

APPENDIX B

ANADROMOUS FISH HABITAT ASSESSMENT

INTERIM REPORT

April 1, 1994

USDA FOREST SERVICE

**ALASKA REGION
PACIFIC NORTHWEST RESEARCH STATION**



United States
Department of
Agriculture

Forest
Service

Alaska Region

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Reply to: 2600

Date: MAR 17 1994

Subject: FY 94 Appropriations Act for Interior and
Related Agencies - Interim Report on PACFISH on the Tongass

To: Chief

Enclosed for your transmittal to the Appropriation Committees is the Alaska Region and Pacific Northwest Research Station's Interim Report required by the Fiscal Year 1994 Appropriations Act for Interior and Related Agencies. It summarizes our actions to date, and our future plans to answer the two questions posed in the Conference Report for the Act. We will submit a Follow-up Report in the fall of 1994. Please contact Jack Capp at the Regional Office or Fred Everest at the Juneau Forestry Sciences Lab if you need more information.


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Enclosure

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TABLE OF CONTENTS

A) INTRODUCTION - PURPOSE OF STUDY	PG 1
B) ANALYSIS PROCESS	PG 2
C) RESULTS TO DATE AND PLANNED FUTURE ACTIONS	PG 3
D) RELATIONSHIP TO DECISION MAKING	PG 6
E) CONCLUSIONS	PG 6
ANADROMOUS FISH HABITAT ASSESSMENT PROCESS FLOW DIAGRAM	FIGURE 1

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
ALASKA REGION - PACIFIC NORTHWEST STATION

ANADROMOUS FISH HABITAT ASSESSMENT

INTERIM REPORT

Required by the FY 1994 Interior and Related Agencies Appropriations Act
April 1, 1994

A. Introduction - Purpose of Study

The USDA Forest Service ((USFS) and USDI Bureau of Land Management (BLM) have developed a protection and restoration strategy for Pacific Salmon and Steelhead habitats on USFS and BLM administered lands in the West called PACFISH. The Secretaries of Agriculture and Interior are currently evaluating the effects of its implementation.

The FY 1994 Appropriations Act for Interior and Related Agencies includes the following section:

"SEC. 321. None of the funds provided in this Act may be used to implement the Bureau of Land Management/United States Forest Service comprehensive strategy for Pacific salmon and steelhead habitat (PACFISH) or to impose interim guidelines for such strategy in the Tongass National Forest: Provided, That nothing in this section shall be construed to enlarge or diminish minimum timber no harvest buffer zones required by the Tongass Timber Reform Act or to enlarge or diminish site-specific management prescriptions which increase no harvest fish stream buffer zones applied under the Tongass Land Management Plan and existing standards and guidelines of the Tongass National Forest."

The Conference Committee Report on the Act also includes the following explanation of the Amendment: The specific actions called for are highlighted.

"The managers recognize that Alaska is the only State which has statutory minimum no harvest buffer zones on State, private, and Federal lands resulting from Federal and State laws. For this reason and because of the differences between the existing good condition of anadromous fish habitat in Alaska and other areas of the country, the managers have revised Senate proposed language to prohibit implementation of the PACFISH strategy in Alaska in 1994. The language also clarifies that this prohibition does not apply to any management prescriptions involving anadromous fish habitat under current standards and guidelines in the Tongass NF."

"The managers recognize that more studies are needed prior to making any decisions on implementing the strategy in Alaska. The Forest Service therefore should proceed with stream analyses and studies and review procedures related to the PACFISH strategy in 1994 in order to study the effectiveness of the current procedures, such as buffer strips, and to determine if any additional protection is needed. The Forest Service should provide an interim report on studies conducted to date to the Appropriations Committees by April 1, 1994. Funding for such studies and analyses shall come from salvage funds identified previously for that purpose and other programs such as soil, water and air, and research."

The purpose of this Interim Report is to describe how the Forest Service's Alaska Region and the Pacific Northwest Research Station are responding to direction in the Appropriations Act and conference report. Attached is a copy of our Assessment Plan which provides detailed information on this assessment. (Appendix 1)

The Alaska Region and the Pacific Northwest Station fully intend to complete an objective, comprehensive and scientifically sound study. The best information and professional skills available will be used. The Forest Service will not implement the PacFish strategy on the Tongass and Chugach National Forests in Fiscal year 1994.

B. Analysis Process

Three interdisciplinary technical analysis teams have been formed. The teams are composed of scientific and technical personnel from the Forest Service (FS), National Marine Fisheries Service, and Environmental Protection Agency (EPA). FS and EPA representatives from outside Alaska are included to provide science used in development of PACFISH, additional professional, scientific, and analytical skills and information, and help evaluate Alaska information in a broader perspective. Consultation with the Alaska State Government agencies, and the Alaska Working Group on Cooperative Forestry Fisheries Research is occurring. The teams will follow the process outlined in Figure 1. The teams will complete technical and scientific analyses and provide information, conclusions and findings to Congress and the FS.

The teams are:

1. The Regional Watershed Analysis Team (RWAT) is developing and testing protocols and procedures for conducting analysis of watersheds following the format of the Federal Agency Guide for Pilot Watershed Analysis. Three Tongass Area teams will test applicability of the watershed analysis procedures in three SE Alaska watersheds to best answer the questions stipulated in the Appropriations Act. The Regional Watershed Analysis Team includes seven technical specialists from the Alaska Region, one Forest Service scientist, one Forest Service technical specialist from California and one person from Alaska State Government acting as a consultant.
2. The Fish Habitat Analysis Team (FHAT) will identify fish habitat protection procedures and other elements that comprise current management direction and the proposed PACFISH strategy. The team will use information from coastal Alaska, British Columbia, the Pacific Northwest, information from the three Tongass Areas, research information from the PNW Station, results of the three pilot watershed analyses, and project plans designed after the test watershed analyses to produce a technical analysis report that will be used to answer the two questions required by the Appropriations Act. The Fish Habitat Analysis Team includes five technical specialists from the Forest Service Alaska Region, two Forest Service scientists, one technical specialist from the National Marine Fisheries Service, one specialist from the Forest Service Washington Office, and one technical specialist from the Alaska State Government acting as a consultant.
3. The FY 1994 Effectiveness Monitoring Team will evaluate current monitoring plans of work from the Ketchikan, Stikine, and Chatham Areas to recommend a Tongass-wide coordinated FY 1994 effectiveness monitoring program. The FY 1994 Effectiveness Monitoring Team includes six technical specialists from the Alaska Region, one Forest Service scientist, and one technical specialist from the Alaska State Government acting as a consultant.

C. Results to Date and Planned Future Actions

1) Fish Habitat Analysis Team:

The primary objective of FHAT is to answer the question: "Is current management effective at maintaining good fish habitat?" The team will also provide:

- 1) a description of current habitat management, including management procedures;
- 2) an assessment of the effectiveness of current management; and
- 3) a list of parameters that indicate good fish habitat.

Reviewing relevant laws and regional policies, FHAT developed a description of stated current management direction. All post-TTRA timber sale Records of Decision were identified.

FHAT defined management as effective when values of indicator parameters for a given watershed over time are consistent with a desired range of variability observed in undisturbed watersheds. FHAT proposes that the following components of aquatic ecosystems be used to measure the effectiveness of current management: 1) large woody debris; 2) sediment and substrate composition; 3) channel morphology; 4) off-channel habitat; 5) the health of the salmonid population; and 6) soil mass wasting. Fhat has not yet determined the desired range of values for these parameters. In addition, FHAT is reviewing a glossary of the technical terms applicable to these parameters.

FHAT is currently writing rationale why these components of habitat are the most relevant and useful as indicators of fish habitats and healthy functioning watersheds. The components list was provided to RWAT to ensure the information collected from analysis of the watersheds can be incorporated into FHAT's analysis. In addition, FHAT provided RWAT with minimum criteria for use in selecting the three test watersheds. These are described in the attached Assessment Plan.

One crucial next step for FHAT will be to determine the range of variability for parameter values indicative of healthy functioning watersheds. FHAT will use a channel-type database from SE Alaska and existing research information to determine those ranges. Fhat recognizes some natural systems, or parts of them, do not exhibit the characteristics of good fish habitat.

FHAT will update the existing Forest Service database on SE Alaska fish habitat quality plus contract for a literature review and annotated bibliography on fish habitat information in Alaska and similar habitats in the Pacific Northwest and British Columbia. The bibliography and literature review will focus on a wide range of source documents, from peer-reviewed work to unpublished in-house reports. While the team is primarily interested in studies conducted in Southeast Alaska forests, the bibliography will also provide references from coastal forests of Oregon, Washington and British Columbia. FHAT will then address implementation and monitoring information that may indicate the overall effectiveness of current management.

2) Regional Watershed Analysis Team:

The Regional Watershed Analysis Team (RWAT), in coordination with FHAT, has selected the following Tongass watersheds for analysis: Game Creek on the Chatham Area; Old Franks Creek on the Ketchikan Area; and Kadake Creek on the

Stikine Area.

An important step preceding the watershed analyses is identification of the analysis issues to be addressed. A hierarchy of issues relevant to fisheries habitat management was listed following the format of the Federal Agency Guide for Pilot Watershed Analysis. Regional issues were taken from the proposed national PACFISH Strategy and the Draft Tongass Land Management Plan Revision.

RWAT also helped identify the parameters needed to indicate anadromous fisheries habitat conditions. The process, organization, and timelines needed for completing the analysis of watersheds have also been identified. The next step is to get agreement with FHAT on parameter measurement protocols.

RWAT, in cooperation with the three Tongass areas, will complete three pilot watershed analyses. The resulting fish habitat conservation strategy from the pilot analyses will be compared with the fish habitat conservation strategy put in place by post-TTRA project Records of Decisions for the same pilot watersheds. The comparison will display the differences between the anticipated PACFISH procedures and current procedures as well as relative effectiveness of the two approaches.

3) FY 1994 Effectiveness Monitoring Team:

The Monitoring Team has reviewed draft and current effectiveness monitoring plans from the three Tongass Areas. The Monitoring Team, working with the three Tongass Areas, is carrying out a project to monitor the effectiveness of stream buffers required by the Tongass Timber Reform Act. Buffer effectiveness monitoring has been a significant issue with the environmental and scientific communities, and with the General Accounting Office (GAO). The Tongass NF received funding from the EPA, under Section 319 of the Clean Water Act, to conduct this evaluation.

The Monitoring Team facilitated the development of a partnership between the Pacific Northwest Station and the Ketchikan Area to study fish habitat effects of a 50-year storm event that occurred on Prince of Wales Island in October 93. The study focus is to compare the relative incidence, magnitude, and effects of landslides occurring on sites where timber was harvested under current habitat protection procedures, harvested where pre-TTRA procedures were implemented, and where no timber harvest has occurred. This study will help to determine how well habitat protection measures functioned during a large natural disturbance. A primary principle contained in PACFISH and the scientific literature is that fish habitat conditions must be maintained at a level high enough for fish populations to withstand large storm events in freshwater habitats.

The Team will review each Tongass Area's monitoring strategy and work plan for the FY 1994 field season, and will develop options for potential improvements for FY 1994 effectiveness monitoring. The Areas will complete revised FY 1994 effectiveness monitoring plans related to fish habitat quality by May 1, 1994. The Monitoring Team will evaluate and document how the three Tongass Area plans will provide better information across the Tongass.

4) Cooperation With Others

The Alaska Region and PNW Station are keeping all interested parties informed of progress in the Anadromous Fish Habitat Assessment. The Alaska Region is providing monthly updates to the Alaska Working Group on Cooperative Forestry, Fisheries Research. Briefings to individuals and organizations are being made

upon request. We will continue to provide opportunities for interested parties to comment on the assessment.

The Alaska Region has provided briefings to: Alaska Forestry Association, Alaska Citizens Advisory Commission on Federal Areas, Alaska Miners Association, Southeast Alaska Conference, Southeast Alaska Conservation Council, Alaska Working Group on Cooperative Forestry, Fisheries Research, Alaska Department of Fish and Game, Alaska Division of Governmental Coordination, Alaska Trollers Association, and various newspapers and radio stations. Briefings on the Assessment are planned for Alaska Federation of Natives, Tlingit - Haida Central Council, and the Southeast Regional Subsistence Advisory Council.

5) Biological Characteristics and Population Status of Southeast Alaska Salmon Stocks

The Alaska Region and the PNW Station are evaluating the status and biological characteristics of salmon stocks in Southeast Alaska. Draft reports are complete for chinook, coho, and sockeye and have been distributed for wide review. Draft reports on chum and pink salmon are progress.

Little information is available on salmon stocks in Southeast Alaska for use in our evaluation. Excluding pink salmon, over 4000 salmon stocks are estimated to occur in Southeast Alaska. Because of data limitations, population status has been evaluated for about 700 (16%) of these stocks. Thirty-one stocks (4% of those analyzed) show a significant increase in population size, while 61 stocks (9%) show a significant decline. Information on biological characteristics is more limited, with less than 200 (5%) stocks included in the analyses due to lack of data. Evaluations of results so far have resulted in identification of 40 biologically unique stocks. Very little is known about the large majority of salmon stocks in Southeast Alaska. Upon completion of this evaluation the Alaska Region and PNW Station will relate the findings to current habitat conditions and document this in our Follow-up Report.

The Alaska Chapter of the American Fisheries Society is in the process of conducting a study of "At Risk" anadromous salmonids similar to the Nelhsen, et. al. effort in Oregon, Washington, California and Idaho. Draft findings of this effort should be available by October 1994. Any available information from this effort will be considered in our Assessment and results incorporated in the Follow-up Report.

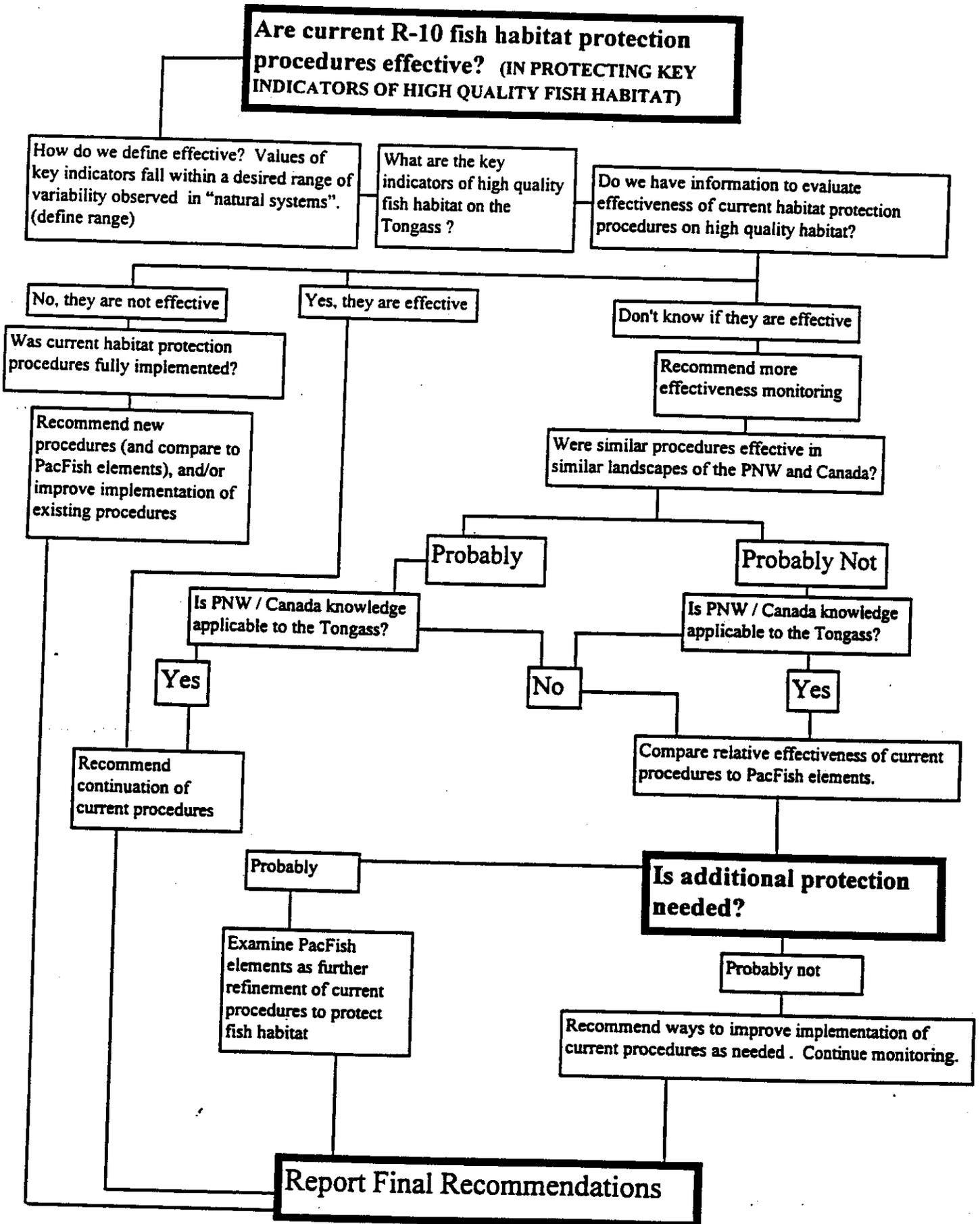
6) Watershed Restoration Needs Inventory

The Alaska Region and Station are developing a Draft Watershed Restoration Strategy. It will identify habitat restoration needs, future and current restoration concerns, restoration projects which are currently being planned and implemented, and Regional policy needs. Restoration projects on the Tongass will be focused on basin-wide treatments and fish habitat needs.

7) The Relationship of Factors Contributing to Salmon Production

The relationships among salmon harvest, salmon production, and timber harvest are complex and unclear. The relationships are complicated and great care must be taken in summarizing them. Recently, Alaska has had near record catches of salmon. At the same time, increased timber harvest levels have occurred. It is very unlikely a direct relationship exists between increased timber harvest and increased salmon harvests. Improved timber harvest practices, increased releases of hatchery - produced salmon, and oceanic conditions which favored

Figure 1 Anadromous Fish Habitat Assessment Plan Flow Diagram



salmon production and growth in the Gulf of Alaska, have occurred recently. Many factors influence production, growth, and harvest of salmon, including: conditions of fresh water and salt water habitats; levels of hatchery salmon releases and other impacts of hatchery fish on wild fish; weather during fish harvest seasons; structure of fish harvest seasons; fishing pressure; disease; and predation. Steelhead and anadromous cutthroat trout populations are generally declining throughout Alaska even though harvests of salmon have been increasing.

Historically, Alaska salmon harvests have fluctuated over a 20 to 30 year cycle. Peaks of salmon harvests have occurred in 1915, 1935, 1968, and 1991. Lows have occurred in 1921, 1960, and 1975. Southeast Alaska catches have mirrored this same cycle. Since about 1985 superior oceanic habitat conditions have contributed to excellent salmon survival and growth. For instance, coho salmon smolt to returning adult survival has a long term average rate of about 5%; but, in recent years the survival rate has approached 30% in some areas. Any reduced smolt output from streams could be masked by increased smolt-to-adult survival in the ocean. The best measure of freshwater habitat conditions, and influence of timber harvest, is the long-term smolt production from the stream or area in question. In a complex mixed stock fishery of wild and hatchery salmon, an overall increase in ocean survival could mask declining populations of a specific wild stock.

D) Relationship to Decision Making

The Assessment is a technical analysis. It is not a decision or direction setting document nor will it present alternatives for decisions. Therefore there will not be a formal public involvement process. The Assessment results will be available as background information for consideration in project planning and revision of the Tongass Land Management Plan. The information will enter the normal planning and decision processes by providing input to Forest Service interdisciplinary teams who formulate alternatives and recommendations for line officer decisions. NEPA is a part of the normal process, so the public and others will be fully involved and consequences of any actions, including impact on other resources, to protect fish habitats will be fully disclosed.

E) Conclusions

- 1) The Assessment will provide valuable and effective information in answering the two questions required by the FY 1994 Interior and Related Agencies Appropriations Act regarding fish habitat management on the Tongass NF.
- 2) A follow-up report will be written about the end of FY 1994, documenting findings and accomplishments in FY 1994. The report will include future considerations regarding anadromous fish habitat management on the Tongass.
- 3) The Assessment is going well at this time. We foresee no major problems with the Assessment.