and the specific land ownership patterns that are finalized.

Petersburg and Wrangell The Proposed Action will not alter significantly the current employment or population for either community. The Stikine River being designated as wilderness has two major impacts as perceived by the communities. First, the closing of the Stikine road option connecting Wrangell and Petersburg with the Alaska highway is perceived by some as a cost and others as a benefit. Road access would bring significant changes to both communities and there are divided feelings whether these changes are favored or opposed. Wrangell will be especially impacted through the eventual removal of some 25 private recreation, hunting and trapping cabins on the Stikine River. This use is highly valued by local residents and cancellation will be strongly opposed even though additional public cabins may be built.

Kake The Proposed Action will be viewed generally as favorable by Kake residents. Southern Admiralty and Tebenkof being kept in an undeveloped state is viewed as an important benefit for the continued subsistence lifestyle of local residents. If Duncan Canal were to be designated as wilderness a future power connection between Kake and the Tyee Project would be blocked. This would probably be viewed as an undesirable cost by Kake residents.

Ketchikan The Proposed Action is generally viewed by local residents and the business community as a loss of future development options as well as the loss of local control over key resource decisions affecting the community. While the Proposed Action may cause some employment shifts from lumber processing in the community to logging jobs in outlying areas the community may experience some employment loss. Increased employment and population is likely to occur in outlying areas that depend on Ketchikan for services, such as Prince of Wales.

Wilderness and National Monument status of Misty Fiords will have little impact on the current use of that area by local residents. Some impacts will be realized as several private special use permits will eventually be cancelled. The future development of Lake Grace as a part of the Swan Lake hydro development will not be possible. This will shift the next development in 10 to 20 years to Mahoney Lake increasing somewhat the cost of power to the community and limiting the future development by the loss of the Lake Grace potential. Additional hydro possiblities are not evident at this time. The future power needs of Ketchikan and Prince of Wales Island are uncertain. Although not a current problem, adequate power past the year 2000 may become a problem for the Ketchikan and Prince of Wales area.

Metlakatla The effects on Metlakatla by the Proposed Action are uncertain. The local hemlock mill provides about 110 man-years of employment. Land owned by Metlakatla can provide between three and seven MM bm annually with the remaining hemlock coming from other lands. The current lease with LPK expires in the spring of 1979, and whether or not the lease will be renewed is unknown. The Metlakatla mill is one of the most vulnerable mills that could be impacted by a reduction in timber harvest from National Forest land or a shortage of hemlock logs. If the mill could not obtain sufficient logs from either National Forest or the anticipated harvest from Native selected lands the mill would be forced to either reduce operation or close. This could create significant economic loss to the community and result in significant social costs. Employment in fisheries could mitigate some of the possible negative impacts of employment loss in the mill. Local fisheries employment has fluctuated over the years. In 1975, the community cannery was closed, but operated in 1978 as a result of the improved fishing in southeast.

Expressions from the community clearly indicate a feeling of loss of control over their future because of their economic dependence on outside business interests and public resource decisions not reflecting their needs.

National Values The public response from outside of Alaska verified our earlier perception that wilderness on the Tongass, emphasizing wildlife and fishery values, are the primary values held by national publics. Employment and development of natural resources in order to maintain our national economic and political strengths were values also expressed, but to a lesser extent.

Effects on Forest Composition

The general effects of logging and other activities on the forest composition which are expected from implementation of the Proposed Action are stated on pages 80-82. Under the Proposed Action, it is anticipated that approximately 16,500 acres of the existing forest composition would begin the described cycle of vegetative change each year. Beyond the 10-year life of this plan, the acreage cut each year will tend to increase as more areas with less volumes per acre are harvested.

Effects on Timber

The land allocations under the Proposed Action will reduce the amount of commercial forest land (CFL) that is available for timber management purposes to a significant degree. Of the 4.9 million acres of commercial forest land, 29 percent has been allocated to LUD I and will be unavailable if included in the National Wilderness Preservation System. This acreage contains 25 percent of the CFL that is currently considered operable. An additional 10 percent of the CFL, including seven percent of the operable acres, will be allocated to LUD II. (These acres will be unavailable for harvest during the life of this plan and are not included in current potential yield calculations.)

The Proposed Action can make 450 MM bm available for timber harvest each year. It requires that an average of 115 miles of permanent road be added to the forest transportation system annually. This level of harvest is equal to the average Tongass timber harvest from 1975 to 1978; it is less than the average of 520 MM bm harvested annually from 1970 to 1976.

The attainment of the 450 MM bm harvest level will prove more difficult if future analysis of timber producing lands (as will be required under NFMA-related regulations) results in an expansion of the acreages that are considered incapable, unavailable or unsuitable for timber production. It is expected that timber from State timber sales, from Canadian import, and from private lands will also be available. In addition to these sources, increasing future utilization of National Forest timber will add to the 450 MM bm. The availability of timber from all of these sources will be required to maintain the current timber-related employment level.

While the 450 MM bm can be provided, a considerable portion of this volume will have to come from lands that are presently considered economically and technologically marginal. Because of the above reductions in available CFL under current market conditions, this volume can only be attained by applying methods that will alleviate such marginality.

Methods of Attainment

The annual timber harvest of 450 MM bm can be attained using five different methods. All of these methods would serve to add 88 MM bm to the 362 MM bm of timber that can be made available annually under current levels of funding.

(1) Additional Investment: The deficit volume can be made available by adding $11.7 million annually to the current funding level of $23.5 million. This would alleviate the current marginality of enough potential harvest areas to make the 450 MM bm harvest level attainable. These investments would be for pre-roading, advanced logging technology and pre-commercial thinning.

(2) Departure from Even Flow: The deficit volume can be obtained through departure from non-declining even flow of timber harvest. The National Forest Management Act requires that such departure be consistent with overall multiple-use objectives of the forest plan. Regulations for implementing the National Forest Management Act have not yet been finalized. A departure from an even flow of timber now, in order to obtain 450 MM bm, would lead to a large reduction in harvest levels after three decades.

(3) Single Shortened Rotation: The deficit volume can be obtained by entering high quality 70-year-old timber stands rather than waiting until these stands reach their culmination at 100 years. Subsequent generations of timber at these sites would be harvested under the normal rotation at culmination of mean annual increment. Stands scheduled for pre-commercial thinning would be subject to shortened rotation.

(4) Continual Shortened Rotation: The proposed harvest can be obtained by entering 70-year-old stands, as described above (3) with subsequent re-growth also harvested on a shortened rotation period. Again, stands scheduled for pre-commercial thinning would be subjected to shortened rotation.

(5) Combined Methods: The proposed harvest can be obtained by using a combination of departure from even flow (2) and shortened rotation (3).

Analysis of Methods for Attaining Proposed Harvest

Each of the five methods for attaining the proposed harvest of 450 MM bm under the Proposed Action and variations F-1 and F-3 has been analyzed. The results are shown in Figure 22-A, -B, and -C, and discussed further in Appendix H.

A reasonable timber management program must provide some contingency volumes to act as a buffer against such unexpected conditions as variations in the natural regeneration of harvest areas, short-falls in additional timber yields anticipated from pre-commercial thinnings, large-scale blowdown of timber, unanticipated ecological effects attributable to timber harvest, and unexpected changes in the world market for timber products. The continuing inventory system and silvicultural examination by which timber resource data are gathered could also produce information requiring revisions in management approaches.

The methods involving departures from even flow or from standard rotation periods are viewed as relatively inflexible in providing for the above conditions. They tend toward a greater dependence on future management activities and possible timber yields than current methods. Also, shortening the rotation period on higher quality sites may result in smaller trees than can be marketed successfully. Possible future reductions in harvest volumes, combined with the lack of final NFMA regulations on departures, make these methods undesirable as a management approach.

For these reasons, additional public investment is the preferred method for attaining the proposed harvest of 450 MM bm at this point in time. The other methods may be employed in future planning, should conditions warrant their application.

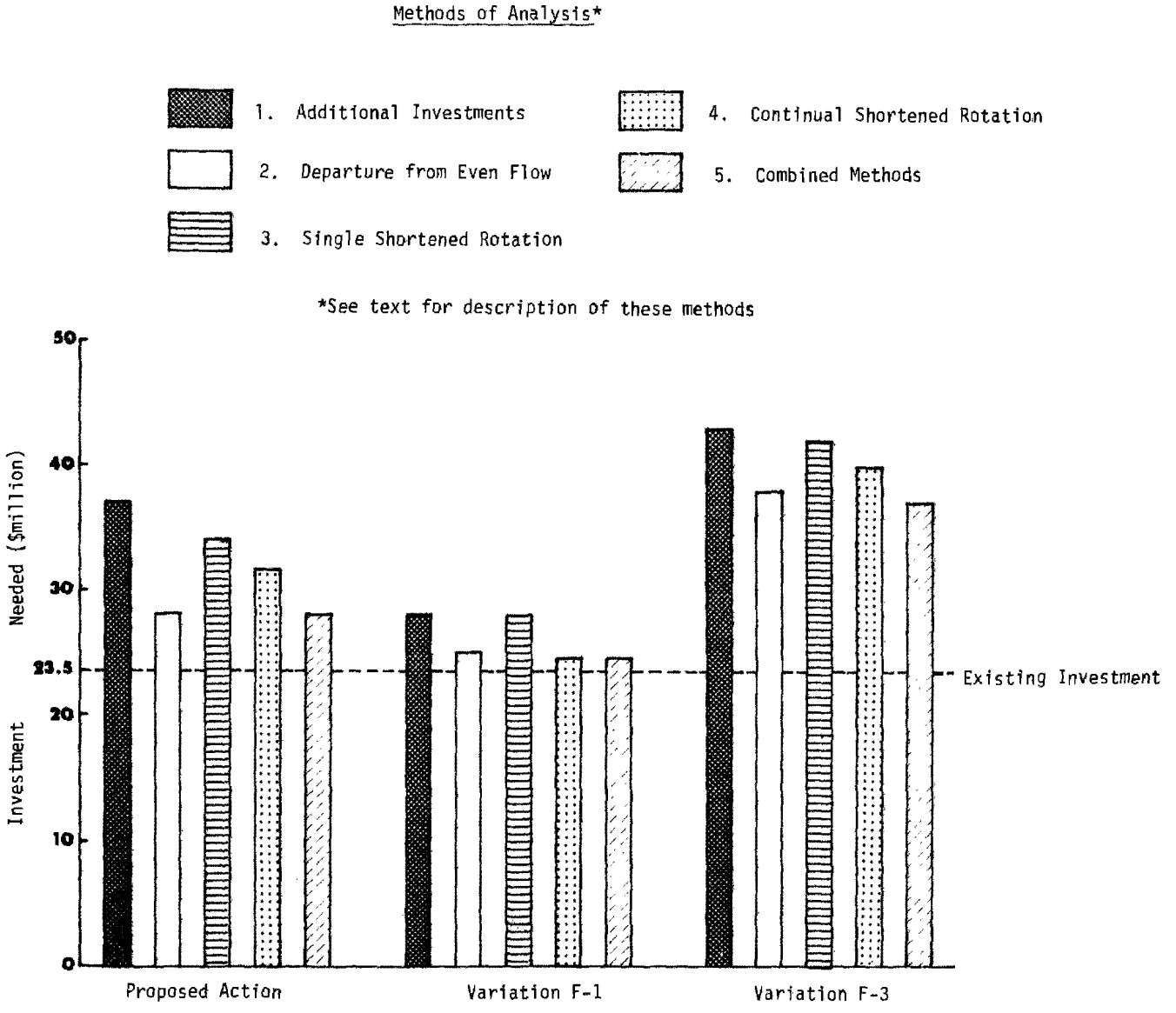


Figure 22A. Analyses of the Effects of the Proposed Action and Variations F-1 and F-3 on Tongass Timber Harvest
A. Investments Needed to Attain an Annual Timber Harvest of 450 MM bm

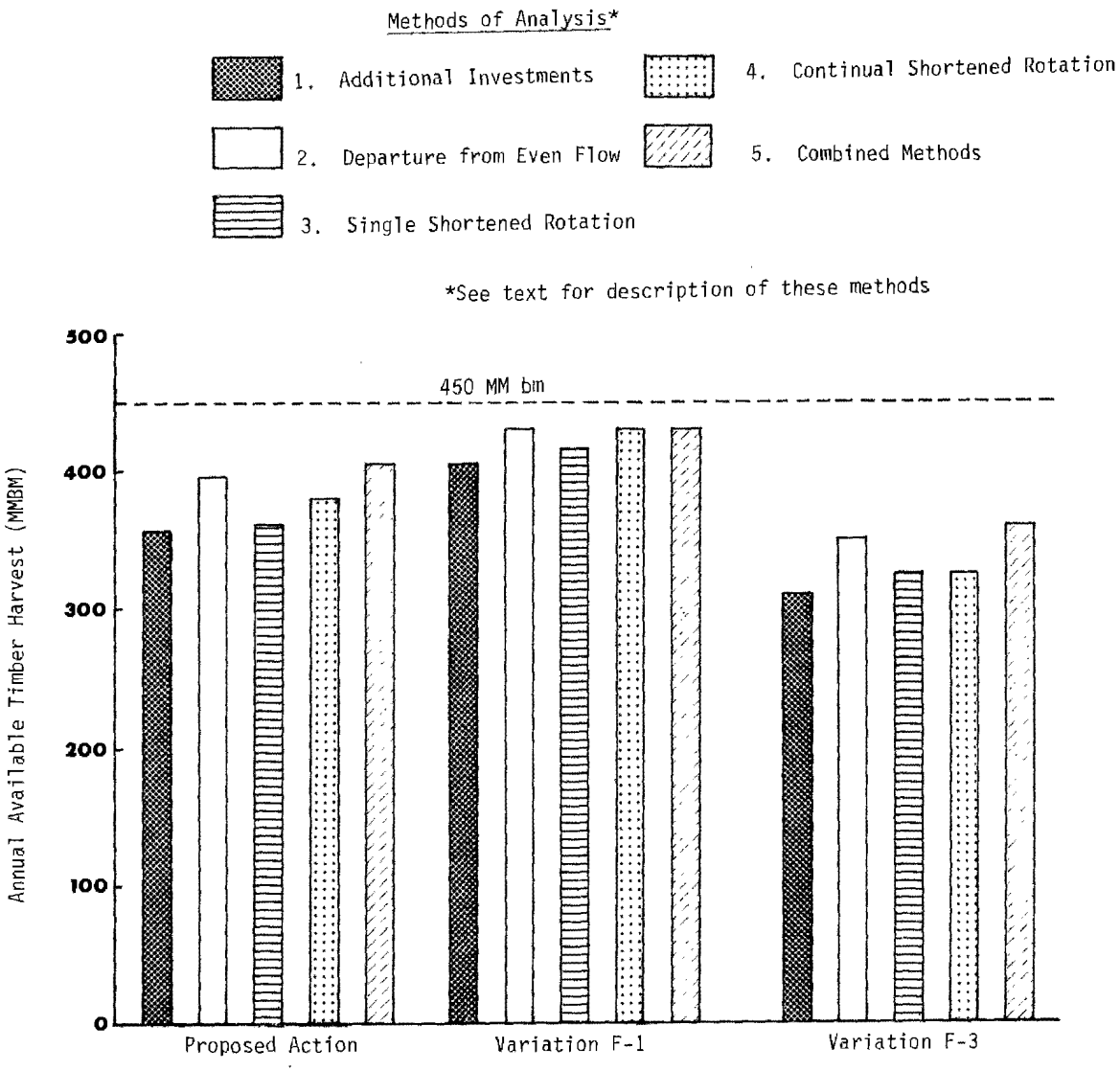


Figure 22B. Analyses of the Effects of the Proposed Action and Variations F-1 and F-3 on Tongass Timber Harvest

B. Available Timber Harvest at the Present Annual Rate of Investment ($23,500,000)

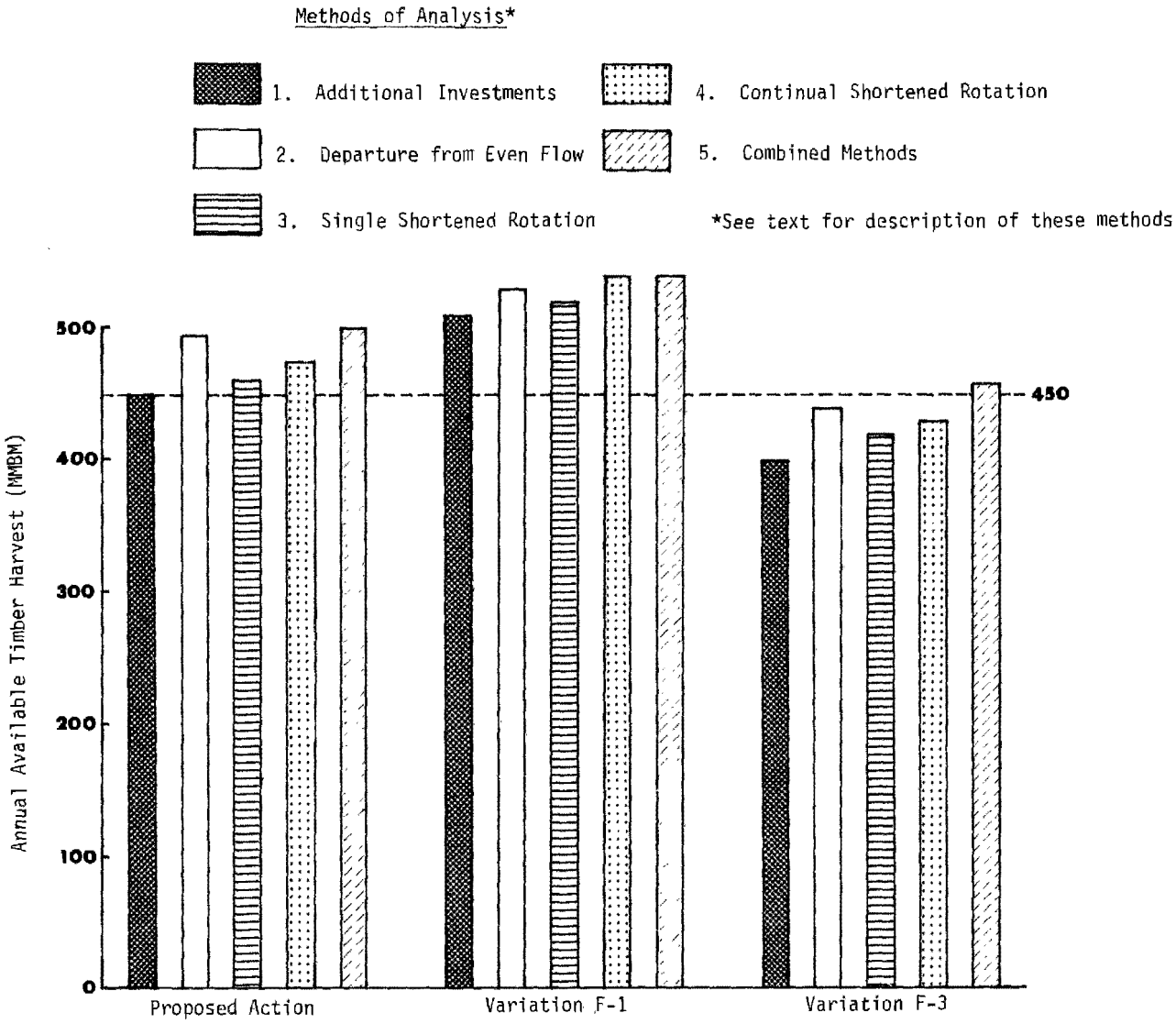


Figure 22C. Analyses of the Effects of the Proposed Action and Variations F-1 and F-3 on Tongass Timber Harvest

C. Available Timber Harvest With an Increase of $12,000,000 Above Present Investment Level

Investment Associated with the Timber Sale Program

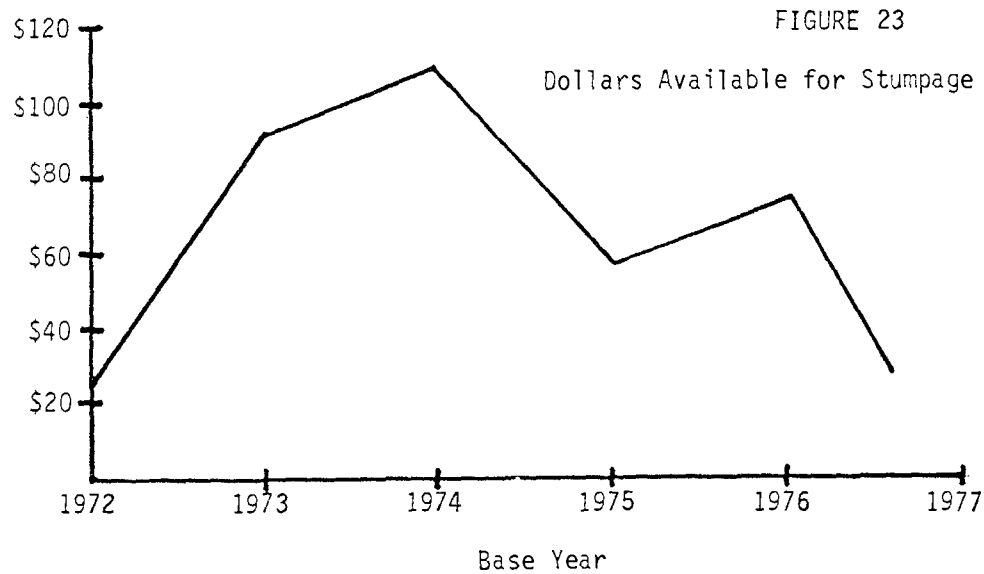
Public investment in the timber program is currently $43.80/MBM covering costs of interdisciplinary study, engineering, investment in roads and preparation, and administration of timber sales. To obtain the proposed harvest of 450 MM bm under the Proposed Action, additional investment would be required to build access roads prior to timber sales; to finance advanced logging technology; and to achieve pre-commercial thinning of suitable timber stands.

(1) Investment in pre-sale logging roads: When logging and manufacturing costs and profit and risk allowances are subtracted from end-product selling values, the remaining value of the timber is available to the purchaser for road construction and stumpage. In some years, when markets are good, the remaining value is high and public investment may be at a lower level. However, in periods of poor markets--when the available residual values are insufficient to cover the full cost of road construction--government investments can be substituted to facilitate construction of the roads. These investments include separate road construction contracts; supply of road construction materials such as culverts and bridge materials; or funding to the timber purchaser through credits which relieve the burden of construction cost. The commitment of government funds must usually precede the sale advertisement on independent sales or be accomplished in conjunction with rate redeterminations on long-term sales.

To obtain an index of values per M bm available to the purchaser for road construction and stumpage on the Tongass, a typical timber sale was analyzed. This index sale has been reappraised periodically to reflect change in markets and in construction costs. The results of this analysis are illustrated in Figure 23. The display illustrates how major fluctuations in the timber market have produced wide variations in purchaser dollars available for roads and stumpage during the five year period, 1972-1977. From a high of +$100 per M bm in 1974 available for purchaser investment, market conditions dropped the residual values to approximately $20/M bm during the first half of 1977. An index of resulting public investment to supplement the purchaser's investment in road construction would reverse the figure, displaying the current high investment required.

FIGURE 23

Dollars Available for Stumpage and Roads



Rate redeterminations affected by this Land Management Plan on the Louisiana-Pacific, Ketchikan sale become effective on July 1, 1979, and July 1, 1984; and on the Alaska Lumber and Pulp Company sale on January 1, 1981, and January 1, 1986. It is not possible to determine in advance what market conditions will be on each of these dates and, consequently, the exact amount of government investment required.

In addition to market conditions, allocation decisions reached through TLMP also create a situation in which public investment may be required to assist in timber road construction. There are areas on the Tongass where constraints involved with the management of the other forest resources reduce the timber available for harvest to the point where the roads cannot be built with timber receipts. In other parts of the Tongass, the timber is too marginal--either in quantity or quality--to amortize the roads by itself.

In those areas where timber harvest and roads are planned, construction of roads can provide access for a variety of other resource activities. Desirable management goals such as fish and wildlife habitat improvement, better distribution of hunting and fishing use, reforestation and timber stand improvement, and recreational use of the National Forest can be served by the public investment in pre-roading. The additional advantage of providing a safer means of transportation than boats and aircraft during inclement weather is obvious to all who travel in southeast Alaska.

(2) Investment to finance advanced logging technology: The distribution of the best operable Tongass commercial forest land (CFL) between land use designations is as follows. Under the Proposed Action, aproximately 25 percent of the high and very high quality operable CFL is in LUDs I and II and, therefore, unavailable for timber harvest. Less than 50 percent of the high and very high operable CFL is included in the development-oriented LUD IV. The other 25 percent is included in areas allocated to LUD III. The LUD I allocations will result in permanent loss of some potential timber harvest. The resulting decrease intensifies the importance of increasing utilization of those lands which can be harvested.

There are areas of the Tongass where the timber may not be harvested with conventional methods without undesirable impacts on other resources. Examples of these conditions include steep slopes with unstable soils and areas with high scenic values which preclude road construction. Through public investment, harvest methods using helicopters, balloons, or long-line skyline systems may make these timber volumes available while protecting and/or benefitting other Forest resources.

(3) Investment in pre-commercial thinning of suitable timber stands: This silvicultural technique releases the young trees from competition and allows the timber growth to be concentrated on the trees that will last throughout the rotation period. Public investment in such methods of intensive timber resource management will play an important role in reaching the proposed annual harvest of 450 MM bm.

Relation of Proposed Action to Long-Term Contracts

The present status of the three long-term timber sales on the Tongass is summarized in the table below:

Sale Name	Contract Date	Expiration Date	Contract Timber Volume MMBM	Timber Volume Remaining 1/1/79
Ketchikan Pulp Co. (KPC)	7/26/51	6/30/2004	8250.0	4560.0
Pacific Northern Timber Co. (PNT)	6/9/54	12/31/1981	693.1	134.0
Alaska Lumber and Pulp Co. (ALP)	1/25/56	6/30/2011	4974.7	3325.0

Each of these timber sale contracts includes measures to protect the other resources within the sale area. The contract with ALP specifies that up to 237 MM bm may be made unavailable for harvest within the primary sale area for purposes of protecting scenic values, salmonid resources, or other purposes incompatible with the contract. The PNT contract permits up to 46 MM bm to be made unavailable for similar reasons in the primary sale area. There are no limitations on the amount of timber that may be retained for other uses in the KPC contract or in the PNT and ALP contingency areas.

There is the possibility that the Proposed Action will withdraw more timber volume from the sale areas than provided in the contracts. Conflicts between the Tongass Land Management Plan and the long-term contracts could also occur if environmental constraints are recommended which require more of the purchaser than the timber sale contract requires.

Section 15 of the National Forest Management Act validated the KPC and ALP timber sales. In addition, subsection (b) of that section states:

> (b) The Secretary of Agriculture is directed, in developing five-year operating plans under the provisions of existing fifty-year timber sales contracts in Alaska, to revise such contracts to make them consistent with the guidelines and standards provided for in the Forest and Rangelend Renewable Resources Planning Act of 1974, as amended, and to reflect such revisions in the contract price of timber. Any such action shall not be inconsistent with valid contract rights approved by the final judgment of a court of competent jurisdiction.

Thus, as part of the periodic revision of some contract terms during preparation of the five-year operating plans, negotiations will be held with the timber purchasers to modify the contracts in conformance with the Tongass Land Management Plan. Compatibility with the plan may be achieved by purchaser agreement, or if the government provides additional areas for the purchasers to harvest in lieu of contract sale areas retained for resource protection. The latter adjustment may require additional legislation. If an acceptable agreement cannot be reached with the timber sale purchasers, they may instigate court actions to establish their claims.

Relation of Proposed Action to Independent Sales and SBA Program

The Pacific Northern Timber Co. sale expires in 1981. This sale has been the basic source of material for the two sawmills in Wrangell. Under terms of the Proposed Action, the two Wrangell sawmills will have to compete for the independent timber sales offered from the Tongass or for timber from private lands. Through the association of these two mills with Alaska Pulp America, sawmill quality logs from the ALP long-term timber sale may supply part of the needed timber. However, since they do not qualify as small businesses, they are precluded from purchasing Small Business Administration set-aside sales.

The current Forest Service agreement with the Small Business Administration calls for an annual Tongass SBA set-aside program of 80 MM bm. This agreement expires in 1980. Under the Proposed Action, less Tongass timber will be sold than in the past. The SBA program will be evaluated after three to five years under the Tongass Land Management Plan. If this re-evaluation indicates that a change in the SBA program may be desirable, public hearings will be held and the input considered before any SBA program changes are made.

Effects on Wildlife

The uneven-aged old-growth forest of southeast Alaska provides ideal habitat for a multitude of species. Clearcutting part of that forest will reduce its attractiveness for certain animals, though it will provide a new food source for certain songbirds and rodents and for bears. The number of species will probably remain the same, but the number of individuals within some species will vary.

Since timber harvests in southeast Alaska are concentrated in high volume areas (25 to 30 MM bm per acre) on moderate slopes (less than 60 percent), they have a disproportionate effect on the species adapted to these specialized habitats. Biologists suspect deer may be especially dependent on these high-volume lands, and studies are in progress to answer this question.

Clearcutting can affect mountain goats in much the same ways it affects deer. However, in some areas mountain goats have a ready supply of winter food on the wind-cleared alpine ridges, and they rely on the forest only for cover. In those areas the impact of harvesting is less severe.

Bears, some rodents, and presumably moose will find food in the increased forbs and shrubs that thrive in cutover areas for up to 30 years after harvest. Thus, black bear and moose populations will probably change little as long as areas are maintained in early sucessional stages. However, species more sensitive to human intrusion such as brown bear, wolves, and wolverines can be expected to decline. Of the fur species, marten will probably be affected most by forest removal. Other fur species as well as eagles can probably be maintained if undisturbed beach habitat is kept near current levels.

Cavity-nesting birds such as woodpeckers and certain owls will decrease dramatically in harvested areas, as will flying squirrels and other animals that make dens in hollow trees. Logging removes the snags and defective trees where these species find cover.

On the other hand, songbird populations will increase in young clearcuts (Gibson 1976). Species such as rufous hummingbird, flycatchers, swallows, wrens, warblers, sparrows, and certain hawks will be plentiful as long as the early successional vegetation is present.

In general, the more logging is permitted, the greater the effect on wildlife. Whether logging is allowed under a LUD III or LUD IV designation is an important consideration. LUD III generally allows an average of 30 percent of the operable old growth to be retained for fish, wildlife, and visual quality. LUD IV allows only an average retention of 13 percent. Thus, LUD III offers much more latitude to protect important wildlife habitat than LUD IV. In LUD IV areas where most or all of the old growth is in the operable category and would be cut during the rotation, the impact most wildlife species would be considerable.

In terms of deer habitat, the Proposed Action allocates about 2.7 millic of commercial forest land with intermediate and key winter range to LUDs III (see Table 39). This amount represents 66 percent of all the winter range that in commercial forest land. Since the Proposed Action would result in the harvest of about 16,500 acres, four percent of the land in these habitat cate would be harvested during the 10-year life of the plan and about 40 percent wo harvested during a typical 100-year rotation.

TABLE 39--Amount of critical deer winter range allocated to LUDs III and IV.

Alternative and habitat category	Commercial forest land allocated to LUDs III and IV	
	Acres	Percent of total in category
Proposed Action:		
2	2,261,451	68
3	411,575	57
2&3	2,673,026	66

Another way to judge potential effects of an alternative is to compare how many VCUs with high wildlife ratings it allocates to LUDs I and II, which offer the greatest protection to habitat, and how many to LUD IV, which offers the least protection (Table 40).

TABLE 40--Number of Value Comparison Units with high wildlife ratings by alternative 1/, 2/

Alternative and wildlife rating	Number of VCUs allocated to			
	LUD I	LUD II	LUD III	LUD IV
Proposed Action:				
5	11	6	4	7
4	74	29	66	101
3	98	32	79	132

1/ Wildlife ratings range from 0 to 5; they are explained in Wildlife Task Force Working Report.

2/ Alternative A-1 would have similar effects on wildlife as A. Alternative A-3 would fall between B and C.

Effects on Threatened or Endangered Species

ne of the plant species threatened or endangered in Alaska are known to occur the Tongass National Forest.

ere are few threatened or endangered animal species in Alaska. The Federal r, October 1976, lists only the Eskimo curlew, the American and Arctic ne falcons, the Aleutian Canada goose, and the Diomedea albatross. The Alaska ent of Fish and Game also considers the short billed albatross as endangered. se species, only the peregrine falcon is likely to occur in the southeast and nen only as a migrant. No known nesting of the endangered peregrines occurs on the Tongass.

Effects on Flood Plains or Wet Lands

Any management activities under the Proposed Action that are located in or adjacent to flood plains or wet lands will conform to the directives of Executive Orders 11988 and 11990, which pertain to such areas. Compliance with the policies set forth in the Southeast Alaska Area Guide for water, fish, estuaries and wetlands resources will also act to minimize any potential adverse effects.

Effects on Research Natural Areas

Under the Proposed Action, existing research natural areas will be protected. Proposed areas will be evaluated before allowing any development.

Effects on Fisheries

The discussion on fisheries on page 92-94 is descriptive of the general effects that can be expected under the Proposed Action.

Impacts on Habitat

Fish streams located in areas allocated to LUDs I or II will be affected primarily by natural forces except for such enhancement as may be allowed (see Impacts on Enhancement). Of the 490 VCUs with high commercial and/or sport fish values 246, or 50 percent, are allocated to LUDs I or II. Twelve of the "High Quality Watersheds (62 percent) and 30 of the "Important Watersheds" (50 percent) identified by the ADF&G are totally within VCUs allocated to LUDs I or II as are portions of several others (see Table 41-A and -B).

Those fish streams in VCUs allocated to LUDs III or IV have a somewhat higher risk of impact due to the roading, timber harvest, and other management activities which will occur within these watersheds. Management direction and activity prescriptions for all LUDs emphasize full protection of the streams' biological potential. However, it's recognized that some unavoidable adverse impacts will probably occur at times.

Sport fisheries will be impacted more than commercial fisheries since the esthetic quality of the sport fishing experience may in some cases be affected even though there may be no effects on fisheries habitat. Management of LUD III areas provides more latitude for protecting the associated environment of these streams.

Under the Proposed Action 98 (20 percent) of the 490 VCUs with high commercial and/or sport fish values are allocated to LUD III and 146 (31 percent) are allocated to LUD IV. Of the 19 "High Quality Watersheds", all or a portion of seven stream systems (36 percent) are within LUDs III or IV. Twenty nine (45 percent) of the "Important Watersheds" are wholly or in part included in LUDs III or IV (see Table 41-A and -B).

TABLE 41-A

ADF&G has recommended 19 "High Quality Watersheds" be allocated to LUDs I or II. The proposed action allocates these watersheds in the following manner:

SYSTEM	LUD	VCU's
Situk River	II	366
Turner Lake	II	43
Mud Bay Creek	III	193
Pavlof Harbor	III	218
Hasselborg-Thayer System	I	157,162,167
Kanalku Lake	I	166
Goulding System	I	265
Lake Eva	II	295
Red Bluff Bay	I	329
Plotnikof-Rezanof Lakes	I	330
Castle River	III/IV*	III-435 IV-436
Duncan Canal-Salt Chuck	II/IV	II-441 IV-424
Petersburg Creek	I	425
Kadake Creek	IV	421
Anan Creek	II	522
Sweet Water-Thorne System	III/IV	552#,571,573#,574#,577 575#,576,578, 579, 580 586#,596,597
Sarkar Lakes	II/IV	II-554.1 IV-554.2
Naha System	II	742
Karta System	I	605,606,607,608

*Special management recommended to protect sport fishing values.
**Lower end of stream in LUD II.
#Lud III.

--continued

TABLE 41-A--continued

SYSTEM	LUD	VCU's
Lake Reflection-Short Creek	II	727,728
Unuk River	I	784,785,786
Helm Bay	III	787,788,789
Orchard Lake	III/IV	III-733 IV-734
Ward Cove System	III	750
Manzanita Lake	I	775
Ella Lake	I	773
Mirrow/Low Lakes	I	754
Blackwell Lake	I	826,827
Hugh Smith Lake and Creek	I	836
Humpback Lake and Creek	I	834,835

TABLE 41-B

Of the 65 "Important Watersheds" recommended by the Alaska Department of Fish and Game for LUD I, II, or III classification, the proposed action makes the following allocations:

SYSTEM	LUD	VCU's
Akwe River	II/III	II-381,385 III-382
Italio River	II/IV	II-380 IV-379
Arnklin River	II/IV	II-371,372 IV-375,376
Square Lake (Ustay River)	III	382
East Alsek River	II	396,397
Doame River	II	396,397
Chilkat Lake	State Land	
Chilkoot Lake	State Land	

--continued

TABLE 41-B--continued

SYSTEM	LUD	VCU's
Moose Lake (TakuRiver)	II/III	II,46,47,49 II-41
Windfall Creek	I	151
Admiralty Creek and Young's Lake	III	133
King Salmon Creek	I	143
Lake Kathleen	I	148
Lake Florence	I	150
Pleasant Bay	I	168
Gambier Bay	I	170
Pybus Bay	I	182
Hood Bay	I (majority native)	171
Black River	I	272
Kook Lake and Creek	III	239
Sitkoh Creek	IV	244
Lake Suloia	IV	278
Lake Baranof	II	326
Salmon Lake	III	323
Redoubt Lake	II	350
Big Bay	II	349
Deer Lake	I	335
Port Krestof	III	308 309
Aleck's Lake	I	405
Tower's Lake	III	440
Kah Sheets Lake	IV	434
Ideal Cove Lakes	III	453
Blind Slough	III	451,452
Virginia Lake and Creek	III	502

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TABLE 41-B--continued

SYSTEM	LUD	VCU's
Kunk Lake and Creek	IV	463
Snake Creek	IV	469
Thom's Lake and Creek	III	479
Marten Lake and Creek	II	509
Eagle River and Lake	II	519
Red Bay Lake	III	532,533
Salmon Bay Lake	III	534
Staney Creek	IV	587,588
Black Bear Lake	III (majority native)	609
Klawak Lake and Creek	Native Land	
Eek Lake	Native Land	
Hetta Lake	Native Land	
Miller Lake	IV	682
Klakas System	I	687
Dickman Bay	II	684
Kegan Lake	II	684
Niblack System	IV	683
Essowah Lakes	IV	659
Lake Mc Donald	II	724
Wolverine	II	724

Impacts on Enhancement

Fisheries enhancement opportunities which fall in areas recommended for wilderness (LUD I) will be restricted to those allowed under the 1964 Wilderness Act. Current interpretations of this Act preclude construction of fish enhancement facilities and prohibit the use of mechanized equipment to clear streams for removal of barriers. Areas immediately adjacent to potential aquaculture sites could possibly be excluded from these areas if Congress designates them as wilderness, but such exclusions are unlikely. Unless Congress specifically permits other uses, hand cleaning of streams, aquaculture utilization of saltwater upwelling areas and lake rearing areas have been determined to by the only activities compatible with the intent of the Act.

The following table displays which of the fisheries enhancement opportunities fall within LUD I in the Proposed Action:

TABLE 42--Number of fisheries enhancement opportunities falling in LUD I

Fisheries enhancement opprotunities (total on forest)	Proposed Action
Existing Federal hatchery sites (3)	0
Existing State hatchery sites (8)	0
Proposed State hatchery sites (18) 1/	2
Private hatchery sites, permits issued (9)	1
Private hatchery sites, permits pending (11)	1
Potential private hatchery sites (22)	4
Identified stream barriers (80)	17
Existing enhancement sites (10)	1
Potential spawning channel sites (5)	1
Potential marine rearing sites (14)	6
Total sites (180)	33

1/ The majority of these sites are located within pending State selections; thus their allocation by the various alternatives is not a point of conflict.

Effects on Recreation

In the Proposed Action many of the high use roadless VCUs are allocated to LUD I or LUD II. This allocation may constrain some existing non-conforming uses, but most traditional uses will normally be allowed to continue unless they are not allowed under wilderness classification by Congress.

Some of the highest used recreation areas such as Rocky Pass, Sarkar Lakes, Berners Bay and Naha River are allocated to LUD II which will allow most existing uses

to continue and will allow enhancement of primitive and semi-primitive recreation opportunities. For the proposed wilderness areas (LUD I) on the Tongass it is recommended that Congress specifically authorize the continuance of existing public recreation trails, cabins and associated facilities. Established airplane access and motorboat use within the proposed wilderness areas are also recommended as permitted activities.

Commercial recreation developments, such as Thayer Lake Lodge on Admiralty Island, and private cabins on National Forest lands under special use permits are expected to be phased out under provisions outlined in the Wilderness Act. It is recommended that Thayer Lake Lodge be allowed to remain for the life of the permittee.

If Congress does not designate portions of the National Monuments as wilderness or specify some other management direction, the Forest Service will prepare management plans for those areas under the NEPA process. It is anticipated that management of these areas would be similar to that presently being carried out on existing National Monuments and would allow more latitude in providing recreation facilities than would be available under wilderness. This might include such things as recreation roads, lodges, aerial trams and other commercial ventures, and facilities to serve the recreation public.

Many VCUs adjacent to the large communities, along major travel routes and around many commonly used recreation areas are allocated to LUD III which will allow concentrated recreation development. Some of these VCUs will be at least partially roaded, and although specific use sites and attractions will be protected, there will be some conflicts with established use patterns and some changes in recreation environments.

Some areas of high recreation attraction are allocated to LUD IV. Many of these are not heavily used at present. VCUs allocated to both LUDs III and IV will continue to provide their present recreation opportunities until they are entered for management activities at which time opportunities will be altered. Some wildland recreation opportunities will be altered in the areas developed, depending on the type and extent of that development. Each VCU is a somewhat isolated entity, and activities in one VCU would not normally affect existing recreation opportunities in adjacent VCUs. As roads are developed and linked to communities, oportunities will be enhanced for many outdoor activities for those who don't need, or want, a totally primitive experience. Areas for many activities such as hunting, fishing, berry picking, day and overnight use as well as simply driving for pleasure will be increased, particularly in the interior of the larger islands. Many roads which will be closed after the timber sale activity will serve as foot and ski trails and access for snowmobiles and other off-road vehicles.

Timber harvest in a currently roadless VCU can have a profound effect on the recreation opportunities of that area, both during the operation itself and for many years after. Activities associated with camp life, road building, logging, hauling and rafting of logs, all tend to displace recreation uses requiring solitude and a natural environment. The logging camps themselves may exist for two to 10 years or more, developing into small communities that generate their own recreation demands on surrounding lands. Increased human activities and the potential conflict with established wildland use patterns thus may spread beyond the actual camp and logging locations to nearby bays and islands. After harvesting is completed, solitude returns to the area as the people and facilities are removed. Those recreation activities that are facilitated by the remaining roads and vegetative changes are then available in a relatively isolated environment. As revegetation of cutting units and spur roads occurs and the physical logging effects are healed, more of the semiprimitive recreation qualities return. With crown closure of the cutover areas occuring some 15 to 30 years after harvest, the areas may once again approach a natural setting, except

for the main gravel roads. However, if the VCU is being managed on a multiple-entry concept, the second entry may be scheduled at about this time, and the sequence would repeat itself.

In areas of timber harvest some wildlife habitat reduction is expected, especially deer and furbearers, which will result in a general decline in numbers over time, especially in LUD IV areas. Much of Revillagegido, Prince of Wales, Wrangell, Zarembo, Mitkof, Kupreanof, and Chichagof Islands would be roaded over the long term. Recreation opportunities associated with these forms of wildlife may be reduced somewhat. On LUD III and IV areas, it is estimated that for the next 10 years 16,500 acres of land per year would begin the cycle of change discribed under the Effects on Forest Composition, Section V. Additional acres will be affected through construction of power generation and transmission facilities, and mining developments. The effects of these modifications will reach beyond the immediate acres they occur on however. The relationship of the modified acres to the rest of the VCU is often such that the visual resource and associated esthetic and recreation experiences available on the rest of the VCU are also changed. The degree of visible change allowed over any period of time will depend on how important or sensitive a particular area is thought to be to forest users.

The Proposed Action allocates many of the more visually sensitive areas, such as those around communities, along narrow portions of the Alaska Marine Highway and around highly used recreation areas, to LUD III. This will allow greater latitude than LUD IV in timing, extent, and techniques of timber harvest and other activities to make those changes fit into the existing landscape as much as possible within the multiple use management objective. The foreground around specific recreation attraction features will normallly be given full visual protection even under LUD IV management.

Effects on Cultural Resources

No adverse effects are anticipated on existing cultural resources under the Proposed Action. Existing management policies, which assure compliance with Federal Antiquities Legislation, and the American Indian Religious Freedom Act, will be adhered to (see Area Guide). The most significant cultural and historical sites have been identified and selected under the Alaska Native Claims Settlement Act. However, the possibility of inadvertent disturbance to presently unknown historical and archeological sites would be proportional to the resource development emphasis on each site.

Effects on Wilderness

Those VCUs allocated to LUD I in the Proposed Action are recommended by the Secretary of Agriculture for wilderness classification by Congress. LUD I lands not classified by Congress as wilderness, other special classification, or designated for other uses, can be considered by the Secretary of Agriculture for special classification under his authority. Those LUD I lands not classified by either Congress or the Secretary will normally be redesignated by the Regional Forester to whatever uses best serve the multiple use objectives of the Forest.

Management plans developed for any redesignated area will conform to TLMP goals and objectives. In the event that some of the lands within the two National Monuments are not classified as wilderness, plans for managing these areas will be developed through the NEPA process.

VCUs allocated to LUDs III and IV for which no management activities are scheduled, will continue to retain their present wilderness values for the life of this plan. VCUs scheduled for development will continue to provide wilderness opportunities until they are entered for management, at which time these opportunities will be altered. The degree of alteration will depend on the type and extent of development within each affected VCU. It is expected that a large percentage of the presently roadless LUD III and IV VCUs will be entered during the life of the plan.

In addition to Forest Service timber activities, proposed mineral and power developments may affect at least 12 roadless VCUs during the life of the plan. These are: VCU 324C, involving the proposed Green Lake power generation site near Sitka; VCUs 505S,509S, 510S, 511S, 512S, and 518S, part of the proposed Tyee Lake power generation and transmission route near Petersburg; VCUs 745K, 748K, and 776K, forming portions of the proposed Swan Lake power transmission route near Ketchikan; and VCUs 841K and 842K, proposed for mineral exploration and development near Ketchikan. Unforeseen mineral discoveries or power demands may precipitate other proposals involving roadless VCUs. Assessment of these proposals will be made through the NEPA process as they occur.

Since each VCU is a somewhat isolated entity it is assumed that activities in one VCU would not normally affect potential wilderness experiences in adjacent VCUs

In the proposed action, the following areas and acreages are recommended for wilderness classification by the Secretary of Agriculture and are represented in the alternative as LUD I:

AREA NAME	TOTAL ACREAGE	LANDSCAPE CHARACTER TYPE
Misty Fiords National Monument	2,285,000	Coast Range & Coastal Hills
Admiralty Island National Monument	921,000	Admiralty/Chichagof
Russell Fiord	295,000	Coast Range
Endicott River	103,000	Coast Range
West Chichagof-Yakobi	227,000	Admiralty/Chichagof
Tracy Arm	506,600	Coast Range
Stikine-LeConte	275,500	Coast Range
South Baranof	305,000	Baranof Highlands
South Prince of Wales Island	97,000	Coastal Hills
Coronation Island	19,100	Kupreanof Lowlands
Warren Island	11,400	Kupreanof Lowlands
Maurelle Islands	4,500	Kupreanof Lowlands
Karta	39,000	Coastal Hills
Tebenkof	65,000	Kupreanof Lowlands
Etolin Island	91,000	Coastal Hills
Petersburg Creek	27,000	Coastal Hills
Boundary Spires	128,300	Coast Range

In addition, table 43 shows the percentages of VCUs allocated to LUD I, by character type and by rating for wilderness and for primitive recreation. This table can be compared to the analysis of other alternatives displayed on page 107 (table 15).

TABLE 43

	LANDSCAPE CHARACTER TYPES					
	Yakutat Forelands	Kupreanof Lowlands	Coast Range	Admiralty-Chichagof	Baranof Highlands	Coastal Hills
Wilderness *						
Very high & high	4% of 26	14% of 37	67% of 123	60% of 52	36% of 28	21% of 87
Moderate	0% of 15	3% of 32	32% of 117	35% of 109	0% of 6	17% of 89
Low	0% of 2	0% of 48	0% of 10	4% of 27	0% of 8	0% of 43
Primitive Recreation						
Very high & high	7% of 15	11% of 44	63% of 81	49% of 69	35% of 26	21% of 80
Moderate	0% of 22	4% of 27	54% of 108	55% of 68	11% of 9	10% of 96
Low	0% of 6	0% of 46	16% of 61	4% of 51	0% of 7	14% of 43

* Total number of VCUs receiving this rating.

A total of 239 VCUs were allocated to LUD I (about 5,400,000 acres) distributed by southeast Alaska landscape character type as follows: Coast Range 50 percent; Admiralty/Chichagof 29 percent; Yakutat Forelands none; Baranof Highlands four percent; Coastal Hills 14 percent; Kupreanot Lowlands three percent.

Lands recommended for wilderness classification (LUD I) in the Proposed Action are distributed by mainland and islands as shown below. In addition, several large areas having high wilderness values are proposed for LUD II. Management as LUD II will have little negative impact on the wilderness resources of these areas.

	Mainland	Islands	Total
LUD I (Acres)	3,356,000	2,044,000	5,400,000
LUD II (Acres)	1,980,000	766,000	2,746,000

Some of the smaller areas or isolated VCUs with high wilderness values scattered throughout the forest were allocated to LUD III. Managed as LUD III, these lands will be modified over time.

Effects on Soils

The discussions on soil erosion and soil productivity on pages 115 and 116 are descriptive of the general effects that can be expected under the Proposed Action. Management activities on LUD I and II areas are of a nature that would disturb only minor amounts of soil and therefore are not expected to add significantly to the natural soil erosion. Soil productivity would not be affected except where trails, cabins or other facilities are constructed which might preclude plant growth.

Achieving the 450 MM bm annual timber yield from LUD III and IV areas will require harvesting of more marginal commercial forest lands than in the previously considered alternatives. Special logging systems and techniques will be required to harvest much of this marginal volume due to the steepness of the terrain, potential soil erosion problems and other factors.

The greatest cause of soil erosion and sedimentation will be the 295 miles of new roads and associated borrow areas required each year to harvest the timber, disturbing about 2,400 acres of land annually. Approximately 90 percent of this soil loss occurs during the first three years after road construction; decreasing as soils stabilize and revegetate.

In addition to the roads, it is estimated that the timber harvesting itself will distrub approximately 16,500 acres annually for the life of the plan. Depending on the character of the landforms and soils on which this harvest occurs, and the way it's harvested, a certain amount of erosion is likely. This soil movement is considered to be significantly less than that caused by roading.

EFFECTS ON WATER

When addressing impacts on water, it is important to distinguish between potential impacts and actual impacts. Potential impacts identified during project planning can be eliminated or reduced to acceptable levels through design modifications. Actual impacts occur during project implementation. They are the result of unanticipated or unavoidable problems, and may or may not be reduced to acceptable levels within a given time constraint. Identification of potential impacts, with associated design modifications (preventive measures), is the key to reducing actual impacts.

Potential Impacts

Potential impacts on water, to the extent that they can be identified at this level of planning are directly related to the LUD designations; LUD IV having the greatest potential impact because of the emphasis on commodity production, and LUD I having essentially no impact because of the emphasis on retention of amenity values.

Timber harvest activity, except for controlling insect infestations or to protect other resource values, will be limited to LUDs III and IV. The 46 percent of the Tongass National Forest which is allocated to LUDs III and IV contains 69.0 percent of the commercial forest land. However, only 30 percent of this commercial forest land (or 14 percent on the whole forest) is considered operable with normal timber harvest methods.

Timber harvest activities can affect both water quality and quantity, although restrictions on cutting-unit size will normally eliminate the potential for measurable increases in streamflow.

Identification of potential water quality problems is geared to compliance with State water quality standards, usually for protection of fish habitat and municipal water supplies. Water quality parameters of major concern include stream temperature, dissolved oxygen (D.O.), nutrients and sedimentation.

In general, southeast Alaska streams are not considered to be highly sensitive to temperature changes resulting from timber harvest. Low air temperatures, steep channel gradients, and frequent precipitation tend to keep stream temperatures below the range considered harmful to fish. However, stream temperature may be increased if long strips of shade-producing vegetation are removed from southeast to southwest banks of temperature-sensitive streams. The streams most likely to be temperature sensitive contain organically-stained water or have low channel gradients and southeast to southwest exposures.

The same natural characteristics that keep stream temperatures low also act to maintain high D.O. concentrations. Dissolved oxygen levels and biochemical oxygen demand may be affected if logging slash is allowed to accumulate in streams; but generally southeast Alaska streams are not considered highly sensitive to D.O. depletion from timber harvest activities.

Nutrient concentrations, particularly nitrogen, have been shown to increase temporarily after timber harvest, but this increase is usually associated with extensive slash burning.

Many stream systems on the Tongass National Forest are susceptible to increased sedimentation from timber harvest activities, particularly road construction. Sediment sources include road pioneering, culvert and bridge installation, cut and fill slopes, road surfaces, borrow pits, and landslides. The most sensitive streams are those which naturally produce the greatest amount of sediment, namely V-notch drainages, alluvial fans, and braided streams.

Protection of municipal water supplies is of primary importance to local communities. About half of the present municipal supply watersheds on the Tongass National Forest are located on State land or within State and Native land selections. The remainder are designated either LUD II or modified LUD III which is excluded from the timber yield calculation.

In light of fish habitat protection, sedimentation is the most important parameter. Potential sedimentation problems are proportional to the area of mineral soil exposed during timber harvest activities. LUDs III and IV contain approximately 16,500 acres which will be harvested annually. There will be approximately 295 miles of road constructed, resulting in nearly 2,500* acres of mineral soil exposed annually.

The length of time each annual increment of exposed mineral soil is subject to erosion-sedimentation may be as little as a few weeks (grass-seeding programs) to as long as five years or more (compacted road surfaces).

In compliance with the National Forest Management Act of 1976, a water resource inventory (WRI) has been initiated. Objectives of the WRI include: 1) identification of landforms and stream systems which are susceptible to sediment or temperature increases, 2) identification of wetlands and floodplains, 3) evaluation of natural streamflow and water quality conditions, 4) identification of water uses, needs and rights, and 5) development of suitability/capability determinations. Through the WRI and the IDT process, on-site investigations and development of specific watershed protection measures will be required. Either the "best management practices" developed by the Alaska Department of Environmental Conservation, or equivalent measures developed by the Forest Service will be implemented to control nonpoint pollution.

*Assumes 6.75 acres of road material and 1.5 acres of borrow pit exposed per mile of road.

Actual Impacts

In spite of the aforementioned prevention measures, some impacts on water quality will still occur, particularly during and shortly after road construction. For example, temporary increases in stream sedimentation during bridge and culvert installation can be expected. An on-going water quality monitoring program has been initiated in an attempt to quantify water impacts and evaluate the effectiveness of control measures.

Restoration (revegetation) of exposed mineral soil areas will also aid in keeping stream sedimentation problems to an acceptable level. Restoration activities will include grass seeding, fertilizing, and planting native species (alder, willow, etc.). Normally, restoration activity will be completed during the first field season after the disturbance occurs.

Effects on Air Quality

With the generally cool, moist summers in southeast Alaska, slash burning is considered unnecessary, and often undesirable because of possible damage to the soil organic component and the difficulty of controlling burns during the requisite dry periods.1/ While a minimal number of acres have been burned on an experimental basis, natural decomposition has been and will continue to be the primary method of eliminating logging residues. Increasing utilization of these residues in the future will also contribute to their elimination from projected harvest areas.

Since slash burning will not be a commonly used technique under the Proposed Action, no significant adverse effects on air quality are anticipated. There will be intermittent effects on air quality from the use of motorized equipment for developmental and recreational activities and road dust during dry periods.

EFFECTS ON MINERAL DEVELOPMENT

Under the Proposed Action, mineral exploration, development and production, subject to existing laws and regulations, could continue on the two-thirds of the forest that is not recommended for wilderness or withdrawn from mineral entry. In the other one-third, 26 percent of the 81 highly mineralized VCUs and six of the 12 prime commercial prospects are allocated to LUD I. (See Table 44) The general effects are stated in Section V, and amplified below.

VCUs 126, 128, 133, 256, 257, 258 and 260, which are allocated to LUDs III and IV, are included in areas that were withdrawn from location and entry under the General Mining Laws. These withdrawals, which are subject to valid existing rights, were made under the Federal Land Management and Policy Act of 1976 (FLMPA) at the request of Secretary of Agriculture Bergland on December 1, 1978. These areas, and the other areas which are outlined on the attached TLMP map, will not be available for new mineral-related activities for a period of two years from this date or until Congress directs other action.

1/ The Forest Ecosystem of Southeast Alaska, part 7. Forest Ecology and Timber Management.

The FLMPA, often referred to as the BLM Organic Act, was signed by the President on October 21, 1976. The Act substantially changes the application of traditional legal mechanisms for restricting mineral lands availability and the use of administrative restrictions. The final Bill incorporated withdrawal provisions. The term "withdrawal" as defined in Section 103 means:

> Witholding an area of Federal land from settlement, sale, location or entry under some or all of the General Land Laws, for the purpose of limiting activities under these laws in order to maintain other public values in the area or reserving the area for a particular public purpose or program.

The principal section of the Act affecting formal withdrawals and reservations is Section 204. Congress reserved to itself the authority to create, modify and terminate withdrawals or reservations for National Parks, National Forests, the Wilderness System, Indian Reservations, certain defense withdrawals, Wild and Scenic Rivers, National Trails, National Recreation Areas, and National Seashores. It also reserved the authority to modify and revoke withdrawals for National Monuments and the National Wild Refuge System.

If the above areas are included in the National Wilderness Preservation System, prospecting and filing of new claims will be allowed until December 31, 1983, unless further withdrawals are made. The Wilderness Act provides that, subject to valid existing rights, further mining and mineral leasing in wilderness areas, LUD I areas, will not be allowed after January 1, 1984. In addition, exercise of existing rights may be regulated to preserve the wilderness characteristics of the area. Existing mining and mineral leasing uses may continue in wilderness, to the extent they were being conducted on October 21, 1976, although new mining uses may be restricted.

The Noranda and the U.S. Borax prospects are both located in the newly proclaimed National Monuments that are also withdrawn under the FLMPA and recommended for wilderness. Under the valid existing rights clause, both of the prospects should be able to continue. Mining is now occuring in the Death Valley National Monument and exploration and staking of claims have been permitted in three other monuments. It is believed that similar provisions would be made for National Monuments in the National Forest System.

Effects on Southeast Alaska Land Transportation Corridors

The State of Alaska, Department of Transportation and Public Facilities preliminary transportation plan (September 15, 1978) lists four transportation projects most recommended by the public. The four transportation improvement alternatives receiving the greatest region-wide support for further investigation were:

1. Construction and improvement of community airstrips and seaplane floats.

2. Construction of additional ferries.

3. Construction of a Stikine River-British Columbia highway connection to both Petersburg and Wrangell.

4. Construction of a highway along Lynn Canal between Juneau, Skagway and Haines.

A preliminary transportation plan was developed based on the region-wide views expressed above. Within this preliminary plan, a Long Range Transportation Plan section identifies the transportation facilities and services that will be needed in

TABLE 44--Allocation of the 81 highly mineralized VCUs by the Proposed Action (asterisks indicate VCUs containing the prime prospects in southeast Alaska).

LUD I	LUD II	LUD III	LUD IV
144C*	16C	17C	256C*
168C	19C	28C	257C*
170C	20C	32C	258C*
182C	512S	33C	503S
254C*	684K	55C	525S
265C	805K	71C	531S
268C		107C	536K
271C		126C	546K
275C		128C*	555K
497S		133C	567K
564K		260C	569K
607K		324C	597K
696K		435S*	598K
755K		448S	610K
795K		502S	622K
796K		666K	625K
815K*		692K*	645K
818K*		715K	648K
825K		716K	673K
841K*		748K	681K
842K*		761K	682K
		762K	683K
		763K	699K
		806K	701K
		864K	702K
			719K
			720K
			759K
			804K

the future. Although the main feature of the plan was improvement of the ferry system, surface transportation systems were also addressed.

Some of the major corridors studied were:

1. Petersburg (Stikine-Iskut Rivers Road). Thirty-four miles on National Forest to Canadian border.

2. Ketchikan (Unuk River Road). Eighty-six miles on National Forest to Canadian Border.

3. Lynn Canal east side, Juneau-Skagway-Haines, 71 miles. West side, Haines to St. James Bay, 60 miles.

4. Taku River Road, 45 miles on National Forest to Canadian border.

5. Sitka-Rodman Bay, 33 miles.

6. Prince of Wales Island Roads (Hollis, Hydaburg and Kaasan), 57 miles.

7. Kake Road (Petersburg to Kake), 44 miles.

Surface transportation systems proposed for construction during the period 1980-85 include the Hydaburg road which is proposed to be constructed to Forest Service standards to Hydaburg from the terminus of existing logging roads.

Construction of the Hydaburg road would not be precluded by the Proposed Action, as the route is within National Forest lands proposed for allocation to LUD IV, and Native selection lands where access could presumably be obtained.

Construction of the Stikine River road between Petersburg, Wrangell and the Cassiar Highway is proposed for 1986-96. At present southeast Alaska has one road connection to the interior and one under construction. Both of these are in the north end of the region. The Stikine River road would permit motor vehicle access between the Canadian highway system and the central portion of southeast Alaska. The Petersburg-Cassiar Highway route to British Columbia would require approximately 44 miles of road in Alaska and 80 miles in Canada. In addition, a 42-mile road connection would be required to connect Wrangell with the Stikine River Road, near the mouth of the river. A full discussion of the merits and effects pertaining to this road is presented in the above mentioned transportation plan.

The Proposed Action would preclude construction of the Stikine River Road, as portions of the route traverse VCUs 492, 493, 495 and 496, all of which would be proposed for wilderness designation. The State of Alaska considers this road corridor as its prime route for connecting southeast Alaska to interior Canada.

An alternate route, identified but not preferred by the State, would connect Wrangell with the Canadian highway system without encroaching on the proposed Wilderness area.

Effects on Hydro-electric Development Sites and Power Transmission Corridors

All power transmission corridors identified in the Alaska Power Administration studies (1978) would be permitted within the land allocation patterns of the Proposed Action. The Petersburg (Mitkof Island) to Green Lake (Baranof Island) transmission line, should it be constructed, would have to be rerouted around the proposed Petersburg Creek wilderness (VCU 445), and the Duncan Canal withdrawal (VCUs 435, 437, 438, 439, 440, and 441). With this modification all power transmission corridors identified would be available for development purposes.

Power generating sites identified by the APA number 22 on the Tongass National Forest. One (Snettisham) is in operation. An additional site (Green Lake near Sitka) is under construction. Five other sites are seen to have enough potential to be under active study or have development proposals pending. Of these, Swan Lake near Ketchikan is in the final stages of planning and preparation, and Tyee Lake (near Bradfield Canal) is actively being considered for construction to supply power for Petersburg, Wrangell and possibly Kake. Only Lake Grace (VCU 776) falls within a LUD I (Misty Fiords National Monument) land classification and would not be available for development. Development of power generating capabilities at the remaining two sites would not be precluded by implementation of the Proposed Action.

Relation of Proposed Action to Evaluation Criteria

Provide for coordinated land management on the Tongass National Forest and adjacent Native, State, and municipal lands.

The Proposed Action provides for coordinated land management of the Tongass National Forest and adjacent Native lands by allocating VCUs containing Native selections to LUDs III and IV where there has been an expressed intention to harvest timber. In this way, access across National Forest lands will be assured. Every attempt will be made to make Forest Service management intentions compatible with local municipal land use intentions. For example, commercial timber harvest will not be planned in those VCUs adjacent to most communities within the forest. State land selections were based on a variety of reasons, including recreation, transportation, and community expansion. No doubt with these intended uses, some conflicts with nearby Forest Service operations will develop. The Forest Service intends to make a strong effort to reduce these conflicts and resolve any management incompatibilities.

Provide continuity among national, regional and local programs. (How does the Proposed Action affect existing programs and commitments?)

With the projected decrease in timber harvest from National Forest lands, there would be a reduction from the current timber program. The programs in recreation, wildlife, fish, and lands would be increased.

Provide opportunities for developing transportation modes that best meet the land management goals as well as the needs of the people. (Does the Proposed Action preserve the transportation options identified in the Southeast Alaska Multimodal Transportation Study?)

All transportation options identified in the Southeast Alaska Multimodal Transportation Study except for the Stikine and Unuk River corridors are available for future development if needed.

Provide for an increase of not less than three million acres (15 percent) in designated Wilderness on the Tongass National Forest. (Does the Proposed Action provide for at least 15 percent of the total land area of the Tongass in LUD I?)

Approximately 35 percent, or 5,400,000 acres, of the Forest would be allocated to LUD I.

Provide for a variety of dispersed recreation on lands with significant fish, wildlife, scientific, scenic, historic, or other recreational qualities. Recognize that many recreational assets exist on the Tongass that are in short supply and high demand elsewhere in the United States, such as wildlands, shoreline, and abundant fish and wildlife populations. (Does the Proposed Action include allocations specifically intended to provide dispersed recreational opportunities.)

A variety of dispersed recreation opportunities on lands with significant fish, wildlife, scientific, scenic, and historic values are assured with this Proposed Action. Fifty-four percent of the VCUs with high dispersed primitive values and 45 percent of the VCUs with high semi-primitive recreation values are allocated to LUDs I and II.

Insure the most effective management of the Tongass National Forest. (Does the Proposed Action provide a favorable cost/benefit relationship in terms of both tangible and intangible values?)

While is is reasonable to assume that the total benefits resulting from public investments should exceed the total costs, the intangible nature of many costs and benefits negates the effectiveness of rigid benefit-cost ratios as decision criteria. The function of the public sector in our mixed economy is not only to provide certain goods and services that our society has indicated should not be allocated through the market mechanism, but also to achieve economic stability and what are perceived to be socially desirable adjustments in the distribution of income. For goods and services that have been traditionally marketed, benefit-cost analysis can provide some useful insights for public investments but must be considered in the context of the overall functions of government in the economy.

The timber program in Region 10 demonstrates a case where the public sector has shown a willingness to sacrifice net returns in order to provide for economic stability. If the sole objective of the Forest Service was to maximize net returns from stumpage sales, it would most logically sell its timber for round log export on an accelerated harvest basis. However, maximum returns are sacrificed in order to provide for a local timber processing industry through the primary manufacture regulation, and harvest levels are regulated by the non-declining sustained yield policies. The establishment and maintenance of a local industry over a sustained period are, thus, the primary aim of the public sector, even at a sacrifice in net revenues.

A recent analysis[1/] of the Alaska timber program indicated that it operated at a deficit if a 10-percent discount rate was used. This analysis, which was limited to budgetary expenditures and revenues received by the Forest Service alone, also concluded that the program operated at a deficit if the costs of other activities associated with the timber program were included as costs. However, if an imputed value primary manufacture regulation was used, benefits exceeded costs in each of these cases. On this basis, it can be anticipated that benefits would exceed costs on a strictly monetary basis for a timber output of 412 MM bm per year, but there is some uncertainty regarding the 450 MM bm output level.

Direct allocations to the areas of best supply. (What percentage of the VCUs with high resource ratings does the Proposed Action allocate to the following uses: commercial timber (LUD III, mixed resource use, and LUD IV, intensive resource use), commercial fish and wildlife (LUDs I, II, and III), remote recreation and sport fishing (LUDs I, II, and III), and wilderness (LUDs I and II)?)

Prime value lands or those lands with high resource ratings are allocated in the following manner: Approximately 27 percent (942,000 acres) of the high value commercial forest lands are allocated to LUD III and 45 percent (1,573,000 acres) are allocated to LUD IV. Lands with high mineral values comprise 1,570,000 acres. Sixty percent (940,000 acres) of the VCUs with mineral ratings of 4 and 5 are allocated to LUDs II, III, or IV so that access to and development of those resources will be allowed. However, six of the 12 major prospects currently thought to have commercial potential are in areas allocated to LUD I.

Forty-eight percent (2,873,000 acres) of the high value wildlife lands are allocated to LUDs I and II. An additional 21 percent is allocated to LUD III.

VCUs with high sport fish values number 328. Seventy-one percent (233) are allocated to LUDs I, II, and III. VCUs with high commercial fish values number 476. Sixty-three percent (299) are allocated to LUDs I, II, and III.

1/Dahl, J.R.

Seventy-nine percent of the VCUs with the highest wilderness attribute ratings are allocated to LUDs I and II. (With attribute index 26 or greater.)

Provide for growth, stability, and diversity in the local and regional economy. (Does the Proposed Action maintain existing levels of timber-related employment? What opportunities does it offer for future increases? Does the Proposed Action provide for a small timber business set-aside program? Will the Proposed Action increase employment opportunities in recreation and tourism? Does it provide for habitat enhancement and aquaculture developments? Does the Proposed Action allow proposed energy development, such as hydroelectric or fossil fuel developments? What receipts to the State will the Proposed Action generate?) (The State receives 25 percent of timber sales and special use receipts.)

The Proposed Action would retain the current level of timber-related employment, but there would be distributional changes. Losses in milling employment would likely occur but harvesting on private lands would provide the basis for greater logging employment. Employment in the pulpmills would be retained at current levels. Any growth in the timber industry under the Proposed Action would have to originate from accelerated harvests on private lands.

There would be sufficient timber to continue the small business set aside program. It is difficult to ascertain if the Proposed Action will have a significant impact on employment related to recreation and tourism due to the complex interaction of a number of factors. Opportunities for additional employment in this industry will probably occur, but the relationship to the Proposed Action is unclear. Most of the identified aquaculture and salmon enhancement improvement opportunities would remain available. About one-third of these may not be available due to their inclusion in recommended wilderness areas. All hydroelectric development sites proposed for the near future are in allocations permitting their construction, although one proposed power transmission corridor would have to be rerouted. Receipts to the State (25 percent fund) would be about three million dollars annually.

Assist southeast Alaska communities and residents in meeting their diverse resource and land use needs. Manage the Tongass National Forest to accomodate the lifestyles and well-being of southeast Alaska residents and communities while being responsive to national goals and concerns. (How well does the Proposed Action meet the community desires as expressed by community plans, elected officials, agencies, and residents? Will the Proposed action provide for desired lifestyle options? Will it accomodate changes in use patterns, populations, income, isolation, subsistence, and services? The source of this criterion is input from state and local governments and the public.)

Description of the social aspects of the affected environment (see Section II), analysis of the social effects of the alternatives (see Section V), and evaluation of the social effects of the Proposed Action (Section VII) all underscore the wide diversity of land dependencies which exist in southeast Alaska. Many communities depend largely on the undeveloped natural character of the National Forest to sustain their fishing economies, subsistence activities, and quiet lifestyle. Many other communities depend largely on extractive development of the National Forest to sustain their timber economies, their recreational access, and their vigorous lifestyle.

If the Forest were managed solely to meet these two broadly characterized demands, allocation would be a reasonably simple matter of clustering roadless areas about communities desiring that management and concentrating development about other communities requiring these activities.

Such an approach is impossible for a number of reasons. First, regardless of the size, location, or economic orientation of southeast Alaska's communities, all include

publics with a wide variety of interests, concerns, and priorities for public land management. Thus, while the communities as a whole can be broadly characterized, their individual residents most certainly cannot. Secondly, allocation decisions must be based on other essential Forest demands in addition to regional community needs. Each portion of the Forest displays unique capabilities and suitabilities for various management options; responsible management must be closely related to the resources and ecological relationships constituting the natural environment. Finally, allocation decisions must balance individual and local needs with overall regional and national expectations.

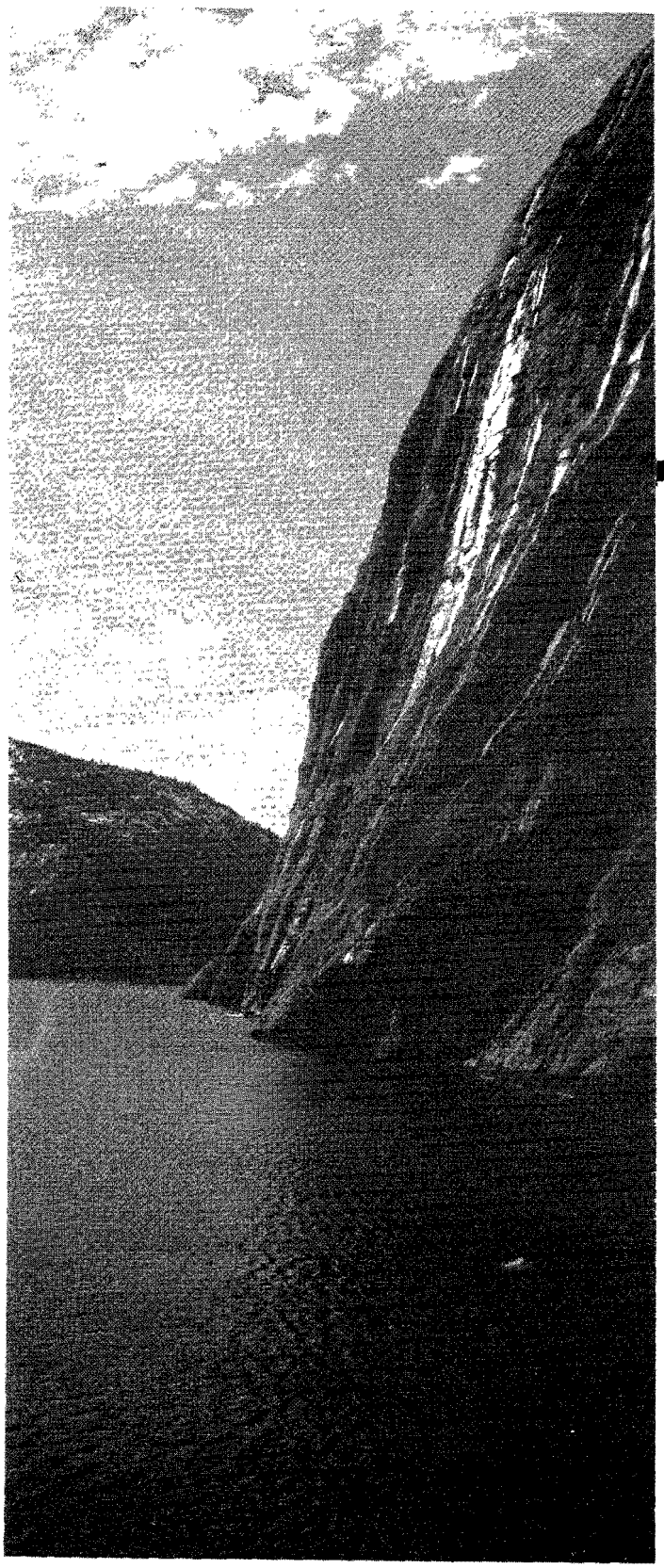
Given these diverse land dependencies and perspectives--and they are typical of the context in which public land management decisions occur--it is our assessment that many desired lifestyle options, resource needs, and established or strongly desired land uses are met by the Proposed Action. It does not coincide in all cases with the specific demands made by specific communities or interest groups for specific areas. The effect is that, through TLMP decisions combined with State and Native selection patterns, Forest users will continue to find what they want on the Tongass but uses will become increasingly concentrated. Wilderness allocation of large land areas will draw users to these locations for dispersed recreation; more intensive commodity use will occur in the other areas, as will developed recreation use. Thus, national goals to preserve substantial amounts of Alaskan wilderness are met; national and regional goals to maintain industry are met; and many, but not all, local community goals to retain existing populations, economic opportunities, subsistence, and recreational uses are met.

Include a wide range of ecotypes representative of southeast Alaska in Land Use Designations (LUDs) that emphasize the preservation and retention of primitive wildland values. (Does the Proposed Action provide for representative examples of the various ecotypes identified in southeast Alaska in either combination of LUDs I and II) (The six major subdivisions: Coast Range, Coastal Hills, Kupreanof Lowlands, Yakutat Forelands, Admiralty/Chichagof, and Baranof Highlands.)

The table below illustrates how the Proposed Action provides representative samples of each landscape character type found in southeast Alaska in LUD I and LUD II.

	LANDSCAPE CHARACTER TYPES					
	Yakutat Forelands	Kupreanof Lowlands	Coast Range	Admiralty-Chichagof	Baranof Highlands	Coastal Hills
	*					
Wilderness						
Very high & high	4% of 26	14% of 37	67% of 123	60% of 52	36% of 28	21% of 87
Moderate	0% of 15	3% of 32	32% of 117	35% of 109	0% of 6	17% of 89
Low	0% of 2	0% of 48	0% of 10	4% of 27	0% of 8	0% of 43
Primitive Recreation						
Very high & high	7% of 15	11% of 44	63% of 81	49% of 69	35% of 26	21% of 80
Moderate	0% of 22	4% of 27	54% of 108	55% of 68	11% of 9	10% of 96
Low	0% of 6	0% of 46	16% of 61	4% of 51	0% of 7	14% of 43

* Total number of VCUs receiving this rating.



VIII. Consultation With Others

VIII. Consultation With Others

Introduction

The role of the public, and State and Federal agencies has been, and continues to be, a key in the resolution of issues on the Tongass. The Forest Service cannot hope to identify and resolve issues using only its internal resources. The public must be fully and continually involved in order to refocus issues and help determine acceptable alternative solutions. In addition, the public helps guide and validate the agency's planning process. To generate effective and efficient participation, the agency must maintain an open and accessible planning process, and must facilitate communication of ideas and information among a wide range of interest groups and the public-at-large.

Public involvement in Tongass planning has been complicated by the simultaneous and interrelated activities of Congress, the Administration, and the agency planning process--all attempting to resolve similar issues. While these activities provide the public with several meaningful avenues to reach solutions, complication arises in identifying which issues are being addressed by which entity; who the decisionmakers are; and how the publics can most effectively let their concerns be known. Coordination of study and decisionmaking through these several regional and national processes required some mid-course changes and revisions to early public involvement commitments within the Forest Service planning program.

This record of consultation with others is designed to document both the process and results of the public involvement program since the DES was issued in June 1978. The changes that were made in the Tongass Land Management Plan as a result of public involvement are documented in the preceding section, Identification of the Proposed Action.

Process Used to Involve the Public

The Tongass Draft Environmental Statement was issued June 28, 1978, presenting 10 alternatives, and the interdisciplinary team's recommendation to the Regional Forester. A supplement to the draft ES was planned for August, to present the Regional Forester's preferred alternative, and his recommendation on the off-Admiralty Native selection issue. The final environmental statement was scheduled for December.

Initial distribution of the DES was effected through mailing of 4,500 copies to regional and national publics. The draft was featured in open houses held in Juneau, Sitka, Petersburg, Wrangell, Yakutat, and Ketchikan during July. These sessions, held in conjunction with the RARE II process, were designed to facilitate distribution and understanding of the Tongass and RARE II documents. Some public input was gathered at these sessions, but they were primarily informational in nature.

Additional briefings were held (in most cases in person and occasionally by telephone) with community and Native leaders in Ketchikan, Kasaan, Craig, Klawock, Metlakatla, Hydaburg, Kake, Petersburg, Kupreanof, Wrangell, Sitka, Juneau, Tenakee Springs, Hoonah, Game Creek, Port Alexander, Pelican, Angoon, Gustavus, Skagway, Haines, and Yakutat.

A response form was included with the draft and the reviewer was asked to comment on:

1. Issues. Are the issues you feel strongly about included in the issue section of the draft? Which alternative(s) best resolves your issues?

2. Team's Recommended Alternative. What are your thoughts on the planning team's alternative? Do you agree with the criteria and the rationale used to select it?

3. Off-Admiralty Selections. Five alternatives are presented for the off-Admiralty Native land selections (EAR in draft appendix). Which alternative do you prefer? Why? Do you have another solution?

The draft ES announced two dates for public response. The close of the public comment period was stated as October 15 (later extended to October 31). In addition, the public was encouraged to provide initial comments by July 27. While recognizing that this date allowed insufficient time for thorough public review, the interdisciplinary team and Regional Forester sought information for use in preparing an August supplement to the draft. In addition, this early response to the draft enabled the agency to provide Congress and the Administration with local and regional perspectives on the major issues, many of which were concurrently being addressed through the legislative process.

The initial public response received by July 27 did not represent all interested publics; but it did serve a variety of immediate needs for public comment. The remainder of the response period (through October) was used to gather more comprehensive input from some of the smaller southeast Alaska communities, environmental organizations, business, industry and commercial fishermen.

Because of the pending completion of Alaska lands legislation, the plan to issue the supplement containing a preferred alternative was abandoned. Just prior to this decision, however, the IDT had prepared a modification of its original recommendation and the Regional Forester subsequently prepared his own recommendation in anticipation of preparing the supplement. The initial public response influenced both of these recommendations. This information--the IDT modified alternative, the Regional Forester's recommendation, and the initial public involvement summary--was provided to the Chief of the Forest Service, the Administration, the Senate, and to other agencies, individuals and organizations who made requests through the Freedom of Information Act.

Through contacts with community leaders and organizations, media news coverage, and meetings in communities, public review of the draft was encouraged and a total of more than 2,400 responses were recieved, analyzed, and incorporated into the preparation of this final environmental impact statement, and land management plan.

Analyses of Public Comment

A commitment was made in the draft statement that the content of responses would be stressed rather than numbers of comments received. The analysis was based on a content summary process that focused on the issues identified, and on respondent perceptions of how adequately the issues were addressed or resolved by each alternative. The responses were analyzed on the basis of geographic origin and interest group affiliation. The intent was to provide the public and decisionmakers with a view of how the officials and residents of individual southeast communities responded; how other Alaskans responded; and how people outside of Alaska responded. Agencies, the various interest groups, and industries were analyzed separately. The analysis focused on how these various groups viewed the process, issues, alternatives, and the off-Admiralty selection alternatives.

By the comment deadline in October, responses reflected the views of all major geographic regions and interest groups. Most of the inadequacies of the initial (July) response period had been corrected through expanded comments from

environmentalists, groups representing various fishing interests, and communities largely dependent on commercial fishing.

Responses from the larger communities in the region may more accurately reflect a total-resident perspective than do those received from smaller communities. To adequately sample the concerns of a smaller community, it is often necessary to hear from a larger percentage of the population. For example, the 362 individual responses from Juneau residents, although representing only two percent of the total population, seem to have expressed a full range of community concerns. On the other hand, the three individuals responding from Elfin Cove (11 percent of the population) may or may not have covered the issues key to that community.

Most of the responses were letters. Verbal comments were documented and verified before inclusion in the record of responses. Individuals responding from southeast Alaska communities expressed a mixture of positions that generally supported either the CMAL or the SEACC position. Form letters endorsing the CMAL alternative, and postcard endorsements of the SEACC position were received, as well as more substantive responses. Underlying these positions was disagreement over whether or not the creation of wilderness areas would bring economic hardships to communities through the loss or displacement of jobs.

The viewpoints of these and other major interests shape the profile of our public involvement analysis which addresses all major perspectives toward the issues.

Interpretation of Key Issues Raised Through Public Comment

CMAL. Most responses from community governments and elected officials endorsed the CMAL position. Those communities largely dependent on the timber industry responded most vigorously in support of CMAL (such as Ketchikan, Sitka and Wrangell); while several of the smaller communities favored positions that would assure a supply of logs for local mills (such as those in Craig, Klawock and Metlakatla). Concerns for loss of jobs, weakening community economic support or the loss of hydro power or road transportation opportunities motivated many of the responses in favor of CMAL or a similar alternative. In addition, many of these respondents expressed a strongly-held value system that supported "wise use and development" of our country's resources in order to keep the nation strong, independent, and economically healthy.

SEACC Those responses that favored the SEACC position or similar alternatives generally expressed strong doubt that wilderness designation would cause economic hardship on communities. These respondents opposed maintaining or increasing the timber industry at the expense of fish and wildlife or wilderness values. The economic analysis of the alternatives was challenged, with the view that the contributions of the tourism and recreation industries to the local and regional economy had been inadequately assessed. In addition, the Forest Service calculations of potential timber yields were judged too conservative. On the other hand, many of these same respondents challenged the ability of the agency to protect fish habitat under any of the alternatives emphasizing development.

NATIVE TIMBER HARVEST. The role of potential timber harvest from Native-selected lands became a key issue. The Regional Forester and the Senate Committee on Energy and Natural Resources proposed that existing employment be supported from National Forest timber, with future harvest from Native lands viewed as a source of growth for the timber industry. The IDT recommendation, the Administration's position and SEACC's proposal advocated that a portion of anticipated harvest from Native land be used to calculate employment levels. Native corporations vigorously opposed IDT assumptions about their future plans as an unacceptable curtailment of their economic options.

ECONOMIC UNCERTAINTIES. A variety of interest groups recognized many of the uncertainties associated with the future timber market and the impact of potential harvest from Native lands. A general concensus appeared (although expressed somewhat differently through a variety of proposals) that there was wisdom in putting some areas into a "reserve" status that allowed inclusion into the timber yield calculations while prohibiting harvest for a period of years. This measure would allow the assumptions associated with the future timber market and Native harvest to be tested. In summarizing this issue, the timber industry felt there was a risk to an economically viable industry under the assumptions made in the IDT recommendation. Industry felt that lands put into reserve status should be opened to harvest if the need was demonstrated. Generally, those supporting environmental alternatives agreed on the need for a reserve category. Divergence between the groups concerned how a future decision to enter those areas should be made. Industry favored a Regional Forester's decision, while environmentalists favored reserve status that would require Congressional action to alter.

Woven throughout a significant portion of the responses was overall concern for the treatment of economics. Environmental interests expressed concern that the Forest Service did not adequately assess the cost to the taxpayers of cutting timber. They maintain that the industry is now being subsidized to a degree not adequately displayed in the DES. Further, they state that if the loss of fish and wildlife habitat and wilderness values was calculated, the total cost of timber harvest would be far in excess of the DES portrayal. Industry, on the other hand, describes the increasing costs of environmental safeguards and the necessity, through wilderness allocation, to harvest the less economical stands. The costs add up, according to industry, to an uneconomical venture.

This brings to the forefront a problem of assessing the costs and benefits of timber harvesting on the Tongass Forest. On both sides of the issue are unquantifiable costs and benefits. The public response clearly shows a desire for community stability, often founded on elements of the timber industry. The number of jobs can be calculated, but the social value of community stability or maintaining worker and associated family members in place is difficult, if not impossible, to assess. The value of wilderness and the unquantifiable threats to fish and wildlife habitat represent values just as difficult to measure.

SUBSISTENCE USE AND LOCAL RECREATION. The issue of local recreation and subsistence uses in relation to National Forest land did not surface as a major issue in the larger communities. These community governments generally felt that the development of resources was compatible with their recreation goals. There were also some individual responses from larger communities that viewed development as compatible with recreation and subsistence goals. Again, the larger communities seemed most concerned about keeping development options open and maintaining "economic stability". Smaller communities expressed much greater concern for protection of subsistence uses, often identifying hunting and fishing on National Forest land as essential to economic survival.

MINERALS. The mineral interests perceived three main deficiencies in the planning process. First, they were concerned over the inadequacy of the mineral inventory and felt that the recommendations did not reflect these shortcomings. Secondly they felt the problems associated with access in wilderness areas and the clean air standards in and adjacent to wilderness areas were not adequately acknowledged in the alternative effects analysis. Thirdly, they observed that the use of value comparison units based on watersheds provided an inadequate and illogical method for assessing subsurface values.

FISHERIES. The concerns of the fishing industry were difficult to assess through regular involvement processes. Much of the year fishermen are unavailable. Further,

a number of organizations speak for different segments of the industry. However, it was clear that those responding from the fishing industry, and those smaller communities dependent on fishing and fish processing, favored allocating significant areas to wilderness to protect the fish resource by limiting development. That part of the industry representing aquaculture preferred to keep development options open. Their responses favored less wilderness and urged that the option to carry out aquaculture facility development and habitat improvements be permitted in designated wilderness areas.

NATIVE CONCERNS. Responses from Native corporations and Native communities indicated general support for the CMAL alternative and resource development. (Angoon and Yakutat were exceptions, favoring some form of protection from timber harvest.) The Native organizations and corporations in the Prince of Wales area urged that no more Native selections be made in their area, and they favored selections on Admiralty Island. The Native corporation responses were adamant in opposing those recommendations (such as the IDT alternative) that proposed some portion of Native harvest to support the existing industry. The central issue expressed was the need by Native communities and organizations to retain maximum opportunity for economic development, as land conveyances are made in the coming months.

OUTSIDE CONCERNS. Responses from the rest of Alaska and outside of Alaska were not substantially different from the southeast responses. There was, however, a strong expression from national respondents giving high priority to wilderness designation for Admiralty Island, and to a lesser degree, Misty Fiords. These responses often stated that compromise on these areas was not acceptable. The highest values usually supported by these respondents were the fish, wildlife and wilderness resources of southeast Alaska.

THE PLANNING PROCESS. The planning process itself--the IDT approach, and the techniques to gather, correlate and analyze data--was generally viewed in favorable terms. The most frequently expressed concerns with the process related to perceived data deficiencies and questionable assumptions. There was, however, no general agreement on which data or assumptions were in error. Mineral interests and environmentalists, for example, perceived different data deficiencies, which led them to question the wisdom of making allocation decisions for the entire forest. Both asked for more information in order to make "informed decisions".

Public involvement received generally high marks. The biggest concern following publication of the DES was the initial response date of July 27. This was viewed by many as far too short a time to respond. Based on this initial response, the IDT modified its first recommendation, and the Regional Forester developed a recommendation for the Chief of the Forest Service. Distribution of these two recommendations was limited, and raised questions as to what the public was expected to respond to during the remainder of the response period. The final response date in October was viewed by most respondents as providing a proper and adequate review period.

Responses of Elected Officials

Responses were received from U.S. Senator Ted Stevens; U.S. Representative Don Young; State Senators Bill Ray and Pete Meland; and State Representative Terry Gardiner.

Some respondents complemented the process and the efforts of the IDT. One person expressed support of the five- and 10-year requirement for reassessment and

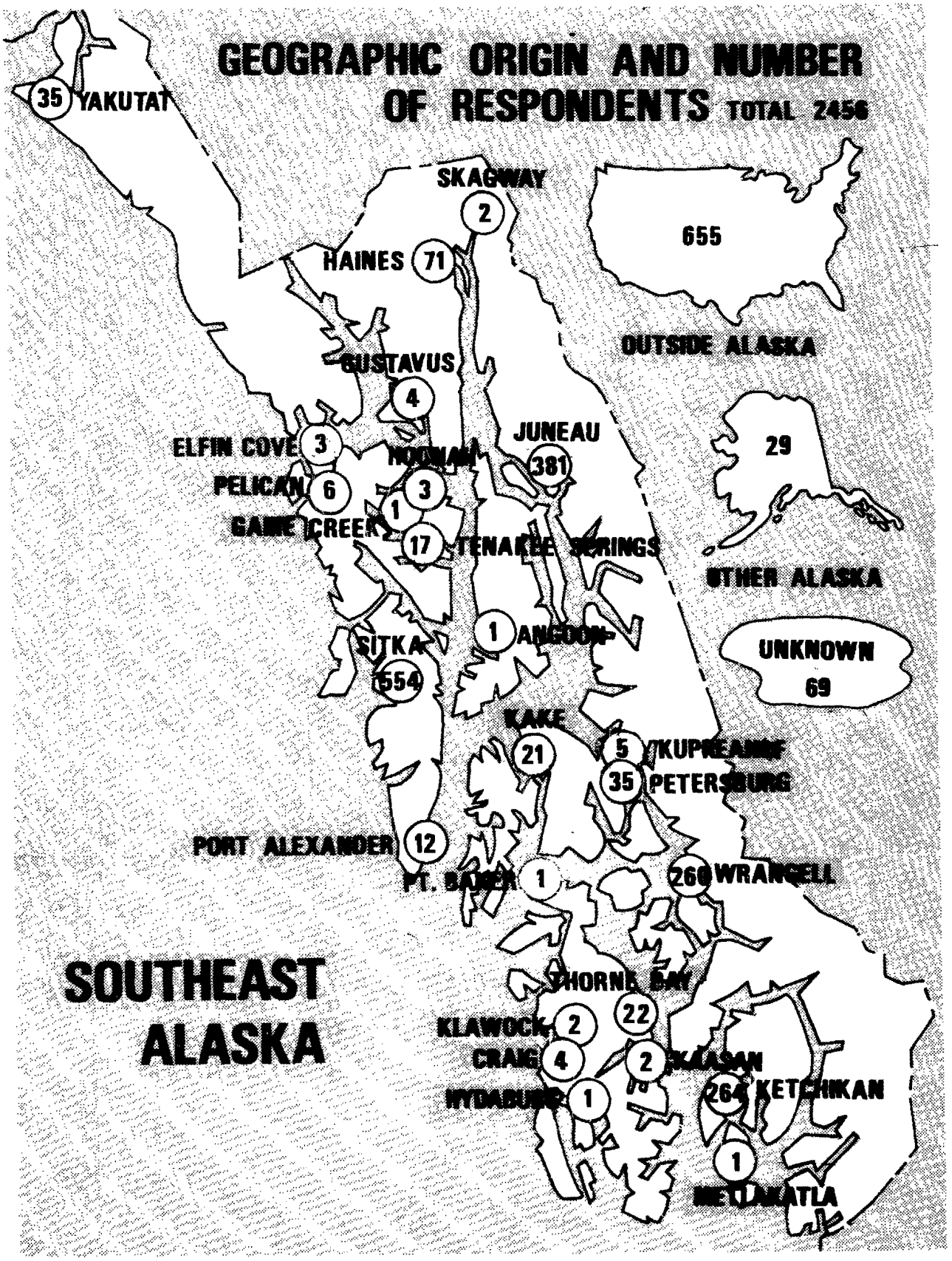

GEOGRAPHIC ORIGIN AND NUMBER OF RESPONDENTS TOTAL 2456
35 YAKUTAT
SKAGWAY
2
HAINES 71
655
OUTSIDE ALASKA
GUSTAVUS
4
ELFIN COVE 3
JUNEAU
381
29
PELICAN 6
3
1
17
OTHER ALASKA
UNKNOWN
69
SITKA
554
1
5
21
35
PORT ALEXANDER
12
1
268
WRANGELL
SOUTHEAST ALASKA
KLAWOCK 2
22
CRAIG 4
2
1
264
KETCHIKAN
1

TABLE 7--Endorsements or modifications of alternatives by elected officials, candidates, governmental agencies, and other organizations*

Person, group, or agency	Alternative							No preference stated
	A	A1	A2	A3	B	C	D	E	
National and State elected officials and candidates:									
T. Stevens, U.S. Senator		X							
D. Young, U.S. Representative		X							
P. Meland, State Senator		X							
B. Ray, State Senator		X							
T. Gardiner, State Representative						M			
State and Federal agencies:									
State of Alaska						M			
U.S. Department of Commerce, National Oceanic and Atmospheric Administration						M			
U.S. Department of Energy Alaska Power Administration									X
U.S. Environmental Protection Agency, Region X			M			M			
U.S. Department of Housing and Urban Development									X
U.S. Department of Agriculture, Office of Equal Opportunity									X
U.S. Department of the Interior, Office of the Secretary									X
U.S. Department of the Interior, Bureau of Mines									X
Elected officials of Alaska communities (by area):									
Chatham Area--									
Angoon			X						
Elfin Cove				X					
Game Creek						X			
Gustavus						M			
Haines		X							
Hoonah						M			
Juneau		X							
Pelican						X			
Port Alexander									X
Sitka		X							
Skagway									X
Tenakee Springs									X
Yakutat									X
Anchorage									X
Ketchikan Area--									
Craig									X
Kasaan		X							
Ketchikan		X							
Klawock		M	M					M	
Metlakatla									X
Pt. Baker									X
Thorne Bay		X							
Stikine Area--									
Hydaburg						M			

TABLE 7--Endorsements or modifications of alternatives by elected officials, candidates, governmental agencies, and other organizations*--Con.

Person, group, or agency	Alternative							No preference stated
	A	A1	A2	A3	B	C	D	E	
Stikine Area--Con.									
Kake									X
Kupreanof			M			M			
Petersburg		X							
Wrangell		X							
Sports associations:									
Alaska Wildlife Federation and Sportsmen's Council (8 affiliate groups)		X							
Far West Ski Association (L.A.)		X							
California Association of 4-Wheel Drive Clubs, Inc. (Sacramento)		X							
United Four Wheel Drive Association (Montana)		X							
Montana Snowmobile Association		X							
Sitka Sportsmen's Association		X							
Territorial Sportsmen, Inc. (Juneau)		X							
Labor organizations:									
International Longshoremen's and Warehousemen's Union (Wrangell)		X							
International Woodworkers of America (Ketchikan)		X							
International Brotherhood of Electrical Workers (Anchorage)		X							
Laborers International Union of America (Juneau)		X							
United Brotherhood of Carpenters and Joiners of America (Juneau)		X							
Building and Construction Trades Council, Inc. (Juneau)		X							
Wrangell Joint Central Labor Council		X							
Ketchikan Joint Central Labor Council		X							
Native corporations:									
Shaan Seet		M			M				
Haida Corporation						M			
Huna Totem		X							
Sealaska		X							
YAK-TAT KWAAN, Inc.									M
Shee-Atika, Inc.		X							
KAVILCO	X								
Goldbelt	X								
Cape Fox Corporation		M							
Kootznoowoo			X						
Timber industries:									
Louisiana-Pacific		X							
Alaska Lumber and Pulp (Sitka)		X							

TABLE 7--Endorsements or modifications of alternatives by elected officials, candidates, governmental agencies, and other organizations*--Con.

Person, group, or agency	Alternative							No preference stated
	A	A1	A2	A3	B	C	D	E	
Timber industries--Con.:									
National Forest Products Association		X							
		X							
Nichimen Company, Ltd. (Tokyo)									X
Alaska Loggers Association		X							
Western Forest Industries Association		X							
White Lumber Sales, Inc.		X							
Alaska Timber Corporation (Klawock) priorities 1,2,3	2	1			3				
Soderburg Logging (Sitka)		M							
Alaska Wood Products									X
Mitkof Lumber (Petersburg)		X							
Southeast Stevedoring Corp.		X							
Fishing industries:									
Northern S.E. Alaska Aquaculture Association									X
Southern S.E. Alaska Aquaculture Association									X
Dry Bay Fish Company (Yakutat) priorities 1,2						2	1		
Fishermen for Compatible Development								X	
United Fishermen of Alaska									X
Alaska Trollers Association									X
Southeast Seiners Association			X						
Environmental groups:									
Southeast Alaska Conservation Council (SEACC)				X					
Alaska Center for the Environment				X					
Isaak Walton League				X					
Sierra Club (Rio Grande Chapter, Juneau Chapter, Southwest Representative)				X					
Friends of the River				X					
Audubon Society (Cape Henry, Anchorage, Juneau, National)				X					
National Park and Conservation Society				X					
N.M. Wilderness Study Committee				X					
Lynn Canal Conservation				X					
Friends of Alaska				X					
Defenders of Wildlife				X					
Petersburg Conservation Society				X					
Mineral industries:									
WGM		X							
Alaska Miners Association, Inc.		X							
Simmons Associates		X							
U.S. Borax		M							
Phil Holdsworth		X							

TABLE 7--Endorsements or modifications of alternatives by elected officials, candidates, governmental agencies, and other organizations*--Con.

Person, group, or agency	Alternative							No preference stated
	A	A1	A2	A3	B	C	D	E	
Minerals industries--Con.									
MAPCO		M							
Apex El Nido Mining Company		X							
Days Mines, Inc.		X							
NRG Associates		X							
AMOCO Mineral									X
Vumex		X							
Nuclear Minerals Exploration		X							
Noranda (Arizona, Montana, Anchorage, & Colorado)		X							
Resource Association of Alaska, Inc.		X							
Inspiration Development Co.		X							
Atlantic Richfield Co.		X							
Northwest Mining Association		X							
Inspiration Consolidated Copper Co.						X			
Other organizations:									
Citizens for Management of Alaska Lands (CMAL)		X							
West Humanist Society (Illinois)				X					
Southeastern Conference		X							
Northwest Public Power Association		X							
Chairman of the Guide Licensing and Control Board									X

* X represents an endorsement without a modification, and M represents an endorsement with a modification which may combine more than one alternative.

reevaluation of the plan, which would facilitate any needed corrections. With the exception of one elected official, all supported Alternative A-1, the CMAL proposal. Economic diversity, mineral development, and fisheries enhancement were the reasons most frequently given for CMAL support, along with the expressed opinion that the timber industry should be maintained and expanded wherever possible in southeast Alaska.

Representative Terry Gardiner supported Alternative C, with some modifications. He suggested an increase in the amount of timber made available for harvest; and strongly urged that wilderness classification allow full access for needed salmon run rehabilitation, and habitat enhancement projects.

Responses of Native Corporations

Responses were received from Yak-Tat Kwaan, Inc. (Yakutat); Shee Atika, Inc. (Sitka); Shaan Seet, Inc. (Craig); Kavilco (Kasaan); Haida Corporation (Hydaburg); Goldbelt (Juneau); Kootznoowoo (Angoon); Huna Totem (Hoonah); Cape Fox Corporation (Ketchikan); Sealaska Regional Corporation (Juneau).

The majority of responses from Native corporations made a firm distinction between the Tongass planning process and the recommendation of the interdisciplinary team (Alternative C) which stems from that process. Such groups as the Cape Fox

Corporation, Shaan Seet, Inc., and Sealaska commended the "thorough and systematic approach," the excellence of the maps which were felt to depict the full range of possibilities requiring review, the comprehensive data and the statement of issues as being sufficient to allow for a full public response. Sealaska said, "It has been our observation that this planning process has been occurring in a professional manner and has provided the necessary public input to lend credibility to the outcome of this effort."

Nevertheless, serious weaknesses in the plan were perceived. All responding Native corporations rejected or extensively changed Alternative C. Huna Totem, Cape Fox, Shee Atika, and Sealaska endorsed Alternative A-1. They felt it provided sufficient timber, access for mining, transportation corridors, and opportunity for aquaculture enhancement facilities and, at the same time, protected sufficient wilderness and roadless areas for future generations. Sealaska noted, too, that Alternative A-1 best met the needs of Native organizations for coordinated management, minimal conflicts between Native lands and VCU designations, some land trading flexibility, and potential job increases. They felt the A-1 allocation would provide larger, more efficient management units than would other options. In endorsing Alternative A-1, Cape Fox made one amendment to designate Misty Fiords as depicted in Alternative A.

Alternative A was endorsed by Goldbelt and Kavilco who expressed opposition to all restrictive allocations. Goldbelt felt Alternative A would best meet the interests of its stockholders and the people residing in affected areas.

One corporation, Shaan Seet of Craig, saw value in Alternatives A, A-1, and B. They approved A-1 because of its provision for commercial timber harvesting and for protection of the outer islands. In the Ketchikan area, however, they preferred Alternative A, because it would reduce pressure from Prince of Wales Island to provide excessive harvest areas. They preferred that Admiralty Island be managed as depicted in Alternative B.

Thus, of the 10 Native corporations responding, seven preferred alternatives projecting the more extensive development solutions. The Yak-Tat Kwaan and the Haida Corporation addressed comments only to their immediate areas. Kootznoowoo of Angoon endorsed H.R. 39 for its management of Admiralty Island as all wilderness.

Objections to Alternative C

A number of comments specify reasons for opposing alternatives, particularly Alternative C. Shee Atika felt that Alternative C ignored the need for access to Native lands. Further, it impinged upon Native areas with adjacent LUD I and II VCUs, imposing restrictions through severe air-quality standards. Huna Totem objected to the LUD I designation for Idaho Inlet, preferring a LUD II designation there and LUD III or IV for Mud Bay. Cape Fox specified that they shared Sealaska's concerns about Alternative C, adding that "we look forward to participating in reasonable and orderly economic growth in southeast Alaska over the coming years. To deny us this opportunity, with a land use plan such as Alternative C, would be counter to...the Alaska Native Claims Settlement Act."

Thus, Sealaska appeared to voice the objections to Alternative C held by several groups. Criticism centered on economic assumptions made by the DES and the IDT. Sealaska felt that "anything below 520 mmbf will most certainly jeopardize...one of the pulp mills and cause economic chaos in more than half of the industry in the region. The Native corporation fledgling entry into the forest products industry will be hobbled." They challenged, as well, economic assumptions based on "simplistic data and reasoning about complexities and the degree of elasticity in the forest products market." Sealaska and other Native groups shared industrial optimism about the potential of the Japanese market for hemlock, for cants, and for continued support of the long-term Alaska supplier.

Sealaska said the IDT failed to meet the stated criteria of supporting regional economies, providing community stability, and protecting lifestyles by making wilderness recommendations which far exceeded the National goal. Wilderness depicted in Alternative C was felt to encompass too many examples of unique land types and far too many areas which are not unique, such as the Kupreanof lowlands and parts of the

Admiralty-Chichagof ecotypes. They suggested that more emphasis be given to various economic elements...timber, minerals, and other activities providing jobs, higher living standards, and a greater tax base. The Haida Corporation added that Natives will need National Forest timber to sustain local industry.

Additional criticism was leveled against Alternative C for its scattered pattern of LUD II designations. Sealaska felt those isolated roadless areas inhibit important transportation corridors on major islands and the mainland, including Taku, Stikine, and Unuk River corridors into British Columbia which could provide stability for Ketchikan, Wrangell, and Juneau. LUD II categories were perceived to block road connections between communities and limit access to Native lands. This pattern limits possiblilities for coordinated land management and presents problems through clean air standards in VCUs adjacent to Native holdings.

The Haida Corporation approved the protection features of Alternative C for the high fisheries values of Nutkwa. However, they were concerned that "Area Guide" policies would not adequately protect fisheries values and that logging would affect streams as it has in the past. So, they favored having wilderness on south Prince of Wales Island, at Hunters Bay, Klakas, and from Nutkwa south to protect the Cordova Bay fisheries. They want LUD II roadless designation for Essewah and LUD II protection of the Sumez-Cape Felix area (VCU 636). They noted, too, the importance of Mears Passage for the gathering of seaweed.

Assumptions About Native Timber

Above all, Native groups objected to assumptions contained in the DES concerning future management of Native timber. Cape Fox stated: "We fail to understand how the Federal government can project utilization of Cape Fox timber when the CFC has not as yet completed our analysis and plans for the future use of that timber." They noted that their lands will support not only timber harvest but residential, commercial, and industrial uses, hydroelectric development, and recreational and fish hatchery developments. Sealaska said it, too, is now in the process of shaping future plans. So, although "it may serve the interests of others to speculate as to the management or final disposition of Native timber holdings, without our involvement these projections remain in that category--speculative."

Goldbelt, Kavilco, Shaan Seet, and Shee Atika joined Cape Fox and Sealaska in opposing this assumption, pointing out that the ANCSA requires them to offer new job markets and business opportunities to Natives, and not to support existing logging and jobs. They are required to market for the highest returns so that, even if their pulp logs are sold to existing mills, their flow is likely to be uneven. On the one hand, the Haida Corporation felt pulp logs might be provided to local industry "if the corporations cooperate." But, on the other hand, they may not cut if the market is low.

Timber Supply

The widespread Native concern for a viable timber industry supported by National Forest land was summarized by Sealaska which stated that the supply "should not only meet the normal operation requirements, but also provide enough timber to provide incentive for growth in the forest products industry in southeast Alaska."

From this position, Kavilco goes on to state that wilderness designation should be finalized only for lands with no commercial value. Shaan Seet felt that only the most minimal designations should be made until regional and Congressional review is completed in coming years.

Concern for adequate timber supply extended beyond the mills with long-term contracts. Shaan Seet, with other groups, stated that all Government commitments to the regional timber industry must be met, including continuation of the Small Business Administration independent sale program.

Off-Admiralty Island Land Selections

The question of Native withdrawals from the Tongass was addressed further in comments concerning land selections off of Admiralty Island. All corporations except Kootznoowoo specified their opposition to all or part of the proposals for selections off of Admiralty Island. Goldbelt reaffirmed its position as stated in the DES, noting that the least acceptable alternative was cash payment which would trade "pride of ownership" for "transitory" gain.

Haida Corporation, Kavilco, and Yak-Tat Kwaan voiced oposition to off Admiralty Island selections in their areas. The Kwaan resolution indicated that planning between Goldbelt, related agencies, and the Kwaan would have to precede their acquiescence to the selection. Haida Corporation opposed all proposals on Prince of Wales Island because of effects on the long-term sale and existing Native selections.

Shaan Seet, Cape Fox, and Sealaska stated broader opposition. The Craig group observed that all village corporations made selections under limitations and "had to live with it;" if off-Admiralty Island exchanges are allowed, they would like the opportunity to reselect as well. Sealaska said: "The stark fact is that the whole of Admiralty Island cannot be committed to wilderness without social and economic detriments to southeast far outweighing any demonstrable benefits."

Responses of the Fishing Industry

Comments were received from the Northern Southeast Alaska Aquaculture Association, South Southeast Alaska Aquaculture Association, Dry Bay Fish Company (Yakutat), Fishermen for Compatible Development, Southeast Seiners Association (Ketchikan testimony), Citizens for Management of Alaska Lands (CMAL) (having some fishing industry membership), United Fishermen of Alska, and Alaska Trollers Association.

The necessity of obtaining public involvement during the summer months worked to the disadvantage of the fishing industry. As the Alaska Trollers Association and the United Fishermen of Alaska commented, fishermen may not have received documents nor had time to review the DES until the fishing season concluded. Since many important voices were missing, the Forest Service asked that several representative positions be submitted.

Alternatives--Of the eight responses, four endorsed an alternative. The Dry Bay Fish Company felt Alternative D provided the best management of their areas. The Southeast Seiners Association supported Senate Bill 1500 (similar to Alternative A-2) during testimony to the Ketchikan City and Borough Assembly. The Fishermen for Compatible Development favored Alternative E as the only position which does not "trade off to LUD IV" employment to related fish habitats or the fishing industry. The Alaska Troller's Board of Directors voted to support Alternative D. The two aquaculture associations provide substantive comment but did not endorse an alternative.

The Dry Bay Fish Company indicated that Alternative C was their second choice (after Alternative D) for management of their area. Their concern was that fish camps and access by land and air would be allowed to continue in a management system similar to that which the Forest Service has operated in the past.

The Southern Southeast Aquaculture Association objected to two assumptions made by the IDT. First, they said the IDT assumed incorrectly that protecting more than half of the forest would safeguard salmon stocks. Second, they objected to the use of current funding levels as a rationale for assessing adequacy of the habitat enhancement program over several years of time.

Process--In addition to problems with the short response period, comments were made on the planning process and methods used to calculate alternative effects. The Northern Southeast Alaska Aquaculture Association noted and approved the fact that their report, "Salmon Enhancement in Southeast Alaska - Locations of Possible Improvement Activities," formed a substantial part of the basic data used by the IDT. They felt the basic analysis of salmon habitat enhancement issues was "quite comprehensive," although they warned that any such data must be expanded and revised as information improves. They said the "Current Program" map did not identify the Sheldon Jackson College facility in Sitka which, last year, experienced the largest run of propagated salmon in Alaska's history.

The Fishermen for Compatible Development (FFCD) also said the DES did not define the 65 locations of "important systems" identified by the Alaska Department of Fish and Game for designation in LUDs I, II, or III. The FFCD, an an hoc group of fishery people, raised several important questions, as well, concerning calculations for retention figures in LUDs III and IV and the nature of value tradeoffs between the two designations. They also questioned the relationship of the land use designations and the Tongass Land Management Plan to the policy for managing fish habitats as identified in the "Southeast Alaska Area Guide."

A final concern of the FFCD was that the economic effects analysis in the DES failed to include important elements, including marine tourism and increases in tourism, recreational use, and sport fishing. They felt, too, that the analysis should have more closely defined the results of protecting and increasing the number of "high quality" and "important" commercial fishing areas.

Issues--LUD I--The comments concerning land use designation changes to allow enhancement center on the continuing debate as to whether a wilderness designation will or will not inhibit active management of habitats and fish stocks. The Fishermen for Compatible Development felt Congress has indicated its willingness to allow construction of habitat enhancement facilities in wilderness. They recommended that the Forest Service plan on this basis and calculate the economic effects of each land use designation with the assumption that fisheries enhancement can occur in all LUDs.

Other groups appeared to assume that LUD I or wilderness designation will make enhancement activities more difficult, if not impossible. The Northern Southeast Aquaculture Association reminded the IDT that site listings are always provisional and that a boundary policy or other provision must assure continued access and management flexibility as new sites are identified. The group suggested that CMAL's prescription (DES page 71, no. 2) for withdrawing areas for fisheries enhancement from LUD I would resolve this problem.

CMAL indicated that their position incorporated every recommendation made to them concerning fish habitat issues by the IDT and by the Alaska Department of Fish and Game. They said the restrictive classification in their proposal would block only 15 sites; the IDT, blocks 28; and SEACC, 42 sites.

The Southern Southeast Aquaculture Association said wilderness restrictions, such as hand-clearing of blocked salmon streams, are absolutely unacceptable. They set forth assurances to be attached to any classification, most particularly to wildeness recommendations. First, access must be assured. And, second, there must be freedom to build weirs, holding ponds, trails to saltwater, living quarters (temporary), and, in some cases, buying stations with more developed living quarters for winters.

Protection and Management Policies--concerns about uses permitted in wilderness reflect the larger issue: What are the best objectives and methods to be adopted by the fishing industry and land management agencies. The FFCD said that economic effects of TLMP alternatives on the fishing industry are opposite to their effects on the timber industry.

The Southern Southeast Aquaculture Association took a different approach. They endorsed the policy of the Tongass plan to protect biological productivity of fish streams. They feel, however, that the technologies of mitigation, where potentially adverse impacts are concerned, can compensate losses, eg. "When a mine could potentially cause damage to a fishery resource, enhancement technology could offset the impact. The same can be true of timber or any other use." Salmon enhancement and rehabilitation technologies are, they state, an alternative to management restriction. Developing their observation that "not touching the land does not safequard the salmon stocks," this group points out that techniques for enhancement facilities in LUD I areas can be developed; they describe systems, such as central incubation facilities and floating egg-take operations, which already meet wilderness protection standards.

The position of this group stems from their view that wilderness areas of southeast Alaska are by no means pristine; the severe depletion of salmon, a critical element in the ecological chain, is a serious blemish on these areas. Thus, the group states, salmon enhancement and rehabilitation (and not merely protection) are urgently needed, especially in the Misty Fiords, Unuk River, and Stikine-LeConte areas.

In sum, this position proposes that LUD I areas be viewed for enhancement opportunities through special technologies and that other land use designations, including those with commodity development, be similarly managed through mitigating techniques which "off-set" and "correct their impact."

Responses of the Timber Industry

Responses were received from the Alaska Loggers Association (Dr. Carl Newport Report), Alaska Lumber and Pulp (Sitka), Alaska Timber Corporation (Klawock), Alaska Wood Products (Wrangell), Louisiana-Pacific (three responses) (Ketchikan), Mitkof Lumber (Petersburg), National Forest Products Association (Washington D.C.), Nichiment Co., Ltd. (Tokyo), Soderburg Logging (Sitka), Western Forest Industies Association (Portland) and White Lumber Sales, Inc. (Kansas City).

Forest industry groups, ranging from Washington, D.C. and Tokyo to regional and local industry spokesmen responded to the TLMP DES. Of the 13 organizaional responses, 10 share the view of Soderburg Logging that the Interdisciplinary Team recommendation is uancceptable and that Alternative A-1 (CMAL position) is closer to the alternative that industry can live with.

The planning process was endorsed by most groups. However, concern was expressed by all respondents that an adequate timber base be maintained; and there were a number of challenges made to assumptions contained in the Draft. The National Forest Products Association "supports the land management planning process and hopes it is not preempted by legislative or Administrative action." Alaska Lumber and Pulp, similarly, supports the effort, noting that "political pressures have contrived to harass the planning process, making the accomplishment even more remarkable." Louisiana-Pacific corporation congratulates the Agency "for a commendable job of putting together an overwhelming amount of resource data into a workable computer program." These groups, plus CMAL, and Alaska Wood Products, commended the VCU data system, the openness of the planning process, and the accomplishment of the Interdisciplinary Team in focusing issues and decision criteria. On the other hand,

concern was voiced that decisions are being shaped by special interest groups and incorrect assumptions.

Issues

Economic Analysis--The primary forest industry challenge to the TLMP DES centers on economic conclusions reached by the Glass Report and Interdisciplinary Team. A number of responses endorse the economic study prepared by Dr. Carl Newport for the Alaska Loggers Association as more realistic. Disputed are conclusions about the future of Japanese markets and lack of quantitative demand analysis in the planning process; inadequate assessment of high logging and processing costs, especially under environmental constraints; failure to calculate timber needs on consumption (including Canadian imports by LPK) rather than harvest; and most of all, assumptions that Native timber harvest will supply some of the volume needed by existing industry. It should be noted that most of these disputed points are of equal concern to Native organizations who will soon enter the forest products industry. Sealaska's position, discussed in the section on Native response, echoes industry views of market conditions and calculations of needed volume.

Forest industry spokesmen project a stable market, based on orientation of Japanese mills to cants; and the importance of Alaskan spruce to Japan's housing industry. Certain optimism about domestic markets is confirmed by the Alaska Timber Corporation (Klawock) which plans to test Pacific Northwest markets in 1979.

In view of the Glass Report projections of reduced hemlock cant markets, however, the industry questions how the IDT can expect a concurrent increase in harvest of special and marginal timber. Higher costs to harvest this timber are combined with the future necessity of harvesting less economical standard timber and with meeting environmental standards in the woods and the mills.

CMAL details the objection of all respondents to assumptions that Native harvest will help to meet industry needs. Recognizing Native corporation objections to this assumption, CMAL notes that, if and when Native harvest begins, production will be cyclical and will not provide a dependable supply for local mills.

Long-Term contracts--Requirements of the long-term sale contracts are also disputed. ALP points out that under their contract, no more than 236,890,000 board feet can be made unavailable for harvest by reserves for scenic purposes and salmon protection; reduction from West Chichagof, South Baranof, and Idaho Inlet exceed this amount. Similarly, LUD I designation on southern Kuiu and Tebenkof is considered a contract violation of the joint selection procedure established in the contract. Industry groups share the view that IDT calculations of timber required under the contracts are too low.

Small Business Administration--Lacking the guarantees of a long-term contract, the small local sawmills are intensely concerned. The Alaska Timber Corporation at Klawock states that "our entire economic existence and the employment base of Craig and Klawock relies upon the maintenance of the agreement between the Forest Service and the Small Business Administration to provide an annual set-aside program of approximately 80 MM bm...Alternatives which would reduce or eliminate that program would be catastrophic." This response recommends that the EIS "address the reliance of independent sawmills such as ours on both the set-aside program and the existing level of Forest Service timber sales and, further, the economic deprivation that would prevail in the communities of Klawock and Craig, ourselves, and other villages and operators...if any of the more restrictive alternatives were developed." Mitkoff Lumber at Petersburg echoes that if the yield drops "below present industry's needs, Mitkof Lumber Company will be the first to go." Alaska Wood Products of Wrangell

indicates "great concern with the attitude that wilderness comes before people and jobs."

Impact from a small-mill shut down is also of concern to the larger mills. LPK projects that a reduction of operating sawmills and volume of residuals will result in a "chain reaction of economic events that would touch many businesses, and more importantly, would negatively affect thousands of Alaskans." They express concern, also, that mill workers (especially Native employees) do not currently have machinery skills to take advantage of increased woods jobs. The response requests an economic impact analysis for Klawock and Metlakatla (Annette Hemlock Mill).

The Western Forest Industries Association pointed out "Congressional direction has provided that small business will be provided its fair share of National Forest timber." The association stated that "Small business is totally dependent upon its 'fair share' of Tongass timber."

Proposed Resolution--A resolution of these high risks to industry, employees, communities, and the regional economy is sought.

CMAL suggests an alternative which permits the disputed assumptions to be tested. Their proposal agrees with SEACC in putting lands in reserve; however, rather than a LUD II "holding pattern", CMAL suggests a LUD IV. These reserve areas would be used to program timber harvest at a level of 520 MM bm, but they would not be entered during the 10-year life of the Tongass Plan. Then, if the Glass Report and assumptions about Native harvest are proven correct, the reserve areas could be recommended for wilderness or LUD II classification. If, on the other hand, industry's assumptions are correct, reserved areas would be available for harvest.

ALP, in support of CMAL's proposal, cites a study by the University of Alaska, Institute of Social and Economic Research, "Socio-Economic Variables That May Affect Wilderness Use in Southeastern Alaska", and a study by Jungst, University of Iowa, which suggest a narrow wilderness user group and difficulties in measuring use demand. ALP feels these reports "add force to CMAL conclusions" that--since large areas of Wilderness would create risks for the future of the timber industry, and the wilderness benefits are uncertain--industry should not be expected to carry a disproportionate share of the risk.

Admiralty Island--CMAL, Louisiana-Pacific, and Alaska Wood Products (Wrangell) discuss the issue of Native selections off Admiralty Island. All affirm the right of Shee Atika and Goldbelt to select on the island. The Wrangell mill observes that while Admiralty has special values in certain locations, portions "are typical of all south Alaska." Native selections should not be driven from these areas to "prime areas that should be protected" elsewhere on the forest. However, if the decision is to negotiate an alternative which moves these selections off Admiralty, LPK favors an equal-value exchange with Goldbelt at Hobart, Yakutat, Douglass, and Berner's Bay. They oppose further withdrawals in the Ketchikan area, especially by Natives not indigenous to that area. CMAL stresses that, if Admiralty is all LUD I, the timber should be made available elsewhere.

Responses of the Minerals Industry

Comments were received from the Alaska Miners Association (Anchorage and Juneau); Simmons Associates; U.S. Borax; Phil Holdsworth, consulting engineer; Mapco; Apex El Nido Mining Company; Day Mines, Inc.; NR and Associates; AMOCO Minerals Company; W.G.M.; Nuclear Minerals Exploration; Noranda (Arizona, Montanta, Anchorage, Colorado); Resource Associates of Alaska, Inc.; Inspiration Development Company;

Atlantic Richfield Company; Northwest Mining Association; and Inspiration Consolidated Copper Company.

Alternatives--Mining industry comments were nearly unanimous in their support of Alternative A-1, with specific LUD modifications recommended in order to assure access and development of known mineral deposits and areas of significant mineral potential. Some support was expressed for Alternative A, with modifications. Some support was expressed for the Regional Forester's recommendation. All others were disfavored, with strong opposition to the IDT Alternative.

Process--Although mining interests generally applauded the TLMP process and IDT efforts, all were very concerned that mineral values did not receive adequate consideration in relation to timber and wilderness.

Industry spokesmen stressed their concern that the IDT failed to recognize that VCUs have no direct relationship to the boundaries of known mineralized areas. While watersheds may constitute logical subdivisions to display surface resource values, they are of questionable value when used to describe and evaluate mineral potentials. As a result, LUD patterns displayed in the alternatives frequently split areas of high mineral potential into two or more LUD classification, compounding the problems of access and development.

Respondents felt that the CMAL Alternative (A-1) was the only proposal that recognized the difficulty in dealing with mineral values watershed by watershed, by proposing the division of some VCUs to more accurately reflect the boundaries of mineralized areas.

Issues--The industry cited specific areas of mineral potential they feel have been given insufficient consideration by the IDT.

* Tracy Arm-Endicott Arm-Fords Terror--The western part of this area is considered by the U.S. Bureau of Mines and the U.S. Geological Survey to be highly mineralized. AMA feels that the results of the federal study were ignored by the IDT in considering the area for wilderness designation.

* Granite Fiords-Misty Fiords area--A similar study shows mineralization in much of the area described by the IDT as desirable for inclusion in the Tongass wilderness system. U.S. Borax felt that a number of VCUs were allocated in the IDT recommendation to a too restrictive LUD designation. They recommended changes feeling a LUD IV better reflected the latitude needed to develop this mineral potential.

* West Chichagof-Yakobi--Mining interests consider this area a "special case" which warrants more attention and consideration than was given by the IDT. Respondents charge that the IDT gave no indication of having referred to or relied upon the West Chichagof-Yakobi Land Use Plan in their consideration of this area for wilderness classification. AMA cites the "tremendous potential" of the area for mineral development, as evidenced by the claims and activities of Inspiration Development Co., the Apex-El Nido Mining Co., the Chichagof mining property, the Hearst-Chichagof mining property,the host of gold claims in the Cobol region, and others. Atlantic Richfield Company of Los Angeles is especially concerned with the area between Yakutat Bay and Cape Fairweather for the location of service facilities for offshore exploration in the Gulf of Alaska. They feel that the national interests are best served when ecologically and economically prudent activities are allowed to coexist. Stating further that discovery and development of oil, natural gas and geothermal resources in and around the Tongass National Forest would help reduce the country's dependence on foreign energy supplies.

Admiralty Island--Much greater mineral potential and present activity is taking place on Admiralty than is reflected in the plan. The CMAL alternative more closely reflects these values.

Respondents said, "Irrespective of what the statutory language may say concerning mining and wilderness areas, there is no successful operation of any substance now being conducted in any wilderness area in the United States."

In addition, they said other environmental legislation, such as the Clean Air Act, must be accommodated in the development of any mining operation. Air quality standards for wilderness areas, they contend, would also affect nearby or adjacent lands, effectively eliminating mineral development even on some LUD III and IV areas. Mining interests urge the IDT to consider these factors as highly important constraints that must be dealt with in the final land management plan.

Another major charge of the mining industry is that the IDT consistently attempted to quantify values which can only be discussed in qualitative terms. They point out that a VCU rated 2 for mineral potential because of the lack of adequate empirical data, may in fact prove ultimately to have far greater potential than a 3-or 4-rated VCU adjacent to it. A roadless classification on such an area, however, "undoubtedly will preclude that area from every being thoroughly investigated or explored."

The Juneau Branch, AMA, quotes from page 19 of the TLMP Draft: "Those who advocate preserving Alaska often qualify their statements by explaining that it is not important whether these wilderness areas are visited; their chief importance lies in the fact that people must know they exist now and will exist for future generations." The respondent feels that this statement accurately expresses the desires of many proponents of wilderness, and maintains, therefore, that non-controversial areas should be selected for wilderness classification, and that these areas should be chosen for their compatibility with other existing forest uses, "not in spite of this competitive need."

There is also a general feeling, both expressed and implied, that mining potential would be more accurately depicted by considering the 444 VCUs with mineral rating of 2, 3, 4 and 5, rather than limiting consideration to the 81 VCUs rated 4 and 5.

Other points stressed by mining interests include:

* IDT should take into account the wilderness values contained in the 1.4 million-acre proposed BLM additions to the Forest.

* LUD uses and restrictions are too vague, and therefore, subject to a variety of conflicting interpretations.

* IDT disregarded its goal of facilitating access to highly mineralized areas in considering land use designations.

* Many wilderness area proposals are unreasonably large, placing unacceptable constraints on the use and development of other values.

* The "Current Program" map grossly misrepresents the mineral exploration now taking place in southeast Alaska.

* IDT did not adequately consider the 1300 potential jobs which present discoveries could provide.

* Potential transportation corridors into Canada should not be blocked by land use constraints.

In general, the responses charge that the IDT did not adequately address the effects on mining or the importance of mineral development to the economy of southeast Alaska and the nation.

In an effort to address the problems industry finds with the IDT Alternative, the Alaska Miners Association (Juneau Branch) acknowledges that the IDT proposal represents a constructive first step, and points out that certain modifications could take "much of the sting" out of the proposal. These include recommendations that would assure mineral development in the areas of: Quartz Hill, Sumdum Mountain, West Chichagof-Yakobi, Pybus and Gambier Bays, as minimum modifications required.

Other specific areas of concern to the mining industry include: Tracy Arm, Endicott Arm, Fords Terror, Granite Fiords, the shores of Lynn Canal from Juneau to Skagway, north and west Admiralty, south Prince of Wales Island, Coronation Island, upper Duncan Canal (Salt Chuck), and Sweetheart Ridge.

Responses of Environmental Groups

Responses were received from the Alaska Center for the Environment, Audubon Society (Cape Henry, Anchorage, Juneau, and National groups), Defenders of Wildlife, Petersburg Conservation Society, Friends of Alaska (South Carolina), Friends of the River (Sacramento California), Isaak Walton League, Lynn Canal Conservation, New Mexico Wilderness Study Committee, National Park and Conservation Association, Southeast Alaska Conservation Council (SEACC), and Sierra Club (Rio Grande Chapter, Juneau, Chapter, Southwest Representative).

Alternatives--All responses were in support of SEACC's proposal, Alternative A-2, the Administration position on wilderness, or proposed wilderness legislation. Respondents felt these options were the most desirable in order to provide maximum wilderness, and to protect high quality fish and wildlife habitat. The Sierra Club, Juneau Group, which supports SEACC's position, felt that the IDT recommended alternative failed to give positive protection to fish and wildlife values, and did not treat Admiralty Island as a single ecological unit deserving of wilderness designation. This group also suggests that the TLMP Draft does not adequately address the long-term values of timber harvest in comparison with long-term fisheries, wildlife and amenity values.

SEACC objects, further, that the IDT recommendation places into a development classification 11 of the remaining 45 areas SEACC has recommended for protection. Eight of these would be logged in the 10-year life of the plan. In addition, within the last four years, SEACC charges that the Forest Service has permitted cutting in nine other areas which SEACC had proposed for protection. The issues raised by the environmentalists fell generally into three catagories: effects of alternatives, forest practices and planning process.

Effects of Alternatives--A major issue raised by the substantive responses centers on the DES failure to provide an adequate cost and benefit analysis upon which the alternatives could be fairly evaluated. Several elements seem to be at the focus of this issue. First, the concern is expressed that the taxpayer is subsidizing the timber industry in southeast and in doing so is incurring unquantifable costs through the loss of valuable fish and wildlife habitat and wilderness values. The Alaskan

Conservation Society expressed it this way: "We would further point to the likelihood that the Forest Service has oversold southeastern timber through large, long-term sales in the 1950's. To propose to maintain (and expand) this industry at essentially any cost to other forest values makes a mockery of every tenet of professional management of the National Forests."

The failure of the DES to quantify in a satisfactory way these other values in order to examine and weigh their worth against the quantifable timber values is viewed as a major problem with the analysis.

An additional omission, identified again primarily by the Alaskan respondents, points to the draft's failure to adequately assess the employment contributions in the recreation, wilderness guiding and general tourism industries. In addition the stumpage fees paid by industry for National Forest timber were seen as artifically low due to "collusion and monopolistic practices". These charges were most often referenced to a study by Dr. Mathew Berman. These artifically low stumpage rates are viewed by SEACC as "....affecting land uses in two ways:

1. Creating an excessive demand for National Forest wood products; and

2. decreasing the effective availability of timber to the mills".

Additional data deficiencies were identified by SEACC, Sierra Club and Federation of Western Outdoor Clubs. These were identified as the DES's inability to display important wildlife habitat and to adequatly assess effects of various management alternatives on this habitat.

The data problems as viewed by the respondents are significant enough to warrent a "go slow policy". That is, not allocate every acre on the Tongass, but rather allocate to timber harvest only what is needed over the life of the plan, allocate to wilderness those areas with outstanding wilderness qualities and then study the remaining areas in order to make a decision at the end of the 10-year life of the plan.

Forest Practices--Several respondents, particularly the Sierra Club and the Federation of Western Outdoor Clubs, challenged the adequacy of the DES since it did not spell out how salmon habitat protection would be achieved. The statement in the DES that under all alternatives the biological productivity of fish streams will be protected was challenged on two points. First, how this protection is to be achieved is not detailed, therefore, it's not possible to evaluate whether or not it can be based on incomplete and inconclusive research and data, therefore, the effectiveness of these past policies is in question. It's stated by the respondents that the protection of fish and wildlife habitat through wilderness designation is a major benefit of wilderness. Since there is disagreement with the ability of the Forest Service to protect fish and wildlife habitat there is then a disagreement with the analysis of effects of the alternatives portrayed in the DES.

Process--The planning and public involvement process received mixed reviews from the environmental organizations.

The Sierra Club, SEACC and Federation of Western Outdoor Clubs viewed the draft as inadequate and generally biased towards industry. The Alaskan Conservation Society and Wilderness Society viewed the draft generally as a "commendable job" and "fair and balanced" even though they point out portions they take exception to.

The public review process, as viewed by these organizations, was not acceptable. The early interim response date of July 27 and the final response date of October 15

was confusing and the July date did not allow for a full and thoughtful response. The final response date of October 15 (extended to October 31) was viewed as the proper and legal response date.

The modification of the IDT recommendation and the subsequent recommendation by the Regional Forester to the Chief of the Forest Service based on the July interim response date is viewed by the Wilderness Society as a violation of NEPA since those recommendations were based on only partial response and the recommendations did not receive the distribution that the original draft did.

Another problem viewed as a major issue by several of the organizations centered on the way the SEACC and the Administration positions were displayed and analyzed. Their alternative, according to SEACC, was accuratly described on pages 75-77 but: "The Forest Service refused to include SEACC's second group of areas of concern in calculating timber yield", resulting in a lower timber yield than was in fact the case. In addition, several areas were placed in LUD I that were not in SEACC's position. This was misleading and confusing.

Concern with the Administration's position on wilderness centered on its portrayal over the "A" map, which suggested a total land allocation pattern.1/ This elicited two different responses: The Federation of Outdoor Clubs viewed this as portraying too harsh a use of LUDs III and IV, indicating far too severe a timber harvest in those areas outside of the wilderness proposals. The Sierra Club saw the "A" base as adding some wilderness areas which were not actually supported by the Administration.

The Sierra Club raised the question that some VCUs were described as roaded or developed when only a portion of the VCU was affected. They pointed out that this did not disqualify as roadless the entire VCU, only the acreage that had been modified.

Other problem areas identified in the DES were that wilderness values were not correctly assessed, and uses allowed in established wilderness areas were stated incorrectly. Several respondents thought that LUD I should only be for wilderness and LUD II should be wilderness study. A significant number of respondents (individuals as well as organizations) called for renegotiation of the long-term timber sale contracts as called for in the National Forest Management Act.

Off-Admiralty--Environmental groups are on record in support of wilderness designation on all of Admiralty Island. Concerning off-Admiralty selections, the Juneau Chapter of the Sierrra Club states that their principal concern is for protection of Admiralty Island. They did not object to the Native land selections off Admiralty. Selection in the Yakutat area, however, should carry a provision that the special values of the Situk River would be protected.

Responses of Outdoor Sports Associations

Responses were received from the Alaska Wildlife Federation and Sportsmen's Council (eight affiliate groups), Sitka Sportsman's Association, and Territorial Sportsmen, Inc. (Juneau), Far West Ski Association (Los Angeles), California Association of 4-Wheel Drive Clubs, Inc. (Sacramento), United Four Wheel Drive Association (Montana), and the Montana Snowmobile Association.

1/ Alternative A-2 in the DES was an effort to display the Administration's mid-1978 position on wilderness, in context with a total land allocation alternative. The Administration's present wilderness position is reflected in the Proposed Action.

The concerns of the sportsmen's organizations center on maxmizing opportunities for developed recreation on the National Forest. The Sitka and Juneau groups endorse the CMAL position, Alternative A-1, as the best way to meet their goals. The Executive Director of Alaska Wildlife Federation and Sportsmen's Council, speaking for nine affiliate groups, states that "time will not permit the Council to take a position on the alternatives proposed in the EIS.... On the basis of past actions of the Council, I believe the Council will support A or A-1." He reaffirms the Council record opposing wilderness classification which may "unduly restrict" access, mineral exploration, or fish and wildlife enhancement. The four organizations from outside Alaska expressed strong support for A-1, the CMAL alternative.

Developed Recreation--The Sitka and Juneau sportsmen's organizations speak both to continued uses and to expansion of recreational opportunities. The Sitka Association states that it is not necessary, in southeast Alaska, to classify land as wilderness in order for people to have a wilderness experience, noting the number of areas adjacent to small communities where a wilderness environment is found by anyone willing "to walk out into the forest less than one-hundred yards." They recommend expansion of public use cabins on northeast and southeast Admiralty Island, on West Chichagof, and on southern Kuiu. They stress that no cabins should be closed because of possible LUD I classification. The Territorial Sportsmen add their support for continuation of the special use permit system which allows individual cabins.

Access--Echoing one of the positions of the Alaska Wildlife Federation, the Sitka response states that float plane access "should not be restricted anywhere in Alaska, and particularly, in southeast," regardless of land use designation.

Fish and Wildlife Management--Similarly, this group shares the Wildlife Federation's interest in fisheries enhancement, including both LUD I and LUD II areas. They ask for both salmon and trout enhancement and recommend that the Alaska Department of Fish and Game "be given jurisdiction of all fish and game management throughout the State of Alaska."

Admiralty Island--Finally, concerning Admiralty, the Wildlife Federation's opposition to Park or wilderness classification is on record. In addition, the Territorial Sportsmen commend the CMAL position as consistent with their "long standing policy of supporting the rights of the Native people of Juneau and Sitka to select land on Admiralty Island as provided for under the terms of the Native Claims Settlement Act."

Responses of Labor Organizations

Responses were received from the International Long Shoremen's and Warehousemen's Union (Wrangell), International Woodworkers of America (Ketchikan), International Brotherhood of Electrical Workers (Anchorage), Laborers International Union of America (Juneau), United Brotherhood of Carpenters and Joiners of America (Juneau), Building and Construction Trades Council, Inc. (Juneau), Wrangell Joint Central Labor Council, and Ketchikan Joint Central Labor Council.

These labor organizations all expressed concern over a reduced level of timber harvest that would create any unemployment, specifying support for the CMAL proposal and opposition to the IDT recommendation. These labor organizations expressed belief that timber harvest is compatible with the amenity values of the Forest.

Their support for the CMAL alternative stems from belief, based on Sealaska's statement, that the Corporations' primary responsibility is to its' shareholders.

Labor groups doubt that the jobs created by Native harvest will be available to displaced non-Native loggers. A second point, stated by the majority of labor organizations in support of CMAL, is that Alternative A-1 will permit the mining industry, for the first time, to get a foothold in southeast Alaska on a production basis, thus creating new employment opportunities and economic diversity.

Responses of Other Organizations

Responses were received from CMAL (Citizens for Mangement of Alaska Lands), West Suburban Humanist Society (Lombard, Illinois), Southeastern Conference (an organization of local municipalities and governments), Northwest Public Power Association and the Chairman of the Guide Licensing and Control Board.

CMAL

The response of CMAL includes detailed comments on the forest products industry, fishing, and mining which are discussed in the analysis sections dealing with those specific interests. In addition, the group addresses the related topics of developed recreation and expanded tourism, criticizing the draft EIS for failure to consider fully the issue of developed recreation.

CMAL's approach to recreational land classification proposed "core wilderness" areas, managed under very restrictive policies governing access and use, which are surrounded by larger recreation areas managed as LUD II roadless areas or as Congressionally designated National Recreation Areas.

They feel that this allocation pattern has a number of advantages over the concentration of other alternatives on distinct LUD I and LUD II areas. First, the core wilderness is protected from the impacts of high use, thus guaranteeing the wilderness user true solitude in a remote wildland atmosphere. At the same time, CMAL feels that more recreationists will be served in the areas permitting some development, noting that the IDT equation of recreation with primitive mangement in LUDs I and II may be correct for the "Lower 48" but is not appropriate here nor favored by the majority of southeast Alaskans. A third advantage cited is the funding available for designated National Recreation Areas, enabling the Forest Service to establish a more aggressive developed recreation program.

Finally, CMAL feels that their system for expanding developed recreation--including renewal of the special use permit system, new public use cabins, boat refueling stations, visitor centers, etc.--is an investment in a sound tourism industry which increasingly is oriented to transportation.

West Suburban Humanist Society

The President of the West Suburban Humanist Society wrote, on behalf of the society, in support of the SEACC proposal for Alaska wilderness.

The group's president expressed concern for wilderness preservation in Alaska, particularly the Misty Fiords.

Southeastern Conference 22nd Annual Convention

The Southeastern Conference 22nd Annual Convention met on October 20-21, 1978, with 49 in attendance.

The conference policy statement supported CMAL's alternative. The policy statement states that CMAL's proposal is a balanced approach to land allocation in southeast Alaska; providing for economic growth and protection of environmental values.

Northwest Public Power Association

The Annual Northwest Public Power Association meeting held in June passed a resolution addressing southeast Alaska Power Transmission Corridors. They stated a concern for the communities of southeast Alaska dependent on fossil fuel electric generation and the cooperation of developing hydroelectric generation facilities requiring transmission lines to transport the energy. The Northwest Public Power Association requests transmission line corridors be established in the wilderness or Wild and Scenic Rivers in southeast Alaska. The Le-Conte Bay and Stikine River areas were specifically mentioned.

Guide Licensing and Control Board

The Chairman expressed concern that guides and their clients would be hurt by the removal of special use cabins in wilderness areas. The point was made that these cabins, well maintained and well stocked, are essential for both comfort and safety in the use of areas like West Chichagof. The respondent position is that past activities in general, and guiding in particular, on West Chichagof have not lessened the wilderness quality at all. To remove these private and commercial cabins will make it all but impossible to use the area as it has been used.

Responses of the Southeast Alaska Communities

ANGOON

In response to several written and telephone offers from the Forest Service to meet with Angoon public officials, Kootznoowoo sent a response which expressed the continuing interest of the corporation and the people of Angoon in gaining protective status for Admiralty Island. Their position supported H.R. 39.

CRAIG

Response from Craig included a statement from the City, conveyed by Mayor Marvin Yost; the position of the Shaan Seet Village Corporation; and one individual endorsement of Alternative A-1.

Alternatives--Mayor Yost expressed special concern about the effects of all alternatives in the TLMP DES on the Klawock mill. He said the mill depends on National Forest timber and provides "the only source of year-round employment in our area."

The Shaan Seet Corporation (discussed fully in the analysis of Native corporation responses) noted elements which satisfy them in Alternatives A, B, and A-1, concluding that "no plan seems to satisfy our request for Prince of Wales Island in total, but it appears that 'A-1' or 'B' would give the most area for future consideration, 'A-1' taking the outer islands into the plan."

Issues--The City stressed that any actions jeopardizing "this one stable economic influence would be vigorously protested by the people of Craig and Klawock." The City position also protests an "assessment of fishermen attitudes as opposed to community attitudes," asserting that "we are one and the same, and we are unanimous in the realization that any reduction in the supply of National Forest timber will be detrimental to all of us through the inevitable economic reduction."

The Shaan Seet Corporation also noted the importance of honoring small business set-aside programs that assure survival of all existing businesses. But, they were concerned that Prince of Wales Island should not carry the full burden of timber harvest operations in the area.

ELFIN COVE

Responses from Elfin Cove were three, two of which had no preferred Alternative.

The respondent that favored A_3, the SEACC Alternative, stated that this Alternative most nearly covered all their concerns--namely the protection of such areas as West Chichagof, Mud Bay, Tebenkof, Misty Fiords and Admiralty Island.

All of the respondents felt strongly that the logging industry would ruin both the natural beauty, and the fishing industry in and around the area. They stated that Alternative A-1 (CMAL) was disturbing because it decimates all land but the icefields and mountain peaks.

Admiralty Island--One respondent favored having Admiralty Island in total wilderness. Another respondent felt that a cash settlement would be best, second choice would be to have them select off-Admiralty.

GAME CREEK

Alternatives--Forest Service employees met on July 25 with Amelia Hundley, one of the founders and leaders of the Mt. Bether Bible Center at Game Creek. She felt Alternative C, recommended by the IDT, would serve the needs of Game Creek's 105 residents and provide for a balanced use of resources. She objected to Alternatives E and A-2 with the observation that they reflected national objectives but did not well serve the objectives of local communities, the Region, and the State.

Issues--Game Creek needs access to Tongass National Forest land to gather firewood and to obtain grasses for livestock. They would like to have a "buffer" around the settlement at Game Creek for privacy but would otherwise approve a LUD III or LUD IV allocation in order to provide for local and regional employment opportunities. Game Creek would also benefit from a road connection to Hoonah to improve the community's access and the distribution of agricultural products.

Beyond concerns in the immediate area of Game Creek, Hundley said land use decisions should serve the needs of individual communities and the State of Alaska. She supports making maximum land areas available for State selection and stressed Game Creek's need for more land to support a growing population and to provide for agricultural expansion. Also, she expressed concern for employment in the timber industry throughout southeast Alaska, stating that additional jobs may not be a good objective, "although that would be fine." But, she opposed increasing job losses in the Region through allocation decisions which limit existing industries.

Admiralty Island--Hundley opposed designating all of Admiralty Island as wilderness, saying it would create too much unsettled and unused land along the waterway. This might create a hazard for small boats.

GUSTAVUS

Four individual responses from Gustavus were received. Two of these persons endorsed the SEACC position (Alternative A_3), stating that their concern was for Admiralty Island and West Chichagof, which should be protected as Wilderness.

One respondent favored Alternative A_2 stating that placement of large landscape units into single management designations and substantial, well rounded, well chosen Wilderness units was most appealing. This respondent did suggest some LUD designation changes in such areas as: Mud Bay, Icy Straits, and Bradfield Canal. This respondent also stated that maintaining wildlife and fish is very difficult in the face of intense timber management.

One respondent supported Alternative E or D although he primarily felt E came closer to what should be retained in Alaska. He felt this Alternative would best preserve Admiralty Island as Wilderness.

The process was complimented by one respondent.

Admiralty Island--One respondent felt land "should be awarded to Natives if they want it (but) they should be given a choice of equally valuable land elsewhere."

HAINES

Responses from Haines included a resolution by the Council of the City of Haines and positions adopted by the Haines Chamber of Commerce and by the Haines Independent Businessmen. During a meeting with Haines residents, several community concerns were clarified. Consequently, notes from the meeting were sent to attendees for verification and are included in this analysis. Finally, 69 individual written responses were received from residents.

Alternatives--One individual endorsed Alternative B; 5 supported A-3 or E, two had no preferred Alternative; all other responses, including the City, the Chamber, and the Independent Businessmen, endorsed Alternative A-1, the CMAL position. Their major concern is to maintain the current timber harvest on National Forest land without looking to Native Corporations to make up the balance. In addition, they state that wilderness principles are generally unacceptable to the community where "maximum utilization of all classifications of land" is preferred. The resolutions therefore, indicate that minerals, fisheries, and recreation development should be encouraged. Finally, the City wishes the record to indicate that Alternative A-2, and the IDT position, Alternative C, are unacceptable.

Issues--The City notes that, unlike Alternative C, the CMAL alternative guarantees the opportunity for a land transportation corridor between Haines and Juneau. This road corridor was the subject of concern during the Forest Service meeting with Haines residents on July 19 and was identified as one of the ideas Haines is considering as a solution to severe socio-economic problems presently threatening community stability.

In addition, residents expressed displeasure at the extensive roadless allocation through Lynn Canal and indicated interest in developed recreation in their area; in possible road connections to Skagway and to Juneau; and in exploring a specialty timber market in Seattle which might create a back haul and reduce their freight costs.

While most of the people at the meeting expressed opposition to wilderness, one individual noted that similar arguments had been raised against early-day parks; he felt that Alaska has enough land for both wilderness and developed recreation. Two letter writers added their comments that wilderness can and should protect the needs of fishermen and tourists, that no road should be constructed in Lynn Canal, and that the long-term timber contracts improperly traded off valuable resources at low prices.

Admiralty Island--One response from Haines addressed the off-Admiralty selections. This individual felt that Native lands should be found somewhere besides Admiralty and the 45 SEACC areas.

HOONAH

Responses from Hoonah include verbal comments provided by Mayor Miles Murphy during a meeting on July 25. Written responses were received from Huna Totem Corporation and the City of Hoonah.

Alternatives--The Mayor expressed tentative endorsement of Alternative C, as modified by the IDT, stating that this appeared to be the best decision to meet Hoonah's interests. He specifically approved LUD I allocation of Idaho Inlet which is important to residents for subsistence use and trapping.

The Huna Totem expressed support for Alternative A-1, the CMAL position, "as the basic land use plan for the region." They specified opposition to Alternative C, objecting to the IDT recommendation for Idaho Inlet and Mud Bay. The corporation favored LUD II, roadless recreation management, in Idaho Inlet and supported a multiple use designation (LUD III or IV) for Mud Bay. The City Council of Hoonah stated in their response that they "will go along with CMAL proposal plan and will reject all other proposal plans."

Issues--Mayor Murphy felt the jobs issue is a central concern in the community. They want "controlled logging" for purposes of local employment to be accomplished with fish stream protection. Mayor Murphy discussed Hoonah's efforts to increase developed tourism, but he felt relatively few jobs are likely to result.

A second important issue is management of road corridors: Hoonah would like to use logging roads to increase access for fishing and hunting. In addition, they are interested in a road connection to Game Creek and, possibly, to Pelican. The Mayor said Hoonah residents are divided about a road connection to Tenakee Springs, since a number of people are originally from Tenakee Springs and would like its isolated lifestyle preserved.

Juneau

Responses from Juneau include the endorsement of Alternative A-1 (CMAL) by the City and Borough Assembly, the Chamber of Commerce, and State Senator Bill Ray. Reasons cited for preferring this alternative include maintaining timber jobs and avoiding job dislocation; fostering the potential of the mining industry, particularly

development on Admiralty Island, to support Juneau's economy; promoting fisheries enhancement; and providing emphasis on developed recreational opportunities.

In addition, several Juneau-based organizations responded. These groups, representing mining, environmental, fishing, sport, Native, and labor interests, are analyzed within the major group sections.

Individual responses totaled 362 from Juneau. They include endorsements and comments on all of the alternatives included in the DES, as well as comments on specific areas or issues.

Alternatives--Endorsement of Alternatives A and A-1 was expressed in terms similar to the comments of State Senator Ray, the Chamber of Commerce, and the City and Borough. Several, such as the Juneau Garden Club, combined their endorsement of these alternatives with statements of strong opposition to Alternative A-2 and H.R. 39. Some also challenged the assumptions of the IDT recommendation, questioning the credibility of the economic analysis.

Several of the 143 people endorsing A and A-1, modified the alternatives to allocate all of Admiralty Island to wilderness. However, the great majority felt that only the eastern portion should be "devoted exclusively to recreation and subsistence uses" with some timber harvest and Native selections approved on the western half of the island.

The additional four individuals who preferred Alternative B held similar views, but they felt Alternative B confirmed their belief that developmental and amenity users could "get along." They felt, too, that this position affords necessary and sufficient protection to present industries and local economies.

Endorsement of the IDT recommendation (C with modification) was based on the view that this position was the most balanced of the options. One person felt this alternative "isn't perfect, but it's a lot better than I would have expected." The five individuals supporting this position voiced concern for wildlife protection, and two modified the alternative to designate all of Admiralty Island for wilderness. Several responses expressed concern that modification of the draft IDT position indicated improper responsivness to pro-industry pressure.

Concern for wildlife and fisheries protection was the motivation most often cited by seven Juneau residents who supported Alternative D. One individual analyzed the alternatives and combined elements of Alternatives D and C; a number of responses modified Alternative D to provide an all-wilderness designation for Admiralty Island.

Some respondents felt Alternative D was a better balanced decision than the IDT position. They said that "the process of developing VCUs, ranking and comparing amenity and commodity values, and grouping into reasonable management units is already a process of compromise." They noted that the IDT position decreases the amount of amenity-oriented allocations more than three times the gain in commodity allocations when contrasted with Alternative D.

The advantages perceived in Alternative E were related to increased protection of wildlife and fisheries. One person felt the IDT position was equally acceptable if all of Admiralty Island were allocated to wilderness. A similar response preferred HR-39, noting that the IDT position--while reasonable in other respects--failed to protect all of Admiralty. The other responses, however, strongly opposed continuation of timber harvesting on the Tongass National Forest and felt that tourism and fisheries would provide a sufficient economic base in the future. One respondent felt strongly that decreased employment, with resulting decreased population, was preferred in order to establish one national area which remains in a wildland condition.

Alternative A-2 was supported by 43 Juneau respondents. About half of them suggested combining the IDT position (Alternative C) with the A-2 position. These responses unanimously expressed the importance of allocating all of Admiralty Island to wilderness, but there were several preferred solutions to off-Admiralty Island selections for Native corporations. Cash payment was felt to be the best solution; a few recommended alternative selections in the Yakutat area; and others recommended land exchange on Kupreanof and Prince of Wales Islands.

All of the 40 individuals supporting Alternative A-3, the SEACC proposal, felt that this alternative addressed the most important issues. The main issues were that high-quality wilderness areas should be protected and that the preservation of Admiralty Island as wilderness is important. Many responded to the IDT-recommended alternative. Although not agreeing with it, one stated, "It certainly has been a major job, handled well. I don't necessarily agree with the logic, but I'm delighted to see such a systematic effort to make clear the various values at issue." There was great concern about the fisheries issue. The feeling most often stated was that the salmon enhancement programs and hatcheries have not been sucessful in other States and that they probably would not work in Alaska (for example, depleted salmon runs in Washington State). One response stressed the agreement of conservationists and the fishing industry that stream rehabilitation can and should continue in wilderness areas. This response noted lack of baseline data to measure water quality and noted similar weaknesses in timber data.

One respondent felt the IDT-recommended alternative combined with Alternative A-2 would provide a good system of reserves in southeast. Five of the respondents felt that a fair exchange was the best alternative for the Native land selections on Admiralty Island. Three felt that a land exchange was fair. Several of the others did not feel this issue needed to be addressed at all.

Issues--Sixteen of the respondents did not endorse an alternative but had several comments to make. The League of Women Voters stressed the importance of regional planning and decision-making; coordination of planning by all levels of government; ensured public access to unique recreation areas; required study of impacts of any major public development; and inventory of land resources and present uses. Several expressed concern over the elimination of private hunting cabins in wilderness areas. These cabins are seen as essential in providing safety and a way of life that would not be replaced with "public cabins". Several thought the process was good but the time allowed for study of such a complex and extensive document was too short. Many of the respondents felt Admiralty Island should be protected and be declared a wilderness. Some felt clearcut logging degraded the deer habitat and logging and mining would hurt the fish streams. One respondent felt the IDT-recommended alternative gave "insufficient emphasis to criteria dealing with the economic needs of the citizens of Alaska." Many objected to the wilderness designation of Idaho Inlet, stating that the population of Idaho Inlet was not consulted on this decision. Another response criticized State of Alaska management of natural resources, favoring fish and wildlife management by appropriate Department of Interior agencies. A number of responses felt that socioeconomic analysis unfairly or inadequately considered the economic importance of the fishing industry and tourism. Others felt that timber data is misleading, vaguely presented, or insufficiently grounded in field inventory. Doubt is expressed that biologically productive fish streams can or will be protected under all alternatives. Finally, concern is expressed that a bias towards timber comes out with the approach used to calculate the timber yield. The approach is very conservative, which results in more acres needed to meet the industry's needs. On the other hand, the approach to protecting streams was most optimistic, which tends to allocate fewer acres for protection. This, in the respondents view, will put the protection of fish habitat in jeopardy while assuring the timber industry its needs will be met.

Admiralty Island--Some who advocated off-Admiralty Island selections indicated that land exchanges were acceptable, but the majority preferred a cash settlement with Native corporations. One respondent was against Native land selections on Admiralty Island or anywhere else, stating that "there are just as many of us concerned with their home in Alaska as the Natives."

KAKE

Responses were received from 21 Kake residents. They represented logging, fishing, Native, and business interests.

Alternatives--One respondent, in support of Alternative C, suggested that management provisions for LUD II areas should include limited cutting of timber for personal use, mainly near communities where timber from LUDs III and IV is not readily available. Nine respondents supported Alternative A-1, suggesting no modifications to the proposal.

Other comments concentrated on issues and concerns of the community, but they did not specify a preferred alternative. General concerns expressed were that Alternative C and most others would not provide enough timber in LUDs III and IV to support the timber industry at its current level. In addition to their concerns for maintaining the independent timber sale program on which the Kake community relies, the respondents felt Kupreanof Island timber must be managed through a continuing harvest program in order to facilitate management of Native corporation timber lands.

Issues--Respondents expressed general concerns about retaining the timber industry at its present level, especially to provide small business set-asides and sustain small mill operations. And, they wanted individual and family access to timber for personal use.

Many respondents feared that wilderness use restrictions may limit or eliminate their use of traditional subsistence areas, mainly on south Admiralty Island. They felt the Forest Service had not adequately defined wilderness uses and restrictions.

The community's respondents generally favored the retention of land management options that would allow for an eventual road connection between Kake and Petersburg. And they favored an option for a power transmission corridor from Petersburg.

The respondents are unanimous in their opposition to wilderness for all of Admiralty Island and to the off-Admiralty Island Native land selections that would result. In their view, these actions would reduce the timber land base to a level that would almost certainly eliminate the independent sales program by committing all available volume to the long-term contracts.

KASAAN

Responses received from Kasaan were two individual responses and one response recorded at a meeting with Louis Thompson representing Kavilco.

Alternatives--Kavilco endorsed Alternative A. The individual response had no preferred alternative but had comments to make.

Issues--Mr. Thompson felt that the assumptions made by the Forest Service were correct regarding export of timber from Native lands and the sale of pulp logs. He also felt that Alternative A would best maintain timber yield.

Finally, he agreed with "instant" wilderness where there was no commercial value. His main concern was protection for the fish if logging was allowed behind Karta.

KETCHIKAN

Responses from the Ketchikan community included statements from Cape Fox Corporation, State Representative Terry Gardiner, Southeast Stevedoring, International Woodworkers of America, Ketchikan Gateway Borough, Chamber of Commerce, Ketchikan Public Utilities, South East Aquaculture, Ketchikan Central Labor Council, Alaska Loggers Association, Alaska Trollers Association, and the Ketchikan Garden Club. In addition, there were 252 responses from individuals.

Process--Many respondents were completely satisfied with the process used in developing the TLMP DES, and they congratulated the IDT on its efforts. But, this did not constitute an endorsement for the IDT recommendation (Alternative C). Some said that time allowed was inadequate for making a detailed response.

Alternatives--The City and Borough voted to adopt Alternative A-1. They felt it best provided for a balanced compromise to meet the amenity and commodity needs from the Tongass National Forest and would protect the present and future economic well-being of the Ketchikan community.

They said the Ketchikan community directly or indirectly relies on the timber industry for its economic base. To maintain that base, the Ketchikan Gateway Borough felt a continous, steady, and dependable supply of timber is essential.

They felt Alternative A-1 also placed a minimum number of highly mineralized areas in restrictive land classifications, thus providing the opportunity for mineral development in southeast Alaska. They realized the importance of the need to diversify and felt that the minerals industry would and should play an important role. The Cape Fox Corporation also agreed with those points.

Another reason for their adoption of Alternative A-1 was its retention of hydro-power and transmission corridor options, which would allow adequate flexibility to develop hydro-power resources. The Ketchikan Chamber of Commerce supported that view, adding that they also felt Alternative A-1 encouraged fish habitat enhancement programs, fully protected amenities by creating "pure" wilderness areas, and encouraged the develpment of recreation facilities on LUD II lands.

Of the 252 individual responses, 120 favored Alternative A-1. The most frequent reasons cited were job security, further economic development of southeast Alaska, access to mineralized areas, and national reliance on southeast Alaska resources.

Alternatives A-3 and E were supported by 14 persons in the Ketchikan area, placing high among their reasons the amenity values that would be protected. Their general consensus was that fishing interests were being overshadowed by timber interests and that there was a real need to protect prime wilderness areas in southeast Alaska.

Many individuals selected no specific alternative but made comments dealing mainly with economic growth, protection of wilderness, and the protection of fish and fish habitat enhancement programs. Alternative B was supported by a few persons who

generally felt it would allow for more growth and development in highly mineralized areas and for a greater allowable timber harvest level than would Alternative C.

Respondents preferring Alternative D said it would allow more protection for fish, wildlife and wilderness resources. The Alaska Trollers Association, supporting Alternative D, recomended that the wilderness boundary for Misty Fiords be adjusted to include the Keta River. The ATA board of directors also recommended that aquaculture sites be permitted in LUD I Wilderness areas, using the same management guidelines as similar developments in LUD II roadless areas. The Trollers also object to any reduction in the IDT's recommended timber retention factors for LUD III and LUD IV areas. "We feel those reductions (reflected in the Regional Forester's August recommendation) would not give adequate protection to fish and wildlife habitat."

One respondent favored Alternative C, because it was a "good" alternative and "would not greatly affect the timber industry." Representative Terry Gardiner endorsed Alternative C, with some modifications, (see section on elected officials and candidates).

Admiralty Island--Several respondents favored a no-action alternative on off-Admiralty Island Native land selections. But, one person expressed concern that (if Admiralty Island is designated Wilderness) Native selections elsewhere would involve prime timber lands that would then become unavailable to the local timber industry.

KUPREANOF

Kupreanof responses included letters from the City Council and four individuals. Kupreanof's prime concern is the retention of its individualistic and undeveloped community lifestyle through the preservation of present fisheries, wildlife, recreation, and watershed values in areas adjacent to the community. The Kupreanof Council urged that the Forest Service planning process reflect and respond to these concerns and to the need for similar protection of small-community lifestyles in Port Protection, Myers Chuck, Port Alexander, Point Baker and Tenakee Springs.

In general comments, the Council expressed a desire for more stringent protection of the small commercial and sport fish rearing grounds and retention of sufficient natural flora to support native animals.

Local Issues--Of major interest is retention of Petersburg Creek in its present undeveloped state through formal Wilderness designation. The Council noted that Petersburg Creek was one of the first areas in southeast Alaska recommended by the Forest Service for wilderness study status; and disappointment was expressed that the area had been returned to the total land base to be "buffeted about in every plan and alternative."

Council proposals for other areas near Kupreanof include:

*Duncan Canal, the Salt Chuck, Towers Arm, and Castle Island VCUs, plus Coho Creek Pass (Duncan Pass), recommended for Wilderness designation because of high recreational use, prime waterfowl habitat, hunting and fishing.

*Woewodski Island-Beecher Pass -- recommended for LUD II. The Council would also prefer that the Forest Service maintain control and management of the Beecher Pass area. If these lands are selected by the State, the Council recommends classification as a State park and recreation area.

*Stikine-LeConte--recommended for Wilderness designation. Council considers this area to include the best and largest waterfowl habitat in southeast Alaska, the best and most diverse wildlife habitat, and the highest present and future potential for recreation uses.

*Rocky Pass, Tebenkof Bay, and south Kuiu Island--recommended for Wilderness.

*The inner Bay of Pillars, the head of Port Camden, the mouth of Kadake Creek (all on Kuiu Island), and the north arm of Farragut Bay (mainland) recommended for LUD II classification.

Alternatives--In addition to these individual areas, the Council supports the Administration's position on areas for wilderness and wilderness study over the rest of the Tongass. The balance of the land should be managed, they said, according to the allocation patterns displayed in Alternative C.

Individual responses seemed to support the Council's view that no single alternative fully satisfied community desires for land allocations. One individual supported the Administration's position on wilderness areas, supplemented by the SEACC proposal to pick up additional wilderness protection for favored areas.

Another individual characterized the Administration proposal as too "biased toward wilderness", while the CMAL alternative was too biased toward development. The respondent considered the SEACC proposal basically sound, but suggested that if wilderness proposals for Yakutat, West Chichagof, Admiralty Island and Misty Fiords were reduced in size, it would allow the addition of some smaller island areas to the wilderness system. "As a reasonable compromise," the respondent supported the IDT recommendation.

Process--Individual responses from Kupreanof differed somewhat in their evaluation of the planning process, and the IDT assumptions and recommendations. One respondent characterized TLMP as a "commendable planning effort" in which "every attempt has been made to keep the public invloved" in an effort to reach a "reasonable compromise".

Another respondent, while basically supporting the planning process, treatment of land management issues and the development of alternatives, suggested that the economic importance of tourism should receive more emphasis, and the transient nature of many logging families should be recognized.

Three individuals questioned the accuracy of some of the VCU ratings for wildlife, and/or the proposed LUD III and IV designation of some VCUs which rated high in wildlife and amenity values.

One respondent charged that the TLMP was developed around "very questionable assumptions as to what is really in the long-term interest of the American people". The respondent proposes that decisions on areas of serious resource conflict be diferred, because "there is obviously insufficient resource data", and "irreconcilable conflicts in resource uses" which would make it "a serious mistake to now classify and allocate every acre of land in the Tongass."

And finally, one respondent, after expressing dismay with the land allocation "shell game", said "I have a sneaking suspicion that your preferred alternative, to be issued in August, is already at the printers. I just hope you gave a LUD I designation to my burial ground on Petersburg Creek."

METLAKATLA

The position of the Metlakatla Indian Community was conveyed by Mayor Solomon Atkinson. Rather than commenting on individual alternatives, Mayor Atkinson expressed concern that the TLMP DES failed to identify and address the potential adverse economic and social effects on the community which would result from a reduced timber harvest on the Tongass National Forest. He urged that Tongass National Forest timber harvesting be maintained at a level sufficient to provide an effective Small Business Administration timber sale program which will sustain the Annette Hemlock Mill.

Mayor Atkinson's concern related to the fact that the mill is leased to Louisiana Pacific which takes all logs that are 33 percent sound or better. He noted that the Annette Hemlock Mill cannot compete with Native logs because of quality and that if the market or supply slackens "LPK will keep their own mill going and close ours."

He also stressed the opposition of Metlakatla to further Native land withdrawals from other areas of the Tongass to resolve conflicts on Admiralty Island. He felt that local adverse effects must first be mitigated and noted that "such withdrawals will not benefit our community, but they will only increase competition within the Japanese round log market."

PELICAN

Response from Pelican included comments from the Mayor, provided by telephone, and five individual responses.

Alternatives--Alternative C, as modified by the IDT, seemed to Mayor Bruce Anderson to reflect the wishes of Pelican for West Chichagof-Yacobi, Lisianski Inlet, and Lisianski Straits. His comments were confined to these areas of immediate interest to Pelican. The only correction which he noted for Alternative C was greater protection for VCU 253 at the head of Lisianski; depicted as LUD III in Alternative C, it has been changed to LUD II by the IDT, corresponding to Mayor Anderson's comment. He noted that Alternative A-2 "doesn't reflect a thing we said" to the Forest Service and to the Seiberling Subcommittee last summer. Finally, he stressed that issues of major concern in Pelican are: logging be limited in their area, allocation permitting mining on West Chichagof-Yacobi, and fisheries protection.

The five individual responses received from Pelican endorse Alternative A-3, the SEACC position, expressing intense opposition to timber harvest. These responses oppose any development on West Chichagof-Yacobi, oppose "concessions" to the Bohemia Basin mine, and propose wilderness designation with management as set forth in the Wilderness Act of 1964. One response suggested that the roaded Peril Straits be opened to homesteading.

Process--Three written responses from Pelican viewed the draft EIS as too technical for an adequate review during the short response period. They criticized the expense of the document and expressed suspicion that the Agency is "stalling" decisions in order to favor timber harvest "when the controversy dies down".

PETERSBURG

Petersburg responses included those of the Mayor, City Engineer, Chamber of Commerce, Petersburg Conservation Society and 31 individuals.

Alternatives--Official responses from the City of Petersburg stressed that Alternative A-1 was the only alternative "that comes close to satisfying the people's needs in southeast Alaska." The overriding issue is people and jobs rather than wilderness, according to City officials, who maintained that "wilderness in Alaska is a natural phenomenon and does not need to be legislated." The City position "agrees completely with SEALASKA's" according to the Mayor's response (see the analysis of Native Corporation responses).

The Chamber of Commerce opposed any management plan that would reduce timber harvesting operations and employment, restrict aquaculture development, or inhibit fisheries habitat protection and enhancement programs. The Chamber supported Alternative A-1, and considered it a balanced plan which will maintain the timber industry employment level, improve fisheries, and allow for development of the mining industry. "It recognizes our future needs for employment and commodities as well as our desire to retain recreational and wilderness values."

"The Petersburg Conservation Society favors the principles of land planning as represented in A-3, the SEACC proposal, and proposal C of the Tongass Land Management Plan." Specific comments from PCS on areas of particular concern near Petersburg include: for LUD I Wilderness--Petersburg Creek, Stikine-LeConte, Duncan Canal, Rocky Pass, and Tebenkof Bay; for LUD II roadless management--Woewodski Island-Beecher Pass, South Kuiu Island, and the north arm of Farragut Bay.

Individual respondents from Petersburg included one favoring Alternative C; one favoring Alternative D; 16 who favored Alternative A-1 without modification; one who would "settle" for Alternative A-1, "if there is no other answer to the need for economic growth;" six who supported Alternative A-3; one supported Alternative E with some modification; and one who supported A-3 but with a preference for D in the Stikine Area. Seven respondents expressed no alternative preference.

Issues--Specific concerns of the City included the retention of hydropower development and transmission options, mainly in the mainland areas of Thomas Bay, Tyee Lake, Virginia Lake, and Sunrise Lake on Woronkofski Island. In addition, the City urged consideration of the long-range option to develop a power-grid system for southeast Alaska and the need to protect potential transmission corridors.

City officials also urged the retention of transportation corridor options. These mainly include the Stikine River route to Canada, the Kake-Petersburg route, and selected locations on Mitkof Island to serve community expansion and recreation needs.

Petersburg respondents generally agreed that Petersburg Creek should be nominated for wilderness status. One respondent proposes making both Petersburg Creek and LeConte Glacier national parks.

Some consensus formed regarding protective status for Rocky Pass, Tebenkof Bay, the Stikine River, and Duncan Canal. But, again, there are those who feel recreation activities, hunting, fishing, logging, and mining "can and do exist in the same areas without major conflicts."

The Petersburg Conservation Society expressed support for the building and maintenance of Forest Service public recreation cabins in Wilderness areas, and for the retention of traditional modes of water and air access.

Process--Individual respondents differed significantly, with comments both supporting and condemning the planning process and IDT efforts. Some felt that the planning approach was balanced, properly recognizing the major issues and values; others claimed the Forest Service had "sold out to groups of radicals...leaving little hope for future development of timber resources to meet the needs of present and

future generations in southeast Alaska". Other comments suggested that the Forest Service is working solely for the timber industry, paying little heed to the conservation-minded community.

One person suggested that much of the environmentalist pressure from outside the State results from a widespread lack of understanding concerning the issues, lands, and uses in southeast Alaska. The respondent said that each summer there is a large influx of visitors who urge wilderness designation for much of the land but who are themselves seldom out of sight or reach of roads and recreational conveniences.

POINT BAKER

The Point Baker Association, Alan Stein - President, favors most Wilderness areas for TLMP. They disagree with its proposal for the Point Baker area.

They felt that the present administration of the float in Port Protection indicates an inability of the Forest Service to protect subsistence resources.

PORT ALEXANDER

Responses from Port Alexander included a written position statement signed by 11 residents, and one individual letter. Verbal comments were also received during a meeting between the Forest Service and residents on July 13.

Alternatives--Respondents endorsed Alternative C and approved giving southern Baranof Island and Tebenkof Bay areas on Kuiu Island wilderness designations. They felt this position would meet community needs for isolation and for protection of amenity and fisheries values.

Process--Comments also reflected approval of the process being used to make allocation decisions. One person said, "It appears that the long years of research and evaluation are finally beginning to gel into an acceptable land use plan, unbiased by past, seemingly one-sided, logging priorities. I like what I see in the Tongass Land Management Plan." Another commended agency efforts to obtain local opinions.

Issues--Several issues were of major concern to Port Alexander respondents. First, they wanted to "maintain the currently wild and undeveloped character" surrounding the community; changes in lifestyle or a population increase were strongly opposed. Second, they opposed "overselection" by the State adjacent to Port Alexander, viewing such a land selection as an unwelcome invitation to development-minded outsiders. Third, they opposed the development of a pink salmon hatchery at Port Armstrong; they favored coho salmon habitat enhancement but did not want seine fishing encouraged in the area. Also, they favored continuation of research by the National Marine Fisheries Service at Little Port Walter (VCU 337).

Admiralty Island--Port Alexander respondents felt the areas recommended for wilderness by the IDT are sufficient, and that no effort should be made to classify the entire island in LUD I. However, if off-Admiralty Island land selections are made, they would oppose any exchange on Kupreanof Island. One writer felt the selections should be near areas already developed, such as Douglas Island. This person opposed any exchange for the Kootznoowoo Native Corporation. Another suggested making cash settlements with the urban corporations (reduced by the amount of operational overhead for developing a timber sale) and exchanging with Kootznoowoo (on a value-for-value basis) lands from the Holkham to Farragut Bay areas.

Response from Sitka includes a resolution by the City and Borough Assembly and position statements by the Chamber of Commerce, Senator Pete Meland, the Sitka Sportsmen's Association, and 550 individuals.

Alternatives--Responses by elected officials, organizations and 461 individuals endorsed the CMAL Alternative A-1. The remaining responses expressed support for other alternatives, discussed specific issues, or recommended management preferences for specific areas.

Issues--The City and Borough Resolution supporting CMAL states that this position "strikes the best balance between protection of existing and potential jobs in southeast Alaska and amenity values on the Forest." The Assembly stresses its concern for timber, mining, and fishing jobs and for allocation which makes prime wilderness areas accessible to the public. The City Administrator voices the additional concern that all potential hydro-electric sites within the municipality be excluded from LUD I or II designation. Others who endorse Alternative A-1, A, or a combination of the two, focus on concern for jobs and for accessibility of recreation areas. Alternative C, as modidified by the IDT, was endorsed by 10 Sitkans, most of whom recommended further revision. Again, the issues addressed were continued supply of timber from National Forest land and preference for LUD II, rather than LUD I, recreation areas.

Wilderness--Two individuals favoring Alternative D felt that it provides better protection for important wilderness than does the IDT position while not substantially affecting economic options.

Strong wilderness positions, either Alternative E or A-3 (SEACC position), were voiced by 25 individuals. Many of these responses expressed support for the planning process, but felt that the IDT had over-emphasized the jobs issue. Some felt that extensive wilderness would not jeopardize jobs; others acknowledged job loss, but felt that reduction of timber employment was preferable to loss of prime wilderness values.

One respondent expressed doubt that industry efficiently uses timber, criticizing "the 25% discrepency between inventoried and scaled volume" and beach logs. Another response stated that "since alternatives provide first for continued or enlarged timber harvest," a real choice between wilderness and development was not provided.

Thirty responses, recorded on a RARE II response form, expressed that only "areas or portions obviously good for nothing but Wilderness" should be recommended as Wilderness on the Tongass. Responding to possible criteria for reaching RARE II decisions, the group assigned highest priority to meeting 1975 RPA targets; employment and community stability; national housing and energy goals, and inflation control; highest and best use of the land; benefit to greatest number in the long run; increased intensive use of National Forests; access; and maximum net public benefits in perpetuity.

A few responses addressed the issue of wilderness management, expressing doubt that access would be assured and/or "prior use of motorized access" could be agreed upon. One person expressed concern for safety in wilderness areas and expressed belief that special use permits be allowed to continue.

Finally, some responses combined specific aspects of two or more alternatives. They approved the protection of small key areas as depicted in the IDT position, but preferred another position, such as Alternative A-2, for specific areas (Duncan Canal,

Misty Fiords, or Admiralty) or Alternative A-1 for increased timber. Others approved the "core wilderness" concept of the CMAL position, but combined this concept with allocation patterns in Alternative C.

Management Recommendations--Eleven Sitka responses addressed specific concerns, but did not endorse one of the alternatives. Some requested a single boundary change; others voiced a general orientation, favoring sustained employment, increased wilderness, etc. Some responses recommended specific areas for protection, including West Chichagof-Yacobi, Suemez, Noyes, Lulu, Saginaw Bay, Misty Fiords, Hoonah Sound, and Tebenkof. Others spoke to particular management considerations: one person felt that scenic transportation routes should not be a decision factor; another was concerned that coordination of public lands be accomplished through "a uniform plan for administration;" one writer wanted more roadless areas adjacent to communities to serve those who cannot reach the major wilderness areas; another recommended smaller cutting units and larger leave strips on beaches and streams. Concern for protection of fisheries values included recommendation that ADF&G identified non-logging areas be maintained in LUD I or LUD II.

Admiralty Island--The City and Borough, the Chamber of Commerce, and the majority of individual responses felt that Native selections should remain on Admiralty and that wilderness should be limited to the eastern portion of the island. The four responses favoring Alternative B each expressed belief that, "as political reality" Admiralty Island will be designated wilderness; they feel that Alternative B, therefore, offers the best supply of timber from other locations. This concern for Admiralty is echoed by several who endorse the IDT position "only if western Admiralty provides timber."

The majority of individuals supporting Alternatives E or A-3 preferred land exchange or cash payment in order to relocate Native selections elsewhere, maintaining Admiralty for all-wilderness designation.

TENAKEE SPRINGS

Respondents from Tenakee Springs included six persons who sent written comments. Verbal responses were made by 11 residents during a meeting with the Forest Service on July 13. The comments were summarized and sent to the residents for verification.

Alternatives--During the meeting all 11 individuals endorsed Alternative C as modified by the interdisciplinary team. They felt the IDT position provided resource protection and still allowed enough logging to sustain local employment. Two individuals stated a tentative preference for Alternative C but expressed the concern that employment in other communities might suffer and that individuals might be unable to shift from mill work to logging jobs.

Of the written responses, one person approved Alternative C for Tongass management but preferred Alternative D's allocation plan for Tenakee Inlet, expressing a special concern for fisheries protection. The remaining five written responses supported the CMAL alternative, stating their firm opposition to legislation or alternatives which would reduce timber industry employment.

Tenakee Springs respondents strongly feel that Alternative A-2, although responsive to national interests and publics, would not serve the needs of residents. They objected to a "lockup" of minerals, and to the extensive LUD IV allocation plan for Tenakee Inlet.

Issues--Special concerns of Tenakee Springs respondents involve fisheries protection and timber management. The respondents stressed the need for protecting the fisheries resource. Although some felt this could be done with careful logging practices and limited storage of logs in water, others were opposed to timber harvesting activities. In general, respondents felt timber operations were needed to sustain the current economy in the Inlet, but they felt an increased harvest would strain the present critical housing shortage and alter the community's lifestyles.

Concerns about specific bays were expressed to the interdisciplinary team. Finally, all respondents expressed opposition to a road connection from Tenakee Springs to Hoonah.

Admiralty Island--No comments addressed the issue of off-Admiralty Island land selections. One person stated that cabins should remain regardless of final allocation decisions on Admiralty Island.

THORNE BAY

Twenty-two responses were received from Thorne Bay, all supported Alternative A-1 the CMAL proposal.

Issues--The major issue stated by the Thorne Bay respondents was job security. Many felt that CMAL adequately provided for Wilderness while allowing timber resources to be utilized for economic growth and stability. The Thorne Bay respondents also felt that Alternative A-1 was a more balanced alternative to protect wildlife, and fish while allowing for recreation.

One respondent objected to the assumption that Native lands would add to the harvest level. He felt this was unpredictable and should not be taken into account.

IDT--Many felt that the IDT recommended Alternative was not adequate to fit their needs and very unfair. They felt the Alternative would take away their livelihoods.

WRANGELL

Wrangell respondents included the City Council, Chamber of Commerce, and 258 individuals.

Alternatives--The City of Wrangell, by resolution, rejected Alternative C as being detrimental to the economic and social well-being of Wrangell and southeast Alaska, placing undue risk on the Alaska working person. The Council believed the assumed job loss under Alternative C was grossly understated because of the IDT's "questionable assumption" regarding the availability of Native timber to industry.

The Council resolved to support Alternative A-1. They said it provides sufficient quantities of timber from Tongass National Forest lands to support industry at its present level, protects mining industry jobs, provides positive opportunities for tourism development, and provides adequate protection to communities dependent on the timber industry. They said Alternative A-1 was a balanced land use plan that fits the needs of the people of southeast Alaska, and still protects environmental values.

The Chamber said Alternative C was unacceptable. They said it would create a drastic effect on the economic and social well-being of Wrangell. They cited such

potential adverse effects as the closure of one and perhaps both mills, job displacement, tax base alteration, and disruption of community stability.

Of individual respondents, 252 persons supported Alternative A-1. Four respondents supported Alternative (A-3), one favored Alternative C, and one supported Alternative E.

CMAL supporters suggested no significant changes from Alternative A-1 displayed in the TLMP DES. Those supporting the SEACC proposal said Alternative A-3 best addresses the most critical land management issues and best fulfills their expectations for wilderness.

The IDT recommendation (Alternative C, modified) was called a "rational approach" to land allocation, and "in the right ballpark for the first time;" but many respondents considered the IDT Alternative inadequate, claiming that it either a) did not include enough prime areas for Wilderness designation, or b) did not include enough multiple-use land to maintain existing industry. The respondent who did favor the IDT proposal (or Alternative C) disagreed with most of the alternatives displayed in the TLMP Draft, "especially CMAL and SEACC, which seem a bit radical in their views."

The respondent who favored Alternative E did so in support of "maximum wilderness" in order to retain the option of intensive development for future generations.

Admiralty Island--Two of the respondents commented on the off-Admiralty Island Native land selection alternatives. Both preferred either purchase for fair-market-value or land exchanges to move Native selections off the island.

YAKUTAT

The City of Yakutat, the Yak-Tat Kwaan, and 33 individuals commented on the DES through letters, telephone calls, and verbal comments noted and verified by Forest Service personnel.

Alternatives--The position of the City Council stresses the concern of most Yakutat residents about any land designation which would reintroduce National Forest logging in the area. They felt fish stocks are building again and must be protected above all other considerations. Yakutat respondents felt past logging activities did not provide enough jobs for local residents. Logging was perceived as damaging to spawning streams and counter to their wishes expressed over the years. Consequently, they rejected all alternatives contained in the DES and restated their position submitted a year ago, which proposed managing the Yakutat Forelands in a LUD II category, with one section adjacent to the airport in LUD III. The community supports designation of Russell Fiord as wilderness.

Issues--Two issues received major attention by Yakutat respondents. The first concerns management of the area near Dry Bay and the Alsek River. The Mayor and all individual respondents stressed the importance of the fishing camps. They indicated that LUD II management of the Yakutat Forelands is desired in order to exclude logging or other activities believed detrimental to the fisheries. But, that form of management should not inhibit the fishing camps or existing road and aircraft accesses to Dry Bay.

A number of people specified their strong opposition to transfer of this area to the National Park Service as an extension of Glacier Bay National Monument. The

people living and working in the area--some over several generations and decades--expressed a sense of exclusion from the decision making process, describing their frustration that recreationists spend a brief time at Dry Bay (waiting for floatplanes at the end of canoe trips) and then advocate park or wilderness management, disregarding the wishes of local people.

One respondent said, "We have not been given a hearing of any kind." Another person says he is "sure that the few people who float down the Alsek River from Canada on rafts each year think we should not be in the area. We feel the same way when we see them in the area--invading our privacy and way of life." A third said, "We have our own lifestyle in this area...we are pioneers as were our forefathers."

It should be noted that the same concerns were raised by those individuals who did support one of the alternatives in the DES. The two endorsements of Alternative A-1 and one for Alternative D, similar to those supporting Yakutat's City position, advocated current uses of the Yakutat Forelands by fishing interests, local recreationists, and sport users.

The second issue of major concern is the proposed land exchange with Goldbelt in the Yakutat area. The Yak-Tat Kwaan Village Corporation, the Yakutat City Council, and all respondents addressing this question opposed such a land exchange until assurances can be given that Goldbelt's logging would not harm spawning areas. Individual respondents felt that a group not indigenous to the area would lack the motivation to protect the fish and that the Goldbelt selection might impinge upon the proposed Russell Fiord Wilderness Area which is favored in Yakutat.

A third issue of some concern is Russell Fiord. One response described research in the glacier areas, continuing over several years under direction of the Universities of Alaska and Washington; he asks that this work, including required helicopter support, continue within LUD I management. The Yak-Tat Kwaan, although indicating they have not had time to study the full implications of the proposals for Yakutat, do object to the CMAL designation of VCUs 365 and 355 (on the southern edge of the proposed Russell Fiord Wilderness) in LUD III. They feel these areas are very important for recreational and subsistence uses and are "no less sensitive environmentally and culturally than Admiralty." Moreover, they object on grounds that CMAL's LUD III designation would provide easy access, "opening up all the LUD I lands around the Fiord to every Sunday speed-boater."

Other Alaska Responses

Responses from other Alaska (other being outside of southeast Alaska) were received with responses from the Alaska Miners Association, Noranda and 27 individual responses.

Alternatives--One respondent favored Alternative C stating that this was the best balanced Alternative. Nineteen of the respondents supported Alternative A-1 (CMAL) feeling that this is the only Alternative that takes mineral values into consideration and allows for reasonable recreation opportunities and wilderness; while still satisfying the timber interests, and also allowing for future energy development. Three of the respondents felt that Alternative B would best serve their needs, one stating that this would allow subsistence living to continue in the Stikine area.

Eleven of the respondents supported Alternative A-3 the SEACC proposal. Several of the respondents favor total and immediate Wilderness for Admiralty Island. One

respondent did not agree with the IDT's recommended Alternative because "Admiralty and Misty Fiords, were not designated Wilderness."

All agreed that A-3 best addresses the issue of balancing the past bias for timber production in the Tongass National Forest which they feel has been detrimental to fisheries, wildlife, recreational, and watershed values.

One respondent opposed Alternative A-1 stating that this is a reactionary approach totally devoid of sensible conservation considerations.

Issues--Eleven of the respondents favored no alternative, but had comments to make. One respondent could not agree with the Regional Forester's recommendation because he felt it cut into mineral belts where future reserves will be identified. Some of the respondents requested some changes in LUD designation for VCUs 63, 64, 65, and 66.

One respondent felt that the preservation groups' alternatives are not consistent with sound management of Alaska's resources. Some felt conservation could be practiced without total withdrawals. While some supported total withdrawals, some felt it was better to have "too" much Wilderness now and evaluate this at a later time than to be sorry later. One respondent felt aquaculture facilities were compatible with Wilderness designations. One respondent felt that Admiralty Island should not be locked-up, but that we should use and develop its resources.

Process--Compliments on the process were made. One respondent stated that he wanted to commend the efforts made to consider all possible values when making these decisions. Some felt more time should be allowed in order to involve greater numbers of the public.

Admiralty Island--Two of the respondents felt the Natives should be allowed their original rights. Some felt that off-Admiralty selections should be made.

Responses from Outside Alaska

Responses were received from 655 individuals and organizations outside of Alaska. Of these responses, 186 supported A1 (CMAL), 235 supported A3 (SEACC), and 129 supported the remaining alternatives. 105 respondents did not support any one alternative, however of those it was clear that 41 respondents favored a strong wilderness alternative, while 64 favored a developmental approach.

The reasons given by respondents to support their perferences were very similar to the Alaskan responses.

Alternatives--The main concerns of respondents favoring Alternative A, A1, and B, and those not favoring a particular alternative but a developmental approach, were job security, further economic development, access to mineralized areas; and they felt that these alternatives did not lock-up valuable land in a "wilderness" category.

Concerns were expressed over the need of the United States to make available its natural resources to lessen dependency on foreign countries. This point was most often made in connection with minerals.

Those supporting the CMAL alternative often pointed out that their choice would assure that over one third of southeast Alaska would remain in its natural state. Additionally the respondents pointed out that this alternative was most favorable to development of fish habitat and aquaculture.

Respondents supporting Alternatives E, D, A2, or A3, and those respondents who did not prefer an alternative but favored a strong wilderness approach, felt that these alternatives would best serve their concerns regarding wilderness. Many felt that lands should be made wilderness, or put into further study, to protect valuable resource areas for future generations; adding that protection for wildlife habitat, fish, and preservation of entire ecosystems are major concerns. Many felt that too much emphasis was being placed on commodity values and not enough on non-commercial resources. Some expressed the opinion that wilderness classifications would provide higher employment in tourism and the fishing industry.

Many of the respondents expressed the need to preserve Alaska lands, since Alaska represented "our last chance to set aside an unspoiled and undeveloped area". Additionally some pointed out that the timber industry in southeast was a benefit to a few multi-National corporations. This was viewed as particularly unacceptable since the cost of supplying these corporations with raw materials was at the expense of higher wildlife , fish and wilderness values.

Other expressions--Additional concerns were expressed requesting an emphasis on dispersed recreation rather than wilderness in order to accomodate recreation vehicle campers. Several responses addressed development of ski areas. One encouraged new facilities while another opposed new ski facilities on federal land and urged greater utilization of existing facilities.

Process--Many persons complimented the process. One stated that TLMP is a "remarkably complete and objective document," but pointed out apparent inconsistencies between the Administration's February, 1978, position on wilderness, and the LUD I portrayal in Alternative A_2.

One person felt than not enough time was allowed for response. Some felt that RARE II and TLMP should have been combined as one process to minimize confusion.

IDT Recommended--Some perceived a general commodity/development bias which they found unacceptable. Many felt that the IDT recommended Alternative was unacceptable because it did not protect entire ecosystems and valuable wilderness areas. Many voiced a general concern that not enough weight was given to wilderness.

Other respondents viewed the IDT alternative as too wilderness oriented and expressed a view that a more "multiple use" approach was desired.

Admiralty Island--Those respondents favoring a strong wilderness alternative most often supported Native corporation land selections off of Admiralty. Second choice seemed to be a cash settlement.

Other respondents did not generally address the issue of off Admiralty selections.

Responses from Unknown Origins

Responses received from 69 individuals could not be identified with a geographic locale.

Alternatives--Nine of the respondents supported Alternative A-3, the SEACC proposal. Fifty eight respondents supported A-1, the CMAL proposal. One supported A or A-1 and one supported E.

Issues--All of the respondents supporting A-3 felt that protecting our wilderness was the first importance and all agreed that immediate wilderness should be designated for Admiralty Island and Misty Fiords. They felt that the wildlife and fish should be protected and that no mining should be allowed. Supporters of CMAL felt this plan would provide for a healthy economy--job security. They stated that "National Monument land and the CMAL Alternative proposal A-1 when combined will assure that 33 percent of southeast Alaska would stay in its natural environmental state." One respondent felt that mining the ore reserves could be accomplished with little or no disturbance or alteration to the surroundings. He felt that Idaho Inlet should not be made wilderness because of the chance that property owners in that area might lose their lands.

One respondent voiced his concerns about the extraction of minerals which he felt was given a low priority "when in fact it's a very important resource commodity." He felt the "...IDT team has unwittingly down-graded all aspects of mineral industry in evaluating all their criteria, be it jobs, stability of the local economy, or regional economy, and even national needs."

Some of these respondents felt that the IDT recommendation and the Administration's wilderness position were unacceptable because they "did not provide for a healthy economy."

One respondent favored Alternative E with additional wilderness for all of West Chichagof-Yacobi and Admiralty Island.

Process--The same respondent critized "The IDT team's total acceptance of the "Glass Report." He felt the process needed to be reviewed so that the weighting of impacts and inputs are considered equitably.

Admiralty Island--One respondent felt that a purchase or cash settlement would be best for off-Admiralty selections.

Key Questions and Answers

A number of questions have been raised through public participation. We have attempted to address those in the text of this document. Some, however, are addressed here because of their topical nature.

What uses will be allowed in Wildernesses? This question has been asked continually throughout the planning process. Adding recent emphasis to the question were the special exceptions included in Congressional wilderness bills (which were not enacted) that would have allowed some development of aquaculture facilities, not otherwise permitted in a designated wilderness.

Under current legislative mandates, which are subject to modification by Congress, The Secretary of Agriculture and the Forest Service have specific authority in what uses may be allowed in wilderness and what uses may not. Within that authority there is some latitude, guided by a management philosophy established within the Department. The highlights of that authority and philosophy are summarized here:

The Act

The Wilderness Act of 1964, defines a wilderness as an area of undeveloped federal land, designated by Congress, that has the folllowing characteristics:

- It is affected primarily by the forces of nature, where man is a visitor who does not remain. It may contain ecological, geological, or other features of scientific, educational, scenic, or historical value.

- It posseses outstanding opportunities for solitude or a primitive and unconfined type of recreation.

- It is an area large enough so that continued use will not change its unspoiled, natural condition.

Wilderness Management Objectives

To carry out the intent of the Act, Forest Service management is based on these objectives:

- To maintain an enduring system of high-quality wilderness representative of all National Forest ecotypes;

- To perpetuate the wilderness resource for future generations;

- To the extent that it is consistent with the first two, to provide opportunities for public use, enjoyment, and understanding of wilderness and the unique experiences dependent upon a wilderness setting;

- To maintain plants and animals indigenous to the area by protecting the natural dynamic equilibrium associated with natural, complete ecosystems;

- To accomodate and administer those "nonconforming but accepted" uses provided in the Wilderness Act and subsequent Acts in a way to minimize their impacts;

- To maintain stable watersheds;

- To consider the special protection needs of endangered plant and animal species and their habitats.

The Objectives in Action

In broad terms, following these objectives means that practices which could alter the natural qualities of wilderness will not be permitted. For example, there will generally be: (1) No use of motor vehicles, mechanical transport, and motorized equipment; (2) no buildings, roads, powerlines, developed public recreation facilities, or other permanent manmade structures; (3) no timber harvesting; and (4) no manipulation of vegetation for watershed, wildlife, or forage purposes.

But there are exceptions, designed to benefit both the wilderness and humans. For example, if there are no good alternatives:

- Fires may be fought with motorized mechanical equipment, if they threaten life or property. (In cases where fire is needed to maintain natural ecological systems in wilderness, they may be allowed to burn under close surveillance if prescribed conditions of humidity, temperature, topography, fuels, etc. are met.)

- Insect and disease epidemics may be controlled to protect timber or other valuable vegetation outside the wilderness.

- Certain manmade structures may be installed to protect the soil, water, or vegetation.

- Motorized vehicles may be authorized for use in search and rescue operations.

The Forest Service also permits certain kinds of facilities in the wilderness if needed for wilderness purposes, and as long as they do not adversely affect the area.

Visitor-Use Facilities

Visitor-use facilities are permitted only as needed to protect and manage the wilderness resources:

- Trails to protect soil, water, and biological resources, and to distribute visitors are permitted throughout the wilderness.

- Bridges may be provided when no other route or crossing is available, or to protect a visitor from hazard.

- As a general rule, shelters are not built. Any that existed at the time of wilderness designation are maintained until they need major repair or their continued use begins to downgrade wilderness resources. Then they are removed. (Cabins and shelters that exist now in vast and remote areas, such as Alaska's potential wilderness, may be exceptions. In such cases, cabins may be continued or even expanded.)

- Camping may be restricted if too many people begin using the same areas, and wilderness resources are damaged by such things as excessive trampling of soil and vegetation or fouling of streams and lakes.

- Simple water sources, such as hand pumps, if they existed before wilderness designation, may be kept and maintained.

- Pit or vault toilets serviced by non-motorized or non-mechanical transport may be added where human waste disposal problems cannot be corrected by dispersing or limiting visitors.

Commercial Service Facilities

Commercial services needed for use and enjoyment of the wilderness are allowed under special use permits, and certain man-made installations may be allowed for these services.

- Outfitter camp permits may allow hitching racks and corrals made of native material at approved locations. These facilities should be designed so they can be easily dismantled, if necessary, at the end of a season.

- Tent frames with board flooring, wood sidings, or built-in bunks used by a permittee are not generally allowed. However, if their use was authorized in the season before wilderness designation, then they may continue to be used until replacement or major repair work is needed or until their continued use would cause damage to wilderness resources. New installations of this nature will not be permitted.

This is the picture as it might apply to you personally on a visit to the wilderness. But don't be surprised to see some other activities that don't seem to fit the wilderness concept we've described!

Nonemergency Exceptions

As mentioned earlier, the Forest Supervisor may allow motorized vehicles, equipment, and mechanical transport to be used in case of emergency, such as fighting dangerous forest fires or saving lives. In addition, a number of nonemergency uses of motorized equipment will be possible.

- Weather stations existing when the area was designated a wilderness may remain, as long as the operating agency agrees that each time a device needs replacing it will be converted to miniaturized equipment and camouflaged.

- Aerial fish stocking programs that were in operation by State game and fish agencies before wilderness designation may continue with Forest Service approval.

- State agencies reintroducing animals in a Forest Service-approved project may use mechanical transport, including helicopters, if the Assistant Secretary of Agriculture determines that the reintroduction is desirable and that no practical alternative mode of transportation exists.

*- Aircraft and motorboat use may continue if their use was established before wilderness designation and if the wilderness management plan shows that continued use is necessary and proper in the wilderness.

Congress specifically allowed certain other well-established uses to continue within the Wilderness System.

- Improvements for grazing are permissible when needed to protect wilderness resources. (Livestock grazing is permitted where such use was established before the wilderness was designated.)

- Prospecting for minerals and location of mining claims is permitted through December 31, 1983, under the Wilderness Act (unless withdrawn). Mining operations on valid claims are permitted indefinitely.

- Hunting and fishing are allowed under State and Federal laws and regulations.

- New water projects or parts of projects are prohibited except on specific authorization by the President. Existing water developments must be made compatible with the wilderness environment or be removed.

The above objectives having particular relevance to the Alaskan National Forests have been underlined. The Congress, in acting on enabling legislation for wilderness areas in Alaska, may provide for exceptions to them. Currently, the only exception that is in force is related to new exploration and claim location on those lands that have been withdrawn from new mineral entry under FLMPA for the purpose of allowing Congress to act on wilderness proposals or until December 1, 1980, whichever occurs first. (See Land Status section, Effects of Implementing the Proposed Action, and Plan Map for further information on this exception.)

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*Since aircraft and motorboats have traditionally been used and in most cases constitute the only means of accessing prospective wilderness areas, the Forest Service in Alaska recommends that the use of these modes of travel be continued in the areas that are added to the National Wilderness Preservation System.

In the case of aquaculture, the general rule will be that those developments that call for buildings, facilities, changing of the landscape and use of mechanized equipment to clear streams or remove barriers will not be allowed. Additionally there is the issue of altering a natural fish population to one developed through the works of man. This is contrary to the objective of wilderness providing a scientific benchmark for comparison with other lands that have been developed.

Trapping cabins, private special use cabins and commercial lodges would not be allowed unless provided for by legislation. They would most likely be phased out over a specified time period. Use of chain saws and other motorized equipment would not be allowed.

What has the Forest Service done to minimize non-competitive bidding on National Forest timber by the two large timber processors in southeast Alaska? This question is raised in a number of responses. It centers on the assumption that the two companies (ALP and LPK) are involved in non-competitive bidding for National Forest timber, resulting in artifically low stumpage prices, higher profits, higher demands on timber, and a monetary loss to the U.S. Government.

The Forest Service is monitoring the bidding pattern for Tongass timber sales. In 1976, information which might have indicated non-competitive bidding was sent to the Antitrust Division of the Department of Justice. That Department conducted an extensive investigation of timber products companies operations on the Tongass National Forest. They concluded that no further investigation was warranted at that time. In 1977 an analysis was made of the Tongass bidding patterns. This was sent to the Chief of the Forest Service, resulting in a review of the Alaska region timber appraisal process to see if it invites non-competitive bidding.

In 1978 the Forest Service gave Dr. Matthew Berman, a consulting economist for the Trustees for Alaska, a copy of the 1977 bidding pattern analysis. Dr. Berman reviewed this analysis and information from other sources. He concluded that the information showed that some of the bidding on timber sales was less than competitive. Dr. Berman's comments were sent to the Chief of the Forest Service for transmittal to the Office of Investigation. We have not yet received any information concerning their actions on the matter.

In 1977 the Forest Service and the Small Business Administration agreed upon an annual Small Business set-aside program of 80 MM bm for the Tongass. The timber sale bidding for Tongass timber in 1978 reflected spirited competition. Seven timber sales were sold in 1978, totalling 176.5 MM bm. There was competition on four of these sales representing 88 percent of the sold volume. Only one sale, totalling 61.5 MM bm, was purchased by a large timber processor.

During recent years the Forest Service has provided assistance to Native corporations in the development of their timber programs. Information has been provided to out-of-state timber product companies interested in constructing timber processing plants in southeast Alaska. Tongass timber sales have been advertized in other states in addition to Alaska. These efforts are expected to result in increased competition for Tongass timber.

What is the basis for the assumptions about anticipated private timber harvest levels, and local industry's use of part of the anticipated volumes? While the United States has a mixed economy with a definite role for the public sector, it has traditionally relied on the market system as its chief allocator of resources. It appears that private landowners will export higher quality round logs but the local industry certainly can compete for this volume in the market. Lower grade logs suitable for pulp will quite likely be used locally since this appears to be the most

efficient use for both the private landowners and the public manufacturers. While concerned that it not unjustly compete with private enterprise, the Forest Service must also consider the stabilization of the labor force. No attempt is being made to coordinate public-private timber harvest, but to assess likely market behavior under a specified set of conditions. In our society, we must consider the operation of the "free market system", not just the contribution of the public sector to stimulate industrial development.

Since Japanese imports of round logs and cants go through further processing to provide the same final products, either form of raw material can be substituted for the other. The Japanese have, however, indicated a decided preference for round logs over cants. This preference can be interpreted to mean that round logs exported from private holdings throughout Alaska are apt to substitute, at least to some degree, for cants. The extent to which cant production in southeast Alaska is likely to be impacted by round log exports will depend on the quantity of timber private landowners make available over a given period and the degree to which the Japanese desire to keep their current cant suppply lines open.

Since round log exports appear to offer the most lucrative net returns for those exempt from the primary manufacture law, it can be anticipated that private landowners will become involved in this enterprise to the maximum extent feasible without glutting the market. The fact that the old growth forests of southeast Alaska yield little or no growth means that the landowners possess capital which is providing no returns, leaving them in a position where it would be economically rational to liquidate their standing timber as soon as possible and reinvest in more lucrative alternatives. However, an attempt to dispose of too much timber volume over a limited time span might glut the market and reduce the price received for stumpage. Some village corporations have expressed a desire to engage in primary manufacture, although at a sacrifice of net returns, as a means of stimulating local employment and income. The long-run stability related to the sustained yield of timber products might also be a factor reducing the rate of liquidation, but this possible stability would also be at an apparent sacrifice to overall net returns.

What is the rationale for considering timber sources other than Tongass National Forest in estimating timber-related employment? Timber harvesting and processing creates employment regardless of the source of raw materials. The conversion of standing timber to logs at the loading site requires direct employment to facilitate the harvest and transfer (as well as including other employment) just as in the case of National Forest timber. Timber from private lands which are exempt from the primary manufacture regulations can enter markets in which southeast Alaska timber products were not previously competitive, thus, providing an opportunity for expansion of the industry. However, the structure of the industry might also be affected, that is, a decrease in cant manufacture may occur as the result of the substitution of round log exports. Despite the past predominance of the Forest Service in supplying raw materials to the timber industry in southeast Alaska, it must be considered that our Nation has traditionally depended primarily on a free market system as its basic resource allocator. Now that a private sector is about to emerge as a timber supplier, its contribution to the regional economy must also be considered just as would be the case in other parts of the Nation. While the Forest Service is concerned with maintaining a stable timber industry in southeast Alaska, it must also consider the influence it might have as a competitor with timber, particularly that of lower quality, from private sources. While a stable regional economy is a primary concern, it can be achieved through a private-public mix of both raw material sources and employment opportunities.

In southeast Alaska alone, private landowners can harvest an estimated 150 MM bm per year on a sustained yield basis. If these timber lands are similar to those that

have been harvested in recent years on the National Forest, they will yeild 114 MM bm of quality logs suitable for export and 36 MM bm of pulp logs, as well as 18 MM bm of utility logs not counted in this volume. Since this pulpwood commands a relatively low price in all potential markets, it would be advantageous to sell locally before further transportation costs are incurred, provided that a reasonable price can be obtained. As discussed elsewhere in this document, scarcity of low quality timber suitable for pulp does not appear to be a limiting factor.

How does the timber program contribute to the economic stability of southeast Alaska? Local expenditures and investments resulting from harvest of Tongass timber result in a local expenditure on logging of $114.72 per MBF, on manufacturing wood products $200.35, and on road building $19.88. In other words, for each thousand board feet logged and manufactured, $334.95 is circulated throughout the local economy for wages, supplies, etc. In addition to that economic stimulus, the National Forest property value is enhanced with a permanent road system valued at a minimum of $50 per MBF harvested in terms of replacement value. These are public roads and are much used and enjoyed by local citizens when connected to communities. Added to these stimuli for the local economy is the National Forest 25 percent payment to the State for schools and roads in the Boroughs. The total payment to the State of Alaska for 1978 was $3.1 million which works out to $6.77 per MBF. In total, this means that each thousand board feet of timber sales in the timber program initiates the circulation of at least $341.72. A program of 450 MM bm annually then triggers a total economic influence of $153.8 million within Alaska. This does not count the local stimulus from precommercial thinning, planting, and mistletoe control work nor does it pick up the effect on the economy of the Forest Service wage earners and home owners, or the profits of the timber sale purchasers.

How will the Forest Service provide for environmental protection measures? Concern was expressed that specific provisions were not spelled out for assuring environmental protection.

The forest practice policies detailed in the Southeast Alaska Area Guide provide the guiding direction. Potential timber yield reductions in the LUD IIIs and IVs provide the latitude for interdisciplinary teams to design timber sales and other projects in order to meet the Area Guide policies. Essentially then, the specifics of environmental protection and monitoring are left to subsequent field level planning with the latitude necessary to accomplish them built into the allocations of this plan. If field level investigations show that the degree or latitude provided in this plan proves either insufficient or excessive to meet the intents of an allocation, it will be adjusted. Sufficient latitude will exist to provide for needed environmental protection.

What are the limitations of the data used in the plan? The data used in this planning process are described in the Affected Environment section and in the working reports of the six Task Forces that were formed to gather and evaluate the data. These working reports also point out deficiencies and limitations. During subsequent planning, the existing information will be refined through onsite analysis by interdisciplinary teams. Where serious discrepencies are encountered between the original data used to make allocations and actual field conditions, the field data will be used to improve allocation decisions.

It's our judgement that the data used in this process are sufficient to make the kind of decisions the plan proposes. At this point additional resource data would

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August 4, 1978

Mr. John Sandor
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Dear John:

I am encouraged that we are nearing the end of a long and arduous process in which some volatile questions of forest practices and land allocations will be resolved through difficult but responsible compromise. Once again I want to thank you for providing the cooperative atmosphere in which this complex planning process was accomplished. I am especially pleased that you allowed the State of Alaska to take such an active role in formulating the Tongass Land Use Plan.

Before critiquing the draft plan, I think it would be appropriate to review briefly the nature and magnitude of the problems which we are all attempting to solve in reaching an acceptable compromise between a healthy timber industry and a perpetuity of Southeast Alaska's wildlife, scenic, and recreational resources.

Our testimony before the Senate Subcommittee on Environment, Soil, Conservation, and Forestry in August of 1976 stressed a "received abuse of forestry practice and lack of any recognizably fair and agreed process for allocating land for purposes other than logging "as the legitimate basis for the heated controversy which had been building for roughly twenty years, to the detriment of all interests using the forest. The Zieski v. Butz lawsuit at that time treatened to close down Alaska's forest products industry. We further elaborated that "our forest industry people fear their timber supply will be cut off by new demands by fishermen or recreationists, while at the same time our fishermen

fear their livelihood is threatened by poor cutting practices that pay too little attention to stream protection. Just as the loggers have no guarantee that they can cut a given block of land sometime in the future, the recreationists have no guarantee that their favorite hunting area will not be cut."

Since that time, forest practices related problems have been progressively and responsibly addressed in the "Tongass Guide"; however, the sister issue of land allocations remains to be addressed, as part of the Tongass Plan and in Congress. In approaching land allocation, I must again stress that the State cannot and will not support a plan which would result in loss of employment in our timber industry. It is equally important that we also provide a system of land use designations which recognize and protect Southeast Alaska's high value wilderness and roadless areas. We must do this in fairness to all forest users. More pragmatically, if we must do it we are to avoid perpetuating the kind of damaging controversy and litigation between user groups which has occurred in the past. In light of less sensitive and informed proposals which are being made both in Alaska and Washington, D. C., the Tongass planning process is perhaps our only hope for arriving at a reasonable and balanced land use allocation for Southeast Alaska.

Consequently, we wish to join with you in endorsing the work of the planning team, and the basic intent of their preferred alternative, which is also the professed intent of other groups, such as CMAL & SEACC, presenting alternatives. I do, however, have serious reservations about the validity of assumptions upon which that alternative is premised, and therefore offer amendments to better meet our dual goals of a healthy timber industry and a healthy environment.

Employment & Timber Volume

The State of Alaska's first goal is that the Tongass Land Management Plan (TLMP) must provide sufficient timber volumes to maintain the present level of employment in our timber industry. However, the planning team's recommended alternative relies to the great extent on the following assumptions:

(1) Timber of private lands will be made available to the existing pulp industry at the rate of 36 mbf per year, commencing in two to three years.

(2) Round log export from private lands will likely displace some of the exising cant market, and thereby decrease cant production; and,

(3) Total employment in Southeastern Alaska's timber industry would increase approximately 10 percent, but there would be some shift from cant mill employment to logging (i.e.: displacement of jobs).

These assumptions, though carefully formulated, are tentative and have been the subject of considerable dispute during the review period. Furthermore, even the annual yield estimates which form the basis for overall harvest goals are subject to error. As indicated in a letter from Secretary Bergland to John Seiberling (February 1978), the timber yield estimates "reflect the best available information, but are not precise. Actual sustained yield calculations may vary significantly from these estimates."

It seems crucial, then, to provide a plan that is flexible enough to achieve our dual goals even if one or all of these critical assumptions turn out to be in error.

We agree with the Citizens for Management of Alaska Lands, the timber industry, and SEALASKA, Inc., that reliance on these projections, with little margin for error, may place an unnecessary risk on timber employment, and therefore stress that there should be a clearly stated mechanism for providing additional timber from the Tongass should that become necessary. However, that additional timber should come only on a prioritized basis from the least sensitive areas, leaving critical areas, such as Admiralty Island and outstanding fish and wildlife habitats until last, in the hope and assumption that it will never be necessary to log them. Our alternative uses "LUD" designations flexibly, to maximize protection afforded while the necessary timber volume is provided. It is encouraging that the recommended alternative does provide for overall growth in the timber industry. New employment opportunities will become available as Native corporations begin to harvest lands, with the potential to supply a sustained yield of approximately 1/3 of that being harvested by the existing industry. There is some forewarning that the possibility exists for a displacement to occur in the export market, resulting in a shift from cant mill employment to logging employment. We feel that such displacement is undesirable, and that it must not be precipitated by a lack of timber available from the Tongass.

Just as employment should not be jeopardized by reliance on "optimistic" economic assumptions, neither should a sound allocation pattern for other resources (wilderness, fish, wildlife, recreation) be compromised by attempts to avoid all uncertainties relative to timber availability or demand by ensuring "pessimistic" assumptions. We therefore suggest that the following means be adopted to provide future adjustment to the preferred alternative should present assumptions prove incorrect. This would allow testing the plan's economic assumptions as the future develops, making necessary adjustments automatically:

(1) Provide for a formal reassessment of the final plan within five years of its acceptance. Timber could be harvested at an accelerated rate during this time if necessary to support existing industry, without having to resort to entry into areas not scheduled for cutting during the life of the plan.

(2) Provide for reentry into areas which are roaded but not scheduled during the ten year life of the plan.

(3) Establish a mechanism in this plan which facilitates entry into lands classified as LUD III or LUD IV but not scheduled for harvest during the life of the plan. The major element of the mechanism would be to allow for timber availability within a reasonable period of time following a determination that the timber is necessary to sustain the current level of employment, without additional environmental analyses.

In summary, the Tongass Land Management Plan must proceed from some basic economic assumptions of unknown validity. Although the assumptions may prove accurate, very little margin of error is provided. Sufficient timber must be made available to the industry without reliance on private lands, but if private timber is available, less must be provided from the forest. The specifics of this process must be clearly stated in the plan. I believe this can be accomplished without significantly upsetting the land allocation pattern established by the recommended althernative. In effect, this would establish a protectively-oriented holding pattern, but one with guarantees of timber availability if actual need does occur. It would eliminate the need to choose between two conflicting sets of assumptions today, and allow you to rely on facts as they develop.

Mineral Development

A second state goal in the formulation of the Tongass Land Plan is to allow for continued mineral development on those areas in current operation and for exploration in lands which show high potential for economically viable mineral extraction.

The preferred alternative represents a compromise between mineral values and wilderness values. In a few cases, we do not feel the compromise is fairly balanced, and therefore make the following specific recommendations:

(1) Redesignate VCU 254C and 815K from LUD I into LUD II to permit controlled mineral development should the known potential become economically viable. Both VCU's are on the "prime prospect" list for Southeast Alaska and are the only "prime prospects" to be included under LUD I status in the preferred alternative.

(2) Redesignate VCU's 682, 683, and 684 from LUD I to LUD II to allow for continued mineral exploration with an option for carefully controlled development.

Transportation

A third state goal is to provide for the future utilization of principle transportation corridors having local, regional, national, and international significance.

The primary impact of the preferred alternative on Southeast Alaska's future transportation needs is to preclude road access through the Stikine River Valley. The Alaska Department of Transportation and Public Facilities considers this an extremely high priority access route, and we recommend that all VCU's abutting on the Stikine River be removed from LUD I status, and be redesignated as LUD II, with a specific authorization for a road corridor to the Canadian border, designed to high environmental standards. Although a road corridor through the Unuk River Valley does not appear viable at the present, we further recommend a change from LUD I to LUD II for VCU 786 K and VCU 788K with a specific authorization for a road corridor should one prove desirable in the future.

Hydroelectric Power

A fourth state goal is proper allowance for hydroelectric power sites and transmission corridors. Hydroelectric power is extremely important to the future well-being of Southeast communities and the most feasible potential sites should not be precluded from development by designation as LUD I.

The alternative endorsed by the IDT would not affect the development of any hydroelectric projects now under active consideration or anticipated to be necessary within the next 15 to 20 years. Therefore, the State has no objection to the planning team's recommendations as it relates to energy development based upon information currently available.

Aquaculture

The fifth state goal for the plan is proper provision of sites for aquaculture. Alternative C does a generally adequate job of allowing for development of sites identified by the State with potential for aquaculture.

To maximize the potential of the State to increase the level of salmon production, however, we recommend the following alterations to the planning team's alternative:

(1) Modify the South Baranof land use designations to more closely approximate Alternative B. This will allow

for the future development of aquacultural facilities in VCU's 334-338, 345, and 347.

(2) Recommend to Congress that express authorization be granted to develop the aquacultural potential in VCU's 264 and 276 should West Chichagof Island be formally designated as wilderness.

Fish & Wildlife Habitats

As noted previously the two major issue areas for which the Tongass Land Use planning process has sought resolution are protection of non-timber values through appropriate forest practices, and the recognition and protection of essentially non-renewable high value fish, wildlife and recreation lands through institution of a representative system of roadless and wilderness areas. Forest practices are addressed by the Area Guide, but the Tongass Land Management Plan will serve as the only visible commitment of the Forest Service to protection and maintenance of the specific islands and drainages which have been the focus of public concern and controversy.

Protective allocation for many of these areas was asked more than twenty years ago. They are perhaps best represented by requests for wilderness, roadless or back country recreation designation proposed by the Alaska Department of Fish and Game (since 1961) and the Southeast Alaska Conservation Council more recently.

Alternative C as modified by the planning team appears to be the only alternative allocational pattern capable of providing appropriate land use designations for a representative group of these high value areas, and also capable of supporting current timber related employment, if modified as we suggest. This recommended alternative represents significant compromise of high non-timber values in areas such as Sweetwater Lake, Admiralty Island and Etolin Island. Additionally, certain specific high value habitat areas, particularly deer winter range, will be essentially removed from production under this alternative. It is estimated that Alternative C will, to some extent, adversely affect up to seventy percent of critical deer habitat if implemented, but this is the price that will likely have to be paid to achieve stable employment in the industry.

These losses and compromises are significant. There is always some element of risk inherent in any plan of intensive development associated with fish or wildlife habitat, although this risk can be minimized under our proposed alternative. Wilderness values are the underpannings of much of the region's tourism and recreation industries. In addition, subsistence hunting and fishing and other values associated with de facto wilderness are important to the cultures and lifestyles of people in Southeast Alaska's small communities. Commercial

fishing, which seasonally employs upwards of 6,400 persons in the region, is in turn supported in large measure by drainages which may be logged under our alternative.

Although the ultimately protective classifications (wilderness, LUD II) are often suggested as the only protection for areas with high value fish and wildlife habitats, the wilderness or roadless status of areas in Alternative C is based not only on these considerations, but also on the additional criteria of accessability, aesthetic considerations and the occurrence of several species of fish, wildlife and recreational opportunities in one location (as well as on the absence of commercially desirable timber in some cases). Areas which are primarily important only as deer habitat or only for sport fishing, for example, are generally relegated to LUD III and IV. In this way, the maximum amount of "protection" for non-timber values can be achieved for each board foot removed from the cut. Comparing Alternative C to Alternatives B, A_2, A_1 and A, we notice that not only do wilderness and roadless areas shift into LUD's III and IV, but emphasis also shifts from LUD III to LUD IV in the other alternatives. The significance of this is that there is a corresponding loss of opportunity to manage lands for non-timber values.

The "Administration Position", Alternative A_2, is particularly lacking in this respect, since it provides only 410 mmbf of timber per year and accomplishes this at the expense of most LUD III areas and some of the roadless and wilderness areas proposed by the team. In other words, Alternative A_2 "spends" the allowable "protective" board feet on complete protection of a few large wilderness areas, while sacrificing fish, wildlife and recreation values on a multitude of other areas. In contrast, Alternative C "spends" this value on protection of a much broader range of fish and wildlife habitat and recreation areas, at the expense of some acreage in wilderness.

The following table, propared by the Alaska Department of Fish and Game, indicates the magnitude of the problem stated above relative to the percent of deer winter range which may be adversely impacted by the various alternatives. Notice that the percent of deer habitat impacted is not proportional to the percentage of lands allocated to LUDs III and IV in any alternative but E. This is because the best deer winter range coincides with the best timber. This disproportionality is manifest to a striking degree in Alternative A_2 primarly because of the LUD III emphasis for non-wilderness lands mentioned above. Thus, this "Administration Alternative", which preserves large blocks of wilderness in exchange for lesser protection on the rest of the forest, would have greater negative impact on deer than or the team's Alternative C.

PERCENT DEER HABITATS
ADVERSELY IMPACTED BY ALTERNATIVE

	% Allocated to LUDS III & IV	% Critical Deer Habitat Present in Areas Designa LUD III or LUD IV
A	72	95
A_1	61	90
B	53	85
A_2	45	80
C	42	70
D	35	60
E	22	20

Note: LUD IV - little or no protection for deer
LUD III - some degree of protection based on distribution and arrangement of cut

LUD III provides 18% of the available timbered land to be reserved for the protection of not only deer winter range but eagle trees, streamside leave strips, and retention of visually sensitive areas such as beach fringes, as well. Even LUD III designation may not provide adequate protection in areas with several high value fish, game or recreational resources present at once.

Again with reference to deer, areas with the highest timber values are usually the best deer winter habitat. Of 227 VCU's rated 4 and 5 for timber production over 50 percent have already been cut or are committed to timber harvest. Impacts of this cutting on critical deer winter range will persist for upwards of 140 years. Alternative C represents the maximum adverse impacts on deer winter range that is biologically tolerable.

Admiralty Island

Due to the high degree of local and national interest in Admiralty Island, we would like to offer some specific comments on its future.

The controversy which enshrouds Admiralty represents nearly every conflicting value in the Tongass Forest. The Island has superlative wildlife, wilderness, scenic and recreational values, high quality timber stands and considerable potential for mineral development. It is used extensively for recreation by residents of Juneau, Sitka and Petersburg, and also

for guided canoe and hunting trips. Additionally, it provides large quantities of commercially valuable fish and is the mainstay of local subsistence hunting and fishing, particularly by residents of Angoon. Admiralty Island has received congressional attention for special protective classification since the 1930's.

As recently as one year ago, it appeared that there would be sufficient timber volume available in the Tongass Forest to exclude Admiralty Island from timber yield calculations, while retaining sufficient harvest levels from the rest of the forest to maintain a healthy timber industry as well as to offer a reasonably balanced land allocation scheme for protecting fish, wildlife and recreation values on the rest of the Tongass. If this were in fact the case, the State would without reservation urge recognition of Admiralty as wilderness. Sadly, however, based upon yields calculated for the various alternatives in the Tongass Land Management Plan, and the work of the planning team, it is clear that to exclude all of Admiralty Island from timber harvest would result in either (1) a lower level of employment in the timber industry or (2) an extremely unbalanced and insensitive land allocation plan for the remainder of the Tongass Forest, assuming the team's economic assumptions are correct. Either result is unacceptable from the State's perspective, so a difficult compromise must be struck.

Therefore, the State of Alaska endorses the IDT's preferred alternative for Admiralty Island, which would classify the eastern half of the Island as wilderness. In addition, however, we strongly urge that no harvest be conducted on the remainder of the Island for the 10 year life of the plan.

Should the economic assumptions upon which the plan is based prove inaccurate, we will have thereby maintained the option of deciding the future of the western half of the Island at a more appropriate time, when that decision can be based upon fact rather than assumption.

Additional areas which should be considered for deferral from timber harvest for the life of the plan or at least until its five year reassessment are:

Etolin Island - VCU 466, 467, 468
Duncan Canal - VCU 440, 438, 435, 436
Yakobi Island - VCU 253
South Prince of Wales - VCU 691, 692, 693

Off Admiralty Selections

With regard to off-Admiralty selections proposed by Goldbelt, Inc., and the change in selection alternative proposed by Shee-Atika, Inc., the State is unable to endorse either proposal without a final decision on TLMP.

One impact of the Goldbelt proposal would be to diminish the annual yield calculated in the preferred alternative by approximately 10 mbf per year. To maintain the planned level of harvest, equivalent forest lands would have to be redesignated into LUD III or IV. Until we know which forest lands will be so redesignated, it is impossible to determine the trade-offs and to permit meaningful public involvement.

For this reason, we feel that inclusion of these proposals into the TLMP addendum is inadequate, and very likely will not meet the requirements imposed by NEPA. Therefore, we suggest that a separate environmental statement be issued immediately upon formal adoption of TLMP. If possible, the statement should include any proposals by Goldbelt, Shee-Atika, Kootznawoo, and SEALASKA (Yakutat selection) for land exchanges.

The State's primary concern in any off-Admiralty exchange which involves an alteration of the adopted plan is that a positive net benefit to the public be realized. This can best be determined on a site-specific basis.

In conclusion, the Tongass Land Management Plan will succeed in resolution of the considerable controversy surrounding land allocations in the forest only if it provides the public with an allocational pattern which vividly portrays a commitment to maintenance of present industrial activity and employment, while providing formal classification of a representative system of roadless and wilderness areas. In general, we applaud the efforts of the planning team in seeking to provide this balance, and find their proposed alternative acceptable with our suggested changes, despite the possibility that parts of Admiralty Island may receive some degree of development and that substantial areas of deer winter range will be devalued.

However, we cannot support any alternative which is not flexible enough to support current levels and distribution of employment in the timber industry. Insofar as the plan represents an intent to provide a certain set of opportunities, we must stress that it must also be capable of amendment in a timely fashion should any of its basic assumptions prove unwarranted. Provisions for accelerated harvest in areas designated for cutting within the 10 year period, timber contingency areas, and a three or five year review of the final plan, would seem to accomplish this objective. It is crucial that the present Environmental Impact Statement include these contingencies, so that time-consuming and repetitive EIS's or their review are unnecessary in the future.

Sadly, the facts as they are known today show wilderness designation for the entirety of Admiralty Island too great a price to pay, for given the limited supply of timber, it would preclude wilderness or roadless designation for a more representative system of wilderness and roadless areas in

other parts of the forest, such as that recommended by the planning team. However, we see no need at all to commit the western side of the Island to timber harvest during the life of the plan. This area should be the last to be cut, and then only if all economic facts prove that it is truly required. If the wilderness option for Admiralty is to be kept alive, some conclusive agreement with the Goldbelt, Shee-Atika, Kootznawoo and SEALASKA corporations must be achieved in the near future.

Thank you again for the cooperative spirit in which we have been able to work for the past three years in seeking to resolve issues which have been brewing for the last twenty, and which likely still threaten to be the basis of litigation should we fail in this endeavor. We are confident that you are willing to take the necessary risks to achieve the balance between resource use, regional and national economic demands, and the perpetuation of Southeast Alaska's invaluable and irreplaceable wilderness.

Sincerely,

Frederick A Boness

for Robert E. LeResche
Deputy Commissioner

U.S. ENVIRONMENTAL PROTECTION AGENCY

REGION X

1200 SIXTH AVENUE

SEATTLE, WASHINGTON 98101

REPLY TO ATTN OF: M/S 443

August , 1978

John A. Sandor, Regional Forester
U.S.D.A. Forest Service, Alaska Region
P. O. Box 1628
Juneau, Alaska 99802

Dear Mr. Sandor:

We have completed our review of your draft environmental statement for the Tongass Land Management Plan. You and your staff are to be commended for the thorough and imaginative approach which has been

taken to land use planning and public involvement throughout this process, including the Southeast Alaska Area Guide as well as this environmental statement. We are especially pleased to see the stated commitment to actively protect soil, water quality, and fishery resources. Other commendable aspects of your proposed program include reliance on interdisciplinary teams for study and recommendations; better use of management prescriptions, as outlined in the Area Guide, to protect environmental values; better administration and control over development activities; full coordination with State and National fish and wildlife agencies; and a water quality monitoring program with effective feedback to management decisions. We are hopeful that these measures, together with allocative decisions responsive to environmental objectives, will assure the maintenance of very high levels of water quality and other environmental benefits, while supporting the economic and social needs of local communities.

We have a number of comments and suggestions relating to the planning process, the discussion of impacts, and the proposed management activities.

Management Prescriptions

These comments deal with prescriptions in the Area Guide on which this Land Management Plan relies.

1) We suggest that whenever possible, revegetation of road cuts and fills or other disturbed areas be accomplished before the autumn rainy season.

2) Although sediment is acknowledged as the main source of adverse water quality and fisheries impacts, none of the parameters to be measured in the Forest's monitoring program directly address streambed sedimentation. We recommend a measure such as percentage of intragravel fines, similar to the sediment standard now used by Alaska Department of Environmental Conservation.

3) We suggest inclusion of management prescriptions aimed a minimizing logging residues so as to reduce the need for slash burning and associated air quality impacts.

Evaluative Criteria

1) Although the Area Guide states on page 80 that the allocation phase of planning is significant in terms of fisheries values and that allocation will be responsive to those values, neither fisheries or water quality objectives are explicitly addressed in the evaluative criteria on pages 63 and 64 of the environmental statement. The goals and allocation criteria used to develop the different alternatives do provide for allocation to protect fisheries values. However, protection of fisheries values may not always be equivalent to protection of water quality. Standards for domestic water supplies, for example, would normally be more stringent that those for fishery protection. The environmental statement should assess the degree of overlap between streams important, because of capability or sensitivity, for fisheries and those important for other water quality benefits. Streams important for water quality independent of fisheries values should be allocated to LUDs I, II, or III. Likewise, water quality value independent of fisheries should be an issue factor for rating alternatives in Table 30 on page 148.

2) There seems to be a conflict between the evaluative criterion of complying with the Administration wilderness proposal of 4.4 million acres and the criterion of designating at least 3 million acres of wilderness. The latter criterion appears superfluous and may weaken the former criterion.

Effects of Implementing Alternatives

This section should discuss the potential impacts of the various alternatives on air quality. This should include consideration of generation of logging debris, the need for slash burning, and the quantities of pollutants discharged to the atmosphere.

Recommended Alternative

Based on the value of LUDs I and II for protection of water quality, and the importance to the Administration of a wide and generous distribution of wilderness to various landscape character types, we support allocation of LUD Group I and II as in Alternative A(2), although not necessarily the breakdown between LUDs I and II shown in A(2), with the remainder of the land allocated to LUDs III and IV as shown in Alternative C. If adjustments or tradeoffs are made to improve the overall quality of the wilderness resource, the acreage in LUDs I and II should not be significantly reduced. We recommend that an accelerated harvest from private lands be encouraged. We assume the preferred alternative will be similar to the modified Alternative C recommended by the Forest Service planning team. Based on this assumption, our comments on this draft statement have been rated LO-2 (LO - Lack of Objections; 2 - Insufficient Information). If the preferred alternative differs significantly from the recommended alternative we may revise our rating. This rating will be published in the Federal Register in accordance with our responsibility to inform the public of our views on proposed Federal actions under Section 309 of the Clean Air Act, as amended.

Thank you for the opportunity to review this environmental statement. If you have questions or would like to discuss these comments, please feel free to contact me or Craig Partridge, of my staff at (206) 442-4011 or (FTS) 399-4011.

Sincerely,

Alexandra B. Smith

Alexandra B. Smith, Chief
Environmental Evaluation Branch

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
P. O. BOX 1668 - JUNEAU, ALASKA 99801

August 7, 1978

Mr. John A. Sandor
Regional Forester
U.S. Forest Service, Alaska Region
P. O. Box 1628
Juneau, Alaska 99802

Dear John:

The National Marine Fisheries Service is currently reviewing the Tongass Land Management Plan - Draft Environmental Statement.

The following comments are submitted to you directly, for consideration by the Forest Service in its decision on a Recommended Alternative for the TLMP. These comments represent the views of the National Marine Fisheries Service. More extensive comments on the entire DES will be transmitted to the Department of Commerce for incorporation in the Departmental response. The formal, consolidated views of the Department should reach you shortly.

Of the various alternative land allocation plans outlined in the TLMP-DES, we believe that Alternative D best protects fishery resources while allowing for a large range of developmental activities, including meeting existing contractural timber harvest commitments. This selection is supported by the evaluation of the Interdisciplinary Team, which states that "Alternative D provides the best balance in the use of the forest's prime amenity and commodity values . . ." (p. 150, para. 4).

Although we support the fishery policies put forth in the Area Guide, we are also familiar with the limited research base that was available to help formulate them. Those management practices have not been adequately tested, so we believe it is premature to assume that, "since Area Guide policies adequately protect the present level of natural productivity regardless of other resource uses, there is no basis for differentiating the effects on natural salmon output by alternative" (p. 125, para. 3). Further, salmon is not the only fishery resource that can be impacted by watershed development; the estuaries which receive the upland waters and which can be further impacted by log transfer facilities, etc., support valuable resources such as crab, shrimp, and flatfish. Protective land allocations, in concert with practical management prescriptions, are needed to maintain and enhance the production of our regional fisheries.

In the TLMP-DES, we believe that land use designations I and II received an improper evaluation relative to fisheries. First, natural undeveloped watersheds have an enormous economic value as fisheries habitat, evidenced by high salmon production in the 1930's and 1940's. Second, concerning fishery enhancement and aquaculture opportunities, LUD II allows for "permanent improvements such as fishways, fish hatcheries, or aquaculture sites . . ." (p. 6, para. 1) and LUD I could accommodate these facilities with a change in Forest Service policy (p. 5, para. 3; p. 92, para. 4). Therefore, LUDs I and II do provide commodity benefits and should be given credit for these when evaluating the different land allocation alternatives.

The National Marine Fisheries Service believes that the TLMP is an admirable attempt at comprehensive land-use planning; we do suggest, however, that the selected alternative be conservative in nature. A much clearer picture of the effects of TLMP's land-use allocations, following the constraints outlined in the Southeast Area Guide, will be available in 1990. At that time we may have the knowledge and expertise to allow more extensive development of our forest's timber and non-renewable resources in a way compatible with fish, wildlife, and recreational uses. Some other issues that require a similar time frame for resolution are:

1. State and Native land claims selections and their effects on the fisheries and general economy of Southeast Alaska.

2. Economic value of bottom fisheries off Alaska and their dependence on estuaries.

3. The effectiveness of aquaculture as a fisheries management tool.

To accommodate these and other changing environmental and social conditions, good use can be made of the amendment and revision procedure discussed in the TLMP (p. 163).

In summary, given the need for a significant amount of forest to be placed in protective LUDs as a prudent and conservative approach to resource management, the need for continued development of forest resources, and the flexibility incorporated into the Tongass Land Management Plan, we believe that Alternative D is the best proposal for allocating land-uses within the Tongass National Forest.

Sincerely,

Harry L. Rietze
Director, Alaska Region

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
P. O. BOX 1668 - JUNEAU, ALASKA 99802

August 8, 1978

Mr. John A. Sandor
Regional Forester
U.S. Forest Service, Alaska Region
P.O. Box 1628
Juneau, Alaska 99802

Dear John:

The National Marine Fisheries Service is currently reviewing the Tongass Land Management Plan-Draft Environmental Statement. Although more extensive comments on the entire TLMP-DES will be transmitted to Washington for incorporation into the Department of Commerce's response, enclosed are our specific comments on the VCU designations of Alternative D. These comments are offered to clarify our preferred alternative and to give you more information during your deliberation on a Recommended Alternative for the TLMP.

Looking at your VCU classification for Alternative D, we found that some were inappropriate as they relate to fishery needs within the Tongass National Forest. There are nine watersheds covering fourteen VCU's which we believe should be given a different LUD (Table 1).

Eleven of these VCU's (161, 244, 434, 571, 576, 578, 579, 588, 590, 596, 597) are classified as LUD IV streams and have previously received some logging activity. Due to their high fishery values, Fishery Task Force commercial fish rating of 5 and sport fish rating of 4 or 5, we believe these streams belong in a LUD III category.

VCU 158, Fishery Creek, is rated as a LUD IV and is scheduled to be the only VCU harvested on Admiralty Island within the 1979-1990 time frame.

Fishery Creek has a commercial fish rating of 5 and a sport fish rating of 4. This system contains thirty miles of streams, has enhancement potential and is an Alaska Department of Fish and Game sample stream for pre-emergent salmon. Therefore, we believe this stream system should be allocated to LUD III and harvest should not be scheduled until 1991. These changes would be more consistent with the other land-use designations on Admiralty Island and the fisheries objective of Alternative D.

TABLE 1
Recommended changes in LUD classifications for Alternative D.

VCU	Proposed LUD	Recommended LUD	Commercial Fish Rating	Sport Fish Rating	
158	IV	III [1]	5	4	Fishery Creek
161	IV	III	5	5	Upper Portion of the Thayer Creek System
244	IV	III	5	5	Sitkoh Lake and Creek
434	IV	III	5	5	Kah Sheets System
571	IV	III	5	4	Yatuk Creek
576, 578 579, 596 597	IV	III	5	5	Thorne River
588, 590	IV	III	5	5	Upper Lester River (including Staney Creek)
673-2	IV	II or III [2]	5	5	Hetta Creek System
734	IV	II or III [3]	3	5	Orchard Lake

1 With no harvesting until 1990
2 Dependent on native land selections and subsequent logging practices
3 Dependent on the needs of a state hatchery

Hetta Creek, VCU 673-2, is scheduled to be managed as a LUD IV stream. Since it is probable that much of Hetta Creek will be chosen for native lands, your LUD classification should be consistent with the management scheme proposed for adjacent native lands. Also, Hetta Creek received an extremely high fishery rating, sport fish 5 and commercial fish 5, by the Fisheries Task Force. We therefore recommend that VCU 673-2 be designated as a LUD II or III, dependent on native management plans.

VCU 734, containing Orchard Lake, is scheduled for a state fish hatchery. This project seems inconsistent with your LUD IV classification. We suggest this VCU be reclassified to a LUD II or III, dependent on the needs of the proposed state fish hatchery.

Sincerely,

Harry L. Rietze

Harry L. Rietze
Director, Alaska Region

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
REGIONAL OFFICE
ARCADE PLAZA BUILDING, 1321 SECOND AVENUE
SEATTLE, WASHINGTON 98101

July 20, 1978

IN REPLY REFER TO:
10D M/S 317

REGION X
Office of Community
Planning & Development

Mr. John A. Sandor
Regional Forester
United States Department of
Agriculture
Forest Service
P.O. Box 1628
Juneau, Alaska 99802

Dear Mr. Sandor:

Subject: Draft Environmental Impact Statement
Tongass National Forest

We have reveiwed the Draft Statement which was made available to the public on June 28, 1978.

The proposed action is the development of a land management plan for the Tongass National Forest in Southeast Alaska.

We believe the Statement is well prepared and our areas of concern are adequately covered. We see no conflicts with any of our present HUD programs. We were especially interested in the section on the Social Effects on Communities. We recognize that these effects are difficult to project, especially with the preferred alternative not yet determined. However, your Statement provides a good overall analysis. The section could be improved if the population for each area were shown. We believe this data should be readily available from the State Planning Agency. Our preference of an alternative would be one that would provide for the development of the future economy of the communities in the area. We would also like to see specific areas provided as close as possible to population centers to enhance recreational opportunities and to maintain appropriate wilderness areas.

We defer to other agencies to comment on the various other issues that you have discussed in the Statement which are not within our areas of expertise or jurisdiction.

Thank you for the opportunity to comment.

Sincerely,

Robert C. Scalia
Director
Regional CPD

Department Of Energy
Alaska Power Administration
P.O. Box 50
Juneau, Alaska 99802

July 20, 1978

Mr. John Sandor
Regional Forester
US Forest Service
Alaska Region
P.O. Box 1628
Juneau, AK 99802

Dear Mr. Sandor:

This letter has our informal comments on the Draft Environmental Statement for the Tongass Land Management Plan.

Your people have done a fine job analyzing a complex set of problems in Southeast Alaska.

APA provided input mainly on location of potential hydroelectric projects and transmission systems. In our view, these hydroelectric resources rank among the most valuable assets of the region. These resources have the capability to place the region on a renewable energy economy with a degree of energy self-sufficiency that few parts of the world can achieve. Further, the hydro resources are characterized by relatively small developments on relatively small watersheds. Environmental aspects are quite favorable for these projects.

Each of the alternative plans advanced in the new Statement would impact availability of hydro resources to meet future needs. However, we are unable to determine what the actual impact would be except in the case of wilderness designations (LUD I) which would specifically preclude water and power development.

Wilderness designations in Alternatives A, B, C, and D would not affect any hydroelectric projects are now under active consideration or expected to be needed within the next 15 to 20 years.

Wilderness designations in these plans do involve significant hydro resources that may be required for longer-range needs. Of specific interest in this regard are:

Misty Fiords-Unuk-Eagle Wilderness
Stikine-LeConte Wilderness
South Baranof Wilderness
Port Snettisham Wilderness.

We perceive Alternatives A, B, C, and D as limiting long-term energy options for the Ketchikan, Petersburg, Wrangell, and Sitka areas because of wilderness designations.

Plan E is a massive wilderness proposal which would essentially rule out most significant hydro development in Southeast Alaska, including several projects now under active consideration. Plan E would also weigh very heavily against transmission system development for the region.

It is not clear to us what the impacts of LUD II, III, and IV would be on future water and power development.

The management intent for LUD II is stated at pages 5 and 6. LUD II is to provide greater management flexibility while retaining the primitive

wildland environment. Developments, including water and power, could be permitted if consistent with management direction. We are concerned that most managers would find most power projects and transmission lines inconsistent with "primitive wildland environment" and that LUD II would become essentially as restrictive a classification as LUD I.

The Draft has clear statements of goals and objectives for each alternative. We think the management purpose for LUD II may be too restrictive to permit accomplishment of the goals and objectives.

We do not believe the report's evaluation of economic effects is adequate. There is some detail on forestry industry, but impacts on other sectors of the economy are stated only in generalities. The economic evaluation is limited to short-term analyses (through 1990). The only significant economic factor identified which would offset diminished use of national forest lands is logging activity on Native lands. Long-term mineral production possibilities are not evaluated.

Even with this very limited economic analysis, the regional economic impact appears to be very significant. Changes in gross regional product are discussed at pages 129 and 130. Alternative E is linked with a future gross product that is 8.1 percent below the 1976 level, and Alternative A with a future gross product of 88.9 percent above 1976 levels. Alternative A would thus show twice the regional economic productivity as Alternative E, based on your figures for 1990.

The cases assume no capital move, and the high case assumes only one new major mineral development. We suggest the long-term economic difference between the alternatives would be much greater if mineral, hydroelectric, and other resource values were in the equation.

By way of recap, we're concerned that the economic effects of the alternative plans may be grossly understated, and we're concerned that the LUD II management might be so restrictive as to preclude stated objectives of the alternatives.

We appreciate the opportunity to comment, and would again like to compliment your staff for their excellent work in producing this important planning document.

Sincerely,

Robert J. Cross
Administrator

United States Department of the Interior

OFFICE OF THE SECRETARY

P. O. Box 120
Anchorage, Alaska 99510

ER 78/694

August 31, 1978

Mr. John A. Sandor
Regional Forester
U. S. Forest Service
Tongass National Forest
P. O. Box 1682
Juneau, Alaska 99802

Dear Mr. Sandor:

In response to your July 10, 1978 request, we have reviewed the Tongass Land Management Plan Draft Environmental Statement and offer the following comments for your consideration.

General Comments

The Department of the Interior supports the Administration's recommendations in response to H.R. 39 for Alaska land legislation. We are concerned that the recommended alternative in your draft statement deviates considerably from the Administration's recommendations in several key areas. Of particular concern are the Admiralty Island and Misty Fjords portion of the Forest Service recommendations.

We have maintained for many years that the outstanding scenic and wildlife values on Admiralty Island merit special protection from traditional resource uses. In August 1977, the Secretaries of Agriculture and Interior agreed that this protection could best be provided by a U. S. Forest Service wilderness area designation for the entire island with the exception of Mansfield Peninsula. We are gravely concerned by the recommended Alternative "C" which would protect less than half of this island as wilderness.

The Fish and Wildlife Service has conducted extensive bald eagle nest surveys on Admiralty Island and has found that there are an average of 1.04 nests per mile of coastline (the highest density of eagle nests in the United States). Southeast Alaska is one of the last strongholds for our national bird, and Admiralty Island is the last large island in southeast Alaska without any major logging or other commercial activity. It is the hub of the eagle population and every effort must be made to keep it as such (Observations from 2,760 Bald Eagle Nests in Southeast Alaska, USF&WS Progress Report 1969-1976, Frederick C. Robards and John I. Hodges, Juneau, Alaska). In addition to the value of Admiralty Island for eagle protection, we believe that values associated with the recreation potential and fish and wildlife resources on the island far outweigh other resource uses.

The Misty Fjords area has long been recognized for its outstanding scenery and wilderness recreation opportunities, including boating, back country hiking, hunting and fishing. This outstanding area contains streams vital to the maintenance of an important commercial and sport salmon fishery. About 34 percent of the king salmon producing streams are in Misty Fjords and over 20 percent of the harvest of all salmon species in Southeastern Alaska are produced in this area. Again, we are concerned that the recommended Alternative "C" would protect only one half the area recommended by the Administration.

If the U. S. Forest Service and the Department of Agriculture plan to recommend that the Administration change its position on the designation of Admiralty Island and other areas in Southeastern Alaska, then this Department may wish to also reconsider its position and recommend other land designations in the area. If the position recommended in the draft statement is not the position of the Forest Service, then the draft statement should be corrected to display the Service's proposed position for the benefit of all reviewing the statement. Proposals made after publication of the draft statement prevent the public from knowing what the proposal is when they are reviewing the document.

The statement should include the Administration's recommendation that the Situk and Stikine Rivers be studied for possible inclusion in the National Wild and Scenic River System. Other rivers with resource values that may qualify them for the National Wild and Scenic River System should be identified and taken into account during final land allocations and subsequent management planning.

The statement should also discuss culturel resource values and the implications of management planning and land allocation on these resources. Recognition of sites listed or eligible for listing on the National Register of Historic Places is required in any federal decision-making process leading to resource allocation among competing uses and values.

Little information is provided in the statement on hydroelectric power. We suggest that the effects of the land use alternatives on hydroelectric

potential be analyzed in a manner similar to the analysis on other resource values.

Specific Comments

It would be helpful if a summary of the various management alternatives was provided, or at least a summary of the alternative recommended by the interdisciplinary team. Neither the present summary nor the Introduction provide that information, and the section on "highlights" is mainly an explanation of how the document was prepared and of the administrative procedures.

Page 11 - Geologic constraints on land use, such as susceptibility to slides, have been alluded to briefly, but evidently have not been considered in the formulation of alternative management plans. It would be helpful to explain at what stage in the planning geologic constraints would be considered and in what manner.

Page 17 - The sentence concerning bald eagles is not correct. The bald eagle in Southeast Alaska is adapted to a very narrow range of old-growth timber growing on or near the beach. They may soar at times over the alpine meadows, but probably not in a quest for food.

Page 27 - There are frequent references to production of "cant" or "cants" from the National Forest, but no definition has been found in the report and the term has not been explained in the glossary.

Pages 28-86 - We suggest expansion of the statement to discuss renegotiations of the old long-term timber contracts. Present commitments and levels of harvest are placing increased pressure on fish and wildlife habitat. These old timber contracts were made based primarily upon economic considerations which may preclude more enlightened land use planning. The planning effort should be able to make land use considerations not constrained by previous commitments.

In addition, since making these old commitments, conveyance of Native selections under the Alaska Native Claims Settlement Act will most likely result in timber harvest on the conveyed lands. This should result in reconsideration of sustainable yields of forest products from federal commercial forest lands which will be reduced in area.

Pages 32-33 - Although this report did a good job of acknowledging the presence of minerals in the Forest, a case could be made for additional mineral consideration in developing a land use plan. For example, while major exploration programs are noted on Pages 32 and 33 of the text and the current program map, this discussion and map do not give the reader a feeling for the geological distribution of the better mineral properties examined in recent years. A map showing the location of the mineral properties given in Table 6 would certainly help the reader appreciate the distribution of past mining operations. A reproduction of the Bureau of Mines mineral trend map would also help the reader appreciate the location of future exploration efforts, and possibly future mineral properties. The Bureau of Mines would be pleased to provide this mineral information to you.

Page 36 - The narrative identifies 867 VCU's that were analyzed. On page 42 the narrative states that 743 VCU's were rated as roadless. It should be explained what the rating is on the remaining 124 VCU's.

Page 37 - Reference to "19 percent of the forest land" should be clarified by changing it to "19 percent of the commercial forest land."

Page 41 - On the map entitled, "Attractive Features (natural)", the hexagonal symbols represent "salt chuck," but that unfamiliar term has not been defined or included in the glossary. It would be helpful to explain these features where they are first mentioned in the text.

Page 42 - A reference is made to the "Roadless Area Map," but it is not clear what map is referred to.

Page 45 - Inasmuch as the large volume of summer runoff is due to snowmelt, the effects of any excessive summer rainfall that may be combined with this large volume of streamflow on potential flooding should be discussed. Such combined runoff may cause higher seasonal peak flows and result in potential flooding that could be hazardous within summer recreation areas.

Page 51 - We do not believe you can measure wilderness values in terms of costs and benefits. From a scientific standpoint, inadequate information exists as to the consistency and function of certain ecosystems and, therefore, any attempt to place value assignments on these resources would not be accurate or appropriate.

Page 59 - Under the description of the Administration Position it is stated that "total wilderness proposed on the Tongass is 4,393,000 acres" (p. 59, par. 3). However, in the description of the Effects on Wilderness of Alternative A2, described as the Administration Position, it is stated that "the following areas and acreages. ..." followed by a list that totals 5,717,873 acres (p. 109). It is not clear why the acreages referred to above differ significantly.

Page 128 - We believe the statement has a heavy reliance on past mining activity to assess the future potential for mining. Certainly the concept of seeking future geologic theories is constantly changing with the addition of new information. Hence, geologic trends identified in recent years may be better indicators of future development sites. The existence of a mineral trend map is acknowledged on page 128. While the use of past mines may be easier to quantify in calculation of VCU's, we believe a mineral trend map would have been more meaningful.

Pages 65-141 -The quality of the environmental analysis in these pages is very poor. Generalities are relied upon almost entirely. Data to support conclusions are missing. Most of the discussion describes plans and policy positions of the Forest Service, not analysis of impact conditions and cause and effect relationships. Many statements are conclusions without supporting fact. Assumptions are reported as if they were factual conclusions. For example, there is no plan-wide assessment that is understandable relating the effects that development on Admiralty Island will have upon fisheries (p. 91). Other impacts are similarly unanalyzed.

We appreciate the opportunity you have provided for comment on the draft statement.

Sincerely,

Paul D. Gates
Regional Environmental Officer-Alaska

United States Department of the Interior

BUREAU OF MINES
P.O. Box 550
Juneau, Alaska 99802

August 9, 1978

John Sandor
Regional Forester - USDA Forest Service
P.O. Box 1628
Juneau, Alaska 99802

Dear Mr. Sandor:

As requested by a phone call from K. J. Metcalf, the following comments on draft environmental statement "Tongass Land Management Plan" are submitted for your consideration in preparing the final statement. These are informal comments that do not necessarily reflect the position of the Bureau of Mines. The State Director, Bureau of Land Management, will prepare the Department of Interior's comments.

Basically the report is a good attempt to show the various alternatives for land planning in Southeast Alaska. Certainly it's a very difficult subject on which to achieve a consensus.

Probably our main concern with the report is the heavy reliance of past mining activity to assess the future potential for mining. Certainly the concept of seeking future potential in areas having a mining history is valid but geologic theories are constantly changing with the addition of new information. Hence, geologic trends identified in recent years may be better indicators of future development sites. The existence of a mineral trend map is acknowledged on page 128. While the use of past mines may be easier to quantify in calculation VCU's, the use of the mineral trend map would have been more meaningful.

Although this report did a good job of acknowledging the presence of minerals in the Forest, a case could be made for additional consideration in developing a land use plan. For example, while major exploration programs are noted on pages 32 and 33 of the text and the Current Program map, this discussion and map does not give the reader a feeling for the geological distribution of the better mineral properties examined in recent years. A map showing the location of the mineral properties given in table six would certainly help the reader appreciate the distribution of past mining operations. A reproduction of our mineral trend map would also help the reader appreciate the location of future exploration efforts, and possibly future mineral properties. The Bureau of Mines would be pleased to provide this mineral information to you.

The point is made in the report that a national perspective is used rather than looking at only state and local needs. In that respect, much more could have been said about the importance of minerals to the region's development and to the nation. The implication one gets from pages 125 and 128 is that there are no problems in obtaining mineral supplies in the near term and that the future is too uncertain to even think about. The authors seem to be saying that the world will continue to supply the U.S. with its mineral requirements now and in the future come what may.

We think the reader should know that the U.S. imported 50 to 100 percent of its requirements for 23 of 32 major mineral commodities in 1976 and that the Department of the Interior predicts that the U.S. could depend upon imports for one half of all basic raw materials by 1985. Southeast Alaska has minerals such as nickel, cobalt, gold, silver, lead, zinc, and titanium. Mining these and other mineral commodities would help the Nation's balance of payments situation, and in the case of cobalt, its security posture. It's unfortunate that the supply-demand situation for Southeast Alaska's minerals was not studied as it was for timber, salmon, and transportation (page 35).

This land plan considers national needs. On page 146, all the assumptions for making final recommendations are oriented towards timber management. We believe that the Forest Service as one of the Nation's principal managers of multiple use Federal lands should likewise view minerals in the perspective of the national concern for long-range domestic adequacy.

John J. Mulligan
Chief
Alaska Field Operations Center

UNITED STATES DEPARTMENT OF AGRICULTURE
OFFICE OF THE SECRETARY
WASHINGTON, D C 20250

JUL 14 1978

OFFICE OF EQUAL OPPORTUNITY

IN REPLY REFER TO: 8140 Supplement 8

SUBJECT: Draft Environmental Statement, Land Management Plan, Tongass National Forest, Alaska

TO: John A. Sandor
Regional Forester

THRU: Chester A. Shields, Associate Deputy
Chief for Administration, Forest Service

We have reviewed the Draft Statement with special emphasis upon your assessment of the probable impacts of proposed and alternative actions upon minority groups who will be affected. Our concern is that there will be no adverse impacts upon these groups that might constitute a violation of their civil rights and it is apparent from a reading of your Draft Statement that these matters are being taken into consideration in the process of selecting your final actions.

JAMES FRAZIER
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IX.
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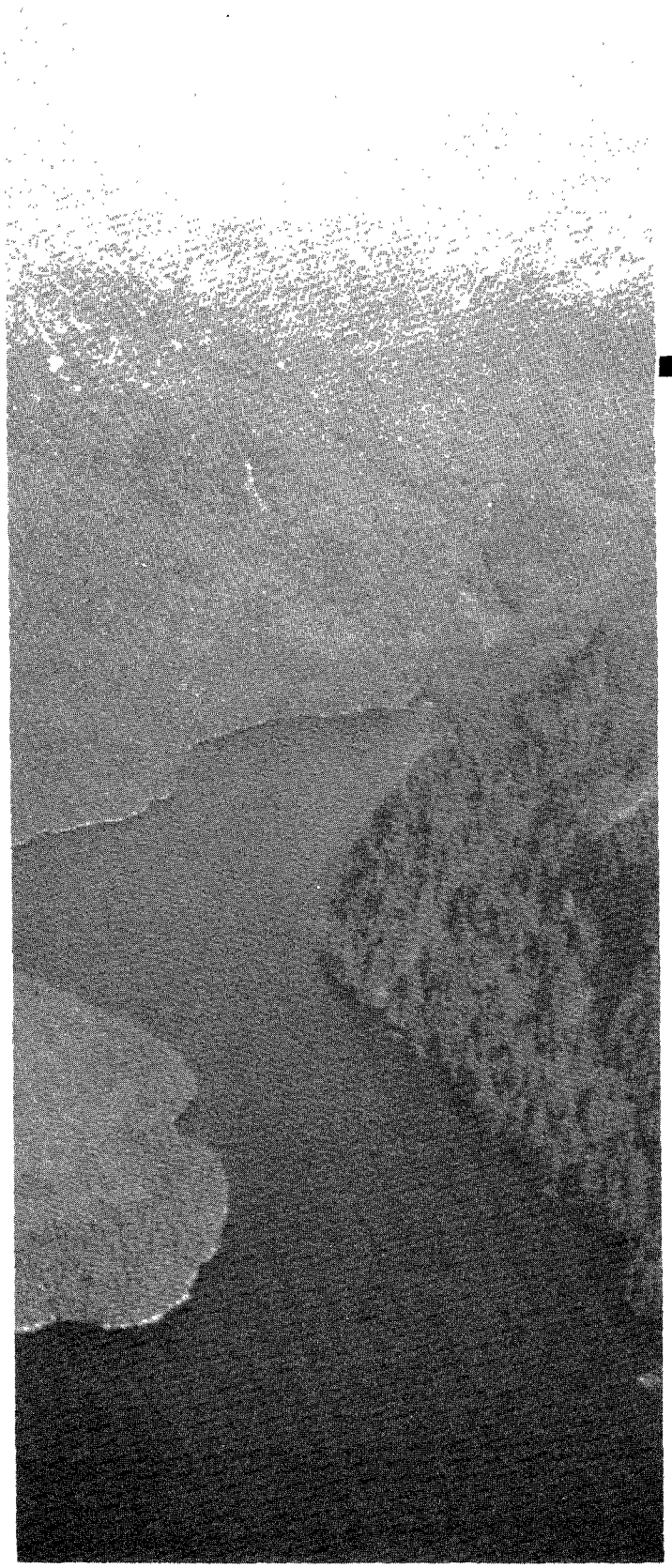

X.

Glossary

X. Glossary

ACT -
"Act" means the National Environmental Policy Act as amended which is also referred to as "NEPA".

AFFECTING -
Will or may have an effect on.

ALLOCATION -
The committing of a given area of land to one or more kinds of management, along with related manpower and capital requirements, to provide the public with differing land use opportunities.

ALLOCATION CONSTRAINTS -
Any factors that limit the consideration of a given land area to less than the full set of land management options that are basically suitable for application thereon.

ALLUVIAL -
Pertaining to material that is transported and deposited by running water.

COOPERATING AGENCY -
This means any Federal agency other than a lead agency which has jurisdiction by law or special expertise with respect to any environmental impact involved in a proposal for legislation or other major federal action significantly affecting the quality of the human environment.

CUMULATIVE IMPACT -
Is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

DUFF -
The partly decayed organic matter on the forest floor.

EFFECTS -
Effects include:
a) Direct effects, which are caused by the action and occur at the same time and place.
b) Indirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.

Effects and impacts as used in Federal regulations are synonymous. Effects includes ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions which may have both beneficial and detrimental effects, even if on balance the agency believes that the effct will be beneficial.

ENVIRONMENT -
Interaction of physical, biological, economic, and social factors affecting all organisms in an area.

ENVIRONMENTAL ASSESSMENT (EA) -
Means a concise public document for which a Federal agency is responsible that serves to: Briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact.

ENVIRONMENTAL IMPACT STATEMENT -
Means a detailed written statement as required by sec. 102(2)(C) of the Act.

EVALUATION CRITERIA -
Predetermined rules for appraising alternatives.

FORB -
Any herbaceous plant other than grasses, sedges or rushes, any nongrass-like plant having little or no woody material in it.

GROSS REGIONAL PRODUCT -
This is the total value of all goods and services produced within the region over a specified period of time, or the sum of all factor costs used in production.

HUMAN ENVIRONMENT -
Interpreted comprehensively to include the natural and physical environment and the relationship of people with that environment.

INOPERABLE -
A stand of timber is considered inoperable when it is physically inaccessible to harvest or economically inaccessible (i.e. physicaly available as by helicopter but not economical to harvest).

INTERDISCIPLINARY APPROACH -
The utilization of individuals representing two or more areas of knowledge and skills focusing on the same subject. The participants develop solutions through frequent interaction so that each discipline may provide insights to any stage of the problems and disciplines may combine to provide new solutions.

ISSUE -
A point, matter, or question to be resolved.

LAND USE DESIGNATION (LUD) -
A method of classifying or zoning lands according to a combination of various uses and use intensities. Uses or activities are grouped to define, together with a set of coordinating policies, an essentially compatible combination of management activities.

MINERAL DEFINITIONS -
Critical Minerals -
Minerals essential to the national defense, the procurement of which in war, while difficult, is less serious than those of strategic minerals because they can be either domestically produced or obtained in more adequate quantities or are less essential, but for which some degree of conservation and distribution control is necessary.

MITIGATION -
Mitigation includes:
a) Avoiding the impact altogether by not taking a certain action or parts of an action.
b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.

c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
e) Compensating for the impact by replacing or providing substitute resources or environments.

OVERSTORY -
That portion of the trees in a forest with more than one roughly horizontal layer of foliage, that forms the upper or uppermost layer.

PROPOSAL -
Exists at that stage in the development of an action when an agency subject to the Act has a goal and is actively preparing to make a decision on one or more alternative means of accomplishing that goal and the effects can be meaningfully evaluated.

RETENTION FACTOR -
The amount of commercial forest land removed from the timber base to protect other resource values. These factors are allowances available to draw upon when meeting other resource needs and are not fixed policies to be rigidly applied by the IDT or Forest Supervisors.

SIGNIFICANTLY -
Significantly requires considerations of both context and intensity:
a) Context. This means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significant varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short and long-term effects are relevant.

b) Intensity. This refers to the severity of impact. Responsible officials must bear in mind that more than one agency may make decisions about partial aspects of a major action. The following should be considered in evaluating intensity:
1) Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.
2) The degree to which the proposed action affects public health or safety.
3) Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.
4) The degree to which the effects on the quality of the human environment are likely to be highly controversial.
5) The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknowwn risks.
6) The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.
7) Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.
8) The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the

National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.
9) The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.
10) Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

SITE INDEX -
A numerical evaluation of the quality of the land for forest productivity, determined by the rate of growth in height of one or more species of trees.

SUCCESSIONAL STAGE -
A relatively transitory plant community comprising one stage in a series from either mineral soil (primary succession) or disturbed land (secondary succession) to the final stabilized plant association or climax stand.

UNDERSTORY -
The small trees and other woody species growing under a more or less continuous cover of branches and foliage formed collectively by the upper portions of adjacent trees and other woody growth.

UNREGULATED -
A stand of timber is termed unregulated when it has been removed from the timber base and logging is prohibited. Unregulated timber lands may be allocated to such uses as municipal watersheds, critical wildlife habitat, research natural areas, etc.

V-NOTCHED DRAINAGE -
V shaped system of drainage.

VALUE COMPARISON UNIT (VCU) -
A distinct geographic area that generally encompasses a drainage basin containing one or more large stream systems. Boundaries usually follow easily recognizable watershed divides. These units were established to provide a common set of areas for which resource inventories could be conducted and resource value interpretations made.

XI.

Index

XI. Index

Accelerated Yield (see timber)

Allocation
  Allocation Constraints -- Appendix B
  Land -- 147, 180

Alluvial -- 42-43, 80, 115

Alpine Tundra -- 11-12, 42-43

Alternatives
  Assumptions -- 60-61
  Comparison -- 146
  Considered -- 60
  Description -- 64-77
  Development process -- 61-63
  Effects of Implementation -- 80-142
  Evaluation of -- 144
  Goals and Objectives -- 64-76
  Relation to Issues -- 144

Alternative A -- 64-64, 82, 99, 103, 119, 152

Alternative B -- 67-68, 82,87-89, 100, 109, 119, 153-155

Alternative C -- 69-70, 82, 87-89, 100, 110, 119

Alternative A-2 -- 70, 82, 87-89, 101, 111, 119

Alternative D -- 71-72, 84, 87-88, 101, 112, 119

Alternative E -- 75-76, 84, 87-89, 102, 114, 119

Alternative A-1 -- 66, 82, 87-89, 99-100, 108, 119

No Action Alternative--77

Single Focus Alternative -- 76

Appendices -- 314

Archeological and Historical Sites -- 16, 197

Bird habitat, Land -- 15, 38, 188-189

Cants -- 13, 25, 28, 168, 172

Climate -- 8

Community Profile -- 21-24

Criteria
  Evaluation -- 57-58
  Purpose of -- 57

Cultural Resources -- 16, 102

Drainage, V-notched -- 9, 43

Duff -- 9

Economic Effects -- 127

Effects
  Air -- 200
  Economy -- 127
  Employment -- 132-133, 163
  Endangered species -- 91
  Fisheries -- 92-94, 159, 174
  Flood plains and wetlands -- 91, 190
  Minerals -- 119-126, 163, 174-176, 202-203
  Population -- 21-24
  Recreation areas -- 95-102, 160-162, 195-197
  Social -- 135-142, 177
  Soils -- 115-116, 199-200
  Timber -- 82-83, 163, 170-174, 180-188
  Water -- 117, 200-202
  Wilderness -- 102-114, 156-157
  Wildlife habitat -- 86-91, 156-159

Employment
  Direct, Indirect, Induced -- 29-30, 163, 175
  Government -- 132-133, 176
  Related to Community Stability -- 133, 164-167
  Research and natural areas -- 89, 190
  Timber 27, 129-131, 164-167, 172-174
  Tourism and recreation -- 29-30, 134, 176

Environment, Human -- 49, 177-180

Estuarine, Landtype -- 42-43

Evaluation of Alternatives -- 144-147

Fish,
  Effects on -- 159, 190-195
  Fisheries Enhancement -- 29, 53, 64-76, 93-94,
  Fishing, Commercial -- 14, 28-29 159, 194-195
  Fishing, Sport -- 14, 92, 190-195
  Habitat -- 38-39, 92, 190-194
  Issues -- 52
  Resources -- 14, 64-76
  Salmon Harvest -- 28-29, 131

Forb -- 80, 86

Geography -- 8

Glaciated Valley Walls -- 42-43, 115

Glossary -- 296-298

Grass, Sedge Meadows -- 11-12

Gross Regional Product -- 133, 176-177

Hydroelectric Power Sites -- 64-76, 102-103, 126, 136, 205

Introduction -- 1

Issues
Admiralty Island -- 51
Allocation -- 48-49
Aquaculture -- 53, 222
Community lifestyles -- 49
Community stability and jobs -- 50, 221
Fish and Wildlife -- 52
Minerals -- 53-54, 235-237
Wilderness preservation -- 50-51

Land Capability -- 35

Lands, Privately Owned -- 31-33
Timber Harvest -- 28, 127, 131

Land selections
Native -- 13, 51, 131
State -- 13

Land Suitability -- 35

Land Use Designation -- 35,91, 152, 169

Laws Related to Public Land Management
ANCSA -- 18, 32, 132
NFMA -- 181, 187, 201
RPA, as amended by the NFMA -- 73
Multiple Use-Sustained Yield Act -- 76
Statehood Act -- 32
Wilderness Act -- 118, 262-263
NEPA -- 196, 197
Clean Air/Clean Water Acts -- 200
FLMPA -- 202-203

Logs, Round -- 13, 25-26, 168, 172

LUD, (see Land Use Designation)

Management
Alternative A (Alternatives continued next page) -- 99, 103
Alternative B -- 100
Alternative C -- 100
Alternative A-2 -- 101
Alternative D -- 101
Alternative E -- 102
Alternative A-1 -- 99-100, 108
Alternative A-3 -- 101
No Action Alternative -- 77
Single Focus Alternative -- 76

Minerals
Critical -- 118
Effects on -- 64-76, 118-126, 163, 174-176
Exploration -- 10-11, 30-31, 131, 174

Summary Rating -- 45-48

Muskeg -- 11-12, 42-43

National Monuments --
Admiralty Island -- 32, 151
Misty Fiords -- 32, 151

Old Growth -- 36

Overstory -- 80

Oxygen, Dissolved concentrations -- 44, 117, 201

Pulp Manufacture -- 13
Pulp capacity -- 28

Proposed Action
Effects of -- 180-216
Identification of -- 150
Social Effects of -- 177-180
Relation of Proposed Action to the Evaluation Criteria -- 144, 206-209

Public Involvement -- 136-142, 218-292

RARE II, (see Roadless Area Review and Evaluation)

Recreation -- 19
Concentrated -- 40-41, 97
Dispersed primitive -- 40-41, 95, 99-102
Dispersed semi-primitive -- 40-41, 95, 99-102
Effects on -- 64-76, 95-102, 134, 160-162

Recreation Resources -- 39-40, 97, 134

References -- 293-295

Research Natural Areas -- 91

Retention factors -- 37

Road Corridors -- 64-76, 126, 136

Road Development -- 20, 25, 95, 99, 115-117, 136, 185

Roadless Area Review and Evaluation -- 135, 167
Relationship of Alternatives -- 77-78, 152
Wilderness Attribute Rating System -- 41-42

Salmon harvest, (see fish)

Sediment levels -- 177, 201

Site Index -- 37-38

Social Aspects
National Perspective -- 17
Regional Perspective -- 17-20
Local Perspective -- 20, 242-259

Soils -- 9, 42
Soil Erosion -- 43, 115-116
Soil Productivity -- 44, 116
Spodosols -- 42-43

Special Features -- 40-41, 97

Stumpage Costs -- 26, 185

Subsistence -- 18-20, 30, 136-142, 221

Successional Stage -- 80-81

Summary -- iii-xix

Sustained Yield (see timber)

Table of Contents -- xx-xxii

Timber
Allocations -- 147, 180-181
Economic Aspects -- 127
Effects on -- 64-76, 82, 163, 170-174, 180-181
Harvest -- 27, 36, 95, 115, 138, 130, 180-188, 196-197
Independent Sales -- 188
Logging Techniques -- 35-36
Long-Term Sales -- 26, 83-85, 187
Marginal -- 27, 36, 83, 115
Reserved -- 36
Resources -- 35
Short-Term Sales
Special -- 27, 36
Standard (Timber continued next page) -- 27, 36, 83
Sustained Yield -- 28, 36
Unregulated -- 36
Yield Calculations -- 36-37, 153, 180

Timber Sale Contracts -- 27

Tourism -- 29-30, 64-76, 134, 176

Transportation -- 19, 126, 136, 163, 203-205

Understory -- 81

Valley Bottoms -- 42-43

Value Comparison Units
Definition -- 33-34
Fish -- 38-39, 92-93
Minerals -- 46-48
Recreation -- 39-41, 95-98
Timber -- 33-37, 83
Wilderness -- 41-42, 102-114
Wildlife -- 38

VCUs (see Value Comparison Units)

Water -- 9
Effects on -- 117, 200-202
Water Quality, Chemical -- 44-45
Water Quality Standards -- 201, 202

Wildlife
Effects on -- 64-76, 86-91, 156-159, 188-189
Issues -- 52
Resources -- 14-15, 38

Wilderness Areas
Effects on -- 64-76, 102-114, 156-157, 197-199
Issues of Preservation -- 50-51
Uses in Wilderness Areas -- 262-265
Wilderness -- 41-42, 167

XII.

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XII. Principal Participants Involved in Planning Process

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XIII.
Appendices

XIII. Appendices

A. VCUs Unsuitable for Timber Management

VCUs containing no commercial forest land suitable for timber management (All other VCUs contain stands of timber suitable for management.)

				VCUs			
1	43	103	333	390	494	508	796
6	45	104	352	392	495	512	797
7	47	267	353	393	496	667	798
11	48	316	354	394	498	766	804
21	92	327	357	481	499	787	805
22	100	328	358	491	500	789	816
39	101	330	359	492	506	794	845
42	102	331	371	493	507	795	866

B. Allocation Constraints

315 Following VCU 183

Insert "193" under the VCU column, "x" under the LUD I column, and "ALP 76-81 FEIS Timber Sale" under the Reason column.

Errata

APPENDIX TABLE --Allocation constraints: Application of various LUDs is precluded in the VCUs indicated because of human settlements, past land allocation decisions, and past land use effects. The X indicates where each of the LUDs should not be applied.

VCU	I	II	III	IV	REASON
3	X				Skagway (city property)
25	x				Roaded
27	x	x			Juneau-Auke Bay
28	x			x	Montana Ck. Classified Recreation Area
29	x		x	x	Mendenhall Classified Recreation Area
32	x	x			Juneau Proper
33	x	x			Douglas Proper
34	x			x	Fish Creek (Eaglecrest Ski Area)
50	x				Snettisham Power Site
53			x	x	Limestone Inlet Natural Area
54	x				Power Transmission Corridor
62			x	x	Tracy Arm-Fords Terror Scenic Area
65			x	x	Tracy Arm-Fords Terror Scenic Area
67			x	x	Tracy Arm-Fords Terror Scenic Area
85			x	x	Cape Fanshaw Natural Area
110	x				Roaded area
119	x	x			Homeshore Timber Sale - sold 6/78
120	x	x			Homeshore Timber Sale - sold 6/78
122	x	x			Roaded
123	x	x			Roaded
132	x	x			Young Bay Experimental Forest
152			x	x	Pack Creek Natural Area
153			x	x	Seymour Eagle Management Area
156			x	x	Admiralty Lakes Recreation Area
157			x	x	Admiralty Lakes Recreation Area
162			x	x	Admiralty Lakes Recreation Area
165	x			x	Angoon
167			x	x	Admiralty Lakes Recreation Area
187	x				Elfin Cover Proper
201	x	x			ALP 76-81 FEIS Timber Sale
202	x	x			ALP 76-81 FEIS Timber Sale
205				x	Hoonah (city)
206	x			x	Hoonah (city)
216	x	x			ALP 76-81 FEIS Timber Sale
217	x	x			Current timber operation
218	x	x			ALP 76-81 FEIS Timber Sale
219	x	x			Roaded
220	x	x		x	Tenakee (city) and ALP 76-81 FEIS
221	x	x			Roaded
223	x	x			Roaded
230	x	x			ALP 76-81 FEIS Timber Sale

VCU	I	II	III	IV	REASON
233	x	x			ALP 76-81 FEIS Timber Sale
234	x	x			ALP 76-81 FEIS Timber Sale
236	x	x			ALP 76-81 FEIS Timber Sale
237	x	x			ALP 76-81 FEIS Timber Sale
239	x	x			ALP 76-81 FEIS Timber Sale
240	x	x			ALP 76-81 FEIS Timber Sale
241	x	x			ALP 76-81 FEIS Timber Sale
242	x	x			ALP 76-81 FEIS Timber Sale
243	x	x			Active Logging Operation
244	x	x			Active Logging Operation
245	x	x			Active Logging Operation
251	x	x			Pelican
256	x	x			Yakobi Is. (Inspiration Mining - Cu-Ni mine)
257	x	x			Yakobi Is. (Inspiration Mining - Cu-Ni mine)
291	x	x			Roaded
292	x	x			Roaded
293	x	x			Roaded
300	x	x			Roaded
301	x	x			Roaded
303	x	x			Roaded
307	x	x			Roaded
311	x	x			Sitka Proper
312	x	x			Roaded
315	x	x			Current harvest
316	x				Hidden Falls - Sandy Bay Aquaculture Development
319	x	x			Roaded
321	x	x			Current harvest
324	x				Green Lake Hydroelectric Dev, Port Alexander
339	x				
345	x				Hidden Falls - Sandy Bay Aquaculture Development
370	x				
399	x	x			ALP 76-81 FEIS Timber Sale
400	x	x			ALP 76-81 FEIS Timber Sale
402	x	x			ALP 76-81 FEIS Timber Sale
403	x				ALP 76-81 FEIS Timber Sale
432	x	x			Roaded
425	x	x			South Hamilton Exchange for Mud Bay
426	x	x			South Hamilton Exchange for Mud Bay
434	x	x			Current harvest
435	x				Mining venture (Castle Is. - road construction started

VCU	I	II	III	IV	REASONS
447	x	x			Petersburg Proper
450	x	x			Current harvest
451	x	x			" "
452	x	x			Current harvest
453	x	x			Current harvest
454	x	x			Current harvest
456	x	x			Current harvest
457	x	x			Current harvest
458	x	x			Current harvest
459	x	x			Current harvest
460	x	x			Current harvest
469	x	x			Current harvest
476	x	x			Wrangell Proper
477	x	x			Current harvest
478	x	x			Current harvest
479	x	x			Current harvest
492				x	Stikine Flats Wildlife Area
496				x	Stikine Flats Wildlife Area
514	x	x			Current harvest
517	x	x			Current harvest
527	x	x		x	Point Baker - Port Protection
528	x	x			Current or recent harvest
529	x	x			Current harvest
530	x	x			Current harvest
531	x	x			Current harvest
532	x	x			Current harvest
535	x	x			Past harvest
536	x	x			Past harvest
537	x	x			Past harvest
538	x	x			Past harvest
539	x	x			Past harvest
540	x	x			Past harvest
541	x	x			Current or recent harvest
542	x	x			Current or recent harvest
543	x	x			Current or recent harvest
544	x	x			Current or recent harvest
545	x	x			Current or recent harvest
546	x	x			Current or recent harvest
549	x	x			Current or recent harvest
550	x	x			Current or recent harvest
554.2	x	x			Current or recent harvest
555	x	x			Current or recent harvest
556	x	x			Current or recent harvest
557	x	x			Current or recent harvest
558	x	x			Current or recent harvest
559	x	x			Current or recent harvest

VCU	I	II	III	IV	REASONS
560	x	x			Current or recent harvest
561	x	x			Current or recent harvest
570	x	x			Current or recent harvest
571	x	x			Current or recent harvest
572	x	x			Current or recent harvest
573	x	x			Current or recent harvest
579	x	x			Current or recent harvest
580	x	x			Current or recent harvest
581	x	x			Current or recent harvest
583	x	x			Current or recent harvest
584	x	x			Current or recent harvest
585	x	x			Current or recent harvest
586	x	x			Thorne Bay Proper - past logging
587	x	x			Current or recent logging
588	x	x			Current or recent logging
589	x	x			Current or recent logging
590	x	x			Current or recent logging
591	x	x			Current or recent logging
595	x	x			Big Salt Road
596	x	x			Current or recent logging
597.2	x	x			Recent harvest
598	x	x			Current harvest
610	x	x			Maybeso Experimental Forest
611	x	x			Current or recent harvest
620	x	x			Current or recent harvest
621	x	x			Current or recent harvest
622	x	x			Current or recent harvest
624	x	x			Current or recent harvest
699	x	x			Open pit mine and road
733	x	x			Current or recent harvest
735	x	x			Current or recent harvest
736	x	x			Current or recent harvest
737	x	x			Current or recent harvest
738	x	x			Current or recent harvest
739	x	x			Current or recent harvest
740	x	x			Current or recent harvest
744	x	x			Recent harvest
746	x	x			Current or recent harvest
749	x	x			Roaded
750	x	x			Ward Lake Classified Recreation Area (also roads)
751	x	x			Roaded
753	x	x			Current or recent harvest
756	x	x			Current or recent harvest
799			x	x	Walker Cove - Rudyard Bay Scenic Area
800			x	x	Walker Cove - Rudyard Bay Scenic Area
801			x	x	Walker Cove - Rudyard Bay Scenic Area
802			x	x	Walker Cove - Rudyard Bay Scenic Area
803			x	x	Walker Cove - Rudyard Bay Scenic Area
805	x	x			Hyder - roaded
864.2	x	x			Ketchikan Proper - roads

C. VCU Matrix

The VCU matrix lists all of the resource value ratings that were assigned by the Land Assessment Task Forces to each Value Comparison Unit. VCUs rated 0 are presently considered incapable of producing resources or providing land use opportunities. Those rated 5 have the highest capability.

The matrix was used during the alternative development process to select VCUs for allocation on the basis of their comparative values. (Refer to the Alternative Development Process section). It is included in this document to enable the reviewer to analyze the displayed alternatives.

The resource values of individual VCUs can be considered if a LUD change is contemplated for a particular alternative. For instance, if the reviewer wanted to propose additional acres of LUD I with the least impact on available timber volumes, he may choose to look through the matrix for VCUs with high ratings for wilderness attributes and primitive recreation and low acerages of operable CFL. If the objective were to increase the amount of available timber with the least impact on wildlife, one might begin by looking for VCUs with high operable CFL acres and low wildlife and fish ratings.

The VCU numbers in the matrix correspond with the VCU numbers that are shown on the alternative display maps.

The rating column abbreviations in the matrix are defined as follows:

TIM RTG	- Timber Supply Qualities Rating
MIN RTG	- Mineral Values Rating
WILD ATT	- Wilderness Attributes Index (0-28)
PRIM REC	- Dispersed Primitive Recreation Opportunities Rating
SEMI PRIM REC	- Dispersed Semi-primitive Recreation Opportunities Rating
CONC REC	- Concentrated Primitive Recreation Opportunities Rating
SPORT FISH	- Sport Fisheries Values
COMM FISH	- Commercial Fisheries Values
WILDLF VALUE	- Wildlife Values
EST SENS	- Estaurine Sensitivity Ratings
SCEN ECO DIV	- Scenery and Ecotype Diversity Rating
SUPP W VALUE	- Supplimentary Wilderness Attributes
WILDLF USE	- Wildlife Use (human) Rating

VCU MATRIX SUMMARY
05/17/1978

VCU NUMBER	NATIONAL FOREST ACRES	OPERABLE CFL AC	TIM RTG	MIN RTG	WILD ATT	PRIM REC	SEMI PRIM REC	CON REC	SPORT FISH	COMM FISH	WILDLF VALUE	EST SENS	SCEN ECO DIV	SUPP W VALUE	WILDLF USE
1.0	24827.	0	0	4	21	1	1	2	1	1	1	0	4	2	1
2.0	20000.	61	1	3	22	1	1	2	1	1	1	0	4	2	1
3.0	4337.	0	1	3	19	1	2	4	2	2	1	2	2	2	1
4.0	13244.	0	1	0	20	2	2	1	2	2	1	2	3	2	1
5.0	7726.	227	2	0	19	2	2	1	2	2	2	2	3	2	1
6.0	25347.	0	0	0	22	2	1	1	2	2	1	0	4	2	1
7.0	23922.	0	0	0	22	2	1	1	2	2	1	0	4	2	1
8.0	11630.	723	2	2	20	2	2	1	2	2	2	2	3	2	1
9.0	52756.	1999	1	0	26	3	3	1	2	2	2	2	5	3	1
10.0	23299.	355	1	2	22	2	2	2	2	2	2	2	4	2	1
11.0	26177.	0	0	0	23	3	1	1	1	1	1	0	4	2	1
12.0	40308.	1504	1	3	25	4	3	2	4	5	2	2	5	4	3
13.0	73932.	765	1	1	28	4	3	2	4	5	2	2	5	4	3
14.0	13000.	0	1	1	24	3	2	2	4	4	2	0	4	3	2
15.0	32552.	0	1	0	28	4	2	2	4	4	2	3	5	4	2
16.0	17893.	2240	2	4	23	5	5	3	4	5	3	4	4	4	3
17.0	5379.	398	2	4	18	2	2	1	3	4	1	2	1	2	1
18.0	9858.	0	1	2	20	2	2	1	2	2	2	2	3	2	1
19.0	9014.	201	1	4	20	2	2	1	2	2	2	2	3	2	1
20.0	9662.	696	1	4	21	2	2	1	2	2	2	2	1	1	1
21.0	11150.	0	0	1	25	2	1	1	0	0	1	0	5	1	1
22.0	215471.	0	0	2	25	2	1	1	0	0	1	0	5	1	1
23.0	19086.	2103	2	2	22	3	2	1	4	4	1	0	3	2	1
24.0	6137.	877	2	2	18	2	2	1	4	4	1	0	1	2	1
25.0	4332.	1258	3	2	0	3	4	2	4	4	3	4	2	3	2
26.0	29990.	1866	1	3	22	3	2	2	4	4	2	0	4	3	2
27.0	15296.	3656	3	3	0	2	4	4	5	5	3	5	3	4	3
28.0	13139.	2211	3	4	13	2	2	2	5	5	2	0	2	3	2
29.0	7297.	128	1	3	19	2	3	4	5	5	2	0	3	3	3
30.0	10420.	119	1	2	21	3	2	2	5	5	1	0	3	3	2
31.0	14722.	0	1	3	20	2	2	1	2	2	1	0	4	2	2
32.0	3847.	95	2	4	0	1	3	4	3	4	2	3	4	3	2
33.0	5937.	2016	1	4	0	1	1	2	2	2	1	3	2	1	2
34.0	5017.	2153	1	3	0	1	1	3	4	5	1	4	2	2	3
35.0	4503.	1600	3	0	18	1	1	1	2	2	2	4	1	1	3
36.0	4030.	440	1	0	18	3	1	1	3	4	3	2	1	2	3
37.0	4911.	1757	1	3	18	2	2	1	2	2	2	2	1	1	3
38.0	6357.	299	1	2	19	2	2	1	2	2	2	2	2	2	1
39.0	16701.	0	0	2	23	2	2	1	2	2	1	0	3	2	1
40.0	4243.	53	1	2	20	2	2	1	2	2	1	0	3	2	1
41.0	32565.	2610	2	2	19	5	5	2	5	5	3	5	2	3	2
42.0	10878.	0	0	1	23	3	2	1	2	2	1	0	5	3	1
43.0	32869.	0	0	1	25	3	4	2	5	3	1	0	5	3	1
44.0	21776.	1258	1	1	22	3	2	1	5	5	1	5	3	2	1
45.0	6830.	0	0	1	23	3	2	2	2	2	1	0	4	2	1
46.0	103173.	2384	1	2	27	5	5	1	5	5	4	5	5	5	4

VCU MATRIX SUMMARY
05/17/1978

*	VCU NUMBER	NATIONAL FOREST ACRES	OPERABLE CFL AC	TIM RTG	MIN RTG	WILD ATT	PRIM REC	SEMI PRIM REC	CON REC	SPORT FISH	COMM FISH	WILDLF VALUE	EST SENS	SCEN ECO DIV	SUPP W VALUE	WILDLF USE
***																
*	47.0	41257.	0	0	1	25	3	2	2	5	5	1	0	4	3	1
*	48.0	25571.	0	0	2	22	2	1	1	1	1	1	0	3	2	1
*	49.0	23114.	0	1	2	24	4	2	2	5	5	2	0	5	4	1
*	50.0	32667.	116	1	2	22	3	2	1	2	2	2	2	4	3	1
*	51.0	15987.	3392	3	3	18	3	3	1	3	5	3	4	2	3	1
*	52.0	7766.	2349	3	3	0	3	3	1	2	2	3	4	2	2	1
*	53.0	10275.	1742	2	3	22	3	3	2	3	4	2	4	4	3	2
*	54.0	2936.	189	2	1	0	2	1	1	2	2	2	2	2	2	1
*	55.0	22575.	1062	2	4	20	4	4	2	3	4	4	4	3	4	1
*	56.0	12294.	464	1	1	21	2	2	1	2	2	3	3	2	2	1
*	57.0	29145.	6953	3	3	23	4	4	2	3	4	5	4	3	4	2
*	58.0	17172.	682	1	1	22	3	3	2	2	2	2	3	4	2	1
*	59.0	19599.	771	1	1	24	3	2	2	4	5	1	3	4	3	1
*	60.0	92514.	483	1	1	28	3	2	2	4	5	1	0	5	4	1
*	61.0	141999.	5905	1	3	28	4	3	2	4	5	2	2	5	4	1
*	62.0	238583.	450	1	1	27	3	2	2	2	2	2	3	5	3	2
*	63.0	12280.	1965	1	2	22	3	2	1	2	2	3	3	2	2	2
*	64.0	9270.	3908	2	2	22	3	3	1	2	2	2	3	1	1	1
*	65.0	41001.	4446	1	3	24	4	3	2	2	2	3	4	4	3	3
*	66.0	14175.	6151	3	3	21	4	3	2	2	2	3	4	3	3	2
*	67.0	167291.	2941	1	3	25	3	2	1	2	2	2	4	5	3	2
*	68.0	8156.	5994	5	1	20	2	2	1	2	2	2	3	2	2	1
*	69.0	12498.	5024	4	1	21	3	2	1	3	3	2	3	2	2	1
*	70.0	8675.	2830	2	2	21	3	2	1	3	4	2	4	1	2	1
*	71.0	17208.	4079	2	4	20	4	4	2	4	5	3	4	3	4	2
*	72.0	7233.	1984	2	2	18	2	1	1	2	2	2	4	1	1	1
*	73.0	4801.	3201	1	1	20	2	2	1	2	2	3	4	2	2	2
*	74.0	8662.	4394	3	3	20	2	2	1	2	2	2	3	1	1	1
*	75.0	21210.	10346	3	3	25	5	3	2	3	4	3	4	4	4	2
*	76.0	43559.	3269	2	3	23	3	2	1	4	5	1	0	3	3	1
*	77.0	23150.	2162	1	1	21	2	2	1	4	5	1	0	2	2	1
*	78.0	47406.	0	1	1	26	4	1	2	4	4	1	0	5	3	1
*	79.0	42688.	7606	1	1	27	4	4	2	3	4	3	5	4	4	2
*	80.0	6957.	1958	1	0	20	2	2	1	2	2	2	5	2	2	1
*	81.0	5079.	1785	2	1	19	2	2	1	2	2	2	5	1	1	1
*	82.0	12212.	6261	3	1	22	4	3	2	3	4	4	5	2	3	2
*	83.0	10363.	3179	3	1	21	3	2	1	2	2	3	5	2	2	2
*	84.0	17024.	3493	2	1	22	4	3	2	3	5	3	5	2	3	2
*	85.0	6435.	3218	1	3	17	4	4	2	2	2	3	4	3	3	2
*	86.0	8440.	1780	2	1	22	2	2	1	2	2	3	2	1	2	1
*	87.0	14521.	2444	2	1	23	3	2	1	4	4	3	2	1	2	1
*	88.0	3667.	1304	3	1	22	2	2	1	2	2	3	2	1	2	1
*	89.0	17344.	2806	3	1	23	3	3	1	2	2	4	4	1	2	3
*	90.0	28300.	7037	3	1	26	4	3	2	4	5	5	4	3	3	3
*	91.0	34597.	0	1	3	26	3	2	2	4	5	2	0	4	3	1
*	92.0	31754.	0	0	1	25	3	2	1	4	5	2	0	5	3	1

VCU MATRIX SUMMARY
05/17/1978

*	VCU NUMBER	NATIONAL FOREST ACRES	OPERABLE CFL AC	TIM RTG	MIN RTG	WILD ATT	PRIM REC	SEMI PRIM REC	CON REC	SPORT FISH	COMM FISH	WILDLF VALUE	EST SENS	SCEN ECO DIV	SUPP W VALUE	WILDLF USE
***																
*	94.0	3985.	3100	3	2	19	3	3	1	2	2	1	2	1	1	1
*	95.0	8843.	968	1	2	24	3	2	1	2	2	2	2	4	3	1
*	96.0	8575.	229	1	2	25	3	2	1	2	2	2	2	5	3	1
*	97.0	6447.	701	1	2	21	3	3	1	2	2	2	3	3	2	1
*	98.0	25469.	131	1	2	26	3	3	2	2	2	2	3	5	3	1
*	99.0	13374.	61	1	2	23	2	2	1	2	2	2	2	3	1	1
*	100.0	8218.	0	0	2	21	3	2	1	4	5	1	0	3	3	1
*	101.0	6613.	0	0	2	20	2	1	1	2	2	1	0	3	2	1
*	102.0	36361.	0	0	2	25	3	2	2	4	5	1	0	5	4	1
*	103.0	9210.	0	0	2	20	2	2	1	4	4	1	0	1	2	1
*	104.0	19041.	0	0	2	23	3	2	1	4	5	1	0	3	3	1
*	105.0	23409.	1320	1	3	24	3	2	2	4	5	2	3	4	4	3
*	106.0	19674.	0	1	2	23	3	2	2	4	5	2	0	4	4	1
*	107.0	7418.	441	1	4	18	3	3	1	3	4	3	4	3	3	2
*	108.0	3359.	91	1	2	19	2	2	1	2	2	2	2	1	1	1
*	109.0	1882.	153	1	1	18	2	2	1	2	2	2	5	1	2	1
*	110.0	3379.	526	1	1	0	2	2	1	4	5	2	0	2	3	1
*	111.0	21010.	544	1	1	24	5	2	2	4	5	5	5	3	5	3
*	112.0	21989.	1180	1	1	23	3	2	1	2	2	2	3	3	3	2
*	113.0	16241.	890	1	2	22	3	3	2	2	2	3	3	4	3	1
*	114.0	21514.	144	1	1	22	3	2	1	3	4	1	0	4	3	1
*	115.0	9038.	1454	2	3	18	3	3	2	3	4	2	3	2	2	2
*	116.0	8319.	228	1	1	21	3	2	1	3	5	1	0	3	3	1
*	117.0	9934.	180	1	1	24	4	5	2	3	5	4	3	4	4	2
*	118.0	13393.	1923	1	1	19	2	1	1	3	4	2	0	1	2	1
*	119.0	29981.	2070	1	1	19	3	2	1	3	5	2	0	3	3	2
*	120.0	11745.	1395	1	1	19	2	3	1	3	5	3	3	1	3	2
*	121.0	9481.	737	1	1	18	2	2	1	2	2	2	3	2	2	2
*	122.0	5917.	612	1	1	0	3	2	1	2	2	3	3	3	3	1
*	123.0	2508.	1140	3	3	0	2	2	1	2	2	3	3	2	2	2
*	124.0	6162.	1415	3	3	19	3	3	2	4	1	2	3	3	2	2
*	125.0	13723.	1706	2	2	19	2	2	1	2	2	3	3	1	1	4
*	126.0	8413.	1951	3	4	17	3	3	1	2	2	3	5	2	2	4
*	127.0	4957.	1565	3	2	19	2	1	1	2	2	2	2	2	1	2
*	128.0	14319.	7117	4	4	15	3	3	2	3	3	3	5	2	3	5
*	129.0	10530.	5519	4	3	19	2	2	2	4	4	3	4	2	2	4
*	130.0	4388.	911	3	3	18	2	2	1	2	2	3	2	2	2	5
*	131.0	5876.	4952	5	3	18	3	2	2	3	4	3	3	2	3	5
*	132.0	6495.	2105	4	3	0	2	2	1	2	2	3	3	2	2	5
*	133.0	18173.	6127	4	4	23	4	4	2	5	5	3	5	5	5	5
*	134.0	6387.	2570	3	2	18	2	2	1	2	2	3	5	2	2	5
*	135.0	5017.	2797	3	1	18	3	2	1	2	2	3	5	2	2	5
*	136.0	11154.	5872	5	1	20	2	2	1	2	2	2	3	2	1	5
*	137.0	10955.	5519	4	1	21	2	2	1	2	2	3	3	1	1	4
*	138.0	25445.	9724	4	1	22	3	2	1	2	2	3	2	3	2	4
*	139.0	14717.	8142	5	1	19	3	2	1	2	2	3	5	2	2	4

VCU MATRIX SUMMARY
05/17/1978

VCU NUMBER	NATIONAL FOREST ACRES	OPERABLE CFL AC	TIM RTG	MIN RTG	WILD ATT	PRIM REC	SEMI PRIM REC	CON REC	SPORT FISH	COMM FISH	WILDLF VALUE	EST SENS	SCEN ECO DIV	SUPP W VALUE	WILDLF USE
140.0	9485.	4813	4	1	22	4	3	2	2	2	3	5	2	2	5
141.0	12916.	7401	5	3	20	3	3	1	2	2	3	5	2	2	5
142.0	16967.	8042	4	1	23	5	4	2	3	3	4	5	4	4	5
143.0	27903.	4769	2	3	26	5	3	2	5	5	4	5	3	5	5
144.0	17225.	6588	4	5	22	3	2	2	3	5	3	5	3	3	3
145.0	22849.	5412	3	3	24	3	2	2	4	5	2	0	3	4	2
146.0	18629.	9990	5	1	23	4	3	2	4	5	4	5	3	4	5
147.0	4174.	3818	5	2	20	2	2	1	2	2	3	5	2	2	3
148.0	15302.	1025	3	3	24	4	3	2	5	5	3	4	4	4	3
149.0	29001.	9775	4	2	22	3	2	1	3	3	3	2	3	3	3
150.0	21984.	6857	4	2	24	4	3	2	5	5	3	2	4	4	3
151.0	19042.	3782	3	3	27	5	5	2	5	5	3	4	5	5	5
152.0	40823.	6510	2	3	27	5	3	2	3	5	4	5	5	5	5
153.0	10398.	6566	5	1	22	3	3	1	2	2	3	5	1	1	5
154.0	9277.	3510	4	0	20	2	2	1	2	2	3	5	2	2	5
155.0	14479.	8249	4	1	21	3	2	2	4	5	3	5	1	3	5
156.0	24420.	13886	5	1	24	4	3	1	4	5	4	5	3	4	5
157.0	62344.	17875	4	3	27	4	4	2	5	5	3	2	4	4	4
158.0	39627.	18951	5	2	22	3	2	2	4	5	3	2	3	4	3
159.0	8899.	2519	3	1	20	2	1	1	2	2	3	2	2	1	2
160.0	12063.	7043	5	1	20	2	1	1	2	2	3	3	1	1	2
161.0	13064.	6719	4	1	22	3	2	2	5	5	3	2	3	3	2
162.0	25374.	10169	4	1	22	3	3	2	5	5	2	0	4	4	2
163.0	7402.	5945	5	2	25	5	4	2	2	2	4	5	5	4	5
164.0	1452.	820	4	1	19	2	1	1	2	2	3	5	1	1	3
165.0	10836.	5520	5	2	23	4	1	2	3	4	4	5	3	4	5
166.0	15294.	9214	5	2	24	5	4	2	5	5	3	5	4	4	5
167.0	13611.	5038	4	2	23	3	2	2	5	4	1	0	3	3	2
168.0	10339.	4064	4	4	22	4	3	2	5	5	3	5	3	3	5
169.0	6855.	2955	4	1	21	2	1	1	2	2	3	5	1	1	2
170.0	69076.	27101	4	4	28	5	5	3	5	5	4	4	4	5	5
171.0	27000.	5843	3	1	25	5	5	3	5	5	4	4	4	5	5
172.0	22615.	8445	4	3	26	5	5	3	4	5	4	4	4	5	5
173.0	19524.	7511	4	1	17	2	3	2	4	5	4	4	3	4	5
174.0	3566.	2547	4	1	19	2	1	1	2	2	3	2	1	1	2
175.0	22688.	11521	4	1	21	3	3	2	3	5	4	5	2	3	5
176.0	9303.	5145	4	1	20	2	1	1	2	2	3	3	1	1	2
177.0	13942.	6063	4	2	22	3	3	2	2	2	4	5	2	2	5
178.0	2546.	1003	3	2	19	2	1	1	2	2	3	2	1	1	2
179.0	12980.	4401	4	1	21	3	3	1	2	2	4	5	2	2	5
180.0	37634.	10442	3	1	20	3	3	2	2	2	4	4	3	3	4
181.0	11436.	2259	2	1	22	4	4	2	3	5	3	5	3	3	4
182.0	41513.	13902	4	4	27	5	5	3	5	5	4	5	4	5	5
183.0	9713.	5997	5	1	20	3	2	1	3	3	4	4	1	2	5
184.0	1711.	1283	3	0	18	2	2	1	1	1	3	2	2	1	2
185.0	8804.	926	1	1	19	2	2	1	2	2	2	3	1	1	1

VCU MATRIX SUMMARY
05/17/1978

VCU NUMBER	NATIONAL FOREST ACRES	OPERABLE CFL AC	TIM RTG	MIN RTG	WILD ATT	PRIM REC	SEMI PRIM REC	CON REC	SPORT FISH	COMM FISH	WILDLF VALUE	EST SENS	SCEN ECO DIV	SUPP W VALUE	WILDLF USE
186.0	6723.	3511	3	2	19	2	2	1	2	2	2	4	2	1	1
187.0	10697.	3027	3	3	20	3	3	2	2	2	2	5	4	2	1
188.0	8040.	804	1	3	19	2	2	1	2	2	2	2	3	2	2
189.0	15181.	3080	2	1	24	4	1	2	3	4	4	3	3	4	2
190.0	53395.	8452	2	2	26	5	5	2	3	4	4	4	5	5	3
191.0	6132.	2079	3	1	19	3	2	1	2	2	3	4	3	2	1
192.0	12836.	2502	2	1	22	3	2	1	2	2	3	5	2	2	2
193.0	36554.	7704	3	1	27	5	4	2	5	5	4	5	5	5	3
194.0	8935.	5265	5	1	24	3	2	2	5	5	3	2	3	4	1
195.0	4498.	2058	3	0	21	2	2	1	2	2	3	2	1	1	2
196.0	15564.	3328	3	1	22	3	2	1	3	4	3	2	2	3	3
197.0	3004.	668	2	0	18	2	1	1	2	2	2	2	1	1	4
198.0	4323.	802	2	1	21	3	2	2	3	4	4	4	3	4	3
200.0	11076.	1704	2	1	22	4	3	2	4	5	3	4	3	4	5
201.0	39617.	7813	2	3	23	4	3	2	4	5	4	5	5	5	5
202.0	16649.	4955	4	1	22	4	3	2	2	2	4	4	3	3	4
203.0	10946.	2443	3	1	21	3	1	1	3	4	3	4	2	3	5
204.0	34570.	8831	3	1	23	4	3	2	4	5	4	4	4	5	4
205.0	10754.	2454	3	3	20	2	2	2	3	4	2	4	3	3	4
207.0	12058.	2849	3	1	23	3	3	2	3	5	3	5	3	3	5
208.0	6613.	1730	3	0	19	2	1	1	2	2	2	2	1	2	4
209.0	13198.	3756	4	1	22	3	3	2	3	4	3	4	4	4	4
210.0	12610.	5835	4	1	21	3	2	2	3	4	3	4	3	3	1
211.0	4688.	1486	1	1	19	1	1	1	2	2	2	2	1	1	2
212.0	13330.	3793	4	3	21	3	2	2	3	3	3	3	3	3	1
213.0	3831.	1607	4	2	18	3	3	2	2	2	3	4	2	2	1
214.0	6853.	1273	3	1	22	3	2	2	3	4	3	4	3	3	3
215.0	23143.	8609	4	1	25	5	3	2	4	5	4	4	4	5	4
216.0	10760.	2945	3	1	21	2	1	1	4	5	1	4	2	3	1
217.0	10232.	4660	5	1	0	3	2	2	3	5	3	4	3	3	3
218.0	18866.	8116	4	1	22	4	4	2	5	5	4	5	5	5	3
219.0	5980.	3565	4	3	0	3	2	1	2	2	3	5	2	0	2
220.0	17917.	6287	4	2	0	3	2	2	4	4	3	5	4	4	2
221.0	4708.	1314	3	0	0	3	2	1	2	2	3	5	2	2	2
222.0	12231.	3700	4	1	18	3	2	1	2	2	3	5	3	2	3
223.0	3833.	1243	2	0	0	3	3	1	2	2	3	5	1	1	2
224.0	26668.	1616	1	3	24	4	3	2	3	4	4	5	4	4	4
225.0	18244.	1591	1	2	24	4	3	2	3	5	3	5	4	4	4
226.0	23798.	2818	2	3	24	4	3	2	3	4	4	5	4	3	4
227.0	3854.	881	2	1	19	3	1	1	2	2	3	5	2	1	4
228.0	18659.	3373	2	3	28	4	3	2	3	4	4	5	4	3	4
229.0	23231.	3107	2	1	23	4	3	2	4	5	4	3	4	3	4
230.0	9639.	3284	3	3	19	4	2	2	3	3	4	3	2	2	4
231.0	18517.	3196	2	3	27	5	5	2	4	5	4	3	2	2	4
232.0	11477.	3603	3	3	20	3	2	1	3	3	4	5	2	3	4
233.0	10515.	1770	2	3	18	2	2	2	3	3	4	5	2	3	4

VCU MATRIX SUMMARY
05/17/1978

VCU NUMBER	NATIONAL FOREST ACRES	OPERABLE CFL AC	TIM RTG	MIN RTG	WILD ATT	PRIM REC	SEMI PRIM REC	CON REC	SPORT FISH	COMM FISH	WILDLF VALUE	EST SENS	SCEN ECO DIV	SUPP W VALUE	WILDLF USE
234.0	6002.	3232	3	3	0	3	2	1	3	4	3	5	2	3	4
235.0	33641.	12084	4	3	27	4	3	2	4	5	4	5	4	5	5
236.0	10930.	4769	4	1	0	2	2	1	3	4	3	4	3	3	4
237.0	6446.	2813	4	1	21	4	2	1	3	3	3	5	4	3	2
238.0	9946.	3278	4	3	21	2	1	1	2	2	2	2	3	2	1
239.0	17007.	5681	4	3	0	3	1	1	5	5	3	3	3	4	1
240.0	9340.	2706	3	1	20	3	2	1	2	2	3	2	3	2	1
241.0	7537.	2416	3	1	0	1	1	1	2	2	2	2	3	2	1
242.0	11334.	6418	5	1	0	3	2	2	3	4	3	3	3	3	2
243.0	27748.	11146	4	1	0	2	2	2	4	5	3	4	3	4	3
244.0	11472.	5052	4	1	0	2	1	1	5	5	2	0	2	3	1
245.0	23732.	11663	5	3	0	1	2	1	3	4	3	5	2	3	2
246.0	17145.	2717	3	2	21	2	1	1	2	2	2	2	2	1	3
247.0	15918.	2835	3	1	21	3	3	2	3	3	2	4	3	2	3
248.0	9700.	396	1	1	21	3	2	2	3	3	3	4	3	3	3
249.0	19521.	3144	2	1	22	3	3	2	3	5	3	4	3	4	3
250.0	11589.	1394	1	1	22	3	2	2	3	5	2	2	3	3	4
251.0	11503.	1514	2	1	18	2	2	1	2	2	2	2	3	2	3
252.0	9124.	917	2	3	20	3	3	2	3	4	2	3	3	3	2
253.0	10350.	2670	3	2	20	3	3	2	5	5	3	5	2	3	3
254.0	17588.	3660	2	5	28	5	4	2	5	5	4	5	2	5	2
255.0	14156.	4022	3	2	28	5	4	2	3	5	4	5	5	5	2
256.0	2257.	393	2	5	21	2	1	1	2	2	1	0	3	2	1
257.0	3990.	961	2	5	0	1	1	1	3	3	1	0	3	2	1
258.0	11944.	2087	3	4	20	2	3	2	2	2	2	4	3	2	2
259.0	14859.	1652	2	3	24	5	4	2	3	5	3	4	4	4	1
260.0	8573.	1128	1	4	20	3	2	1	2	2	2	3	3	2	2
261.0	9726.	1017	2	3	20	3	2	1	4	4	2	3	3	3	2
262.0	8844.	1381	2	3	24	3	3	2	3	5	3	3	4	4	2
263.0	14328.	1363	2	2	25	4	3	2	4	4	2	0	4	4	1
264.0	11480.	2071	2	3	25	4	3	2	4	4	3	4	4	3	1
265.0	10998.	3622	3	4	26	5	4	2	5	5	3	4	4	4	1
266.0	7604.	95	1	3	24	3	2	2	3	4	1	4	5	3	1
267.0	2124.	0	0	1	21	4	3	2	2	2	3	4	4	3	1
268.0	4114.	392	2	4	26	5	3	2	3	4	3	5	4	4	1
269.0	11645.	2081	2	3	28	5	4	2	2	2	4	4	5	4	2
270.0	19507.	1772	2	1	28	5	4	2	4	4	4	4	5	4	1
271.0	16745.	3582	2	4	21	5	5	2	4	5	4	5	4	5	3
272.0	18961.	2328	2	2	26	5	3	2	5	5	3	3	5	5	1
273.0	7108.	148	1	2	21	3	2	1	4	4	1	0	3	2	1
274.0	16907.	3433	2	3	26	5	4	2	4	5	3	3	3	4	2
275.0	14618.	4525	4	4	22	4	4	2	3	4	3	3	3	3	2
276.0	8352.	1893	3	2	20	2	1	1	3	4	1	0	2	2	1
277.0	5938.	824	1	1	21	3	2	1	3	4	2	3	2	3	1
278.0	9847.	1526	2	2	23	4	3	2	5	3	3	4	3	4	2
279.0	7637.	3642	3	1	20	3	3	2	3	4	3	5	3	3	4

* VCU NUMBER	NATIONAL FOREST ACRES	OPERABLE CFL AC	TIM RTG	MIN RTG	WILD ATT	PRIM REC	SEMI PRIM REC	CON REC	SPORT FISH	COMM FISH	WILDLF VALUE	EST SENS	SCEN ECO DIV	SUPP W VALUE	WILDLF USE
***															
* 280.0	17612.	3072	3	1	22	4	3	2	4	5	2	5	3	3	3
* 281.0	20785.	4472	3	3	20	4	4	2	4	5	3	4	3	4	4
* 282.0	15641.	4575	3	1	18	3	3	1	3	5	3	5	2	3	4
* 283.0	30689.	4802	2	1	22	4	3	2	3	5	3	4	3	3	4
* 284.0	11823.	2166	2	1	24	4	3	2	4	5	4	4	3	4	4
* 285.0	5035.	2832	3	0	22	4	4	2	3	4	3	4	4	4	5
* 286.0	5847.	2314	3	0	19	3	2	1	2	2	3	4	1	1	2
* 287.0	41544.	6407	3	3	19	4	4	2	4	5	5	4	4	5	5
* 288.0	6964.	1485	2	1	19	2	2	1	3	3	3	5	2	2	4
* 289.0	7754.	2645	3	1	14	2	2	1	3	3	3	3	2	2	2
* 290.0	5799.	1300	3	1	19	3	3	2	3	3	3	4	2	2	2
* 291.0	11436.	4605	4	1	0	1	2	2	3	4	4	3	1	3	2
* 292.0	24802.	6820	3	3	0	4	3	2	4	5	5	4	4	5	4
* 293.0	13764.	4688	4	1	0	3	3	2	3	4	4	5	4	4	5
* 294.0	23845.	5193	3	1	21	4	3	2	4	5	4	4	4	5	5
* 295.0	12100.	3025	3	1	23	5	3	2	5	5	4	5	4	5	3
* 296.0	16136.	6441	4	1	20	2	2	1	3	4	4	5	1	3	4
* 297.0	15712.	9606	4	0	21	3	3	2	3	4	3	5	3	3	2
* 298.0	28370.	5378	2	1	23	4	2	2	3	4	4	3	4	4	3
* 299.0	23211.	2314	2	1	21	4	4	2	5	5	4	3	4	5	5
* 300.0	19575.	4517	3	1	0	4	4	1	3	5	4	4	4	4	5
* 301.0	5702.	1866	3	2	0	2	1	1	3	3	4	3	1	2	5
* 302.0	21367.	8357	4	3	18	3	4	2	3	3	3	5	3	3	4
* 303.0	18333.	6146	4	3	0	4	3	2	3	4	3	4	3	3	5
* 304.0	3385.	1338	3	0	18	3	1	1	3	4	2	5	2	2	4
* 305.0	9317.	2626	3	1	26	5	4	2	4	4	4	5	5	5	4
* 306.0	6962.	3254	4	0	20	2	2	1	2	2	2	4	3	2	3
* 307.0	16041.	11221	5	0	0	2	2	1	3	3	4	4	0	3	5
* 308.0	32822.	8688	3	1	24	4	4	2	3	5	4	4	4	4	4
* 309.0	9033.	4901	5	1	21	4	4	2	5	4	3	5	3	4	4
* 310.0	5112.	2672	4	0	16	2	2	2	2	2	2	4	4	2	3
* 311.0	13747.	4204	4	3	0	1	2	5	5	4	2	5	4	3	3
* 312.0	9829.	1135	2	1	0	2	3	2	4	5	4	3	3	3	5
* 313.0	30073.	4201	2	2	25	3	4	2	5	5	4	3	4	5	4
* 314.0	34936.	1384	1	2	24	4	3	2	3	5	4	3	4	4	4
* 315.0	8366.	5003	5	0	0	3	3	2	3	4	3	5	3	3	2
* 316.0	12563.	0	0	2	24	4	2	2	2	2	4	4	4	3	2
* 317.0	14161.	321	1	2	26	4	3	2	2	2	3	3	5	3	2
* 318.0	25374.	248	1	3	21	2	2	1	4	3	4	4	4	4	3
* 319.0	5020.	1757	3	3	0	2	1	1	3	3	3	5	2	2	4
* 320.0	7611.	3119	4	1	17	3	4	2	3	4	3	5	3	3	4
* 321.0	9045.	3479	4	1	0	1	2	1	3	5	3	3	2	2	3
* 322.0	7619.	1935	3	1	19	2	2	2	2	2	3	1	2	1	3
* 323.0	7545.	3091	4	3	23	3	3	2	5	5	2	0	3	3	2
* 324.0	18445.	460	1	4	17	4	4	2	5	5	3	4	4	4	4
* 325.0	3761.	0	1	2	19	3	2	2	2	2	3	4	5	3	2

VCU MATRIX SUMMARY
05/17/1978

VCU NUMBER	NATIONAL FOREST ACRES	OPERABLE CEL AC	TIM RTG	MIN RTG	WILD ATT	PRIM REC	SEMI PRIM REC	CON REC	SPORT FISH	COMM FISH	WILDLF VALUE	EST SENS	SCEN ECO DIV	SUBP # VALUE	WILDLF USE
***															
326.0	27652.	460	1	2	24	4	4	3	5	4	4	3	3	4	2
327.0	22298.	0	0	2	28	4	2	2	2	2	3	4	5	3	2
328.0	19907.	0	0	2	19	4	4	2	3	4	3	4	5	3	2
329.0	31728.	2123	1	3	28	3	3	2	3	3	3	4	5	4	2
330.0	6124.	0	0	2	24	4	2	2	4	3	3	2	5	4	2
331.0	9884.	0	0	2	25	4	2	2	2	2	3	2	5	3	2
332.0	23157.	340	1	2	28	5	4	2	5	4	3	3	5	5	2
333.0	17048.	0	0	2	25	5	3	2	4	4	3	3	4	4	3
334.0	11075.	68	1	2	25	4	2	2	3	4	2	3	5	2	1
335.0	8067.	529	1	2	25	4	2	2	5	3	3	3	3	3	1
336.0	10469.	399	1	2	25	4	2	2	4	4	2	5	3	2	2
337.0	11984.	1008	2	2	27	5	4	2	4	5	2	4	4	2	3
338.0	9485.	517	2	2	25	3	1	1	2	2	2	3	2	1	3
339.0	13257.	1320	1	1	23	4	2	2	2	2	2	5	4	2	3
340.0	7370.	259	1	2	22	3	1	1	2	2	2	4	3	1	2
341.0	22880.	717	1	2	26	5	3	2	3	5	2	3	5	4	2
342.0	13199.	1008	2	2	28	5	4	2	4	5	2	4	5	4	2
343.0	11454.	419	1	3	25	4	2	2	3	4	2	3	4	2	2
344.0	30574.	930	1	2	28	5	5	2	5	5	3	5	5	5	2
345.0	16847.	1615	2	3	26	4	3	2	5	4	2	5	2	2	2
346.0	70352.	3845	2	2	28	5	5	2	3	5	4	4	5	5	3
347.0	40359.	2857	1	2	27	5	3	2	4	5	2	3	5	4	3
348.0	55580.	2123	2	2	26	5	3	2	4	4	2	4	5	4	4
349.0	9037.	571	1	1	23	3	2	2	4	3	3	4	2	1	3
350.0	22732.	2046	2	1	23	4	3	2	5	5	3	5	3	2	4
351.0	8442.	1432	2	0	25	4	5	2	2	2	4	5	5	3	2
352.0	50070.	0	0	1	25	3	3	1	2	2	2	4	5	3	2
353.0	39045.	0	0	0	26	3	3	2	2	2	2	4	5	3	2
354.0	30330.	0	0	0	25	3	1	1	2	2	2	0	5	3	1
355.0	30731.	3862	1	1	25	3	2	1	2	2	3	3	4	3	1
356.0	57344.	1300	1	0	26	5	4	2	2	2	4	4	5	4	2
357.0	16241.	0	0	0	25	3	2	1	2	2	2	4	4	3	2
358.0	8190.	0	0	1	23	3	2	1	2	2	2	4	3	2	2
359.0	9025.	0	0	1	22	3	2	1	2	2	2	5	3	2	2
360.0	14260.	77	1	1	22	3	2	1	2	2	3	5	3	3	2
361.0	10513.	3842	3	0	28	3	3	2	2	2	4	5	3	3	3
362.0	1436.	882	5	3	21	2	3	2	5	5	4	0	1	2	2
364.0	4632.	4129	5	3	21	3	2	2	5	5	4	0	2	3	2
365.0	9866.	8769	5	3	24	4	4	2	5	5	3	4	3	3	1
366.0	12477.	5169	4	2	22	4	5	3	5	5	5	5	4	5	4
367.0	11116.	3131	3	2	18	1	3	2	4	5	4	4	3	3	5
368.0	1388.	1021	3	3	22	3	4	2	2	2	4	5	5	3	3
370.0	2267.	972	2	0	0	3	3	3	5	5	3	5	4	3	2
371.0	7165.	0	0	1	23	5	5	2	5	5	4	5	4	3	3
372.0	63338.	2610	1	2	20	2	2	2	5	5	4	0	3	3	3
373.0	14033.	11348	5	2	18	1	1	2	5	5	3	0	1	1	2

VCU MATRIX SUMMARY
05/17/1978

VCU NUMBER	NATIONAL FOREST ACRES	OPERABLE CFL AC	TIM RTG	MIN RTG	WILD ATT	PRIM REC	SEMI PRIM REC	CON REC	SPORT FISH	COMM FISH	WILDLF VALUE	EST SENS	SCEN ECO DIV	SUPP W VALUE	WILDLF USE
374.0	19637.	4150	2	1	23	4	3	2	5	5	4	0	4	5	2
375.0	9678.	5057	4	1	18	3	3	2	5	5	4	0	4	5	2
376.0	3815.	1186	2	1	20	3	2	2	5	5	3	0	4	3	2
377.0	7074.	1667	2	0	21	3	3	2	4	4	4	5	4	3	3
378.0	2750.	2030	3	0	21	3	2	2	5	5	4	0	4	4	3
379.0	40655.	16119	4	2	23	3	3	2	5	5	4	0	3	3	2
380.0	5051.	177	1	1	24	5	5	3	5	5	5	5	5	5	3
381.0	5051.	2204	3	1	24	5	5	2	5	5	4	5	5	5	3
382.0	27391.	9518	3	2	25	4	3	2	5	5	4	0	5	5	2
383.0	4166.	472	1	1	22	2	2	1	2	2	3	0	2	2	1
384.0	8890.	784	1	0	26	4	3	2	5	5	3	0	3	4	2
385.0	18229.	1215	1	1	26	4	3	2	5	5	3	0	5	5	1
386.0	7352.	6676	5	1	23	3	1	2	5	5	3	0	3	3	1
387.0	12800.	4468	2	1	24	3	2	2	5	5	4	0	4	4	3
388.0	6901.	5156	5	1	21	3	1	1	3	5	3	0	1	1	1
389.0	26667.	10470	2	2	24	4	3	2	5	5	4	0	5	5	3
390.0	5138.	0	0	0	24	3	2	1	3	5	3	0	3	3	1
391.0	17735.	87	1	1	25	4	2	2	3	5	3	0	4	4	1
392.0	13664.	0	0	1	26	4	4	2	5	5	3	0	5	5	1
393.0	10771.	0	0	1	24	4	3	2	5	5	4	0	3	4	2
394.0	10460.	0	0	1	24	3	3	2	5	5	3	0	3	4	2
395.0	11030.	1460	1	1	16	3	3	2	5	5	5	5	3	5	4
396.0	29896.	25651	1	2	23	3	2	2	5	5	4	0	3	4	3
397.0	4799.	1129	1	0	22	5	4	3	5	5	4	5	4	5	3
398.0	11061.	3683	2	3	23	5	5	2	2	2	4	2	3	4	3
399.0	23987.	10630	4	1	21	3	4	1	4	5	3	4	3	4	1
400.0	28040.	14983	4	1	26	5	5	2	3	5	4	5	3	4	2
401.0	13863.	2714	2	1	24	2	2	1	2	2	3	4	2	3	1
402.0	31392.	11982	4	1	21	1	3	1	4	5	4	5	2	4	1
403.0	28227.	10376	4	1	23	5	5	2	4	5	4	4	4	4	2
404.0	8805.	2620	3	0	23	2	3	1	2	2	4	5	1	1	1
405.0	23027.	5851	3	1	27	5	5	2	5	5	3	5	4	5	3
406.0	7232.	4269	4	0	26	4	5	2	3	3	3	5	3	3	2
407.0	25464.	9278	4	0	27	5	5	2	3	4	4	5	4	5	3
408.0	18170.	5933	3	3	27	5	4	2	3	3	3	4	4	4	1
409.0	18231.	3881	3	1	27	5	4	2	3	5	3	5	4	4	3
410.0	12829.	503	3	0	23	2	3	1	2	2	3	4	2	2	1
411.0	15315.	2467	3	0	27	5	5	2	3	4	3	4	2	3	3
412.0	8906.	710	2	0	22	2	2	1	2	2	3	5	1	1	1
413.0	8891.	416	2	0	21	2	1	1	2	2	3	2	1	1	1
414.0	16191.	4251	4	3	22	2	2	1	2	2	4	4	1	2	1
415.0	24251.	5312	3	1	27	5	5	2	4	4	3	4	4	4	1
416.0	17989.	5327	3	0	21	4	4	2	3	4	3	5	2	3	1
417.0	12535.	4523	3	0	20	4	2	1	3	4	3	5	2	3	1
418.0	10766.	3201	3	0	24	4	4	2	3	4	3	5	3	3	2
419.0	19444.	5245	3	0	22	4	4	1	4	5	3	5	2	3	2

C10

VCU MATRIX SUMMARY
05/17/1978

* VCU NUMBER	NATIONAL FOREST ACRES	OPERABLE CFL AC	TIM RTG	MIN RTG	WILD ATT	PRIM REC	SEMI PRIM REC	CON REC	SPORT FISH	COMM FISH	WILDLF VALUE	EST SENS	SCEN ECO DIV	SUPP W VALUE	WILDLF USE
***															
* 420.0	33955.	9855	4	2	24	5	5	2	3	5	4	4	3	4	3
* 421.0	33612.	14640	4	1	22	3	3	1	5	5	3	5	1	3	3
* 422.0	15239.	5747	3	0	22	2	3	2	4	5	3	2	1	2	3
* 423.0	6702.	3709	4	3	0	1	1	1	4	4	3	0	1	2	1
* 424.0	57132.	5609	2	1	22	2	2	2	5	5	3	2	1	3	3
* 425.0	34791.	14208	4	0	14	1	2	2	5	5	3	5	1	3	3
* 426.0	42195.	8073	2	0	23	2	2	2	5	5	2	0	1	2	1
* 427.0	32743.	6513	2	0	26	5	5	2	4	5	4	5	2	4	3
* 428.0	49555.	11882	3	0	25	4	5	2	5	5	3	5	2	4	3
* 429.0	53531.	7735	2	1	24	2	2	1	5	5	1	0	1	2	1
* 430.0	14544.	1385	2	0	22	3	3	2	4	4	4	5	1	3	3
* 431.0	22238.	3538	2	0	21	3	3	1	5	5	4	2	1	4	3
* 432.0	43213.	3522	1	1	23	3	3	1	4	5	4	5	1	3	1
* 433.0	14091.	2944	2	0	18	1	2	1	2	2	4	5	1	2	1
* 434.0	22484.	4486	2	1	21	3	4	1	5	5	3	5	1	3	3
* 435.0	32814.	6356	3	5	19	3	4	1	5	5	4	5	1	4	3
* 436.0	21031.	5787	3	0	21	1	1	1	5	5	1	0	1	2	1
* 437.0	23774.	9149	4	2	22	4	2	2	4	4	3	5	1	2	3
* 438.0	27620.	3713	2	1	24	3	2	1	2	2	4	5	1	2	3
* 439.0	14528.	4222	4	1	18	2	1	1	2	2	3	5	3	2	3
* 440.0	25965.	3570	2	3	25	4	3	2	5	5	4	5	1	4	3
* 441.0	22684.	6843	3	3	24	5	4	2	5	5	4	5	3	5	3
* 442.0	11269.	3829	4	0	23	4	4	2	3	4	3	5	2	4	3
* 443.0	11743.	3404	4	1	21	2	2	1	2	2	3	2	3	2	3
* 444.0	24250.	7224	3	1	24	4	3	2	3	4	4	2	4	4	3
* 445.0	27277.	6635	2	3	23	4	4	2	5	5	3	5	4	4	3
* 446.0	11208.	2807	4	0	22	3	3	2	2	2	3	2	3	2	3
* 447.0	40303.	12540	4	3	20	1	4	4	4	4	4	2	4	4	3
* 448.0	20944.	8223	4	4	24	5	5	2	4	3	4	5	2	3	3
* 449.0	6835.	2492	4	1	20	1	1	1	2	2	3	2	1	1	3
* 450.0	19187.	8233	4	3	0	1	1	1	4	5	3	2	1	2	3
* 451.0	10219.	3001	4	1	0	1	1	2	4	5	3	2	4	4	3
* 452.0	30655.	10102	4	1	20	1	3	3	4	4	4	5	2	3	3
* 453.0	8589.	3423	4	0	0	2	2	2	5	2	3	5	1	2	3
* 454.0	11033.	4445	4	1	0	1	2	1	2	2	4	2	1	2	3
* 455.0	8437.	7006	5	0	17	1	2	1	1	1	3	5	2	1	3
* 456.0	16972.	8597	5	1	0	1	1	1	2	2	3	4	1	1	1
* 457.0	26151.	11071	3	0	0	1	2	1	2	2	4	5	1	2	2
* 458.0	31584.	11629	3	1	13	2	2	1	2	2	4	2	1	2	1
* 459.0	42476.	10863	3	2	13	1	2	1	3	3	3	5	1	2	1
* 460.0	11422.	7840	3	1	16	3	4	1	1	1	3	2	2	1	1
* 461.0	14532.	3407	3	3	12	1	2	1	1	1	3	4	2	1	3
* 462.0	16915.	5568	4	1	19	2	2	1	2	2	4	2	2	2	3
* 463.0	10215.	2398	3	1	24	4	3	2	4	4	4	2	4	4	3
* 464.0	18847.	5303	4	1	23	4	4	1	3	4	4	3	4	4	3
* 465.0	9245.	4281	5	1	21	2	2	1	2	2	3	3	1	1	1

C 11

VCU NUMBER	NATIONAL FOREST ACRES	OPERABLE CFL AC	TIM RTG	MIN RTG	WILD ATT	PRIM REC	SEMI PRIM REC	CON REC	SPORT FISH	COMM FISH	WILDLF VALUE	EST SENS	SCEN ECO DIV	SUPP W VALUE	WILDLF USE
466.0	17323.	5813	2	2	25	4	5	2	4	4	3	4	5	4	2
467.0	25573.	9138	4	1	26	5	5	2	3	5	4	4	5	5	2
468.0	22406.	5962	3	1	24	5	5	2	3	5	4	4	5	5	1
469.0	12031.	3120	3	1	22	3	3	2	5	5	3	5	5	5	2
470.0	9859.	4555	4	1	20	1	2	1	2	2	3	5	1	1	1
471.0	19049.	5772	3	1	23	4	3	2	3	4	3	3	4	4	2
472.0	23333.	6908	4	3	27	5	5	2	4	5	3	4	5	5	1
473.0	29062.	12561	4	3	26	5	4	2	4	4	4	5	3	4	3
474.0	20020.	4450	3	3	20	4	4	2	3	4	4	3	5	5	2
475.0	9117.	1359	2	1	19	1	2	4	2	2	3	5	1	1	3
476.0	7689.	1295	2	1	21	2	3	1	2	2	4	2	1	2	2
477.0	12449.	4065	4	2	18	1	2	3	3	4	4	2	1	2	3
478.0	24240.	6825	4	1	22	2	2	1	2	2	4	2	2	2	1
479.0	21141.	7664	4	3	23	4	5	3	5	5	3	5	3	4	3
480.0	30963.	4441	2	3	24	3	3	2	4	4	3	4	1	2	1
481.0	12249.	0	0	1	23	2	1	1	0	0	2	0	4	2	1
482.0	14214.	209	1	1	23	4	2	2	1	1	4	4	5	3	3
483.0	10829.	1152	2	1	22	3	3	2	4	5	4	2	1	3	1
484.0	11782.	553	1	1	21	4	4	2	2	2	4	4	2	2	3
485.0	17928.	125	1	1	21	4	4	2	2	2	4	4	5	4	2
486.0	14099.	707	2	1	21	4	3	1	1	1	3	4	5	3	1
487.0	20227.	4436	3	1	22	4	4	2	2	2	5	4	4	4	3
488.0	17593.	56	1	1	22	2	1	1	1	1	0	5	2	0	0
489.0	39431.	7883	3	1	22	3	4	2	5	5	5	5	1	4	3
490.0	9815.	1098	2	1	19	2	2	1	2	2	4	2	1	2	3
491.0	55315.	0	0	1	24	3	4	2	2	2	5	4	5	4	3
492.0	23052.	0	0	1	23	4	4	2	3	4	5	5	3	4	3
493.0	26403.	0	0	1	22	4	5	2	4	5	5	0	5	5	3
494.0	22985.	0	0	1	24	4	3	2	4	2	4	0	5	5	3
495.0	49896.	0	0	1	28	5	5	3	5	5	5	0	5	5	3
496.0	11563.	0	0	1	22	3	3	1	1	1	5	4	2	3	3
497.0	15066.	301	3	4	22	3	4	2	2	2	5	5	3	4	3
498.0	29293.	0	0	1	23	4	3	2	4	5	4	0	3	4	1
499.0	10938.	0	0	1	20	3	2	2	4	2	3	0	3	3	1
500.0	21159.	0	0	1	21	2	2	1	4	5	3	0	3	4	1
501.0	25639.	3844	2	3	22	3	4	2	4	4	5	2	2	4	1
502.0	29601.	467	2	4	18	3	3	1	5	2	2	2	3	2	2
503.0	46005.	2131	3	4	26	4	4	2	4	5	4	2	5	5	2
504.0	14128.	4196	3	3	21	2	3	1	2	2	4	3	1	2	2
505.0	26021.	5352	3	1	22	3	3	2	2	2	4	4	4	3	1
506.0	20496.	0	0	2	21	2	1	1	4	5	1	0	2	2	1
507.0	128736.	0	0	2	24	3	1	1	2	2	2	0	5	3	1
508.0	13110.	0	0	2	21	2	1	1	2	2	2	0	2	2	1
509.0	14030.	610	1	1	23	4	3	2	5	4	4	4	2	4	1
510.0	26918.	1955	2	3	22	3	3	2	5	5	3	4	2	3	1
511.0	45303.	2039	2	1	23	4	3	2	4	5	4	4	5	5	1

VCU MATRIX SUMMARY
05/17/1978

VCU NUMBER	NATIONAL FOREST ACRES	OPERABLE CFL AC	TIM RTG	MIN RTG	WILD ATT	PRIM REC	SEMI PRIM REC	CON REC	SPORT FISH	COMM FISH	WILDLF VALUE	EST SENS	SCEN ECO DIV	SUPP W VALUE	WILDLF USE
512.0	31786.	0	0	4	24	3	2	1	1	1	3	4	4	3	2
513.0	40171.	142	1	1	23	3	2	2	4	5	2	0	4	4	1
514.0	30063.	4486	3	1	20	2	2	1	4	5	4	4	4	4	2
515.0	42494.	927	1	2	23	2	2	1	4	5	2	0	4	4	1
516.0	55743.	345	1	2	24	3	2	2	4	5	2	0	4	4	1
517.0	23482.	2407	2	1	20	2	2	1	4	5	4	4	3	4	2
518.0	15087.	138	1	1	22	3	2	1	1	1	3	4	3	2	2
519.0	43783.	213	1	1	26	5	4	2	5	5	4	4	4	5	1
520.0	18417.	1419	2	1	21	3	2	1	2	2	4	4	1	2	1
521.0	7514.	673	2	1	22	3	2	1	2	2	3	4	1	2	1
522.0	37331.	739	1	1	26	5	5	3	5	5	4	4	4	5	3
523.0	5389.	79	1	1	20	2	2	1	1	1	3	2	1	1	1
524.0	18185.	2469	2	1	23	4	3	2	2	2	4	2	2	2	1
525.0	9983.	2787	2	4	22	3	3	2	1	1	3	2	2	1	2
526.0	17909.	2544	2	1	23	4	4	1	2	2	3	2	2	2	1
527.0	6257.	6257	5	1	0	3	4	2	2	2	4	4	3	3	3
528.0	9232.	6364	5	1	22	3	2	2	3	5	4	5	2	4	2
529.0	15451.	12602	5	1	20	1	1	1	2	2	2	5	2	1	2
530.0	10434.	6243	5	1	20	1	1	1	2	2	2	5	2	1	2
531.0	29599.	14470	5	4	0	4	5	2	3	5	4	5	2	3	2
532.0	15145.	9070	5	1	0	4	5	2	5	4	4	5	2	4	2
533.0	13265.	5732	3	1	23	4	5	2	5	4	1	0	3	3	2
534.0	23649.	11318	4	2	23	4	5	2	5	5	4	5	2	4	3
535.0	6837.	2991	3	2	0	1	2	1	2	2	4	5	1	2	2
536.0	15202.	7504	3	4	0	2	3	1	4	4	4	5	2	4	3
537.0	12524.	6293	5	3	0	1	2	1	2	2	3	4	1	1	2
538.0	10483.	7696	5	1	0	2	3	1	5	5	4	4	1	4	3
539.0	8763.	6503	5	1	0	3	4	2	4	4	4	5	2	4	3
540.0	5055.	3431	3	1	0	3	3	2	3	4	3	5	1	2	2
541.0	16284.	5248	4	1	24	5	4	2	4	4	4	3	3	4	2
542.0	7319.	2215	2	3	0	3	3	1	3	4	3	4	2	3	2
543.0	16009.	12620	5	1	0	1	2	1	5	5	3	2	1	3	2
544.0	7080.	6542	5	1	0	1	2	2	2	2	4	5	1	2	3
545.0	6757.	4681	4	1	0	3	3	2	3	4	4	5	1	3	2
546.0	11177.	9396	4	4	0	4	4	2	4	5	4	4	1	3	3
547.0	6350.	2996	4	1	23	4	4	2	3	5	4	4	1	3	2
548.0	9652.	4048	4	3	24	5	5	2	3	5	4	4	3	4	2
549.0	11960.	5128	4	1	21	3	3	1	3	4	3	4	2	2	2
550.0	9703.	6764	5	1	0	2	2	1	2	2	2	0	1	1	3
551.0	13050.	5988	4	1	24	5	4	2	2	2	4	4	2	4	3
552.0	9503.	6940	5	1	24	5	5	2	5	5	4	4	2	5	3
553.0	7474.	3597	2	1	19	1	1	1	2	2	1	0	1	1	2
554.0	32438.	17270	4	3	23	5	5	2	5	5	4	4	2	4	2
555.0	13948.	10258	5	4	0	4	4	1	2	2	4	4	2	2	2
556.0	6595.	5718	5	3	0	4	4	1	2	2	3	5	2	2	2
557.0	8614.	8073	5	1	0	3	3	1	2	2	3	5	1	1	2

VCU MATRIX SUMMARY
05/17/1978

VCU NUMBER	NATIONAL FOREST ACRES	OPERABLE CFL AC	TIM RTG	MIN RTG	WILD OFF	PRIM REC	SEMI PRIM REC	CON REC	SPORT FISH	COMM FISH	WILDLF VALUE	EST SENS	SCEN ECO DIV	SUPR W VALUE	WILDLF USE
556.0	5018.	4796	5	3	0	3	4	1	2	2	3	4	1	1	2
559.0	6372.	4720	5	1	0	3	4	1	3	4	3	3	1	2	2
560.0	5975.	5045	5	3	0	2	3	1	4	5	3	2	1	3	2
561.0	12359.	9464	5	3	0	3	4	1	4	5	4	3	1	3	4
562.0	10608.	8090	5	1	22	3	2	1	2	2	3	4	2	2	2
563.0	4531.	2077	3	1	23	3	2	2	2	2	4	2	1	2	2
564.0	19122.	3526	2	4	22	4	2	1	1	1	3	2	4	2	1
565.0	11353.	0	2	1	23	4	3	2	3	3	4	5	3	2	2
566.0	4424.	354	3	1	21	3	3	1	1	1	3	4	3	2	3
567.0	24651.	10590	3	4	22	3	3	2	1	1	4	4	3	2	2
568.0	18517.	1925	2	2	25	4	3	2	3	4	4	2	1	4	3
569.0	31946.	8335	3	4	25	4	5	2	3	4	4	4	4	4	2
570.0	5166.	4139	5	3	0	1	2	1	2	2	3	3	1	1	3
571.0	18690.	13965	5	1	0	2	3	2	5	5	4	4	1	4	3
572.0	10349.	7510	5	1	0	2	3	2	5	5	4	5	1	4	3
573.0	23743.	17440	5	3	0	5	3	2	5	5	3	0	3	4	3
574.0	27324.	17731	5	1	22	3	2	2	5	5	2	0	2	4	2
575.0	18005.	10335	5	1	23	4	2	2	5	5	2	0	3	4	2
576.0	15348.	5678	4	0	21	2	1	1	5	5	1	0	2	2	3
577.0	28874.	17310	5	0	21	1	1	2	4	4	2	0	1	2	3
578.0	6612.	5562	5	0	20	2	1	2	5	5	2	0	2	3	3
579.0	10821.	5322	5	1	0	1	1	1	5	5	1	0	1	2	2
580.0	15482.	7207	4	1	0	4	2	2	5	5	1	0	2	2	3
581.0	19826.	11275	5	1	0	4	2	2	5	5	3	2	1	3	2
582.0	4110.	2239	3	1	20	1	1	1	1	1	3	2	1	1	2
583.0	12392.	7210	5	1	0	3	4	2	4	5	4	4	2	4	3
584.0	14252.	8919	5	1	0	3	1	1	2	2	3	5	1	1	2
585.0	10796.	7111	5	3	0	1	1	2	2	2	3	5	1	1	3
586.0	13499.	11768	5	2	0	4	5	4	5	5	4	4	1	4	4
587.0	12129.	9793	5	1	0	3	4	2	5	2	5	5	2	4	3
588.0	26111.	17397	5	0	0	1	1	2	5	5	2	0	1	2	3
589.0	20245.	9815	4	1	0	2	2	1	2	2	4	5	2	2	2
590.0	13912.	8778	4	1	0	1	1	1	5	5	1	0	1	2	3
591.0	8662.	4228	4	0	0	4	4	2	3	5	3	4	2	3	3
592.0	14454.	4481	3	0	24	4	4	2	3	5	4	5	3	4	3
593.0	16590.	1072	2	1	25	5	4	2	3	5	4	4	2	4	3
594.0	22652.	6230	4	1	24	5	3	2	2	4	4	4	2	3	2
595.0	20102.	8309	4	3	21	2	1	1	4	5	1	0	1	1	3
596.0	12735.	5965	4	2	21	2	1	2	5	5	2	0	2	3	3
597.0	24927.	12610	4	4	21	2	1	2	5	5	2	0	1	2	3
598.0	12645.	8783	5	5	0	3	4	3	3	4	4	4	2	3	4
599.0	1628.	1422	1	3	0	2	2	2	2	2	4	3	1	2	3
600.0	186.	180	1	3	0	3	2	1	2	2	3	5	1	1	2
601.0	338.	338	2	3	0	2	3	2	2	2	4	4	1	2	4
602.0	4691.	1501	3	3	22	3	2	2	2	2	3	2	1	1	2
603.0	744.	365	1	1	0	3	2	1	1	1	4	2	1	1	3

VCU MATRIX SUMMARY
05/17/1978

VCU NUMBER	NATIONAL FOREST ACRES	OPERABLE CFL AC	TIM RTG	MIN RTG	WILD ATT	PRIM REC	SEMI PRIM REC	CON REC	SPORT FISH	COMM FISH	WILDLF VALUE	EST SENS	SCEN ECO DIV	SUPP W VALUE	WILDLF USE
604.0	2863.	441	1	3	21	3	2	1	1	1	3	2	2	1	3
605.0	5544.	2602	4	1	21	2	1	1	5	5	1	0	1	2	2
606.0	12133.	5956	3	3	22	3	2	2	5	5	2	0	3	3	2
607.0	14850.	6461	4	4	23	4	4	2	5	5	4	4	2	4	4
608.0	6144.	3266	4	3	21	2	1	1	5	5	1	0	2	2	1
609.0	7090.	951	1	3	0	1	2	2	5	1	2	0	4	1	2
610.0	9995.	3829	4	4	0	1	2	2	4	5	2	5	1	2	3
611.0	6754.	2563	3	3	0	2	2	2	2	2	3	3	1	1	4
612.0	6061.	2310	2	3	0	3	3	2	3	4	3	4	1	2	4
613.0	17175.	5666	3	1	21	2	2	1	3	5	2	0	1	2	2
614.0	7261.	2437	3	1	22	3	3	2	3	4	3	4	2	2	3
615.0	9638.	2347	2	3	24	4	3	2	3	4	4	4	2	3	3
616.0	5992.	1966	2	1	23	3	2	1	2	2	3	2	2	2	3
617.0	13997.	1414	2	1	22	3	2	2	3	4	3	4	2	2	3
618.0	17249.	6503	4	3	23	3	4	2	3	5	4	3	2	5	3
619.0	9620.	4623	4	1	23	4	4	2	3	4	4	4	2	3	3
620.0	23068.	10958	4	2	22	3	3	2	3	5	4	4	2	3	3
621.0	23344.	11502	4	3	0	3	3	1	4	5	4	3	1	3	4
622.0	23244.	8903	4	4	0	3	2	1	4	5	3	5	1	2	4
623.0	8713.	2584	3	1	22	3	2	2	4	5	2	0	2	2	3
624.0	19465.	8212	4	3	22	3	2	1	4	5	4	5	1	3	3
625.0	15026.	3086	2	4	23	4	4	2	3	5	4	3	2	0	4
626.0	6489.	877	1	0	22	4	4	2	3	4	4	5	2	3	4
627.0	4687.	727	2	0	23	3	3	2	2	2	4	4	2	2	4
628.0	10514.	1397	2	0	0	4	3	2	3	4	4	2	2	3	4
630.0	2739.	793	1	1	23	3	3	4	3	3	4	5	2	0	4
631.0	16721.	2994	2	1	24	3	3	2	3	4	4	4	2	3	3
632.0	28268.	12804	4	1	23	4	4	2	3	4	4	4	2	3	3
633.0	3465.	1397	1	0	23	3	2	1	2	2	3	2	1	1	4
634.0	11624.	6167	5	0	24	3	3	2	3	3	3	4	4	2	2
635.0	9119.	4431	4	0	22	3	3	2	3	5	3	4	2	3	4
636.0	8616.	3780	3	0	22	3	2	1	2	2	3	4	4	2	1
637.0	5117.	1659	2	3	22	3	3	2	2	2	4	2	2	2	2
638.0	2834.	1519	3	3	22	3	2	1	2	2	4	2	1	2	2
639.0	6756.	2943	3	3	22	3	3	1	2	2	3	4	2	2	1
640.0	4827.	2750	2	3	21	3	3	2	3	4	3	3	3	3	1
641.0	3232.	1109	2	3	23	3	3	2	2	2	3	4	3	2	1
642.0	5411.	451	1	3	22	4	4	2	4	4	3	3	3	3	1
643.0	3031.	222	1	3	0	4	3	2	3	3	3	5	3	3	1
644.0	1766.	321	2	3	0	3	2	1	2	2	3	4	3	0	1
645.0	4194.	2094	2	4	23	5	4	2	3	4	4	4	3	0	3
646.0	4337.	2450	3	3	22	4	3	2	4	4	3	5	3	3	1
647.0	3193.	2437	2	3	22	3	2	2	2	2	3	5	3	2	1
648.0	7734.	3576	3	4	0	3	2	1	1	1	3	3	4	2	1
649.0	366.	270	1	0	0	2	1	1	2	2	3	2	1	0	2
650.0	715.	584	1	0	22	3	3	1	3	4	3	3	1	0	2

VCU MATRIX SUMMARY
05/17/1976

VCU NUMBER	NATIONAL FOREST ACRES	OPERABLE CFL AC	TIM RTG	MIN RTG	WILD ATT	PRIM REC	SEMI PRIM REC	CON REC	SPORT FISH	COMM FISH	WILDLF VALUE	EST SENS	SCEN ECO DIV	SUPP W VALUE	WILDLF USE
651.0	5197.	2482	3	0	0	3	2	1	1	1	3	3	4	2	1
653.0	4859.	2253	2	1	0	3	2	2	2	2	3	4	3	2	1
654.0	223.	197	1	1	22	3	2	2	4	4	3	4	1	0	2
655.0	1286.	600	1	0	0	3	2	1	1	1	2	5	4	1	1
656.0	4345.	2960	3	1	0	4	3	2	3	3	3	4	3	0	1
659.0	11175.	4165	3	0	22	4	3	2	5	4	3	5	3	4	2
660.0	3798.	2041	3	0	22	3	2	1	2	2	3	4	2	2	2
661.0	2654.	682	1	0	22	3	2	1	2	2	2	3	2	1	1
662.0	3342.	844	2	0	23	3	2	1	2	2	3	5	2	2	2
663.0	3954.	2019	3	1	20	4	3	2	3	4	3	3	2	2	2
664.0	3293.	347	2	2	22	3	2	2	2	2	2	3	3	2	1
665.0	2589.	585	2	2	22	3	2	1	2	2	2	3	3	2	1
666.0	3459.	1729	3	4	21	3	3	2	3	4	3	5	2	2	2
667.0	1476.	0	0	0	22	3	2	1	1	1	3	2	4	2	1
668.0	5856.	1217	2	3	0	3	3	1	2	2	3	5	2	2	2
670.0	16478.	4820	3	2	23	4	3	2	2	2	4	4	3	3	2
671.0	14026.	2935	3	2	22	4	4	2	3	4	4	4	3	4	2
672.0	9987.	3935	3	3	26	4	4	2	5	4	3	4	2	3	3
673.0	5394.	869	1	4	26	5	4	2	5	5	4	3	3	4	3
674.0	23738.	8607	4	3	25	4	3	2	3	5	4	5	2	2	3
675.0	6967.	2257	3	2	24	3	3	2	3	5	4	3	1	2	3
676.0	5700.	2033	1	1	23	3	2	1	2	2	3	3	2	2	3
677.0	9217.	4985	5	1	25	4	3	2	3	4	4	3	2	2	4
678.0	15371.	6263	4	3	23	3	3	2	3	5	3	3	2	2	3
679.0	16720.	9048	5	3	26	5	4	2	3	5	4	5	2	4	3
680.0	6775.	4125	4	1	23	3	2	1	2	2	3	4	2	2	2
681.0	13104.	10042	5	4	24	4	4	2	3	4	4	4	2	2	2
682.0	17083.	6322	4	4	26	5	5	3	5	5	4	4	3	3	2
683.0	7776.	2556	4	4	24	4	3	2	3	2	4	4	3	4	2
684.0	23858.	7172	3	4	25	4	4	2	5	5	4	3	2	3	3
685.0	17134.	7461	3	3	25	5	4	2	3	5	4	5	2	2	3
686.0	16853.	6022	3	2	24	3	1	1	3	5	2	5	3	3	2
687.0	31033.	6581	3	3	26	5	4	2	5	5	4	3	3	2	3
688.0	8731.	2778	3	1	25	4	3	2	2	2	3	4	2	2	2
689.0	10917.	4309	4	0	25	4	4	2	2	2	4	4	2	2	2
690.0	3233.	910	1	0	24	3	3	2	2	2	4	5	2	2	2
691.0	9672.	1900	3	2	22	4	4	2	3	4	4	4	3	2	3
692.0	23471.	7587	3	5	23	4	4	2	4	5	4	4	3	2	3
693.0	5106.	2540	3	2	23	4	3	2	2	2	4	2	2	2	2
694.0	6244.	3204	4	2	24	4	4	2	2	2	3	4	2	2	2
695.0	4797.	1526	2	1	24	4	3	2	2	2	3	5	3	3	2
696.0	15866.	2677	3	4	25	5	5	2	5	5	4	5	3	3	2
697.0	5212.	487	1	1	24	4	4	2	2	2	4	4	4	3	2
698.0	13395.	81	1	2	21	2	1	1	3	3	1	0	2	1	1
699.0	14657.	2300	3	4	23	3	3	1	2	2	4	4	3	3	2
700.0	4154.	1097	2	2	22	3	3	1	2	2	3	4	2	2	2

VCU NUMBER	NATIONAL FOREST ACRES	OPERABLE CFL AC	TIM RTG	MIN RTG	WILD ATT	PRIM REC	SEMI PRIM REC	CON REC	SPORT FISH	COMM FISH	WILDLF VALUE	EST SENS	SCEN ECO DIV	SUPP W VALUE	WILDLF USE
701.0	10379.	1660	2	4	24	4	3	2	3	4	3	3	2	2	2
702.0	9322.	2514	3	4	22	3	2	1	2	2	3	4	2	2	2
703.0	2060.	76	1	1	21	2	1	1	1	1	3	2	2	1	1
704.0	17338.	2753	2	3	25	4	4	2	3	4	3	3	3	3	2
705.0	8400.	363	1	3	23	4	3	2	2	2	3	3	3	2	2
706.0	17892.	180	1	2	25	4	4	2	2	2	4	4	3	3	2
707.0	2002.	348	1	0	23	3	2	1	1	1	3	5	2	3	2
708.0	5080.	3510	2	0	22	3	4	2	2	2	4	5	2	2	2
709.0	14061.	8453	4	3	25	5	4	2	3	5	5	3	4	5	3
710.0	5735.	3657	4	3	22	3	2	2	2	2	3	3	2	2	2
711.0	1389.	849	1	1	23	3	2	1	2	2	4	2	2	2	2
712.0	5811.	2106	2	1	23	3	3	2	2	2	3	2	2	2	2
713.0	9108.	3705	3	3	22	3	3	2	2	2	4	2	3	3	2
714.0	5650.	2295	3	3	21	2	2	1	2	2	3	4	2	2	3
715.0	13669.	5134	3	4	23	4	3	2	2	2	4	4	3	2	4
716.0	16127.	6862	4	4	24	5	5	3	5	5	5	4	4	5	4
717.0	10397.	2969	3	1	22	3	2	2	3	4	4	5	2	3	3
718.0	12176.	4801	3	3	23	3	1	1	4	5	2	0	2	2	3
719.0	21502.	9003	4	4	24	4	3	2	4	5	5	4	3	4	4
720.0	23990.	9984	3	4	25	4	4	2	4	5	5	5	3	5	3
721.0	7879.	3591	4	2	22	3	2	2	3	4	3	4	2	2	2
722.0	31491.	9343	3	2	24	5	5	2	5	4	4	3	3	4	4
723.0	6955.	2564	3	2	22	3	2	2	2	2	4	2	2	2	3
724.0	42566.	8910	3	2	25	4	5	4	5	5	5	4	4	5	4
725.0	6927.	732	2	1	23	3	2	1	1	1	3	2	2	2	4
726.0	15381.	760	2	2	23	4	4	2	2	2	4	4	4	3	4
727.0	9736.	0	1	2	23	3	3	2	5	4	2	0	3	3	4
728.0	14419.	1297	2	2	23	4	4	2	5	4	4	4	3	4	4
729.0	8973.	1353	2	2	22	3	3	2	2	2	4	4	3	3	2
730.0	11954.	74	1	2	23	4	3	2	3	5	3	2	3	3	4
731.0	19202.	2026	2	3	22	3	3	2	2	2	3	2	3	3	5
732.0	4917.	170	2	2	21	2	1	1	1	1	1	0	2	2	1
733.0	16460.	6446	3	3	0	3	3	1	5	3	3	3	2	0	4
734.0	32341.	5274	3	2	24	3	2	2	5	3	1	0	4	3	2
735.0	10059.	4336	3	0	22	3	3	1	2	2	4	5	2	2	4
736.0	12647.	6394	4	1	0	2	2	1	2	2	4	3	1	2	3
737.0	13268.	5802	4	1	0	3	2	1	2	2	3	3	2	2	4
738.0	19506.	6940	3	3	0	3	3	2	3	5	3	5	3	3	4
739.0	24256.	8751	3	2	23	4	3	2	5	5	4	4	3	4	4
740.0	6595.	3020	4	3	23	2	1	1	2	2	3	2	1	1	3
741.0	3679.	1594	3	2	22	3	2	1	2	2	3	3	2	2	5
742.0	31926.	12722	3	1	22	4	3	3	5	5	3	3	3	4	5
743.0	10934.	4714	3	3	22	3	2	1	3	4	2	4	2	5	4
744.0	31276.	5562	3	1	0	4	3	2	4	5	4	3	4	0	4
745.0	22150.	331	1	1	22	2	1	1	1	1	2	0	4	1	4
746.0	31103.	11049	4	3	0	2	2	1	2	2	3	3	1	0	5

VCU MATRIX SUMMARY
05/17/1978

VCU NUMBER	NATIONAL FOREST ACRES	OPERABLE CFL AC	TIM RTG	MIN RTG	WILD ATT	PRIM REC	SEMI PRIM REC	CON REC	SPORT FISH	COMM FISH	WILDLF VALUE	EST SENS	SCEN ECO DIV	SUPP W VALUE	WILDLF USE
747.0	17644.	6730	4	3	23	4	3	2	4	5	4	4	2	4	5
748.1	4417.	2616	4	4	0	4	5	4	5	5	4	4	3	4	5
748.2	19502.	2906	4	4	0	4	5	4	5	5	4	4	3	4	5
749.0	686.	629	2	1	0	1	1	1	1	1	1	0	1	1	5
750.0	9055.	3268	2	3	0	3	3	4	5	5	1	5	3	3	5
751.0	6631.	369	2	3	23	4	4	4	4	5	1	0	4	3	5
752.0	6094.	847	2	3	21	2	2	1	1	1	2	3	3	1	5
753.0	29420.	11448	4	3	0	3	2	1	3	4	4	3	1	2	5
754.0	20699.	2428	2	3	23	4	4	2	5	5	2	3	4	2	3
755.0	13364.	6209	4	4	22	3	3	2	5	4	3	3	2	3	3
756.0	8558.	5496	5	3	0	3	3	1	2	2	4	3	1	2	5
757.0	11147.	2964	3	1	0	3	2	1	2	2	3	3	1	1	3
758.0	11903.	2492	1	3	0	3	3	1	2	2	3	3	2	2	5
759.0	7718.	373	1	4	22	3	3	2	3	3	3	3	1	2	5
760.0	12453.	3481	2	1	21	2	2	2	3	5	3	3	1	2	4
761.0	5110.	2245	3	4	0	3	2	1	3	4	4	4	1	2	5
762.0	0944.	5606	4	4	22	3	2	1	2	2	3	4	2	2	4
763.0	13960.	6464	3	4	0	4	4	1	5	5	4	4	2	4	5
764.0	3656.	687	1	3	0	3	2	1	2	2	4	3	2	2	5
765.0	4803.	2316	2	3	22	3	3	1	2	2	3	5	2	2	5
766.0	2285.	0	0	3	21	3	3	1	1	1	3	5	1	1	3
767.0	39914.	927	1	3	22	4	4	2	2	2	4	5	2	2	3
768.0	5111.	170	1	3	22	3	3	1	2	2	3	4	1	1	4
769.0	13582.	5270	3	3	21	2	3	1	2	2	3	5	1	1	4
770.0	11443.	1909	3	2	21	2	2	1	3	4	2	5	1	1	3
771.0	15845.	5329	4	3	22	3	3	2	3	4	3	3	2	2	4
772.0	4932.	2188	3	1	22	3	2	1	2	2	3	5	2	2	4
773.0	12815.	2612	3	3	24	4	3	2	5	4	3	5	3	4	3
774.0	6534.	1721	3	1	22	3	2	1	2	2	3	3	2	2	3
775.0	24358.	1605	2	2	25	5	4	2	5	4	4	3	2	3	3
776.0	19741.	172	2	2	23	4	3	2	3	5	3	2	4	4	2
777.0	9248.	2020	3	2	21	2	1	1	2	2	3	2	2	2	2
778.0	31173.	1452	2	2	25	4	3	2	3	5	4	5	5	5	2
779.0	15792.	3065	3	2	22	3	1	1	2	2	3	2	4	3	1
780.0	14840.	726	2	2	22	3	1	1	1	1	3	2	4	2	1
781.0	22425.	3038	3	2	24	4	2	2	4	5	3	2	4	4	2
782.0	11420.	1772	2	2	23	5	4	2	5	5	5	4	3	5	3
783.0	40692.	1742	1	2	24	3	2	1	5	5	2	0	4	4	1
784.0	13939.	247	1	2	22	3	2	1	5	5	1	0	4	3	2
785.0	18628.	73	1	2	22	3	2	2	5	5	1	0	4	3	2
786.0	71864.	15719	3	2	26	5	4	3	5	5	5	4	4	5	5
787.0	50610.	0	0	2	26	4	3	1	5	5	3	0	5	5	2
788.0	22592.	472	1	3	24	4	3	2	5	5	3	0	4	4	3
789.0	38832.	0	0	2	23	2	1	1	1	1	1	0	3	2	1
790.0	39609.	3699	2	2	25	4	3	2	5	5	4	4	4	5	2
791.0	12876.	3900	3	2	23	4	2	2	2	2	4	4	4	3	2

VCU MATRIX SUMMARY
05/17/1978

VCU NUMBER	NATIONAL FOREST ACRES	OPERABLE CFL AC	TIM RTG	MIN RTG	WILD ATT	PRIM REC	SEMI PRIM REC	CON REC	SPORT FISH	COMM FISH	WILDLF VALUE	EST SENS	SCEN ECO DIV	SUPP W VALUE	WILDLF USE
792.0	25797.	862	2	2	23	4	3	2	4	4	4	4	4	4	2
793.0	75979.	827	1	2	25	4	4	3	5	5	5	5	5	5	5
794.0	43840.	0	0	2	26	4	3	2	5	5	4	0	4	5	4
795.0	105544.	0	0	4	26	4	3	2	5	5	3	0	4	4	2
796.0	99866.	80	0	4	26	4	3	2	5	5	3	0	4	4	2
797.0	84554.	0	0	2	25	4	3	2	5	5	3	0	5	5	2
798.0	53798.	0	0	2	25	4	2	2	5	5	2	0	4	4	2
799.0	35447.	236	2	2	28	5	4	3	4	5	5	3	5	5	4
800.0	16617.	1613	2	2	23	3	2	1	2	2	3	2	3	3	3
801.0	13985.	214	1	2	24	4	3	2	3	4	4	4	4	4	3
802.0	32507.	2678	2	2	26	5	5	3	5	5	5	4	5	5	4
803.0	17113.	965	2	1	25	4	3	2	2	2	4	4	5	4	2
804.0	25136.	0	0	4	22	3	3	2	5	5	1	0	5	4	1
805.0	19335.	0	0	4	22	2	1	1	1	1	1	0	5	4	1
806.0	33694.	2946	1	4	24	4	4	3	5	5	4	5	4	3	4
807.0	48925.	1834	1	2	24	4	2	2	2	2	3	5	5	3	2
808.0	51279.	460	1	2	23	3	2	2	2	2	3	2	5	3	2
809.0	28777.	78	1	2	22	3	1	1	1	1	2	2	4	2	2
810.0	16217.	1467	2	2	23	3	2	1	2	2	3	2	3	3	2
811.0	32643.	747	1	2	23	3	2	1	2	2	3	2	3	3	2
812.0	13390.	181	1	2	22	3	1	1	1	1	2	2	4	2	2
813.0	25319.	154	1	2	21	2	1	1	1	1	2	2	4	2	2
814.0	10923.	67	1	2	21	2	1	1	1	1	2	2	3	2	2
815.0	42957.	2529	2	4	26	3	1	1	5	5	2	0	3	2	2
816.0	26382.	0	0	2	24	3	2	1	5	5	1	0	4	3	1
817.0	33368.	5752	2	2	25	4	3	2	5	5	2	0	4	4	2
818.0	13856.	2859	3	5	22	3	2	2	5	5	4	3	2	4	5
819.0	9051.	1601	2	2	22	3	2	1	1	1	3	3	3	2	5
820.0	12652.	390	1	2	24	4	4	2	4	4	4	4	3	4	3
821.0	14104.	2235	2	3	24	4	4	3	4	3	4	5	3	4	2
822.0	11900.	3365	3	3	22	3	3	2	2	2	4	3	3	3	2
823.0	7270.	1128	2	2	24	4	3	2	4	4	4	5	2	3	3
824.0	15992.	3102	2	1	22	3	3	1	2	2	4	3	2	3	3
825.0	12844.	4082	3	2	22	3	3	2	3	4	4	3	2	3	3
826.0	27422.	5632	3	4	25	4	4	3	5	5	4	4	3	4	3
827.0	5045.	1387	3	2	21	3	2	2	5	5	2	0	2	3	2
828.0	8767.	979	1	2	22	3	3	2	3	3	3	4	2	3	3
829.0	18820.	7532	1	1	23	3	2	1	3	3	3	4	2	3	3
830.0	11669.	5001	4	3	22	3	2	1	2	2	4	2	2	3	2
831.0	17255.	4757	3	1	24	3	3	2	3	4	4	2	2	3	2
832.0	5559.	1508	1	2	22	3	2	1	2	2	4	3	1	3	3
833.0	18679.	3431	1	1	24	4	3	2	3	4	4	4	2	3	3
834.0	10527.	1842	2	1	23	4	4	3	5	5	3	3	3	4	3
835.0	21101.	711	2	2	25	4	3	3	5	5	2	0	4	4	3
836.0	11717.	2134	3	1	24	4	4	2	5	4	3	3	3	4	3
837.0	37344.	4753	2	2	25	4	3	2	4	4	3	3	3	4	3

VCU NUMBER	NATIONAL FOREST ACRES	OPERABLE CFL AC	TIM RTG	MIN RTG	WILD ATT	PRIM REC	SEMI PRIM REC	CON REC	SPORT FISH	COMM FISH	WILDLF VALUE	EST SENS	SCEN ECO DIV	SUPP W VALUE	WILDLF USE
838.0	62425.	5201	2	2	25	4	4	2	5	5	4	3	3	4	2
839.0	28717.	2587	2	2	25	4	2	1	5	5	1	0	4	3	1
840.0	34693.	2197	2	2	24	4	3	2	2	2	4	3	3	3	3
841.0	10672.	1599	3	5	24	4	3	2	5	5	4	3	2	4	3
842.0	49391.	4203	2	5	24	3	2	2	5	5	2	0	3	3	2
843.0	27798.	3328	2	2	24	4	3	2	5	5	2	4	4	4	2
844.0	10922.	1072	2	2	22	3	2	1	1	1	3	2	3	2	1
845.0	12008.	0	0	2	22	2	1	1	2	2	1	0	3	2	2
846.0	22975.	2602	2	2	24	4	3	2	3	4	4	4	3	4	2
847.0	9801.	823	1	2	22	3	3	2	4	4	3	4	2	3	2
848.0	10511.	1219	1	2	22	3	2	1	1	1	3	3	3	3	2
849.0	9086.	0	1	2	22	3	2	1	1	1	3	3	3	2	1
850.0	21403.	3726	2	2	23	3	4	2	3	5	4	3	3	4	2
851.0	7117.	90	1	1	22	3	3	1	2	2	3	2	2	3	1
852.0	6300.	0	1	1	23	3	2	2	2	2	3	3	4	3	1
853.0	18631.	1520	2	2	25	4	3	2	4	5	3	4	3	4	2
854.0	7048.	639	3	1	21	3	2	1	1	1	4	2	5	3	2
855.0	23018.	3232	2	1	24	4	4	2	3	4	4	5	3	4	3
856.0	14215.	3151	3	2	23	3	3	2	3	5	3	3	3	3	3
857.0	16823.	1652	1	1	24	3	3	2	2	2	4	3	3	3	3
858.0	30089.	3580	1	3	24	5	5	2	4	5	4	3	3	3	3
859.0	33739.	6153	2	2	25	4	3	2	3	4	4	5	2	3	2
860.0	12089.	3539	2	1	24	3	3	2	2	2	4	4	2	3	3
861.0	22266.	385	1	0	22	3	3	1	2	2	3	2	2	2	2
862.0	16630.	2972	2	0	23	4	3	2	4	4	3	3	2	3	2
863.0	4617.	227	1	3	24	4	4	2	1	1	4	4	2	3	2
864.1	5477.	4129	4	4	17	0	2	3	2	2	3	2	1	0	5
864.2	5932.	2435	3	3	0	2	2	4	2	2	3	4	1	1	5
865.0	800.	700	2	1	22	3	2	1	1	1	3	4	1	1	2
866.0	2119.	0	0	1	23	3	1	1	1	1	3	2	4	2	1
867.0	9776.	1593	2	2	23	3	2	1	5	5	1	0	2	3	1

D. LUD Related Management Information Handbook (MIH) Activities

Management Activity Reference Key

For definitions and a complete list of management activities conducted by the Forest Service, refer to Management Information Handbook 1309.11. The list below includes only those activities which are not applicable to all Land Use Designations.

CODE	TITLE	Land Use Designations I	II	III	IV
A08	VISITOR INFORMATION SERVICES-FULL SERVICE MANAGEMENT (FSM)		X	X	X
A09	VISITOR INFORMATION SERVICES-REDUCED SERVICE NOT ON SITE (RSM)		X	X	X
A10	INSTALLATION OR CONSTRUCTION OF VIS FACILITIES NOT ON VIS SITE		X	X	X
A11	DEVELOPED RECREATION SITES-FULL SERVICE MANAGEMENT (FSM) PUBLIC SECTOR		X	X	X
A13	DEVELOPED RECREATION SITES-REDUCED SERVICE MANAGEMENT (RSM) PUBLIC SECTOR		X	X	X
A14	DISPERSED RECREATION-FULL SERVICE MANAGEMENT (FSM)		X	X	X
A15	DISPERSED RECREATION-REDUCED SERVICE MANAGEMENT (RSM)		X	X	X
B01	WILDERNESS AREA-PLANNING AND INVENTORY	X			
B02	WILDERNESS AREA-FULL SERVICE MANAGEMENT (FSM)	X			
B03	WILDERNESS AREA-REDUCED SERVICE MANAGEMENT (RSM)	X			
E00	TIMBER RESOURCE MANAGEMENT PLANNING AND INVENTORIES		X	X	X
E03	SILVICULTURAL EXAMINATION AND PRESCRIPTION			X	X
E04	REFORESTATION		X	X	X
E05	TIMBER STAND IMPROVEMENT			X	X

CODE	TITLE	LAND USE DESIGNATIONS I	II	III	IV
E06	TIMBER SALE PREPARATION			X	X
E07	TIMBER HARVEST ADMINISTRATION			X	X
E08	NURSERY MANAGEMENT			X	X
E09	GENETIC FOREST TREE IMPROVEMENT PROGRAM			X	X
E10	NURSERY EXPANSION OR IMPROVEMENT			X	X
F04	WATER USES MANAGEMENT		X	X	X
F05	WATER RESOURCE IMPROVEMENT		X	X	X
L02	ARTERIAL ROAD PRECONSTRUCTION		*	X	X
L03	ARTERIAL ROAD CONSTRUCTION AND ENGINEERING		*	X	X
L04	ARTERIAL ROAD CONSTRUCTION		*	X	X
L05	ARTERIAL ROAD RECONSTRUCTION		*	X	X
L06	COLLECTOR ROAD PRECONSTRUCTION		*	X	X
L07	COLLECTOR ROAD CONSTRUCTION AND ENGINEERING		*	X	X
L08	COLLECTOR ROAD CONSTRUCTION		*	X	X
L09	COLLECTOR ROAD RECONSTRUCTION		*	X	X
L10	LOCAL ROAD PRECONSTRUCTION		*	X	X
L11	LOCAL ROAD CONSTRUCTION ENGINEERING		*	X	X
L12	LOCAL ROAD CONSTRUCTION		*	X	X
L13	LOCAL ROAD RECONSTRUCTION		*	X	X
L14	TIMBER PURCHASER ROAD CONSTRUCTION		*	X	X
L15	TIMBER ROAD CONSTRUCTION SUPPLEMENTATION & CONTRIBUTION		*	X	X
L19	ROAD MAINTENANCE		*	X	X

* By specially authorized permit only.

E. Previous Recommendations

IDT RECOMMENDATION

ROLE OF RECOMMENDED ALTERNATIVE

The role of the alternative that is recommended for implementation by the interdisciplinary team (IDT) is twofold. First, such a recommendation provides the Regional Forester and the Forest Supervisors with the team's views on the selection of a forest management plan. They, in turn, have the options of 1) accepting the recommendation as the Forest Service position, 2) modifying the recommendation, 3) requesting additional information or analysis from the IDT, or 4) choosing another alternative. The Regional Forester's decision in this regard will be distributed for public review in a supplement to this document in August 1978. Second, the interdisciplinary team recommendation provides the public with an idea of how the Forest Service is approaching the resolution of the land management issues at this point in the planning process. Public response to this recommendation--and the other alternatives presented--will greatly influence the selection of the land management plan which will be implemented on the Tongass National Forest.

Recommending an alternative conforms with the direction for interdisciplinary teams established in the Area Guide and the Draft National Forest Management Act Regulations. This direction assures that a role in selecting an alternative is also given to representatives of the different disciplines who supplied physical, biological, economic, and social data and who developed the basic alternatives.

PROCEDURE USED TO MAKE RECOMMENDATION

The procedure for defining a recommended alternative began with a recognition of the current and projected situation. This is defined in detail in the "Affected Environment". In essence, the IDT recognized the existing human dependencies on forest resources for economic well-being, the desire of people within southeast Alaska and elsewhere to maintain the great amenity values of the Tongass National Forest, and the limited supply of resources that is available to satisfy those needs and desires. To establish a common basis for considering the various alternatives, a set of assumptions was established.

Assumptions

1. All alternatives would be evaluated on the basis of how they are presented in this environmental statement. Possible future alterations of their allocative patterns and resource yields because of legislative actions would not influence the evaluation.

2. Demand for National Forest timber will be no higher than 450 MM bm per year by 1990.

3. No less than 150 MM bm of timber will be harvested annually on a sustained-yield basis from privately owned lands by 1990. Part of that volume would be locally processed.

4. If timber harvesting on private lands is accelerated to 225 MM bm a year, it is likely that this will take place in the near future.

5. One hundred percent of the standard and special timber components and 10 percent of the total marginal components that are available under each alternative would be considered as the maximum harvestable volumes that could be provided.

6. Potential timber yields from State lands will not be available to industry until after 1990.

7. If an alternative is implemented that would reduce the annual timber yield to less than the level that is now used, a gradual reduction to the new yield level could be spread over the next 10 years. This gradual decline in harvest would have less drastic effects on the regional economy than an immediate and abrupt reduction in volumes offered for sale from National Forest lands.

8. The following uses and facilities would be permitted in wilderness areas:

a. Existing public use cabins will be maintained.
b. Construction of new public use cabins will be for health and safety reasons.
c. Salmon enhancement activities will be limited to hand clearing of stream blockages.
d. Motorized access will be permitted where currently established. Such access will be regulated on a case-by-case basis in accord with forthcoming wilderness management plans for individual wilderness areas.
e. Other uses permitted under The Wilderness Act of 1964, including hunting and fishing, mineral exploration and development, and so forth, will be allowed.

9. The allocation range in part B of the Area Guide would not constrain the recommendation of alternatives that deviated from it.

Relation of Alternatives to Issues

Data about Alternatives A+ (maximum commodity emphasis), A, A-1 (CMAL), B, C, A-2 (Administration position), D, A-3 (SEACC), E, and E+ (all roadless areas classified as wilderness) were compiled to compare the alternatives with the evaluation criteria listed in an earlier chapter. Since many of the criteria proved to be fairly general from an evaluation standpoint, a more specific set of related issue factors was defined by the IDT. (These are listed in Table 30, Section VI.) The issue factors are grouped into those related to the retention of amenity values, to the retention of growth and development opportunities, and to both of those. Each of the 10 alternatives was then rated on a scale of 1 to 10 (lowest to highest) to represent how well it could satisfy each issue factor. These ratings are based on the information about each alternative that is displayed in this document.

After jointly reviewing the alternative ratings for the issue factors, the IDT members individually decided which alternative should be recommended for implementation. Five IDT members selected Alternative D, four chose Alternative C, and four favored Alternative B. None of the other alternatives was proposed by a team member. Each member then discussed the reasons for recommending an alternative. After a joint discussion of the merits of each alternative, the team as a whole agreed to center on one alternative and to modify it so that a consensus could be reached. Four of the members did not agree, their opinions are presented at the end of this section.

Twelve interdisciplinary team members participated in the recommendation procedure:

R. Behnert, Planner, USDA-FS, Juneau, Alaska;
E. Brannon, Planner, USDA-FS, Juneau, Alaska;
R. Estelle, Landscape Architect, USDA-FS, Petersburg, Alaska;
D. Gibbons, Fisheries Biologist, USDA-FS, Juneau, Alaska;
R. Glass, Economist, USDA-FS, Juneau, Alaska,
C. Harmon, Geologist, USDA-FS, Sitka, Alaska;
M. Johnson, Forester, USDA-FS, Ketchikan, Alaska;
J. Kirschenman, Landscape Architect, USDA-FS, Ketchikan, Alaska;
C. Knight, Soil Scientist, USDA-FS, Sitka, Alaska;
K. Metcalf, Public Involvement Specialist, USDA-FS, Juneau, Alaska;
R. Reed, Fisheries Biologist, ADF&G, Juneau, Alaska;
H. Wolfe, S.E. Parks Superintendent, Alaska Department of Natural Resources, Juneau, Alaska; and
R. Wood, Wildlife Biologist, ADF&G, Ketchikan, Alaska.

RECOMMENDED ALTERNATIVE

Alternative C is recommended for implementation by the interdisciplinary team. The majority of the team felt that this alternative, with the modifications proposed in Table 31, would better resolve the many issues that have been identified than would the other alternatives.

Adoption of this recommendation would result in a considerable departure from the emphasis of previous forest management plans. Alternative C, as modified, would establish a new balance in management emphasis that attempts to satisfy the projected needs and desires of forest users for both amenities and extractable resources.

The IDT members favored the modification of some Alternative C allocations. The allocative pattern that is now displayed on the Alternative C map should be modified (or qualified) as expressed in Table 31.

RECOMMENDATION RATIONALE

The rationale for this recommendation is presented in three related parts. One part describes how the recommended alternative utilizes the resource values of the forest. The other parts describe how it would resolve the issues of retaining amenity values and growth and development opportunities.

Each IDT member holds diverse views about how the forest should be managed and has demonstrated a willingness to accept the premise that amenity-oriented users and commodity-oriented users have legitimate and equal rights to the use of the Tongass National Forest. Because it is a National Forest, it must be managed in the best interest of all the people of the Nation. The belief that such equality of use is necessary is basic to the planning process established by the National Forest Management Act.

Balance in Utilization of Prime Values

The supply of land and resources on the Tongass is not sufficient to satisfy everyone's desires. This is verified in the information and the land management alternatives portrayed in this document. The IDT members gave strong consideration to how well the different alternatives were balanced in their use of the forest's amenity

and commodity values. The team as a whole made balance a prime criterion in their recommendation.

To analyze how well each alternative is balanced in those respects, the IDT analyzed the alternatives to see which of them allocated the greatest number of highly rated VCUs to LUDs I and II to provide amenity values and the greatest number to LUDs III and IV to provide commodity values.

The IDT selected the ratings for dispersed primitive recreational opportunities to represent the forest's amenity values. The recreational opportunity ratings were considered to be the most reflective of the forest's combined wildland, fisheries, and wildlife resources. The timber supply qualities ratings were most reflective of the forest's major commodity resource.

The percentage of the total VCUs highly rated (4 or 5) for recreational opportunities and allocated to LUDs I or II were tabulated for each alternative. The same tabulation was done for the timber supply qualities for VCUs allocated to LUDs III or IV. The results of the analysis are presented in Table 32.

Alternative D provides the best balance in the use of the forest's prime amenity and commodity values, since it allocated the greatest percentage to each of these. Alternative C ranked second in those respects. The other alternatives provide increasingly disproportionate mixes of commodity and amenity values.

Although the IDT recognized Alternative D was the best utilizer of the prime values of the forest, it was considered less desirable than Alternative C in addressing the issues related to retaining growth and development opportunities. Alternative C, which is superior in this respect and which does provide for a high proportion of the forest's prime amenity values, was chosen as a reasonable compromise. (See "Effects of Implementing Alternatives" Section V.)

Retention of growth and Development Opportunities

Nine issue factors related to growth and development opportunities were considered in evaluating the various alternatives. Some of the issue factors were considered more important than others by the IDT. Maintaining the current level of timber-related jobs was considered critical in order to maintain the social and economic stability of several southeast Alaska communities. Regional employment distribution and the availability of mineralized areas for development were also considered to be very important.

Alternative C provides a sufficient timber harvest volume to retain the current levels of timber-related employment if privately owned lands are managed on a sustained-yield basis. In the more likely event that private timber landowners harvest on an accelerated basis, this alternative provides for some limited growth in the industry if the National Forest provides only 400 MM bm a year. With an accelerated harvest, total employment may slightly increase under Alternative C.

There is likely to be a loss of nearly 200 cant manufacturing jobs, but an increase of nearly 300 logging jobs is likely. This increase would not be sustained indefinitely, since harvesting would not be on a sustained-yield basis. This job displacement is likely to occur under all alternatives, since the timber market reflects a preference for round logs over cants (in the Japanese economy.)

Special attention should be given to the possible time lag between the implementation of Alternative C and adjustments in the timber market that reflect the effect of private sales. Although this lag creates a situation for a potential loss of nearly 500 jobs, there is sufficient flexibility in the sustained-yield regulations

to permit a gradual decline in National Forest timber output until market shifts brought about through private sales become a reality. In other words, short-run adjustments in National Forest output can provide for current employment levels until conveyance of timber lands to private ownership and until sales preparation activities reach a sufficient magnitude for private sales to affect the market.

Limiting the availability of the timber supply from the Tongass National Forest, which this alternative would do, could be beneficial to the private landowners who plan to develop their timber resources. If the existing industry is at least partly dependent on private timber harvests to satisfy its supply needs, it would place the owners of those resources in a more competitive posture than is likely if the industry could obtain all of its supply from the National Forest. This should also encourage a greater utilization of the timber resources on the private lands by creating a local demand for timber that is of insufficient quality for export in the round.

Merely increasing the availability of timber from the National Forest does not guarrantee additional employment. Most of the available information suggests that a limited market capacity will constrain growth in the timber industry in southeast Alaska. With sustained-yield management of privately owned timber lands, the supply-demand analysis prepared in conjunction with this plan indicates that a maximum of 450 MM bm of timber a year can be used from the Tongass National Forest. Timber harvest at this level will provide a 10 percent increase in employment, but current employment levels can be maintained at the Alternative C level of output. Timber made available beyond the 450 MM bm level will not likely be used, unless there are some dramatic market changes. In the case of a moderately accelerated harvest from private lands, the projections indicate that only 400 MM bm of timber can be used from the National Forest each year. In this case, the greater quantities of timber made available in Alternative B would not likely contribute to higher employment.

The retention of regional employment distribution was also considered important in order to minimize population shifts. Under the sustained-yield assumption for private timber lands, implementation of this alternative would retain the timber-related employment levels on all three of the Forest Service Administrative Areas (Chatham, Ketchikan, and Stikine). Current information indicates that the Chatham Area could be adversly affected to a very slight degree (see Alternatives and Their Effects.) Total employment opportunities on the Stikine Area will be retained, and an increase is anticipated on the Ketchikan Area.

The recommendation could constrain an expansion of the industry if market trends significantly improve. Opportunities for adjusting to such a situation will be available when the plan is revised at the end of its 10-year life. The alternative contains a significant number of areas now allocated to LUDs II and III that could be reallocated in the future to increase the timber supply and thereby create more job opportunities, if this is in the public interest at that time.

Maintaining the availability of minerals and land for mineral exploration and development was considered important, because it could increase the economic diversity in southeast Alaska. Under this alternative, 17 of the 81 highly mineralized VCUs would be allocated to LUD I. This would include two more VCUs than Alternative B and three less than Alternative D (see Alternatives and Their Effects for further information.)

Of the active mineral prospects, only the WGM claims on Admiralty Island would be included in their entirety in a LUD I area. Consideration was given to removing the areas containing those claims from LUD I, but this was rejected to maintain the high amenity values of Gambier Bay. Portions of the Inspiration claims on Yakobi Island and the U.S. Borax claims in the Boca De Quadra area would also be included in LUD I areas. Under the Wilderness Act of 1964, these claims can all be developed, even if the LUD I proposals actually become part of the Wilderness System.

The IDT analyzed the opportunities for road corridor developments to decrease transportation costs and promote tourism and recreation. Alternatives C and D would both preclude development of the Unuk and Stikine Rivers' corridors. Alternative B would keep the Unuk River option open.

Minimizing damage to commercial fisheries was considered. This was an important criteria. But, fisheries protection is provided under all alternatives under Area Guide policies. So, only the risk of damage was rated, which was not considered a key factor since it is difficult to assess.

Opportunities for salmon habitat enhancement were also considered. LUD I allocations would restrict the opportunity to develop most types of salmon enhancement facilities. Alternative B would have offered more enhancement opportunities than would C.

The opportunity for hydropower development was another factor that was considered. Increases in petroleum prices in the past five years have greatly increased power costs at several southeast Alaska communities. Efforts have begun to turn from this non-renewable resource use to renewable water power. Of the sites proposed and their associated transmission corridors, Alternatives C and D could both restrict the transmission corridor from Snettisham to Petersburg, which is not considered critical at this time. Alternative B did not pose any restrictions.

Compatibility with State and Native selections was also considered. Alternatives B, C, and D were so similar in their compatibility that no differentiation could be made. None of the alternatives was rated as being very compatible with the proposed State selections.

Retention of Amenity Values

Two of the nine issue factors relating to amenity values considered by the team were identified as being the most important to the recommendation. These were the representation of the highest wilderness values and retention of high-quality primitive recreational opportunities. The next most imporant factors were the maintenance of key sport fisheries, protection of habitat to maintain deer popuations, and protecting the scenic quality of visually sensitive areas. In was felt that nationally supported wilderness areas should be selected if their wilderness attribute ratings were high, but where other more suitable lands were available, these should be selected instead. The amenity objective, then, became one of selecting the alternative which had the highest ratings for all amenity factors and for particularly the two critical ones.

Most of the team agreed that the optimum mix of amenity values was provided in Alternative D. But, since the timber volume available in Alternative D is only 390 MM bm, it would not satisfy the commodity needs, which the team felt were also important. Alternative C was then analyzed and chosen as having the best overall amenity potential that still provides for the important commodity demands.

Next to Alternative D, the recommended alternative does the best job of allocating to roadless management (LUDs I and II) the highest rated VCUs for such attributes as wilderness, wildlife, dispersed primitive recreation, dispersed semiprimitive recreation, scenery, and protection of sensitive visible areas.

The team next analyzed the Alternative C allocation pattern and decided that several allocations should be modified. These are described in Table 31.

TABLE 31- Proposed modifications to Alternative C

AREA NAME	VCUs INCLUDED	N.F. ACRES	PRESENT ALLOCATION (LUD)	PROPOSED ALLOCATION (LUD)	REASONS FOR MODIFICATION
Glass Peninsula, Admiralty Island	135	5,017	III	II	To retain the existing characteristics of Oliver Inlet for recreation purposes.
	136	11,158	III	I	To assure that the wilderness qualities of all lands bordering the Seymour Canal are maintained and to enlargen the proposed Admiralty Island wilderness area as a whole.
	137	10,955	III	I	
	138	25,445	III	I	
	139	14,717	III	I	
	140	9,485	III	I	
	141	12,816	III	I	
Pelican Area	253	10,350	IV	III	Community (Pelican) visual and recreation considerations.
Castle River	435	32,814	III	III	Manage Castle River portion of this VCU to preserve the sport fish values and settings for other existing recreation uses including duck hunting areas and three existing recreation cabins.
Beecher Pass	448	20,944	II	III	State of Alaska has selected the most sensitive area; remainder will be managed under LUD III constraints because of proximity to a ferry route.
Petersburg Creek	445	27,277	I	II	Recommend for 'recreation' area status under Secretary of Agriculture regulation.
Stikine River	493	26,403	I	I	Recommend a LUD II corridor (with no road allowed) along the Stikine River access route - the river would be proposed for a Scenic River designation under the Wild and Scenic Rivers Act.
	495	49,896	I	I	
	497	15,066	I	I	
Behm Canal Entrance	760	12,453	IV	III	Provide more latitude to protect visual values at the entrance to the Behm Canal.
	769	13,582	IV	III	
	770	11,443	IV	III	
	830	11,669	IV	III	
	831	17,255	IV	III	
Bokan Mountain	694	6,244	II	III	VCU 699 contains the Bokan Mountain uranium mine. VCUs 694 and 695 form a logical boundary to this LUD III area and compensate for foregone timber volumes in areas shifted to LUDs I or II.
	695	4,797	II	III	
	699	14,657	II	III	
South Kuiu Island	414	16,191	I	III	To compensate for foregone timber values in areas shifted to LUDs I and II.
	415	24,251	I	III	
Twelve Mile	444	24,250	III	IV	To compensate for foregone timber values in areas shifted to LUDs I and II.

All VCUs surrounding Seymour Canal should be in LUD I to be more compatible with the east Admiralty Island wilderness proposal. Since allocation of the west side of Glass Peninsula would block access for development of the east side, all of Glass Peninsula was reallocated to LUD I. Oliver Inlet was changed to LUD II to be more consistent with the management intent for the adjoining lands and in recognition of the land route to Seymour Canal. Petersburg Creek was changed from LUD I to LUD II with the stipulation that it receive formal classification as a special recreation area by the Regional Forester under Secretary of Agriculture Regulations (36 CFR 294.1(a).) The group felt this would better accomodate the expressed recreational desires for this area and still provide the desired permanency of the allocation.

VCU 253 was changed to LUD III to give better recognition to visual and recreation concerns of the Pelican community. The Castle River VCU was proposed for change to LUD II, but it was decided to leave it as LUD III with the stipulation that the high-use recreational area around the lower river, beach, and cabins be given full aesthetic protection.

VCU 448 was changed from LUD II to III, because the State has selected most of the high-use recreational area around Beecher Pass. With the additional aesthetic protection that could be provided under LUD III, this VCU could compensate for some of the timber values that were foregone on the Glass Peninsula.

The area around the entrance to Behm Canal was changed from LUD IV to III to allow for better protection of the visual values in this important gateway. The Bokan Mountain area has already been developed. It contains a road and a uranium mining operation. Because of this and the need to compensate for timber values foregone in the previous modifications, this area was changed to LUD III.

VCU 403, Bay of Pillars, was considered for change from LUD II to III. The team recognized that some minor development already exists in a portion of the unit but concluded that no further development was desirable. They recommended leaving the unit as LUD II.

The team felt that VCUs 414 and 415 on South Kuiu could be allocated to LUD III without unduly compromising the proposed Tebenkof-South Kuiu wilderness. This would provide timber to compensate for other timber values foregone in previous modifications.

VCU 444, Twelve Mile, was changed from LUD III to IV. Since the team felt this unit is sufficiently isolated and the recreational use is low enough, it could provide more timber values to compensate for the other changes.

The Stikine River was considered by the team for reallocation to LUD II to be more compatible with existing recreational uses and expressed desires. The team felt that a highway up the Stikine River to Canada is not desirable or needed, considering the associated environmental impacts. The recommendation is that a variable width LUD II corridor be established along both sides of the river with no road building permitted. The Stikine River would be proposed for designation as a scenic river under the Wild and Scenic Rivers Act, and the remaining lands in VCUs 493, 495, and 497 would be proposed for wilderness designation. The Stikine Flats should remain in LUD II. This proposal would also be more commensurate with the 1871 treaty between Great Britain and the United States, which states that navigation of the Stikine River "shall forever remain open and free for commerce."

For Admiralty Island, the team felt that allocating the eastern half of the island, including the Glass Peninsula, to LUD I would provide the portion of the island which is in greatest demand for wilderness and that is also richest in wilderness attributes. The VCUs containing Thayer Lake and Chaik Bay would be managed

under LUD II provisos. Many other parts of the island, including all of the Mansfield Peninsula and all of the southern end, would not be developed for timber during the life of the plan. These lands would continue to provide wilderness opportunities and be available for reallocation if desired when the plan is revised in the future.

The main reason for this proposal is the limited availability of timber. The team knew that allocating the very high quality timber lands on the west side to LUD I would either reduce the total available timber volumes on the forest below acceptable limits or would require equally unacceptable reallocations of many other VCUs from LUDs I and II to III or IV to make up the difference. The amenity values that would have to be foregone elsewhere on the forest are known to be of higher value than the ones that would be protected on Admiralty Island if the whole island became a wilderness. If all of Admiralty Island is finally allocated to wilderness, the majority of the team felt that a reduced timber base and yields would be more acceptable than would any major changes in the allocation pattern for the rest of the forest. Agreement on this point was not unanimous, however.

Many of the areas that are nationally supported for wilderness but not allocated to LUD I in this recommendation are allocated to LUD II. For example, the Karta River, the majority of Misty Fiords, the Stikine River Flats, Upper Duncan Canal, all of Endicott River, and some of the Yakutat Forelands are recommended for LUD II rather than for wilderness. Many of the lands included in various legislative proposals for wilderness or special management are also recommended for LUD II. These include Sarkar Lakes, Salmon Bay, Rocky Pass, St. James Bay, and the Situk River. Idaho Inlet and Mud Bay are recommended for LUDs I and II, respectively. Many other areas will not be affected by development activities during the life of this plan (see Alternative C display map and the associated modifications).

Another reason for emphasizing the retention of amenity values is the transfer of forest lands to private ownership. If the anticipated resource development activities do materialize on these lands, then more effects on existing amenities are likely. Adoption of this recommendation would tend to counter such effects by calling for a reduced level of development activities on the forest.

Synopsis of Other Views Relating to the Recommendation

Although most IDT members felt that Alternative C best represented their individual recommendations, there were other opinions expressed. These opinions are summarized as follows:

1. Those wanting an alternative between Alternatives B and C.

   These opinions focused on the significant deviation of Alternative C from the previously stated Area Guide range for LUDs I and II and the relatively low level of programmed harvest (410 MM bm). These members felt that we were "just cutting it too close" and not allowing the flexibility to meet higher output levels for timber in light of future uncertainties regarding timber harvests from private lands. They proposed a program harvest level of 450 MM bm which, when combined with timber from private lands, would provide a potential for some increase in the level of employment.

The IDT members also felt that the amount of land in LUDs I and II was more than the demand required and that the existing use levels could easily be provided on fewer acres. For example, the range allocated to LUDs I and II in Alternative C, as modified, was about 8.7 million acres. The range for LUDs I and II projected in the Area Guide 5.5 to 7.0 million acres. Thus, Alternative C, as modified, exceeded the projected acreage for roadless management and conversely fell short of the timber harvest targets by 77 MM bm.

An additional factor that should be considered was demand for other types of recreation. The IDT felt that LUD III offered good opportunities for a type of recreation that was in demand and could be provided on many areas proposed for LUD II by Alternative C. The reasons for these variations from the Guide range are reflected in the rationale section. Basically, when compared with the total set of issues, the land area alone did not allow for a sufficient preservation of amenity values on the areas needed to satissfy desires and that a tradeoff in potential and possibly existing employment levels was necessary.

2. Those wanting an alternative between Alternatives C and D.

Those opinions focused on the need to preserve and protect amenity values. These were key observations:

a. Relatively undeveloped coastal lands, such as those in southeast Alaska, are scarce and not found in abundance elsewhere in the world. This represented a very high value in its own right.

b. Alternative D represented a better use of inventoried prime values by LUD.

c. National legislation and recent expressions of support for wilderness illustrates changing national concerns which strongly favor preservation of wildland values.

d. Effects on wildlife are still not well researched, and the estimated effects for the alternatives may be understated. Thus, a greater margin for error should be allowed.

e. There is a strong indication that private lands will provide greater volumes than predicted, and not so much timber would need to be harvested from National Forest land. Even with a sustained-yield harvest from private lands, Alternative D would reduce employment levels by only about 10 percent. This was viewed to be an acceptable, although unlikely, tradeoff by these IDT members.

RELATION OF RECOMMENDED ALTERNATIVE TO THE EVALUATION CRITERIA

Provide for cordinated land management on the Tongass National Forest and adjacent Native, State, and municipal lands.

The recommended alternative provides for coordinated land management of the Tongass National Forest and adjacent Native lands by allocating VCUs containing Native selections to LUDs III and IV where there has been an expressed intention to harvest timber. In this way, access across National Forest lands will be assured. Every attempt will be made to make Forest Service management intentions compatible with local muncipal land use intentions. For example, commercial timber harvest will not be planned in those VCUs adjacent to the communities within the forest. State land selections were based on a variety of reasons, including recreation, transportation, and community expansion. No doubt with these intended uses, some conflicts with nearby Forest Service operations will develop. The Forest Service intends to make a strong effort to reduce these conflicts and resolve any management incompatibilities.

Provide continuity among national, regional and local programs. (How does the alternative affect existing programs and commitments?)

With the projected decrease in timber harvest from National Forest lands, there would be a reduction from the current timber program. The programs in recreation, wildlife, fish, and lands would be increased.

Provide opportunities for developing transportation modes that best meet the land management goals as well as the needs of the people. (Does the alternative preserve the transportation options identified in the Southeast Alaska Multimodal Transportation Study?)

All transportation options identified in the Southeast Alaska Multimodal Transportation Study except for the Stikine and Unuk River corridors are available for future development if needed.

Provide for an increase of not less than three million acres (15 percent) in designated wilderness on the Tongass National Forest. (Does the alternative provide for at least 15 percent of the total land area of the Tongass in LUD I?)

Twenty-six percent or approximately four million (3,909,000) acres of the forest would be placed in LUD I.

Provide for a variety of dispersed recreation on lands with significant fish, wildlife, scientific, scenic, historic, or other recreational qualities. Recognize that many recreational assets exist on the Tongass that are in short supply and high demand elsewhere in the United States, such as wildlands, shoreline, and abundant fish and wildlife populations. (Does the alternative include allocations specifically intended to provide dispersed recreational opportunities?)

A variety of dispersed recreation opportunities on lands with significant fish, wildlife, scientific, scenic, and historic values are assured with this recommendation. Sixty-three percent of the VCUs with high primitive values and 57 percent of the VCUs with high semi-primitive recreation values are allocated to LUDs I and II.

Insure the most effective management of the Tongass National Forest. (Does the alternative provide a favorable cost/benefit relationship in terms of both tangible and intangible values?)

The IDT found that quantifying cost/benefit relationships for the alternatives was not possible due to the difficulty in measuring and assessing the "intangible values" contributed by each alternative. The team did feel that this criteria was probably more meaningful in measuring how an alternative should be implemented.

This criteria, therefore, provided little help in the evaluation process, but did serve the purpose of stimulating discussion among team members on the benefits and costs of each alternative.

The team recommends that before the preferred alternative is selected, further analysis of the costs and benefits of each altenative be done.

Direct allocations to the areas of best supply. (What percentage of the VCUs with high resource ratings does the alternative allocate to the following uses:)

Commercial timber (LUD III, mixed resource use, and LUD IV, intensive resource use);

Commercial fish and wildlife (LUDs I, II, and III);

Remote recreation and sport fishing (LUDs I, II, and III);

and wilderness (LUDs I and II)?

Prime value lands or those lands with high resource ratings are allocated in the following manner. Approximately 33 percent (1,150,000 acres) of the high value commercial forest lands are allocated to LUD III and 46 percent (1,590,000 acres) of these same lands are allocated to LUD IV. Lands with high mineral values comprise 1,570,000 acres. Seventy-two percent (1,130,000 acres) of the VCUs rated 4 and 5 are allocated to LUDs II, III, or IV so that access to and development of those resources will be allowed.

Fifty-three percent (3,196,000 acres) of the high value wildlife lands are allocated to LUDs I and II. An additional 22 percent are allocated to LUD III.

VCUs with high sport fish values number 328. Seventy-six percent (249) are allocated to LUDs I, II, and III. VCUs with high commercial fish values number 476.

Seventy percent (334) are allocated to LUDs I, II, and III.

Ninety-four percent of the VCUs with the highest wilderness attributes ratings are allocated to LUDs I or II. (With attribute index 26 or greater.)

Provide for growth, stability and diversity in the local and regional economy. (Does the alternative maintain existing levels of timber-related employment? What opportunities does it offer for future increases? Does the alternative provide for a small timber business set-aside program? Will the alternative increase employment opportunities in recreation and tourism? Does it provide for habitat enhancement and aquaculture developments? Does the alternative allow proposed energy development, such as hydroelectric or fossil fuel developments? What receipts to the State will the alternative generate?) (The State receives 25 percent of timber sales and special use receipts.)

Regionally, the opportunity for timber related employment would stay at approximately the present level. Assuming private lands are harvested at a sustained yield level. Locally, the Chatham and Stikine management areas would suffer some loss. There would be essentially no opportunity for future increases. There would be a Forest Service independent timber sale program of about 110 million, some of which could be sold under the SBA program.

Opportunities for backcountry recreation will decrease somewhat from the present, but opportunities for recreation and tourism employment may increase as road systems are completed on such areas as Prince of Wales Island (this would be dependent on the State providing good ferry service to these areas). Adequate opportunities are provided for aquaculture and salmon enhancement to meet needs for several years at current investment levels. All hydroelectric development sites proposed for the near future are in allocations permitting their construction. Receipts to the State (25 percent fund) are the fifth highest of all alternatives and about the same as Alternative A-2.

Assist southeast Alaska communities and residents in meeting their diverse resource and land use needs. (How well does the alternative meet the communities desires as expressed by community plans, elected officials, agencies, and residents? The sources of this criterion are comments received from State and local governments and the public.)

Most community desires should be well satisfied through the opportunities for both recreation and employment provided. However, for some, such as Wrangell where dependence on timber is heavy, this plan would not satisfy desires that have been expressed by the local government officials (see social effects of Alternative C).

Manage the Tongass National Forest to accomodate the lifestyles and well-being of southeast Alaska residents and communities while being responsive to national goals and concerns. (Will the alternative provide for desired lifestyle options? Will it accomodate changes in use patterns, populations, income, isolation, subsistence, and services? The source of this criterion is input from state and local governments and the public.)

This recommendation provides for maintenance of desired lifestyle options of most southeast Alaska residents.

Include a wide range of ecotypes representative of southeast Alaska in Land Use Designations (LUDs) that emphasize the preservation and retention of primitive wildland values. (Does the alternative provide for representative examples of the various ecotypes identified in southeast Alaska in either combination of LUDs I and II? The five major subdivisions: Coast Range, Coastal Hills, Kupreanof Lowlands, Yakutat Forelands, Admiralty/Chichagof, and Baranof Highlands.)

The table below illustrates how the selected alternative provides representative samples of each landscape character type found in southeast Alaska in LUD I and LUD II.

CHARACTER TYPE	TOTAL ACRES	ACRES IN LUD I & II	PERCENT
Coastal Hills	2,690,000	883,000	33
Coast Range	6,640,000	5,630,000	85
Kupreanof Lowland	2,040,000	439,000	21
Yakutat Forelands	340,000	159,000	47
Admiralty/ Chichagof	2,750,000	1,025,000	37
Baranof Highlands	750,000	590,000	79
TOTALS	15,200,000	8,726,000	58

Comply with the Administration's direction established in USDA policy. Does the alternative include the Administration's recommendations for wilderness in southeast Alaska? If not how does it vary?

COMPARISON OF ADMINISTRATION PROPOSED WILDERNESS AREAS WITH ALLOCATIONS PROPOSED IN THE RECOMMENDED ALTERNATIVE

ADMINISTRATION's PROPOSAL		RECOMMENDED ALTERNATIVE				
NAME OF PROPOSAL	ACRES PROPOSED FOR WILDERNESS	ACRES IN LUD I	% OF ACRES PROPOSED	ACRES IN LUD II	% OF ACRES PROPOSED	% OF PROPOSED AREAS ALLOCATED TO LUDs I AND II
Admiralty Island	1,014,956	417,905	41%	83,304	8%	49%
Endicott River	102,852		0%	102,852	100%	100%
Duncan Canal	168,416		0%	22,684	13%	13%
Yakutat Forelands	259,100		0%	92,565	36%	36%
Karta River	38,671		0%	32,527	84%	84%
Tebenkof Bay	64,528	64,528	100%		0%	100%
Misty Fiords	2,274,784	1,151,582	51%	871,019	38%	89%
Russell Fiord	301,413	275,615	91%	21,067	7%	98%
Stikine-LeConte	275,395	231,055	84%	34,615	13%	97%
West Chichagof/ Yakobi	226,876	226,876	100%		0%	100%

1/ Of the VCUs within these areas that are not allocated to LUDs I or II (63), only eight are proposed for timber harvest during the life of the plan.

TABLE 32--Percentage of prime valued lands allocated

Item	Alternatives							
	A	A1	B	C	A2	D	A3	E
% of all VCUs with high dispersed primitive recreation in LUDs I & II	35	23	46	63	54	82	57	87
% of all VCUs with high timber supply qualities in LUDs III & IV	95	89	89	79	70	73	70	50
Prime values aggregate score	130	112	135	142	124	155	127	137

NOTE: Data not available for Alternatives A+ and E+.

Modified IDT Recommendation

Preface

The following interdisciplinary team (IDT) recommendation was considered by the Regional Forester when he formulated his recommendation to the Chief. It should be looked on as an extension and modification of the original IDT recommendation contained in this appendix.

The recommendation is presented in the same form the Regional Forester received it. Some of the timber yield calculation procedures the IDT used were later altered. The division of Timber Management indicated the utility log volumes and volumes attributable to commercial thinnings during the life of the plan should not be counted on. This reduced the total annual timber yield to 409 MM bm instead of the 467 MM bm that was anticipated by the IDT.

Conversely, if the IDT were to employ the timber yield calculation techniques used by the Regional Forester, a total of 462 MM bm could be yielded annually. This would include volumes attributable to lowering the retention factors for LUDs III and IV, pre-commercial thinnings, and the inclusion of economically marginal areas where supplemental roading funds would alleviate the marginality.

Since this timber yield level would differ by only five MM bm from the yield level that was anticipated, the IDT recommendation remains essentially valid. Only the <u>way</u> in which the total timber yield is increased has been altered.

Introduction

The Interdisciplinary Team* was reconvened during the week of July 31, 1978 to provide additional recommendations to the Regional Forester and the Forest Supervisors for their consideration. The recommendations and the associated information are oriented to respond to topics and concerns that have surfaced in the public response to the TLMP Draft Environmental Statement.

The IDT altered the nature of its original recommendation to a considerable degree. Most of this alteration is attributable to new timber-related information that has come to light since the Draft Statement was issued. The other changes that are proposed stem from a reconsideration of the land allocations that were made in the original recommendation. The new information minimized the need to make large scale revisions. The change in the timber supply outlook strengthens the IDT's previous recommendation regarding a balanced approach to the provision of amenity and commodity oriented use opportunities on the Tongass.

* This is the same IDT that is responsible for the recommended alternative included in the TLMP Draft Environmental Statement. Only one of the original members could not be present. Charles Gass, Planner, substituted for Marlin Johnson, Forester.

Recommended Alternative

Seventy Value Comparison Units (VCUs) have been reallocated by the IDT in response to the public input that has been received. These are listed in TABLE 1. In comparison to the IDT's previous alternative, these changes lower the amount of land proposed for wilderness by 488,000 acres and LUD II by 138,000 acres while raising the amount of land allocated to LUDs III and IV by 626,000 acres. The alternative that is now proposed includes 3,505,000 acres, or 23 percent, of the Forest in LUD I (wilderness), 4,665,000 acres, or 31 percent, in LUD II (undeveloped area management), 3,663,000 acres, or 24 percent, in LUD III (mixed resource use emphasis), and 3,356,000 acres, or 22 percent, of the Forest in LUD IV (commodity oriented management).

Approximately 470 MM bm of timber could be yielded annually under this alternative. This represents a net increase of 64 MM bm over the previously proposed alternative. Nine MM bm of this increase is attributable to the VCUs that have been reallocated; 25 MM bm more volume can be expected from the long-term effects of precommercial thinning of up to 5,000 acres annually; and a 30 MM bm net increase in utility logs volumes can be expected due to the required utilization standards that were instituted in the Region in 1976.

It is important to note that the increased volumes from the latter two sources are not limited to this alternative alone. Such increases could also be expected under the other alternatives that are presented in the TLMP Draft Environmental Statement. The adjusted programmed harvest levels that could be expected under each alternative are presented in TABLE 2.

The addition of these volumes should alleviate the concerns about timber related employment opportunities that have been expressed in relation to the IDT's previous recommendation. With the 470 MM bm that can be expected, this alternative is almost equivalent to the yield of Alternative B, as it was presented in the Draft Statement. Adding another 10 MM bm of yield from State lands that is now scheduled for harvest in the Haines area, make these two alternatives only eight MM bm different in total yield.

Alternatives A, A_1, and B, as they were previously analyzed in the Draft Statement, could all "provide enough timber to increase employment although the market analysis...indicated that demand may not be sufficient to translate these volumes into additional employment" in all of the Forest's three Administrative areas. This assumes that privately-owned timber lands will be harvested on a sustained-yield basis and that 10 percent of the marginal component of National Forest timber will be operable. This assumption, and the other assumptions (except for assumption 6) stated on pages 146 and 147 of the Draft Statement continue to be supported by the IDT.

There will probably be a time lag before the private lands actually become productive and influence market conditions, even though purchase contracts are already being negotiated for some of the private timber. During this transition period, the IDT recommends that sufficient volumes of timber should be offered to assure that no job losses or job displacements can be attributed to a failure on the part of the Forest Service to supply enough timber. Beyond this period, however, the Forest Service should not be considered as the sole source of supply for the timber industry. Were it not for the transfer of land to the State and the private sector, the addition of more than 150 MM bm of annual yield this land is capable of providing could be

TABLE 1--Proposed modifications to the previous IDT recommendation[1/]

Area name	VCU included[2/]	Extent of national forest land	Present allocation[3/]	Proposed allocation[3/]	Reasons for modification
	No.	*Acres*	*LUD No.*	*LUD No.*	
Port Snettisham	53	10,275	II	III	Increase timber yield potential, presence of power developments.
	55	22,575	II	III	
	56	12,294	II	III	
	58	17,172	II	III	
Whiting River	61	141,999	I	II	Increase future allocation flexibility, unrelated to Tracy Arm.
Williams Cove	64	9,270	I	II	Potential recreational development location; active mineral prospect.
Port Houghton	78	47,406	I	II	Increase future allocation flexibility, unrelated to Tracy Arm.
	79	42,688	I	II	
Northern Chilkat Peninsula	94	3,455	II	III	Satisfy desire of Haines for nearby developmental opportunities. The IDT recognizes that Haines will depend upon areas that are very distant from the community to satisfy the needs it has for resources, such as timber.
	95	8,843	II	III	
	96	8,575	II	III	
	97	6,447	II	III	
	98	25,469	II	III	
	99	13,374	II	III	
	100	8,218	II	III	
	101	6,613	II	III	
	102	36,361	II	III	
	103	9,210	II	III	
	104	19,041	II	III	
	105	23,409	II	III	
	106		II		
	107		II		
Ansley Basin	118	13,393	II	III	Increase timber yield potential.
Mud Bay	193	36,554	II	III	No change after considering discussion.
Tenakee Inlet	229	23,231	III	II	Satisfy community concerns facilitating use of Hoonah Sound for log storage purposes.
	231	18,517	II	III	
	248	9,700	II	III	
West Chichagof	254	17,588	I	I	Exclude Inspiration mining claims from LUD I.

Continued

TABLE 1--Proposed modifications to the previous IDT recommendation[1]--continued

Area name	VCU included[2]	Extent of national forest land	Present allocation[3]	Proposed allocation[3]	Reasons for modification
	No.	Acres	LUD No.	LUD No.	
Steelhead River	261	9,726	IV	III	Protection of sport-fishing values.
Southern Baranof	334	11,075	I	II	Facilitate the development of salmon habitat enhancement sites (aquaculture).
	335	8,067	I	II	
	336	10,969	I	II	
	337	11,984	I	II	
	338	9,485	I	II	
	340	7,370	I	II	
	341	22,880	I	II	
	342	13,199	I	II	
	343	11,454	I	II	
Yakutat Forelands	379	40,655	IV	III	Satisfy concerns of Yakutat residents about fisheries values.
Keku Strait	398	11,061	II	IV	Increase timber yield potential.
South Kuiu	408	18,170	I	II	Low interest in area for wilderness; provide more flexibility for future allocations.
	409	18,231	I	II	
	410	12,829	I	II	
	411	15,315	I	II	
	412	8,906	I	II	
	413	8,891	I	II	
Thomas Bay	484	11,282	II	III	Increase timber yield potential.
Stikine River	493	26,403	I	I	Provide a LUD II Corridor, as outlined on the map, to facilitae the consideration of a road corridor along the Stikine River (see transportation corridors recommendation).
	495	22,985	I	I	
	497	15,066	I	I	
Sunny Bay	524	18,185	II	IV	Increase timber yield potential.
	26	17,909	II	IV	
Salmon Bay	534	23,649	II	III	Increase timber yield potential.

Continued

TABLE 1--Proposed modifications to the previous IDT recommendation[1]--continued

Area name	VCU included[2]	Extent of national forest land	Present allocation[3]	Proposed allocation[3]	Reasons for modification
	No.	*Acres*	*LUD No.*	*LUD No.*	
Dall Island	641	16,284	II	IV	Increase timber yield potential.
	642	7,319	II	IV	
	643	16,009	II	IV	
	644	7,080	II	IV	
Essowah Lakes	659	6,372	IV	III	Protection of fisheries values.
Nutkwa	685	17,134	II	III	Increase timber yield potential.
Gravina Island	763	13,960	II	III	Increase timber yield potential.
	764	3,666	II	III	
Upper Portland Canal	810	16,217	II	III	Increase timber yield potential.
	811	32,643	II	III	
	812	13,390	II	III	
	813	25,319	II	III	
	814	10,923	II	III	
Blossom River	815	42,957	I	I	Exclude Borax mining claims from LUD I.
Lower Portland Canal	844	10,922	II	III	Increase timber yield potential.
	845	12,008	II	III	
	846	22,975	II	III	
	847	9,801	II	III	
	848	10,511	II	III	
	849	9,086	II	III	
	851	7,117	II	III	

1/ The interdisciplinary team's recommendation was shown as Alternative C, as modified in the TLMP DES.

2/ VCU means value comparison unit. VCUs are geopraphic units of specific land areas for which resource information can be gathered, analyzed, and displayed. The unit may be managed by itself or with other units. A VCU generally encompasses a complete ecosystem and may be easily recognized by a hydrological boundary. In some cases, an island or small group of islands comprise a single VCU. The 867 VCUs in the Tongass National Forest average about 18,000 acres in size, ranging from about 1,000 acres to more than 200,000 acres.

3/ In forming land allocation alternatives, a land use designation (LUD) is used to describe the broad purpose of the choice of management option, and to establish the types of allowed activities.

TABLE 2--Adjusted timber yield levels

Alternative	Current 1/ programmed harvest	Thinnings 2/	Net increase in utility logs	Revised programmed harvest 3/
		MM bm		
A	545	25	53	623
A-1	516	25	48	589
B	488	25	42	555
C	415	25	27	467
A-2	380-395 4/	25	22	435
D	367	25	18	410
A-3	345-360 4/	20	15	388
E	202	10	0	212

1/ As presented in table 9, page 85, TLMP DES.

2/ Assuming 5,000 acres are precommercially thinned each year (Alternatives A-D).

3/ This formula was used: 0.2 (CPH - Cedar) - Average utility log consumption level + Thinning + CPH = Revised programmed harvest. For example, under Alternative D 0.2(367 - 18) - 52 + 25 + 367 = 410 MM bm

4/ With off-Admiralty Island land selections.

added to the amount that is available under this alternative. This could push the total combined yield to more than 600 MM bm per year. Of the 150 MM bm, the team has only assumed that about 35 MM bm, which would not be suited to export as round logs, would be available to local pulp mills. The availability of such volume is viewed as a strong likelihood by the IDT. It should not be misconstrued as something that will obligate private timber land owners to supply this amount.

The proposed mechanism for supplying enough timber during the transition period is as follows. Sufficient timber should be offered for sale during the first five years of the Plan's life to satisfy the demands of the existing industry. If, at the end of this five year period, the actual level of harvest of National Forest timber is not declining as projected, then the reallocation of VCU's that are currently allocated to LUD's II and III will be considered. Given that the current (1977) harvest level is 483 MM bm and a declining demand for National Forest timber is anticipated, offerings of between 500-550 MM bm or more could be made to satisfy any countervailing demand trends. This mechanism is in keeping with the non-declining even flow policy that allows for harvest levels that are above a sustainable level so long as the average harvest level for a 10-year period is equal or less than the sustainable level. If the actual average harvest level for the first five years continues to remain higher than the 470 MM bm level, then a reconsideration of the allocations is in order. If the harvest levels are trending downward as predicted, then no changes will be necessary.

The Team is confident that the latter condition will be realized. In any case, what is proposed will assure that no timber related jobs will be lost due to Forest Service actions. If the assumptions that the team supports are borne out, then there will even be growth opportunities for the industry as a whole.

The areas allocated to LUD's III and IV contain 2,208,000 acres, or 72 percent, of the operable commercial forest land (CFL) whereas LUD II contains only 16 percent and LUD I contains 13 percent for a total of 877,000 acres, or 28 percent. Thus, while the total amount of land allocated to LUD's III and IV, which are permissive of timber harvesting, is somewhat less then that allocated to LUD's I and II, it contains the lion's share of the operable commercial forest land. This is important to consider since it indicates that diminishing returns can be expected from the allocation of more areas to LUD III and IV. The number of acres that would have to be allocated to increase the availability of the operable CFL acres is illustrated in Figure 1. For example, to include 18 percent (574,000 acres) more of the operable CFL in LUD's III and IV would require the reallocation of at least 2.2 million acres (see Alternatives A and A_1 in Figure 1). Most of these acres contain the most highly valued fisheries, wildlife, wilderness, and recreation resources of the Forest and should not, in the IDT's view, be allocated to increase the timber supply at the present time.

Reallocation of proposed LUD II and III areas to LUD's III and IV could yield an additional 80 to 170 MM bm per year. These areas, however, along with those proposed for LUD I, contain 14 of the 19 ADF&G identified "high quality watersheds", 85 percent of the 65 "important watersheds", many important recreation/subsistance areas, 58 percent of the most highly valued dispersed recreation areas, about 55 percent of the total important deer habitat that would not be directly affected by timber harvesting in the long-run (2,415,000 acres, or 60 percent), and about 90 percent of the areas rated highest in wilderness attributes (26 or greater). Reallocation of these areas to more intensive management would have to be accompanied be increasingly high trade-offs in the above amenity values. This flexibility to increase timber yields from the Forest should be held in reserve until it is truly needed. At the moment, there is no forseeable need to allocate more of these areas to LUD's III or IV.

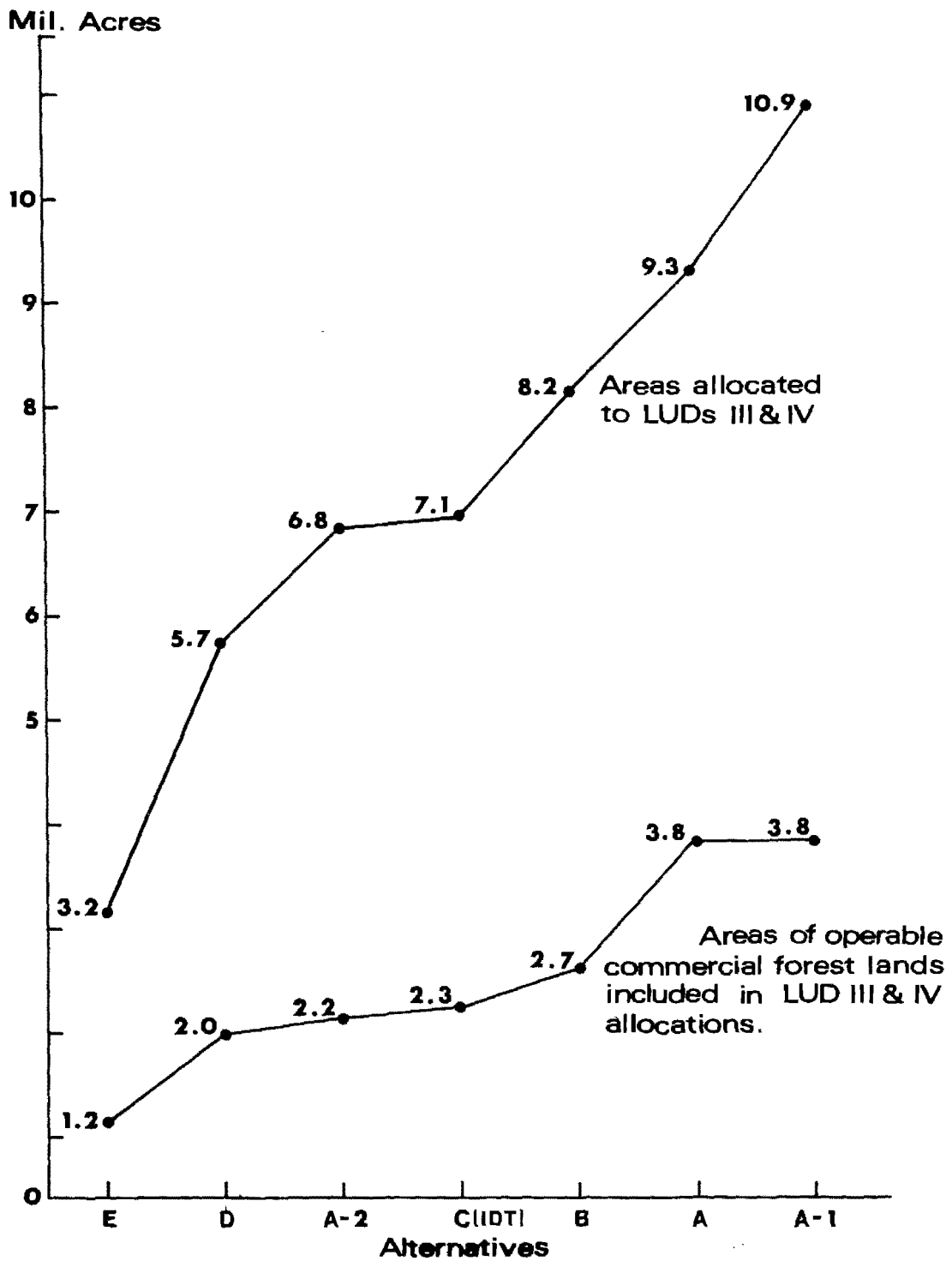


Fig.1- Allocated land areas compared by alternative with areas where timber harvesting requires no sophisticated equipment.

ADMIRALTY ISLAND

The IDT reviewed the allocation pattern on Admiralty Island in light of the response to the position it expressed in the DEIS. After consideration, the recommendation remains essentially the same, and was reinforced, because of the following;

1. The land values of Admiralty, when compared with the other camparable values on the Forest in a consistent manner, do not support a basically different allocation pattern than that proposed.

2. As part of the attempt to achieve a higher timber yield level the IDT made an intensive search of the Forest, including Admiralty, and adjusted the allocation pattern to increase the potential timber yield. This resulted in approximately nine MM bm of additional volume over the previous recommendation. No allocation changes were made on Admiralty. If all VCU's allocated to LUD's II, III, and IV on Admiralty were changed to LUD I and the proposed off-Admiralty selections were made, an additional 65 MM bm to 80 MM bm would have to be found by reallocations on the rest of the Forest. Based on the difficulty that the Team experienced in increasing the volume by nine MM bm, the IDT feels that the amenity values which would have to be foregone to increase the volume by this amount would be unacceptible to the public at large--both in southeast and nationally--as well as to the Forest Service which is reponsible for managing these lands under a multiple use concept.

3. The additional volumes that will be available from the thinnings and the increased utilization requirements should be used to alleviate the wide-spread concern about timber-related employment, rather than to support an all-Admiralty wilderness. However, since Admiralty is so highly valued by the many conservation organizations, the Team does recommend that the option to consider the Island further should be at least partially preserved. For this reason, it is recommended that the timber harvest that is proposed in VCU 158 be shifted to an off-Admiralty area for the life of the Plan.

OFF-ADMIRALTY SELECTIONS

1. The Team feels the existing Native land selections are compatible with the above land use pattern and does not recommend selection off-Admiralty. The selections which would have to be made in order to compensate, on a value for value basis, would require more acres with at least equal wildlife and amenity values, with a greater total reduction of these values on the National Forest. If Admiralty becomes wilderness and Native selections are not allowed there, approximately 15 MM bm per year timber yield would not be realized. In addition, the lands selected from the National Forest as compensation would reduce National Forest timber volume by up to 30 MM bm, since the possibility exists that, in order to gain value for value, the Natives could receive as much as two acres for one in the trade.

2. Some communities, the State, other Native organizations and other publics are greatly concerned about where the off-Admiralty selections would be. The proposal around the Situk River area near Yakutat was of specific concern.

3. If the Island does become a wilderness, the Natives should be allowed to keep their selections as proposed on Admiralty.

TIMBER RELATED EMPLOYMENT

While considering the relationship between public timber and the emerging private sources, the IDT was deeply concerned that existing levels of timber related employment not be jeopardized by its recommended allocation. It was concluded that the impact of privately-owned timber on the free market could not be ignored, but the team also agreed that timber unavailibility from the National Forest should not be the cause of any job losses. The team also realized that providing excessive volumes of timber might compete with private sources and, thus, make the marketing of low quality logs a source of difficulty.

The original alternative recommended by the IDT would maintain existing employment levels, but a shift between logging and sawmilling jobs would have likely occurred. The revised plan will provide sufficient timber to retain the average level of employment without any job shifts for the initial five year period, after which the preferred allocative pattern will be reassessed. While the IDT recommended alternative considers the impact of timber from private sources, this volume is not necessary to retain the current level of jobs during the initial five years of the plan. Since total employment is likely to increase under this alternative, each employment category is discussed in detail.

TABLE 3--Current, average and projected employment levels in the southeast Alaska timber industry

Employment category	Average employment level, 1970-76	Current level, 1976	Projected level, 1990
Logging	1,230	1,076	1,670
Cants	565	515	565
Pulps	1,096	1,178	1,180
Total	3,005	2,869	3,415

1/ Assuming a harvest of 450 MM bm from Tongass National Forest lands, 150 MM bm from private ownerships, and 8 MM bm from State of Alaska lands. This level of harvest assumes that cant production will remain at its current level, despite round log exports, but lower grade logs from private sales will be locally sold for pulp production.

Logging and Related Transportation

Employment in logging appears to have the greatest potential for growth of the three timber-related employment categories. Although round log exports from private lands are apt to compete with cants to some extent, their primary impact is likely to be an increase in total southeast Alaska timber exports. Regardless of the market to which private timber is shipped, its harvesting and transportation will create employment. Under the IDT alternative, sufficient timber will be made available from public lands to retain the current level of logging related employment.

Over a longer period, some reduction in logging employment on National Forest land is anticipated, but increased yield from private sources will more than compensate for this. Some shifts may occur regarding the individuals holding these jobs but logging employment in southeast Alaska has traditionally been somewhat unstable.

Pulp Manufacture

Expansion in employment related to pulp manufacture is constrained by present plant capacities. The IDT alternative provides an adequate wood supply to operate both of the existing pulp mills during the next five years, but anticipates that low quality sawlogs and utility logs from private sources will provide a portion of these raw materials in the long run. This does not represent any implied commitment on the part of the private landowners, but the result of an assessment of the market situation which indicates that local sales provide the highest potential returns for lower quality logs. In fact, the IDT was concerned that dumping large quantities of low quality logs on market from public sources could compete with the private landowners and cause them a disposal problem that has ramifications on the feasibility of some desired forest practices. Nevertheless, the scarcity of pulpwood does not appear to be a potential problem during the life of the plan.

Sawmilling

Cant manufacturing is the category most likely to experience a decline in employment opportunities, although the IDT alternative provides sufficient timber from the National Forest to retain employment at its current level for the next five years.

It is anticipated that some sawmilling jobs will be lost in the long run under an acclerated harvest from private lands as round log exports displace cant exports to some extent. However, the implementation of the preferred alternative will not cause any such job losses within the next five years and the market situation will be reviewed at that time.

In summary, some salient considerations regarding southeast Alaska timber-related employment should be examined. (Table 3) Average employment for the past seven years in the timber industry is equivalent to approximately 3,000 full time jobs. However, current employment is somewhat below this. By 1990, total employment is projected to increase by over 13 percent, although the increase could be tempered by a reduction of cant manufacturing. On the other hand, an accelerated harvest on private lands and increases in round log exports could further increase employment although these would likely be distributional changes.

RECREATION

On the Ketchikan Area the following areas of high to moderate recreation and subsistance use were allocated to LUD's I or II to retain existing recreation values and use options:

Most of E. Behm Canal, Manzanita, Ella and Mirror Lakes, Smeaton and Rudyerd Bays, Walker Cove, Bell Arm, Yes Bay, Naha, Moser Bay, Betton Island, Helm Bay, Caamano Point, Ketchikan Lakes, Bostwick and Carol Inlets, Grindall Island, Salmon Lake-Karta Bay, Trollers Cove, North Cholmondelay Sound, and Mary Island.

Most of the land directly adjacent to Ketchikan, including Ward Cove and Clover Pass, was allocated to LUD III to allow concentrated recreation development as needed, but with special restrictions on non-compatible activities.

Some areas were allocated to LUD III to provide greater protection to the scenic resource as viewed from highly used waterways and use areas including:

Land along the south entry to Behm Canal, Hassler Island, Spacious Bay, Carroll and Cholmondeley Sound, Kasaan Peninsula, Tuxekan Passage, Red Bay and Red Bay Lake, Port Protection and Lulu-San Fernando Island complex west of Prince of Wales Island, and Salmon Bay.

Around Petersburg and Wrangell, the following areas of high to moderate recreation use were allocated to LUD's I or II to retain existing roadless recreation values and use options:

Stikine-LeConte, Rocky Pass, Keku Strait and Keku Islets, Petersburg Creek, Duncan Salt Chuck, Pillar Bay, Tebenkof Bay and South Kuiu Island, Anan, Onslow-Stone Island group off Etolin Island, Farragut Bay and portions of North Thomas Bay.

Most of the land directly adjacent to Wrangell and Petersburg were allocated to LUD III to allow concentrated recreation development as needed, but with special restrictions on non-compatible activities. Some areas were allocated to LUD III to provide greater protection to the scenic resource as viewed from highly used waterways and use areas including:

Zimovia Strait, Eastern Passage and Blake Channel, waters along Stikine Strait (south side only), Wrangell Narrows, North Kupreanof, Port Camden and Security Bay.

On the Chatham Area, the following areas of high to moderate recreation were allocated to LUD's I or II to retain existing roadless recreation values and use options:

Areas around Goddard-Crawfish Inlet, Readout Bay, Baranof Lakes, South Kruzof, Kalinin Bay, Sealion Cove , Lake Eva, Warm Springs Bay, Khaz Bay Inian Islands, White Sulpher Springs, Elfin Cove, Three Hill Island, George Islands, Mud Bay on Icy Strait, Corner, Trap, Kadashan, Seal and Long Bays, Pavlof and Port Walter. On Admiralty Island, Chaik Bay, Hood, Pybus and Gambier Bays, Seymour Canal and Glass Peninsula, Admiralty Lakes, Mitchell Bay, also St. James Bay, Berner's Bay, Shelter Islands, Taku Inlet, Tracy Arm, Endicott Arm and Ford's Terror. In Yakutat, the Situk River, Dangerous River and Alsek River.

Areas adjacent to Sitka, Pelican, Tenakee Springs, and Juneau have been allocated to LUD III to allow concentrated recreation development as needed, but with special restrictions on non-compatible activities.

Some areas were allocated to LUD III to provide protection to the scenic resources as viewed from high use waterways and viewpoints including:

Olga Strait, Neva Strait, Lisianski Strait and Inlet, Seal Bay, Saltery-Tenakee Springs area (Cannery Cove, Indian River and Pavlof River), Freshwater Bay and Neka Bay-Eight Fathom Bight, Lake Florence, Lake Kathleen, Hawk Inlet, Funter Bay, Davies Creek-Echo Cove and Taku Harbor.

FISHERIES

Of the 19 "High Quality Watersheds" recommended by the Alaska Department of Fish and Game for LUD I or II classifications, the team recommended alternative resulted in the following allocations:

TABLE 4 - Allocation of High Quality Watersheds

System	Designation	VCU
	LUD Number	*Number*
Situk River	II	366
Turner Lake	II	43
Mud Bay Creek	II	193
Pavlof Harbor	III	218
Hasselborg-Thayer System	I,II	I - 157,167 162
Kanalku Lake	I	166
Goulding System	I	265
Lake Eva	II	295
Red Bluff Bay	I	329
Plotnikof-Rezanof Lakes	I	330
Castle River	3/III,IV	III - 435 IV - 436
Duncan Canal-Salt Chuck	4/II,III	II - 441 III - 424
Petersburg Creek	II	425
Kadake Creek	IV	421
Anan Creek	II	522
Sweet Water-Thorne System	III,IV(522) ,571,(573) ,(574) ,577 (575) , 576, 578 , 579 ,580 (586) ,596 ,597	
Sarkar Lakes	II	II - 554.1 IV - 554.2
Naha System	II	742
Karta System	II	I - 607 II - 606 ,608 III - 605

1/ See TABLE 1 for a definition of land use designation.
2/ See TABLE 1 for a definition of value comparison units.
3/ Special management recommended to protect sport fishing values.
4/ Lower end of stream in LUD II.
5/ LUD III units are in parentheses.

TABLE 5 - Allocation of Important Watersheds

System	Designation	VCU
	LUD Number	*Number*
Akwe River	II,III	II - 381,385
		III - 382
Italio River	II,IV	II - 380
		IV - 379
Arnklin River	II,IV	II - 371,372
		IV - 375,376
Square Lake (Ustay River)	III	III - 382
E. Alsek River	II	II - 396,397
Doame River	II	II - 396,397
Chilkat Lake	State land	
Chilkoot Lake	State land	
Moose Lake (Taku River)	II	41,46,47,49
Windfall Creek	I	151
Admiralty Creek and Young's Lake	III	133
King Salmon Creek	I	143
Lake Kathleen	III	148
Lake Florence	III	150
Pleasant Bay	I	168
Gambier Bay	I	170
Pybus Bay	I	182
Hood Bay	IV(Most in Native land)	171
Black River	I	272
Kook Lake and Creek	III	239
Sitkoh Creek	IV	244
Lake Suloia	I	278
Lake Baranof	II	326
Salmon Lake	III	323
Redoubt Lake	II	350
Big Bay	II	349
Deer Lake	I	335
Port Krestof	II,III	II - 308
		III - 309
Aleck's Lake	I	405
Tower's Lake	III	440
Kah Sheets Lake	IV	434
Ideal Cove Lakes	III	453
Blind Slough	III	451,452
Virginia Lake and Creek	III	502
Kunk Lake and Creek	III	463
Snake Creek	III	469
Thom's Lake and Creek	III	479
Marten Lake and Creek	II	509
Eagle River and Lake	II	519
Red Bay Lake	III	532,533
Salmon Bay Lake	III	534
Staney Creek	III,IV	III - 587
		IV - 588
Black Bear Lake	II	609
Klawok Lake and Creek	Native land	
Eek Lake	Native land	

TABLE 5 - Allocation of Important Watersheds

System	Designation	VCU
	LUD Number	*Number*
Hetta Lake	Native land	
Miller Lake	I	682
Klakas System	I	687
Dickman Bay	I	684
Kegan Lake	I	684
Niblack System	I	683
Essowah Lakes	III	659
Lake McDonald	II	724
Wolverine Creek	II	724
Lake Reflection-Short Creek	II	727,728
Unuk River	I	784,785,786
Helm Bay	II	787,788,789
Orchard Lake	III,IV	III - 733 IV - 734
Ward Cove System	III	750
Manzanita Lake	II	775
Ella Lake	II	773
Mirrpw and Low Lakes	II	754
Blakewell Lake	II	826,827
Hugh Smith Lake and Creek	III	836
Humpback Lake and Creek	II,III	II - 834 III - 835

1/ See TABLE 1 for a definition of land use designations.
2/ See TABLE 1 for a definition of value comparison units.

Land use designation III and IV and the resulting management prescriptions will probably result in some adverse impacts upon the fisheries resource. Sport, more than commercial, fisheries will be impacted by land use allocations III and IV. Any of the 19 "High Quality" systems sport fishing watersheds that fall within LUD's III or IV cannot be managed in a manner which maintains the high quality recreational attractions they contain. Likewise, any of the 65 "Important" sportfishing watersheds falling within LUD IV would have the same management consequences.

Even though the Forest Service goal is to "protect and/or enhance the fish resources and their habitat" (Area Guide, page 79) some unavoidable adverse impacts will occur from road building and other activities associated with timber harvest. While every effort will be made to minimize these impacts through proper mamagement, some damage is likely to occur.

With adequate prescriptive planning these adverse impacts should be minimized. Retention factors have been included in both LUD's III and IV to provide the necessary latitude for proper stream management.

WILDLIFE

The recommended alternative serves to protect the most valuable wildlife areas in southeast. In general, the highest valued wildlife areas are allocated to LUD I or

II. Areas such as the major mainland rivers - Taku, Stikine, Unuk and the Chickamin which received some of the highest wildlife ratings were placed in LUD I or II. Other high value wildlife areas that received considerable human use of the wildlife resource were also placed in LUD I or II. Such areas as Helm Bay, Rocky Pass, the Stikine Flats, Chaik Bay, Pybus and Gambier Bays, Mud Bay, Kadishan and Upper Duncan Canal fall in this category.

Other areas of high wildlife value or high human use were placed in Lud III category because this LUD would provide sufficient latitude for their management in conjunction with developmental activities. Much of the area around communities was designated to LUD III because of the higher use of those areas for fish, wildlife and recreation, even if the wildlife ratings were not particularly high. Such areas around Ketchikan include George and Carroll Inlets, Vixen Inlet, Gravina Island, Port Stewart and Union Bay. In the Petersburg-Wrangell area the Wrangell Narrows, Blind Slough and parts of Zimovia Straits and the Blake Channel were allocated the LUD III primarily because of high human use and/or high wildlife values. Around Sitka, the LUD III designation was applied to the high use areas of Stargavin Bay, Katlian Bay, Nakwosina Bay, Fish Bay, Salisbury Sound and Olga and Neva Straits. Berners Bay, the Mansfield Peninsula and Youngs Bay area were designated to LUD III to provide more flexibility in managing the visual, fish and wildlife values.

Some areas that would probably have been designated as LUD I or II because of high wildlife or human use were designated as LUD III or IV because of past logging activities. Areas like Staney Creek, Sweetwater, Fish Bay, Rodman Bay and Exchange Cove are included here.

The recommended alternative is likely to affect the deer populations, and other wildlife populations, in the areas that are proposed for timber harvest activities during the life of the Plan. Most of these areas are away from the major communities. Smaller communities like Craig, Klawock, Hydaburg, Hoonah and Point Baker will probably find deer hunting more difficult and furbearer populations, particularly pine martin, at lower levels in years to come.

The annual magnitude of loss of important deer habitat is not great when considering the Tongass as a whole and the amount of forest land it contains (see effects analysis in DES). The cumulative loss over the rotation period, however, could add up to as much as 35 to 40 percent for those species, like deer, that are closely tied to the old growth forest.

Wildlife biologists in Alaska and the Pacific Northwest have long felt that the change of uneven aged forests in this area to even aged second growth is detrimental to deer and certain other species. Current research being conducted in British Columbia and Alaska is now showing this to be true. Habitat requirements of deer in southeast Alaska are poorly understood, but it is becoming clear that the old growth areas are needed for winter range, and that even the intermediate summer and fall ranges are important for building the fat reserves needed for winter periods.

While actual studies on other species in southeast Alaska are not complete or even available, indications point to the value of old growth to such species as the bald eagle. Essentially all nesting takes place in old growth and very few nests have been recorded in second growth. Pine martin apparently require old growth. No studies have been conducted in southeast to show this, but studies have been made in other areas that indicate martin require this old climax habitat. Wolves in southeast are primarily dependent on deer as a food source, and while they will apparently tolerate a certain amount of development, activities that would reduce deer numbers will in turn reduce wolf numbers.

TRANSPORTATION CORRIDORS

Seven major road corridors on National Forest lands were analyzed for each alternative and the IDT Recommmended Alternative.

They are:

1. Petersburg (Stikine-Iskut Rivers Road). Thirty miles on National Forest to Canadian Border.

2. Ketchikan (Unuk River Road). Eighty-six miles on National Forest to Canadian Border.

3. Lynn Canal
   (a) East Side, Juneau-Skagway-Haines, 71 miles.
   (b) West Side, Haines to St. James Bay, 60 miles.

4. Taku River Road. Forty-five miles on National Forest to Canadian Border.

5. Sitka-Rodman Bay (Road I). Thirty-three miles.

6. Prince of Wales Island Roads. (Hollis to Hydaburg and Kaasan), 51 miles.

7. Kake Road (Petersburg-Kupreanof to Kake), 44 miles.

The IDT Recommended Alternative forgoes the option for construction of the Ketchikan (Unuk River) road for access to British Columbia and the Yukon. The Lynn Canal (east and west sides), Taku River, Sitka-Rodman Bay, Prince of Wales and the Kake to Petersburg roads are all within land use designations that would allow their construction.

These seven are the major inter- and intra-area access routes that are most likely to be built should any of those identified in the Southeast Multi-model Transportation Study be considered in the near future.

In regards to the Stikine-Iskut Rivers Road, the IDT favors the use of the road corridor that is contained in VCU's 503, 504, 506 and 507 in lieu of the corridor that parallels the river in VCU's 453 and 445. This would provide for the described linkage to Canada without altering the existing characteristics of the Stikine River Valley.

Since, however, the State of Alaska considers the latter corridor as its prime route at present, the IDT has retracted its previous "no road" provision for the LUD II corridor. If a road is eventually built along the river, then it should be constructed in conformance with the scenic river guidelines of the Wild and Scenic Rivers Act.

HYDRO ELECTRIC DEVELOPMENT SITES AND POWER TRANSMISSION CORRIDORS

All power transmission corridors identified in the Alaska Power Administration studies (1978) would be permitted within the land allocation patterns of the IDT Recommended Alternative. Only the Wrangell-Swan Lake transmission line would have to be re-routed around VCU 730. With this modification all power transmission corridors identified would be available for development purposes.

Power generating sites identified by the APA number 22 on the Tongass National Forest. One (Snettisham) is in operation. Five others (Mahoney, Grace, Swan and Green Lakes and Thomas Bay) are being considered for construction or are under construction (Green Lake near Sitka). Development of power generating capabilities on these sites would not be precluded by implementation of the IDT Recommended Alternative.

MINERALS

The recommended exclusions of the Inspiration and Borax mining claims (6,670 acres in VCU 254 and 1,160 acres in VCU 815) would remove the identified prime mineral prospects from proposed wilderness areas.

Fifteen of the 81 highly mineralized VCU's (19%) would be contained in the proposed wilderness areas. These include:

VCU 168: 136 claims, 2,720 acres plus, new claims, owner W.G.M.

VCU 170: 171 claims, 3,420 acres plus, new claims, owner W.G.M.

VCU 182: 160 claims, 3,700 acres plus, new claims, owner W.G.M.

VCU 265: 86 claims, 1,770 acres plus, owners Branson, Brow, Hollowell.

VCU 268: 241 claims, 4,820 acres, owners El Paso and Inspiration Development.

VCU 271: 309 claims, 6,180 acres plus, 46 patented claims, 920 acres plus, Chichagof Mining Company.

VCU 275: 14 claims, 280 acres plus, Cobel Mine Company.

VCU 497: six claims, 120 acres plus, two claims patented, 40 acres plus, owner Boy Scouts of America.

VCU 564: 73 claims; 1,430 acres plus, new claims.

VCU 682: 27 claims, 540 acres plus, 12 claims patented , 240 acres.

VCU 683: 60 claims, 1,200 acres plus, 18 claims patented, 360 acres plus.

VCU 684: 64 claims, 1,280 acres plus, 19 claims patented, 380 acres plus.

VCU 696: 86 claims, 1,720 acres.

VCU 795: 20 claims, 400 acres.

VCU 796: 149 claims, 2,980 acres.

The Wilderness Act provides that, subject to valid existing rights, mining and mineral leasing in wilderness areas will not be allowed after December 31, 1983. In addition, exercise of existing rights may be regulated to preserve the wilderness characteristics of the area. Nothing in the Act shall prevent within National Forest wilderness areas any activity, including prospecting, for the purpose of gathering information about mineral or other resources, if such activity is carried on in a manner compatable with the preservation of the wilderness environment (section 4(d)(2).

Mining locations lying within the boundaries of said wilderness areas shall be held and used solely for mining or processing operations and uses reasonably incident thereto, and hereafter, subject to valid existing rights, all patents issued under the mining laws of the United States affecting National Forest lands designated by the Act as wilderness areas shall convey title to the mineral deposits within the claim.

On January 24, 1977 patent was obtained by the Ridge Mining Company of the Percy Lode Claim (20.62 acres), located in Glacier Peak wilderness area. This property was granted under section 4(d)(3) of the Wilderness Act of September 3, 1964. In addition, within the Glacier Peak wilderness are several acres (17 patented claims) owned by the Kennecott Copper Company. These claims are active. Within the Weminuche wilderness area in Colorado, Climax Molybdenum Company has an extensive helicopter supported mineral exploration. (Herald, southwest Colorado's daily newspaper, Durango, Colorado, 81301, of July 9, 1976.)

Mr. William H. Snapp of Libby, Montana was permitted to uperate mining claims in the Cabinet Wilderness Area, Kootenai National Forest, September 3, 1969. (Agreement made jointly by Mr. Neal M. Rahm, Regional Forester, Region 1, and Mr. William H. Snapp, claim owner, September 1969.)

The amended Clean Air Act of August 1977 includes three air quality classes that will be applied to different geographical areas. The Class I, II and III designations are not standards in themselves. The classes specify the maximum allowable increases in concentrations of sulfur dioxide and particulate matter that are permitted over the baseline concentrations. In no case can the increment exceed the National Ambient Air Quality Standard (Reference: Section 163).

A Class I designation permits only a minor increase above the baseline level. A Class II designation permits moderate industrial growth to occur. A Class III designation permits significant industrial growth.

Wilderness existing on August 7, 1977, and larger than 5,000 acres, are mandatory Class I areas. They cannot be redesignated to any other class except by Act of Congress (Reference: Section 162).

All other areas are initially designated Class II. This includes wilderness established after August 7, 1977, proposed wilderness, etc. These lands can be redesignated by the State under Section 164 of the Act (Reference: Section 162).

States can redesignate air classes over their lands, including Federal lands with some restrictions. Federal Land Managers have no redesignation authority (Reference: Section 164(a)).

1. Wilderness established after August 7, 1977, and larger than 10,000 acres, may only be redesignated Class I or II by the State (Reference: Section 164(a)).

2. Wilderness established after August 7, 1977, and less than 10,000 acres may be redesignated Class I, II, or III by the State (Reference: Section 164(a)).

this page follows page E38

TABLE 6 - Wilderess Areas by Value Comparison Units and Extent

Area Name	VCU's included	Extent of National Forest land	VCU's included	Extent of National Forest land	Total Area
	Number	Acres	Number	Acres	Acres
Tracy Arm-Fords Terror	62	238,583	65	41,001	459,155
	63	12,280	67	167,291	
East part of Admiralty Island	136	11,158	156	24,420	472,810
	137	10,955	139	14,717	
	138	25,445	141	12,816	
	140	9,485	151	19,042	
	143	27,903	153	10,398	
	152	40,823	155	14,479	
	154	9,277	157	62,344	
	156	24,420	167	13,611	
	166	15,294	169	6,855	
	168	10,339	181	11,436	
	170	69,076	183	9,713	
	182	41,513			
	184	1,711			
Idaho Inlet	190	53,395			53,395
West Chichagof-Yakobi Islands	254	17,588	255	14,156	226,876
	259	14,859	263	14,328	
	264	11,480	265	10,998	
	266	7,604	267	2,124	
	268	4,114	269	11,645	
	270	19,507	271	16,745	
	272	18,961	273	7,108	
	274	16,907	275	14,618	
	276	8,352	277	5,938	
	278	9,847			
South part of Baranof Island	329	31,728	330	6,124	304,653
	331	9,884	332	23,157	
	333	17,048	344	30,574	
	345	18,847	346	70,352	
	347	40,359	348	56,580	
Russel Fiord	352	50,070	353	39,045	275,615
	354	30,330	355	30,731	
	356	57,344	357	16,241	
	358	8,190	359	9,025	
	360	14,260	361	10,513	
	365	9,866			
Tebenof Bay	404	8,805	405	23,027	64,258
	406	7,232	407	25,464	
South part of Etolin Island	472	23,333	473	29,062	53,395

It can be seen from Table 1 (acres) that the 3,042,419 (20.1%) operable commercial Forest land component becomes of crucial importance in the decisions to allocate such lands for wilderness, timber harvesting, or other development activities. The four Land Use Designations (LUDS I-IV) and Value Comparison Units (VCU's) are defined, along with other terms, in Appendix 1 of this report. The Tongass National Forest was divided into 867 Value Comparison Units (VCU's) to provide a common set of areas for inventorying resource values. Each VCU is a distinct geographic area that generally encompasses a drainage basin containing one or more large stream systems. The multiple values of each VCU have been assessed and land use designations are assigned to each VCU. In short, the LUD I designation is intended to preserve areas of representative ecosystems in the National Wilderness Preservation System. The LUD II designation provides greater management flexibility than LUD I while still retaining the primitive environment. Under LUD II designation, only timber harvesting for salvage is permitted, although personal use of wood may also be authorized by permit. Roads will only be built to serve authorized activities such as mining, power and water developments, aquaculture developments, and State-community transportation needs. LUD III areas are managed for the full range of multiple uses to provide a combination of amenity and commodity values. LUD IV areas also provide for the protection of the critical biological and esthetic values, but with more opportunities for intensive development. However, because of the intermingled nature of Forest, non-Forest, commercial and noncommercial Forest lands in southeast Alaska, an area designated LUD IV will, after a 100-120 year rotation period, still retain most of the Forest cover originally on the area.

Appendix 2 of this report summarizes the more than 1,700 public responses received to date. Although the preponderant number of the responses expressed preference for the A-1 (CMAL) alternative, there is a wide range of responses in most groups. Most larger communities of southeast Alaska also proposed the A-1 alternative, but some of the smaller communities such as Yakutat and Kupreanof preferred alternatives with substantially greater wilderness LUD I and LUD II designations. Also, Angoon is on record in support of the proposals for wilderness in HR-39. The individual community positions were given special consideration in the development of our recommendations. Among the Environmental-Conservation groups, most favored the alternatives with the higher wilderness (LUD I) and

Regional Forester's Recommendation

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
R-10

REPLY TO: 1920 Land Management Planning

August 15, 1978

SUBJECT: Tongass Land Management Plan

TO: Chief

I refer to Assistant Secretary Cutler's August 2 request for information developed to date in the Tongass Land Management Planning process. In accord with the planned schedule, the Interdisciplinary Team (IDT), Tongass National Forest Supervisors, and I have reviewed the public comments received and have analyzed the various land allocation alternatives.

In keeping with the direction of developing "a strong wilderness package," yet "substantially maintaining employment levels in southeast Alaska," we have given special emphasis to these two points. At the same time, we have carefully considered the fisheries and wildlife values attempting to provide a reasonable level of protection and enhancement wherever feasible to do so. Opportunities for recreation development were also examined. Although mining has been an important part of Alaska's history, many of the strategic mineral and energy sources in southeast Alaska have not been adequately explored to determine their economic potential. The U.S. Geological Survey this past year has completed mineral studies on two of the wilderness study areas designated by the Forest Service, but such studies have not been completed on other areas. However, we have made a special effort to obtain the best minerals information available and have considered this in the land allocation recommendations developed. The State and local communities were especially helpful in identifying transportation corridors, hydroelectric sites, and the needs for community expansion and development. The Multiple Use-Sustained Yield Act provided an excellent framework for evaluating these many different values and needs.

TABLE 1

The land area of southeast Alaska (Native and State selections excluded)

	Acres	Percent of Total
Total Land Area	15,189,193	100
Forest Land	9,402,110	61.9
Non-Forest Land	5,787,083	38.2
Commercial Forest Land	4,982,055	32.8
Noncommercial Forest Land	4,420,055	29.1
Operable Commercial Forest Land	3,053,028	20.1

TABLE 6 - Wilderness Areas, by Value Comparison Units and Extent

Area Name	VCU's included	Extent of National Forest land	VCU's included	Extent of National Forest land	Total area
	Number	*Acres*	*Number*	*Acres*	*Acres*
Stikine-Le Conte 1/	490	9,815	491	55,315	240,870
	493	26,403	494	22,985	
	495	49,896	497	15,066	
	498	29,293	499	10,938	
	500	21,159			
Coronation Island	564	19,122			19,122
Warren Island	565	11,353			11,353
South part of Prince of Wales Island	682	17,083	683	7,776	145,750
	684	23,858	687	31,033	
	690	3,233	696	15,866	
	697	5,212	698	13,395	
	705	8,400	706	17,892	
	707	2,002			
Part of Misty Fiords 2/	730	11,954	782	11,420	1,161,358
	783	40,692	784	13,939	
	785	18,628	786	71,864	
	787	50,610	788	22,592	
	789	38,832	790	39,609	
	791	12,876	792	25,797	
	793	75,979	794	43,840	
	795	105,544	796	99,866	
	797	84,554	798	53,798	
	799	35,447	800	16,617	
	801	13,985	802	32,507	
	803	17,113	808	53,279	
	809	28,777	815	42,957	
	816	28,382	817	33,368	
	820	12,652	821	14,104	
	867	9,776			
13 Areas	127 VCU's			3,487,883	3,487,883

1/ Contains a proposed LUD corridor in VCU's 493, 495 and 497. See"Transportation Corridors" in IDT Recommendations Appendix.

2/ Includes Unuk River (VCU's 730, 782-791).

LUD II values, but the Alaska Wildlife Federation expressed a preference for alternative A or A-1, and the Territorial Sportsmen expressed preference for the A-1 alternative.

The degree of public involvement throughout the land management planning process has been good. Citizen involvement groups participated in the formulation of the Area Guide and development of early planning efforts. Local communities have been keenly interested and involved. Organizations of various types similarly have been participating and responding to the various proposals. The State of Alaska has been a close partner in the planning process, and was represented on many task forces and on the Interdisciplinary Team. The Commissioner of Natural Resources coordinated the State's response to the Draft Environmental Statement and this response (Appendix 2) has been very helpful in pinpointing the specific concerns of the State of Alaska.

Analysis and Decision Criteria

The process of analyzing and evaluating alternatives is outlined in the Draft Environmental Statement (pages 146-159). The various alternatives were reassessed in the light of these criteria, the public comments, and information developed with the University of Alaska Institute of Social and Economic Research. With regard to the criteria of maintaining employment levels in the timber and related industry, the factors of harvest and production levels as well as employment were considered. In the State of Alaska's response (Appendix 2) the issue of employment and timber volume was addressed as follows:

> "The State of Alaska's first goal is that the Tongass Land Management Plan (TLMP) must provide sufficient timber volumes to maintain the present level of employment in our timber industry. However, the planning team's recommended alternative relies to the great extent on the following assumptions:
>
> (1) Timber of private lands will be made available to the existing pulp industry at the rate of 36 mbf per year, commencing in two to three years.
>
> (2) Round log export from private lands will likely displace some of the existing cant market, and thereby decrease cant production; and,

(3) Total employment in southeastern Alaska's timber industry would increase approximately 10 percent, but there would be some shift from cant mill employment to logging (i.e.: displacement of jobs).

"These assumptions, though carefully formulated, are tentative and have been the subject of considerable dispute during the review period. Furthermore, even the annual yield estimates which form the basis for overall harvest goals are subject to error. As indicated in a letter from Secretary Bergland to John Seiberling (February 1978), the timber yield estimates 'reflect the best available information, but are not precise. Actual sustained yield calculations may vary significantly from these estimates.'

"It seems crucial, then, to provide a plan that is flexible enough to achieve our dual goals even if one or all of these critical assumptions turn out to be in error."

The State of Alaska Response continues: "We agree with the Citizens for Management of Alaska Lands, the timber industry, and SEALASKA, Inc., that reliance on these projections, with little margin for error, may place an unnecessary risk on timber employment, and therefore stress that there should be a clearly stated mechanism for providing additional timber from the Tongass should that become necessary. However, that additional timber should come only on a prioritized basis from the least sensitive areas, leaving critical areas, such as Admiralty Island and outstanding fish and wildlife habitats until last, in the hope and assumption that it will never be necessary to log them. Our alternative uses "LUD" designations flexibly, to maximize protection afforded while the necessary timber volume is provided. It is encouraging that the recommended alternative does provide for overall growth in the timber industry. New employment opportunities will become available as Native Corporations begin to harvest lands, with the potential to supply a sustained yield of approximately 1/3 of that being harvested by the existing industry. There is some forewarning that the possibility exists for a displacement to occur in the export market, resulting in a shift from cant mill employment to logging employment. We feel that such displacement is undesirable, and that it must not be precipitated by a lack of timber available from the Tongass."

We, too, essentially reached this same conclusion as that outlined in the State response above, as we considered the possible impacts of significant reductions in timber to be offered and sold. Our recommendation seeks to assure the offering of the necessary timber volume to sustain the production and assure the employment levels of this industry.

Table 2 displays the average employment in the timber industry by administrative area on the Tongass National Forest during the period 1970-1976. (Source Dr. George Rogers, et al, University of Alaska Institute of Social and Economic Research.)

TABLE 2

Average Employment in the Timber Industry
Tongass National Forest 1970-1976

Area	Logging	Lumber	Pulp	Transport	Total
Ketchikan	636	255	609	66	1,566
Stikine	190	189	-	20	399
Chatham	404	121	487	28	1,040
Total	1,230	565	1,096	114	3,005

The average annual harvest for the above period (1970-1976) was 520 MMBF/year. The 1977 production level was 483 MMBF with no employment figures yet available for 1977. This reflects a lower than average situation including a reduction in production and employment at Haines.

The timber industry outlook for the future is somewhat brighter. During the current year, the Forest Service in initiating its Small Business Administration "set aside" program offered 80 million board feet to qualified Small Business operators in the timber industry. Each of the three sales offered were sold with up to five qualified bidders interested in these sales. Each were sold at higher than appraised rates demonstrating the viability of this program.

In view of the above, our objective is to retain the existing level of timber industry employment and we will plan to offer timber sales which would assure the industry the opportunity to purchase at the 520 MMBF level. This should assure no job loss, no job displacement, and continuance of a Small Business "set aside" program.

In recognition of the developing private sector, it might be expected that as the Native and State selected lands are conveyed, timber would become available from the private lands. The IDT and Draft Environmental Statement dealt with this question. The leaders of the Native corporations strongly urged the Forest Service not plan on substituting the volumes which may come from private lands, and we have not planned to do so during the first five-year period of the Tongass Land Management Plan. If, however, by 1984 the private timber land sector is able to supply local timber industry needs, it would be possible to recommend additional areas for LUD I or LUD II designation. Our recommendation provides for this type of adjustment for the second five years of this planning period.

Wilderness and Other Special Classifications

The Forest Service in Alaska has taken many actions over the years to recognize and protect the outstanding natural features occurring on National Forest lands. The following areas have been given a special classification to assure this recognition and protection.

--Mendenhall Glacier Recreation Area, established in 1947 (5,660 acres).
--Ward Lake Recreation Area, established in 1948 (160 acres).
--Limestone Inlet Natural Area, established in 1951 (6,439 acres).
--Old Tom Natural Area, established in 1951 (4,727 acres).
--Pack Creek Natural Area, established in 1951 (5,800 acres).
--Walker Cove-Rudyerd Bay Scenic Area, established in 1952 (93,540 acres).
--Tracy Arm-Ford's Terror Scenic Area (283,000 acres). This was proposed by the Forest Service for classification as a wilderness area in 1954. During the hearings, there was strong opposition to this classification and the proposal was set aside. In 1960, the Secretary of Agriculture classified it as a scenic area.
--Cape Fanshaw Natural Area, established in 1965 (600 acres).
--Admiralty Lakes Recreation Area, established in 1965 (110,000 acres).
--New Eddystone Rock Geological Area, established in 1966 (1 acre).
--New Kasaan Totem Park Archeological Area, established in 1966 (11 acres).
--Fish Creek Recreation Area, established in 1972 (8,710 acres).
--Dog Island Natural Area, established in 1976 (744 acres).

In addition to those classified areas, the Forest Service in its earlier roadless area review (completed in 1973 with one addition in 1976) identified seven wilderness study areas totaling 2,600,000 acres. Table 3 summarizes a few significant statistics about them.

TABLE 3

Tongass National Forest Wilderness Study Area Data
Developed During 1973-1977

Study Areas	Total Area	National Forest Land	Commercial Forest Land	Timber Volume
	---------- Acres ----------			MM bm
Russell Fiord	227,000	227,000	3,000	60.0
Tracy Arm 1/	900,000	780,000	38,000	1,155.8
Petersburg Creek	24,000	24,000	13,000	400.0
King Salmon Capes	120,000	119,000	51,000	1,274.5
Granite Fiords 2/	591,400	590,000	55,300	1,712.0
Khaz Bay	33,000	33,000	2,400	60.0
Total	1,895,400	1,773,000	163,600	4,662.3

1/ USGS minerals survey completed a report in summer 1977.
2/ USGS minerals survey published a report in 1977.

Administration's Wilderness Area Recommendations

Secretary Bergland's February 1 letter to the Subcommittee on General Oversight and Alaska Lands (Appendix 3) notes the objective to "recommend the strongest wilderness package possible in southeast Alaska coordinated with other needs and uses." The Secretary recommended the following areas and acreages for the Tongass National Forest as wilderness or wilderness study area proposals:

TABLE 4

Tongass National Forest Areas Proposed for Wilderness in Secretary Bergland's February 1 Letter

Name of Area	Acreage
Misty Fiords	2,282,000 acres
Stikine-LeConte	468,000 acres
West Chichagof-Yakobi	237,000 acres
Russell Fiord	306,000 acres
Admiralty Island	1,100,000 acres
Total	4,393,000 acres

TABLE 5

Tongass National Forest Areas Proposed for Wilderness Study in Secretary Bergland's February 1 Letter

Name of Area	Acreage
Endicott	124,000 acres
Yakutat Forelands	247,000 acres
Duncan Canal	163,000 acres
Karta	39,000 acres
Tebenkof	67,000 acres
Total	640,000 acres

The five areas proposed for wilderness designation and five areas proposed for wilderness study designation by the Secretary of Agriculture February 1, 1978, are covered in the Draft Environmental Statement and were carefully considered in the development of our recommendations. Other suggestions for wilderness and wilderness study areas were also considered. The Tongass Land Management Planning process also provided the mechanism and opportunity for analyzing all roadless areas in accord with Roadless Area Review (RARE II) criteria.

Secretary Bergland's February 1 letter (Appendix 3) committed the Tongass Land Management Planning process to provide the public with the opportunity to comment on the various wilderness proposals and to offer other suggestions. The many responses by the public did provide many helpful suggestions and these have been considered as we developed our recommendations. We hope this information and the recommendations developed during the planning process will be helpful as Secretary Bergland noted.

Table 6 is a listing of wilderness area (LUD I) designations we have recommended. It will be noted that there are a number of modifications, deletions, and additions from the listing in Secretary Bergland's letter of February 1, 1978. The changes are primarily due to the application of the criteria on wilderness values and the projected impact of proposed designations on existing timber employment levels and areas which may provide opportunities for the development of aquaculture facilities, hydroelectric power sites, critical mineral deposits and recreation facilities.

> Admiralty Island from timber harvest would result in either (1) a lower level of employment in the timber industry or (2) an extremely unbalanced and insensitive land allocation plan for the remainder of the Tongass Forest, assuming the team's economic assumptions are correct. Either result is unacceptable from the State's perspective, so a difficult compromise must be struck.
>
> "Therefore, the State of Alaska endorses the IDT's preferred alternative for Admiralty Island, which would classify the eastern half of the Island as wilderness. In addition, however, we strongly urge that no harvest be conducted on the remainder of the Island for the 10 year life of the plan."

The pending Native land selections on Admiralty Island should be resolved as soon as possible. The Government does not challenge the selection rights of Goldbelt, Inc. and Shee Atika, Inc., but voluntary exchange proposals are now under consideration. The consolidation of Shee Atika, Inc. and Goldbelt, Inc. selections on northwest Admiralty Island has already been recommended.

Admiralty Island Coastal Mountains National Recreation Area

Although all of Admiralty Island is not being recommended as wilderness, the entire island is recommended for designation as a National Recreation Area along with the mainland areas from Endicott Arm to Haines-Skagway (Appendix 5).

The suggestion of National Recreation Area status for parts of these areas has been suggested by a number of groups. The Territorial Sportsmen, Inc. proposed a National Recreation Area for a part of Admiralty Island and more recently the Juneau-Douglas Borough Planning Department and Assembly had suggested this type of development for a part of the Tracy Arm Fords Terror Area.

The proposed designation of Admiralty Island and the Coastal Mountains area as a National Recreation Area (NRA) would require congressional action. Among the specific provisions suggested for the development of this NRA are the following:

1. Provisions for further community expansion-development of the existing communities and the encouragement of the private sector to develop recreation facilities within the NRA.

2. Emphasis should be on State and local government participation in planning and development of the NRA and the encouragement of investments by the private sector.

3. Continued and expanded private land ownership should be provided. The Statehood Act authorized selection of up to 400,000 acres of National Forest lands for community expansion, development and recreation. This authority would continue to be the basis for State and community land selection. Native land selections should not be adversely effected in any way.

4. Developed recreation facilities, aquaculture sites, timber management, minerals exploration and development would be provided for on those parts of the National Recreation Area not designated as wilderness.

5. It is suggested that the primary NRA Visitor's Center be located at Juneau with interpretative services provided at such a Center. Natural resource management, historic and cultural interpretation would be featured. The existing Forest Service administrative site in downtown Juneau is the suggested location of the NRA Center. Ideally, this facility should be developed in conjunction with or adjacent to the community convention center now being planned by the Borough.

6. An Orientation-Visitor Center facility should also be provided at Haines as the northern "Gateway" to southeast Alaska and the NRA. This would build on the Chilkat Native culture, natural resource features, and recreation opportunities of the area. Access to and interpretation of the Davidson Glacier should be provided.

7. A Native cultural facility is suggested at Angoon to be designed and planned primarily by the Native communities and corporations.

8. Such facilities as Thayer Lake Lodge on Admiralty Island which would have to be phased out with wilderness classification should remain, as it is an ideal facility for the area and would be consistent with NRA designation.

9. Forestry, recreation, fisheries, wildlife, minerals, watershed, glaciology and other natural features of the NRA would be highlighted.

Appendix 4 displays the specific proposals in more detail and discusses the rationale for the areas recommended.

TABLE 6

Recommended Wilderness Developed for the Draft Environmental Statement Supplement (August 1978), Tongass Land Management Plan

	Area Proposed	Acreage
	Russell Fiord	275,614 acres
	Admiralty Island	472,810 "
*	West Chichagof-Yakobi	226,876 "
	Misty Fiords	785,383 "
	Blue River	330,395 "
	Petersburg Creek	27,277 "
	Coronation-Warren-Maurille Islands	34,899 "
	Endicott River	141,695 "
*	Idaho Inlet	53,395 "
*	South Baranof	304,552 "
	Karta	14,850 "
	Barrier Island-South Prince of Wales	97,033 "
*	Tebenkof	64,528 "
	Tracy Arm-Fords Terror	506,563 "
	Stikine-LeConte	315,096 "
	Etolin	73,087 "
		3,724,053 Acres

*-Requires timber sale contract modification/adjustment.

(Section 1 of the ALP Contracts limits reservations from allotments B&H to 236,890,000 board feet.)

Admiralty Island

With regard to Admiralty Island, this area was very carefully considered for wilderness designation, but the entire island is not being so recommended for a number of reasons. First, there are a number of other areas with higher wilderness and related resource values meriting LUD I or LUD II designation. The designation of all of Admiralty Island as wilderness would preclude the feasibility of adequately recognizing these other values, without triggering a reduction in employment levels.

The State of Alaska came to this same conclusion. Their position statement addresses this issue:

> "Due to the high degree of local and national interest in Admiralty Island, we would like to offer some specific comments on its future.
>
> "The controversy which enshrouds Admiralty represents nearly every conflicting value in the Tongass Forest. The Island has superlative wildlife, wilderness, scenic and recreational values, high quality timber stands and considerable potential for mineral development. It is used extensively for recreation by residents of Juneau, Sitka and Petersburg, and also for guided canoe and hunting trips. Additionally, it provides large quantities of commercially valuable fish and is the mainstay of local subsistence hunting and fishing, particularly by residents of Angoon. Admiralty Island has received congressional attention for special protective classification since the 1930's.
>
> "As recently as one year ago, it appeared that there would be sufficient timber volume available in the Tongass Forest to exclude Admiralty Island from timber yield calculations, while retaining sufficient harvest levels from the rest of the forest to maintain a healthy timber industry as well as to offer a reasonably balanced land allocation scheme for protecting fish, wildlife and recreation values on the rest of the Tongass. If this were in fact the case, the State would without reservation urge recognition of Admiralty as wilderness. Sadly, however, based upon yields calculated for the various alternatives in the Tongass Land Management Plan, and the work of the planning team, it is clear that to exclude all of

to pg 6

Transportation Corridors

Seven major road corridors on the Tongass National Forest were identified in the State of Alaska's Southeast Multi-Modal Transportation Study. They are:

1. Petersburg (Stikine-Iskut Rivers Road). Thirty-four miles on National Forest to Canadian border.

2. Ketchikan (Unik River Road). Eighty-six miles on National Forest to Canadian border.

3. Lynn Canal

(a) East side, Juneau-Skagway-Haines, Seventy-one miles.

(b) West side, Haines to St. James Bay, Sixty miles.

4. Taku River Road. Forty-five miles on National Forest to Canadian border.

5. Sitka-Rodman Bay (Road I). Thirty-three miles.

6. Prince of Wales Island Roads. (Hollis to Hydaburg and Kaasan), Fifty-one miles.

7. Kake Road (Petersburg-Kupreanof to Kake), Forty-four miles.

The recommended Land Use Designations provide for the possibility of these roads. The decision to actually approve and construct them will primarily be made by the State and Federal Highway Administration.

Appendix 6 is a listing of advance roading investments needed for Forest Service roads and trails during the first five years of the planning period. These are needed for development and use of all resources in Land Use Designations III and IV.

Fisheries/Wildlife/Water Resources

Appendix 7 is a listing of designated aquaculture sites where investments in fisheries enhancement projects are planned. Fisheries, wildlife, and water values were assessed on all value comparison units (VCU's) and considered in the Land Use Designations. This appendix also includes position statements on timber harvesting/wildlife-fisheries habitat relationships.

Appendix 8 also lists the existing and potential hydroelectric power sites on the Tongass National Forest.

Mineral Resources

Mining activity has played a very important part in the development and history of southeast Alaska. Many of the older mine sites have, in fact, become prime tourist and recreation attractions.

There are also many mining claims located. Prospecting and exploration investments were estimated to exceed $20 million this past year. Because many of the minerals and energy sources are in short supply or are critical to the strength and independence of the Nation, it is essential that continued exploration and development be encouraged. Such development can be planned in a manner which will assure reasonable protection of the environment. Appendix 9 summarizes the minerals/energy situation in southeast Alaska.

Summary of Recommendations

The enclosed maps show the specific Land Use Designations (LUD's) proposed for each value comparison unit (VCU). Map 1 covers the Regional Forester's recommendation; map 2 is the IDT recommendation shown for comparison purposes.

LUD I areas are the recommended wilderness area proposals. Table 6 identifies those proposed wilderness areas which involve existing timber sale contracts and requires either a bilateral or unilateral contract adjustment before the area could be formally recommended for such classification.

LUD II designations provide greater management flexibility than LUD I but generally retains the primitive environment.

LUD III areas are managed for the full range of multiple uses to provide a combination of amenity and commodity values. LUD IV areas also provide for the protection of the critical biological and esthetic values, but with more opportunities for intensive development.

Table 7 summarizes the recommended Land Use Designations for the Tongass National Forest.

TABLE 7
Tongass National Forest
Land Use Designations by Areas

	Chatham	Ketchikan	Stikine	Total
LUD I	1,989,026	1,079,410	655,617	3,724,053
LUD II	2,351,482	1,303,057	466,137	4,120,676
LUD III	1,386,680	1,291,004	728,665	3,406,349
LUD IV	1,179,177	1,488,743	1,270,195	3,938,115

The recommended alternative proposes the designation of over three million acres of wilderness LUD I areas. The recommendation also provides for a continued timber sale and harvest program that will enable the timber industry to operate within the historic 520 million board foot annual production level. This should assure no loss of current jobs or the displacement of such jobs. However, because of the expected development of a private land timber harvest program, some opportunities for purchase of this timber by the established local industry may be possible. For this reason, the timber sell and harvest schedule for the 1985-89 period may be adjusted.

Also, some of the value comparison units with LUD III designations, but with timber harvesting deferred to the second five-year period, may be reconsidered at that time. Adjustments in the individual Land Use Designations between LUD II and LUD III for the above purposes will be accomplished with an Environmental Assessment Report and with the participation and involvement of the public and the State. Table 8 is a listing of those LUD III areas on which no timber harvesting is planned during the 1979-84 period. If private timber becomes available for the local timber industry, consideration for reallocation to LUD II designations will be made by the end of that period.

TABLE 8

Areas on Which No Timber Harvesting is Planned During the 1979-84 Period

Area	Tongass Administration Unit
Kadashan	Chatham Area
West Admiralty Island	Chatham Area
Yakutat Foreland	Chatham Area
*Pillar Bay	Stikine Area
Rocky Pass	Stikine Area
Upper Duncan	Stikine Area
South Kuiu	Stikine Area
Gravina Island	Ketchikan Area

* Access road is planned through this area.

Appendix 10describes the specific activities and constraints applicable to Land Use Designations III and IV. It should be noted that even after the completion of a 100-200 year rotation period, most LUD IV areas (VCU's) will still retain most of their original forest cover. This situation occurs because of the fact that the operable commercial forest land component makes up only about 20 percent of the total Tongass National Forest land area.

This memorandum and the appendices provide the recommendations and information requested in Dr. Cutler's August 2 memorandum to the Chief. This report summarizes the information developed to date in the Tongass Land Management Planning process with more complete reports to be included in the Supplement to the Draft Environmental Statement to be published by the first week of September.

The Alaska Region Land Management Planning Staff continues its close liaison with the Washington Office Land Management Planning Group. The cooperation and assistance of your Staff is appreciated.

JOHN A. SANDOR
Regional Forester

Enclosure

F. September 14, 1978 Letter from Agriculture Secretary Bergland to the Senate Energy and Natural Resources Committee

DEPARTMENT OF AGRICULTURE
OFFICE OF THE SECRETARY
WASHINGTON, D. C. 20250

SEP 14 1978

Honorable Henry M. Jackson
Chairman, Committee on Energy
and Natural Resources
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

On June 2, 1978, on behalf of the Administration, we provided you with our recommendations for designation of National Forest Wilderness in southeast and southcentral Alaska. We recommended seven areas totaling 5,936,000 acres for wilderness designation. Each contains spectacular scenery, diverse vegetation and wildlife, and is in a primitive, undeveloped condition. They will be outstanding additions to the National Wilderness Preservation System. In addition, we recommended that seven areas totaling 2,638,000 acres be designated for wilderness study. Inclusion of these National Forest wildernesses and wilderness study areas in the Alaska lands legislation provides the opportunity to provide truly comprehensive wilderness representation in Alaska. Our recommendations propose the strongest wilderness package coordinated with employment and other resource management needs. As the Committee begins its consideration of southeast Alaska wilderness, we wish to emphasize the Administration's strong support for its wilderness proposals.

As you are aware, the Forest Service has been proceeding with land management planning on the Tongass National Forest in Alaska. In this process, several alternatives have received additional discussion and review. We have had the benefit of the analysis of these alternatives as we continued to assess the issues involved in management of the National Forest lands. Our review has considered the national, State, and local interests. We strongly believe it is in the long-term interest of the Nation to provide for the wilderness designations we recommend. Such action is fully in keeping with the purposes of the National Forests and overall management of the Tongass National Forest.

In considering overall resource management on the Tongass National Forest in Alaska, including wilderness designations, a question has arisen as to the impact on employment in the timber industry. Assuming a continued strong market for timber in southeast Alaska, two factors will determine whether or not the current levels of employment in the southeast Alaska timber industry can be maintained or increased--the amount of timber that will be available from the National Forest and the amount that will be available from former National Forest

lands transferred to State and Native ownership. In looking at the overall employment picture, it is also important to recognize the major economic value of Alaska's natural resources for tourism, sport fishing and hunting, and commercial fishing. Our proposed wilderness designations will contribute to the realization of these latter economic opportunities.

Historically (1970-76), the forest industry has harvested an average of 520 million board feet of timber and employed 3,005 people in southeast Alaska. This timber harvest and employment were supported by the total commercial forest land area which at that time was essentially all National Forest. This land base has changed, based on the Statehood and Native Claims Acts. Approximately 16 percent of the commercial forest land on the Tongass National Forest, containing some of the best commercial timber, has been or will be transferred to State and Native ownership. It is anticipated that substantial timber harvest will occur on Native lands as well as some harvest on State lands.

The appropriate level of timber harvest from the reduced capability of the Tongass National Forest must be carefully set after consideration of the new landownership pattern and the requirements of the National Forest Management Act concerning overall resource protection and management including wilderness designations.

The Administration plans to work with the Native Corporations to find ways to increase the marketability and domestic manufacture of substantial quantities of logs which are not in demand in the export market. The Administration also will work with industry to seek ways to lower production costs and achieve more economic yields from forested lands.

We estimate that timber sold from State and Native lands, formerly part of the Tongass National Forest, will support approximately 400 timber-related jobs, leaving approximately 2,600 to be supported from timber sold from the reduced land base of the Tongass National Forest. This would be necessary to maintain the historical average of approximately 3,000 timber-related jobs in southeast Alaska. To do this will require annual harvest of approximately 450 million board feet from the Tongass National Forest. Such harvest levels can be sustained without unacceptable loss of environmental and other resource values within our management program. Investments in advance roading, intensive timber management, and improved harvested techniques would be necessary. Our current estimates are that such a management effort would cost an estimated 27-27.5 million in current dollars, approximately 4 million dollars more than the 23.5 million dollars programmed for the Tongass National Forest in fiscal year 1978. This incremental cost seems manageable within the normal Forest Service budget allocation process.

We recognize that the actual amounts of timber-related employment from harvest on State and Native lands are dependent upon decisions by those landowners, and could differ from our current estimate. We are willing to cooperate in planning with the State and Native landowners, and we believe that we can adjust our plan to some degree to compensate for decisions on their part that would cause employment to vary significantly from our current estimates.

We must emphasize that success in maintaining any given level of total employment in southeast Alaska is dependent on many economic, social, and environmental factors. We also would like to point out that variations in forest products employment cannot be avoided if market conditions change significantly.

We will be happy to work with you, members of the Committee, and staff to clarify information concerning resources in Alaska in an effort to expedite your consideration of the Alaska lands legislation.

The Office of Management and Budget advises that there is no objection to the presentation of this report and that the designation of the recommended wilderness would be in accord with the President's program.

Sincerely,

f/ Bob Bergland
Secretary

G. Off-Admiralty Land Selections

A. The Objective

The objective of land exchanges for Native selection rights on Admiralty Island is essentially the same as in the environmental analysis report (EAR) dated July 25, 1978, except that the Native corporations of Goldbelt and Shee Atika submitted several specific exchange proposals. The proposals are also made in a new context, that of the President's withdrawal of Admiralty Island for wilderness purposes. The proposals by Goldbelt and Shee Atika and alternatives proposed by the Government are set forth below. In summary, the Government's objective is to acquire the selection rights or partial interests of Goldbelt, Shee Atika and Kootznoowoo on Admiralty Island in order to minimize conflict with the purposes for which the Admiralty Island National Monument was established and to maintain the wilderness qualities pending Congressional action on wilderness designation. Any exchange proposal must be evaluated in terms of that objective.

B. The Present Situation

1. Public interest served in exchanging for the Natives Admiralty Island selection rights.

The Administration has identified wilderness designation for Admiralty Island as a specific goal. On December 1, 1978, the President proclaimed Admiralty a National Monument to protect the historic, scenic and biological values in this area. It will be administered to preserve its recreational, scenic, scientific, educational, natural and historic values. Valid existing rights on Admiralty, including selection rights of the Alaska Natives, are protected under terms of the Proclamation. It is felt that intensive management and development of lands which the Natives have selected on Admiralty would be in conflict with the overall objective of the Monument and the proposed wilderness. Much of the wilderness value of Admiralty and the publics use of it lies in maintaining the island's integrity as a wilderness management unit unbroken by areas of intensive development with associated roads and logging. It is, therefore, determined to be in the public interest to move the Natives selections off of Admiralty Island. Various alternatives to achieve this objective have been explored with the Natives including purchase, exchange for cutting rights, and other types of land exchanges.

2. Benefits to management of moving Native selections off Admiralty.

Maintenance of the integrity of the island as a wilderness unit would enable the most efficient management by the Forest Service. Were Native selections to remain on Admiralty, the Forest Service would incur additional costs such as boundary marking and posting, protection from trespass, and providing rights-of-way for access.

3. Nature of Native rights on Admiralty.

Three Native corporations have had land on Admiralty withdrawn for selection purposes. Kootznoowoo, the Angoon village corporation, had land withdrawn by Section 16(a) of the Alaska Native Claims Settlement Act (ANCSA) while the urban corporations of Sitka (Shee Atika) and Juneau (Goldbelt, Inc.) had land withdrawn under Section 14(h)(3) of ANCSA. Each of these corporations proceeded to select acreage from within these withdrawals as prescribed by regulations of the

Department of the Interior. Kootznoowoo selected 21,480 acres on Admiralty, Shee Atika selected 19,910 acres, and Goldbelt selected 20,025 acres on the island.

The lands selected by Kootznoowoo are in the scenic Mitchell Bay area near the village of Angoon on the southwest side of Admiralty. There is estimated to be about 417,280 M bm of timber on the lands selected by Kootznoowoo with an estimated value by the Forest Service of $47,703,450. The values of other resources, i.e., the recreation, wildlife, water, fisheries, and other characteristics have been evaluated in the Tongass land management planning process but have not been quantified in monetary terms. The comparative values of these resources are indicated in Table 1-A.

The lands selected by Shee Atika are in the scenic Hood Bay area on the southwest side of Admiralty and just south of the village of Angoon. There is an estimated timber volume of 478,300 M bm on the area with an estimated value by the Forest Service to be $52,340,370. The value of the recreation, wildlife, fisheries, water and other values cannot be fully quantified, but are indicated in Table 1-A.

Goldbelt has selected its lands in the scenic Lake Kathleen area on the northwest side of Admiralty. There is an estimated timber volume of 497,370 M bm on the selected land with a value estimated by the Forest Service to be $53,974,590. The relative values of the other resources are indicated in Table 1-A.

Although the rights of Kootznoowoo to select on Admiralty have never been questioned, various parties have challenged the selections made by the Shee Atika and Goldbelt Corporations. This question was addressed by the Administration on January 19, 1978. Secretary of the Interior Andrus, in presenting the Administration's position to the Senate Committee on Energy and Natural Resources, said: "...The Administration does not propose to take away the selection rights of the Native corporations of Sitka and Juneau. We are hopeful that voluntary arrangements will be made with those corporations for the exchange of their selections on Admiralty Island for other lands in southeast Alaska."

C. Available Alternatives to Retain Natives' Selections on Admiralty Island in Federal Ownership.

There are three basic ways to move the Natives' selections off Admiralty. These are to exchange National Forest land for the Admiralty selections, exchange timber cutting rights, or to purchase the selected lands at fair market value.

Under the exchange alternative an exchange can be made of land for land at (1) equal fair market value (2) equalized through use of cash equalization or, (3) land for timber at fair market value with cash equalization. The Secretary of Agriculture is also authorized to make exchanges under Section 22(f) of ANCSA for other than equal value if he deems it in the public interest.

Exchange of timber cutting rights is authorized under Section 22(f) of the ANCSA and the Federal Land Policy and Management Act of 1976.

Purchase of lands can be made under authority of the Act of August 3, 1956. In its last session, Congress supported proposals for exchange of selection rights of Kootznoowoo, Shee Atika, and Goldbelt on Admiralty Island for National Forest lands off-Admiralty. The legislation was not acted upon before the Congress adjourned. However, the clear intent of both the Congress and the Administration was to effect such exchanges. This then is the basis for further efforts by the Forest Service and

the Native corporations to identify lands elsewhere on the Tongass National Forest that could be exchanged for the corporations' selections on Admiralty.

D. National Forest Areas Designated as Available for Exchange For Admiralty Island Selections.

The Forest Service has compiled and evaluated National Forest lands available for exchange on Table 2-A.

Table 3-A identifies areas and groups them into two economic combinations which form the bases of the initial offers made by the Forest Service to Goldbelt and Shee Atika June 19, 1978. Those proposed equal value exchanges were based primarily on timber balues. The value within these combinations actually exceeded the value of the Goldbelt and Shee Atika Admiralty selections based on operability and appraisal standards and include 25 percent additional volume to allow for a margin of error in volume which could later be revised and values equated in appropriate cash equalization or other adjustments. Table 1-A summarizes the total value characteristic of the two Forest Service offered tracts.

E. Options

While there are interrelationships between exchanges with the three corporations for lands off-Admiralty, this FES is only intended to identify a preferred solution for an off-Admiralty Island settlement with Goldbelt. Acceptable alternatives for resolution of the Kootznoowoo and Shee Atika selections are still being explored.

Goldbelt, Inc. Alternatives

1. On June 5, 1978, Goldbelt, Inc. submitted a proposal for exchange of their Admiralty selections for certain lands off-Admiralty. However, much of the desired off-Admiralty areas were not within the area which was identified at that time as being available for exchange. Therefore, the proposal was not favorably acted upon by the Forest Service pending a new proposal by Goldbelt.

2. The first specific proposal for lands within areas identified by Forest Service as available for exchange came from Goldbelt. This was a modification of their first proposal of June 5, 1978. It dropped the Nutkwa Lagoon and West Arm Cholmondeley portions and added 13,814 acres in the Yakutat area. The proposal included 42,494 acres in four areas on the mainland for their 19,618 acres on Admiralty. Three thousand twenty-three (3,023) acres on Douglas Island and Berners Bay in their original selection which remained unchanged are not included in these acreages or those shown below.

The following table compares the values of Goldbelt's original Admiralty Island selections with those of their modified proposal of June 5, 1978.

GOLDBELT INC.

CHARACTERISTIC	ADMIRALTY IS.	MAINLAND	DIFFERENCE
Gross Acres	20,025	42,494	22,369
Timber Vol. MBF	497,374	1,145,040	+674,666
Timber Value $	53,974,590	133,591,820	+79,617,230
Relative Fishery Value	Medium	Medium	Twice as many of similar acres.
Wildlife Value Rating	Low	Moderate High	Over twice the size of more productive habitat.
Recreation/Wild.	Low	High	Over twice the acres of more desirable recreation/ wilderness lands.
Relative Soil Productivity	Medium-High	Low-Medium	Twice the area of less productive soil.
Acres of Developable Lands/with higher real estate values	2,100 0 Harbors	8,100 5 Harbors	+6,000 +5 Harbors

The value of the surface resources on the National Forest lands in this proposal exceeds that of the original Admiralty Island selection by more than double. To justify the exchange as being in the public interest requires that the advantages of having Goldbelt, Inc. move from Admiralty outweighs the disadvantage of the disparity in surface values including consideration of valuable public recreation, timber and wildlife values on the mainland areas selected for exchange. Of particular concern in determining public interest is the serious impact of removing both on and off Admiralty Island areas from availability for the small business timber sale program.

3. An alternative was proposed on August 11, 1978, by the Forest Service for exchange on an acre-for-acre basis with cash equalization. An area equal to the Goldbelt Admiralty selections would be selected from a 29,085 acre area of National Forest which has an estimated value of $62,637,450. Goldbelt's Admiralty selections include 20,025 acres with 497,370 M bm of timber valued at $53,974,590.

The National Forest lands included in this alternative were located as follows:

Berners Bay	6,624 acres
Douglas Island	8,281 acres
Hobart Bay	14,180 acres
TOTAL	29,085 acres

National Forest lands included in this proposal were identified to provide lands for both Goldbelt and Shee Atika exchanges within the area originally identified by the Forest Service as available for exchange.

4. Exchange on a value-for-value basis considering the same lands as in 3 above.

5. On October 13, 1978, an alternative was proposed by Goldbelt which dropped out any lands previously identified in the Yakutat area and added lands in the Port Houghton Bay area and the head of Chuck River.

This alternative would include an exchange of the Goldbelt 20,025 acre Admiralty Island selection for 995 acres at Berners Bay and 26,779 acres in the Port Houghton-Hobart Bay area. In this alternative the values of Goldbelt's selection rights on Admiralty and the National Forest land which would be exchanged are unequal based on estimated value of standing timber, $53,974,500 (497 MM bm) and $70,472,000 (653 MM bm) respectively. Through a series of meetings, Goldbelt has expressed its willingness to accept the lands identified in this alternative as a minimum compensation for its selection rights on Admiralty. The Secretary of Agriculture has expressed his willingness to pursue this exchange. In his judgement the value to the public interest served through movement of Goldbelt off-Admiralty and protection of the island for wilderness, National Monument and other values, offsets the difference in the monetary values and public interest values foregone on National Forest lands exchanged. Under Section 22(f) of ANCSA, the Secretary has authority to make exchanges for Native selection rights for other than equal value if it is deemed to be in the public interest. While the Secretary proposes to pursue this exchange, it must first be subjected to the NEPA process before final conveyance can be made. The value estimates of the offered and selected lands in this alternative are based on more refined timber volume and value information than was available at the time of the DES publication.

No attempt was made to place a dollar value on other resources such as recreation, wildlife, and fisheries. The recent Presidential proclamation establishing Admiralty Island as a National Monument recognizes that protection of Admiralty Island is deemed in the public interest. This interest is not easily quantifiable in monetary terms, but has significant value as expressed in the proclamation. Without the exchanges of the Natives off-Admiralty lands the public value of the island would be diminished due to possible development inconsistent with wilderness and National Monument objectives. Managed as an unbroken entity by the Forest Service, public values of the island will be enhanced by the protection of the scenic, scientific, historical, and wilderness values.

Under this alternative, sub-surface rights would be selected in the new off-Admiralty area by Sealaska Regional Corporation for an equal acreage to that relinquished on Goldbelt's Admiralty Island selection.

Easements

Public access routes are needed across the off-Admiralty lands proposed for exchange. Various roads and trails would provide access to National Forest resources isolated from the public waterways by the land proposed to be conveyed to Goldbelt. Also part of the five-acre site easement may be identified where needed for transfer facilities. The trails will be located to assure continued access for hunting, fishing and general public enjoyment on the remaining public land. The easements needed could be reserved as part of the exchange agreement, or they could be handled using the process of Section 17(b) of the Alaska Native Claims Settlement Act. Although the 17(b) process may not be legally applicable to exchanges made under the Section 22(f) exchange authority, the parties to the exchange may agree to utilize the Section 17(b) process as one means of identifying easement.

Adequate provision for access to National Forest lands will maximize the future resource management options.

6. Purchase of Goldbelt's Admiralty Island selections is another alternative. However, Goldbelt has stated that they will not consider any alternative which will not provide them a land base. This alternative has, therefore, not been pursued as a viable alternative.

Shee Atika, Inc. Alternatives

1. On June 21, 1978, Shee Atika, Inc. submitted a proposal to shift from its original selection to the northwest Admiralty lands vacated by Goldbelt with a small addition to previously selected lands in Katlian Bay near Sitka. A comparison of its original selection to their proposed alternative follows:

SHEE ATIKA, INC.

CHARACTERISTICS	ORIGINAL SELECTION	ALTERNATIVE SELECTION	DIFFERENCE
Acres	19,910	23,970	+4,060
Timber Volume	478,312 MBF	570,620 MBF	+92,308 MBF
Timber Value	$52,340,370	61,193,290	+8,852,920
Relative Fishery Value	Low	Medium	Generally Insignificant.
Relative Wildlife Value	Very High	Low	Substantial reduction in quality wildlife habitat.
Rec/Wilderness Values	High	Low	Substantial reduction in quality of rec/ wilderness values.
Relative Soil Productivity	Medium	Med-High	Generally insignificant.
Developable Lands Real Estate - Acres Harbors	2,600 5	2,200 2	 -400 -3

This alternative does not meet the evaluation criteria to enable additional wilderness classification by acquiring the Native corporation land selection rights on Admiralty Island, nor is it consistent with Admiralty National Monument as proclaimed by the President. It does, however, retain an extremely desirable area in public ownership. Hood Bay has both higher recreation/wilderness values and higher wildlife values than the northwest Admiralty lands. If Goldbelt exchanges off-Admiralty, it may be in the public interest (i.e. higher wildlife, recreation, and wilderness value retained in public ownership) to consider Shee Atika's proposal to move from Hood Bay to northwest Admiralty, with a small addition to previously selected lands in Katlian Bay.

2. Shee Atika could exchange its selections for lands on northwest Admiralty Island, with Goldbelt retaining their original selection on Admiralty Island. This alternative presumes that an exchange off-Admiralty would not be consummated and that lands off-Admiralty could not be agreed upon for an exchange with Shee Atika. Shee Atika could shift their selections to VCUs 144, 145, 146, and 147. Several other VCUs could also be added if necessary to provide equal value. There is enough land in the area for both Shee Atika and Kootznoowoo.

This alternative is not consistent with either the Administration's desire to classify all of Admiralty as wilderness nor is it consistent with the purposes of Admiralty Island National Monument as proclaimed by the President.

If, however, a move of the Native selections from Admiralty cannot be achieved, this alternative may provide several advantages over leaving Shee Atika in its original selection area.

a. Hood Bay would remain in National Forest ownership. Shee Atika would not be burdened with the difficult task of harvesting timber and other valuable resources from this more sensitive area.

b. The Native ownerships on Admiralty could be consolidated to take economic advantages of a joint road system, shared camps, log dumps, and other very costly logging investments. This would provide a greater profit margin to the corporations.

c. The scenic and recreation value of the Hood Bay area are much greater than those of National Forest land in northwest Admiralty that would be exchanged. Other things being equal, it may be in the public interest to gain the protection of the Hood Bay area for the loss of public values in northwest Admiralty.

3. On July 9, 1978, the Forest Service proposed an acre-for-acre exchange with cash equalization with Shee Atika for certain National Forest lands within areas which had previously been identified as unencumbered lands available for exchange. Shee Atika had concluded that it was unable to find suitable lands within the remaining areas available for exchange after selections by Goldbelt were accommodated. Nevertheless the Forest Service identified unencumbered available lands believed to be of adequate value for an exchange with Shee Atika. The lands and a comparison to the current Admiralty selection follows:

	GROSS ACRES	CFL ACRES	TIMBER VOLUME ESTIMATES TOTAL VOLUME (MBF)	GROSS MBF/ACRE	CFL MBF/ACRE
Current Selection	19,910	18,642	478,300	24,023	25,657
Alternative Areas					
Chuck River	9,976	9,527	243,903	24,449	25,601
South Windham Bay/ Libby Creek	11,020	9,282	208,189	18,892	22,429
Dry Bay	8,960	7,898	167,499	18,694	21,208
Totals	29,956	26,707	619,591	20,683	23,200

The estimated value of the timber volume (478,300 M bm) on Shee Atika's original Admiralty Island selections is $52,340,370 as compared to $60,645,470 for the estimated timber volume (619,591 M bm) in the National Forest area available for exchange.

If a decision is reached to consummate the exchange with Goldbelt for lands identified in the October 13, 1978 proposal, to which there is general agreement, some lands in the Chuck River area will no longer be available for exchange with Shee Atika. On the other hand some lands previously identified for use in an exchange with Goldbelt will not be included in the Goldbelt exchange and therfore, these lands will be available for exchange with Shee Atika.

4. Exchange with Shee atika on a value-for-value basis considering the same lands as in item 3 above.

5. Purchase of Shee Atika's Admiralty Island selections for fair value. This would be consistent with the Administrations's desire for wilderness and proclamation of Admiralty as a National Monument.

Shee Atika has expressed a willingness for possible cash or land off-Admiralty and cash but the government and Shee Atika have been unable to agree on how value should be determined.

Kootznoowoo, Inc. Alternatives

1. Exchange of timber cutting rights off-Admiralty for timber on Kotznoowoo Admiralty Island selections. It should be noted that Kootznoowoo has made no proposal. Sufficient timber is believed to be available to exchange for cutting rights on Kootznoowoo's Admiralty selection.

2. Purchase of a scenic easement on Kootznoowoo Admiralty Island selections. A scenic easement is generally not the best method of protecting the island since it involves the perpetual administration of a shared ownership over a given tract of land.

3. Purchase of Kootznoowoo Admiralty Island selection. This would be consistent with wilderness for Admiralty and National Monument status. Timber value alone is estimated to be $47,703,450 and therefore a purchase would be a substantial impact on the budget. No agreeement has been reached on value.

4. Kootznoowoo shift its selections to northwest Admiralty Island. Kootznoowoo could shift its selections to VCUs 144, 145, 146 and 147, in the same general area as proposed in one alternative for Shee Atika where there is enough land for both. Several other adjacent VCUs could also be added if necessary to provide equal value.

This alternative does not meet the evaluation criteria to enable additional wilderness classification by acquiring the Native corporation land selection rights on Admiralty Island, nor is it consistent with the purposes of Admiralty National Monument as proclaimed by the President. It does, however, retain an extremely desirable area around Mitchell Bay in public ownership.

If, however, a move of the Natives off-Admiralty cannot be achieved, this alternative has several advantages over leaving Kootznoowoo in its original selection area:

A. Mitchell Bay would remain in National Forest ownership. Kotznoowo would not be burdened with the difficult task of harvesting timber and removing other valuable resources from this more sensitive area.

B. The Native ownerships on Admiralty could be consolidated to take economic advantages of a joint road system, shared camps, log dumps, and other very costly logging investments. This would provide a greater profit margin to the corporations.

TABLE 1-A

SUMMARY OF VALUE CHARACTERISTICS OF ALL THE TRACTS
(See individual appraisals in Appendix)

TRACT NAME	GROSS ACRES	TIMBER VOLUME MBF	TIMBER VALUE $ 1/	RELATIVE FISHERY VALUE 2/	WILDLIFE VALUE RATING 3/	RECREATION WILDERNESS VALUES 4/	RELATIVE SOIL PRODUCTION 5/	SOIL HAZARD	DEVELOPABLE 6/ Acres	Harbors	OVERALL RATING 7/
Goldbelt Selection	20,025	497,370	53,974,590	Medium 6	Low	Low 26.5	Medium to	Medium	2,100	0	Exc. timberlands other values relatively low.
Goldbelt Proposal	42,494	1,145,040	1,33,591,820	Medium 10	Moderate to Mod. High	High 38.0	Low to Medium	Low	8,100	5	Good timberlands wildlife and rec. values high.
F.S. Alternative for Goldbelt 8/	29,085	620,050	62,637,450	High 16	Moderate	High 34.5	Low	Medium to High	6,900	2	Fair timberlands Rec, values high high soil hazard.
* Goldbelt Proposal Oct. 13, 1978	27,774	653.000	70,472,000	High	Moderate	High	Low	Medium to High	7,000	5	Good timberlands wildlife and rec. values high.
Shee Atika Selection	19,910	478,300	52,340,370	Low 3	Very High	High 35.0	Medium to High	Medium	2,600	5	Exc. timberlands very high wildlife values other values moderate
Shee Atika Proposal 8/	23,970	570,620	61,193,290	Medium 8	Low	Low 26.0	Medium to High	Medium	2,200	2	Exc. timberlands other values relatively low.
F.S. Alternative for Shee Atika	29,956	619,590	60,645,470	Medium 6	Low to Moderate	High 39.5	Low	Medium to High	3,900	6	Fair timberland rec/wilderness high - high soil hazard.
Kootznoowoo Selection	21,480	417,280	47,703,450	Medium 8	High to very High	Low 28.0	Not Calculated	Not Calc.	6,400	4	No rating made.

1/ Timber value based on private land operation - not subject to National Forest harvest standards or primary manufacture.
2/ See appendix document - "Fishery Resources Associated With Off-Admiralty Selections."
3/ See appendix document "Wildlife Value Ratings."
4/ See appendix document "Recreation Wilderness Evaluation" report.
5/ See appendix document "Off-Admiralty Soils Report."
6/ See appendix document "Lands (Selection Alternatives)."
7/ Overall Rating - Value to the general public assuming an equal interest in all resources. This, of necessity, is a subjective summation.
8/ Forest Service offered lands subject to value equalization under existing Forest Service authority.

* Proposed Action

TABLE 2-A

ALTERNATIVE AREAS DELINEATED BY THE FOREST SERVICE

June 27, 1978

	GROSS (ACRES)	VOLUME (MBF)
Berners Bay (Allowing State Selection)	6,624	141,952
Berners Bay (No State Selection)	7,844	164,359
Douglas Island (No State Selection)	8,281	136,920
Dry Bay	8,960	167,499
Chuck River	9,976	243,903
South Windham Bay	6,118	113,193
Libby Creek	4,902	94,996
Hobart Bay	14,180	341,182
Hobart River	3,388	69,849
Hobart Addition #1	880	19,855
" " #2	1,350	37,906
" " #3	800	18,050
" " #4	1,350	30,459
" " #5	1,760	41,471
South Port Houghton	2,950	62,809
Port Houghton Chuck	3,448	78,161
Sanborn Canal	5,765	132,919
Robert Islands	7,015	158,176
Farragut Bay	7,440	125,914
Farragut River	10,128	189,282
Todahl Creek	5,190	128,685

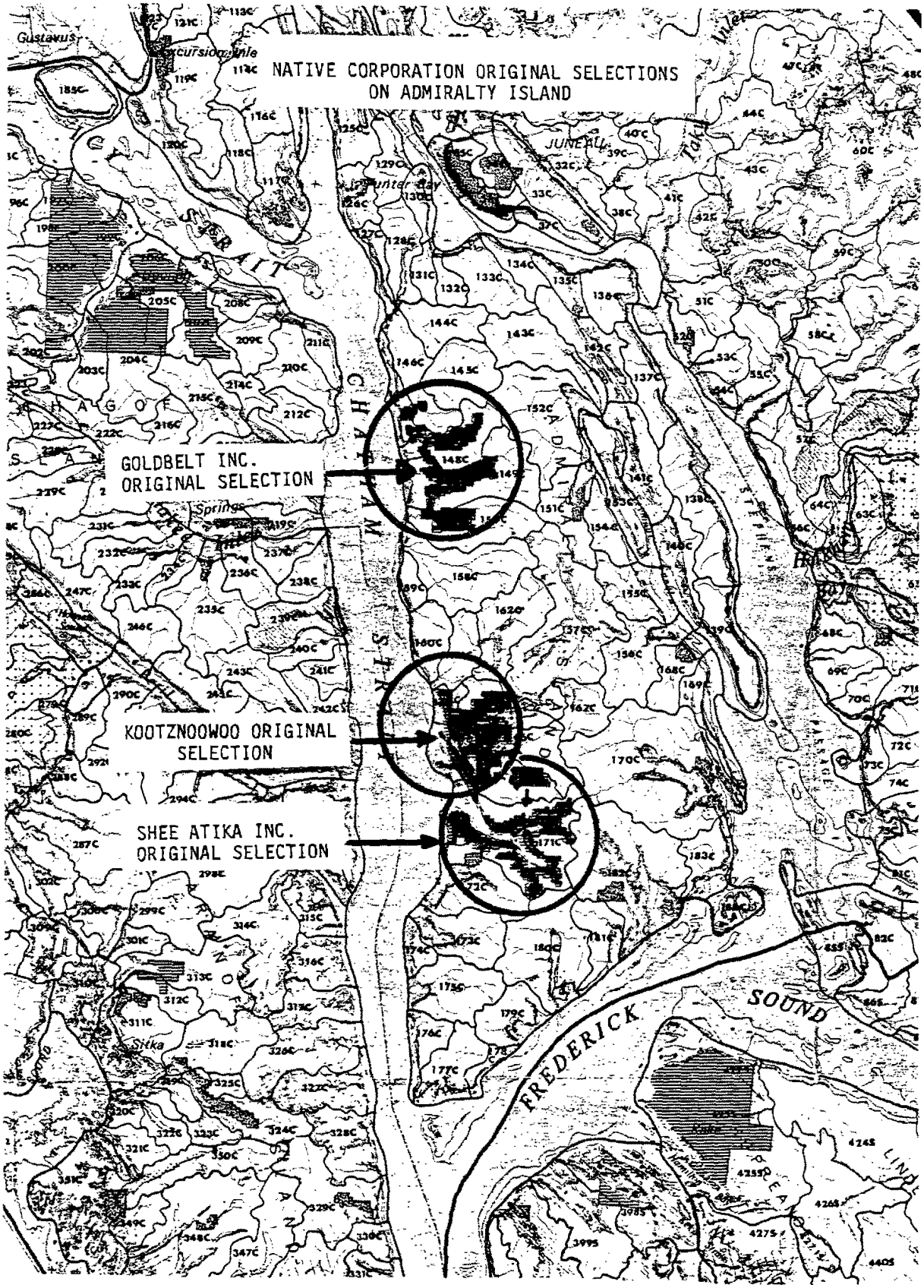
TABLE 3-A

FOREST SERVICE
OFF-ADMIRALTY SELECTION ALTERNATIVES
(See Notes 1 and 2)

July 19, 1978

	GROSS ACRES	CFL ACRES	TIMBER VOLUME ESTIMATES TOTAL VOLUME (MBF)	GROSS MBF/ACRE	CFL MBF/ACRE
GOLDBELT					
Current Selection (Admiralty Is.)	20,025	18,174	497,374	25,353	27,367
Alternative Areas					
Berners Bay (State Selection Allowed)1/	6,624	6,008	141,952	21,430	23,627
Douglas Is. (No State Selection)	8,281	6,991	136,920	16,534	19,585
Hobart Bay	14,180	13,278	341,182	24,061	25,695
TOTALS	29,085	26,277	620,054	21,319	23,597
SHEE ATIKA					
Current Selection (Admiralty Is.)	19,910	18,642	478,300	24,023	25,657
Alternative Areas					
Chuck River	9,976	9,527	243,903	24,449	25,601
South Windham Bay/Libby Creek	11,020	9,282	208,189	18,892	22,429
Dry Bay	8,960	7,898	167,499	18,694	21,208
TOTALS	29,956	26,707	619,591	20,683	23,200
1/ Berner Bay (Without State Selection)	7,844	7,083	164,359	20,953	23,205

Notes:
No. 1: Criteria used by the Forest Service reflect standard reconnaissance techniques used by the Forest Service in locating timber sales. These criteria differ from those used by Shee Atika.
No. 2: See footnote on value equalization on Table 1-A, criteria for selecting Forest Service alternatives are found in Appendix.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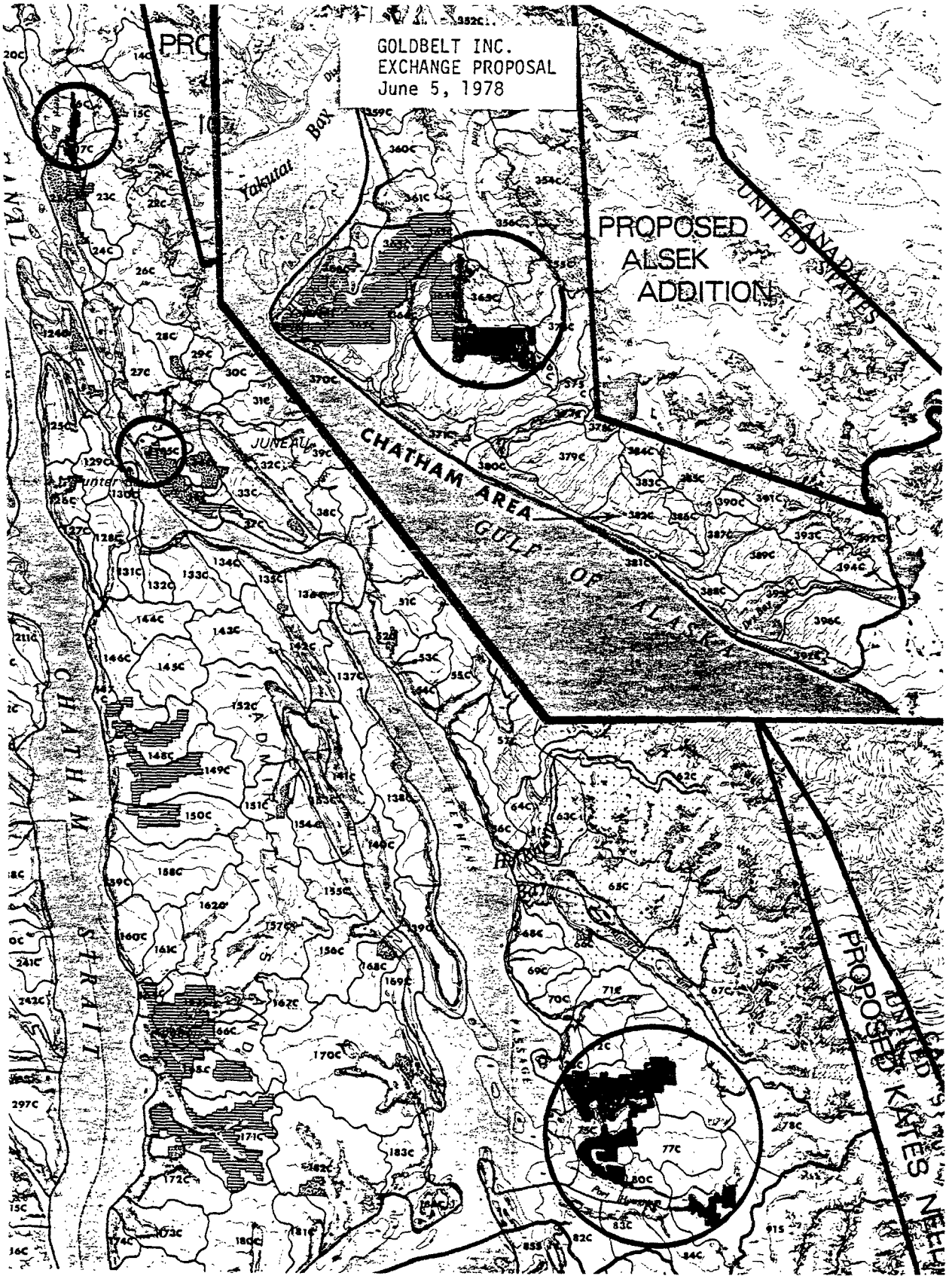
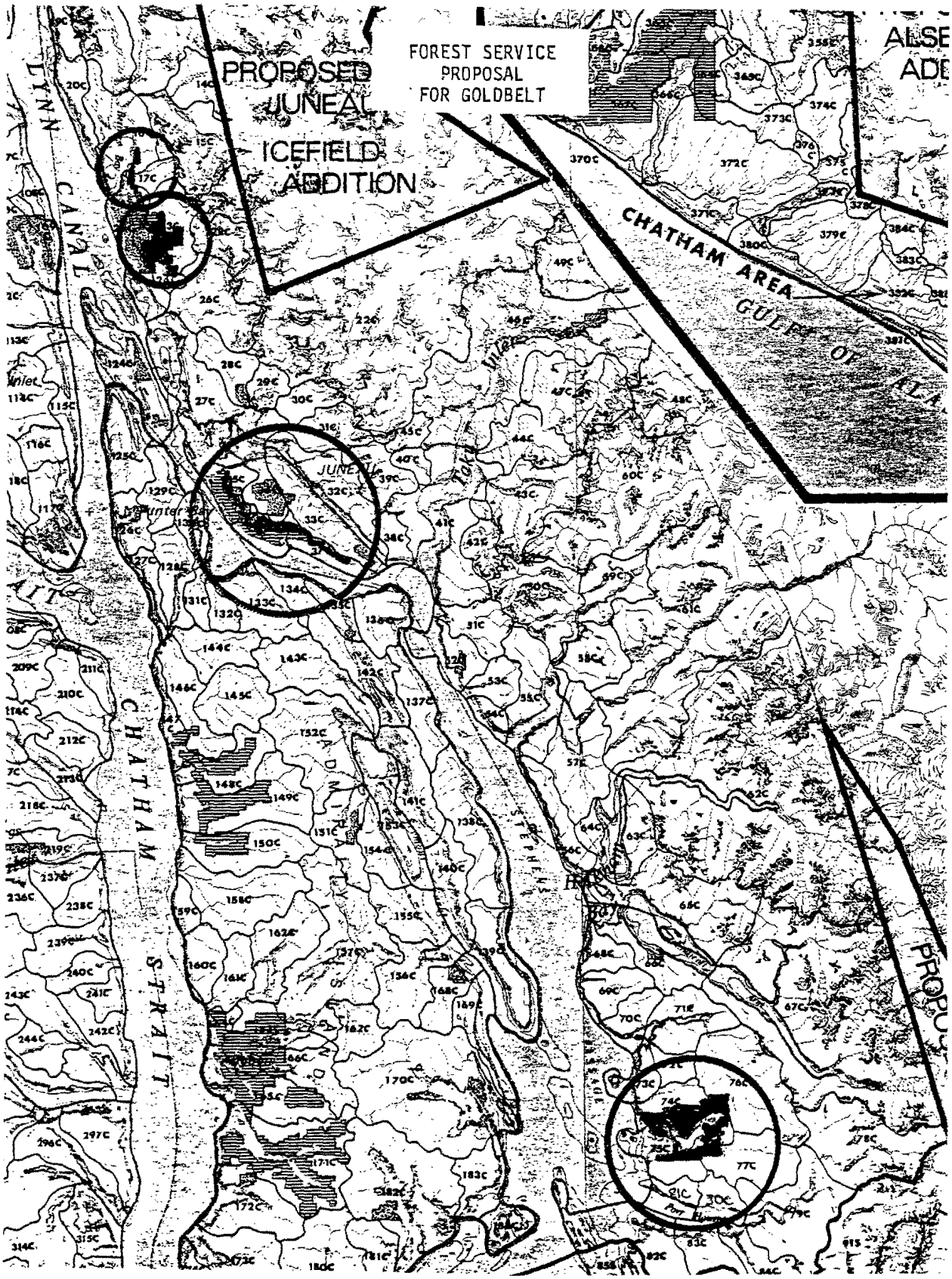
ON ADMIRALTY ISLAND
GOLDBELT INC.
ORIGINAL SELECTION
KOOTZNOOWOO ORIGINAL
SELECTION
SHEE ATIKA INC.
ORIGINAL SELECTION
Gustavus
Excursion Inle
Juneau
Hunter Bay
Sitka
Sitka Sound
Frederick Sound
Chichagof Island
Admiralty Island
Hoonah
Tenakee Springs
Port Frederick


GOLDBELT INC.
EXCHANGE PROPOSAL
June 5, 1978
PROPOSED
ALSEK
ADDITION
CANADA
UNITED STATES
CHATHAM AREA
GULF OF ALASKA
JUNEAU
Yakutat Bay
CHATHAM STRAIT
PROPOSED KAKES NEHE


PROPOSED
JUNEAU
ICEFIELD
ADDITION
FOREST SERVICE
PROPOSAL
FOR GOLDBELT
CHATHAM AREA
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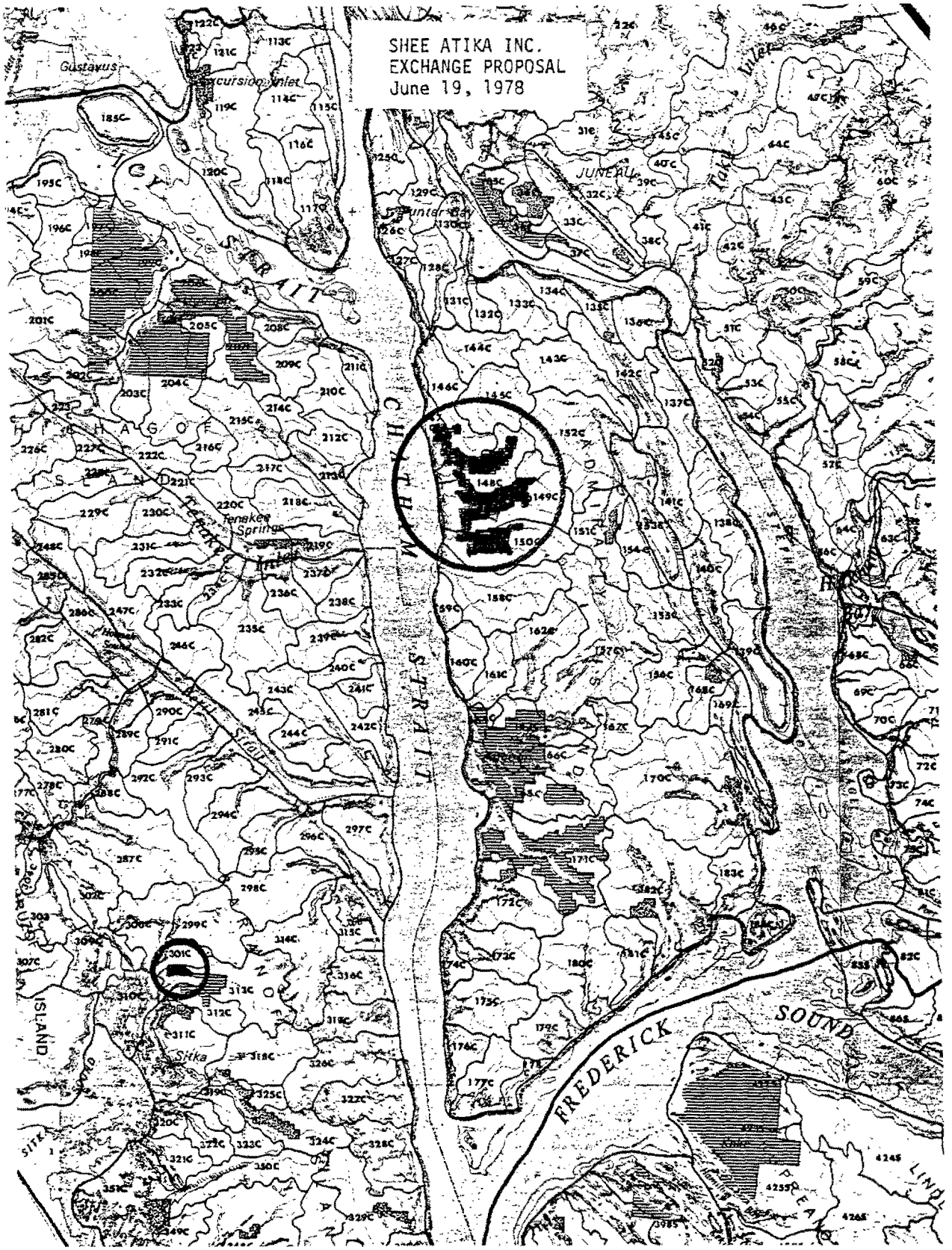
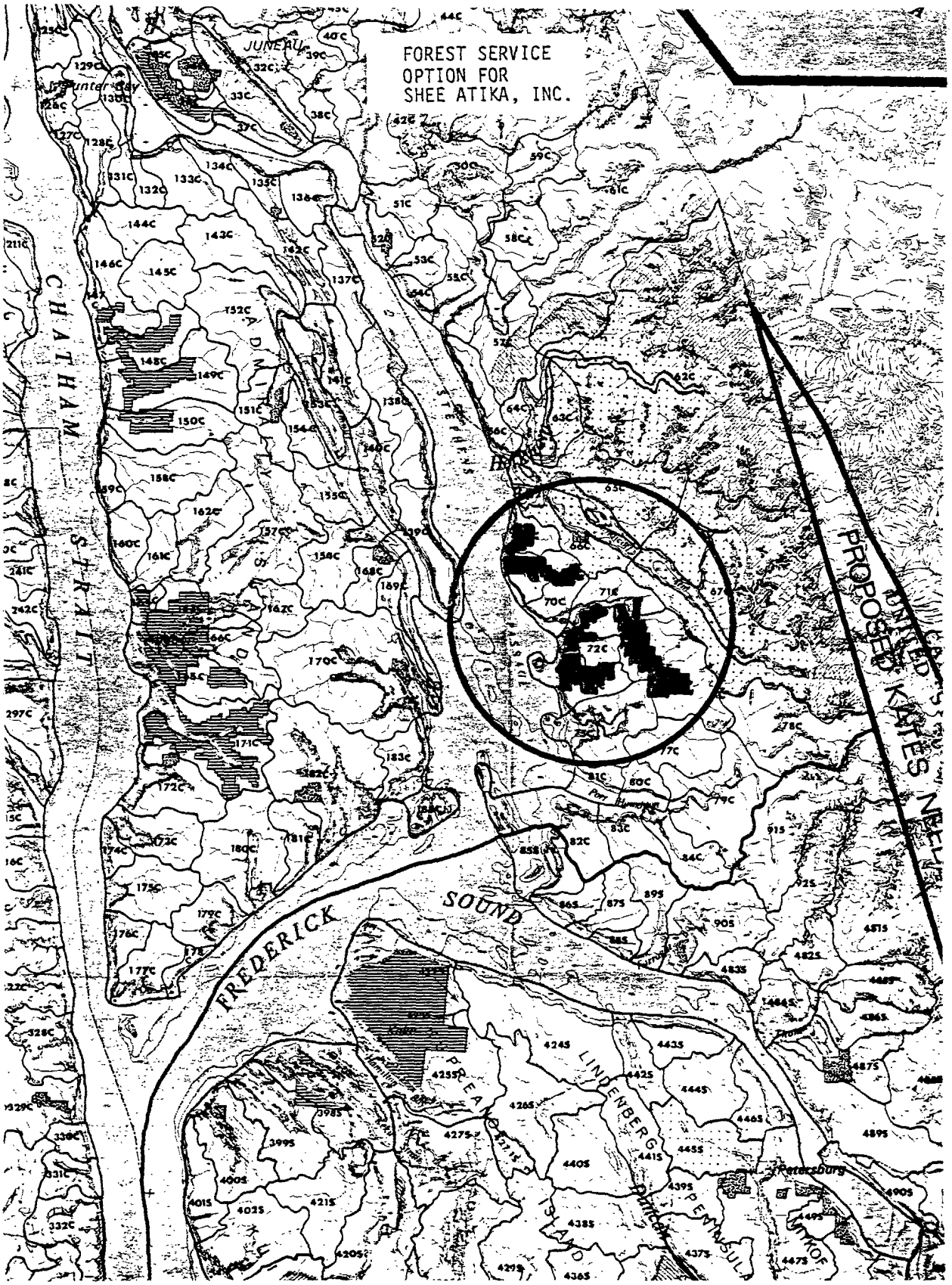
LYNN CANAL
JUNEAU
Taku Inlet
Port Frederick
Admiralty Island
Stephens Passage


SHEE ATIKA INC.
EXCHANGE PROPOSAL
June 19, 1978
Gustavus
Excursion Inlet
Icy Strait
Chatham Strait
Peril Strait
Tenakee Springs
Hoonah
Sitka
Baranof Island
Juneau
Douglas
Admiralty Island
Frederick Sound


FOREST SERVICE
OPTION FOR
SHEE ATIKA, INC.
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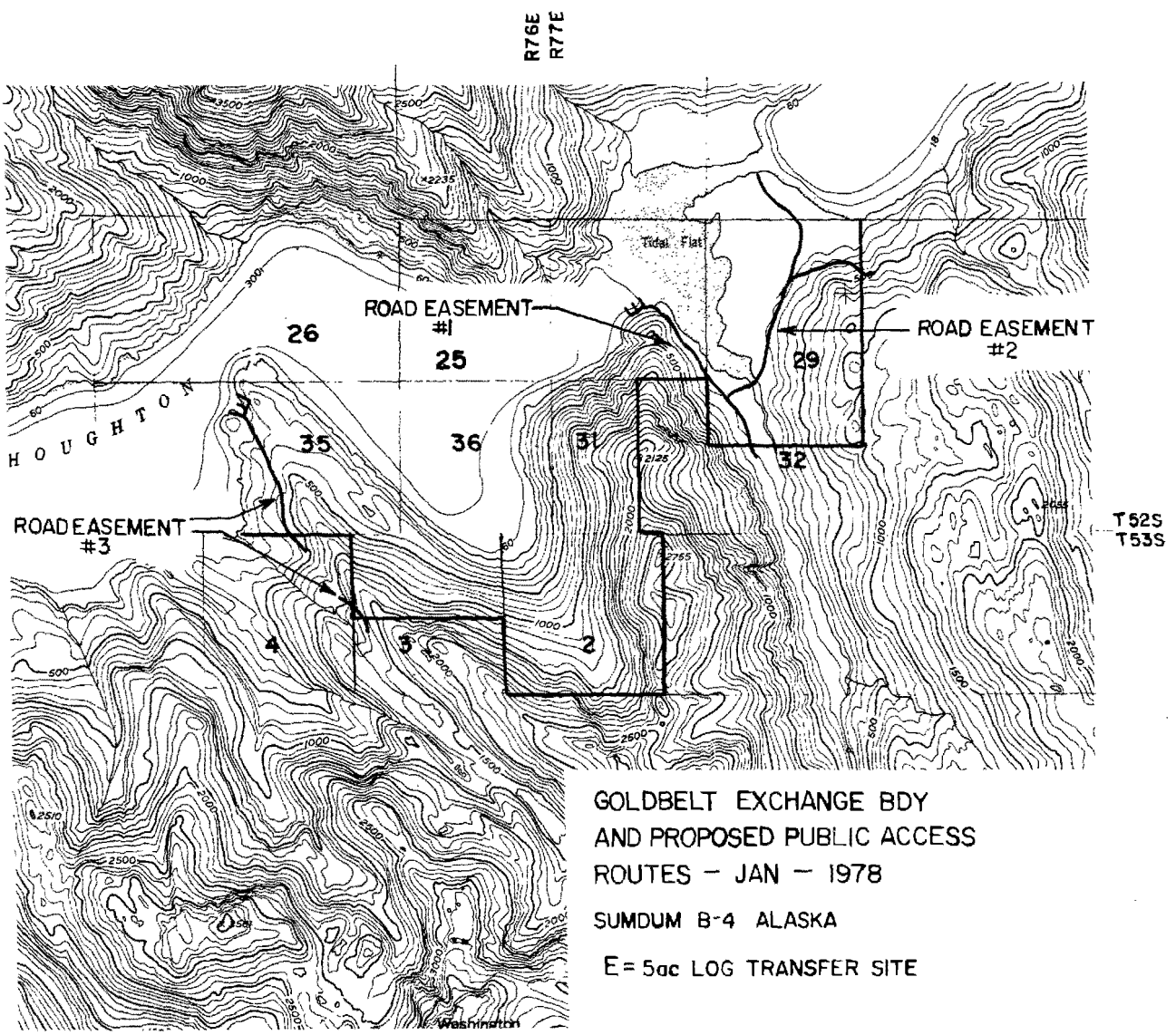
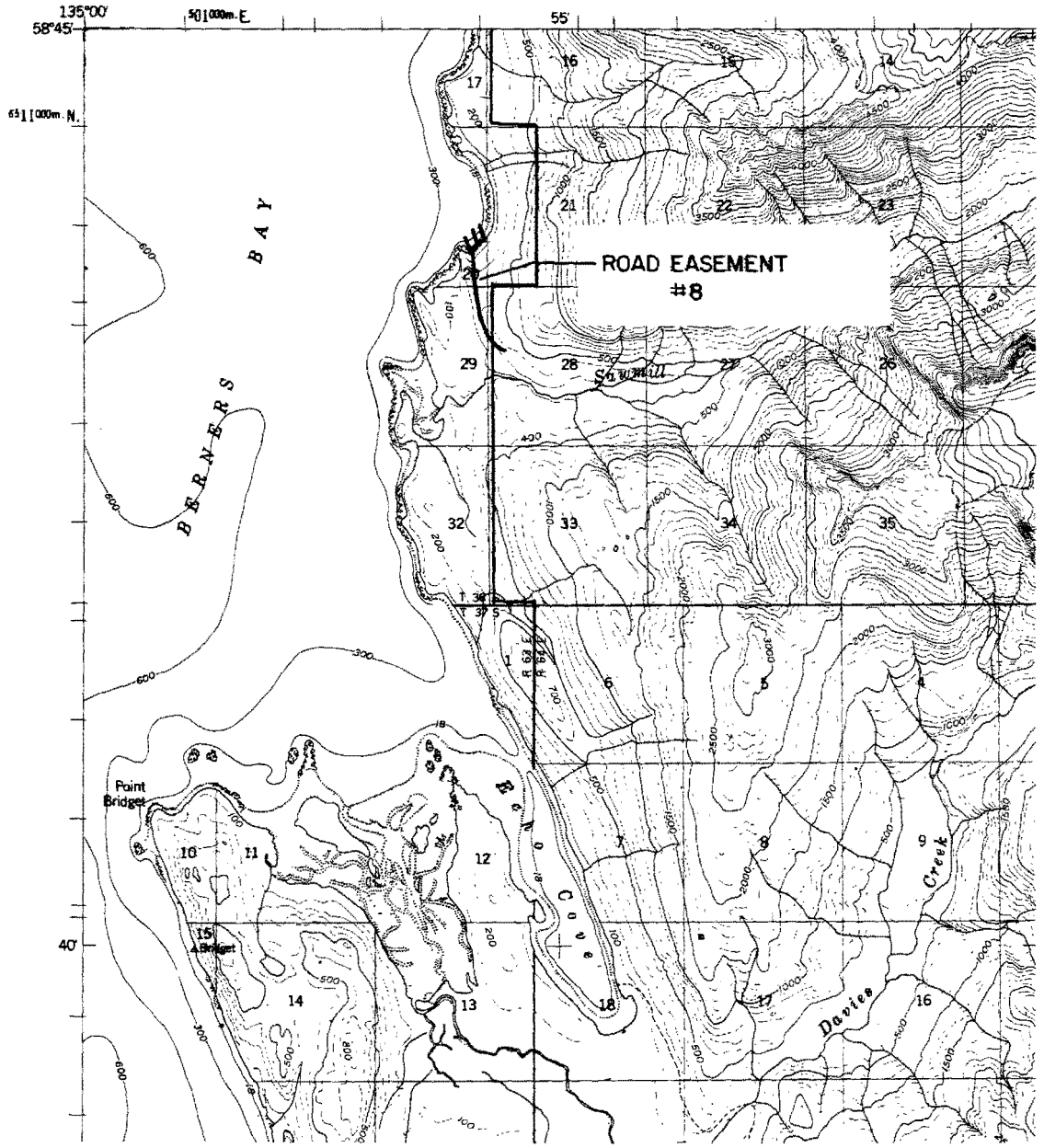
CHATHAM STRAIT
PROPOSED KAKE
FREDERICK SOUND
LINDENBERG PENINSULA
PEARL ISLAND
Petersburg



GOLDBELT EXCHANGE BDY
AND PROPOSED PUBLIC ACCESS
ROUTES – JAN – 1978

SUMDUM B-4 ALASKA

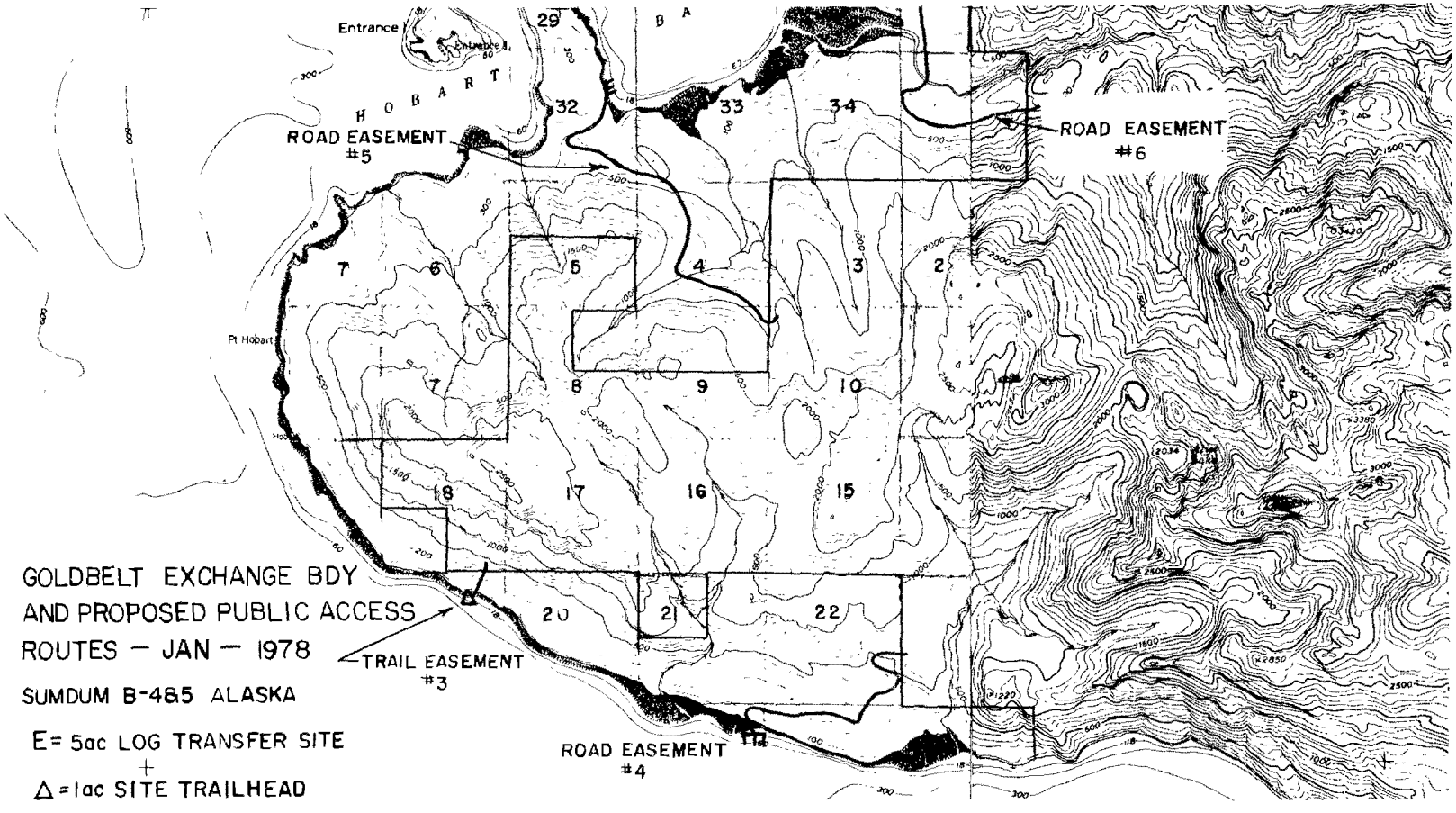
E = 5ac LOG TRANSFER SITE



GOLDBELT EXCHANGE BDY
AND PROPOSED PUBLIC ACCESS
ROUTES — JAN — 1978

JUNEAU C-3 ALASKA

E= 5ac LOG TRANSFER SITE


Entrance
Entrance I.
HOBART
B A
29
32
33
34
ROAD EASEMENT
#5
ROAD EASEMENT
#6
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5
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2
Pt Hobart
8
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18
17
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15
20
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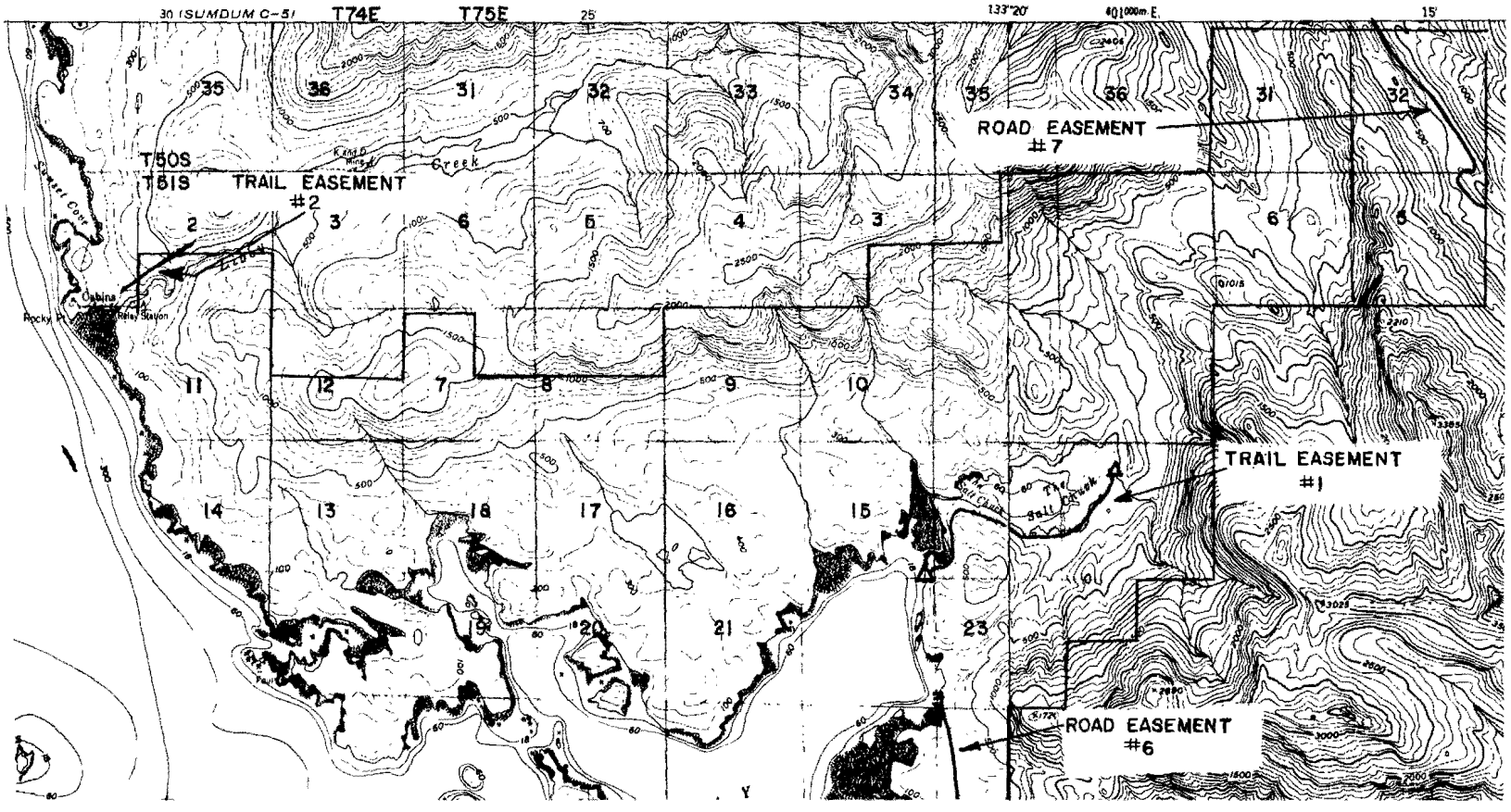
TRAIL EASEMENT
#3
ROAD EASEMENT
#4
GOLDBELT EXCHANGE BDY
AND PROPOSED PUBLIC ACCESS
ROUTES — JAN — 1978
SUMDUM B-485 ALASKA
E= 5ac LOG TRANSFER SITE
+
Δ=1ac SITE TRAILHEAD


T74E
T75E
ROAD EASEMENT #7
T50S
T51S
TRAIL EASEMENT #2
TRAIL EASEMENT #1
ROAD EASEMENT #6

F. Brief History

Both the House Bill H.R. 39 and the Senate Energy and Natural Resources Committee substitute Bill as proposed in the 95th Congress, provide for the exchange of selection rights with Goldbelt, Shee Atika, and Kootznoowoo. The authority relative to Goldbelt and Shee Atika currently exists under Section 22(f) of ANCSA as amended by P.L. 94-204. The language in the above mentioned bills additionally provided authority for reimbursement to the Natives for court costs and other expenses in resolution of litigation of the Admiralty Island Selections.

The Table I-A summary of offers by Goldbelt, Inc., Shee Atika, Inc., and the Forest Service indicates the major offers and counter-offers. Negotiations for exchange of selection rights have been in progress since June 1978. The proposed action in this document has general agreement of the Department of Agriculture and Goldbelt, Inc., but does not provide for a settlement with Shee Atika or Kootznoowoo.

APPENDIX

This Appendix is essentially the same as that displayed in the August, 1978 supplement to the Draft Environmental Statement. It is included herein to apprise the reviewer of the various tradeoffs associated with land exchanges, but may not contain complete data projections for proposals presently being negotiated. Additional data will be analyzed during consideration of the various land exchange proposals.

Appendix G-1

TIMBER VALUES

The timber values involved have been refined for each of the three Admiralty Island selection areas. The alternative proposals by Goldbelt, Inc., and Shee Atika Corp. have also been analyzed.

It should be understood that the volume estimates are based on aerial photographic interpretation and past reconnaissance sample ground plots (inventory scale basis), and are not assumed to be final. Development of more definitive on-the-ground information could result in substantial changes in the value relationships presented in this analysis. The period on which costs and values are based could also change the figures presented.

The approach taken in the value comparisons made is based on a combination of round log export and domestic processing. The timber volume is allocated by price according to log grade distribution. Experienced utilization indicates approximately 70 to 80 percent of the volume would be feasible for round log export. The values used represent the value of the timber in round log form delivered aboard ship for export or to the millpond for domestic use. Associated costs reflect the cost of delivery of round log products to these points of valuation.

The lack of verified field data on which to base detailed value analysis required a number of basic appraisal assumptions to be made as follows:

1. The log quality estimates used are based on field cruise data collected in the 1960s in connection with preparation of the proposed Juneau Unit sale. Where more localized data was not available separate general quality averages were used for the mainland and for Admiralty Island.

2. Road construction costs used are based on a projected network which would, as far as feasible, develop each of the areas for logging. Costs are assumed the same for similar classes of road on all areas. The projected roads were estimated from aerial photo analysis. The road construction costs are amortized over the entire estimated volume for each area. It assumes the entire volume is available for logging. No allowance is made for reconstruction if the timber is harvested in more than one entry with roads not maintained during the intervals. An accurate assessment of what portion of the timber is actually accessible and in specific configurations and schedules would require an on-the-ground layout of a detailed logging plan. This requires extensive and time consuming field studies and surveys.

3. Logging costs allowed represent experienced regional average truck logging costs for the year 1975. These costs were increased for the mainland areas due primarily to generally more difficult terrain and soil conditions.

4. All cost values developed are of a historic nature and do not necessarily represent costs and values being experienced as of July 1978. No attempt has been made to update cost data at this time.

5. No separate values were developed for incidental hardwood and cedar volumes.

The results of the value comparisons are shown by the following table.

TIMBER VALUE COMPARISONS

ADMIRALTY ISLAND SELECTIONS	AVE. VALUE 1/ PER (MBF)	ESTIMATED VOLUME (MBF)	TOTAL VALUE ESTIMATE (#)
Goldbelt (Ward Creek Area)	$108.52	497,370	$53,974,590
Shee Atika (Hood Bay)	109.43	478,300	52,340,370
Kootznoowoo (Angoon Area)	114.32	417,280	47,703,450
ALTERNATIVE AREAS CONSIDERED			
Goldbelt Proposal	116.67	1,145,040	133,591,820
Shee Atika Proposal	107.24	570,620	61,193,290
F.S. Option for Goldbelt	101.02	620,050	62,637,450
F.S. Option for Shee Atika	97.88	619,590	60,645,470

1/ Values based on round log export and domestic prices.

ACREAGE, TIMBER VOLUME, AND ROAD MILEAGE DATA

	TOTAL AREA (ACRES)	CFL AREA (ACRES)	TOTAL AREA AVE. VOL/ACRE (MBF)	CFL AREA AVE. VOL/ACRE (MBF)	TOTAL ESTIMATED VOLUME (MBF)	ROAD SYSTEM (MILES)
ADMIRALTY ISLAND SELECTIONS						
Goldbelt	19,618	18,174	25.353	27.367	497,374	69.6
Shee Atika	19,910	18,642	24.023	25.657	478,300	71.6
Kootznoowoo	21,480	18,729	19.426	22.280	417,283	56.5
					1,392,957	
ALTERNATIVE PROPOSALS						
Goldbelt						
Berners Bay	995	902	21.424	23.627	21,312	6.5
Douglas Is.	266	224	16.530	19.585	4,387	0.5
Hobart Bay	24,304	22,758	24.061	25.695	584,767	65.4
Port Houghton (So. shore)	3,115	2,888	21.291	22.965	66,322	7.8
Yakutat (Russell Fiord)	13,814	12,914	33.897	36.259	468,252	18.0
					1,145,040	
Shee Atika Corp						
Katlian Bay	920	800	10.435	12.000	9,600	6.0
Ward Creek	23,050	20,500	24.339	27.367	561,024	72.6
					570,624	
ALTERNATIVE AREAS						
Delineated by F.S.						
Berners Bay	6,624	6,008	21.430	23.627	141,952	25.6
Douglas Is.	8,281	6,991	16.534	19.585	136,920	25.6
Dry Bay	8,960	7,898	18.694	21.208	167,499	20.9
South Windham/Libby Creek	11,020	9,282	18.892	22.429	208,189	32.1
Chuck River	9,976	9,527	24.449	25.601	243,903	24.7
Hobart Bay	14,180	13,278	24.061	25.695	341,182	44.7
					1,239,645	

FISHERY RESOURCES

ASSOCIATED WITH

OFF ADMIRALTY SELECTIONS

Salmon and trout production occurs extensively throughout mainland and island watersheds in southeast Alaska. The areas encompassed in nearly all of the proposed land selection alternatives produce pink salmon, chum salmon, sockeye salmon, steelhead, Dolly Varden, cutthroat, and rainbow trout. Some stream systems contain all six species. Population densities vary from insignificant numbers in some smaller catalogued fish streams to extremely large fish runs in several top rated watersheds. Species distribution and population densities were two of several parameters that were considered to evaluate fishery resource values associated with Value Comparison Units (geographical units with one or more watersheds) for the Tongass Land Management Plan (appendix). The sport, commercial, and estaurine values derived for the TLMP are the most representative and comparable measurements available for fishery resource values in southeast Alaska (see attached table).

The number of catalogued anadromous fish streams associated with each land selection alternative, although an index to fish habitat distribution, do not reflect overall fishery resource values as well as the number of Value Comparison Units with ratings in excess of category #3 (see attached table).

The highest fishery resource values associated with the Goldbelt alternatives appear to occur in the area proposed by the Forest Service. The second highest values occur in the "Goldbelt Proposal" area. Lowest fishery resource values of the three Goldbelt alternatives are in their original selection area. Highest fishery resource values associated with the Shee Atika alternatives appear to occur in the "Shee Atika Proposal" area. Second highest values occur in their "Original Selection" area, and lowest fishery values in the Forest Service alternative for Shee Atika.

OFF ADMIRALTY SELECTIONS
(FISHERY EVALUATIONS)

LAND SELECTION ALTERNATIVE	NO. OF ADF&G CATALOGUED FISH STREAMS 2/	NO. OF VCUs WITH SPORT FISH RATINGS #3 1/	NO. OF VCUs WITH COMMERCIAL FISH RATINGS #3 1/	NO. OF VCUs WITH ESTUARIES #3 1/
Goldbelt Proposal	13	1	5	4
Shee Atika Proposal	6	3	3	2
Goldbelt Original Selection	4	2	2	2
Shee Atika Original Selection	26	1	1	1
Kootznoowoo Selection	14	2	3	3
U.S.F.S. Alternative For Goldbelt	28	2	6	8
U.S.F.S. Alternative For Shee Atika	9	2	2	2

1/ Fishery values and estuarine sensitivities were rated on a scale of 1-5 for the Tongass Land Management Plan. Ratings in excess of #3 reflect outstanding fishery values associated with one or more watersheds in the VCU. Estuary ratings in excess of #3 indicate a high degree of sensitivity to development and potential adverse impacts to estuarine fish and shellfish production.

2/ Streams known to support salmon, designated by Alaska Department of Fish and Game.

OFF ADMIRALTY SELECTIONS
(FISHERY EVALUATIONS)

LAND SELECTION ALTERNATIVE	NO. OF ADF&G CATALOGUED FISH STREAMS 2/	NO. OF VCUs WITH SPORT FISH RATINGS #3 1/	NO. OF VCUs WITH COMMERCIAL FISH RATINGS #3 1/	NO. OF VCUs WITH ESTUARIES #3 1/
U.S.F.S. ALTERNATIVES				
#1	7	2	3	3
#2	10	0	1	1
#3	3	0	0	0
#4	1	1	1	1
#5	4	1	1	1
#6	1	0	0	0
#7	11	0	2	4
#8	1	1	1	0
#9 & #10	4	0	1	1
#11	1	0	1	1
#12	4	0	1	2
#13	2	0	0	1
#14	1	1	1	1

WILDLIFE VALUE RATINGS - OFF-ADMIRALTY SELECTIONS

SHEE ATIKA ORIGINAL SELECTION
SOUTHWEST ADMIRALTY ISLAND

HOOD BAY Wildlife Value Rating (VERY HIGH) 6,500 A. Estuary, 17,000 A shorelines and river valleys.

The estuaries at the heads of North and South Arm and the main stem, totalling approximately 6,500 acres of aquatic habitats, have high wildlife habitat ratings for marine mammals and water birds (water fowl and sea bird species). The entire shoreline areas, approximately 17,000 acres, are important habitats for furbearers, brown bear, deer winter range and bald eagle nesting. Vancouver Canada geese, a largely non-migratory local Canada Goose species, nest in several locations throughout the Hood Bay area. Lands around the heads of North and South Arm are important habitats for land birds and brown bear, concentrate inland along major salmon streams during the fall.

Alaska Department of Fish and Game have also indicated the importance of the Hood Bay area to wildlife and its comparison to other areas. See attached letter dated 7/14/78.

Removal of approximately 17,000 acres of Shee Atika's claims around Hood Bay would be a significant benefit to wildlife populations in comparison to other areas evaluated. The Kanalku Mountain parcel of 2,920 acres has only moderate wildlife values.

Relinquishment of Shee Atika's claims in this location would likely be favorable to Angoon's population, due to its proximity to Angoon and their traditional utilization of Fish & Wildlife Resources in Hood Bay. Any reduction of conflicting developments near their village, would be well received.

KOOTZNOOWOO SELECTIONS ORIGINAL

MITCHELL BAY Wildlife Value Rating (HIGH) 21,480 acres.

Both Mitchell Bay and Kanalku Bay rate high for marine mammals, brown bear, water birds, furbearers, land birds, deer winter range, and bald eagle nesting. The inland lakes are important for waterfowl including the Vancouver Canada goose, a local nesting sub-species of Canada's. The inland areas, generally more than one mile from the water, are considered to be of moderate importance for deer. This habitat type comprises approximately 25% of the upland areas.

GOLDBELT ORIGINAL SELECTION NORTHWEST ADMIRALTY ISLAND (RELINQUISHED)
SHEE ATIKA #2 PROPOSED EXCHANGE FROM HOOD BAY (RESELECTED)

KATHLEEN-WARD-FLORENCE LAKES Wildlife Rating Value (LOW) 23,000 acres.

Of the approximately 23,000 acres proposed to select by Shee Atika, in exchange for approximately 20,000 in their original Hood Bay selection, only 560 acres of estuary and adjoining lands are considered as critical habitat for waterfowl and brown bear.

Lake Kathleen, Peanut Lake, and Lake Florence, approximately 1,300 acres, are rated as important for waterfowl and an additional 1,100 acres of river bottoms upstream are important for brown bear. A small acreage around the head of Lake Florence is important for land birds.

The impact of timber harvest or development of wildlife in this acreage would be minimal compared to Hood Bay and still less than on most substitute areas proposed on the mainland or at Yakutat.

KATLIAN BAY ADDITION Wildlife Rating Value (MODERATE) 920 acres shorelines, 300 acres associated waters.

This acreage, requested by Shee Atika in addition to its proposal to select Goldbelt's original lands, is all in historically critical deer winter range. Much of the area, though, has been logged in the past so its value as winter range is considerably reduced. Approximately 400 acres are important for brown bear and waterfowl and one small island is also important for furbearers and marine mammals. This area's proximity to Sitka makes it somewhat more important as it is accessible to large numbers of people and consequently receives considerable public use of the wildlife resources.

Chart #1

Land Selection Alternatives	Selection Sub-Units	Wildlife Value Rating	Approximate % of Land Area In Critical Habitats	Affected Number of Major Species	Wildlife Acres Affected		Acres Exchanged	
					Uplands	Estuarine-Water Areas (Approximate)	Original Selection	Proposed Selection
Shee Atika #1	Hood Bay	Very High	90%	7	17,010	6,500		
	Kanalku Mt.	Low	0%	0	2,900	0		
					19,910		19,910	
Kootznoowoo #1	Mitchell Bay	High-Very High	80%	7	21,480	5,500	21,480	
Goldbelt #1	Kathleen-Ward-Florence Lakes	Low	10%	4	19,188	1,860	19,188	
Shee Atika #2 Superceeds Goldbelt #1 after they relinquish & additional	Kathleen-Ward-Florence Lakes	Low	10%	4	23,000	1,860		23,000
	Katlian Bay	Moderate	100%	4	920	300		920
					23,920	2,160	19,910	23,920
Goldbelt #2	Hobart Bay	Moderate	25%	8	27,419	5,800		
	Port Houghton	Mod-High	30%	6-7		1,000		
	Yakutat	Mod-High	20%	6	14,080	100		
	Berners Bay	Low	20%	3	995	260		
	Douglas Island	Low	30%	2	266	160		
					42,760	7,320	19,188	42,760
USFS Alternative For Goldbelt	Hobart Bay (Less Port Houghton)	Moderate	30%	8 3 4	14,180	5,800		
	Berners Bay	Low	5%		6,624	260		
	Douglas Island	Moderate	50%		8,281	280		
					29,085	6,340	19,188	29,085
JSFS Alternative For Shee Atika	Dry Bay	Moderate	25%	5-6	8,960	800		
	Chuck River	Moderate	25%	4-5	9,976	440		
	S. Windham Bay	Low+	15%	3-4	6,118	1,160		
	Libby Creek	Low+	15%	3-4	4,902	440		
					29,956	2,840	19,910	29,956

The following is a listing from a wildlife standpoint, of USFS & native selected areas in approximate order of importance.

List #1

Unit Name	Wildlife Rating	Proposed by	Type of Proposal
*Hood Bay	Very High	Shee Atika	Original Selection
*Mitchell Bay	High - Very High	Kootznoowoo	Original Selection
Port Houghton	Moderate + High	Goldbelt (#2)	Proposed Exchange
Yakutat	Moderate - High	Goldbelt (#2)	Proposed Exchange
Hobart Bay	Moderate	USFS For Goldbelt	Proposed Exchange
Hobart Bay	Moderate	Goldbelt (#2)	Proposed Exchange
Douglas Island	Moderate	USFS For Goldbelt	Proposed Exchange
Dry Bay	Moderate	USFS For Shee Atika	Proposed Exchange
Chuck River	Moderate	USFS For Shee Atika	Proposed Exchange
Katlian Bay	Moderate	Shee Atika (#2)	Proposed Exchange
Libby Creek	Low+	USFS For Shee Atika	Proposed Exchange
S. Windham Bay	Low+	USFS For Shee Atika	Proposed Exchange
Douglas Island & Berners Bay	Low	Goldbelt (#2)	Proposed Exchange
*Kathleen-Florence Lakes	Low	Goldbelt (#1)	Original Selection
*Kanalku Mt.	Low	Shee Atika (#1)	Original Selection

* Indicates acreage on Admiralty Island.

Rankings were developed based on concentrations of wildlife populations and critical habitats. The order is debatable, to some extent, if species diversity is considered as more important than population densities and critical habitats; i.e. mainland areas have more total different species than Admiralty, but generally in lower densities. Hood Bay & Mitchell Bay on Admiralty have high populations of and extensive critical ranges for brown bear, deer, bald eagles, water birds, land birds, marine mammals, and furbearers. The mainland supports, in addition to these, moose, wolf, mountain goat, black bear, and wolverine. The difference is the spotty occurences of these species, lower densities and lesser amounts of multiple critical habitats as found in Hood and Mitchell Bay.

An exchange of equal value mainlands from the aforementioned list with Shee Atika for the Hood Bay selections, would greatly benefit wildlife.

Appendix G-4

RECREATION/WILDERNESS RESOURCE REPORT

INTRODUCTION

The objective of this report is to evaluate recreational and wilderness values contained within parcels of land that are proposed for land exchange. "Appraised Exchange Values" are proposed as a means of equalizing the exchanged values. These values are the result of comparable "Quality" figures multiplied by "acreage" figures. The resultant numbers can be used to construct acreage exchange ratios for recreational values.

METHODS

The evaluation incorporates information contained in the Draft Tongass Land Management Plan "VCU Matrix Summary" starting on page 179. Detailed explanations of this data can be found in Recreation/Wilderness Task Force Working Report (TLMP-5).

The "Dispersed Semi-primitive Recreation Opportunities Rating" is used as an indicator of general recreational qualities. It is defined as "Recreational pursuits associated with a moderate to high degree of self-reliance through the application of basic outdoor skills. Activities are often oriented toward the taking of fish, wildlife, and edible plants. The natural environment dominates, but also includes

some modification for human comfort and convenience. Rudimentary roads as well as traditional air and small boat access may be available."1/

The following information was used to establish the rating:

"1. Physical and biological features - Ecotype diversity based on variety in terrain, geologic features, waterforms, vegetative patterns, wildlife, and fisheries.

2. Cultural and historical features - Archeological and historical sites and events, recreational facilities, and recreation-oriented services.

3. Accessibility - Opportunities for traditional air access, boat access, and land-based vehicular routes.

4. Land use effects and discord elements - Modifications to the national environment in addition to noise, water and air pollution.

Land base information was reviewed and updated through field reconnaissance and by examining existing inventories, aerial photographs and maps, information from individuals, and from other task force inventories for the Tongass Land Management Plan."2/

The RARE II "Wilderness Attribute Index" is used as an indicator of wilderness qualities. The TLMP process developed the index as follows:

"The RARE II wilderness attribute rating system was used to evaluate 743 VCUs that are, at present, either roadless or partially roadless, irrespective of any developmental activities that may be scheduled for them. Of the four main attributes that are rated, natural integrity, apparent naturalness, outstanding opportunities for solitude, and opportunities for primitive recreation, the first three were rated according to the RARE II system. Ratings from the recreational opportunities inventory for the dispersed primitive type were used to rate the last attribute. The task force felt that this approach would more accurately portray available primitive recreational opportunities on the Tongass than the technique outlined in the RARE II system. Recreational opportunities ratings were also used for the supplementary attributes including ecological values, special features, scenic values, and cultural features." 3/

The Wilderness Attribute Index is based on a scale of 0-28. Chatham Area ratings fell in the 13-28 range. This scale has been adjusted to a 1-5 scale so that the "Wilderness Exchange Values" and "Dispersed Semi-primitive Recreation Exchange Values" will be of similar magnitude. The 13-28 range was converted because this report is comparing wilderness values to other wilderness values throughout the nation. Conversions were made as follows:

1/ U.S.D.A. Forest Service, Alaska Region. 1978. Recreation/Wilderness Task Force Working Report. TLMP-5, Page 1.

2/ IBID, Page 2.

3/ IBID, page 8.

13		16		19		23		26	
14	= 1	17	= 2	20		24	= 4	27	= 5
15		18		21	= 3	25		28	
				22					

Two adjustments must be made to the indicators of recreation and wilderness qualities before direct comparisons can be made between parcels of land.

The first adjustment is necessary because inventoried TLMP data is an average value for the entire Value Comparison Unit (VCU). In the actual landscape, values are found to be concentrated in various segments of the VCU. Shorelines and estuaries, for example, may contain clam beaches, tidal pools, driftwood, wildflowers, marine mammals, birds, bear and deer populations. Rock spires, glaciers, waterfalls, and alpine meadows are also site specific. Thus, erroneous data would be generated by applying the inventorial VCU rating to specific parcels of land located within the VCU.

The "Significance to total VCU" adjustment factor is obtained by determining how much of the inventoried value is contained within the selected land area and rating the significance as being High = 3, Medium = 2, Low = 1. This is accomplished by studying the original rating forms that served as basic input to the TLMP process. The attached appendix contains summary sheets that were used in determining the "Significance to total VCU" adjustment factor.

The second adjustment factor is necessary because the TLMP data is not comparable between different landscape character types. Landscapes in Region 10 are diverse. Some consist of rugged snowcapped mountains with long penetrating fiords. Others are heavily forested foothills with small bays and rocky island shorelines...and still others have extensive white sand beaches backed by vegetated dunes, extensive muskeg systems, and mountains. Each landscape offers a variety of different recreational opportunities.

The TLMP process used an "ECOTYPE" concept to describe and rate the values in each landscape character type. It is theoretically possible to compare ecotype values by using "equivalency factors" as a basis of exchange. The author, after consulting with other R-10 landscape architects, has adopted ecotype equivalency factors that are based on a scale of 1-5 (one being low value and five being high). The ecotypes relevant to this report and their assigned equivalency factors are as follows:

ECOTYPE	FACTOR
Coast-Range	5
Baranof	4
Cordova-Yakutat	4
Admiralty-Chichagof	3

The following ecotype descrptions were taken from Visual Character Types [4/], a draft Region 10 publication:

4/ U.S.D.A. Forest Service, Alaska Region, 1976. Visual Character Types of Alaska National Forest Lands.

Coast-Range:

LANDFORM - Generally glacier covered upland 5,000-7,000 feet in altitude dissected by a free-like pattern of deep steep-walled U-shaped valleys. The ridges have rounded summits and are surmounted by aretes and horns rising 8,000 to 10,000 feet. Elevations in the Chilkat Range portion of this unit are lower but visually similar. Large fiords with steep sides give great visual relief. The mountains give an impression of great bulk and are bordered largely by cliffs or headlands that plunge several thousand feet to tidewater or to the lowlands below.

ROCKFORM - This unit has a variety of rock forms or geological features. Cliffs, rock escarpments, smooth glacially scoured faces (some can be seen for miles) and at higher elevations jagged peaks, spires, cirques, etc., are evident. Excellent examples, at lower elevations, are Tracy Arm and Rudyerd Bay. The unit is capped with extensive icefields (the largest 90 miles long) and many valley glaciers, some of which descent to saltwater. Shorelines vary from rocky bluffs to sand beaches. Bedrock streams are sometimes evident, some with waterfalls.

WATERFORM - Generally the unit is drained by glacial streams less than 20 miles long and at intervals of 30-120 miles. Most of these large streams are glaciated and braided, some with origin in British Columbia. Lakes are not plentiful but a few small clear lakes lie on valley floors and in rock basins on the ocean side of the unit. Many small lakes in upper elevations are glaciated. Clear streams are usually confined to side drainages of the larger streams or are short in nature flowing directly to saltwater.

VEGETATION - This unit has a great variety of vegetation ranging from the Stikine marshes, large grass tidal meadows, to conifer covered slopes, to deciduous tree cover in the upper river drainages and including the variety of alpine ecological systems offered in the high country.

COMMENT - This unit easily "stands on its own" as a separate visual frame of reference.

Baranof:

LANDFORM - Irregular, rugged, asymetrical chain of landforms 3,000-5,300 feet in altitude having a steep eastern slope and a more gentle western slope deeply indented with fiords. Visually massive, bulky, stark and rugged throughout character type. Shoreline forms are very rugged with steep sided fiord country both east and west coasts. A chain of extremely irregular and exposed island forms are found in the northwest corner of the character type.

ROCKFORM - Rugged headwalls, cliffs, escarpments common on the west side (exposed to the sea wind and waves). Rock faces sometimes visible on many steep sided fiords near saltwater throughout unit. Numerous rocky crests, sharp ridges, horns, aretes and cirques at higher elevations. Snow all year round on higher summits with cirque glaciers and small icefields especially in the north half.

WATERFORM - Streams are generally short and flow directly to saltwater. Cascades are common on east Baranof. Lakes are plentiful throughout the character type but especially in the south half. Several are three to four miles long. Many of them are found at lower altitudes under

500 feet elevation. The west and south coastline exhibits potential for very dynamic surf waterforms.

VEGETATION - Conifer cover density varies widely even on lower slopes near saltwater and is usually interspersed with muskeg and other lower forms of vegetation affording the viewer much variety. Larger intertidal grass and associated meadows species are infrequent. Effects of wind and salt spray effect character and to some extent species type on the west side of character type.

COMMENT - Character of this unit contrasts sharply with the adjacent Admiralty-Chichagof and Basin-Knob character types. It is similar in some respects to the Coast Range but lacks the variety and scale.

Cordova-Yakutat:

LANDFORM - A coastal plain marked by longitudinal beach and dune ridges, crossed by outwash plains and occasional moraines and backed by marine terraces some several hundred feet in elevation. The St. Elias Range in the south half and the Chugach Mountain Range in the north half of the unit serve as a dramatic scenic backdrop to this visual character type.

ROCKFORM - Sand and gravel beach forms are readily apparent. Large river gravel bars and deltas shaped by glacial streams and the ocean surf are dominant focal points. The large ocean bars and spits are primary features.

WATERFORM - Streams are both clear and glaciated. Many of the clear streams offer visual variety in waterforms e.g. pools, cascades, rapids, riffles. Several large low areas e.g. Copper River flats, are marsh interlaced with many sloughs and small ponds. The several lakes found in the unit are generally glaciated with some noteable exceptions e.g. Situk, Eyak, Square Lake. The ocean surf is a key waterform in this unit, as are the large glaciated streams, both influencing to a marked degree other natural forms e.g. vegetation, landform.

VEGETATION - Lowland areas are wet tundra species with low growth deciduous interlaced with conifer species in other large areas. Conifer forest covers much of the better drained land. There is considerable vegetational variety in this unit.

COMMENT - Key landscape components are the large beach and surf waterform and the low rolling foreland which offers the setting for the massive mountain complex in the background.

Admiralty-Chichagof:

LANDFORM - Most landforms are generally rounded with noteable exceptions on the north portions of Admiralty and Chichagof where higher landforms are rugged, jagged, irregular, snow covered most of the year and are 4,000 - 4,700 feet in altitude on Admiralty and 2,500 - 3,500 feet on Chichagof. There is a narrow strand flat on the west side of Chichagof with a maze of small island forms.

ROCKFORM - Rocky islands, and/or reefs, rocky bluffs are found on the outer coast of Chichagof, Mitchell Bay-Kootznahoo area, and south tip of Admiralty. Rocky shorelines are common throughout the unit with many small scattered gravel and sand beaches. Higher portions of Admiralty

and Chichagof (from Black River to north tip of Yakobi) have dramatic rocky spires, horns and aretes visible for many miles.

WATERFORM - Many large lakes e.g. Hasselborg, Thayer, Sitkoh, Elfendall, and lake chains e.g. Goulding Lakes, Admiralty Lake are found in this unit. Streams are short and swift (except for Black River) and flow directly to saltwater on the west side of Chichagof. Streams in the rest of the unit are generally larger and longer than on other islands in southeast Alaska. All streams are clear and many offer considerable visual variety e.g. pools, rapids, cascades, riffles, falls, meandering forms. Saltwater bays and estuaries are numerous and exhibit much variety from small sheltered coves to large exposed forms. Often dramatic surf water forms can be found on the outer coast of west Chichagof and south tip of Admiralty Island.

VEGETATION - With the exception of west Chichagof numerous tidal meadows of varying sizes are found in this unit. Lower slopes are generally conifer covered or exhibit a combination of muskeg openings and scrub-conifer cover up to approximately 2,500 feet in altitude. Muskeg-conifer mixtures are more plentiful on east Admiralty and west Chichagof. West Admiralty north of Angoon to Hawk Inlet displays an essentially unbroken green forested covered lower mountain slope. Upper slopes and summits sometimes appear barren from a distance but usually offer a variety of alpine vegetational species as well as some rockforms.

COMMENT - Large portions of Admiralty and Chichagof Islands appear similar enough, from a visual standpoint, to include in the same character type.

In summary, Appraised Exchange Values are generated by the following mathematical formula:

		Inventoried		Significance		Ecotype Equivalency	Appraised Exchange
Acreage	x	TLMP Value	x	To total VCU	x	Factor	= Value

The appendix contains computation forms illustrating the above information.

The Appriased Exchange Values are directly comparable between land parcels. The "Parcel Exchange Value per acre of land" for each parcel can be calculated as follows (see table 2):

$$\frac{\text{Total Parcel Appraised Exchange Value}}{\text{Total Acres in Parcel (sum of VCU acreage)}} = \text{Parcel Exchange Value per acre of land}$$

Thus, the Appraised Exchange Value computed for each parcel of land (see Table 1) can be used to generate a ratio of acre exchange to compare recreation and wilderness values.

TABLE 1 - APPRAISED EXCHANGE VALUE PER PARCEL.

	GOLDBELT			KOOTZNOO-WOO	SHEE ATIKA		
	ORIGINAL LAND SELECTION	NATIVE LAND EXCHANGE PROPOSAL	F.S. LAND EXCHANGE PROPOSAL	ORIGINAL LAND SELECTION	ORIGINAL LAND SELECTION	NATIVE LAND EXCHANGE PROPOSAL	F.S. LAND EXCHANGE PROPOSAL
DISPERSED SEMI-PRIMITIVE RECREATION APPRAISED EXCHANGE VALUE.	428,920	1,376,858	871,721	502,290	732,204	521,226	951,350
WILDERNESS ATTRIBUTES APPRAISED EXCHANGE VALUE.	595,764	1,869,943	1,134,546	707,370	615,456	714,618	1,398,765
AVERAGED EXCHANGE VALUE.	512,342	1,623,401	1,003,134	604,830	673,830	617,922	1,175,058

TABLE 2 - APPRAISED EXCHANGE VALUE PER ACRE.

	GOLDBELT			KOOTZNOO-WOO	SHEE ATIKA		
	ORIGINAL LAND SELECTION	NATIVE LAND EXCHANGE PROPOSAL	F.S. LAND EXCHANGE PROPOSAL	ORIGINAL LAND SELECTION	ORIGINAL LAND SELECTION	NATIVE LAND EXCHANGE PROPOSAL	F.S. LAND EXCHANGE PROPOSAL
DISPERSED SEMI-PRIMITIVE RECREATION APPRAISED EXCHANGE VALUE.	22/ACRE	32/ACRE	30/ACRE	23/ACRE	38/ACRE	22/ACRE	32/ACRE
WILDERNESS ATTRIBUTES APPRAISED EXCHANGE VALUE.	31/ACRE	44/ACRE	39/ACRE	33/ACRE	32/ACRE	30/ACRE	47/ACRE
AVERAGED EXCHANGE VALUE.	26.5/ACRE	38/ACRE	34.5/ACRE	28/ACRE	35/ACRE	26/ACRE	39.5/ACRE

— GOLDBELT —

DISPERSED SEMI-PRIMITNE RECREATION APPRAISAL

	LAND AREA (PARCEL)	VCU NO.	ACREAGE	X	DISPERSED SEMI-PRIMITIVE RECREATION OPPORT. RATING	X	SIGNIFICANCE TO TOTAL VCU	X	ECOTYPE EQUIVALENCY FACTOR	=	APPRAISED EXCHANGE VALUE
ORIGINAL LAND SELECTION	CUBE COVE	146	510	X	3	X	2	X	3	=	9,180
		147	880	X	2	X	2	X	3	=	10,560
	KATHLEEN	147	278	X	2	X	1	X	3	=	1,668
	[illegible]	148	5,220	X	3	X	3	X	3	=	140,940
	WARD-FLORENCE	149	7,280	X	2	X	3	X	3	=	131,040
		150	5,020	X	3	X	3	X	3	=	135,540
	* TOTAL =	19,188	ACRES					*	TOTAL	=	428,928
NATIVE LAND EXCHANGE PROPOSAL	BERNERS BAY	16	340	X	5	X	1	X	5	=	8,500
		17	240	X	2	X	3	X	5	=	7,200
		25	420	X	4	X	1	X	5	=	8,400
	OUTER POINT	35	260	X	1	X	3	X	3	=	2,340
	SOUTH RUSSELL FIORD	362	706	X	3	X	2	X	4	=	16,944
		364	2,746	X	2	X	2	X	4	=	43,936
		365	1,456	X	4	X	3	X	4	=	69,888
		372	506	X	2	X	1	X	4	=	4,048
		373	8,666	X	1	X	3	X	4	=	103,992
	PORT HOUSTON	79	3,080	X	4	X	3	X	5	=	184,800
	HOBART BAY	74	1,712	X	2	X	2	X	5	=	34,240
		75	16,512	X	3	X	3	X	5	=	743,040
		76	3,392	X	2	X	2	X	5	=	67,840
		77	911	X	2	X	3	X	5	=	27,330

- GULDBERG -

DISPERSED SEMI-PRIMITIVE RECREATION APPRAISAL

	LAND AREA (PARCEL)	VCU NO.	ACREAGE	X	DISPERSED SEMI-PRIMITIVE RECREATION OPPORT. RATING	X	SIGNIFICANCE TO TOTAL VCU	X	ECOTYPE EQUIVALENCY FACTOR	=	APPRAISED EXCHANGE VALUE
	HOBART BAY	80	261	X	2	X	3	X	5	=	7,830
	(CONT.)	81	1,551	X	2	X	3	X	5	=	46,530
	* TOTAL = 42,759 ACRES							*	TOTAL	=	1,376,858
FOREST SERVICE LAND EXCHANGE PROPOSAL	BERNERS BAY	16	387	X	5	X	1	X	5	=	9,675
		17	187	X	2	X	3	X	5	=	5,610
		23	1,987	X	2	X	3	X	5	=	59,610
		24	2,686	X	2	X	3	X	5	=	80,580
		25	1,377	X	4	X	1	X	5	=	27,540
	DOUGLAS ISLAND	35	2,674	X	1	X	3	X	3	=	24,066
		36	3,474	X	1	X	2	X	3	=	20,844
		37	2,133	X	2	X	2	X	3	=	25,596
	HOBART BAY	74	200	X	2	X	1	X	5	=	2,000
		75	13,120	X	3	X	3	X	5	=	590,400
		77	860	X	2	X	3	X	5	=	25,800
	* TOTAL = 29,085 ACRES							*	TOTAL	=	871,727

- KOOTZNOOWOO -

DISPERSED SEMI-PRIMITIVE RECREATION APPRAISAL

	LAND AREA (PARCEL)	VCU NO.	ACREAGE	X	DISPERSED SEMI-PRIMITIVE RECREATION OPPORT. RATING	X	SIGNIFICANCE TO TOTAL VCU	X	ECOTYPE EQUIVALENCY FACTOR	=	APPRAISED EXCHANGE VALUE
ORIGINAL LAND SELECTION	KOOTZNOOWOO	157	200	X	4	X	3	X	3	=	7,200
	INLET	161	100	X	2	X	1	X	3	=	600
		163	9,600	X	4	X	3	X	3	=	345,600
		164	1,610	X	1	X	3	X	3	=	14,490
		165	6,530	X	1	X	3	X	3	=	58,770
		166	2,670	X	4	X	2	X	3	=	64,080
		171	770	X	5	X	1	X	3	=	11,550
	* TOTAL =		21,480	ACRES				*	TOTAL	=	502,290

— SHEE ATIKA —

DISPERSED SEMI-PRIMITIVE RECREATION APPRAISAL

	LAND AREA (PARCEL)	VCU NO.	ACREAGE	X	DISPERSED SEMI-PRIMITIVE RECREATION OPPORT. RATING	X	SIGNIFICANCE TO TOTAL VCU	X	ECOTYPE EQUIVALENCY FACTOR	=	APPRAISED EXCHANGE VALUE
ORIGINAL LAND SELECTION	HOOD BAY	171	16,040	X	5	X	3	X	3	=	721,800
		172	80	X	5	X	1	X	3	=	1,200
	KANALKA MTN.	165	3,068	X	1	X	1	X	3	=	9,204
	* TOTAL = 19,188 ACRES							*	TOTAL	=	732,204
NATIVE LAND EXCHANGE PROPOSAL	KATLIAN BAY	311	200	X	2	X	2	X	4	=	3,200
		312	400	X	3	X	1	X	4	=	4,800
		313	320	X	4	X	2	X	4	=	10,240
	KATHLEEN =	146	722	X	3	X	1	X	3	=	6,498
	FLORENCE	147	1,642	X	2	X	2	X	3	=	19,704
		148	5,722	X	3	X	3	X	3	=	154,494
		149	9,082	X	2	X	3	X	3	=	163,476
		150	5,882	X	3	X	3	X	3	=	158,814
	* TOTAL = 23,970 ACRES							*	TOTAL	=	521,226
FOREST SERVICE LAND EXCHANGE PROPOSAL	DRY BAY	68	3,800	X	2	X	3	X	5	=	114,000
		69	5,160	X	2	X	3	X	5	=	154,800
	CHUCK RIVER	71	980	X	4	X	3	X	5	=	58,800
		75	160	X	3	X	3	X	5	=	7,200
		76	8,836	X	2	X	3	X	5	=	265,080
	SOUTH WINDHAM BAY	71	2,826	X	4	X	3	X	5	=	169,560
		72	1,556	X	1	X	3	X	5	=	23,340
		73	1,736	X	2	X	2	X	5	=	34,720

- SHEE ATIKA -

DISPERSED SEMI-PRIMITIVE RECREATION APPRAISAL

LAND AREA (PARCEL)	VCU NO.	ACREAGE	X	DISPERSED SEMI-PRIMITIVE RECREATION OPPORT. RATING	X	SIGNIFICANCE TO TOTAL VCU	X	ECOTYPE EQUIVALENCY FACTOR	=	APPRAISED EXCHANGE VALUE
LIBBY CREEK	73	2,321	X	2	X	2	X	5	=	46,420
	74	2,581	X	2	X	3	X	5	=	77,430
* TOTAL = 29,956 ACRES							*	TOTAL	=	951,350

— GOLDBELT —

WILDERNESS ATTRIBUTES APPRAISAL

	LAND AREA (PARCEL)	VCU NO.	ACREAGE	X	WILDERNESS ATTRIBUTE INDEX	X	SIGNIFICANCE TO TOTAL VCU	X	ECOTYPE EQUIVALENCY FACTOR	=	APPRAISE EXCHANGE VALUE
ORIGINAL LAND SELECTION	CUBE COVE	146	510	X	4	X	2	X	3	=	12,24C
		147	880	X	3	X	2	X	3	=	15,84
	KATHLEEN	147	278	X	3	X	1	X	3	=	2,50
		148	5,220	X	4	X	3	X	3	=	187,90
	WARD-FLORENCE	149	7,280	X	3	X	3	X	3	=	196,56
		150	5,020	X	4	X	3	X	3	=	180,7
	* TOTAL =		19,188	ACRES				*	TOTAL	=	595,7
NATIVE LAND EXCHANGE PROPOSAL	BERNERS BAY	16	340	X	4	X	1	X	5	=	6,8
		17	240	X	2	X	3	X	5	=	7,2
		25	420	X	0	X	1	X	5	=	2,1
	OUTER POINT	35	260	X	2	X	3	X	3	=	4,6
	SOUTH RUSSELL FIORD	362	706	X	3	X	2	X	4	=	16,9
		364	2,746	X	3	X	2	X	4	=	65,0
		365	1,456	X	4	X	3	X	4	=	69,8
		372	506	X	3	X	1	X	4	=	6,0
		373	8,666	X	2	X	3	X	4	=	207,0
	PORT HOUSTON	79	3,680	X	5	X	3	X	5	=	231,
	HOBART BAY	74	1,712	X	3	X	2	X	5	=	51,
		75	16,512	X	4	X	3	X	5	=	990,
		76	3,392	X	4	X	2	X	5	=	135,
		77	911	X	3	X	3	X	5	=	40,

- GOLDBELT -

WILDERNESS ATTRIBUTES APPRAISAL

	LAND AREA (PARCEL)	VCU NO.	ACREAGE	X	WILDERNESS ATTRIBUTE INDEX	X	SIGNIFICANCE TO TOTAL VCU	X	ECOTYPE EQUIVALENCY FACTOR	=	APPRAISED EXCHANGE VALUE
	HOBART BAY	80	261	X	3	X	2	X	3	=	4,69
	(CONT.)	81	1,551	X	3	X	2	X	3	=	27,91
	*TOTAL =		42,759	ACRES				*	TOTAL	=	1,869,9
FOREST SERVICE LAND EXCHANGE PROPOSAL	BERNERS BAY	16	387	X	4	X	1	X	5	=	7,74
		17	187	X	2	X	3	X	5	=	5,6
		23	1,987	X	3	X	3	X	5	=	89,41
		24	2,686	X	2	X	3	X	5	=	80,5
		25	1,377	X	0	X	1	X	5	=	6,8
	DOUGLAS ISLAND	35	2,674	X	2	X	3	X	3	=	48,13
		36	3,474	X	2	X	2	X	3	=	41,6
		37	2,133	X	2	X	2	X	3	=	25,5
	HOBART BAY	74	200	X	3	X	1	X	5	=	3,0
		75	13,120	X	4	X	3	X	5	=	787,2
		77	860	X	3	X	3	X	5	=	38,7
	*TOTAL =		29,085	ACRES				*	TOTAL	=	1,134,5

- KOOTZNOOWOO -

WILDERNESS ATTRIBUTES APPRAISAL

	LAND AREA (PARCEL)	VCU NO.	ACREAGE	X	WILDERNESS ATTRIBUTE INDEX	X	SIGNIFICANCE TO TOTAL VCU	X	ECOTYPE EQUIVALENCY FACTOR	=	APPRAIS EXCHANG VALUE
ORIGINAL LAND SELECTION	KOOTZNOOWOO	157	200	X	5	X	3	X	3	=	9,0C
	INLET	161	100	X	3	X	1	X	3	=	9(
		163	9,600	X	4	X	3	X	3	=	345,6
		164	1,610	X	3	X	3	X	3	=	43,4
		165	6,530	X	4	X	3	X	3	=	235,0
		166	2,670	X	4	X	2	X	3	=	64,0
		171	770	X	4	X	1	X	3	=	9,2
	*	TOTAL=	21,480	ACRES				*	TOTAL	=	707,3

- SHEE ATIKA -

WILDERNESS ATTRIBUTES APPRAISAL

	LAND AREA (PARCEL)	VCU NO.	ACREAGE	X	WILDERNESS ATTRIBUTE INDEX	X	SIGNIFICANCE TO TOTAL VCU	X	ECOTYPE EQUIVALENCY FACTOR	=	APPRAISE EXCHANGE VALUE
ORIGINAL LAND SELECTION	HOOD BAY	171	16,040	x	4	x	3	x	3	=	577,44
		172	80	x	5	x	1	x	3	=	1,20
	KANALKA MTN.	165	3,068	x	4	x	1	x	3	=	36,81
	*	TOTAL=	19,188	ACRES				*	TOTAL	=	615,45
NATIVE LAND EXCHANGE PROPOSAL	KATLIAN BAY	311	200	x	0	x	2	x	4	=	1,60
		312	400	x	0	x	1	x	4	=	1,60
		313	320	x	4	x	2	x	4	=	10,24
	KATHLEEN-	146	722	x	4	x	1	x	3	=	8,66
	FLORENCE	147	1,642	x	3	x	2	x	3	=	29,55
		148	5,722	x	4	x	3	x	3	=	205,99
		149	9,082	x	3	x	3	x	3	=	245,21
		150	5,882	x	4	x	3	x	3	=	211,75
	*	TOTAL=	23,970	ACRES				*	TOTAL	=	714,61
EST SERVICE LAND XCHANGE PROPOSAL	DRY BAY	68	3,800	x	3	x	3	x	5	=	171,00
		69	5,160	x	3	x	3	x	5	=	232,20
	CHUCK RIVER	71	980	x	3	x	3	x	5	=	44,10
		75	160	x	4	x	3	x	5	=	9,60
		76	8,836	x	4	x	3	x	5	=	530,16
	SOUTH WINDHAM BAY	71	2,826	x	3	x	3	x	5	=	127,17
		72	1,556	x	2	x	3	x	5	=	46,68
		73	1,736	x	3	x	2	x	5	=	52,08

- SHEE ATIKA -

WILDERNESS ATTRIBUTES APPRAISAL

LAND AREA (PARCEL)	VCU NO.	ACREAGE	X	WILDERNESS ATTRIBUTE INDEX	X	SIGNIFICANCE TO TOTAL VCU	X	ECOTYPE EQUIVALENCY FACTOR	=	APPRAISED EXCHANGE VALUE
LIBBY CREEK	73	2,321	X	3	X	2	X	5	=	69,630
	74	2,581	X	3	X	3	X	5	=	116,145
*	TOTAL=	29,956		ACRES			*	TOTAL	=	1,398,765

CUBE COVE
Goldbelt Original

VCUs

		146	147
ECOTYPE	Admiralty-Chichagof		
	Terrain	Med.	Med.
	Geology	Med.	Med.
	Water	High	Low
	Vegetation	High	Med.
BIOLOGY	Wildlife	High	Med.
	Fish	High	Low
CULTURE - ACCESS	Archeology	--	Low
	History	--	--
	Landing Site	Fair	Fair
	Anchorage	Fair	--
	Trails	--	--
	Roads	--	--
	Land Use	--	--
RARE II	Natural Integrity	7	7
	Apparent Naturalness	7	7
	Solitude	5	3
	Primitive Recreation Opportunity	4	3
	Supplementary Value	3	2
	Scenic Value	3	2

The Cube Cove Selection contains a small portion of each VCU. The VCU 147 selection includes a fairly nice cove that could be used as an anchorage by Chatham Strait boaters. Better anchorages exist in the area. This landscape serves as scenic backdrop to the marine highway and tour boat travel corridors. The selection does not block access to other portions of the VCU.

The VCU 146 selection is in the middle segment of Wheeler Creek. It blocks access to the Wheeler Creek headwaters.

VCU	Significance to Total VCU
146	Med.
147	Med.

KATHLEEN
Goldbelt Original

VCUs

		147	148
ECOTYPE	Admiralty-Chichagof		
	Terrain	Med.	High
	Geology	Med.	Med.
	Water	Low	High
	Vegetation	Med.	High
BIOLOGY	Wildlife	Med.	Med.
	Fish	Low	High
CULTURE - ACCESS	Archeology	Low	--
	History	--	--
	Landing Site	Fair	Fair
	Anchorage	--	--
	Trails	--	--
	Roads	--	--
	Land Use	--	--
RARE II	Natural Integrity	7	7
	Apparent Naturalness	7	7
	Solitude	3	5
	Primitive Recreation Opportunity	3	5
	Supplementary Value	2	3
	Scenic Value	2	4

This selection removes the entire valley bottom from VCU 148 - leaving the mountain tops and alpine. Peanut Lake and Lake Kathleen are included in the selection...water features rate high. The selection includes a small portion of VCU 147. This portion is scenic backdrop to Chatham Straits.

VCU	Significance to Total VCU
147	Low
148	High

WARD-FLORENCE
Goldbelt Original

		VCUs 149	150
ECOTYPE	Admiralty-Chichagof		
	Terrain	Med.	High
	Geology	High	High
	Water	Med.	High
	Vegetation	Med.	Med.
BIOLOGY	Wildlife	Med.	Med.
	Fish	Med.	High
CULTURE - ACCESS	Archeology	--	--
	History	--	--
	Landing Site	Limited	Fair
	Anchorage	Limited	--
	Trails	--	Limited
	Roads	--	--
	Land Use	--	--
RARE II	Natural Integrity	7	7
	Apparent Naturalness	7	7
	Solitude	4	5
	Primitive Recreation Opportunity	4	5
	Supplementary Value	3	4
	Scenic Value	3	4

This selection includes the valley bottoms of both VCUs, cuts off access to the headwaters of each VCU and leaves the alpine areas and beach areas in public ownership. It includes approximately half of Chatham Straits. Scenic backdrop in each VCU. Lake Florence is included in VCU 150 - water features rate high.

VCU	Significance to Total VCU
149	High
150	High

BERNER'S BAY
Goldbelt Proposal

		VCUs 16	17	25
ECOTYPE	Coast Range			
	Terrain	Ave.	Low	Low
	Geology	High	Low	Ave.
	Water	High	Low	Ave.
	Vegetation	High	Ave.	High
BIOLOGY	Wildlife	Ave.	Low	Ave.
	Fish	High	Ave.	Ave.
CULTURE - ACCESS	Archeology	High	Low	High
	History	Med.	Low	--
	Landing Site	Good	Lim.	--
	Anchorage	Fair	--	Fair
	Trails	Lim.	--	Lim.
	Roads	--	--	--
	Land Use	--	--	--
RARE II	Natural Integrity	7	7	--
	Apparent Naturalness	7	7	--
	Solitude	4	2	--
	Primitive Recreation Opportunity	5	2	--
	Supplementary Value	3	1	--
	Scenic Value	4	1	--

This selection is similar to the north portion of the Forest Service Berner's Bay selection. The area includes coast line and serves as scenic backdrop to tour boats, ferries, and other water bound users. The selection does not presently have adverse impacts on recreational uses in the area. It does block access into VCU 17. It will block future highway access to Berner's Bay.

VCU	Significance to Total VCU
16	Low
17	High
25	Low

OUTER POINT
Goldbelt Proposal

VCUs

		35
ECOTYPE	Admiralty-Chichagof	
	Terrain	Low
	Geology	Ave.
	Water	Ave.
	Vegetation	Ave.
BIOLOGY	Wildlife	Low
	Fish	Low
CULTURE = ACCESS	Archeology	High
	History	--
	Landing Site	Fair
	Anchorage	--
	Trails	--
	Roads	Primary
	Land Use	Moderately Discordant
RARE II	Natural Integrity	7
	Apparent Naturalness	7
	Solitude	2
	Primitive Recreation Opportunity	2
	Supplementary Value	1
	Scenic Value	1

This selection is an extension of Goldbelt's existing selection on Douglas Island. The selection includes a recreational beach and state highway access. It serves as scenic backdrop to Stephens Passage - a tour and ferry boat corridor.

VCU	Significance to Total VCU
35	High

SOUTH RUSSELL FIORD
Goldbelt Proposal

		VCUs					
		364	365	366	372	373	376
ECOTYPE	Yakutat Forelands						
	Terrain	Med.	High	Med.	Low	Low	Med
	Geology	Med.	Med.	Med.	Med.	Low	Med
	Water	Med.	High	High	High	Med.	High
	Vegetation	Low	Med.	High	High	Low	High
BIOLOGY	Wildlife	High	Med.	High	High	Med.	Med
	Fish	High	High	High	High	High	High
CULTURE - ACCESS	Archeology	Low	Low	High	Med.	Low	--
	History	Low	Low	High	--	Low	--
	Landing Site	--	Fair	Fair	--	--	--
	Anchorage	--	Fair	Fair	--	--	--
	Trails	--	--	sev.	--	--	--
	Roads	--	--	State	--	Iso.	Iso.
	Land Use	--	--	--	--	Mod. Dis.	--
RARE II	Natural Integrity	7	7	7	7	7	7
	Apparent Naturalness	7	7	7	7	7	7
	Solitude	3	5	3	3	2	2
	Primitive Recreation Opportunity	4	5	5	3	2	4
	Supplementary Value	2	3	3	2	1	4
	Scenic Value	2	3	4	3	1	4

This selection borders on and includes a portion of wilderness proposals in TLMP alternatives A2 (administration's proposal), C (Forest Service IDT recommendation), D, E, A3 (SEACC).

VCU		Significance to Total VCU
364	Heavily forested Area half of VCU	Med.
365	Terminal Moraine at south end of Russell Fiord	High
366	Headwaters of Situk River next to Russell Fiord	High
372	Heavily Forested area	Low
373	Heavily forested area blocks public access to Fiord 60% of VCU	High
376	Corner of highly valued lake area	High

PORT HOUGHTON
Goldbelt Proposal

VCUs

		79
ECOTYPE	Coast Range	
	Terrain	Med.
	Geology	Med.
	Water	High
	Vegetation	High
BIOLOGY	Wildlife	Med.
	Fish	High
CULTURE - ACCESS	Archeology	Low
	History	Low
	Landing Site	Good
	Anchorage	Good
	Trails	--
	Roads	--
	Land Use	--
RARE II	Natural Integrity	7
	Apparent Naturalness	7
	Solitude	7
	Primitive Recreation Opportunity	6
	Supplementary Value	4
	Scenic Value	4

This selection is at the end of the bay's north arm. It encompasses portions of the bay that recreationalists are most likely to use. It serves as scenic backdrop for the anchorage.

VCU	Significance to Total VCU
79	High

Note: This area is contained within TLMP Alternative C as a wilderness proposal.

HOBART BAY
Goldbelt Proposal

VCUs

		74*	75	76	77	81
ECOTYPE	Coast Range					
	Terrain	Low	High	Ave.	Ave.	Low
	Geology	Low	Ave.	Ave.	Low	Low
	Water	Low	High	Ave.	Ave.	Low
	Vegetation	Low	High	Ave.	Ave.	Ave.
BIOLOGY	Wildlife	Low	Ave.	Low	Low	Low
	Fish	Low	Ave.	High	High	Low
CULTURE - ACCESS	Archeology	Low	Low	Low	--	--
	History	Low	--	Med.	--	--
	Landing Site	Lim.	Good	--	--	Lim.
	Anchorage	--	Good	--	--	--
	Trails	Lim.	--	Lim.	--	--
	Roads	--	--	--	--	--
	Land Use	--	--	--	--	--
RARE II	Natural Integrity	7	5	7	7	7
	Apparent Naturalness	7	6	7	7	7
	Solitude	3	7	5	4	3
	Primitive Recreation Opportunity	3	7	4	3	2
	Supplementary Value	1	4	3	2	1
	Scenic Value	1	4	3	2	1

This proposal includes all of the values listed for VCU 75. This bay has good anchorage, is spacially complex, scenically rich, as well as being located along frequently traveled water routes.

VCU		Significance to Total VCU
74	Scenic backdrop to Stephens Passage and shoreline values	Med.
75	Hobart Bay scenic backdrop to Stephens Passage	High
76	One of two entrances to this VCU - cuts off access to headwaters	Med.
77	Mouth of stream plus blocks access to rest of VCU	High
81	Saltwater shoreline values plus scenic backdrop to Stephens Passage	High

Note: This selection is in TLMP Alternative E Wilderness Area.

(Goldbelt)
BERNER'S BAY
Forest Service Proposal

		VCUs				
		16	17	23	24	25
ECOTYPE	Coast Range Ecotype					
	Terrain	Ave.	Low	Ave.	Low	Low
	Geology	High	Low	Ave.	Low	Ave.
	Water	High	Low	Ave.	Ave.	Ave.
	Vegetation	High	Ave.	Ave.	Ave.	High
BIOLOGY	Wildlife	Ave.	Low	Low	Low	Ave.
	Fish	High	Ave.	Ave.	Ave.	Ave.
CULTURE - ACCESS	Archeology	High	Low	Low	Med.	High
	History	Med.	Low	--	Med.	--
	Landing Site	Good	Lim.	--	--	--
	Anchorage	Fair	--	--	--	Fair
	Trails	Lim.	--	--	Mod.	Lim.
	Roads	--	--	--	--	--
	Land Use	--	--	--	--	--
RARE II	Natural Integrity	7	7	7	7	--
	Apparent Naturalness	7	7	7	7	--
	Solitude	4	2	4	2	--
	Primitive Recreation Opportunity	5	2	3	2	--
	Supplementary Value	3	1	2	1	--
	Scenic Value	4	1	3	1	--

The Berner's Bay selection is at the north end of the Juneau highway. The Berner's Bay area contains good recreational values that are readily accessible to Juneau boaters. These values center around the estuarine areas.

The Cowee Creek area contains good beach oriented recreational values that are frequently used by Juneau residents who drive cars to the area. The mountain backdrop contains two small glaciers and some alpine areas that are used by goat hunters.

Selections in both of these areas do not encompass the significant recreational values although they serve as "scenic backdrop" to frequently used areas. Cowee Creek selections will block normal public access (along valley bottoms) to the surrounding mountains.

VCU	Significance to Total VCU
16 Heavily forested hillside	Low
17 Some estuarine-Blocks access	High
23 Blocks access	High
24 Heart of unit	High
25 Heavily forested hillside	Low

(Goldbelt)
DOUGLAS ISLAND
Forest Service Proposal

		VCUs		
		35	36	37
ECOTYPE	Admiralty-Chichagof			
	Terrain	Low	Ave.	Low
	Geology	Ave.	Ave.	Low
	Water	Ave.	Low	Low
	Vegetation	Ave.	Low	Ave.
BIOLOGY	Wildlife	Low	Ave.	Low
	Fish	Low	Ave.	Low
CULTURE - ACCESS	Archeology	High	Low	Med.
	History	--	--	--
	Landing Site	Fair	Fair	Fair
	Anchorage	--	--	--
	Trails	--	--	Lim.
	Roads	Pri.	--	--
	Land Use	Mod.	--	--
		Dis.		
RARE II	Natural Integrity	7	7	7
	Apparent Naturalness	7	7	7
	Solitude	2	2	2
	Primitive Recreation Opportunity	2	2	2
	Supplementary Value	1	1	1
	Scenic Value	1	1	1

The Douglas Island Selection area is a very typical Admiralty-Chichagof landtype. It is not particularly attractive although it serves as scenic backdrop to the Alaska Marine Highway and tour boat systems. The landtype contains a simple rocky beach, and a fairly uniform simple slope that is heavily forested to the alpine. The alpine areas are attractive and are readily accessible to users of the Fish Creek ski facilities. The shoreline areas are used by deer hunters. Approximately one-third of the area borders on state highway. The shoreline has apparently already been selected...the major recreational impact has occurred.

VCU	Significance to Total VCU
35 Steep forested hillside some tide lands	High
36 Steep forested hillside some lowlands	Med.
37 Steep forested hillside	Med.

(Goldbelt)
HOBART BAY
Forest Service Proposal

		VCUs		
		74	75	77
ECOTYPE	Coast Range Ecotype			
	Terrain	Low	High	Ave.
	Geology	Low	Ave.	Low
	Water	Low	High	Ave.
	Vegetation	Low	High	Ave.
BIOLOGY	Wildlife	Low	Ave.	Low
	Fish	Low	Ave.	High
CULTURE - ACCESS	Archeology	Low	Low	--
	History	Low	--	--
	Landing Site	Lim.	Good	--
	Anchorage	--	Good	--
	Trails	Lim.	--	--
	Roads	--	--	--
	Land Use	--	--	--
RARE II	Natural Integrity	7	5	7
	Apparent Naturalness	7	6	7
	Solitude	3	7	4
	Primitive Recreation Opportunity	3	7	3
	Supplementary Value	1	4	2
	Scenic Value	1	4	2

The Hobart Bay selection encompasses an excellent recreational bay that is surrounded by rather average Coast Range Mountains. The bay is noted for its spacial intrigue and scenery. Its streams are good fish producers.

VCU	Significance to Total VCU
74 Small portion of Coast	Low
75 Encompasses entire Bay	High
77 Estuarine environment plus blocks access to rest of VCU	High

Note: This selection would block one of two access points to VCU 76. This selection is in TLMP Alternative E wilderness areas.

KOOTZNAHOO INLET
Kootznoowoo Original

		VCUs					
		163	164	165	166	171	157
ECOTYPE	Admiralty-Chichagof						
	Terrain	High	Low	Med.	Med.	High	High
	Geology	High	Low	Med.	Med.	Med.	Med.
	Water	High	Low	Med.	High	High	High
	Vegetation	High	Low	Med.	High	High	High
BIOLOGY	Wildlife	High	Med.	High	Med.	High	Med.
	Fish	Low	Low	Med.	High	High	High
CULTURE - ACCESS	Archeology	High	--	High	--	High	--
	History	Med.	--	High	Med.	Med.	--
	Landing Site	Good	--	Fair	Fair	Fair	Good
	Anchorage	Good	--	Fair	Fair	Fair	--
	Trails	--	--	--	--	--	Ext
	Roads	--	--	Iso.	--	--	--
	Land Use	--	--	--	--	--	--
RARE II	Natural Integrity	7	7	7	7	6	7
	Apparent Naturalness	7	7	7	7	7	7
	Solitude	5	5	4	5	6	7
	Primitive Recreation Opportunity	6	5	5	5	6	6
	Supplementary Value	4	3	3	3	4	4
	Scenic Value	5	4	3	4	4	4

The Kootznahoo Inlet Selection encompasses an excellent recreational habitat. The inlet is filled with islands and tidal races, wildlife and fish populations, and historical/archeological use. These elements in combination are significant. Some of the western Prince of Wales Island waterways are similar as are the Redfield Lakes in Yakutat...but Kootznahoo is really in a class of its own.

VCU	Significance to Total VCU
163 Encompasses a majority of Inlet	High
164 Includes shoreline and access points	High
165 Includes lowland and tidal areas plus cuts off access to remainder	High
166 Includes lowland and tidal areas, does not cut off internal access	Med.
171 Includes portion of rocky shore and forested slopes at bay entrance	Low
157 Includes corner of Admiralty Lakes recreation area - includes portion of important trail. This VCU should be eliminated from exchange in order to keep Admiralty Lakes area intact.	High

HOOD BAY
Shee Atika Original

		VCUs 171	172
ECOTYPE	Admiralty-Chichagof		
	Terrain	High	High
	Geology	Med.	High
	Water	High	High
	Vegetation	High	High
BIOLOGY	Wildlife	High	High
	Fish	High	High
CULTURE - ACCESS	Archeology	High	Med.
	History	Med.	--
	Landing Site	Fair	Fair
	Anchorage	Fair	Fair
	Trails	--	--
	Roads	--	--
	Land Use	--	--
RARE II	Natural Integrity	6	7
	Apparent Naturalness	7	7
	Solitude	6	6
	Primitive Recreation Opportunity	6	6
	Supplementary Value	4	4
	Scenic Value	4	4

The Hood Bay Selection encompasses the majority of VCU 171 and an insignificant portion of VCU 172.

This area is highly attractive because the saltwater access is good and the recreational opportunities are excellent.

VCU	Significance to Total VCU
171	High
172	Low

KANALKU MOUNTAIN
Shee Atika Original

VCUs

165

ECOTYPE	Admiralty-Chichagof	
	Terrain	Med.
	Geology	Med.
	Water	Med.
	Vegetation	Med.
BIOLOGY	Wildlife	High
	Fish	Med.
CULTURE - ACCESS	Archeology	High
	History	High
	Landing Site	Fair
	Anchorage	Fair
	Trails	--
	Roads	Iso.
	Land Use	--
RARE II	Natural Integrity	7
	Apparent Naturalness	7
	Solitude	4
	Primitive Recreation Opportunity	5
	Supplementary Value	3
	Scenic Value	3

VCU 165 includes Favorite Bay which is part of the excellent Kootznahoo Inlet area. This selection includes some scenic backdrop to the area and its development may have secondary impacts on the wildlife and fish populations in the area...but otherwise does not physically occupy the essence of VCU 165's recreational values. Together with Kootznoowoo's selections - the values in VCU 165 would be lost to the public.

VCU	Significance to Total VCU
165	Low

KATLIAN BAY
Shee Atika Proposal

VCUs

		311	312	313
ECOTYPE	Baranof Highlands			
	Terrain	High	Med.	Med.
	Geology	High	Med.	High
	Water	High	Med.	Med.
	Vegetation	Med.	Med.	High
BIOLOGY	Wildlife	Low	High	High
	Fish	High	High	High
CULTURE - ACCESS	Archeology	High	Low	Low
	History	High	Low	Low
	Landing Site	Fair	Lim.	Lim.
	Anchorage	Fair	Lim.	Lim.
	Trails	--	--	--
	Roads	--	Log.	Log.
	Land Use	Mod. Dis.	High Dis.	High Dis.
RARE II	Natural Integrity	0	0	7
	Apparent Naturalness	0	0	7
	Solitude	0	0	2
	Primitive Recreation Opportunity	0	0	5
	Supplementary Value	0	0	3
	Scenic Value	0	0	4

This selection would increase native ownership in Katlian Bay. The bay has already been logged and present scenic values are fairly low. Sitka hunters and fishermen use the areas extensively. These selections include shoreline areas on the edge of the Baranof Mountains. Cedar Cove is included in VCU 313. It is a fairweather anchorage. Starrigavin Bay is an important recreational bay to Sitka users.

VCU	Significance to Total VCU
311	Med.
312	Low
313	Med.

Note: The selected strip approximates the location of Sitka road extensions.

KATHLEEN-FLORENCE
Shee Atika Proposal

VCUs

		146	147	148	149	150
ECOTYPE	Admiralty-Chichagof					
	Terrain	Med.	Med.	High	Med.	High
	Geology	Med.	Med.	Med.	High	High
	Water	High	Low	High	Med.	High
	Vegetation	High	Med.	High	Med.	Med.
BIOLOGY	Wildlife	High	Med.	Med.	Med.	Med.
	Fish	High	Low	High	Med.	High
CULTURE - ACCESS -	Archeology	--	Low	--	--	--
	History	--	--	--	--	--
	Landing Site	Fair	Fair	Fair	Lim.	Fair
	Anchorage	Fair	--	--	Lim.	--
	Trails	--	--	--	--	Lim.
	Roads	--	--	--	--	--
	Land Use	--	--	--	--	--
RARE II	Natural Integrity	7	7	7	7	7
	Apparent Naturalness	7	7	7	7	7
	Solitude	5	3	5	4	5
	Primitive Recreation Opportunity	4	3	5	4	5
	Supplementary Value	3	2	3	3	4
	Scenic Value	3	2	4	3	4

This proposal is similar to the original Goldbelt selection except that it:

1. Does not cut off access to the headwaters of Wheeler Creek.

2. Includes more Chatham Strait scenic backdrop.

3. Includes more of the valley bottom in the direction of the watershed's

VCU	Significance to Total VCU
146	Low
147	Med.
148	High
149	High
150	High

DRY BAY
Forest Service Proposal

VCUs

		68	69
ECOTYPE	Coast Range	Low	Low
	Terrain	Low	Med.
	Geology	Med.	Med.
	Water	Med.	Med.
	Vegetation	Med.	Med.
BIOLOGY	Wildlife	Low	Low
	Fish	Ave.	Ave.
CULTURE - ACCESS	Archeology	Low	--
	History	--	--
	Landing Site	Lim.	Lim.
	Anchorage	--	--
	Trails	--	--
	Roads	--	--
	Land Use	--	--
RARE II	Natural Integrity	7	7
	Apparent Naturalness	7	7
	Solitude	3	4
	Primitive Recreation Opportunity	3	3
	Supplementary Value	2	2
	Scenic Value	2	2

This proposal encompasses two-thirds of the combined VCUs saltwater beach areas as well as heavily forested valley bottoms and hillsides. The area serves a scenic backdrop to Stephens Passage.

VCU	Significance to Total VCU
68	High
69	High

CHUCK RIVER
Forest Service Proposal

VCUs 71 76

ECOTYPE	Coast Range		
	Terrain	Med.	Ave.
	Geology	Med.	Ave.
	Water	Med.	Ave.
	Vegetation	High	Ave.
BIOLOGY	Wildlife	Ave.	Low
	Fish	High	High
CULTURE - ACCESS	Archeology	Low	Low
	History	High	Med.
	Landing Site	Good	--
	Anchorage	Good	--
	Trails	Mod.	Lim.
	Roads	--	--
	Land Use	--	--
RARE II	Natural Integrity	5	7
	Apparent Naturalness	6	7
	Solitude	4	5
	Primitive Recreation Opportunity	5	4
	Supplementary Value	2	3
	Scenic Value	3	3

Chuck River empties into the head of Windham Bay. The selection includes the river valley bottom and the areas adjoining the tide lands. It also includes the trail and blocks access into the headwaters of Chuck River. The alpine areas are not selected.

VCU	Significance of Selected Area
71 Mouth of River History - access	High
76 Valley bottom - access	High

Note: This proposal blocks both entrances to Chuck River...the other entrance is from Hobart Bay. TLMP alternative E includes this area as wilderness.

SOUTH WINDHAM BAY
Forest Service Proposal

VCUs

		71	72	73
ECOTYPE	Coast Range			
	Terrain	Med.	Low	Low
	Geology	Med.	Low	Med.
	Water	Med.	Low	Med.
	Vegetation	High	Low	Med.
BIOLOGY	Wildlife	Ave.	Low	Med.
	Fish	High	Low	Low
CULTURE - ACCESS	Archeology	Low	--	Low
	History	High	Low	--
	Landing Site	Good	Lim.	Fair
	Anchorage	Good	--	Fair
	Trails	Mod.	--	--
	Roads	--	--	--
	Land Use	--	--	--
RARE II	Natural Integrity	5	7	7
	Apparent Naturalness	6	7	7
	Solitude	4	2	3
	Primitive Recreation Opportunity	5	2	3
	Supplementary Value	2	1	2
	Scenic Value	3	1	2

The selected area serves as scenic backdrop to Stephens Passage as well as Windham Bay users. It includes a significant portion of the Windham Bay shorelines. It includes the trail.

Windham Bay is attractive in that it is adjacent to a major travel route and it provides good access to the adjacent area.

VCU	Significance to Total VCU
71 South Windham Bay	High
72 1/3 of VCU - blocks access to rest	High
73 1/3 of VCU - blocks access to rest	Med.

Note: VCU 71 is included as wilderness in TLMP alternative E.

		73	74
ECOTYPE	Coast Range		
	Terrain	Low	Low
	Geology	Med.	Low
	Water	Med.	Low
	Vegetation	Med.	Low
BIOLOGY	Wildlife	Med.	Low
	Fish	Low	Low
CULTURE - ACCESS	Archeology	Low	Low
	History	--	Low
	Landing Site	Fair	Lim.
	Anchorage	Fair	--
	Trails	--	Lim.
	Roads	--	--
	Land Use	--	--
RARE II	Natural Integrity	7	7
	Apparent Naturalness	7	7
	Solitude	3	3
	Primitive Recreation Opportunity	3	3
	Supplementary Value	2	1
	Scenic Value	2	1

This proposal includes approximately half the available shoreline that both VCUs offer. It serves as scenic backdrop to Stephens Passage. It blocks access to the headwaters of Libby Creek.

VCU	Significance to Total VCU
73	Med.
74	High

OFF-ADMIRALTY SOILS REPORT

Soil information in this report was derived primarily from data obtained during TLMP investigations.

Native selection areas and proposed selection areas were grouped by value comparison units (VCU). Each area was assessed by the VCU or VCUs it was composed of. An estimate of the percent of each VCU included was made. Site productivity (L=low, M=medium, and H=high) and soil hazard considerations (N=none, M=moderate, and E=extreme) was determined for each area by summing VCU components. In doing this, the following assumptions were made: (1) commercial forest land (CFL) was sought, (2) the composition of the CFL within a VCU was uniformly distributed and (3) the soil hazards within the CFL was also uniformly distributed. These results are tabulated in Table I for Goldbelt and Shee Atika.

The results from Table I are summed for comparison in Table II. These results show:

1. For Goldbelt:

   a. Both the alternative Goldbelt selection and the Forest Service proposal reflect an increase in total CFL.

   b. Both alternative proposals result in major losses to the natives in high productivity sites.

   c. Assuming a 1:1.5:2 difference in productivity between L,M, and H respectively the Goldbelt alternative selection would result in an 18% loss in volume at first rotation while the Forest Service proposal would result in a 24% increase (both values relative to Goldbelt Admiralty selection).

   d. Assuming a 1:2.5:5 increase in erosion rate resulting from the N, M, and E hazard ratings respectively the Forest Service proposal would result in a 2.3-fold increase while the Goldbelt alternative would result in a 10% decrease in erosion relative to the Goldbelt Admiralty selection.

2. For Shee Atika:

   a. Both the Shee Atika alternative and the Forest Service proposal reflect an increase in CFL.

   b. The Forest Service alternative would result in a major loss to the natives in high (H) site productivity and the Shee Atika alternative a major increase - both relative to the Admiralty Whitewater selection.

   c. With the same assumptions as in 1C, the Forest Service proposal would result in a 2.2-fold increase in harvesting

timber at first rotation while the Shee Atika proposal would result in a 1.68-fold increase.

d. With the same assumptions as in 1D, the Forest Service proposal would result in 2.37-fold increase and the Shee Atika alternative in a 1.05-fold increase in erosion over the Shee Atika Whitewater proposal.

General Considerations: The calculations present here should be considered "rough." They should reflect the best data available in the time allotted. It is, however, felt that this information and the assumptions made are accurate enough to validate the above general comparisons. One noteable possible error could occur with the site productivity estimates where it is known that soils occur near the Admiralty Island selection sites which appear productive but are not. These sites appear productive only because of the time factor involved. These sites can only be determined through site analysis investigations.

Table I

Land Selection assessment by VCU

VCU	% Comprised	(AC) Area	CFL[1]	Productivity (%)[2] L	M	H	AVE	Hazard (%)[2] N	M	E	AVE
Goldbelt Admiralty Selection											
147	50	2013*	3887	2	27	71	H	91	9	0	N-
148	40	1786*	2213	17	48	35	M	61	26	13	M-
149	30	8338*	15465	21	44	35	M	59	27	14	M-
150	20	4268*	11195	19	47	34	M	44	38	19	M-
Goldbelt Alternative											
79	13	5441*	8073	88	12	0	L	75	25	0	L
365	25	2450*	8769	12	88	0	M	99	1	0	L
75	70	14947	10869*	68	32	0	L	53	38	9	N-M
Goldbelt FS Proposal											
Berners Bay											
16	10	721*	8016	45	51	4	M	57	38	5	N-M
17	10	540*	1461	55	40	5	L	45	27	28	M-H
23	13	2443*	4886	39	53	8	M	20	49	31	M-H
24	33	2020*	2693	46	46	8	L	23	49	28	M-H
Douglas Island											
35	50	2215	2030*	48	52	0	M	13	42	45	M
36	50	1960	1761*	97	3	0	L	3	9	88	H
37	75	2548	3501*	98	2	0	L	8	30	62	H
Holkut Bay											
75	50	9830*	10869	68	32	0	L	53	38	9	N-M
81	33	1675*	1852	70	30	0	L	56	22	22	M-
83	20	1381*	1958	83	17	0	L	42	58	0	M
74	10	886*	5004	27	33	0	L	25	13	62	H-M
Shee Atika Whitewater Proposal											
171	65	18672	10869*	21	49	30	M	44	23	33	M
Shee Atika Alternative											
147	50	2013*	3887	2	27	71	H	91	9	0	N
148	40	1786*	2213	17	48	35	M-H	61	26	13	M
149	30	8338*	15465	21	44	35	M-H	59	27	14	M
150	20	4268*	11195	19	47	34	M-H	44	38	19	M

Table I (Continued)

VCU	% Comprised	(AC) Area	CFL[1]	Productivity (%)[2]			Hazard (%)[2]		
				L	M	H	N	M	?
Shee Atika FS Proposal									
Chuck River									
76	25	10382	9384*	61	39	0 L	38	54	8
South Windham									
71	17	2855*	4917	75	25	0 L	24	56	20
72	33	2398*	2816	75	25	0 L	13	66	20
73	33	1600*	3905	92	8	0 L	15	46	39
Dry Bay									
68	40	3262*	5994	48	52	0 M	35	64	1
69	40	4999*	5995	51	49	0 L	34	51	15
Libby Creek									
73	33	1600*	3905	92	8	0 L	15	46	39
74	33	2857*	5084	67	33	0 L	24	43	32

* Values used for CFL determinations
1 Total CFL (acres) for that VCU
2 Reported as % of CFL

Table II

Site productivity and soil hazard rating comparisons for CFL for the proposed native selection areas (Goldbelt and Shee Atika).

Goldbelt

	1	2	3	2-1	3-1	4-2
CFL (AC)	16405	18560	27917	2155	11512	9357
Productivity						
L	2906	12337	18775	9431	15869	6438
M	7075	6223	8689	-852	1614	2466
H	6424	0	453	-6424	-5971	453
Soil Hazard						
N	9719	12160	9761	2441	42	-2399
M	4519	5446	10376	927	5857	4930
E	2210	690	7780	-1520	5570	7090

Shee Atika

CFL (AC)	10860	16405	28986	5545	18126	12581
Productivity						
L	3367	2906	18658	-461	15291	15752
M	5321	7075	10328	1754	5007	3253
H	2172	6424	0	4252	-272	-6424
Soil Hazard						
N	9557	9719	9729	162	-828	-990
M	3804	4519	15120	935	11536	10601
E	2389	2210	5137	-179	2748	2927

1 = Admiralty Island Selection
2 = Native Alternative Selection
3 = Forest Service Proposed Alternative

LANDS (SELECTION ALTERNATIVES)

The determination of land value is difficult in Southeast Alaska. Transactional evidence on past land sales is not a reliable measure due to the small number. Also land values may be artifically inflated because of the limited land in private ownership.

Because value is not a reliable measure acreage is used to compare the different selection alternatives. The criteria used to determine desirable acreage is based upon characteristics of land use patterns for community and residential development. Flat gently rolling land, harbors, and beachfrontage are the characteristics determined as most desirable for these developments. Maps delineating the areas were drawn; and the criteria applied uniformly to all selection proposals. Some areas that met this criteria were excluded because of steepness or inaccessability. Small muskeg ponds, rock outcrops, and ravines occurring within the areas were not excluded. The time involved in determining these areas would not be warranted at this time. However, because the criteria has been applied uniformly the method is a valid comparison.

Acreages were calculated using a dot grid. Each dot hitting within the prescribed area was given a value of 6.4 acres. The maps used are filed in the Forest Supervisors office, Sitka, Alaska.

Attached is the comparison based on acreage and developable harbors.

SELECTION	DEVELOPABLE ACRES	HARBORS	ENCUMBRANCES
Goldbelt Selection (Admiralty)	2100	0	PSC - power withdrawal, 850 acres Lake Kathleen
Goldbelt Alt. - Off Admiralty	8100	5	HES 3.28 acres pt'd (west end Douglas Island) HES 34 acres pt'd (west end Douglas Island) Forest Highway 10 (South Russell Fiord) Special Use Permit Residence (Entrance Hobart Bay)
F. Service Alt. For Goldbelt	6900	2	HES 35 Acres (Douglas Island North Pt. Hilda)
Shee Atika Selection (Admiralty)	2600	5	Hood Bay Residence Group Spec. Use Alaska Dept. Fish & Game Cabin & Weir (Cabin Pt.) " " " " " " " " (N. Arm Hood Bay)
*Shee Atika Alternative	2200	2	Lighthouse Reserve 120 acres (Pt. Lookout) HES 40 Acres Pt'd North Chuck Mining Camp HES 37 Acres Pt'd Homestead elim. 4.51 acres (Windham Bay)
**Forest Service Alt.- Shee Atika	3900	6	PSC - power withdrawal 850 acres Lake Kathleen
Kootznoowoo	6400	4	Public Service Log Storage 136 Acres (Kootznoowoo Inlet) Special Use Reservoir and Dam Angoon Special Use Cultivation Killisnoo Homesite Group Public Service Site Log Storage 272 Acres (Favorite Bay)

*Includes Katlian Bay

**FPC Power Withdrawal

STATE OF ALASKA

DEPARTMENT OF FISH & GAME

JAY S. HAMMOND, Governor

P.O. Box 499
Sitka, AK 99835

July 14, 1978

Mr. Virgil Henke
U.S. Forest Service
P.O. Box 1980
Sitka, AK 99835

Dear Virgil:

The following are comments of the Alaska Department of Fish and Game, Division of Game, in regard to Off-Admiralty selections. Comments were prepared on July 14, 1978, by Jack Lentfer, Region I Supervisor, Juneau, and Loyal Johnson, Area Game Biologist, Sitka.

A. Goldbelt, Shee-Atika, Kootznahoo Alternative.

1. The Division of Game views favorably moving the selections out of Hood Bay and onto less critical habitat areas on the mainland, with the exception that the Division of Game is opposed to that selection at the salt chuck at Port Houghton.

   The salt chuck has a highly diversified fauna and is especially noted for its mountain goat and black bear hunting potential as well as its scenic grandeur. It is the recommendation of the Division of Game that Port Houghton be retained in public ownership.

2. The selection at Berners Bay is close to Juneau and receives a great deal of recreational use. There must be adequate access retained for public use of the back country. That access might be provided by the existing road and trail systems.

3. This alternative contemplates about a two-for-one increase acre-wise over the existing Admiralty selection. The Division of Game does not see the wisdom of such an exchange.

B. Forest Service Alternative.

1. Berners Bay.

   Same applies as in A.2 above.

2. Douglas Island.

Douglas Island supports good populations of deer and blue grouse, both of which supply a great deal of high-quality recreational hunting. This selection, if subjected to intensive management such as logging or residential development, would greatly impact the deer and grouse resources and ultimately would result in a great loss of hunting opportunity. Therefore, the Division of Game opposes this site.

If this site must be selected, the above noted losses could be somewhat minimized by breaking this one large selection up into about five smaller ones with logically situated areas of public land between the selected areas.

3. Dry Bay.

There would appear to be little impact on the wildlife resources should this tract of land pass into private ownership. In view of the minimal wildlife and recreational potential of this area, it could perhaps be enlarged to make up for any deficiencies created by rejection of more desirable areas.

4. Chuck River.

The Chuck River supports a significant run of pink and chum salmon and a small run of king salmon. The fisheries interests may therefore have something to offer on this site. The Division of Game has no objection to this area being transferred to private ownership, provided that access is retained at least on the existing trail system.

5. Windham Bay and Libby Creek.

The comments for Dry Bay above would also apply to these areas.

Sincerely yours,

Loyal J. Johnson

Loyal J. Johnson
Area Game Biologist
ADF&G, Game Division

cc Jack Lentfer
Bob Wood
Harry Merriam

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
P. O. Box 1628
Juneau, Alaska 99802

1920
July 10, 1978

Dear Reviewer of the
Tongass Land Management Plan
Draft Environmental Statement:

To assist you in reviewing the June 28 Tongass Land Management Plan Draft Environmental Statement, I have enclosed some additional information: an errata sheet and updated information regarding the Native land selections on Admiralty Island.

The question of the selection rights of Goldbelt, Inc. and Shee Atika, Inc. were addressed by Secretary of the Interior Cecil Andrus on January 19, 1978, in a statement before the Senate Committee on Energy and Natural Resources: "...The Administration does not propose to take away the selection rights of the Native Corporations of Sitka and Juneau. We are hopeful that voluntary arrangements will be made with those corporations for the exchange of their selections on Admiralty Island for other lands in Southeast Alaska." Forest Supervisor Richard Wilson's June 2, 1978 Environmental Analysis Report outlined Forest Service proposals for such land exchanges. Goldbelt, Inc. on June 5, 1978, outlined its proposal for this exchange. Both the June 2 and June 5 proposals are included in the Appendix of the Tongass Land Management Plan Draft Environmental Statement mailed to you earlier.

The Goldbelt, Inc. proposal has since been amended with provisions outlined in their June 27 letter to Senator Henry M. Jackson and a June 28 press conference. The media also reported the Shee Atika, Inc. proposal for an alternate land selection on northwest Admiralty Island. Formal Forest Service responses to these proposals were covered in June 28 letters to Goldbelt, Inc. and Shee Atika, Inc. Enclosed for your review are the Shee Atika, Inc. June 21 proposal, a copy of the Goldbelt, Inc. June 27 letter to Senator Jackson, and my June 28 letters to these two corporations. Legal descriptions and maps of these proposals are available from our Sitka and Juneau offices.

6200-11 (1/69)

Our Tongass Land Management Plan Draft Environmental Statement requests your response by July 27, 1978, including comments on the off-Admiralty Island exchange proposals. Your response is still needed by that date, including your comments on the Goldbelt and Shee Atika land exchange proposals.

A postage paid response form follows page 9 of the Tongass Land Management Plan Draft Environmental Statement. Another form is enclosed for your use. If for some reason you have not received your copy of the Tongass Land Management Plan Draft Environmental Statement, please contact any one of the Tongass Supervisor's offices or my office and we will provide or make a copy available.

Your comments will be appreciated.

Sincerely,

JOHN A. SANDOR
Regional Forester

Enclosure

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June 21, 1978

TO: Don Argetziner
Joseph Brecher, Esquire
James Brookshire, Esquire
Barry Flamm
Sue Kemnitzer
Arthur Lazarus, Jr., Esquire
Wynne Maule
John Norman, Esquire
John Sandor
Steven C. Volker, Esquire
Joseph G. Wilson
Richard Wilson

RE: Sierra Club, et al. v. Andrus;
Kootznoowoo, et al. v. Andrus

Enclosed herewith is Shee Atika's analysis of the alternatives presented by the Forest Serivce at the June 5th meeting.

Sincerely yours,

Edward Weinberg
of Duncan, Brown, Weinberg & Palmer, P.C.

EW:gae

Enclosure

SHEE ATKIA, INC. EVLUATION OF LAND EXCHANGE OPPORTUNITIES

June 19, 1978

INTRODUCTION

Shee Atika, Inc. has selected lands on Admiralty Island in southeast Alaska as part of its land selection entitlement under the terms of the Alaska Native Claims Settlement Act of 1971. Shee Atika, Inc. is the Section 14(h)3 Alaska Native Claims Settlement Act corporation representing 1,961 Alaska Natives enrolled at Sitka under the terms of the Act.

The Departments of the Interior and Agriculture announced on June 5, 1978 that the United States proposed to make a voluntary exchange of lands with Shee Atika, Inc. in order to permit continuing federal control of essentially all Admiralty Island lands. The United States has identified land within the Tongass National Forest which it proposed that Shee Atika, Inc. and Goldbelt, Inc. (The Alaska Native Claims Settlement Act Section 14(h)3 corporation of Juneau) receive title to in lieu of the corporations' present land selection on Admiralty Island. Goldbelt, Inc. has designated portions of those lands plus other lands as being the lands to which it must receive title under any land trade agreement with the United States. Shee Atika, Inc. has agreed to examine the land designated by the United States which remains following elimination of land previously designated by Goldbelt, Inc., to determine if Shee Atika, Inc. would be able to equal the value of its Admiralty Island land selection by receiving title to all or portions of the land identified by the United States which do not lie on Admiralty Island.

SHEE ATIKA, INC.'S MINIMUM SETTLEMENT TERMS

Shee Atika, Inc. has identified the following terms as prerequisite conditions to any trade of land selection interests.

1. Any settlement must be satisfactory to both Shee Atika, Inc. and Goldbelt, Inc. and must be based on a trade for equal value lands as opposed to a trade for equal acreage plus a substantial cash settlement. Equal value will be based on the present value of harvestable timber under conditions in which there are no market restrictions. Legislation shall guarantee Shee Atika, Inc. access for development purposes and the right to harvest timber on a sustained yeild basis.

2. No land selection alternative which is encumbered by an existing timber sale or its contingency area, or which is opposed by any other southeast Alaska Native village corporation will be considered.

3. Shee Atika, Inc. will not consider any land selection alternative which is composed of lands removed from a timber sale, or its contingency area, unless guarantees of timber supply for existing operations are included to the satisfaction of the parties holding long term timber sales contracts in southeast Alaska.

4. The settlement must be enacted into law by Congress.

5. Shee Atika, Inc. must receive, in addition, a money payment which compensates it for the expenses of land selection and litigation together with the expense of maintaining basic corporate operations up until the time of full settlement, including the transfer of lands and cash.

6. The litigation must be dismissed with prejudice.

EQUAL VALUE DETERMINATION

Factors to Be Considered

Lands designated by the United States have been examined for the following aspects which affect value determination:

SOILS:	depth, texture, organic content, erosion potential
SITE QUALITY:	ability of the lands to grow commercial species after the initial harvest operation
TERRAIN:	steepness of slope, unevenness of terrain, presence of harbors, presence of camp, road, and transfer point opportunities, stream size and location
STAND VOLUME:	net total volume tributary to prospective road systems, log transfer points, and camps; net volume per acre
STAND SPECIES:	stand volume composition by species
STAND SIZE CLASS:	the average relative diameter class of trees in the stand overstory

Discussion of the Relationship of the Factors to Be Considered to Value

SOILS:	Soil depth, organic content, moisture, texture, and erosion potential affect development expenses such as the cost of silvicultural development and the construction of landings, roads, and camps. Timber growing on poorer soils is generally more defective and of lower grade and sells for a lower price than would healthy timber of

higher grades which can be found more consistently on more productive soils.

SITE QUALITY: Site quality affects the cost of various silvicultural treatments which are required to establish regeneration and promote growth.

TERRAIN: Terrain affects the cost of road, camp, and port construction and maintenance. Terrain affects yarding and cutting costs. Terrain affects the cost of silvicultural treatment.

STAND VOLUME: Total stand volume affects fixed management costs. Volume per acre affects variable management costs.

STAND SPECIES: There is a dramatic difference in the harvested value of the various species in southeast Alaska.

STAND SIZE CLASS: Size class affects variable operating cost. Smaller trees are more expensive to harvest.

Criteria for Determining Equal Value

1. Net volume/mile of road construction must be 2 MMBF for the initial harvest on well drained slopes of less than 20% steepness when spruce comprises more than 30% of the stand. Net volume/miles of road construction must be 2.5 MMBF for the initial harvest on slopes steeper than 20% and/or having less than 30% of the stand occupied by spruce. No roads will be considered economically feasible on slope exceeding 40%. No more than 1/3 of the stand area in any drainage larger than one square mile will be harvested in any twenty year period. The initial harvest, for volume/road evaluation purposes, does not exceed 1/ 3 of the stand volume in any drainage in which the forest land area exceeds one square mile in area.

2.. Each economic unit, an area to be managed from a single camp, must contain adequate volume to support (6) 30MMBF harvest operations during a rotation without allowance for ingrowth from regenerated lands harvested during the intial stand conversion.

3. All products are free of artificial market restrictions.

4. Stands containing less than 20 MBF net/acre, and/or stands lieing within 350 feet of major streams and beaches, and/or stands farther than 1200 feet from a road location over favorable terrain, and/or stands which are not harvestable by conventional means, and/or stnds on slopes exceeding 65% are considered to be inoperable economically and will have a negative value contribution.

5. Stands which would otherwise be considered economically operable, but which contain less than 30 MBF/acre net are considered to have less value than theaverage stand-acre of Shee Atika, Inc's Admiralty Island land selection.

6. The expenses incurred for silvicultural treatments to promote regeneration and growth and for special management practices for asthetic purposes are regarded as normal operating costs and are not regarded as investments.

7. Spruce is considered to have twice the value of hemlock.

8. No lands will be considered for trade if they lie within a timber sale or its contingency area, or any area proposed for wilderness designation or wilderness study area designation in a bill introduced in Congress since 1976, except for lands on western Admiralty Island.

9. Stands whose overstories are occupied by seedlings, saplings, pole timber, or small sawtimber have no net economic value for purposes of this evaluation.

10. Stands composed of any species other than spruce or hemlock have no net ecnomic value for purposes of this evaluation.

11. Stands overlying muskeg soils have no net economic value for purposes of this evaluation.

12. A-Frame yarding is not considered an economically viable system for purposes of this evaluation.

METHOD

The following sources were reviewed in sequence in the process of gathering resource data on lands identified by the United States.

INFORMATION CONTRIBUTED BY SOURCE

1. Tongass Value Comparison Unit Data
   Information Provided:

   Land Type: water, muskeg, glacial valley wall, alluvial, valley bottom, alpine

   Stand Size Class: sawtimber, smaller diameter stands

   Slope Ratings: 0-40%, 40-66%, over 66%

   Timber Land Classification: commerical, noncommerical

   Volume Class: volume/acre under 20 MBF, 20-30 MBF/acre, 30-50 MBF/acre, over 50 MBF/acre

Soil Mass Movement Hazard: none, moderate, extreme

Forest Type: Hemlock-Spruce, other

Site Index: low, medium, high

Harvest Operability: normal, other

2. USFS Timber Type Maps
Information Provided:

Stand acreage, volume class, species, size class, stand location

3. Topographical Maps
Information Provided:

slope steepness; road, camp, transfer point, anchorage opportunities; management constraints caused by topography

4. USFS Soils Maps
Information Provded:

site quality, mass movement hazard, depth, moisture, "A" horizon depth and organic matter

5. USFS Aerial Photography
Information Provided:

confirmation, evaluation, and refinement of previously gathered data

6. Other Available Information:

USFS Cutting Atlases, timber sale maps

RESULTS

(See Attached Chart, page G 88

CONCLUSION

None of the Value Comparision Units were equal to Shee Atika, Inc.'s Hood Bay selection in overall value considering the combined affect of all factors. Only the NE Kupreanof Island Unit No. 443 met all criteria with the single exception of lacking total volume adequate to be operated efficiently as a sustained yield unit. The unit could, however, be exchanged on a 2:1 basis for lands in Hood Bay. The 2:1 ratio would be necessary to justify the increased fixed costs which would be experienced on the unit and on the remaining lands in Hood Bay after the volume at Hood Bay was reduced. This exchange would only reduce the Admiralty Island selection by 2,000 acres (10%); therefore, it was eliminated as a practical solution for all parties.

Equal value lands on northwest Admiralty and at Katlian Bay are proposed for exchange under the previously mentioned conditions prerequisite to settlement. Adjustments have been made to offset greater risk involved in operations on the Ward Creek tract, higher operating expenses due to the lack of a sufficient anchorage in the vicnity, and shorter operating season. The Ward Creek tract is presently in Goldbelt, Inc's secretarial withdrawal area.

* Note:
This is the breakdown for the total acreages requested:

Katlian	3,840
Admiralty	23,050
	26,890

USFS TONGASS VALUE COMPARISON UNIT DATA

UNIT		SLOPES UNDER 40%	COMMERCIAL FOREST AC.	COMMERCIAL VOLUME	NO HAZARD SOILS	LOW SITE	NORMALLY OPERABLE	COMMENTS
CATION	V.C.U.#	%		%	%	%	%	
Hood Bay (Shee Atika selection)	171	32	11	55	42	31	52	13% over 30 MBF/acre
Chuck River	71	10	5	25	24	75	83	0% " " "
	76	27	9	38	38	61	35	1% " " "
Mainland	68	30	6	52	35	48	100	eliminated by vol/ac.
	69	26	6	49	34	51	84	" " "
	70	13	4	22	19	78	72	" " " , terrain, site
	72	23	3	23	19	75	71	" " " "
	73	25	4	7	15	92	82	" " " "
	77	33	3	24	43	76	67	" " " "
	78	29	0.4	0	43	100	0	non commercial
	82	37	7	36	38	64	93	lowsite & low vol/ac.
	83	37	3	44	82	39	90	low total stand vol.
	86	48	3	38	70	72	55	low site & low vol/rd ratio
	87	30	7	38	51	70	37	" " "
	88	42	3	55	65	48	52	low vol/ac.
	89	40	6	48	77	44	47	low vol/rd ratio
Kupreanof N	424	52	12	33	73	44	47	scattered & muskeg
NE	443	36	7	58	83	28	52	13% over 30MBF/acre
S	429	51	12	24	73	63	65	scattered, muskeg, rd
	430	41	4	24	50	57	39	vol/rd absent
	431	60	6	14	81	59	60	"
	432	45	7	29	64	55	52	"
	433	96	3	8	76	78	87	"
Deer Island	524	21	7	57	61	43	33	vol/rd absent, PNT sale
	525	59	9	33	87	33	35	" " "
	526	10	8	35	31	52	33	" " "
Bradfield	520	40	8	26	64	57	18	low vol., PNT sale
Sokol	446	42	5	53	82	28	51	muskeg soils & low vol./rd ratio, muskeg more extensive than indicated by VCU photo plots
Klaka	505	46	11	39	73	55	50	PNT timber sale, low stand vol.

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
P. O. Box 1628
Juneau, Alaska 99802

5450
June 28, 1978

Mr. Edward Weinberg
Duncan, Brown, Weinberg & Palmer, P.C.
1775 Pennsylvania Avenue, N.W.
Suite 1200
Washington, D.C. 20006

Dear Mr. Weinberg:

This acknowledges your June 21 letter, enclosing the Shee Atika analysis of the alternatives incorporated in the June 2 Environmental Analysis Report on the off-Admiralty Island exchange.

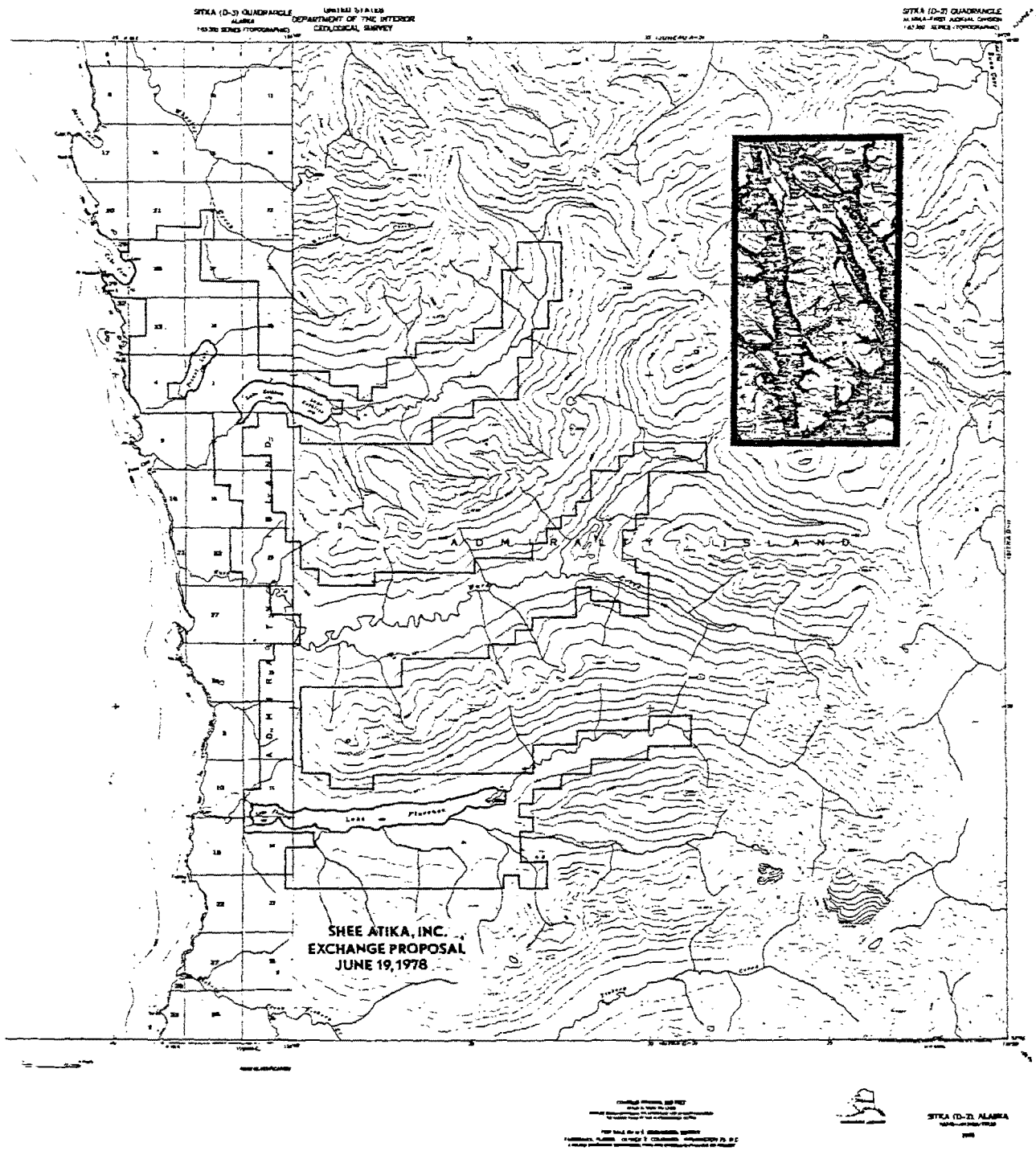
We appreciate the thoroughness of the analysis by Shee Atika. The criteria for determining equal value and for defining possible manageable units are understandably different from those which the Forest Supervisor utilized in the June 2 analysis. This is understandable because the management objectives of the Forest Service and private corporations would be different. With the application of these different criteria and operability standards, your conclusion that the value comparison units were not equal to the Hood Bay selections follow. We do, however, reaffirm the general accuracy of the total volume and volume estimates included in the Forest Supervisor's June 2 analysis.

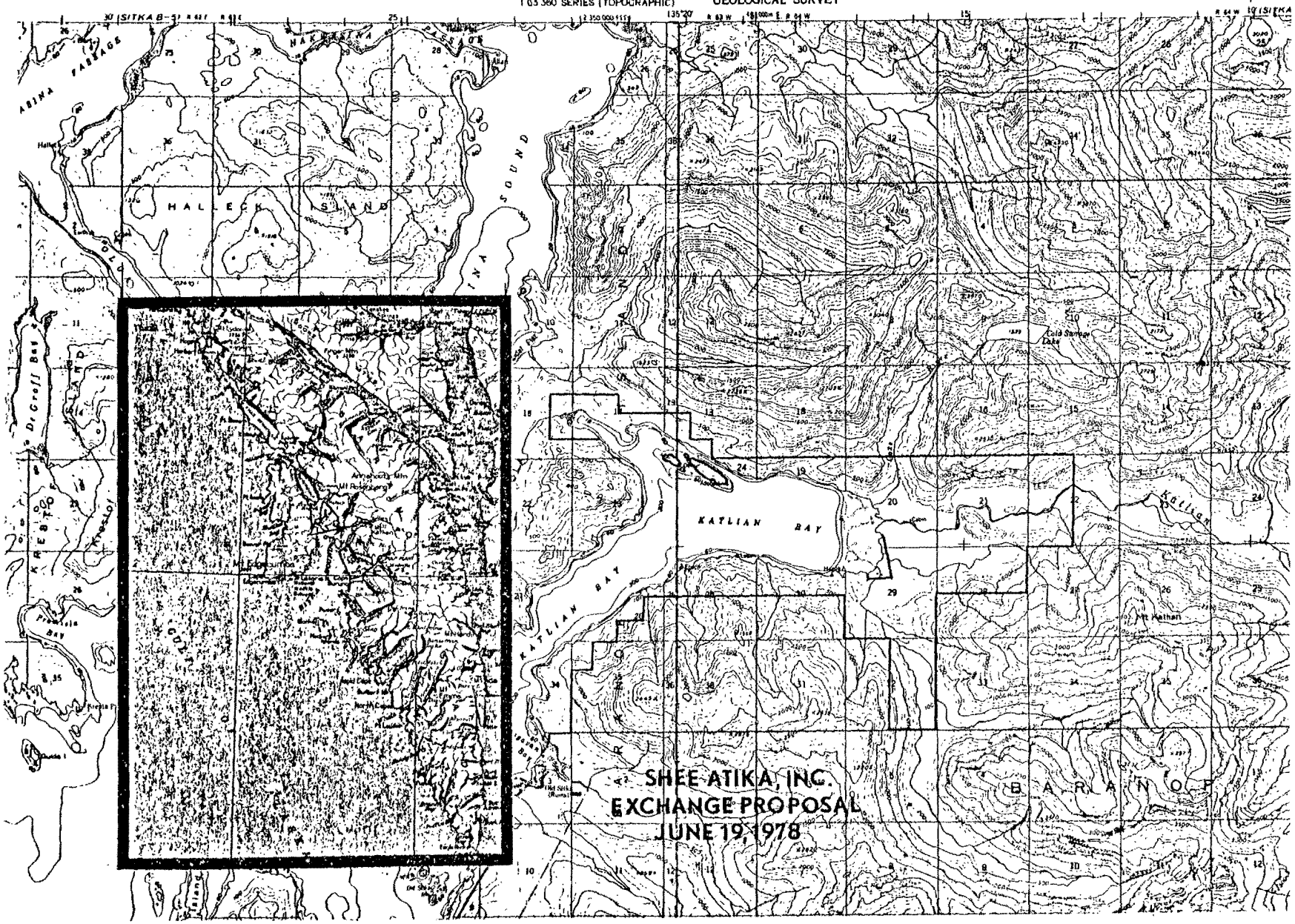
Because the off-Admiralty Island exchange proposal is to be voluntarily negotiated, it may not be productive to try to reach agreement on a common definition of merchantability. With that in mind, the Forest Service has no objection to the presentation of this alternative proposal.

Because State, local communities, and other parties interested in the proposed land exchange should have the opportunity to review and comment on the proposed exchange, I would suggest that the Shee Atika position be incorporated with that of Goldbelt in the addendum of the Tongass Land Management Plan Draft Environmental Statement. This will provide the opportunity for all interested parties to comment on the proposal and for the Forest Service and others to give consideration to these comments.

Sincerely,

JOHN A. SANDOR
Regional Forester


SHEE ATIKA, INC.
EXCHANGE PROPOSAL
JUNE 19, 1978


SITKA (A-5) QUADRANGLE
ALASKA
1:63 360 SERIES (TOPOGRAPHIC)
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
HALEC ISLAND
KATLIAN BAY
KATLIAN BAY
SHEE ATIKA, INC.
EXCHANGE PROPOSAL
JUNE 19, 1978

U. Dibert
(2 - Lands file

P. O. Box 1628
Juneau, Alaska 99802

5450
June 28, 1978

Mr. Joseph G. Wilson
President
Goldbelt, Incorporated
130 Seward Street - Suite 302
Juneau, Alaska 99801

Dear Mr. Wilson:

Thank you for your letter of June 19, amending your off-Admiralty Island exchange proposal of June 5.

The proposal to include lands at Yakutat is responsive to expressed concerns with the inclusion of lands on Prince of Wales Island. We note that the Yakutat lands proposed for exchange are adjacent to the Sealaska selections at Yakutat. We are already on record as not having any objection to the Sealaska land selections. As noted in the Forest Supervisor's June 2 Environmental Analysis Report, we believe the Yakutat lands merit consideration as an off-Admiralty land exchange alternative.

Because the views of State, local communities, and other parties would have to be considered in processing the exchange, I would suggest that we incorporate your amended proposal as a part of the Tongass Land Management Plan Draft Environmental Statement and project a preferred alternative in the August addendum to the Draft Environmental Statement. This will afford the opportunity for interested parties to comment on this amended exchange. The current Draft Environmental Statement incorporated the original proposal. However, through public information releases, I believe we can effectively communicate the change you have proposed.

Again, we appreciate your very constructive approach to the resolution of the off-Admiralty Island exchange issue.

Sincerely,

JOHN A. SANDOR

JOHN A. SANDOR
Regional Forester

RECEIVED
JUL 6 1978
RSW/LANDS/WL

GOLDBELT, INCORPORATED
130 SEWARD STREET, SUITE 302 • JUNEAU, ALASKA 99801 • (907) 586-6244

June 19, 1978

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. John Sandor
Regional Forester
U. S. Forest Service
Federal Building
Juneau, Alaska 99802

RE: Goldbelt Incorporated -- Amendment No. 1 to
OFF-ADMIRALTY LAND SELECTIONS

Dear Mr. Sandor:

There was some objection expressed by you at our meetings June 5th and 6th regarding our Nutkwa Lagoon and Chomondely Sound Off-Admiralty proposal. The objections were based on letters from the Haida Native Corporation objecting to any further native selections in the South Tongass and also by Louisiana Pacific Ketchikan. The objection by Louisiana Pacific indicates their concern over any native selections within their contingency area.

Consistant with our efforts to reach an equitable agreement to find alternate land selection Off-Admiralty Island, we are hereby submitting the following proposal. We have identified 13,814 acres in the Yakutat area that could be substituted for the Nutkwa Lagoon and Chomondely Sound selections submitted at the June 5th and 6th meeting. Attached you will find a legal description and a 1:63,000 U.S.G.S. quad map with the selection plotted on it. You will note that the selection falls entirely within the area identified by the Forest Service as being available as an Off-Admiralty selection alternatives.

Our proposal would include the following selection areas:

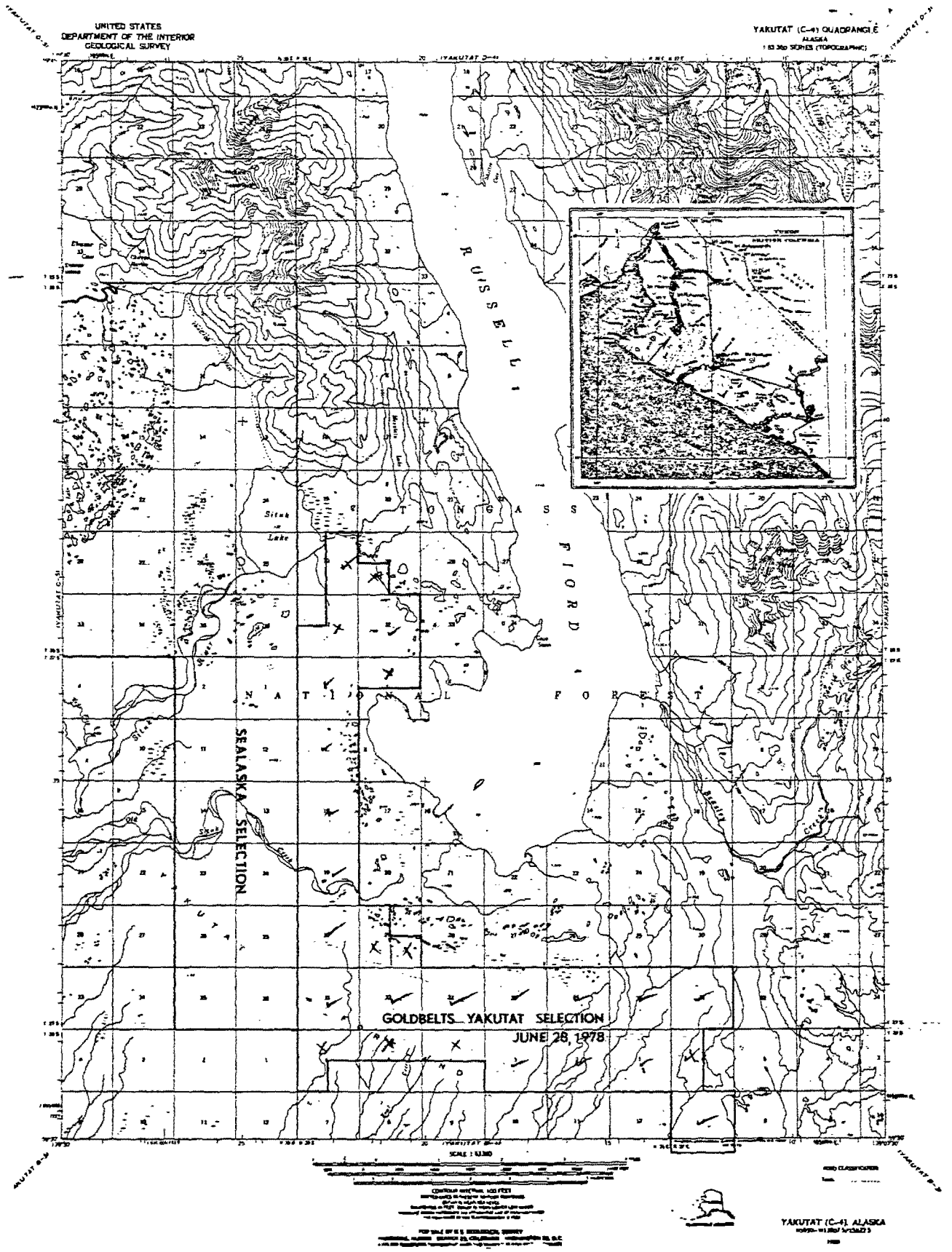
Selection Area	Selection Acres
Hobart Bay	27,419
Yakutat	13,814 ← 14,080 calculated from map by U.S.F.S. 7/19/78
Douglas Island	1,635
Berners Bay	2,649
Total	45,517

As we stated at the meetings, this is Goldbelt's proposal for an "Off-Admiralty" exchange and it reflects the minimum we would be willing to accept.

Should there be any major problems with the Yakutat area I would appreciate being advised as soon as possible.

Very truly yours,

Joseph G. Wilson
President


UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
YAKUTAT (C-4) QUADRANGLE
ALASKA
1:63 360 SERIES (TOPOGRAPHIC)
RUSSELL FIORD
NATIONAL FOREST
SEALASKA SELECTION
GOLDBELTS YAKUTAT SELECTION
JUNE 28, 1978
YAKUTAT (C-4) ALASKA

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
R-10

Appendix G-9

REPLY TO: 1510 Legislation
5450 Title Claims

July 10, 1978

SUBJECT: Admiralty Island Native Land Selections

TO: Chief

This is in follow-up to the June 5-6 and June 28 meetings to consider various proposals for exchange of Native land selections on Admiralty Island. Foresters and others representing the Sierra Club, Goldbelt, Inc., Shee Atika, Inc., Sealaska Corporation, and the Forest Service met July 6-7 to study forest land values of the proposals and other lands available for exchange. Kootznoowoo/Angoon did not send a representative.

Forest Supervisor Richard Wilson, who chaired the meeting, reports no changes in the pending Goldbelt and Shee Atika proposals. Gordon Robinson, representing the Sierra Coub, was noncommittal regarding the Sierra Club's position on these two proposals. Inasmuch as no agreement on the proposals was reached by the Sierra Club and Angoon (Kootznoowoo) at this meeting, it is unclear if any meeting in Washington is to take place the week of July 10.

At the June 28 meeting in Juneau, it was reported that Assistant Secretary Guy Martin's assistant (Don Argetsinger) and Barry Flamm would be prepared to meet with the Sierra Club and Native groups in Washington, D.C. the week of July 10 to reach agreement on an exchange proposal that could then be referred to the Senate Energy and Natural Resources Committee for incorporation into the pending legislation.

Inasmuch as no agreement has yet been reached, the meeting might not materialize. Also, in view of the fact that the June 5-6 and June 28 meetings were closed to the State and other parties that could be impacted by possible agreements, a decisionmaking meeting would be improper without the involvement of the State and other publics.

This week we are updating the information we do have on the Goldbelt and Shee Atika proposals, distributing this to those on the Tongass Land Management Plan Draft Environmental Statement mailing list. The Forest Supervisor's June 2 Environmental Analysis Report and the first (June 5) Goldbelt proposal were incorporated as a part of the Draft Environmental Statement issued June 28. By the 1st of August, we should have substantial public comments on the proposals to exchange lands for the present Admiralty Island selections.

Goldbelt, Inc., while preferring to remain on Admiralty Island, has selected approximately 40,000 acres mostly in the Hobart Bay and Yakutat areas (in addition to selections on Douglas Island and at Berners Bay). Although this is roughly double the acreage of their Admiralty Island selections, the corporation is firm in its criteria/ values necessary for exchange.

Shee Atika, Inc., utilizing a somewhat different set of criteria, concluded there were not sufficient lands available at locations it could operate from - thus proposed its alternative area be on northwest Admiralty Island. Although the lands proposed are of no greater value than those proposed by Goldbelt, the Sierra Club and Kootznoowoo reacted negatively to their proposal.

It is important to closely follow and participate in the next meeting scheduled for Washington, D. C. We are informed that Barry Flamm and Don Argetsinger have agreed to such a meeting with the Sierra Club and Native Corporation attorneys this or next week.

A copy of the updated Goldbelt and Shee Atika proposals and our June 28 responses are enclosed. Let us know if you have any questions on this matter and as you learn of any developments.

JOHN A. SANDOR
Regional Forester

Enclosure

cc w/encl: Dr. Nelson
R. Max Peterson
G. Van Gilst

5450 Title Claims, Sales and Grants July 27, 1978

Off-Admiralty Land Selections

Chief

Reference is made to your meeting this week with Mr. Flamm regarding Gold Belt, Inc. and Shee Atika, Inc. land selections on Admiralty Island and the proposed exchange of off-Admiralty lands for these selections.

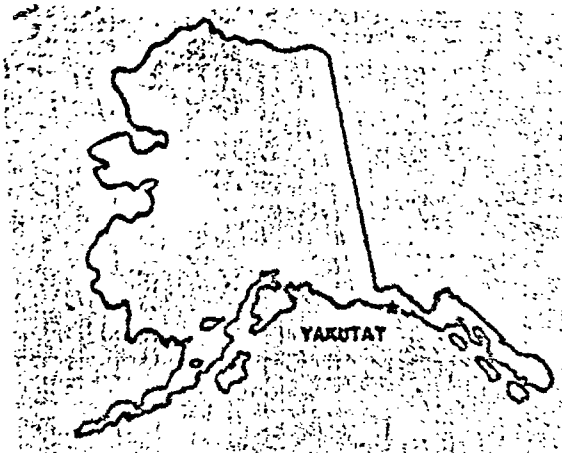
The State of Alaska, Southeast Alaska communities and the general public have not yet had a adequate opportunity to consider the proposed exchange. The "negotiation meetings" of USDI-USDA, Sierra Club, and Native community/organizations were not open to the public or to representatives of the State, even though State selected lands are involved in the proposals.

Although we have incorporated the general proposals in the Tongass Land Management Plan Draft Environmental Statement and have recently sent out a follow-up to this to display the most recent Gold Belt, Inc. and Shee Atika, Inc. proposals, State, local community and general public comments will not be in and analyzed until August 11. We have, however, already received official word of significant opposition to the Gold Belt, Inc. proposal. For example, the Yakutat Kwann is now on record in opposition to the exchange at Yakutat. The State of Alaska is on record in opposition to SEALASKA's selection at Yakutat, but has not yet responded to the Gold Belt, Inc. proposal.

Yesterday the Assembly of the City and Borough of Juneau approved a Tongass Land Management Plan alternative which would not classify all of Admiralty Island as wilderness but their resolution and specific recommendations have not yet been sent to us.

A decision on the off-Admiralty exchange proposal before the State, local governments and public have the opportunity to consider and comment on the proposals would not be consistent with our obligations under the National Environmental Policy Act, National Forest Management Act, and the Tongass land management planning process now underway. Accordingly, we urge no decision be made until these obligations can be met.

John A. Sandor
JOHN A. SANDOR
Regional Forester



CITY of YAKUTAT
P.O. Box 8
Yakutat, Alaska 99689
(907) 784-3323

Appendix G-11

Forest Supv.	
Admin Ofcr	
Planning	
Timber	
RE	
Engineer	
Watershed	
Wild Life	
Yak. W. Cr	
Jun W. Cr.	
D.F.M.	C.O.

July 25, 1978

John Sandor
U.S. Forest Service
Sitka, AK 99835

Dear John:

The following are comments relating to the Tongass Land Management Plan Draft Environmental Statement and the information contained therein.

First off my comments are really centered around Yakutat. The overall area is so large that it is difficult to say what is best for other people in other communities; Therefore we will not attempt to do so.

The groups recommended alternative (C) does not meet the wishes or needs of the people of Yakutat. In some areas it does not conform to feelings expressed by considerable community involvement (C.I.G.).

It is the City Councils feelings that the relation of the recommended alternative to the evaluation criteria is being falsely distorted.

a. Provide for coordinated Land Management on the Tongass National Forest and adjacent municipal interests.

b. Assist S.E. Communities and residents in meeting their diverse resource and land use needs.

c. Manage that portion of the Tongass National Forest to accomodate the life styles and well being of Southeast Alaska residents.

What we are, and have been for years saying is that conditions and situatic are different in Yakutat.

1. Yakutat does not now nor never has had its economy substantially based upon the wood products industry.

2. The fishing Industry in No. 1 in Yakutat.

3. The need to protect and stabilize the vast spawning grounds is paramour

4. This is what the people as a whole want to see happen.

The past Logging has left its mark on Yakutat to the detriment of the land

and the fishery ecosystem. Logging practices have left the land and running streams in danger of a whole host of environmental problems and spurred gangs of incredulity from visiting guests. The people of Yakutat will simply no longer tolerate a compromising attitude in the extraction of local timber resources. It must be done well or leave it bloody well alone. If it isn't worth the cost, then leave it be until it is some time in the future. Public outcry nationwide substantiates our reasoning and reinforces our conviction.

The Council and my office have succinctly stated that we have a viable industry on the upswing with fully 80% of the population either directly or indirectly involved - why jeopardize that industry, which so perfectly complements the local lifestyle, to create jobs which must be filled from outside and a mechanism which may wreak havoc on our prime resource. Surely the national good cannot and should not be torn from the Yakutat forelands at the expense of the local population.

There is a growing consensus that Yakutat is predominantly a fish resource oriented community and wishes to remain as such. This status becomes even more viable with the realization of the bottom fishery potential in the Gulf of Alaska.

That consensus lays considerable gravity on the continued efforts of A.D.F. to rehabilitate all salmon streams on the Yakutat Forelands (of which there are many).

A program of this sort means ultimate preservation of the salmon spawning and rearing areas as they presently exist. The forested areas of the Yakutat forelands are interspersed with the rivers, creeks, lakes and small drainages of this vast natural hatchery. Present timber harvesting practices do not adequately consider that system and its preservation intact, which is plainly visible as one drives in and around Yakutat.

The questions to be answered and the concerns of Yakutat are great. As a result the local people themselves asked that the Yakutat Forelands be placed in a wilderness status to, without question, forever preserve the natural fishery system in this area.

The selected areas will substantially affect the headwaters of the Seal, Akwe River, Italio, Akwe and Dangerous Rivers.

Lastly we have little or no jobs to lose or gain as far as the wood products industry in Yakutat is concerned. Over the last 12 years of logging [illegible] no more than a few were employed in that operation. The rest of the labor force was imported from Washington and Oregon. As there is no logging operation presently underway (nor has there been for several years) there would be no jobs lost as a result of no activity over the coming years.

I sincerely hope that you will weigh heavily the concepts in question on this issue. A people's future and lifestyle is, at this time, in your hands.

Sincerely,

Larry E. Powell
Mayor

LEP/kjp

YAK-TAT KWAAN, INC.

PHONE 907-784-3335 P. O. BOX 416 YAKUTAT, ALASKA 99689

July 18, 1978

as

Joseph G. Wilson
President
GOLDBELT, INC.
130 Seward Street
Juneau, Alaska 99801

Dear Mr. Wilson:

Attached is a self-explanatory resolution adopted by the YKI, Inc. Board of Directors at a meeting held July 15, 1978.

We would appreciate your prompt response.

Sincerely yours,

YAK-TAT KWAAN, INC. CORPORATION

Lowell S. Petersen
Chairman

cc: Governor Jay Hammond
John Sandor, Regional Forester

Enclosure: 1

KH

RECEIVED
JUL 21
FOREST SERVICE
JUNEAU, ALASKA

RESOLUTION YK 78-11 GOLDBELT, INC. LAND SELECTION

RESOLVED, Yak-Tat Kwaan, Inc. hereby registers its concern that the proposed Goldbelt, Inc. land selections in the Yakutat area may negatively impact the environmental integrity and the economic development potential of the area for the benefit of Yakutat residents.

THEREFORE, until such time as Goldbelt, Inc. and the appropriate agencies involved meet with the YKI Board of Directors to fully discuss the proposed selections and future plans, YKI, Inc. registers it objection to the proposed selections.

DATED and APPROVED this 15h day of July, 1978, at Yakutat, Alaska.

YAK-TAT KWAAN, INC. CORPORATION

Lowell Peterson
Chairman

Rosemary Kilas
Secretary

H. Techniques and Assumptions Used for Calculating Timber-related Investment Needs

I. Expenditures Associated with the Timber Sale Program

a. Present Timber Sale Preparation Costs. A partial list of these costs includes interisciplinary planning of the timber program, resources inventories, timber stand improvement, regeneration, road investments, preparation of the individual timber sales, and administration of the timber sale contracts to ensure protection of the public interests.

b. Additional Forest Service Timber Sale Preparation Costs (Additional Layout Costs). It usually takes a longer time in the field to prepare a timber sale which requires pre-roading or advanced logging techniques than it does to prepare the usual timber sale in order to provide the needed resource coordination. Investment in timber sales involving pre-roading or advanced logging techniques include the added sale preparation costs.

c. Basic Future Investments. Implementation of the practices included in Southeast Alaska Area Guide will result in a more intensive form of management than has been used historically on the Tongass. The increased share of the timber harvest which will be in the special and marginal components means that the logging and roading costs will increase. This added management means that the investments for timber harvest have to increase even if no investment measures are used. If increased management standards and practices are to be met, maintenance of the historical investment level can only result in a decreased timber harvest.

II. Tongass Timber-Related Investment Needs

Annual consumption of timber from the Tongass National Forest has averaged 450 MM bm during the last three years.

Most of the Tongass Land Management Plan alternatives can annually provide 45 MM bm if there is an adequate investment. Estimates of the investments needed ranged from less than the present level to more than $20,000.000 per year above present investment level. Tongass Land Management Plan alternatives requiring annual additional investments of up to $12,000,000 were considered by Congress in 1978.

The Alternatives included in the Draft Environmental Statement, variations F1 and F3, and the Proposed Action have been analyzed by two criteria, (1) the annual investment needed to provide a 450 MM bm timber harvest yearly, and (2) the annual timber harvest which can be provided by a yearly investment of $12,000,000 above the present investment level. The information about the amount of investment necessary to provide 450 MM bm annually, the amount of harvest available at present investment levels, and the amount of timber harvest available with an $11.7 million increase above present investment levels is shown in Tables I, II and III.

III Definitions and Data Sources Used in Analyses of Alternatives

1. Initial Economically Viable Volume includes the harvest from the standard and special components and 10 percent of the marginal component in LUD IV. The harvest included in the Gold Belt Alaska Native Claim Settlement Act (ANCSA) has been excluded in the Proposed Action and variations F1 and F3.

2. ANCSA Selections. This represents the harvest included in proposed off-Admiralty ANCSA selections. This figure includes the Shee Atika and Kootznoowoo selections in the Proposed Action and variations F1 and F3. This figure includes the Goldbelt, Shee Atika and Kootznoowoo selections in the other alternatives.

3. Economically Viable Volume. Harvest from the standard and special components and 10 percent of the marginal component in LUD IV excluding off-Admiralty ANCSA selections.

4. Current Investment Levels. The current Forest Service preparation investment costs include the costs to enhance the growth and utilization of the Tongass timber. It includes interdisciplinary team work, roading costs, some precommercial thinning, mistletoe control and regeneration projects; and the costs to prepare and administer the timber sale and its attendent road developments.

The level II Fiscal Year 1979 Tongass Timber budget was used to determine these costs. The Fiscal Year 1979 Tongass cost was $23,500,000 or $43.80/M bm.

5. LUD III Pre-Roading. This involves pre-roading in areas where environmental constraints are such that the needed roads cannot be paid for by the initial timber entry. It is assumed that an initial entry harvesting 40 percent of the operable commercial forest land (CFL) in an area can pay for the road. It is estimated that the initial entry into LUD III areas will only harvest 25 percent of the operable CFL. Average Tongass timber roading is 4.5 miles per section of operable CFL. Therefore, the initial entry will need 160 percent of the normal roading to harvest the same amount of timber as is in the normal initial entry.

Pre-roading has to finance the additional 60 percent of roads (160%-100%). The calculations are then based on the following assumptions:

a) 25 percent of the added roads will be built by the timber sale purchaser.

b) 75 percent of the added roads will be built by contract. Tongass experience indicates that contract road costs average 2.35 times as much as purchaser construction. This is because of :

1. Duplication of mobilization expenses when both the road contractor and purchaser move in and move out.

2. Overhead and profit are directly associated with contract construction, whereas when the purchaser builds a road as part of a timber sale the overhead and profit are shown as separate items.

3. Government contracting regulations require application of the Davis Bacon Act wage rates when contracting. The rates result in contract labor costs which ordinarily exceed purchaser construction costs for labor.

c) A five percent overhead allowance is needed for contracted roads.

d) This average road would cost the purchaser $130,000 per mile to construct.

The average Forest Service preparation investment cost for timber made available by LUD III pre-roading is $43.80/M bm.

7. Precommercial Thinning. It is estimated that precommercial thinning one acre will permit an increase in one year's timber harvest of 5.4 M bm. A maximum of 6,300 acres can be effectively pre-commercially thinned on the Tongass each year. This thinning could increase the Tongass timber harvest by 34 MM bm each year that the thinning takes place. The following factors apply:

a) Average thinning cost is $275 per acre.

b) The present annual Tongass investment in pre-commercial thinning is about $200,000.

c) It will cost the Forest Service about $43.80 per M bm to prepare the harvest resulting from the thinning.

8. Marginal Pre-roading The following factors apply:

a) The average system road cost in Tongass timber appraisals is about $68 per M bm.

b) It is assumed that the average sale needing marginal pre-roading will have a $68/M bm deficit. This is equivalent to no contribution from the timber to the road costs.

c) It is assumed that all the marginal pre-roading will be built by contract rather than the timber sale pruchaser.

d) Contract road costs average 2.35 times as much as purchaser construction for the same reasons as stated above.

e) A five percent overhead allowance has to be made for road contracts.

f) The Forest Service preparation investment costs have to be increased $5/M bm above the average $43.80/M bm because of added layout costs.

g) The average road built by this pre-roading will probably be for local use. There will probably be few of the higher standard collector or arterial roads built in this manner. It is estimated tha average purchaser construction costs are $100,000 per mile.

h) The average Forest Service preparation investment costs have been reduced $22.80/M bm to avoid duplication of road costs.

9. Advanced Logging Technology The following factors apply:

a) The average Tongass timber sale in an area requiring advanced logging technology will have a deficit of $125/M bm.

b) The average Forest Service preparation investment cost has to be increased $5/M bm because of added layout costs.

c) Because of the longer yarding distances and the anticipated distribution of the CFL needing advanced logging technology, the Forest Service preparation investment cost in roads will be only about 25 percent of the Tongass average. Therefore, the average Forest Service preparation investment cost is reduced $17.80/M bm to reflect this.

IV. The alternatives discussed in the Draft Environmental Statement have been analyzed to determine their effects on the timber resource. Table IV shows the resultant timber harvests and investment levels.

Table V presents the alternatives as they were portrayed in the DES under the revised timber calculations which eliminated commercial thinnings and reduced the retention factors to an average of 30 percent for LUD III and 13 percent for LUD IV.

TABLE I

Development of 450 MMBM Annual Program with Different Methods* of the Proposed Action

	METHOD*									
	Additional Investment		Departure from Even Flow		Single Shortened Rotation		Continual Shortened Rotation		Combined Methods	
	Vol. MMBM	Cost $MM	Vol. MMBM	Cost $MM	Vol. MMBM	Cost $MM	Vol. MMBM	Cost $MM	Vol. MMBM	Cost $MM
Initial Econ. Viable Volume	282.3	--	336.8	--	286.2	--	310.3	--	345.8	
ANCSA Selections	(15.0)	--	(15.0)	--	(15.0)	--	(15.0)	--	(15.0)	
Economically Viable Volume	267.3	11.7	321.8	14.1	271.2	11.9	295.3	12.9	330.8	14.5
LUD III Pre-Roading	110.3	13.7	94.2	11.7	109.5	13.6	112.4	14.0	85.2	10.6
Precommercial Thinning	34.0	3.0	34.0	3.0	34.0	3.0	34.0	3.0	34.0	3.0
Marginal Pre-Roading	20.7	4.0	--	--	--	--	--	--	--	--
Advanced Logging Tech.	17.7	2.8	--	--	35.3	5.5	8.3	1.3	--	--
Total After Investment	450.0	35.2	450.0	28.8	450.0	34.0	450.0	31.2	450.0	28.1
Current Investment	--	23.5	--	23.5	--	23.5	--	23.5	--	23.5
Additional Investment Needed	--	11.7	--	5.3	--	10.5	--	7.7	--	4.6
Vol. Avail. w/$23.5 MM Invest.	362.3	23.5	397.5	23.5	364.6	23.5	380.6	23.5	403.3	23.5
Vol. Avail. w/$35.5 MM Invest.	451.9	35.5	492.9	35.5	459.6	35.5	477.6	35.5	497.4	35.5

* See text for a description of these methods.

TABLE II

Development of a 450 MMBM Annual Program with Different Methods* of variation F-1

	METHOD*									
	Additional Investment		Departure from Even Flow		Single Shortened Rotation		Continual Shortened Rotation		Combined Method	
	Vol. MMBM	Cost $MM	Vol. MMBM	Cost $MM	Vol. MMBM	Cost $MM	Vol. MMBM	Cost $MM	Vol. MMBM	Cost $MM
Initial Econ. Viable Volume	354.2	--	376.2	--	357.3	--	384.3	--	384.4	--
ANCSA Selections	(15.0)	--	(15.0)	--	(15.0)	--	(15.0)	--	(15.0)	--
Economically Viable Volume	339.2	14.9	361.2	15.8	342.3	15.0	369.3	16.2	369.4	16.2
LUD III Pre-Roading	70.2	8.9	66.8	8.4	69.2	8.7	66.8	8.4	60.3	7.6
Precommercial Thinning	34.0	3.0	22.0	1.9	34.0	3.0	13.9	1.2	20.3	1.8
Marginal Pre-Roading	--	--	--	--	--	--	--	--	--	--
Advanced Logging Tech.	6.6	1.0	--	--	4.5	0.7	--	--	--	--
Total After Investment	450.0	27.8	450.0	26.1	450.0	27.4	450.0	25.8	450.0	25.6
Current Investment	--	23.5	--	23.5	--	23.5	--	23.5	--	23.5
Additional Investment Needed	--	4.3	--	2.6	--	3.9	--	2.3	--	2.1
Vol. Avail. w/$23.5 MM Invest.	407.0	23.5	422.4	23.5	409.9	23.5	427.4	23.5	427.3	23.5
Vol. Avail. w/$35.5 MM Invest.	499.4	35.5	515.2	35.5	501.9	35.5	520.7	35.5	519.5	35.5

* See text for a description of these methods.

TABLE III

Development of 450 MMBM Annual Program with Different Methods* of variation F-3

	METHOD*									
	Additional Investment		Departure from Even Flow		Single Shortened Rotation		Continual Shortened Rotation		Combined Methods	
	Vol. MMBM	Cost $MM	Vol. MMBM	Cost $MM	Vol. MMBM	Cost $MM	Vol. MMBM	Cost $MM	Vol. MMBM	Cost $MM
Initial Econ. Viable Volume	213.0	--	254	--	216	--	234	--	261	--
ANCSA Selections	(15.0)	--	(15)	--	(15)	--	(15)	--	(15)	--
Economically Viable Volume	198.0	8.7	239	10.5	201	8.8	219	9.6	246	10.8
LUD III Pre-Roading	126.0	15.8	108	13.6	125	15.7	128	16.1	170	21.3
Precommercial Thinning	34.0	3.0	34	3.0	34	3.0	34	3.0	34	3.0
Marginal Pre-Roading	10.1	2.0	--	--	8.1	1.6	--	--	--	--
Advanced Logging Tech.	81.9	12.8	69	10.8	81.9	12.8	69	10.8	--	--
Total After Investment	450.0	42.3	450	37.9	450	41.9	450	39.5	450	35.1
Current Investment	--	23.5	--	23.5	--	23.5	--	23.5	--	23.5
Additional Investment Needed	--	18.8	--	14.4	--	18.4	--	16.0		9.6
Vol. Avail. w/$23.5 MM Invest.	316.0	23.5	342.2	23.5	333.0	23.5	329.5	23.5	357.4	23.5
Vol. Avail. w/$35.5 MM Invest.	409.2	35.5	434.7	35.5	411.3	35.5	424.6	35.5	452.6	35.5

* See text for a description of these methods.

This data extrapolated from other Alternatives.

TABLE IV

Analyses of the Effects of the TLMP Alternatives Included in the Draft Environmental Statement Upon the Tongass Timber Harvest with Increased Investment

	A		B		C		D		E		A1		A2		A3	
	Vol. MMBF	Cost $MM	Vol. MMBF	Cost $MM	Vol. MMBF	Cost $MM	Vol. MMBF	Cost $MM	Vol. MMBF	Cost $MM	Vol. MMBF	Cost $MM	Vol. MMBF	Cost $MM	Vol. MMBF	Cost $MM
Initial Economically Viable Vol.	449.8		328.0		251.0	--	231.0	--	1.0		402.0		322.0		291.0	
ANCSA Selections	(22.0)		(22.0)		(22.0)	--	(22.0)	--	(22.0)		(22.0)		(22.0)		(22.0)	
Economically Viable Volume	427.8	18.7	306.0	13.4	229.0	10.0	209.0	9.2	--	--	380.0	16.6	300	13.1	269.0	11.8
LUD III Pre-Roading	22.2	2.2	137	16.8	140	16.9	118	14.2	185	19.9	70	9.2	60	7.8	58	7.7
Precommercial Thinning	--	--	7	0.1	34	3.0	34	3.0	34	3.0	--		34	3.0	34	3.0
Marginal Pre-Roading	--	--	--	--	--	--	26.9	5.2	25	4.9	--		--	--	17	3.3
Advanced Logging Tech.	--	--	--	--	47	7.3	62.1	9.7	34	5.3	--		56	8.7	72	11.2
Total After Investment	450.0	21.4	450.0	30.3	450	37.2	450	41.3	257*	33.1	450.0	25.8	450	32.6	450	37.0
Current Investment	--	23.5	--	23.5	--	23.5	--	23.5	--	23.5	--	23.5	--	23.5	--	23.5
Add'l. Investment Needed	--	(2.1)	--	6.8	--	13.7	--	17.8	--	9.6	--	2.3	--	9.1	--	13.5
Volume Avail. w/$25.5 MM Invest.	471.1	23.5	388.4	23.5	340.8	23.5	328.0	23.5	201.8	23.5	432.5	23.5	389.5	23.5	361.6	23.5
Volume Avail. w/$35.5 MM Invest.	569.9	35.5	491.7	35.5	439.1	35.5	419.3	35.5	257*	33.1	529.6	35.5	468.6	35.5	442.3	35.5

* Alternative E does not attain 450 mmbm.

TABLE V --Potential Timber Yield[1] from Various Components by Alternative
Volumes MM bm (Scribner)

Alternative	Regulated Component					Programmed Harvest Available	Unregulated Reserved Deferred
	Standard	Special	Marginal Uneconomic	Marginal Technology Not Available	Total Regulated		
A	403	111	57	126	697	532	417
A_1	367	106	48	119	640	490	474
B	364	86	47	107	604	465	510
C	319	60	36	86	501	391	613
A_2	294	73	60	87	514	383	600
D	283	56	32	69	440	349	674
A_3	261	76	37	80	454	349	660
E	149	30	28	38	245	186	869

1) Assuming the eventual harvest of 100 % of the standard and special components and 10 % of the total marginal component. Retention factors average 30 % for LUD III and 13 % for LUD IV. No thinnings are included.

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