

Chapter 2

Alternatives

Introduction

Chapter 2 is divided into four parts:

- ◆ a discussion of how alternatives were developed, and of what constitutes an [alternative](#)
- ◆ a discussion of alternatives considered but eliminated from detailed study
- ◆ a full description of the alternatives that are considered in detail
- ◆ a comparison of the alternatives considered in detail.

A large-scale map for each of the ten alternatives considered in detail is included in the map packet accompanying this document. Each alternative map shows the locations of the [Land Use Designations](#) for that alternative.

Alternative Development Process

What a Forest Plan Includes

Land management planning may be compared to city, county or borough zoning. Just as areas in a community are zoned as commercial (allowing business uses), industrial (allowing factories), or residential (allowing only homes, schools, etc.), the forest is also "zoned" to allow, or not allow, various uses and activities. Land management (forest plan) zoning is done through the use of [Land Use Designations](#).

Land Use Designations (LUD's) specify ways of managing an area of land and the resources it contains. LUD's may emphasize certain resources (such as [Wilderness](#), or [old-growth](#) wildlife [habitat](#)), or combinations of resources (such as providing for scenic quality in combination with timber harvesting). Each Land Use Designation has a detailed [management prescription](#) which includes practices and standards and guidelines.

Practices are specific actions or treatments used in the management of forest resources, such as even-aged timber harvest methods (clearcutting, for instance). Each [management prescription](#) specifies which practices are allowed to be considered for site-specific project proposals, and under what conditions. *Standards and guidelines*, on the other hand, impose limitations on how, where, and when management activities are carried out, usually for specific resource protection purposes.

The [Land Use Designations](#) are assigned, or "allocated," to specified areas of land. Some LUD's, such as [Wilderness](#), are congressionally designated, but many can be allocated differently depending on the resource issue or issues being addressed. Under any one [alternative](#), a given area of land will normally have only one LUD assigned to it (or, in the case of the Minerals and [Transportation and Utility Systems](#) LUD's, only one LUD in use at one time). In some cases, two LUD's may apply to the same area, such as a Wild River within a Wilderness. In these cases, the more restrictive direction always applies.

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Forest resource use opportunities (such as timber harvesting or recreation) can be made available in different amounts. What lands to make available for timber harvest, or how much of a particular kind of recreation “opportunity” to provide, are questions that land management planning must also address. It is not always possible to provide all the resource use opportunities in necessarily the amounts desired.

[Alternatives](#) themselves are usually designed around a “theme” that emphasizes a particular issue (such as the local economy) or a group of compatible issues (such as scenic quality and wildlife [habitat](#)). How alternatives were developed to address the issues is discussed later. The comparison of alternatives section at the end of this chapter also discusses ways in which the alternatives address the issues.

The computer model used for National Forest planning ([FORPLAN](#)), and the “benchmarks” originally run to determine forest resource potentials, are discussed in Appendix B. A summary of the “Analysis of the Management Situation,” including the overall supply and demand situation for the Tongass, is included in the Revised [Forest Plan](#).

How Alternatives are Constructed

Each [alternative](#) for the revision of the Tongass Land Management Plan will be presented in the same format. This includes the following components:

- ◆ **Theme.** The overall management intent and resource emphasis.
- ◆ **Goals.** More specific statements of emphasis, by issue or resource.
- ◆ **Objectives and Outputs.** Amounts of resource use opportunities, protected [habitats](#), etc., that will be provided.
- ◆ **Land Use Designations.** The acreages allocated to each Land Use Designation.
- ◆ **Standards and Guidelines.** Which options for Forest-wide direction to be applied at the project level will be used.

A simple example of how these components work together can be given. Let's assume that part of the theme of an [alternative](#) is to emphasize tourism in support of the local economy. Two goals including aspects of this theme might be:

Emphasize [recreation places](#) and opportunities important to the tourism industry.

Emphasize scenic quality along the Alaska Marine Highway, major cruise ship routes, State highways, and frequently-used Forest roads.

[Objectives](#) to carry out these goals could include providing sufficient tourism-related [recreation places](#) to accommodate a certain amount of user capacity (usually expressed as “[Recreation Visitor Days](#)”), and applying the more-protective [Visual Quality Objectives](#) (“retention” and “[partial retention](#)”) to areas seen from the routes mentioned in the second goal. [Land Use Designations](#) that are compatible with the goals - such as remote and semi-remote recreation, scenic [viewshed](#) and modified landscape - could be assigned to geographic areas having the desired opportunities

or locations. Forest-wide standards and guidelines for recreation and scenery would also be applied at the project level to carry out the [goals](#) and [objectives](#).

Land Use Designations

While the allocation of areas to different Land Use Designations can vary by [alternative](#), the [management prescriptions](#) for each specific LUD do not change (except for certain timber harvest practices in some LUD's, which will be specified by alternative). Chapter 3 of the Revised [Forest Plan](#) includes the full set of management prescriptions for each Land Use Designation. These are summarized below, following a discussion of current Forest Plan LUD's.

The current Tongass Forest Plan uses four basic Land Use Designations (LUD's) and several LUD variations to specify how areas of the Tongass National Forest are to be managed. Each of the four basic LUD's has a stated purpose and related management implications describing how the land should be used. LUD II - Legislated, a variation of the basic LUD II, was added to the Plan because of the [Tongass Timber Reform Act](#). In the 1991 SDEIS, the LUD's of the current Forest Plan were converted to the new set of Land Use Designations described below, primarily to facilitate the effects analysis and comparisons of alternatives. Technical difficulties made this conversion less-than-perfect, however, and we have gone back to the original LUD's for Alternative 9, the "current" alternative. These are defined here using the wording from the most recent Tongass Land Management Plan map (March 1991).

- ◆ **Land Use Designation I (Wilderness).** Wilderness Areas will be managed as directed by the 1964 Wilderness Act, as amended by [ANILCA](#), which provides for the following uses: fishing, hunting, trapping, subject to State Fish and Game regulations; [subsistence](#) uses; public recreation cabins (existing and limited new); structures and facilities under [Special Use Permit](#) and/or public use; fish [habitat](#) enhancement; access to private, State, Native lands; use of airplanes, motor boats, and snow machines; beach log salvage, subsistence, and recreation use of timber.

Lands released from [Wilderness](#) recommendation - to be allocated through the land management planning process, and Nonwilderness National Monument Lands - as described in the following list of [Land Use Designations](#), are considered variations of LUD I in the current Plan.

- ◆ **Land Use Designation II.** These lands are to be managed in a roadless state to retain their wildland character, but this would permit wildlife and fish [habitat](#) improvement and primitive recreational facility development. This designation will exclude: (1) Roads, except for specifically authorized uses; (2) Timber harvesting, except for controlling insect infestations or to protect other resource values; (3) Major concentrated recreational facilities. LUD II - Legislated is a variation of this basic LUD, to be managed in perpetuity as LUD II.
- ◆ **Land Use Designation III.** These lands will be managed for a variety of uses. The emphasis is on managing for uses and activities in a compatible and complimentary manner to provide the greatest combination of benefits. These areas have either high use or high amenity values in conjunction with high commodity values. Allowances in calculated potential timber yield have been made to meet [multiple-use objectives](#). These lands may include concentrated recreational developments.

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[A "LUD III Special" category is also included, with the purpose of minimizing effects on visual and recreation resources in areas directly adjacent to communities. Timber harvest is designed to be compatible with local recreation and visual resource uses, and does not count towards the Forest Plan's [Allowable Sale Quantity](#).]

- ◆ **Land Use Designation IV.** Opportunities will be provided for intensive resource use and development where emphasis is primarily on commodity or market resources. Allowances in calculated potential timber yield have been made to provide for protection of physical and biological productivity.

The 1991 SDEIS included 23 different [Land Use Designations](#) developed for the Tongass Forest Plan Revision. These LUD's represent a wide range of allocation choices for managing specific areas of the Forest, from [wilderness](#) (essentially no land-disturbing activities) to full commodity development (intensive timber harvesting or mining). For the Revised Supplement and FEIS, two of these LUD's have been dropped, and two have been changed to Forest-wide standards and guidelines. The "Other Areas" LUD served no real purpose, simply representing areas left over after the allocation process. "Fish Habitat and Water Quality Requirements" was a slightly less protective version of one of two [riparian area](#) LUD's, and was only used for one [alternative](#). It has been dropped, and the other riparian area LUD, "Stream and Lake Protection," is now one of three options under the Riparian Forest-wide standards and guidelines. Similarly, the "Beach Fringe and Estuary" LUD is now a [Forest-wide standard and guideline](#). Among the 19 remaining LUD's, only the [Old-growth](#) Forest LUD has changed significantly since the 1991 SDEIS.

Following are brief descriptions giving the general intent of the 19 [Land Use Designations](#) considered for Alternatives 1-7, 10 and 11. Two name changes have occurred: Primitive Recreation is now called Remote Recreation, and Semi-primitive Recreation is now Semi-remote Recreation.

- ◆ **Wilderness** - Manage for the protection and perpetuation of essentially natural biophysical and ecological conditions and provide outstanding opportunities for solitude, primitive recreation, and scientific and educational uses, consistent with [ANILCA](#) and the Wilderness Act. Roads are normally not permitted and use of mechanical transport and motorized equipment is limited.
- ◆ **Wilderness National Monument** - Manage the [Wilderness](#) portions of Admiralty Island and Misty Fjords National Monuments to provide outstanding opportunities for solitude and primitive recreation and to protect objects of ecological, cultural, geological, historical, prehistorical, and scientific interest, consistent with ANILCA and the Wilderness Act. Roads are not normally permitted and use of mechanical transport and motorized equipment is limited.
- ◆ **Non-wilderness National Monument** - Manage the nonwilderness portions of Admiralty Island and Misty Fjords National Monuments to facilitate development of significant mineral resources, and to ensure that mining activities are compatible, to the maximum extent [feasible](#), with the purposes for which the Monument was established.

- ◆ **Research Natural Area** - Manage forest resources for research and education and/or to maintain natural **diversity**. Current natural conditions are maintained insofar as possible. No timber harvest is allowed.
- ◆ **Remote Recreation** - Provide recreation opportunities and experiences outside **Wilderness** in unmodified natural environments where interaction with other visitors is infrequent, and the opportunity for independence and self-reliance is high. Timber harvesting is limited to insect and disease control. Roads are generally absent.
- ◆ **Enacted Municipal Watershed** - Manage enacted municipal watersheds to meet State Water Quality Standards for domestic use. Timber harvest is limited to insect and disease control; however, timber may be removed under conditions which safeguard the quantity and quality of water. Roads are generally limited to those needed to administer the municipal watersheds.
- ◆ **Old-growth Habitat** - Maintain a **diversity** of **old-growth** conifer **habitats** in their natural condition to favor old-growth associated fish and wildlife species. No timber harvesting will be scheduled and roads will be located outside the area when possible.
- ◆ **Semi-remote Recreation** - Provide motorized and non-motorized recreation opportunities in natural and natural-appearing environments where interaction with others is low and the opportunity for independence and self-reliance is moderate to high. Allow occasional concentrated recreation and tourism facilities in a natural-appearing setting. When present, roads are few and used primarily to expand and improve access to recreation opportunities or to permit access to other parts of the Forest and other ownerships. Timber harvest is limited to salvage of **catastrophic events** or beach log recovery.
- ◆ **LUD II** - Manage these Congressionally designated areas in a roadless state to retain the wildland character. Wildlife and fish **habitat** improvement and primitive recreational facility development may be permitted. Timber harvesting is limited to insect and disease control. Roads will not be built except to serve mining and other authorized activities and vital Forest transportation system linkages (These areas are sometimes referred to as "Legislated LUD II.>").
- ◆ **Experimental Forest** - Manage to provide a variety of long-term opportunities for Forest research and demonstration areas. Timber harvesting will occur only for these purposes. Roads may be developed to facilitate ongoing research.
- ◆ **Scenic Viewshed** - Management activities are not visually apparent to the casual observer in the near distance from visual priority travel routes and use areas. In the middle to background distance, activities are subordinate to the landscape character of the area. Timber harvest is allowed and roads are permitted.
- ◆ **Modified Landscape** - Manage for a variety of uses. Management activities are subordinate to scenic quality as seen in the near distance. In the middle to background distance, activities may dominate but are

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designed to be compatible with features found in the characteristic landscape. Timber harvest is allowed and roads are permitted.

- ◆ **Timber production** - Manage the area to maintain and promote [industrial wood](#) production. These lands will be managed to advance conditions favorable for the timber resource and for long-term [timber production](#). Roads are permitted.
- ◆ **Minerals** - Encourage the exploration and development of mineral resources in areas having high potential for mineral commodities including nationally-designated strategic and critical minerals. Until mineral activities are initiated, the area will be managed according to the underlying [Land Use Designation](#).
- ◆ **Special Interest Area** - Provide for the inventory, maintenance, protection, and interpretation of areas with unique archeological, historical, recreational, scenic, geological, botanical, zoological or paleontological features. No timber harvest is scheduled. Roads are normally not permitted unless compatible with interpretive objectives.
- ◆ **Wild River** - Maintain and enhance the outstandingly remarkable values of river segments which qualify the river to be classified a Wild River. Shorelines are primitive and undeveloped. Timber harvesting is limited to insect and disease control. Roads are generally not present. Access is by trail, airplane or boat.
- ◆ **Scenic River** - Maintain and enhance the outstandingly remarkable values of river segments which qualify the river to be classified a Scenic River. Shorelines are largely undeveloped but may be accessible in places by roads. Timber harvesting is limited by the ability of the landscape to visually absorb the activity. Roads are designed to be compatible with the landscape.
- ◆ **Recreational River** - Maintain and enhance the outstandingly remarkable values of river segments which qualify the river to be classified a Recreational River. Shoreline development may occur and the river may be readily accessible by road. Timber harvesting is allowed with priority to maintain existing and proposed recreation sites within the [corridor](#). Roads are permitted.
- ◆ **Transportation and Utility Systems** - Emphasize existing and potential state-identified major public [Transportation and Utility Systems](#). Until transportation or utility systems are constructed, the area will be managed according to the underlying [Land Use Designation](#).

Considerations Used for the Original Issues

Table 2-1 lists the primary [Land Use Designations](#) that were used to develop [alternatives](#) in response to the ten original [public issues](#) (see Chapter 1 for a discussion of the issues). It also indicates when standards and guidelines and other specific considerations were used to respond to these issues. Under “scope,” those aspects of an issue that were emphasized by the public are highlighted. This helps to define the “decision space” (or range) within which the issue needs to be addressed.

The comparison of alternatives section at the end of this chapter also discusses ways in which the alternatives address these issues.

**Table 2-1
Considerations used to Develop Alternatives**

Issue	LUD Emphasis ¹	Other Considerations	Scope
Scenic Quality	Scenic Viewshed, Modified Landscape, Remote and Semi-Remote Recreation	Standards and Guidelines	Emphasize area viewed by local residents and tourists.
Recreation	Scenic Viewshed, Modified Landscape, Remote and Semi-Remote Recreation	Standards and Guidelines, Recreation places	Tourism and locally popular recreation areas
Fish Habitat	“Non-development” LUD’s	Standards and Guidelines, Improvement Projects	Riparian areas, key watersheds
Wildlife Habitat	Old-growth Habitat, “Non-development” LUD’s	Standards and Guidelines, Improvement Projects	The amount and location of old growth habitat needed for wildlife.
Subsistence	Old-growth Habitat, “Non-development” LUD’s	Standards and Guidelines	Providing for subsistence uses.
Timber Harvest	Timber production, Scenic Viewshed, Modified Landscape	Harvest Objectives	Local timber markets and demand estimates.
Road System	Same as Timber Harvest, plus Transportation and Utility System	Standards & Guidelines	Support for Forest uses; potential major systems.
Minerals	Minerals	Standards & Guidelines	Access to areas with high potential.
Roadless areas	Remote and Semi-Remote Recreation		Emphasize roadless areas with strong public support.
Local Economy	Some combination of those under Timber Harvest, Minerals, Fish Habitat, Scenic Quality, and Recreation.	Standards & Guidelines	Effects on local communities.

¹ Some LUD’s proposed in the 1990 DEIS and for the 1991 SDEIS, such as Beach Fringe and Estuary, and Stream and Lake Protection ([Riparian area](#)), have been replaced by Forest-wide Standards and Guidelines.

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Considerations Used for the Five Focus Issues

Chapter 1 discussed the five new - or expanded - issues that became the focus of the alternatives in the Revised Supplement. Information about these issues, including the results of recent science assessments, resource reports, and public comments, was combined with the information used to develop the DEIS and SDEIS alternatives to create the alternatives considered in detail in the Revised Supplement and in this FEIS.

Discussed briefly here are some of the principal ways in which the five focus issues are addressed through [alternatives](#).

Wildlife Viability. Wildlife conservation strategies addressing individual species viability and [ecosystem diversity](#) have generally employed one or both of two key features: protected habitat reserves, and modifications of practices within timber harvest areas (see Wilcove et al. 1986). [Habitat](#) reserves have often been the focal point of conservation strategies since the pioneering work of MacCarther and Wilson (1967) on the theory of island biogeography: that the equilibrium number of species on an island generally depends on island size, and island distance from (usually mainland) source populations. Reserves are viewed as islands of undisturbed or natural habitat within a landscape of management-altered or dissimilar habitat. Reserves attempt to protect the integrity of an isolated landscape. From this theory, five general concepts of reserve design have evolved in conservation planning (Thomas *et al.* 1990):

- ◆ well-distributed species are less prone to extinction than species confined to small portions of their range;
- ◆ larger reserves supporting many pairs of individuals are superior to smaller reserves supporting only a few pairs;
- ◆ reserves that are close together are better than ones far apart;
- ◆ reserves should have the least amount of induced [fragmentation](#) possible; and
- ◆ reserves should be connected, either through specific [corridors](#) (such as beach fringe or [riparian areas](#)) or through maintaining habitat characteristics similar to the reserves on the lands between them.

In the other approach, harvest areas (conventionally called the "matrix") are managed as landscapes within which particular vegetative or habitat characteristics are to be provided. This approach often uses extended timber rotations or silvicultural prescriptions patterned after natural ecological processes or events.

A reserve-based strategy relies on blocks of intact, largely undisturbed habitats (such as [old-growth](#) forest) of the appropriate size, spacing, and composition to meet a desired design that will maintain viable, well-distributed populations of one or more species. The [habitat conservation area](#) (HCA) network used for the conservation of spotted owl habitat in the Pacific Northwest is a classic example (Thomas et al. 1990). The interagency Viable Population Committee developed a similar strategy for maintaining habitat for viable wildlife populations across the Tongass (Suring et al. 1993). Influenced by the spotted owl strategy, this Tongass strategy includes a system of large and medium HCA's, small HCA's within each 10,000-acre [watershed](#), and coastal beach fringe and riparian buffers for landscape [connectivity](#). The reserve strategy discussed below and applied to some alternatives is based on the Viable Population Committee's work. Other landscape management approaches developed in recent years are discussed in Verner et al. 1992, and Andersen and Mahato 1995.

An alternative wildlife conservation approach is to recognize the dynamic nature of [ecosystems](#), in particular the related natural [disturbance](#) regimes, and manage an entire area (the matrix) to achieve a desired mixture of vegetation cover types and seral (age class) stand structures. Under this strategy, optimal percentages of such factors are determined based on individual species needs, and the landscape is managed for a spatially dynamic, but proportionately stable, composition of habitat types, including young growth. The approach used for the northern goshawk in the southwestern United States is an example (Reynolds et al. 1992).

Implicit in this matrix management approach is the use of extended silvicultural rotations (the time period between two harvests of the same unit) to achieve the desired distribution and abundance of seral stage classes (Henderson 1993). [Uneven-aged management](#) systems may also be selected over even-aged systems. Such practices are particularly necessary to perpetuate the structures and processes of [old-growth](#) forests (Weigand et al. 1994).

Potential drawbacks of a reserve approach are the failure to consider natural [disturbance](#) processes—the dynamic nature of [ecosystems](#), and not being able to preserve landscape integrity (Irwin and Wigley 1992). These can be overcome by combining a reserve system with some type of matrix management approach (Thomas et al. 1990, Franklin 1993). As a complement to reserves, matrix management can serve at least three important roles: 1) providing habitat at smaller spatial scales, 2) increasing the effectiveness of the reserves, and 3) improving landscape [connectivity](#).

Information from several species assessments, an [old-growth](#) forest inventory, and other recent wildlife surveys and studies was evaluated and synthesized to help identify conceptual approaches in which adequate wildlife habitats capable of supporting viable wildlife populations could be provided. Four general strategies (each of which could include a variety of options or component parts) were identified:

1. A system of large, medium, and small [old-growth](#) forest reserves (or "[habitat conservation areas](#)") distributed across the forest, in which most management activities are restricted. Habitat corridors connecting reserves may be provided through expanded beach fringe corridors and [riparian areas](#).
2. Modifications to silvicultural harvest practices throughout the area of planned timber harvesting so that [old-growth](#) habitat characteristics, if not true old growth, are perpetuated or extensively achieved. All the methods discussed below under "Alternatives to Clearcutting" can be used.
3. A combination of the first two strategies could be used, such as using reserves in areas which have a history of extensive timber harvesting, and employing alternative silvicultural practices elsewhere.
4. Relying on existing withdrawn areas (such as [Wilderness](#)), areas to be managed for purposes other than timber harvesting, and other ways in which old-growth forest would be maintained (such as within [riparian areas](#)). This approach does not necessarily identify areas for protection based on specific wildlife habitat values, or their location and distribution across the Forest.

Fish Habitat. Four options for streamside (riparian) habitat management are available, all in the form of Riparian Forest-wide standards and guidelines. Option

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3 is similar to the Stream and Lake Protection LUD used in the 1991 SDEIS for most alternatives (and also used, but called [Riparian area](#), in the unpublished 1992 FEIS for Alternatives P and D++). Option 2 basically represents the protection called for in the [Anadromous Fish Habitat Assessment](#) (AFHA - discussed in Chapter 1, and under "Fish" in Chapter 3). Option 2 provides greater protection than Option 3, which does not include all measures recommended by AFHA to provide long-term protection. Option 2A is a modified version of Option 2 offering a still higher level of protection. Option 1 is the most protective, incorporating additional measures over Option 2 to reduce the risk to fish habitat.

Karst and Caves. Three options for [karst](#) and [cave](#) resources protection are available. The 1992 FEIS included [Forest-wide standards and guidelines](#) (Minerals, Geology, and Caves) for caves which included some recognition of karst features but not of karst as an [ecosystem](#) or unique system. The Karst and Cave Resources Assessment (1995) has used considerable new information, much of it from field studies, than was available in 1992, and has proposed in-depth, detailed Forest-wide standards and guidelines for Karst and Cave Resources. A third option would be to apply cave protection measures only to the extent needed to comply with the Federal Cave Resources Protection Act, which provides for the identification and protection of significant caves.

Alternatives to Clearcutting. Many alternative [silvicultural systems](#) to standard clearcutting exist, but their applicability to the forests and terrain of Southeast Alaska is largely unknown. Studies are lacking on the effects and implementability of these methods. Systems that come close to matching natural [disturbance](#) processes are more likely to be successful from a silvicultural as well as ecological standpoint. Two alternatives to, and one variation of, clearcutting as traditionally planned and practiced in the Tongass are being considered: [uneven-aged management](#), which can be the harvest of individual trees or small groups of trees; a system called "two-aged" management, which leaves roughly 10-20 percent of the trees within a harvest unit uncut (and in various aggregations); and clearcutting where planned future harvests occur at longer time intervals than the minimum allowed by regulation (a variation of, rather than alternative to, clearcutting). The time intervals of this latter approach are called "[rotation ages](#)," signifying the age of a stand at the time it is harvested again. These can be extended from the current anticipated average rotation of about 100 years to rotations of 200 years or greater.

Socioeconomic Considerations. Alternative P from the unpublished 1992 FEIS emphasizes several economically-important resources: recreation and tourism, minerals, [subsistence](#), and timber. Providing a supply of timber sufficient to meet market demands is a goal. Alternative 2 in this FEIS carries forward Alternative P essentially unchanged, and Alternatives 3-6 and 10 use Alternative P as a starting point. Alternative 11 used Alternative 10 as a starting point. Another alternative considered in the unpublished 1992 FEIS and labeled there Alternative D++ was developed to offer the maximum opportunity for supplying timber. It would provide an annual timber supply well above Alternative P (in the 1992 FEIS D++ had an annual average [Allowable Sale Quantity](#) of 520 million board feet). It was not considered in detail in the 1992 FEIS since it did not appear to address other economic sectors or local issues well. Alternative 7 carries forward Alternative D++, now considered in detail. Alternative 9, the "No Action" alternative, is the current Forest Plan, which has an annual average Allowable Sale Quantity of 450 million board feet. Recreation, tourism, and subsistence are emphasized variously in Alternatives 1-6, 10 and 11 as are both commercial and sport fishing and hunting through greater protection for important habitat elements.

Alternatives Eliminated from Detailed Study

The 1991 SDEIS discussed the rationale for not considering an alternative that would recommend declassifying [Wilderness](#). That reasoning is still valid. The unpublished 1992 FEIS also discussed two alternatives proposed at that time by the State of Alaska, and developed in joint meetings with them, which were considered but eliminated from detailed study. As just discussed, one of these, Alternative D++, is now being considered in detail (as Alternative 7). The other alternative was actually several versions of an alternative that attempted to provide greater wildlife habitat protection while reducing timber harvest (from Alternatives D or D++) as little as possible. These attempts were generally unsuccessful, and none of these versions were considered in detail. On considering the State comments on the Revised Supplement, the "State" alternatives presented in the 1992 FEIS appear to be superseded by the 1996 State proposal, discussed below.

The previous discussion of the five focus issues indicated several options or approaches possible for addressing each one. Literally hundreds of slightly different alternatives could be developed using all the possible combinations of these various options. By focusing on broad alternative themes, many incompatible combinations can be eliminated, but this may still leave dozens of reasonable combinations. It is also the case that the same goal may be achieved in different ways: for instance, greater [riparian area](#) protection may be achieved by using a stricter riparian option, or by using an alternative [silvicultural system](#) such as [uneven-aged management](#). The [Interdisciplinary Team](#) did not try out each of these combinations, but sought a broad array of alternatives addressing the five issues in measurably different ways.

This resulted in much "fine-tuning" of several of the alternatives considered here in detail, but few overall distinctions that represented substantially different alternatives. One "option" that was eliminated from detailed study was the use of timber stand [rotation ages](#) averaging more than 200 years (although many public comments continue to support longer time periods between harvests). These appeared to create such uneconomic logging conditions that any level of timber program would likely be infeasible.

The Interagency Viable Population Committee's strategy, and the peer review of that strategy, are discussed under the "wildlife viability" issue in Chapter 1. Following the peer review, the Committee responded by recommending a number of additions to their original proposal. This information was considered and used in developing many of the alternative options, but an alternative adopting the full set of the Committee's recommendations was not considered necessary to evaluate in detail. Of the numerous ways to combine the several alternative options that address wildlife viability, other combinations than the Committee's were felt to provide a reasonable range while also responding to other issues. Our analysis indicates that an alternative matching the Committee's recommendations would be similar in wildlife viability effects to Alternatives 5 and 11.

Southeast Alaska Conservation Council and The Sierra Club Legal Defense submitted information for additional alternatives to include in the Revised Supplement. This information was submitted too late to be considered at that time, but has since been evaluated and is included in the following discussion.

One alternative from the Revised Supplement, Alternative 8, has not been carried forward in the FEIS. This alternative combined the development-oriented emphasis of Alternative 7 with a Forest-wide [old-growth](#) reserve strategy (as was used for Alternatives 3 and 10) and other wildlife habitat features. Further evaluation showed these two emphases to be largely incompatible, nor did Alternative 8 provide for scenic quality or recreation opportunities commensurate with the wildlife emphasis. The [goals](#) of either resource development or wildlife habitat protection

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were better achieved by other alternatives. The outputs of Alternative 8 were generally similar to those of Alternative 6.

An alternative meeting all of the most recently published RPA Program tentative objectives (Alaska Regional Guide, 1983) was not considered in detail, because the recreation objective exceeds the Forest's recreation capacity under the current inventory. All other main RPA Program objectives are met by one or more of the alternatives. These are discussed further in the "Comparison of Alternatives" section at the end of this chapter.

Conservation Group Alternatives

Several alternative proposals were received from conservation groups as public comment on the Revised Supplement. An additional alternative (with three variations) was received prior to issuing the Revised Supplement, but too late to be evaluated for that document. These various recommended alternatives are now discussed. Table 2-2 presents many of the key features of each in abbreviated form. In general these alternatives emphasize fish and wildlife resources and habitat, subsistence opportunities, and maintaining specific areas in natural settings. Most are based on recent studies and reports, including products of the Interagency Viable Population Committee, the Viability Peer Review, the [Anadromous Fish Habitat Assessment](#), and various wildlife species assessments (all used and discussed in the Revised Supplement and in this FEIS), as well as their own additional analysis. As noted in the table, some groups supported or endorsed the recommendations of other groups.

Groups submitting proposed alternatives were: Alaska Rainforest Campaign, Association of Forest Service Employees for Environmental Ethics (AFSEEE), Defenders of Wildlife, Narrows Conservation Coalition, Sierra Club Legal Defense Fund (SCLDF), Southeast Alaska Conservation Council (SEACC), and the Wilderness Society. Groups endorsing one or more of these alternatives included the Natural Resources Defense Council (NRDC) and Sitka Conservation Society (SCS). Other groups submitted alternative proposals in a more abbreviated form that generally coincide with the Alaska Rainforest Campaign alternative: these included the Alaska Wilderness Recreation and Tourism Association (AWRTA), Lynn Canal Conservation Inc., and the Tongass Community Alliance. Many public comments from individuals also endorsed particular conservation group alternatives, in particular those of Alaska Rainforest Campaign, AFSEEE and SEACC (the latter as the "Transition Alternative").

None of these alternatives were ultimately considered for detailed study in this FEIS. It was generally the case that after applying just the major features of each, little or no suitable timber land remained available, making the alternatives comparable to Alternative 1. Regardless of the intent of any particular component or option, if the aggregate of the recommendations resulted basically in no timber program, then the overall goals of protecting habitats and preserving natural settings (as stated or implied for these alternative) will have been achieved. (Taken individually, these components or options were also considered in relation to specific resources or issues; for that analysis, refer to the Comment/Response Appendix. They may also be compared to the components in Table 2-3.) Based on estimated available suitable acres, a couple of the alternatives could possibly provide a small timber program, although one considerably lower than Alternative 5, the lowest of those considered in detail other than Alternative 1. These proposals did not appear to offer wildlife or related benefits different enough from Alternatives 5 or 11, or enough potential for a sustained timber program above Alternative 1, to make this trade-off desirable to analyze in detail.

The various proposals summarized in Table 2-2 will now be discussed primarily as they are estimated to affect the availability of suitable timber lands. This is not done because only timber-program-oriented alternatives are of interest, but because, without a timber program, essentially all the effects associated with estimated reductions in fish and wildlife habitat, scenic quality, roadless recreation opportunities, etc., go away, as is evidenced from the analysis of Alternative 1 throughout Chapter 3 (the exception being effects resulting from past actions). From a forest plan, forest-wide standpoint, it matters little how specific habitats or favorite places are addressed, if the outcome in either case is no significant effect. Since it became immediately obvious that most of the conservation group proposals were likely to have this result, one focus was to then determine if they were able to support any sort of managed timber program. If not, then they offered nothing different than Alternative 1 and there was no reason to consider them in detail.

This was not necessarily the intent of these proposals, which evidenced considerable thought and analysis. Among their stated goals were: "a sustainable, biologically responsible vision for the Tongass" (AFSEEE); "providing for balanced, sustainable use of our region's resources" (SEACC); and, providing alternatives other than Alternative 1 "that provide adequate conservation measures" (Defenders of Wildlife). Implied in these and similar statements appears to be a desire for some level of sustainable timber harvest from the Tongass. But except for the SEACC proposal, little if any sustainable timber harvest seems likely; the AFSEEE alternative would have to be changed substantially to even have any suitable timber acres available.

All the alternatives recommended several features already present in Alternative 3 (a reserve system, use of riparian Option 1, etc.; see Table 2-3), and it was thus used as a starting point for the additional recommendations, with the exception of the SEACC/SCLDF 11/95 proposals, which were based on Alternative A from the 1991 SDEIS. Both Alternative 3 and the 1991 SDEIS Alternative A had a suitable timber base of 1.2 million acres. All the proposals also expressed the desire that the long-term timber contract with Ketchikan Pulp Company be canceled (implied but not actually stated in the 11/95 proposals), a feature not shown in Table 2-2. (Other features not displayed or evaluated included increased protection for karst areas and caves, and dropping the two-aged timber harvest system.) Although not identical, the proposals of Alaska Rainforest Campaign, SEACC and the Wilderness Society were similar enough to be discussed together (and are shown together in Table 2-2), as were the proposals from Defenders of Wildlife and Narrows Conservation Coalition.

**Table 2-2
Conservation Group Recommended Alternatives**

Conservation Group ⁽²⁾	Alternative Components ⁽¹⁾							
	Old-growth (OG) Habitat Reserves	Beach Buffers	Riparian Areas	Forest Matrix	Geographic Areas	Wild and Scenic Rivers	Wildlife Corridors	Other Key Features
AFSEEE (endorsed by SCS)	80,000 acre reserves Other watershed reserves	1,000 ft. no harvest 500 ft. uneven-aged (UM)	Option 1 for all streams	No harvest of vol. class (VC) 6 or 7 200-300 year rotation, UM	No roads into unroaded watersheds Cleveland, Honker Islands <1,000 acres	67 rivers (w/ 1/2-mile corridors)		1-mile salt chuck buffers No harvest in forested wetlands or traditional use areas
Defenders of Wildlife, Narrows Conservation Coalition	64,000-acre reserves w/1-mile UM buffers	1,000/500 (as above)	Options 1 and 2	No harvest of VC 7 400-year rotation for UM areas	SEACC's list ⁽³⁾ Islands <1,000 acres	All "125" rivers (Defenders), 67 rivers (as above) (for Narrows)	1,600-ft. corridors between reserves	No new roads in brown bear habitat Brown bear riparian zones Deer S&Gs
Alaska Rainforest Campaign, SEACC, Wilderness Society (endorsed by NRDC)	As in Alternative 3, w/1/2-mile UM buffer (1 mile for Wilderness Society) Additional reserves	1,000/500 (as above)	Options 1 and 2	Limited or no harvest of VC 6/7 Use methods that mimic natural disturbance No clearcutting in "Sitka Use Area" (SEACC) 300-year rotation (NRDC)	SEACC's list Other (tourism)	67 rivers (as above)	"Minimum corridor requirements"	No roads into unroaded watersheds in (at least) brown bear habitat No harvest in key subsistence areas Deer S&Gs Provide up to 100 mmbf of SBA sales annually (SEACC)
SEACC and SCLDF (11/95) (also endorsed by NRDC)	As in Alternative 3, w/ 1/2-1 mile UM buffers Also, the "three largest" OG patches per province	3,300-ft. UM buffer	Option 1 (Option 2 if supported by watershed analysis)	No harvest in VC 6/7 <800 ft. Emphasize small sales (<5 mmbf)	As in Alternative A from 1991 SDEIS Additional areas	67 rivers (as above)	1,600 ft. for large reserves 1,000 ft for medium reserves	Add to reserves the old-growth retention areas identified in past sales Provide a "high likelihood" of meeting projected demands (all types) for wildlife and fish "through first rotation"

¹ As abbreviated from the public comments. Not all components are included.

² AFSEEE = Association of Forest Service Employees for Environmental Ethics; SCS = Sitka Conservation Society; SEACC = Southeast Alaska Conservation Council; NRDC = Natural Resources Defense Council; SCLDF = Sierra Club Legal Defense Fund

³ SEACC's list of 20 "Special Places" includes Honker Divide, Cleveland Peninsula, Port Houghton, East Kuiu, Ushk Bay, Upper Tenakee Inlet, North Sea Otter Sound islands, and all of the Salmon Bay Lake watershed.

The following brief discussion of the four major alternatives includes estimates of suitable acreage reductions in brackets. Estimates are based on information from the Revised Supplement and FEIS for Alternative 3 and some of the individual components (Chapter 2, Chapter 3 "Timber" section, and Appendix B), the 1991 SDEIS (Alternative A), and information provided in the analyses submitted with the various proposals. The estimates do not include all potential overlaps between the different options, and this may tend to overstate some effects; on the other hand, no estimate has been made of how the options may isolate or make unavailable areas of otherwise suitable land, and this may tend to understate some effects.

AFSEEE Alternative

1. Large reserves are expanded to 80,000 acres (using the same percentage composition criteria), and other "watershed" reserves are added [350,000 acres].
2. The "no harvest" beach fringe is expanded to 1,000 feet [125,000 acres].
3. Option I riparian management is applied to all streams [60,000 acres].
4. No harvest of timber volume classes 6 or 7 [100,000 acres].
5. No roads into unroaded watersheds [200,000 acres].
6. 67 Wild and Scenic Rivers with 1/2-mile corridors [100,000 acres].
7. No harvest of forested wetlands and 1-mile buffers around salt chucks [500,000 acres].

Conclusion: Together the above components of this alternative would make an estimated 1.435 million acres of suitable timber lands unsuitable, which exceeds the acres of suitable land available in Alternative 3. (No estimate was made for removing islands 1,000 acres or smaller, or traditional use areas.) If we assume that this is an overestimate and some suitable land remained available, it would be subject only to uneven-aged management using 200- to 300-year harvest rotations, and would include only the lower volume classes. Timber harvest under such a scenario is not likely to be economically viable. The 70,000 acres of suitable land remaining in Alternative 1, with less restrictive harvest requirements, were not scheduled for harvest for economic reasons.

Defenders of Wildlife and Narrows Conservation Coalition Alternatives

1. Reserves are expanded to 64,000 acres, using the same percentage composition criteria [200,000 acres].
2. The "no harvest" beach fringe is expanded to 1,000 feet [125,000 acres].
3. Riparian management is similar to that of Alternative 3 [no reduction].
4. No or limited harvest of timber volume classes 6 and 7 [75,000 acres].
5. No harvest of "SEACC's list" areas (see table) [200,000 acres].
6. 67 Wild and Scenic Rivers with 1/2-mile corridors (125 for Defenders) [100,000 acres (200,000 for Defenders)].
7. 1,600-ft. corridors between reserves [125,000 acres].
8. No new roads in brown bear habitat (Chichagof and Baranof Islands) [50,000 acres].

Conclusion: Together the above components of this alternative would make an estimated 0.875 million acres of suitable timber lands unsuitable, leaving approximately 325,000 acres of suitable land available (for Defenders of Wildlife, 0.975 million acres unsuitable, 225,000 acres available). Of this, one mile around each reserve and the additional 500-foot beach buffer are subject only to uneven-aged management using 400-year harvest rotations and limited primarily to the lower volume classes. (The number of reserves is not given. At 6,600 suitable acres for each 23,700-acre reserve buffer, 34 reserves would take up the remaining

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225,000 suitable acres.) Timber harvest under such a scenario is not likely to be economically viable. The 70,000 acres of suitable land remaining in Alternative 1, with less restrictive harvest requirements, were not scheduled for harvest for economic reasons.

Alaska Rainforest Campaign, SEACC and Wilderness Society Alternatives

1. Additional reserves (beyond Alternative 3) [100,000 acres]. (This is a conservative educated guess, since these reserves are not specified.)
2. The "no harvest" beach fringe is expanded to 1,000 feet [125,000 acres].
3. Riparian management is similar to that of Alternative 3 [no reduction].
4. No or limited harvest of timber volume classes 6 and 7 [75,000 acres].
5. No harvest of "SEACC's list" areas (see table) [200,000 acres].
6. 67 [Wild and Scenic Rivers](#) with 1/2-mile corridors [100,000 acres].
7. "Minimum" [corridor](#) requirements [35,000 acres]. (Not specified; we used those discussed under the SEACC/SCLDF 11/95 Alternative.)
8. Removing additional areas important for tourism, and key [subsistence](#) areas (again, a rough guess) [100,000 acres].
9. No new roads into unroaded watersheds in (at least) brown bear habitat (Chichagof and Baranof Islands) [50,000 acres].

Conclusion: Together the above components of this alternative would make an estimated 0.785 million acres of suitable timber lands unsuitable, leaving approximately 415,000 acres of suitable land available. This acreage would be subject to additional constraints, or managed differently, under the three proposals:

Alaska Rainforest Campaign - adds 1/2-mile uneven-aged management buffers around reserves, and an additional 500-foot beach buffer (uneven-aged management), with all timber harvest moving towards methods that mimic natural disturbances (envisioned as uneven-aged management also). If economic, [uneven-aged management](#) on 415,000 suitable acres (using 200-year rotations) could provide an [Allowable Sale Quantity](#) of about 40 [MMBF](#) annually. Such a program, however, could not support additional road construction or alternative harvest systems (such as helicopter), so that much of the 415,000 acres would in effect not be available. (Note: NRDC endorsed this alternative, with the addition of a minimum 300-year timber harvest rotation requirement.)

SEACC - SEACC primarily differs from the Alaska Rainforest Campaign only in how timber management would be done outside the specified [uneven-aged management](#) buffers and an additional "Sitka Use Area" within which no clearcutting would occur. These uneven-aged management areas are estimated to include over one-half of the 415,000 available suitable acres, leaving about 200,000 for possible [even-aged management](#) (with an [Allowable Sale Quantity](#) around 60 [MMBF](#)), and the rest for uneven-aged (around 20 [MMBF](#) assuming a 200-year rotation). SEACC included a goal of providing up to 100 [MMBF](#) of small business administration sales annually. While this level would not likely be attainable, a small but viable timber sale program appears possible under this scenario, probably limited to the southern half of the Tongass (outside brown bear habitat and the Sitka area).

Wilderness Society - the Wilderness Society adds a one-mile buffer around large reserves, and allows no harvest of volume classes 6 or 7. It does not include additional tourism areas in a no harvest category, but appears to call for more additional reserves than the other groups. Like the Alaska Rainforest Campaign, it calls for harvest methods that mimic natural [disturbance](#). Overall

it would likely have a somewhat smaller available timber base than the 415,000 acres, with even less potential for economically viable harvesting.

Of the three proposals, SEACC's offers the highest likelihood that a small-scale timber program could be maintained at a sustainable level, although considerably below any alternative considered in detail except Alternative 1. Opportunities for economic timber harvest under the other two proposals, and for much of SEACC's available acreage, remain problematical, noting again that the 70,000 acres of suitable land remaining in Alternative 1, with less restrictive harvest requirements, were not scheduled for harvest for economic reasons.

SEACC/SCLDF 11/95 Alternative

This proposal is actually one alternative with three minor variations. These variations revolve around an item in the SEACC/SCLDF list of alternative components related to the Peer Review of the Viability Strategy, and the Viable Population Committee's response to that review. Two alternative variations focus on that response, one adopting it wholly, the other requesting that it be evaluated "incrementally" (for effects on [Allowable Sale Quantity](#)). The third variation requests that measures be adopted that respond to all the key Peer Review criticisms. Since the Committee's response (their Appendix 2) did respond to the criticisms, and alternative measures are not suggested, it is assumed that the two are the same thing. The following list can also serve as the incremental analysis (items 1, 2, 4 and 7). (Additionally, one of the three variations eliminates the Option 2 possibility for [riparian areas](#). That would have little effect on the following analysis.) The following changes are applied to Alternative A from the 1991 SDEIS, rather than Alternative 3.

1. A system of reserves similar to Alternative 3, with additional large blocks for each biogeographic province, is added to Alternative A from the 1991 SDEIS [400,000 acres].
2. The beach fringe is expanded to a 3,300-ft. zone of uneven-aged timber management, but an additional "no harvest" buffer is not specified [no reduction].
3. Option 1 for [riparian areas](#) is the general rule [75,000 acres].
4. No harvest of timber volume classes 6 and 7 under 800 feet in elevation [100,000 acres].
5. No harvest of specified areas [100,000 acres].
6. 67 [Wild and Scenic Rivers](#) with 1/2-mile corridors [100,000 acres]. (One variation increases this to 136 rivers.)
7. 1,600-ft. corridors between large reserves, 1,000-ft. between medium reserves [35,000 acres].

Conclusion: Together the above components of this alternative would make an estimated 0.810 million acres of suitable timber lands unsuitable, leaving approximately 390,000 acres of suitable land available. (No estimate was made for removing [old-growth](#) "retention" areas identified in past sales.) Of this, 1/2-1 mile around each reserve and a 3,300-ft. beach buffer are subject only to [uneven-aged management](#). The suitable acres within these two categories substantially exceeds 390,000 acres (a 3,000-ft. beach buffer alone would include over 500,000 suitable acres). This makes this alternative similar in outcome to the Alaska Rainforest Campaign alternative, with the small amount of potential uneven-aged harvest not likely to be economically viable.

State of Alaska Proposal (1996)

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The State of Alaska proposed several modifications to the Revised Supplement Preferred Alternative that would make it a substantially different alternative. Some of these proposals could be evaluated as in the previous examples, such as: 1) applying [riparian area](#) Option 1 within the 50 percent "highest value" watersheds for fish production; 2) applying the additional 500-ft. [uneven-aged management](#) beach buffer (as in Alternatives 3-6); not using the [two-aged management](#) system for timber harvest; and 4) using only the minimum legal protection for [karst](#) and [caves](#) (as in Alternative 9). Taken together, these changes would move the Revised Supplement Preferred somewhat closer to Alternative 3.

However, the major proposed change involves a list of 125 specified watersheds (identified by TLMP [Value Comparison Units](#) (VCU's)) termed "high value community use areas." These are areas identified as important for [subsistence](#), big game hunting (brown bear, black bear, urban deer hunting), and/or fish production (coho and pink salmon, sport fish harvest), and that are allocated to a timber harvest LUD in the Revised Supplement Preferred Alternative. No clear guidelines are given for which to select for special management, or what that management should be. To quote from the State's letter (p. 7):

The list of high value community use areas is enclosed for both the Forest Service and the public's information We request the Forest Service work with the Department of Fish and Game and Southeast communities to determine which of these areas should have appropriate [management prescriptions](#) that protect community use, and fish and wildlife values. Avoiding or minimizing timber harvest in areas of high community use will increase the predictability and reliability of the timber supply and ensure the viability of all forest dependent industries.

These 125 VCU's represent over one-half of the acreage in the available timber base of the Revised Supplement Preferred Alternative. The average VCU within these areas is about 20,000 acres in size, of which about 6,000 acres are suitable timber lands. Therefore, the unknown disposition of these 125 VCU's, whose suitable timber lands total approximately 750,000 acres, made it impossible to model this alternative or consider it in detail.

Alternatives Considered in Detail

Before presenting the alternatives themselves, this section will define terminology and present information on several aspects of the alternatives.

[Non-declining even flow](#)

The Forest Service follows a policy of "non-declining even flow" for timber harvest to ensure that a [Long-term Sustained Yield](#) of timber will be available. This means that the amount of timber harvested in any one decade can not exceed that of any succeeding decade. Non-declining even flow is determined in cubic feet of timber volume, which is the measure used for long-term modeling purposes. The timber outputs for each alternative are shown in board feet, which is currently the more common measure, and in cubic feet. The ratio of board feet to cubic feet changes from decade to decade, depending on the timber volume and size of timber harvested per acre, and because timber yield tables based on board feet and cubic feet are constructed independently (cubic feet being a better overall measure of usable wood). Therefore, the [board foot](#) volume can vary, even decline, by decade while timber harvest measured in cubic feet remains constant.

[Falldown](#)

"Falldown" as used here refers to the difference, usually a reduction, between the number of acres planned for timber harvest and those actually harvested. The Tongass National Forest has commonly experienced falldown in timber sale planning in recent years. Two kinds of falldown have been identified. "Hard" falldown, a reduction in the land base considered suitable for timber harvesting, occurs when unmapped features that would make lands unsuitable (such as high hazard soils or streams requiring buffers) are identified during the planning process, or when the original suitability mapping is found to be in error. "Soft" falldown, a reduction due to project planning, design, or layout, can result from a project-level emphasis on resource issues such as scenic quality, wildlife habitat, or unique features (cave or karst resources, for example), from logging infeasibilities, unfavorable timber market conditions, or from data errors. The primary cause of soft falldown is an incomplete review of site conditions prior to designing or implementing a project. A review of five recent projects showed falldown ranging from 4.5 percent to almost 21 percent (Timber "Falldown" During Implementation, August 1995).

The FEIS alternatives address many of the factors that have resulted in falldown at the project level, in particular those resulting from "emerging" issues such as wildlife viability and cave and karst features. More clearly defined standards and guidelines, and more precise mapping of objectives such as for scenic quality, will mean better information for project-level planning. Timber land suitability criteria have also been reexamined, and the mapping of suitable acres improved. High hazard soils will be more consistently defined. Falldown associated with these factors is likely to be substantially less in the future. Other falldown factors, such as unmapped streams requiring Tongass Timber Reform Act buffers, small inclusions of unsuitable soils within soil mapping units, and new resource issues, will remain likely to occur. Therefore, the allowable sale quantities of the alternatives include adjustments for future falldown, called the "modeling implementation reduction factors." These are discussed in the Timber section of Chapter 3, and Appendix B.

The Allowable Sale Quantity

The amount of timber that could be sold under a Forest Plan alternative is expressed as an "Allowable Sale Quantity" (ASQ). This concept is often misunderstood. The Allowable Sale Quantity is the maximum amount of timber that may be sold from the area of suitable land covered by the Forest Plan within a given decade (although it is usually expressed in average annual terms). It is neither a targeted amount, nor is it a required amount (except as a ceiling). The amount of timber offered for sale by year can exceed the annual average as long as the total decade ASQ is not exceeded; it can also be anywhere below the annual average, and the amount offered for sale over a decade can be below the decadal ASQ. Many factors can result in timber sale offerings that are below the average annual ASQ, including lack of funding, new resource issues that need to be addressed, changes in timber markets, sales held up by appeals or lawsuits, or any of the falldown factors previously discussed.

Allowable sale quantities and other timber harvest figures pertaining to the Tongass have traditionally been expressed in an amount known as "net sawlog," which means sawlog volume only. Another way to express these amounts is in "sawlog plus utility" volume. Utility logs are those with less than one-third usable sawlog volume but at least one-half usable wood chip volume. (Net sawlog includes logs used all or part for chips other than these "utility" logs.) Sawlog plus utility amounts are roughly 15-17 percent higher than sawlog by itself. Both these amounts have been expressed in the common measure known as "board feet." National policy is

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to replace the [board foot](#) measure - which seldom accounts for all the usable wood volume of a log - with a [cubic foot](#) measure - which is a more accurate representation of the amount of usable wood fiber.

To ease the transition in moving from a [board foot](#) to a [cubic foot](#) measure, the Alaska Region and the Tongass will begin expressing timber harvest and sale amounts as sawlog plus utility board foot measure. Thus the standard expression for the ASQ in the future, until only a cubic foot measure is used, will be as sawlog plus utility, and will be a greater amount than if expressed only as sawlog. In comparing current and future timber harvest and sale amounts with past amounts, this will need to be kept in mind. If not otherwise indicated, timber volumes in the FEIS are expressed as sawlog plus utility.

Non-interchangeable components

Economics is an important consideration in determining what lands can be harvested; however, experience has shown that it is seldom [feasible](#) to effectively factor in economics as part of the overall timber suitability determination. Economic conditions can fluctuate greatly during the course of a [plan period](#), and even from year to year specific timber species can shift from being economic to uneconomic to harvest. This makes it difficult to assess the economics of harvesting a particular site even over a 10-year period. Also, the value of the timber sale program must be considered as a whole, rather than by only evaluating individual timber sales or harvest units in isolation, since some sales or units of low value are offset by other higher-value sales or units.

Economic considerations can be adequately addressed using the concept of non-interchangeable components. [Non-interchangeable components](#) (NIC's) allow for separating the ASQ into discrete, individually accountable categories. Chargeable timber volume from one NIC cannot be substituted for the achievement of the volume limit of another NIC, nor can the limits on the sale of chargeable timber volume associated with each non-interchangeable component be exceeded. All alternatives have an [Allowable Sale Quantity](#) for the first decade made up of two non-interchangeable components (see Chapter 3, Timber, and the glossary for more detailed definitions):

NIC I. Normal operable volume scheduled from suitable lands that are available for harvest using standard [logging systems](#) (e.g. high-lead and single-span skyline, shovel, and some helicopter). This is the best (most economic) operable ground and is typically where the Forest has been offering sales since 1980.

NIC II. Non-standard (difficult and isolated) operable volume scheduled from suitable lands that are available for harvest using [logging systems](#) not in common use (e.g. some helicopter, balloon, and multi-span skyline). These lands are presently considered economically and technologically marginal. This volume component has rarely been economic in the past.

1992 Alternative Allocations

The two alternatives from the unpublished 1992 FEIS that form the basis of the majority of the present FEIS alternatives were in turn based on 1991 SDEIS alternatives (Alternative P on Alternative P, Alternative D++ on Alternative D). Changes in [land allocations](#) between the 1991 and 1992 versions were made for both: for Alternative P, to better address concerns about specific areas as reflected

in the public comments on the 1991 SDEIS; and for Alternative D++, to provide the maximum opportunity for intensive timber management. Alternative 2 is based closely on the 1992 version of Alternative P, and Alternative 7 closely resembles 1992 Alternative D++. The changes occurring since the 1991 SDEIS are now discussed.

1992 Alternative P. Changes from "development" to "non-development" LUD's (usually to Semi-primitive Recreation - now Semi-remote Recreation) were made for Mansfield Peninsula, the interior portions of Port Snettisham and the Whiting River area, Farragut Bay, the Chilkat Range and upper Chilkat Peninsula, Kah Sheets Bay, the Sarkar Lakes area, Naha Bay, and most of Dall Island. The Semi-primitive Recreation LUD replaced the Primitive Recreation or [Old-growth](#) Habitat LUD's to the north of Bradfield Canal, between Bradfield Canal and Revilla Island, and at Kegan Lake. Scenic [Viewshed](#) replaced Modified Landscape in several areas adjacent to the Alaska Marine Highway or cruiseship routes.

Several interior areas previously assigned to Scenic [Viewshed](#) or Modified Landscape were changed to [Timber Production](#) where scenic values were not an emphasis. Included were areas on Chichagof Island, portions of Port Houghton and the lower Chilkat Peninsula, areas north of Sitka and on north Kruzof Island, portions of north Etolin Island, and a few areas on Prince of Wales and Revilla Islands. Minerals LUD boundaries were changed to exclude it from [Wilderness](#) or LUD II.

1992 Alternative D++. Alternative D in the 1991 SDEIS, while it emphasized intensive timber management elsewhere, allocated most lands adjacent to or near local communities to either reduced-timber LUD's (Scenic [Viewshed](#) or Modified Landscape) or to Semi-primitive Recreation. Alternative D++ changed most of these allocations to [Timber Production](#), with some areas in the north part of the Tongass remaining in or changing to Modified Landscape. At the same time Alternative D++ used the more-protective Stream and Lake Protection ([Riparian area](#) in the 1992 FEIS) LUD. These changes have been retained for Alternative 7. Three other elements, however, remain as they originally were in Alternative D (Minerals LUD allocations; the Wild, Scenic, and Recreational River LUD allocations; and no Beach Fringe and Estuary requirement).

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Standards and Guidelines; Mitigation

With the exceptions noted below, the Forest-wide standards and guidelines included in Chapter 4 of the revised Forest Plan apply to all alternatives, and are not repeated here. Appendix I of this FEIS includes those alternative standards and guidelines used by some of the alternatives but which are not part of the final revised Forest Plan. The Forest-wide standards and guidelines for the Forest Plan revision have gone through numerous versions since originally being developed in 1989. For many resources, most of the changes that have occurred between the 1991 SDEIS, the 1992 FEIS, and the present set are not significant, representing improved wording, streamlining to avoid redundancy with higher-level direction, incorporation of Forest Service policy changes, etc. Significant changes and options related to the five focus issues are discussed below and in Chapter 3. Also for most resources, the Forest-wide standards and guidelines parallel or build on other current planning direction, such as the Alaska Regional Guide, and Alaska Region supplements to Forest Service manual and handbook direction (such as the Soil and Water Conservation Handbook), therefore representing the current Forest Plan as well as the other alternatives. This common direction is not discussed further here.

Since they serve as the basic mitigation measures for individual projects under the revised Forest Plan, the applicable [Land Use Designation](#) management prescriptions and [Forest-wide standards and guidelines](#) are discussed throughout the environmental consequences sections of Chapter 3. The Forest-wide standards and guidelines, and the practices and standards and guidelines of each LUD [management prescription](#), are the full set of mitigation measures for each alternative.

Alternative Component Options

Table 2-3 shows how the various issue-related components described earlier in this chapter (see also table footnotes) have been assigned to the ten FEIS alternatives. (Allocations of all the [Land Use Designations](#) are displayed later for each alternative.) The options for [silvicultural systems](#), riparian habitat, beach fringe and estuary, and deer [winter range](#) that are not a part of the Forest-wide standards and guidelines of the revised Forest Plan are included in Appendix I. The reserve option emphasizes the Old-growth Forest LUD, but takes into account other [non-Development LUD's](#). The timber stand rotation lengths, and the use of harvest thresholds and percentages of [old-growth](#) habitat retained by [Value Comparison Unit](#) (VCU - somewhat analogous to a [watershed](#)), are not otherwise specified except in the table and alternative descriptions. (Retention for the current Forest Plan is described in the 1986 Tongass Land Management Plan Amendment.)

The revised Forest Plan includes only the new Forest-wide standards and guidelines for [Karst](#) and [Cave](#) Resources (K/C S/G in the table). The previous proposed standards and guidelines for caves are included within the Minerals, Geology, and Caves [Forest-wide standards and guidelines](#) of the 1991 and 1992 Proposed Revised Forest Plan. The 1992 version used here (92 S/G) is slightly expanded from, but comparable to, the version published as part of the 1991 SDEIS. Under Alternative 9, only significant caves as determined under the Cave Resources Protection Act would be protected.

Changes Between Revised Supplement and FEIS

The allowable sale quantities of most alternatives in the FEIS show a 5-10 percent reduction from those of the same alternatives in the Revised Supplement. These reductions are the result of several modeling changes, including better accounting for the effects of [Visual Quality Objectives](#); improvements and adjustments in identifying suitable timber lands; and a technical change in determining harvest ages for second-growth stands. These changes are further discussed in Appendix B. One alternative, however, Alternative 9, shows an increase in [Allowable Sale Quantity](#). This is a result of a change in calculating the utility component of the ASQ. The sawlog component for Alternative 9, the “current” Forest Plan, remained the same at 450 MMBF; the total ASQ, sawlog plus utility, increased because of its higher utility component.

One other change is in the portrayal of suitable timber lands by alternative. In the Revised Supplement (and previous drafts), the total suitable acres available for timber harvest by alternative were displayed. This did not meet the technical definition of suitable acres for an alternative, however. In this FEIS, only those suitable acres scheduled for timber harvest by the [FORPLAN](#) computer model over the 160-year modeling period are included as the suitable acreage for an alternative.

The Ten Alternatives

Each alternative description includes a theme, [multiple-use goals](#), narrative objectives, a set of [Land Use Designations](#) (a table with the acreages allocated to each LUD, and a map - included in the map packet - showing their locations), and other objectives and outputs displayed numerically. The prescriptions (practices, LUD- specific standards and guidelines) of each Land Use Designation are included in the Forest Plan, as are the Forest-wide standards and guidelines applying to all alternatives. Appendix I includes the options not a part of the Preferred Alternative. These are also integral parts of the alternatives. Details on the modeling of each alternative for [FORPLAN](#) analysis are included in Appendix B. The Regional Economy section of Chapter 3 also includes a map for each alternative displaying the suitable timber lands that could be scheduled for timber harvest.

Several of the multiple-use goals are the same for all alternatives, and are listed here. Current Forest Plan [goals](#) for these resources are similar. The [Tongass Timber Reform Act](#) (Section 101) direction for the Tongass to “seek to provide a supply of timber ... which (1) meets the annual market demand for timber from such forest and (2) meets the market demand from such forest for each planning cycle” will be followed by each alternative “to the extent consistent with providing for the [multiple use](#) and [sustained yield](#) of all renewable forest resources,” as determined by that alternative, and subject to appropriations and applicable law.

The Revised Supplement described in detail nine alternatives, numbered 1-9, and was accompanied by a tenth Preferred Alternative. One of these nine, Alternative 8, was eliminated from detailed consideration in the FEIS for the reasons previously discussed. In order not to confuse comparison with the Revised Supplement, and because some of the analysis specific to alternatives is retained by the FEIS, the original numbering has been retained. The Preferred Alternative from the Revised Supplement is numbered Alternative 10. The Preferred Alternative in this FEIS is Alternative 11. There are thus ten alternatives considered in detail, Alternatives 1-7 and 9-11.

2 Alternatives

Alternative 11, the final Preferred Alternative, was developed from Alternative 10 (the former Preferred Alternative) considering public and agency comments on the Revised Supplement, and using additional analysis (as presented in Chapter 3 of the FEIS). In terms of its major components, outputs and effects, Alternative 11 most closely resembles Alternative 3.

**Table 2-3
Alternative Component Options**

Component	Alternative									
	1	2	3	4	5	6	7	9	10	11
Alternative Base	1992 A	1992 P	1992 P	1992 P	1992 P	1992 P	1992 D++	Current Plan (No Action) ⁽²⁾	1992 P	Alt. 10
Reserve Strategy ⁽¹⁾	None	None	All	None	4 Prov.	4 Prov.	None	None	All	All
Aver. Timber Stand Rotation (Years)	200	100	100	200	200	100	100	100	100	100
Silvicultural System	UM	ES	2A	UM, 2A	UM, 2A	UM, 2A	ES	ES	ES, 2A	ES
VCU Harvest Thresholds (%)	None	None	None	25%/ 50 yr	25%/ 50 yr	50%/ 50 yr	None	None	None	None
OG Retention/VCU	None	None	None	33%	33%	33%	None	Retention	None	None
Riparian Habitat:										
FHIP 1 Watershed	Opt 2	Opt 3	Opt 1	Opt 2	Opt 2	Opt 2	Opt 3	TTRA/BMP	Opt 2	Opt 2A
All others	Opt 3	Opt 3	Opt 2	Opt 3	Opt 3	Opt 3	Opt 3	TTRA/BMP	Opt 3	Opt 2A
Beach1 (0-500')	S/G	S/G	S/G	S/G	S/G	S/G	None	None	S/G	S/G
Beach2 (500-1000')	S/G, UM	None	S/G, UM	S/G, UM	S/G, UM	S/G, UM	None	None	None	S/G
Estuary (0-1000')	S/G	S/G	S/G	S/G	S/G	S/G	None	None	S/G	S/G
Karst/Caves	K/C S/G	92 S/G	K/C S/G	K/C S/G	K/C S/G	K/C S/G	92 S/G	Cave Act	K/C S/G	K/C S/G
Deer Winter range	Yes	No	Yes	Yes	Yes	Yes	No	No	No	No

¹ This component refers to the use of a system of [old-growth habitat reserves](#) to address wildlife viability. Such a system is in addition to reserves that may already exist, such as within [Wilderness](#) or Legislated LUD II areas. The layout of the system is different for Alternative 11 than for Alternatives 3 and 10.

² Implementation of projects under the Current Plan typically goes beyond current direction in providing protection for [riparian areas](#) and [karst](#) and [cave](#) areas; the retention method provides selected recognition of deer [winter range](#) and beach fringe, and eagle nest buffers also provide beach fringe protection. This table, however, is designed to represent only what is actually direction under the Current Plan.

Definitions

Reserves:

All = Large, Medium, and Small reserves proposed by the Interagency Viable population Committee (Suring et al. 1993).

4 Provinces = N. POW, Kupreanof/Mitkof, Dall Isl., NE Chichagof, + individual reserves (Myers Chuck, Lake Eva, Wright Lake).

Silvicultural system:

UM = Unevenaged Management (single tree/group selection).

ES = Evenaged Short Rotation (approximately 80-150 years, depending upon site potential).

2A = Two-aged stand management (permanent retention of 10-20% of trees during harvest).

Riparian:*

Option 1 (Lowest Risk) - expanded [riparian corridors](#) on Class I-III streams, exclusion of high hazard soils, etc.

Options 2 and 2A (Lower Risk) - expanded riparian corridors on Class I-III streams (but less so than Option 1), etc.

Option 3 (Higher Risk) - 1991 SDEIS "Stream and Lake Protection" LUD.

TTRA/BMP (Highest Risk) - [Tongass Timber Reform Act/Best Management Practices](#).

FHIP = Forest Habitat Integrity Project: FHIP 1 - highest quality watersheds for sport/commercial fish.

Deer Winter range: Application of management standards to maintain important deer winter range.

Karst/Caves: K/C S/G - Lower risk standards and guidelines; 92 S/G - Moderate risk standards and guidelines; Cave Act - Protect only identified caves.*

***The levels of risk indicated are relative terms only. They do not imply absolute risk levels.**

Goals Common to All Alternatives

Air. Maintain the current air resource condition to protect the Forest's [ecosystems](#) from on- and off-Forest air emission sources.

Biodiversity. Maintain healthy forest ecosystems; a mix of habitats at different spatial scales (site, [watershed](#), island, province, and forest) capable of supporting the full range of naturally occurring flora, fauna, and ecological processes native to Southeast Alaska.

Fish. Maintain or restore the natural range and frequency of aquatic [habitat](#) conditions on the Tongass National Forest to sustain the [diversity](#) and production of fish and other freshwater organisms.

Heritage Resources. Identify, evaluate, preserve, and protect heritage resources.

Local and Regional Economies. Provide a diversity of opportunities for resource uses that contribute to the local and regional economies of Southeast Alaska.

Rare Natural Areas. Protect a variety of areas with natural, scenic, or geologic features distinct to the region, including areas set aside specifically for future research needs.

Research. Continue to seek out and promote research opportunities that are consistent with identified information needs.

Soil and Water. Maintain [soil productivity](#) Forest-wide, and minimize soil erosion resulting from land-disturbing activities. Minimize [sediment](#) transported to streams from land-disturbing activities. Maintain and restore the biological, physical, and chemical integrity of Tongass National Forest waters.

Subsistence. Provide for the continuation of subsistence uses and resources by all rural Alaskan residents.

Wetlands. Minimize the destruction, loss or [degradation](#) of wetlands, and preserve and enhance the associated wetland functions and values.

Wilderness. Manage designated [Wilderness](#) to maintain an enduring wilderness resource while providing for public access and uses consistent with the Wilderness Act of 1964 and the Alaska National Interest Lands Conservation Act of 1980 ([ANILCA](#)).

2 Alternatives

Alternative 1

Theme

The theme and purpose of this alternative is to emphasize high-quality fish and wildlife habitat, unroaded areas, wild, scenic, and recreational rivers, scenic quality, [subsistence](#) use, and a wide range of recreation and tourism opportunities in a natural setting. Geographic areas mentioned in public comments as deserving of protection, and all identified [recreation places](#), are assigned non-development LUD's.

Goals

Karst and Caves

Maintain and protect [caves](#) and [karst](#) ecosystems Forest-wide.

Minerals

Encourage environmentally sound [mineral exploration](#), development and reclamation in areas open to [mineral entry](#), and for valid existing rights in closed areas, while protecting other resource needs and values. Seek withdrawal of areas where [mineral development](#) is not allowed by a specific [Land Use Designation](#).

Recreation and Tourism

Provide a wide range of recreation opportunities in a natural setting, with emphasis on identified [recreation places](#) and areas identified by the public.

Scenery

Maintain visually-appealing scenery Forest-wide. Limit extensive landscape modifications to seldom-seen areas, consistent with the other resource goals.

Timber

Manage timber to maintain forest structure, function and dynamics similar to existing natural conditions. Within this context, provide opportunities for small-scale [timber production](#) using [uneven-aged management](#) systems.

Transportation and Utilities

Develop and manage roads as required to support resource management [objectives](#). Allow the development of utility systems.

Wild and Scenic Rivers

Maintain the outstandingly remarkable features of rivers recommended for designation as components of the National [Wild and Scenic Rivers](#) System.

Wildlife Habitat

Maintain as much contiguous, undisturbed [old-growth](#) habitat as possible, with emphasis on identified high-value areas for old-growth associated species, to provide a high likelihood of insuring the maintenance of [viable populations](#). Minimize adverse effects from human activities through road and facility management.

Objectives

Manage suitable timber lands using uneven-aged systems with an average management age of 200 years.

Apply riparian management option 2 to watersheds with the highest fisheries values (see Table 2-3); riparian management option 3 to the rest.

Use the full beach and estuary fringe standards and guidelines (1,000-foot beach [corridor](#) and 1,000-foot estuary corridor).

Apply the [Forest-wide standards and guidelines](#) for [karst](#) areas and [caves](#).

Apply Forest-wide standards and guidelines for deer [winter range](#).

Recommend 6 new [Research Natural Areas](#), 16 new [Special Interest Areas](#), and all 112 eligible Wild, Scenic and Recreational Rivers.

Do not apply the Minerals or [Transportation and Utility Systems](#) LUD's.

Table 2-4 (1)
Land Use Designation Allocations for Alternative 1⁽¹⁾

Land Use Designation	Acres Allocated
Wilderness	2,622,913
Wilderness National Monument	3,098,820
Nonwilderness National Monument	163,654
Research Natural Area	26,672
Special Interest Area	173,582
Remote Recreation	4,590,131
Enacted Municipal Watershed	9,713
Old-growth Habitat	63,497
Semi-remote Recreation	4,850,194
Land Use Designation II	719,000
Wild, Scenic, Recreational River	329,904
Experimental Forest	17,260
Scenic Viewshed	820
Modified Landscape	0
Timber production	222,052
Minerals	0

⁽¹⁾ When more than one [Land Use Designation](#) is applied to the same area (such as a [Special Interest Area](#) within [Wilderness](#)), only the acreage of the more-restrictive LUD is included, except that total Wilderness, Wilderness National Monument, and Land Use Designation II acres are always shown. For the Minerals LUD, which is always an overlay, acreages are separately included. No acreages have been calculated for the [Transportation and Utility Systems](#) LUD.

2 Alternatives

Table 2-5 (1)
Selected Dimensions of Alternative 1⁽¹⁾

Resource/Category	Output/Measure
Recreation Opportunity Spectrum Class: (Recreation Visitor Days)	
Primitive and Semi-primitive Non-motorized	1,432,000
Semi-primitive Motorized	1,666,000
Roaded Natural and Roaded Modified	1,850,000
Recreation Construction/Reconstruction:	
Trails (miles)	7
Developed Sites (persons at one time)	190
Visual Quality Objectives: (acres, excluding Wilderness)	
Retention	5,920,967
Partial retention	4,877,611
Modification	1,180
Maximum Modification	220,912
River Recommendations (miles):	
Wild River	1,085
Scenic River	154
Recreational River	55
Suitable Timber Lands (acres)	0
Allowable Sale Quantity: (million cubic feet/million board feet) (2)	
Non-interchangeable component I	0/0
Non-interchangeable component II	0/0
Total	0/0
Timber Harvest by System (acres):	
Even-aged (clearcut) management	0
Two-aged management	0
Uneven-aged management	0
Precommercial thinning (acres)	0
Road Construction (miles)	0
Fish/Wildlife Improvement Projects:	
Fish projects (number)	16
Non-structural wildlife projects (acres)	9,300
Structural wildlife projects (number)	1,190
Total Budget (dollars)	52,765,000

⁽¹⁾ All figures are average annual amounts for the first decade (1997-2006) except for [Visual Quality Objectives](#), river recommendations, and tentatively suitable timber lands.

⁽²⁾ For each category two equivalent figures are given: the first is volume expressed in million cubic feet, the second the same volume expressed in million board feet. All timber volumes are [sawlogs](#) plus utility. Totals may not add due to rounding.

Alternative 2

Theme

The theme and purpose of this alternative is to emphasize scenery, recreation and tourism, [subsistence](#) uses, and [timber production](#). Many of the more important wildlife habitats, recreation and [subsistence](#) opportunities, and scenic values will be maintained in a natural setting. Resources that will contribute to the local and regional economies of Southeast Alaska are emphasized.

Goals

Karst and Caves

Protect [caves](#), and maintain selected [karst](#) features.

Minerals

Encourage environmentally sound [mineral exploration](#), development and reclamation in areas open to [mineral entry](#), and for valid existing rights in closed areas, while protecting other resource needs and values. Seek withdrawal of areas where [mineral development](#) is not allowed by a specific [Land Use Designation](#).

Recreation and Tourism

Provide a range of recreation opportunities consistent with public demand, with emphasis on [recreation places](#) identified as being popular with local users or important to the tourism industry.

Scenery

Provide Forest visitors with visually appealing scenery, with emphasis on areas seen along the Alaska Marine Highway, State highways and major Forest roads, and popular [recreation places](#). In other areas, where landscapes are altered by management activities, the activity may dominate the characteristic landscape.

Timber

Manage the timber resource for the production of sawtimber and other wood products from suitable timber lands made available for timber harvest, on an even-flow, [Long-term Sustained Yield](#) basis and in an economically efficient manner. Seek to provide a timber supply sufficient to meet the annual market demand for timber, and the market demand for the planning cycle.

Transportation and Utilities

Develop and manage roads to support resource management activities. Recognize the potential for the future development of major [Transportation and Utility Systems](#).

Wild and Scenic Rivers

Maintain the outstandingly remarkable features of rivers recommended for designation as components of the National Wild and Scenic Rivers System.

2 Alternatives

Wildlife Habitat

Maintain contiguous [old-growth](#) habitat in selected areas, and provide some likelihood of insuring the maintenance of [viable populations](#). Minimize adverse impacts from human activities through road and facility management.

Objectives

Manage suitable timber lands using even-aged systems with an average [rotation age](#) of 100 years.

Apply riparian management option 3 to all watersheds.

Apply beach and estuary fringe standards and guidelines (500-foot beach [corridor](#) and 1,000-foot estuary corridor).

Use the [Forest-wide standards and guidelines](#) for [caves](#) from the 1992 FEIS.

Recommend 6 new [Research Natural Areas](#), 16 new [Special Interest Areas](#), and 25 Wild, Scenic and Recreational Rivers.

Apply the Minerals LUD to 12 mineral activity tracts with high development potential.

Apply the [Transportation and Utility Systems](#) LUD to selected State-identified potential highways and utility transmission corridors.

Table 2-4 (2)
Land Use Designation Allocations for Alternative 2⁽¹⁾

Land Use Designation	Acres Allocated
Wilderness	2,622,913
Wilderness National Monument	3,098,820
Nonwilderness National Monument	163,654
Research Natural Area	26,672
Special Interest Area	173,582
Remote Recreation	2,310,239
Enacted Municipal Watershed	9,713
Old-growth Habitat	49,685
Semi-remote Recreation	2,461,558
Land Use Designation II	719,000
Wild, Scenic, Recreational River	90,505
Experimental Forest	17,260
Scenic Viewshed	810,199
Modified Landscape	851,484
Timber production	3,477,368
Minerals	166,215

⁽¹⁾ When more than one [Land Use Designation](#) is applied to the same area (such as a [Special Interest Area](#) within [Wilderness](#)), only the acreage of the more-restrictive LUD is included, except that total Wilderness, Wilderness National Monument, and Land Use Designation II acres are always shown. For the Minerals LUD, which is always an overlay, acreages are separately included. No acreages have been calculated for the [Transportation and Utility Systems](#) LUD.

Table 2-5 (2)
Selected Dimensions of Alternative 2⁽¹⁾

Resource/Category	Output/Measure
Recreation Opportunity Spectrum Class: (Recreation Visitor Days)	
Primitive and Semi-primitive Non-motorized	1,405,000
Semi-primitive Motorized	1,639,000
Roaded Natural and Roaded Modified	1,902,000
Recreation Construction/Reconstruction:	
Trails (miles)	7
Developed Sites (persons at one time)	190
Visual Quality Objectives: (acres, excluding Wilderness)	
Retention	3,551,073
Partial retention	3,079,740
Modification	452,668
Maximum Modification	3,944,635
River Recommendations (miles):	
Wild River	287.5
Scenic River	86.5
Recreational River	57
Suitable Timber Lands (acres)	1,180,000
Allowable Sale Quantity: (million cubic feet/million board feet) (2)	
Non-interchangeable component I	91/375
Non-interchangeable component II	22/87
Total	113/463
Timber Harvest by System (acres):	
Even-aged (clearcut) management	14,705
Two-aged management	0
Uneven-aged management	0
Precommercial thinning (acres)	592
Road Construction (miles)	190
Fish/Wildlife Improvement Projects:	
Fish projects (number)	16
Non-structural wildlife projects (acres)	9,300
Structural wildlife projects (number)	1,190
Total Budget (dollars)	90,675,000

⁽¹⁾ All figures are average annual amounts for the first decade (1997-2006) except for [Visual Quality Objectives](#), river recommendations, and tentatively suitable timber lands.

⁽²⁾ For each category two equivalent figures are given: the first is volume expressed in million cubic feet, the second the same volume expressed in million board feet. All timber volumes are sawlog plus utility. Totals may not add due to rounding.

2 Alternatives

Alternative 3

Theme

The theme and purpose of this alternative is to provide a mix of National Forest uses and activities similar to Alternative 2, with additional emphasis on fish and wildlife habitat protection and the [karst](#) and [caves](#) resource, and less emphasis on some resource uses contributing to the local and regional economies of Southeast Alaska.

Goals

Karst and Caves

Maintain and protect [caves](#) and [karst](#) ecosystems Forest-wide.

Minerals

Encourage environmentally sound [mineral exploration](#), development and reclamation in areas open to [mineral entry](#), and for valid existing rights in closed areas, while protecting other resource needs and values. Seek withdrawal of areas where [mineral development](#) is not allowed by a specific [Land Use Designation](#).

Recreation and Tourism

Provide a range of recreation opportunities consistent with public demand, with emphasis on [recreation places](#) identified as being popular with local users or important to the tourism industry.

Scenery

Provide Forest visitors with visually appealing scenery, with emphasis on areas seen along the Alaska Marine Highway, State highways and major Forest roads, and popular [recreation places](#). In other areas, where landscapes are altered by management activities, the activity may dominate the characteristic landscape.

Timber

Manage the timber resource for production of sawtimber and other wood products from suitable timber lands made available for timber harvest, on an even-flow, [Long-term Sustained Yield](#) basis and in an economically efficient manner. Seek to provide a timber supply sufficient to meet the annual market demand for timber, and the market demand for the planning cycle.

Transportation and Utilities

Develop and manage roads and utility system opportunities to support resource management activities. Recognize the potential for future development of major [Transportation and Utility Systems](#).

Wild and Scenic Rivers

Maintain the outstandingly remarkable features of rivers recommended for designation as components of the National [Wild and Scenic Rivers](#) System.

Wildlife Habitat

Maintain a system of [old-growth](#) habitat areas as part of a strategy to provide a moderately-high likelihood of insuring the maintenance of [viable populations](#). Minimize adverse impacts from human activities through road and facility management.

Objectives

Manage suitable timber lands using two-aged systems with an average management age of 100 years.

Apply riparian management option 1 to watersheds with the highest fisheries values (see Table 2-3); riparian management option 2 to the rest.

Apply a Forest-wide system of large, medium, and small [old-growth reserves](#) following the criteria in the [Old-growth](#) Habitat LUD.

Use the full beach and estuary fringe standards and guidelines (1,000-foot beach [corridor](#) and 1,000-foot estuary corridor).

Forest-wide standards and guidelines for [karst](#) areas and [caves](#) are applied.

Apply Forest-wide standards and guidelines for deer [winter range](#).

Recommend 6 new [Research Natural Areas](#), 16 new [Special Interest Areas](#), and 25 Wild, Scenic and Recreational Rivers.

Apply the Minerals LUD to 12 mineral activity tracts with high development potential.

Apply the [Transportation and Utility Systems](#) LUD to selected State-identified potential highways and utility transmission corridors.

2 Alternatives

Table 2-4 (3)
Land Use Designation Allocations for Alternative 3⁽¹⁾

Land Use Designation	Acres Allocated
Wilderness	2,622,913
Wilderness National Monument	3,098,820
Nonwilderness National Monument	163,654
Research Natural Area	26,672
Special Interest Area	173,582
Remote Recreation	2,310,239
Enacted Municipal Watershed	9,713
Old-growth Habitat	963,259
Semi-remote Recreation	2,461,558
Land Use Designation II	719,000
Wild, Scenic, Recreational River	90,505
Experimental Forest	17,260
Scenic Viewshed	572,232
Modified Landscape	675,812
Timber production	2,977,433
Minerals	166,215

⁽¹⁾ When more than one [Land Use Designation](#) is applied to the same area (such as a [Special Interest Area](#) within [Wilderness](#)), only the acreage of the more-restrictive LUD is included, except that total Wilderness, Wilderness National Monument, and Land Use Designation II acres are always shown. For the Minerals LUD, which is always an overlay, acreages are separately included. No acreages have been calculated for the [Transportation and Utility Systems](#) LUD.

Table 2-5 (3)
Selected Dimensions of Alternative 3⁽¹⁾

Resource/Category	Output/Measure
Recreation Opportunity Spectrum Class: (Recreation Visitor Days)	
Primitive and Semi-primitive Non-motorized	1,415,000
Semi-primitive Motorized	1,647,000
Roaded Natural and Roaded Modified	1,883,000
Recreation Construction/Reconstruction:	
Trails (miles)	7
Developed Sites (persons at one time)	190
Visual Quality Objectives: (acres, excluding Wilderness)	
Retention	4,422,726
Partial retention	2,908,900
Modification	366,293
Maximum Modification	3,330,198
River Recommendations (miles):	
Wild River	287.5
Scenic River	86.5
Recreational River	57
Suitable Timber Lands (acres)	795,000
Allowable Sale Quantity: (million cubic feet/million board feet) ⁽²⁾	
Non-interchangeable component I	51/210
Non-interchangeable component II	12/46
Total	62/256
Timber Harvest by System (acres):	
Even-aged (clearcut) management	0
Two-aged management	9,423
Uneven-aged management	82
Precommercial thinning (acres)	1,575
Road Construction (miles)	104
Fish/Wildlife Improvement Projects:	
Fish projects (number)	16
Non-structural wildlife projects (acres)	9,300
Structural wildlife projects (number)	1,190
Total Budget (dollars)	70,820,000

⁽¹⁾ All figures are average annual amounts for the first decade (1997-2006) except for [Visual Quality Objectives](#), river recommendations, and tentatively suitable timber lands.

⁽²⁾ For each category two equivalent figures are given: the first is volume expressed in million cubic feet, the second the same volume expressed in million board feet. All timber volumes are sawlog plus utility. Totals may not add due to rounding.

2 Alternatives

Alternative 4

Theme

The theme and purpose of this alternative is to provide a mix of National Forest uses and activities similar to Alternative 2, with additional emphasis on fish and wildlife habitat protection and the [karst](#) and [caves](#) resource, and less emphasis on some resource uses contributing to the local and regional economies of Southeast Alaska.

Goals

Karst and Caves

Maintain and protect [caves](#) and [karst](#) ecosystems Forest-wide.

Minerals

Encourage environmentally sound [mineral exploration](#), development and reclamation in areas open to [mineral entry](#), and for valid existing rights in closed areas, while protecting other resource needs and values. Seek withdrawal of areas where [mineral development](#) is not allowed by a specific [Land Use Designation](#).

Recreation and Tourism

Provide a range of recreation opportunities consistent with public demand, with emphasis on [recreation places](#) identified as being popular with local users or important to the tourism industry.

Scenery

Provide Forest visitors with visually appealing scenery, with emphasis on areas seen along the Alaska Marine Highway, State highways and major Forest roads, and popular [recreation places](#). In other areas, where landscapes are altered by management activities, the activity may dominate the characteristic landscape.

Timber

Manage the timber resource for the production of sawtimber and other wood products from suitable timber lands made available for timber harvest, on an even-flow, [Long-term Sustained Yield](#) basis and in an economically efficient manner. Seek to provide a timber supply sufficient to meet the annual market demand for timber, and the market demand for the planning cycle.

Transportation and Utilities

Develop and manage roads and utility system opportunities to support resource management activities. Recognize the potential for the future development of major [Transportation and Utility Systems](#).

Wild and Scenic Rivers

Maintain the outstandingly remarkable features of rivers recommended for designation as components of the National [Wild and Scenic Rivers](#) System.

Wildlife Habitat

Maintain as much contiguous [old-growth](#) habitat as possible for old-growth associated species to provide a high likelihood of insuring the maintenance of [viable populations](#). Minimize adverse impacts from human activities through road and facility management.

Objectives

Manage suitable timber lands using two-aged systems with an average management age of 200 years.

Within each VCU where timber harvest is scheduled: harvest no more than 25 percent of the productive [old growth](#) during any 50-year period; retain a minimum of 33 percent of the VCU in an old-growth forest condition.

Apply riparian management option 2 to watersheds with the highest fisheries values (see Table 2-3); riparian management option 3 to the rest.

Use the full beach and estuary fringe standards and guidelines (1,000-foot beach [corridor](#) and 1,000-foot estuary corridor).

[Forest-wide standards and guidelines](#) for [karst](#) areas and [caves](#) are applied.

Apply Forest-wide standards and guidelines for deer [winter range](#).

Recommend 6 new [Research Natural Areas](#), 16 new [Special Interest Areas](#), and 25 Wild, Scenic and Recreational Rivers.

Apply the Minerals LUD to 12 mineral activity tracts with high development potential.

Apply the [Transportation and Utility Systems](#) LUD to selected State-identified potential highways and utility transmission corridors.

2 Alternatives

Table 2-4 (4)
Land Use Designation Allocations for Alternative 4⁽¹⁾

Land Use Designation	Acres Allocated
Wilderness	2,622,913
Wilderness National Monument	3,098,820
Nonwilderness National Monument	163,654
Research Natural Area	26,672
Special Interest Area	173,582
Remote Recreation	2,310,239
Enacted Municipal Watershed	9,713
Old-growth Habitat	49,685
Semi-remote Recreation	2,461,558
Land Use Designation II	719,000
Wild, Scenic, Recreational River	90,505
Experimental Forest	17,260
Scenic Viewshed	810,199
Modified Landscape	851,484
Timber production	3,477,368
Minerals	166,215

⁽¹⁾ When more than one [Land Use Designation](#) is applied to the same area (such as a [Special Interest Area](#) within [Wilderness](#)), only the acreage of the more-restrictive LUD is included, except that total Wilderness, Wilderness National Monument, and Land Use Designation II acres are always shown. For the Minerals LUD, which is always an overlay, acreages are separately included. No acreages have been calculated for the [Transportation and Utility Systems](#) LUD.

Table 2-5 (4)
Selected Dimensions of Alternative 4⁽¹⁾

Resource/Category	Output/Measure
Recreation Opportunity Spectrum Class: (Recreation Visitor Days)	
Primitive and Semi-primitive Non-motorized	1,419,000
Semi-primitive Motorized	1,652,000
Roaded Natural and Roaded Modified	1,876,000
Recreation Construction/Reconstruction:	
Trails (miles)	7
Developed Sites (persons at one time)	190
Visual Quality Objectives: (acres, excluding Wilderness)	
Retention	3,551,073
Partial retention	3,079,740
Modification	452,668
Maximum Modification	3,944,635
River Recommendations (miles):	
Wild River	287.5
Scenic River	86.5
Recreational River	57
Suitable Timber Lands (acres)	845,000
Allowable Sale Quantity: (million cubic feet/million board feet) ⁽²⁾	
Non-interchangeable component I	26/107
Non-interchangeable component II	6/23
Total	32/130
Timber Harvest by System (acres):	
Even-aged (clearcut) management	0
Two-aged management	6,288
Uneven-aged management	0
Precommercial thinning (acres)	0
Road Construction (miles)	52
Fish/Wildlife Improvement Projects:	
Fish projects (number)	16
Non-structural wildlife projects (acres)	9,300
Structural wildlife projects (number)	1,190
Total Budget (dollars)	58,410,000

⁽¹⁾ All figures are average annual amounts for the first decade (1997-2006) except for [Visual Quality Objectives](#), river recommendations, and tentatively suitable timber lands.

⁽²⁾ For each category two equivalent figures are given: the first is volume expressed in million cubic feet, the second the same volume expressed in million board feet. All timber volumes are sawlog plus utility. Totals may not add due to rounding.

2 Alternatives

Alternative 5

Theme

The theme and purpose of this alternative is to provide a mix of National Forest uses and activities similar to Alternative 2, with additional emphasis on fish and wildlife habitat protection and the [karst](#) and [caves](#) resource, and less emphasis on some resource uses contributing to the local and regional economies of Southeast Alaska.

Goals

Karst and Caves

Maintain and protect [caves](#) and [karst](#) ecosystems Forest-wide.

Minerals

Encourage environmentally sound [mineral exploration](#), development and reclamation in areas open to [mineral entry](#), and for valid existing rights in closed areas, while protecting other resource needs and values. Seek withdrawal of areas where [mineral development](#) is not allowed by a specific [Land Use Designation](#).

Recreation and Tourism

Provide a range of recreation opportunities consistent with public demand, with emphasis on [recreation places](#) identified as being popular with local users or important to the tourism industry.

Scenery

Provide Forest visitors with visually appealing scenery, with emphasis on areas seen along the Alaska Marine Highway, State highways and major Forest roads, and popular [recreation places](#). In other areas, where landscapes are altered by management activities, the activity may dominate the characteristic landscape.

Timber

Manage the timber resource for the production of sawtimber and other wood products from suitable timber lands made available for timber harvest, on an even-flow, [Long-term Sustained Yield](#) basis and in an economically efficient manner. Seek to provide a timber supply sufficient to meet the annual market demand for timber, and the market demand for the planning cycle.

Transportation and Utilities

Develop and manage roads and utility system opportunities to support resource management activities. Recognize the potential for the future development of major [Transportation and Utility Systems](#).

Wild and Scenic Rivers

Maintain the outstandingly remarkable features of rivers recommended for designation as components of the National [Wild and Scenic Rivers](#) System.

Wildlife Habitat

Maintain as much contiguous [old-growth](#) habitat as possible for old-growth associated species to provide a high likelihood of insuring the maintenance of [viable populations](#). Minimize adverse impacts from human activities through road and facility management.

Objectives

Manage suitable timber lands using uneven-aged and two-aged systems with an average management age of 200 years.

Apply a system of large, medium, and small [old-growth reserves](#), or individual reserves, to the [biogeographic provinces](#) and other areas specified in Table 2-1.

Within each VCU where timber harvest is scheduled: harvest no more than 25 percent of the productive [old growth](#) during any 50-year period; retain a minimum of 33 percent of the VCU in an old-growth forest condition.

Apply riparian management option 2 to watersheds with the highest fisheries values (see Table 2-3); riparian management option 3 to the rest.

Use the full beach and estuary fringe standards and guidelines (1,000-foot beach [corridor](#) and 1,000-foot estuary corridor).

[Forest-wide standards and guidelines](#) for [karst](#) areas and [caves](#) are applied.

Apply Forest-wide standards and guidelines for deer [winter range](#).

Recommend 6 new [Research Natural Areas](#), 16 new [Special Interest Areas](#), and 25 Wild, Scenic and Recreational Rivers.

Apply the Minerals LUD to 12 mineral activity tracts with high development potential.

Apply the [Transportation and Utility Systems](#) LUD to selected State-identified potential highways and utility transmission corridors.

2 Alternatives

Table 2-4 (5)
Land Use Designation Allocations for Alternative 5⁽¹⁾

Land Use Designation	Acres Allocated
Wilderness	2,622,913
Wilderness National Monument	3,098,820
Nonwilderness National Monument	163,654
Research Natural Area	26,672
Special Interest Area	173,582
Remote Recreation	2,306,311
Enacted Municipal Watershed	9,713
Old-growth Habitat	441,989
Semi-remote Recreation	2,431,490
Land Use Designation II	719,000
Wild, Scenic, Recreational River	90,505
Experimental Forest	17,260
Scenic Viewshed	754,330
Modified Landscape	750,181
Timber production	3,276,232
Minerals	166,215

⁽¹⁾ When more than one [Land Use Designation](#) is applied to the same area (such as a [Special Interest Area](#) within [Wilderness](#)), only the acreage of the more-restrictive LUD is included, except that total Wilderness, Wilderness National Monument, and Land Use Designation II acres are always shown. For the Minerals LUD, which is always an overlay, acreages are separately included. No acreages have been calculated for the [Transportation and Utility Systems](#) LUD.

Table 2-5 (5)
Selected Dimensions of Alternative 5⁽¹⁾

Resource/Category	Output/Measure
Recreation Opportunity Spectrum Class: (Recreation Visitor Days)	
Primitive and Semi-primitive Non-motorized	1,420,000
Semi-primitive Motorized	1,653,000
Roaded Natural and Roaded Modified	1,871,000
Recreation Construction/Reconstruction:	
Trails (miles)	7
Developed Sites (persons at one time)	190
Visual Quality Objectives: (acres, excluding Wilderness)	
Retention	3,881,020
Partial retention	3,041,219
Modification	421,656
Maximum Modification	3,684,220
River Recommendations (miles):	
Wild River	287.5
Scenic River	86.5
Recreational River	57
Suitable Timber Lands (acres)	786,000
Allowable Sale Quantity: (million cubic feet/million board feet) ⁽²⁾	
Non-interchangeable component I	24/100
Non-interchangeable component II	6/22
Total	30/122
Timber Harvest by System (acres):	
Even-aged (clearcut) management	0
Two-aged management	4,550
Uneven-aged management	0
Precommercial thinning (acres)	0
Road Construction (miles)	49
Fish/Wildlife Improvement Projects:	
Fish projects (number)	16
Non-structural wildlife projects (acres)	9,300
Structural wildlife projects (number)	1,190
Total Budget (dollars)	57,635,000

⁽¹⁾ All figures are average annual amounts for the first decade (1996-2005) except for [Visual Quality Objectives](#), river recommendations, and tentatively suitable timber lands.

⁽²⁾ For each category two equivalent figures are given: the first is volume expressed in million cubic feet, the second the same volume expressed in million board feet. All timber volumes are sawlog plus utility. Totals may not add due to rounding.

2 Alternatives

Alternative 6

Theme

The theme and purpose of this alternative is to provide a mix of National Forest uses and activities similar to Alternative 2, with additional emphasis on fish and wildlife habitat protection and the [karst](#) and [caves](#) resource, and more emphasis than Alternative 3-5 on resources contributing to the local and regional economies of Southeast Alaska.

Goals

Karst and Caves

Maintain and protect [caves](#) and [karst](#) ecosystems Forest-wide.

Minerals

Encourage environmentally sound [mineral exploration](#), development and reclamation in areas open to [mineral entry](#), and for valid existing rights in closed areas, while protecting other resource needs and values. Seek withdrawal of areas where [mineral development](#) is not allowed by a specific [Land Use Designation](#).

Recreation and Tourism

Provide a range of recreation opportunities consistent with public demand, with emphasis on [recreation places](#) identified as being popular with local users or important to the tourism industry.

Scenery

Provide Forest visitors with visually appealing scenery, with emphasis on areas seen along the Alaska Marine Highway, State highways and major Forest roads, and popular recreation areas. In other areas, where landscapes are altered by management activities, the activity may dominate the characteristic landscape.

Timber

Manage the timber resource for the production of sawtimber and other wood products from suitable timber lands made available for timber harvest, on an even-flow, [Long-term Sustained Yield](#) basis and in an economically efficient manner. Seek to provide a timber supply sufficient to meet the annual market demand for timber, and the market demand for the planning cycle.

Transportation and Utilities

Develop and manage roads and utility system opportunities to support resource management activities. Recognize the potential for the future development of major [Transportation and Utility Systems](#).

Wild and Scenic Rivers

Maintain the outstandingly remarkable features of rivers recommended for designation as components of the National [Wild and Scenic Rivers](#) System.

Wildlife Habitat

Maintain contiguous [old-growth](#) habitat for old-growth associated species, and provide a moderate likelihood of insuring the maintenance of [viable populations](#). Minimize adverse impacts from human activities through road and facility management.

Objectives

Manage suitable timber lands using uneven-aged and two-aged systems with an average management age of 100 years.

Apply a system of large, medium, and small [old-growth reserves](#), or individual reserves, to the [biogeographic provinces](#) and other areas specified in Table 2-1.

Within each VCU where timber harvest is scheduled: harvest no more than 50 percent of the productive [old growth](#) during any 50-year period; retain a minimum of 33 percent of the VCU in an old-growth forest condition.

Apply riparian management option 2 to watersheds with the highest fisheries values (see Table 2-3); riparian management option 3 to the rest.

Use the full beach and estuary fringe standards and guidelines (1,000-foot beach [corridor](#) and 1,000-foot estuary corridor).

Forest-wide standards and guidelines for [karst](#) areas and [caves](#) are applied.

Apply [Forest-wide standards and guidelines](#) for deer [winter range](#).

Recommend 6 new [Research Natural Areas](#), 16 new [Special Interest Areas](#), and 25 Wild, Scenic and Recreational Rivers.

Apply the Minerals LUD to 12 mineral activity tracts with high development potential.

Apply the [Transportation and Utility Systems](#) LUD to selected State-identified potential highways and utility transmission corridors.

2 Alternatives

Table 2-4 (6)
Land Use Designation Allocations for Alternative 6⁽¹⁾

Land Use Designation	Acres Allocated
Wilderness	2,622,913
Wilderness National Monument	3,098,820
Nonwilderness National Monument	163,654
Research Natural Area	26,672
Special Interest Area	173,582
Remote Recreation	2,306,311
Enacted Municipal Watershed	9,713
Old-growth Habitat	441,989
Semi-remote Recreation	2,431,490
Land Use Designation II	719,000
Wild, Scenic, Recreational River	90,505
Experimental Forest	17,260
Scenic Viewshed	754,330
Modified Landscape	750,181
Timber production	3,276,232
Minerals	166,215

⁽¹⁾ When more than one [Land Use Designation](#) is applied to the same area (such as a [Special Interest Area](#) within [Wilderness](#)), only the acreage of the more-restrictive LUD is included, except that total Wilderness, Wilderness National Monument, and Land Use Designation II acres are always shown. For the Minerals LUD, which is always an overlay, acreages are separately included. No acreages have been calculated for the [Transportation and Utility Systems](#) LUD.

Table 2-5 (6)
Selected Dimensions of Alternative 6⁽¹⁾

Resource/Category	Output/Measure
Recreation Opportunity Spectrum Class: (Recreation Visitor Days)	
Primitive and Semi-primitive Non-motorized	1,408,000
Semi-primitive Motorized	1,641,000
Roaded Natural and Roaded Modified	1,892,000
Recreation Construction/Reconstruction:	
Trails (miles)	7
Developed Sites (persons at one time)	190
Visual Quality Objectives: (acres, excluding Wilderness)	
Retention	3,955,923
Partial retention	3,004,871
Modification	416,157
Maximum Modification	3,646,920
River Recommendations (miles):	
Wild River	287.5
Scenic River	86.5
Recreational River	57
Suitable Timber Lands (acres)	1,024,000
Allowable Sale Quantity: (million cubic feet/million board feet) ⁽²⁾	
Non-interchangeable component I	61/250
Non-interchangeable component II	15/59
Total	76/309
Timber Harvest by System (acres):	
Even-aged (clearcut) management	0
Two-aged management	11,437
Uneven-aged management	88
Precommercial thinning (acres)	1,575
Road Construction (miles)	124
Fish/Wildlife Improvement Projects:	
Fish projects (number)	16
Non-structural wildlife projects (acres)	9,300
Structural wildlife projects (number)	1,190
Total Budget (dollars)	76,960,000

⁽¹⁾ All figures are average annual amounts for the first decade (1996-2005) except for [Visual Quality Objectives](#), river recommendations, and tentatively suitable timber lands.

⁽²⁾ For each category two equivalent figures are given: the first is volume expressed in million cubic feet, the second the same volume expressed in million board feet. All timber volumes are sawlog plus utility. Total may not add due to rounding.

2 Alternatives

Alternative 7

Theme

The theme and purpose of this alternative is to provide an economic timber supply from public lands to meet market demand in Southeast Alaska. Management of other resources will be done in an efficient manner consistent with the emphasis on timber supply, and while meeting environmental standards. Some areas with low timber volumes will be managed with an emphasis on wildlife, [subsistence](#), recreation, scenery and other non-commodity values.

Goals

Karst and Caves

Protect [caves](#), and maintain selected [karst](#) features.

Minerals

Emphasize the development of mineral resources in areas with known development potential. Encourage environmentally sound [mineral exploration](#), development and reclamation in areas open to [mineral entry](#), and for valid existing rights in closed areas, while protecting other resource needs and values.

Recreation and Tourism

Provide recreation and tourism opportunities consistent with the emphasis on [timber production](#).

Scenery

Maintain visually appealing scenery in areas where [timber production](#) is not a goal. In areas where significant ground-disturbing activities will occur, allow extensively modified landscapes.

Timber

Manage the timber resource for the maximum production of sawtimber and related wood products from suitable timber lands made available for timber harvest, on an even-flow, [Long-term Sustained Yield](#) basis and in an economically efficient manner. Seek to provide a timber supply sufficient to meet the annual market demand for timber, and the market demand for the planning cycle.

Transportation and Utilities

Develop and manage roads and utility system opportunities to support resource management activities. Recognize the potential for the future development of major [Transportation and Utility Systems](#).

Wild and Scenic Rivers

Maintain the outstandingly remarkable features of rivers recommended for designation as components of the National [Wild and Scenic Rivers](#) System.

Wildlife Habitat

Provide for [diversity](#) of plant and animal communities based on the suitability and capability of specific land areas to meet overall multiple-use objectives.

Objectives

Manage suitable timber lands using even-aged systems with an average [rotation age](#) of 100 years.

Apply riparian management option 3 to all watersheds.

The beach and estuary fringe standards and guidelines are not applied.

Use the [Forest-wide standards and guidelines](#) for [caves](#) from the 1992 FEIS.

Recommend 4 new [Research Natural Areas](#), 2 new [Special Interest Areas](#), and 11 Wild, Scenic and Recreational Rivers.

Apply the Minerals LUD to 23 mineral activity tracts with high development potential.

Apply the [Transportation and Utility Systems](#) LUD to selected State-identified potential highways and utility transmission corridors.

Table 2-4 (7)
Land Use Designation Allocations for Alternative 7⁽¹⁾

Land Use Designation	Acres Allocated
Wilderness	2,622,913
Wilderness National Monument	3,098,820
Nonwilderness National Monument	163,654
Research Natural Area	23,490
Special Interest Area	21,084
Remote Recreation	1,224,232
Enacted Municipal Watershed	9,713
Old-growth Habitat	0
Semi-remote Recreation	1,202,627
Land Use Designation II	719,000
Wild, Scenic, Recreational River	0
Experimental Forest	17,260
Scenic Viewshed	0
Modified Landscape	1,478,436
Timber production	6,301,423
Minerals	291,030

⁽¹⁾ When more than one [Land Use Designation](#) is applied to the same area (such as a [Special Interest Area](#) within [Wilderness](#)), only the acreage of the more-restrictive LUD is included, except that total Wilderness, Wilderness National Monument, and Land Use Designation II acres are always shown. For the Minerals LUD, which is always an overlay, acreages are separately included. No acreages have been calculated for the [Transportation and Utility Systems](#) LUD.

2 Alternatives

Table 2-5 (7)
Selected Dimensions of Alternative 7⁽¹⁾

Resource/Category	Output/Measure
Recreation Opportunity Spectrum Class: (Recreation Visitor Days)	
Primitive and Semi-primitive Non-motorized	1,386,000
Semi-primitive Motorized	1,587,000
Roaded Natural and Roaded Modified	1,946,000
Recreation Construction/Reconstruction:	
Trails (miles)	7
Developed Sites (persons at one time)	190
Visual Quality Objectives: (acres, excluding Wilderness)	
Retention	1,994,765
Partial retention	1,288,071
Modification	1,010,389
Maximum Modification	6,725,256
River Recommendations (miles):	
Wild River	211
Scenic River	0
Recreational River	0
Suitable Timber Lands (acres)	1,575,000
Allowable Sale Quantity: (million cubic feet/million board feet) ⁽²⁾	
Non-interchangeable component I	126/520
Non-interchangeable component II	30/120
Total	156/640
Timber Harvest by System (acres):	
Even-aged (clearcut) management	20,297
Two-aged management	0
Uneven-aged management	0
Precommercial thinning (acres)	3,165
Road Construction (miles)	263
Fish/Wildlife Improvement Projects:	
Fish projects (number)	16
Non-structural wildlife projects (acres)	9,300
Structural wildlife projects (number)	1,190
Total Budget (dollars)	108,935,000

⁽¹⁾ All figures are average annual amounts for the first decade (1997-2006) except for [Visual Quality Objectives](#), river recommendations, and tentatively suitable timber lands.

⁽²⁾ For each category two equivalent figures are given: the first is volume expressed in million cubic feet, the second the same volume expressed in million board feet. All timber volumes are sawlog plus utility. Totals may not add due to rounding.

Alternative 9 (No Action)

Theme

This is the “No Action” alternative which represents the [management direction](#) of the current Tongass Land Management Plan (as approved in 1979, comprehensively amended in 1986, and amended again in 1991 to reflect certain provisions of the [Tongass Timber Reform Act](#) of 1990). Under this alternative, the Tongass National Forest would continue to be managed under the current [land allocations](#) reflected in the Plan’s four basic [Land Use Designations](#) (the LUD’s and LUD variations previously described, as displayed on the enclosed map for Alternative 9), and related Plan direction. The related direction includes the Plan’s Goals; Anticipated Outputs and an [Allowable Sale Quantity](#); Standards and Guidelines (which are provided by the Alaska Regional Guide and currently applied Regional policies and guidance); [Management Area](#) direction (which includes Area-specific Management Direction/Emphasis statements; various scheduled management activities (which are now outdated); and some additional Standards and Guidelines); and requirements for Monitoring and Evaluating the on-going implementation of the Plan. This management direction is contained in the Plan (1986 Alaska Region Administrative Document Number 147 which amended and superseded the original 1979 Plan, as further amended in 1991), the 1991 TLMP map, and in the Alaska Regional Guide (1983 Alaska Region Administrative Document Number 126b) and Appendix B of its related Final Environmental Impact Statement. The land use opportunities provided by the current Plan’s LUD allocations, as bounded by the related Plan direction, would continue to be available to Forest users under this alternative.

A total of 141 [Management Areas](#) were established by the current Plan. Each of these areas consists of one or more of the 867 [Value Comparison Units](#) (VCU’s) the entire Forest was originally divided into for planning purposes. The VCU’s are watersheds or small islands which averaged about 17,500 acres in size. The Management Areas, the VCU’s they contain, and how the VCU’s were allocated to the various LUD’s are shown on the 1991 TLMP map.

In anticipation of protection measures that would be needed for certain wildlife, fish and visual resources when implementing the plan, a Retention Factor method was applied during the original planning process. Use of this method in calculating the Plan’s 450 million board feet (average annual, [net sawlog volume](#)) [Allowable Sale Quantity](#) variously reduced the average of operable (and predominantly [old-growth](#)) forest land that might otherwise have been scheduled for timber harvest in each of the VCU’s that were allocated to LUD’s III and IV (under which commercial timber harvest is permitted). A total of 1.7 million acres of operable forest land were scheduled for harvest within VCU’s allocated to LUD’s III and IV. A total of 273,000 acres of operable forest land were retained to provide wildlife and fish habitat, and 244,000 acres were programmed for harvest over extended rotation periods for visual resource management purposes, as a result of applying the Retention Factor method.

This alternative also reflects the [RPA](#) Program resource objective for Timber Sale Offerings displayed in the Alaska Regional Guide.

Goals

The stated goals of the current Forest Plan follow. The current Forest Plan does not have a stated goal for [Karst](#) and [Caves](#). However, current [management practices](#) at the project level are protecting caves and maintaining selected karst features.

2 Alternatives

Fish

The goal is to maintain and enhance the natural fisheries resources by managing some of the highest quality watersheds in ways which would not modify them significantly. In those where major management activities will take place, adequate protection of the aquatic environment will be provided. In addition, it is the intent to take advantage of as many identified fisheries enhancement opportunities as possible.

Minerals

The goal is to facilitate the orderly development of mineral resources in accordance with current regulations and applicable laws.

Recreation

The goal is to provide a broad spectrum of recreation opportunities with emphasis on maintaining natural areas with the highest wildlife, sport fish, and [dispersed recreation](#) assets. (Note: The Recreation and the Tourism goals are intended to provide appropriate recreation opportunities for both resident and non-resident recreation publics. The improvement of recreation facilities to accommodate increasing tourism would also be oriented to satisfy local recreation needs, for example.)

Tourism

The goal is to improve recreation facilities and attractions near communities for the use of visitors to Southeast Alaska, by managing these areas with a high degree of protection for their natural attractive features while developing access and required recreation facilities.

Visual

The goal is to maintain the scenic qualities of the most highly viewed landscapes on the Forest by managing many of these areas in ways which would not modify them significantly. In those areas where management activity will take place, projects will be designed to be compatible with the natural elements of the visual resource.

Timber Management

The goal is to make enough timber available from National Forest lands to maintain current levels of timber-related employment within the context of the total timber available from other land ownerships. (Note: As originally established in this Plan, current levels of employment are based on average timber industry conditions that were prevalent during the 1970 to 1976 period. The legislative history of the Alaska National Interest Lands Act of 1980 ([ANILCA](#)) indicates the Congressional decisions relating to the supply of timber from the Tongass National Forest related to the employment generated from timber harvested on the National Forest.)

Hydroelectric Power

The goal is to facilitate the development of hydroelectric power sites with identified high development potential by managing those sites, and their attendant transmission corridors, in ways which will allow development of these facilities with due consideration of the other various resources.

Road Corridors

The goal is to insure that as many as possible of the potential road corridors identified by the Southeast Alaska Multimodal Transportation Study (an on-going study by the Alaska Department of Transportation during the 1976-1979 [planning period](#)) be managed to allow their development with due consideration of the various resources.

Wildlife

The goal is to maintain and enhance the natural productivity of the Forest’s wildlife habitat by managing many of the highest quality areas in ways which would not significantly modify them. In those areas where major modifications will occur, those changes will be designed to have the least adverse effects possible on wildlife.

Objectives

**Table 2-4 (9)
Land Use Designation Allocations for Alternative 9⁽¹⁾**

Land Use Designation	Acres Allocated
LUD I	5,671,680
National Monument Nonwilderness	170,200
Unallocated Released Lands	304,710
Subtotal	6,146,590
LUD II	2,437,880
Legislated	722,480
Unallocated Forest Additions	1,122,900
Subtotal	4,283,260
LUD III	2,304,320
Special	148,380
Subtotal	2,452,700
LUD IV	3,824,450

⁽¹⁾ These acreages are from the [Land allocation](#) Summary on the 1991 TLMP map and do not reflect the current acreages contained in the Revision data base, which are used in describing this alternative throughout the rest of this document. While not shown on the TLMP map as LUD’s, the Forest also contains six existing [Research Natural Areas](#), various [Special Interest Areas](#), an Enacted Municipal Watershed, and two Experimental Forests.

2 Alternatives

Table 2-5 (9)
Selected Dimensions of Alternative 9⁽¹⁾

Resource/Category	Output/Measure
Recreation Opportunity Spectrum Class: (Recreation Visitor Days)	
Primitive and Semi-primitive Non-motorized	1,394,000
Semi-primitive Motorized	1,599,000
Roaded Natural and Roaded Modified	1,924,000
Recreation Construction/Reconstruction:	
Trails (miles)	7
Developed Sites (persons at one time)	190
Visual Quality Objectives: (acres, excluding Wilderness)	
Retention	5,160,505
Partial retention	1,090,184
Modification	354,184
Maximum Modification	4,413,637
River Recommendations (miles):	
Wild River	0
Scenic River	0
Recreational River	0
Suitable Timber Lands (acres)	1,390,000
Allowable Sale Quantity: (million cubic feet/million board feet) ⁽²⁾	
Non-interchangeable component I	108/447
Non-interchangeable component II	26/102
Total	134/549
Timber Harvest by System (acres):	
Even-aged (clearcut) management	17,428
Two-aged management	0
Uneven-aged management	0
Precommercial thinning (acres)	991
Road Construction (miles)	225
Fish/Wildlife Improvement Projects:	
Fish projects (number)	16
Non-structural wildlife projects (acres)	9,300
Structural wildlife projects (number)	1,190
Total Budget (dollars)	97,360,000

⁽¹⁾ All figures are average annual amounts for the first decade (1997-2006) except for [Visual Quality Objectives](#), river recommendations, and tentatively suitable timber lands. For Alternative 9, many of the dimensions in this table have been created using the Revision database for purposes of alternative comparisons, and are not always reflective of what the Current Plan actually contains.

⁽²⁾ For each category two equivalent figures are given: the first is volume expressed in million cubic feet, the second the same volume expressed in million board feet. All timber volumes are sawlog plus utility. Totals may not add due to rounding.

Alternative 10

Theme

The theme and purpose of this alternative is to provide a mix of National Forest uses and activities similar to Alternative 2, with additional emphasis on fish and wildlife habitat protection and the [karst](#) and [caves](#) resource, and less emphasis on some resource uses contributing to the local and regional economies of Southeast Alaska. This was the Revised Supplement Preferred Alternative.

Goals

Karst and Caves

Maintain and protect [caves](#) and [karst](#) ecosystems Forest-wide.

Minerals

Encourage environmentally sound [mineral exploration](#), development and reclamation in areas open to [mineral entry](#), and for valid existing rights in closed areas, while protecting other resource needs and values. Seek withdrawal of areas where [mineral development](#) is not allowed by a specific [Land Use Designation](#).

Recreation and Tourism

Provide a range of recreation opportunities consistent with public demand, with emphasis on [recreation places](#) identified as being popular with local users or important to the tourism industry.

Scenery

Provide Forest visitors with visually appealing scenery, with emphasis on areas seen along the Alaska Marine Highway, State highways and major Forest roads, and popular [recreation places](#). In other areas, where landscapes are altered by management activities, the activity may dominate the characteristic landscape.

Timber

Manage the timber resource for production of sawtimber and other wood products from suitable timber lands made available for timber harvest, on an even-flow, [Long-term Sustained Yield](#) basis and in an economically efficient manner. Seek to provide a timber supply sufficient to meet the annual market demand for timber, and the market demand for the planning cycle.

Transportation and Utilities

Develop and manage roads and utility system opportunities to support resource management activities. Recognize the potential for future development of major [Transportation and Utility Systems](#).

Wild and Scenic Rivers

Maintain the outstandingly remarkable features of rivers recommended for designation as components of the National [Wild and Scenic Rivers](#) System.

2 Alternatives

Wildlife Habitat

Maintain a system of [old-growth](#) habitat areas as part of a strategy to provide a moderately-high likelihood of insuring the maintenance of [viable populations](#). Minimize adverse impacts from human activities through road and facility management.

Objectives

Manage suitable timber lands using two-aged systems with an average management age of 100 years.

Apply riparian management option 2 to watersheds with the highest fisheries values (see Table 2-3); riparian management option 3 to the rest.

Apply a Forest-wide system of large, medium, and small [old-growth reserves](#) following the criteria in the Old-growth Habitat LUD.

Apply beach and estuary fringe standards and guidelines (500-foot beach [corridor](#) and 1,000-foot estuary corridor).

[Forest-wide standards and guidelines](#) for [karst](#) areas and [caves](#) are applied.

Recommend 6 new [Research Natural Areas](#), 16 new [Special Interest Areas](#), and 25 Wild, Scenic and Recreational Rivers.

Apply the Minerals LUD to 12 mineral activity tracts with high development potential.

Apply the [Transportation and Utility Systems](#) LUD to selected State-identified potential highways and utility transmission corridors.

Table 2-4 (10)
Land Use Designation Allocations for Alternative 10⁽¹⁾

Land Use Designation	Acres Allocated
Wilderness	2,622,913
Wilderness National Monument	3,098,820
Nonwilderness National Monument	163,654
Research Natural Area	26,672
Special Interest Area	173,582
Remote Recreation	2,310,239
Enacted Municipal Watershed	9,713
Old-growth Habitat	963,259
Semi-remote Recreation	2,461,558
Land Use Designation II	719,000
Wild, Scenic, Recreational River	90,505
Experimental Forest	17,260
Scenic Viewshed	572,232
Modified Landscape	675,812
Timber production	2,977,433
Minerals	166,215

⁽¹⁾ When more than one [Land Use Designation](#) is applied to the same area (such as a [Special Interest Area](#) within [Wilderness](#)), only the acreage of the more-restrictive LUD is included, except that total Wilderness, Wilderness National Monument, and Land Use Designation II acres are always shown. For the Minerals LUD, which is always an overlay, acreages are separately included. No acreages have been calculated for the [Transportation and Utility Systems](#) LUD.

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Table 2-5 (10)
Selected Dimensions of Alternative 10⁽¹⁾

Resource/Category	Output/Measure
Recreation Opportunity Spectrum Class: (Recreation Visitor Days)	
Primitive and Semi-primitive Non-motorized	1,409,000
Semi-primitive Motorized	1,642,000
Roaded Natural and Roaded Modified	1,887,000
Recreation Construction/Reconstruction:	
Trails (miles)	7
Developed Sites (persons at one time)	190
Visual Quality Objectives: (acres, excluding Wilderness)	
Retention	4,422,726
Partial retention	2,908,900
Modification	366,293
Maximum Modification	3,330,198
River Recommendations (miles):	
Wild River	287.5
Scenic River	86.5
Recreational River	57
Suitable Timber Lands (acres)	924,000
Allowable Sale Quantity: (million cubic feet/million board feet) ⁽²⁾	
Non-interchangeable component I	59/245
Non-interchangeable component II	14/55
Total	73/300
Timber Harvest by System (acres):	
Even-aged (clearcut) management	0
Two-aged management	11,168
Uneven-aged management	0
Precommercial thinning (acres)	1,575
Road Construction (miles)	121
Fish/Wildlife Improvement Projects:	
Fish projects (number)	16
Non-structural wildlife projects (acres)	9,300
Structural wildlife projects (number)	1,190
Total Budget (dollars)	75,905,000

⁽¹⁾ All figures are average annual amounts for the first decade (1997-2006) except for [Visual Quality Objectives](#), river recommendations, and tentatively suitable timber lands.

⁽²⁾ For each category two equivalent figures are given: the first is volume expressed in million cubic feet, the second the same volume expressed in million board feet. All timber volumes are sawlog plus utility. Totals may not add due to rounding.

Alternative 11

Theme

The theme and purpose of this alternative is to provide a mix of National Forest uses and activities with an emphasis on fish and wildlife habitat protection and the [karst](#) and [caves](#) resource, and less emphasis on some resource uses contributing to the local and regional economies of Southeast Alaska. This is the FEIS Preferred Alternative.

Goals

Karst and Caves

Maintain and protect significant [caves](#) and [karst](#) ecosystems Forest-wide.

Minerals

Provide for environmentally sound [mineral exploration](#), development and reclamation in areas open to [mineral entry](#), and in areas with valid existing rights that are otherwise closed to mineral entry. Seek withdrawal of specific locations where [mineral development](#) may not meet [Land Use Designation](#) objectives.

Recreation and Tourism

Provide a range of recreation opportunities consistent with public demand, with emphasis on [recreation places](#) identified as being popular with local users or important to the tourism industry.

Scenery

Provide Forest visitors with visually appealing scenery, with emphasis on areas seen along the Alaska Marine Highway, State highways, major Forest roads, and popular [recreation places](#). Recognize, that in other areas where landscapes are altered by management activities, the activity may dominate the characteristic landscape.

Timber

Manage the timber resource for production of sawtimber and other wood products from suitable timber lands made available for timber harvest, on an even-flow, [Long-term Sustained Yield](#) basis and in an economically efficient manner.

Transportation and Utilities

Develop and manage roads and utility system opportunities to support resource management activities. Recognize the potential for future development of major [Transportation and Utility Systems](#).

Wild and Scenic Rivers

Maintain the outstandingly remarkable values and the free-flowing conditions of rivers designated or recommended for designation as components of the National [Wild and Scenic Rivers](#) System.

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Wildlife Habitat

Maintain the abundance and distribution of habitats, especially [old-growth](#) forests, to sustain [viable populations](#) in the planning area. Maintain [habitat capability](#) sufficient to produce wildlife populations that support the use of wildlife resources for sport, [subsistence](#), and recreational activities.

Objectives

Manage suitable timber lands using even-aged and two-aged systems with an average management age of 100 years.

Apply riparian management option 2A to all watersheds to implement the recommendations of the [Anadromous Fish Habitat Assessment](#) (1995).

Apply a Forest-wide system of mapped large, medium, and small [old-growth reserves](#) following the criteria in the Old-growth Habitat LUD.

Use the full beach and estuary fringe standards and guidelines (1,000-foot beach [corridor](#) and 1,000-foot estuary corridor).

[Forest-wide standards and guidelines](#) for [karst](#) areas and [caves](#) are applied.

Recommend 6 new [Research Natural Areas](#), 16 new [Special Interest Areas](#), and 32 Wild, Scenic and Recreational Rivers.

Apply the Minerals LUD to 12 mineral activity tracts with high development potential.

Apply the [Transportation and Utility Systems](#) LUD to selected State-identified potential highways and utility transmission corridors.

Table 2-4 (11)
Land Use Designation Allocations for Alternative 11⁽¹⁾

Land Use Designation	Acres Allocated
Wilderness	2,622,913
Wilderness National Monument	3,098,820
Nonwilderness National Monument	163,654
Research Natural Area	26,672
Special Interest Area	178,471
Remote Recreation	2,129,169
Enacted Municipal Watershed	9,713
Old-growth Habitat	1,130,069
Semi-remote Recreation	2,928,386
Land Use Designation II	719,000
Wild, Scenic, Recreational River	122,641
Experimental Forest	17,260
Scenic Viewshed	496,613
Modified Landscape	622,387
Timber production	2,580,821
Minerals	166,215

⁽¹⁾ When more than one [Land Use Designation](#) is applied to the same area (such as a [Special Interest Area](#) within [Wilderness](#)), only the acreage of the more-restrictive LUD is included, except that total Wilderness, Wilderness National Monument, and Land Use Designation II acres are always shown. For the Minerals LUD, which is always an overlay, acreages are separately included. No acreages have been calculated for the [Transportation and Utility Systems](#) LUD.

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Table 2-5 (11)
Selected Dimensions of Alternative 11⁽¹⁾

Resource/Category	Output/Measure
Recreation Opportunity Spectrum Class: (Recreation Visitor Days)	
Primitive and Semi-primitive Non-motorized	1,412,000
Semi-primitive Motorized	1,646,000
Roaded Natural and Roaded Modified	1,885,000
Recreation Construction/Reconstruction:	
Trails (miles)	7
Developed Sites (persons at one time)	190
Visual Quality Objectives: (acres, excluding Wilderness)	
Retention	4,753,475
Partial retention	3,208,617
Modification	427,088
Maximum Modification	2,770,216
River Recommendations (miles):	
Wild River	364.5
Scenic River	87.5
Recreational River	89.0
Suitable Timber Lands (acres)	676,000
Allowable Sale Quantity: (million cubic feet/million board feet) ⁽²⁾	
Non-interchangeable component I	53/219
Non-interchangeable component II	12/48
Total	65/267
Timber Harvest by System (acres):	
Even-aged (clearcut) management	6,654
Two-aged management	1,917
Uneven-aged management	0
Precommercial thinning (acres)	2,130
Road Construction (miles)	110
Fish/Wildlife Improvement Projects:	
Fish projects (number)	16
Non-structural wildlife projects (acres)	9,300
Structural wildlife projects (number)	1,190
Total Budget (dollars)	72,660,000

⁽¹⁾ All figures are average annual amounts for the first decade (1997-2006) except for [Visual Quality Objectives](#), river recommendations, and tentatively suitable timber lands.

⁽²⁾ For each category two equivalent figures are given: the first is volume expressed in million cubic feet, the second the same volume expressed in million board feet. All timber volumes are sawlog plus utility. Totals may not add due to rounding.

Comparison of Alternatives

This section will briefly present comparisons of the ten alternatives just described in detail, primarily focused on the [public issues](#) and based on the effects analysis in Chapter 3. The five focus issues, and additional issues from the 1991 SDEIS, will both be discussed. Table 2-6 summarizes the [Land Use Designation](#) allocations of the alternatives using LUD Group combinations. The four LUD Groups combine the individual LUD's in terms of similarities in management and/or potential effects, as described in the Introduction to Chapter 3. Table 2-7 includes some of the key outputs of the alternatives displayed in Tables 2-5(1-11). Both tables will be referred to in the following discussions. The reader is also referred back to Table 2-3, Alternative Component Options, which presents additional information about the alternatives in comparative form.

The 1980 [RPA](#) Program tentative resource objectives for the Tongass for the 1991-2000 time period are displayed in the Alaska Regional Guide. These tentative objectives have not been updated since the 1983 publication of the Guide. The relationships of the expected outputs of the alternatives to the main objectives are discussed below under their respective resource headings. The Forest's current [Wilderness](#) acreage exceeds the Program's Wilderness Management objective of 5,362,000 acres (see Table 2-6).

Table 2-6
Land Use Designation Group Comparisons (million acres)⁽¹⁾

Alternative	Wilderness	Natural Setting	Moderate Development	Intensive Development
1	5.9	10.8	<0.1	0.2
2	5.9	5.8	1.7	3.5
3	5.9	6.8	1.3	3.0
4	5.9	5.8	1.7	3.5
5	5.9	6.2	1.5	3.3
6	5.9	6.2	1.5	3.3
7	5.9	3.2	1.5	6.3
9	5.9	4.9	2.3	3.8
10	5.9	6.8	1.3	3.0
11	5.9	7.3	1.1	2.6

⁽¹⁾ LUD Group combinations are described in the Introduction to Chapter 3 (Table 3-1). For Alternative 9, "Unallocated Released Lands" (Table 2-2(9)) are included with the Natural Setting group acres, and the acreages are based on the Revision database and not Table 2-2(9).

Wildlife Habitat and Wildlife Viability

The analysis of these issues in Chapter 3 includes both short-term and long-term considerations. Potential short-term effects focus on areas within the Tongass that are currently experiencing, or may experience within the next decade, substantial adverse effects due to losses of [old-growth](#) habitat, and where current levels of deer harvesting (hunting) may not be sustainable. Alternative 1 schedules no additional timber harvesting. Alternatives 3, 5, 6, 10 and 11 include old-growth reserve systems in all or most of the major geographic areas of concern, and Alternatives 4 and 5 would reduce potential effects by using extended timber harvest rotations. Alternatives 3, 4, 5 and 6 also maintain important deer [winter range](#) in areas where deer harvesting is high, to provide continued deer harvesting opportunities at current levels. Alternatives 2, 7 and 9 would be expected to exacerbate existing problems. (See Table 2-3 for alternative-specific wildlife habitat measures.) [Subsistence](#) use associated with deer hunting will be correspondingly affected.

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Table 2-7
Selected alternative dimensions⁽¹⁾

Resource/Category	Alternative										
	1	2	3	4	5	6	7	9	10	11	
Recreation - ROS Opportunities (million RVD's)											
Primitive and Semi-primitive Non-motorized	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Semi-primitive Motorized	1.7	1.6	1.6	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.6
Roaded Natural and Roaded Modified	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Scenery - VQO's⁽²⁾ (million acres):											
Retention	5.9	3.6	4.4	3.6	3.9	4.0	2.0	5.2	4.4	4.8	
Partial retention	4.9	3.1	2.9	3.1	3.0	3.0	1.3	1.1	2.9	3.2	
Modification	<0.1	0.5	0.4	0.5	0.4	0.4	1.0	0.4	0.4	0.4	
Maximum Modification	0.2	3.9	3.3	3.9	3.7	3.6	6.7	4.4	3.3	2.8	
Timber:											
Suitable Lands (million acres)	0.0	1.2	0.8	0.8	0.8	1.0	1.6	1.4	0.9	0.7	
Sale Quantities (MMBF):⁽³⁾											
Non-interchangeable I	0	375	210	107	100	250	520	447	245	219	
Non-interchangeable II	0	87	46	23	22	59	120	102	55	48	
Allowable Sale Quantity	0	463	256	130	122	309	640	549	300	267	
Silvicultural system (1,000 acres):											
Even-aged	0	14.7	0	0	0	0	20.3	17.4	0	6.7	
Two-aged	0	0	9.4	6.3	4.6	11.4	0	0	11.2	1.9	
Uneven-aged	0	0	<0.1	0	0	<0.1	0	0	0	0	

¹ Abbreviations used: ROS = Recreation Opportunity Spectrum; RVD = Recreation Visitor Day; VQO = Visual Quality Objective; MMBF = million board feet. RVD's, sale quantities, and silvicultural system acreages are average annual amounts.

² Excluding Wilderness (5.7 million acres of Retention in all alternatives).

³ All timber volumes are sawlog plus utility

In the long-term, the ability of several alternatives to maintain habitats adequate to sustain well distributed viable wildlife populations Forest-wide is a concern, as suggested by the ratings from six wildlife species panel assessments. (As noted in Chapter 3, however, these ratings embody uncertainty about wildlife and habitat interactions, and are much better used for alternative comparisons than actual - or quantifiable - measures of risk.) The alternatives tended to cluster in groups, with Alternatives 1, 4 and 5 generally having the least risk to viability, and Alternatives 2, 7 and 9 the greatest risk. In terms of relative likelihoods of maintaining conditions in the future that would sustain well distributed viable populations, Alternatives 2, 7 and 9 rated lowest, Alternatives 3 and 6 somewhere in-between, and Alternatives 1, 4 and 5 highest. These relative ratings were fairly consistent between species overall, and the rankings (from low risk to high risk) very similar to those given by the old-growth ecosystem panel, and arrived at in other analyses (see both the Biodiversity and Wildlife environmental consequences sections in Chapter 3). Due to existing altered or degraded habitats, and their likely persistence over time, none of the alternatives was considered free from some level of risk.

Alternatives 10 and 11 were not rated by the panels. Alternative 10 is estimated to have a similar relative likelihood of maintaining habitat to sustain viable populations as Alternative 6. Alternative 11 is estimated to have a higher likelihood than Alternative 3, putting it closer to Alternatives 4 and 5.

All alternatives exceed the RPA Program Wildlife Habitat Improvement objective of 1,200 acres per year. At least 8,200 acres of wildlife habitat improvement is proposed under each alternative.

Fish Habitat

Most alternatives include combinations of three "Riparian Options" designed to minimize to various degrees potential adverse effects to fish habitat. Alternative 11 uses a fourth option. Options 2 and 2A incorporate recommendations from the [Anadromous Fish Habitat Assessment](#); Option 2A with somewhat lower risk than Option 2. Option 1 goes beyond these recommendations (lower risk), and Option 3 reflects the 1991 SDEIS proposals (higher risk). Alternative 3 applies Option 1 (the most protective) to key watersheds, and is the only alternative applying Option 2 to other watersheds. Alternative 11 applies Option 2A to all watersheds. Alternatives 1, 4, 5, 6 and 10 use Option 2 for key watersheds, Option 3 for the rest. Alternatives 2, 7 and 9 use either only Option 3 or only current direction (Alternative 9).

Beyond these riparian-area measures, risks to maintaining high-quality fish habitat come primarily from the amounts and methods of timber harvesting, and the associated amount of new roads constructed. These and other factors were considered by the Fish/Riparian panel. Their overall ranking of alternatives in terms of relative long-term risk to fish habitats Forest-wide, from lowest risk to highest, was: Alternatives 1, 5, 4, 3, 6, 2, 9 and 7. Alternative 10, not rated by the panel, is estimated to be similar in risk to Alternative 6. Alternative 11, also not rated, is estimated to fall somewhere between Alternatives 1 and 3.

Noticeable short-term effects to fish habitat are most likely to occur in watersheds where past and near-term future activities are concentrated. This is most likely in alternatives with the highest levels of permissible timber harvesting. These same alternatives project the greatest amounts of road construction over the next decade, and entry into more areas with steep slopes. Alternatives 2, 7 and 9 are distinctly higher in these categories, and also have the least-protective riparian measures. They thus have higher short-term potentials to adversely affect fisheries than the other alternatives. Alternative 1 has no additional timber harvesting or roads, and thus a very low risk. Alternatives 3, 4, 5, 6 and 10 all include at least Riparian Option 2 for key watersheds, helping to reduce short-term risks; Alternatives 6 and 10 have more timber harvest and roading and thus the higher risks within this group. Alternative 11, although projecting more timber harvest and roading than Alternatives 4 and 5, applies Riparian Option 2A to all watersheds and has a lower short-term risk than most alternatives in this group.

All of the alternatives exceed the RPA Program Anadromous Fish Improvement objective of 12,133,000 pounds per year. The estimated [anadromous fish](#) production of existing Cooperative Fisheries Enhancement Projects, which totals 17,702,200 pounds annually (see Fish section of chapter 3), already exceeds the Program objective, and additional fish projects are planned under each alternative.

Karst and Caves

All alternatives comply with the Federal [Cave](#) Resources Protection Act in protecting designated significant caves. However, the cave resources of the Tongass are a part of an extensive limestone landscape type known as [karst](#), which has complex relationships to water flows and forested lands. Fully protecting the cave resource requires a wider recognition of these karst areas. Special Karst and

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Caves Forest-wide standards and guidelines are applied in Alternatives 1, 3, 4, 5, 6, 10 and 11, and these alternatives are most likely to protect sensitive karst areas and the cave resource (still largely unexplored). Alternatives 2, 7 and 9 have less protection, and also greater amounts of timber harvesting, and pose a higher risk to karst areas and caves.

Timber Harvest and Alternatives to Clearcutting

Projected timber harvest levels, as inferred from the allowable sale quantities of the alternatives, range from 0 million board feet (MMBF) in Alternative 1 to 640 MMBF in Alternative 7. (These and the following are all average annual amounts for the first decade. See Table 2-7.) The allowable sale quantities (which are not targets, but ceilings and how much timber may be sold) are divided into two [non-interchangeable components](#) (NIC's) based on harvest economics and available technology. The NIC I portion is the amount considered likely to be economically viable over the next decade. It can be compared to the historic average harvest (340 MMBF per year average between 1980 and 1995 approximates NIC I, contrasted to an ASQ of 450 MMBF (net sawlog) for the same period). Alternatives 2, 7 and 9 have a NIC I sale quantity higher than this amount (Table 2-5), and would be most likely to allow the timber industry in Southeast Alaska to operate at or above historic levels. Alternatives 6 and 10 are somewhat below this average, but probably have sufficient NIC I volumes to meet long-term timber sale contract requirements and supply a viable independent timber sale program. Alternatives 3 and 11 are marginal in this regard. Alternatives 4 and 5 would probably not provide sufficient volume to meet long-term contract requirements, but could supply a viable independent sale program in the absence of such a contract. Alternative 1 has no timber harvest scheduled.

Alternatives 7 and 9 meet or exceed the 1983 [RPA](#) Program Timber Sale Offering objective of 450 MMBF per year (net sawlog). All other alternatives fall short of this objective.

Three alternative [silvicultural systems](#) were available as options for timber harvest in the forest plan alternatives: [even-aged management](#) (clearcutting), [two-aged management](#), and [uneven-aged management](#). (See Table 2-3.) Two harvest [rotation ages](#) were also available: an average 100-year rotation ("short" rotation), and an average 200-year rotation ("extended" rotation). The combination of even-aged management with 100-year rotations is the practice used currently, and forms the primary harvest system selected for Alternatives 2, 7, 9 and 11 (in 11 in combination with two-aged systems). Other combinations would be considered the "alternatives" to clearcutting.

The Timber section of Chapter 3 discusses the pros and cons of the different harvest systems, and describes the reasons for currently and historically using [even-aged management](#), which has been very successful in regrowing forests across the Tongass. For Southeast Alaska there are many unknowns surrounding the silvicultural alternatives to clearcutting and this translates into considerable uncertainty over their long-term success and effectiveness. This is rather a moot point for [uneven-aged management](#), however, since whether given the choice between it and the two-aged method (Alternatives 4, 5 and 6), or relying on it as the only method (Alternative 1), the computer planning model never selects it, uneven-aged management being generally uneconomic to use. Only in Alternatives 3 and 6 is a small amount of uneven-aged harvest scheduled (from areas where even-aged is not allowed).

Two-aged systems are used in Alternatives 3, 4, 5, 6, 10 and 11; in Alternatives 3, 6 and 10 using 100-year rotations, in Alternatives 4 and 5 using 200-year rotations, and in Alternative 11 in combination with even-aged systems and using 100-year rotations (see also Table 2-3). The differences in acres scheduled for harvest and sale quantities among these combinations can be seen in Table 2-7. Using two-aged rather than [even-aged management](#) with a 100-year rotation results in about 20 percent less timber volume scheduled for harvest (comparing Alternatives 2 and 6 and adjusting for the difference in suitable timber lands available). Using a 200-year rotation instead of 100 years, with all else being equal (comparing Alternative 5 and 6), results in a drop of over 60 percent in harvest volume. Besides the reduced timber volumes from two-aged harvest, the ultimate success of this method is not assured, nor have the anticipated benefits to wildlife and diversity been tested. The use of this method instead of clearcutting did not appear to influence the wildlife-related panel assessment ratings.

Socioeconomic Considerations

The analysis of social and economic effects includes an examination of regional (Southeast Alaska) industry and employment impacts, and a more qualitative look at potential effects to each of Southeast Alaska's 30+ communities (including effects on the availability of [subsistence](#) resources). The regional analysis concluded that only two employment sectors - timber and recreation/tourism - would show direct or indirect effects from Tongass management over the next decade. There is a fairly direct, linear relationship between the [Allowable Sale Quantity](#) of an alternative and the timber jobs that would result from the harvest of that quantity - down to a certain point. For alternatives with sale quantities - either ASQ or the NIC I portion of ASQ (these terms are explained earlier in this chapter) - insufficient to keep a known mill operation in business, offering sales below that amount would not necessarily provide employment. Alternatives 7, 9 and 2 all have allowable sale quantities adequate to support an increase in Tongass timber-related employment over the next decade. Alternatives 6 and 10 show a slight decrease, and the other alternatives progressively more of a decrease (Alternative 3, followed by 11, 4 and 5, followed by 1).

Employment in the recreation and tourism sectors (considered together in the analysis) increases moderately, and about the same amount, under all alternatives during the first decade.

Recreation and Tourism

Table 2-7 displays first-decade annual [Recreation Visitor Day](#) capacity under the alternatives. The differences result from changes in [Recreation Opportunity Spectrum](#) classes, which will occur slowly over several decades, and thus appear relatively minor for the first decade. On a longer-term basis, Alternatives 7 and 9 would result in a greater shift towards the roaded types of opportunities than the other alternatives.

None of the alternatives meet the [RPA](#) Program objectives for [Dispersed recreation](#) Use (2,174,000 RVD's per year) or [Developed recreation](#) Use (5,920,000 RVD's per year). Application of the [Recreation Opportunity Spectrum](#) system in the revision process has shown the Forest has the capacity for accommodating only about two-thirds of these usage levels (see Table 2-7).

LUD group allocations (Table 2-6) are another way to generally identify recreation opportunities. Outside of [Wilderness](#) (which is the same for all alternatives),

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"roadless" recreation availability can be equated to acres within the Natural Setting LUD group. Alternative 1 has a considerably larger acreage in this category than the other alternatives (10.8 million). Alternative 11 has over 7 million acres, Alternatives 3, 5, 6 and 10 all have over 6 million acres, and Alternatives 2 and 4 have 5.8 million. Alternatives 7 and 9 each have less than 5 million acres, with Alternative 7 the lowest at 3.2 million. "Roaded" recreation opportunities in the Moderate and Intensive Development groups are offered in the reverse of this order.

For the analysis of recreation and tourism, various types of "recreation places" - areas popular for specific types of recreation and for tourism - have been identified. In most cases, relatively undeveloped or natural settings for these places are preferred. Forest-wide, for all types of recreation places, Alternative 1 has the most recreation place acres in Natural Setting LUD's, followed by Alternatives 3, 10 and 11, then Alternatives 5 and 6, and then 2 and 4, all with fairly comparable recognition of recreation places. Alternatives 7 and 9 have the fewest recreation place acres in natural settings. Tourism recreation places are recognized in generally the same order and relative amount.

Scenery

Recognition of scenic quality through application of [Visual Quality Objectives](#) is indicated Forest-wide in Table 2-7. Outside of [Wilderness](#), the Retention and [Partial Retention](#) categories would be considered capable of maintaining natural or natural-appearing scenery. Acres in these combined categories are highest in Alternative 1. Alternatives 3, 6, 10 and 11 each have 7 million or more acres, closely followed by Alternatives 2, 4 and 5, then Alternative 9. Alternative 7 has considerably fewer acres in retention and partial retention objectives.

A list of "visual priority routes and use areas" has been developed to help recognize the areas most important for scenic values (by being most often seen by recreationists, local residents, tourists and travelers, etc.). Apart from Alternative 1 (which, with no additional timber harvest or road construction, has essentially no future alterations affecting scenic quality), Alternatives 2-6, 10 and 11 all include the majority of these routes and areas either in natural setting LUD's, or in the Scenic [Viewshed](#) and Modified Landscape LUD's, although portions of some are assigned to [Timber Production](#). Many are included in Alternative 9 in the LUD II and LUD III categories, but many are also allocated to LUD IV. Alternative 7 did not allocate LUD's based on these routes or areas, and did not use the Scenic [Viewshed](#) LUD.