

United States
Department of
Agriculture

Forest Service



United States
Department of the
Interior

Bureau of Land
Management



February 1995

Decision Notice/ Decision Record

Finding of No Significant Impact

Environmental Assessment

for the Interim Strategies for
Managing Anadromous
Fish-producing Watersheds in
Eastern Oregon and Washington,
Idaho, and Portions of California

ABBREVIATIONS AND ACRONYMS

AFS	American Fisheries Society
ASQ	Allowable Sale Quantity
AUM	Animal Unit Month
BA	Biological Assessment
BLM	Bureau of Land Management
CEQ	Council on Environmental Quality
CWE	Cumulative Watershed Effects
CFR	Code of Federal Regulation
DSEIS	Draft Supplemental Environmental Impact Statement
EA	Environmental Assessment
EEMP	Eastside Ecosystem Management Project
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FEMAT	Forest Ecosystem Management Assessment Team
FERC	Federal Energy Regulatory Commission
FLPMA	Federal Land Policy and Management Act
FONSI	Finding of No Significant Impact
FS	Forest Service
FSEIS	Final Supplemental Environmental Impact Statement
FWS	Fish and Wildlife Service
FY	Fiscal Year
ID Team	Interdisciplinary Team
LUP	Land Use Plan
MMBF	Million Board-feet
MOU	Memorandum of Understanding
NEPA	National Environmental Policy Act
NFMA	National Forest Management Act
NMFS	National Marine Fisheries Service
NOI	Notice of Intent
R5	Forest Service Region 5 - Pacific Southwest Region
RHCA	Riparian Habitat Conservation Area
RMO	Riparian Management Objective
ROD	Record of Decision
RPA	Resources Program and Assessment
RVD	Recreation Visitor Day
S&Gs	Standards and Guidelines
UCRBP	Upper Columbia River Basin Project
USC	United States Code
USDA	United States Department of Agriculture
USDI	United States Department of the Interior



U.S. Department of the Interior
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Washington, D.C. 20240



U.S. Department of Agriculture
Forest Service
Washington, D.C. 20090

Date: February 24, 1995

Dear Reader:

The USDA Forest Service (FS) and the USDI Bureau of Land Management (BLM) are pleased to provide you with the enclosed Decision Notice/Decision Record (DN), Environmental Assessment (EA), and Finding of No Significant Impact (FONSI) for interim management of anadromous fish-producing watersheds on Federal lands in eastern Oregon and Washington, Idaho, and portions of California. Our intent is to provide an interim management strategy (commonly referred to as PACFISH) for an 18-month period while long-term management strategies are developed through several geographically-specific environmental analyses. We want to make every effort to see that nothing done by the Agencies in the next 18 months would lead to the extinction or further endangerment of anadromous fish stocks, or otherwise limit options that will be considered in the environmental analyses for long-term management. This action does not apply to areas that are subject to the Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl, which provides a comprehensive aquatic conservation strategy for those areas.

The EA evaluates a range of interim management strategies designed to arrest the degradation and begin the restoration of habitat for Pacific salmon, steelhead, and sea-run cutthroat trout (anadromous fish). The EA explains the purpose and need for the action, describes the alternatives, analyzes their effects on the physical, biological, and human environments, and identifies the Agencies' preferred alternative.

The Agencies have completed consultation with the Fish and Wildlife Service and the National Marine Fisheries Service on the effect of the Agencies' preferred alternative on species listed under the Endangered Species Act (ESA). Appended to the EA are the Agencies' Biological Evaluation (Appendix G) and Biological Assessment (Appendix H), which describe the expected effects on species listed as threatened or endangered or identified by the Agencies as sensitive species, and the expected effects on designated critical habitat.

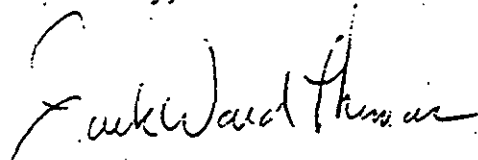
The Agencies made the EA and the proposed FONSI available for public review and comment on March 25, 1994. In response to public comment and ESA consultation, the EA has been modified to provide greater clarity and consistency, to provide additional information, and to correct errors. A summary of the public comments and the Agencies' responses can be found in Appendix F of the EA.

The FONSI concludes that the Agencies' preferred alternative would not have significant impact on the human environment, as defined by the National Environmental Policy Act.

The DN documents our decision to non-significantly amend the affected FS forest plans and Regional Guides and to supplement the affected BLM land use plans with additional riparian goals, management objectives, standards, and guidelines during the interim period. The DN identifies the alternative selected and states the reasons for selection.

Please feel free to contact your local FS or BLM office if you have any questions regarding this action.

Sincerely,



JACK WARD THOMAS
Chief
USDA Forest Service



MIKE DOMBECK
Acting Director
USDI Bureau of Land Management

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DECISION NOTICE/DECISION RECORD

**INTERIM STRATEGIES FOR MANAGING ANADROMOUS FISH-
PRODUCING WATERSHEDS ON FEDERAL LANDS IN EASTERN
OREGON AND WASHINGTON, IDAHO, AND PORTIONS OF
CALIFORNIA**

USDA Forest Service and USDI Bureau of Land Management

DECISION NOTICE/DECISION RECORD

INTERIM STRATEGIES FOR MANAGING ANADROMOUS FISH-PRODUCING WATERSHEDS ON FEDERAL LANDS IN EASTERN OREGON AND WASHINGTON, IDAHO, AND PORTIONS OF CALIFORNIA

USDA Forest Service and USDI Bureau of Land Management

I. Introduction

The United States Department of Agriculture, Forest Service (FS) and the United States Department of the Interior, Bureau of Land Management (BLM) (hereinafter referred to as the Agencies) are adopting an interim strategy for management of anadromous fish-producing watersheds on lands they manage. The FS will implement the strategy through its field offices as amendments to Regional Guides and Land and Resource Management Plans (forest plans). The BLM will issue an Instruction Memorandum to field offices to implement this strategy as management guidance in conformance with land use plans (LUPs). This strategy will be applied to project proposals which must also comply with requirements of the Endangered Species Act (ESA), the National Environmental Policy Act (NEPA), the National Forest Management Act (NFMA), the Federal Land Policy and Management Act (FLPMA), and other applicable laws.

The Agencies are engaged in developing long-term strategies to protect and restore anadromous fish-producing watersheds on Federal lands in the Columbia River Basin and in other watersheds supporting anadromous fish (EA, Appendix I). The Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl (Northern Spotted Owl ROD) comprehensively addresses management of anadromous fish-producing watersheds on Federal lands in western Washington and Oregon and portions of northern California.

Recent and pending listings of anadromous fish stocks, combined with the Agencies' own internal studies, as well as information produced by other sources, indicate a need for prompt action by the Agencies. Recognizing the need to address the watersheds comprehensively, the Agencies are undertaking environmental analyses to examine long-term management strategies for protecting and restoring anadromous fish-producing watersheds. Given the critical nature of the situation, the Agencies have decided to institute an interim strategy designed to halt the degradation and begin the restoration of anadromous fish habitat and see that future opportunities are not foregone by management decisions taken over the next 18 months while comprehensive studies and NEPA analysis and documentation are completed for the long-term management strategies.

Utilizing Agency scientists and related field personnel, the Agencies developed actions to apply during an 18-month interim period. In accordance with the requirements of NEPA, an Environmental Assessment (EA) was prepared to examine the likely effects of proposed protection

strategies, and a Finding of No Significant Impact (FONSI) was concluded. The EA and a proposed FONSI were published in March 1994 and circulated for public review and comment. The Agencies also undertook consultation with the United States Department of Commerce, National Marine Fisheries Service (NMFS) and the United States Department of the Interior, Fish and Wildlife Service (FWS) in accordance with the requirements of the ESA.

II. Decision

It is the decision of the Agencies to select Alternative 4 in the Environmental Assessment for the of Interim Strategies for Managing Anadromous Fish-producing Watersheds in Eastern Oregon and Washington, Idaho, and Portions of California. Based on public comment and consultation with the NMFS and the FWS, Alternative 4 has been modified from the Preferred Alternative described in a published version of the EA dated March 18, 1994, to provide greater clarity and consistency.

This decision amends Regional Guides for the FS's Northern, Intermountain, Pacific Southwest, and Pacific Northwest Regions and 15 forest plans in the affected National Forests and provides management direction applicable to the 7 BLM LUPs. The FS and the BLM will apply the following management measures to all proposed or new projects and activities* and ongoing projects and activities that pose an unacceptable risk** involving the management of timber, roads, grazing, recreation resources, riparian areas, minerals, fire and fuels, and land uses such as leases, permits, rights-of-way and easements, as well as restoration of watershed, fish, and wildlife habitat within all anadromous fish habitat occurring in the States of Oregon, Washington, Idaho, and California (except for those areas under the direction contained in the Northern Spotted Owl ROD) during the interim period (18 months from the effective date of this decision).

* "Proposed or new projects and activities" are defined as those actions that have not been implemented, or for which contracts have not been awarded, or for which permits have not been issued, or (within the range of listed anadromous fish) continuing actions for which the Biological Assessments have not been prepared and submitted for consultation prior to signing of this decision (EA, pp. 17 and Glossary-5).

** "Ongoing projects and activities" are defined as those actions that have been implemented, or that have contracts awarded, or permits issued, and (within the range of listed anadromous fish) for which Biological Assessments have been prepared and submitted for consultation, prior to the signing of this decision (EA, p. Glossary-5). The Glossary defines "unacceptable risk" as a level of risk from an ongoing activity or group of ongoing activities that is determined through NEPA analysis or the preparation of Biological Assessments/Evaluations, or their subsequent review, to be: "likely to adversely affect" listed anadromous fish or their designated critical habitat, or "likely to adversely impact" non-listed anadromous fish (EA, p. 18 and p. Glossary-7).

- A. Establish riparian goals to maintain or restore fish habitat (EA, Appendix C, p. C-3 - C-4).
- B. Establish Riparian Management Objectives (RMOs) for streams in watersheds with anadromous fish (EA, Appendix C, p. C-4 - C-6).
- C. Delineate Riparian Habitat Conservation Areas (RHCAs) in anadromous fish-producing watersheds on lands administered by the Agencies using interim widths for four categories of streams or water bodies (EA, Appendix C, pp. C-6 - C-9).
- D. Establish standards and guidelines*** to govern management actions within RHCAs or degrading RHCAs (EA, Appendix C, pp. C-9 - C-18).
- E. Establish general criteria and identify a process to designate Key Watersheds within the extent of the anadromous fish-producing watersheds (EA, Appendix C, p. C-19).
- F. Establish general criteria and identify a process to guide development and application of Watershed Analyses (EA, Appendix C, pp. C-19 - C-21).
- G. Establish requirements for implementation and effectiveness monitoring (EA, Appendix C, pp. C-22 - C-23).

These measures essentially provide for mitigation of environmental effects of future decisions. No additional measures to mitigate the environmental impact of this action have been identified in the EA or this decision.

III. Alternatives

Besides the selected Alternative 4 described above, the EA considers four other alternatives in detail (EA, pp. 28 - 30).

Alternative 1 represents the "no action" alternative. The Agencies would manage national forest and public land resources under direction specified in current forest plans and BLM LUPs without any adjustment during the interim period, except as required through consultation with NMFS or FWS on projects and activities which may affect listed species or designated critical habitat (EA, p. 29), and project-level NEPA and Clean Water Act compliance.

Alternative 2 would include standards and guidelines for road systems construction and reconstruction, logging slash treatment and prescribed fire, livestock grazing, and riparian and fish-habitat restoration. Alternative 2 provides standards and guidelines for a more narrow range of land management activities than Alternatives 3, 4, and 5. It would

*** The standards and guidelines attempt to ensure that adequate environmental safeguards are applied to proposed or new and ongoing projects and activities that pose unacceptable risk within RHCAs or that degrade RHCAs.

provide riparian protection zones of approximately 300 feet on either side of fish-bearing streams, 150 feet on either side of permanent water courses, and 50 feet on either side of intermittent streams in areas with moderately to highly unstable soils (EA, pp. 29 - 30).

Alternatives 3 and 5 contain largely the same features (items A. through G.) as the selected Alternative 4. Alternatives 3, 4, and 5 provide standards and guidelines for a range of land management activities, including management of timber, roads, grazing, recreation, minerals, fire/fuels, land uses (such as leases, permits, rights-of-way, and easements), riparian areas, watershed restoration, and fisheries and wildlife restoration. Alternative 3 would be applied to all proposed or new projects, but to no ongoing projects and activities. Alternative 5 would be applied to all proposed or new projects and to all ongoing projects and activities (EA, p. 30).

IV. Rationale for Selection

The purpose of the interim direction is to take prudent measures to arrest the degradation and begin the restoration of riparian and aquatic ecosystems in watersheds where anadromous fish habitat is present or easily could be reestablished (EA, pp. 6-8). Interim direction was developed to maintain management options for anadromous fish habitat while the Agencies are developing long-term management strategies.

The deciding officials considered the ability of each alternative to: meet the stated purpose and need of the action; comply with applicable laws, statutes, regulations, executive orders, and policies; and respond to issues and public comments about the alternative strategies. A critical factor relevant to this decision was the ability of the alternatives to respond to the issues identified in the EA (pp. 21 - 22):

Issue 1. Manage habitat to contribute to maintenance of anadromous fish stocks in the interim period.

Issue 2. Provide management direction to insure consistent, effective, and efficient ESA consultation in the interim period.

Issue 3. Consider the ability of national forests and BLM districts to provide traditional amounts and kinds of goods and services in the interim period while long-term management direction is under development.

Issue 4. Integrate interim management of anadromous fish habitat with other planning efforts in the interim period.

Issue 5. Integrate new scientific knowledge into the management of anadromous fish habitat.

The interdisciplinary teams that prepared the EA have reviewed the best available scientific information and used this information in formulating the alternatives, evaluating the effects of the alternatives, and identifying the preferred alternative. Although there is not a complete scientific understanding of the relationships between land management

activities and aquatic ecosystem processes, or between aquatic ecosystem processes and anadromous fish habitat, existing information on these relationships is sufficiently extensive to permit a reasoned choice among the alternatives presented in the EA (EA pp. 2-6, 8-11, 36-39, Appendix A, Appendix C). New information may permit the development of more specific protective measures, but it is unlikely that new information would reverse or nullify what is understood about these relationships.

Alternatives 1 and 2 would not provide sufficient protection to halt the degradation and begin the restoration of anadromous fish-producing watersheds. Alternatives 1 and 2 may result in Agency actions that foreclose management options for protecting species while long-term strategies are being developed. Finally, Alternatives 1 and 2 do not respond to several issues: they would not provide for consistent, efficient, and effective ESA consultation; they would not provide anadromous fish habitat management that is consistent with other planning efforts; and they would not integrate new scientific knowledge into the management of anadromous fish habitat.

Alternatives 3, 4, and 5 differ from each other most significantly in whether they apply interim direction to none, some, or all of the ongoing activities. Alternative 3 does not apply interim direction to any ongoing activities, and thus it is likely that management options for protecting species would be foreclosed while the long-term strategies are being developed. Furthermore, because Alternative 3 does not apply interim direction to ongoing activities, it would not contribute to a consistent or efficient approach to ESA consultation on those activities. Alternative 4 provides more habitat protection than Alternative 3. Alternative 5 applies interim direction to all ongoing projects, regardless of whether such activities pose a risk to anadromous fish stocks. Thus, Alternative 5 would unnecessarily affect all existing contracts, permits and other outstanding obligations in the affected areas. Moreover, Alternative 5 would result in a loss of management adaptability or flexibility and might restrict the ability of Agency-administered lands to provide traditional amounts and kinds of goods and services.

Alternative 4 would apply the interim direction to only some ongoing projects -- those that pose an unacceptable risk to anadromous fish. The deciding officials have determined that the most reasonable approach to applying interim direction is for field managers to make case-by-case judgements as to whether specific ongoing projects pose an unacceptable risk to anadromous fish. This alternative provides the best opportunity among the alternatives analyzed to protect fish habitat during the interim period while still allowing for multiple use management.

Alternative 4 meets the purpose of the interim direction, which is to arrest the degradation and begin the restoration of riparian and aquatic ecosystems. Alternative 4 responds to the need to insure that management options are not foreclosed while the long-term strategies are being developed, because it applies interim direction to all new activities and ongoing activities that pose an unacceptable risk to anadromous fish. Alternative 4 represents the agencies' judgement of the best balance among competing interests: it responds to the need to provide a high level of protection for anadromous fish habitat, without unnecessarily

restricting existing contracts, permits and other authorizations, management flexibility, or the flow of goods and services. Alternative 4 provides for consistent, effective, and efficient ESA consultation****; is consistent with other planning efforts; and integrates new scientific knowledge into the management of anadromous fish-producing watersheds.

Alternative 4 is in full compliance with applicable law, statutes, regulations, executive orders, and policies of both Agencies.

Alternative 4 has been modified based on public comments and ESA consultation to provide increased clarity and consistency among standards and guidelines, to provide additional information, and to correct errors.

V. Public Involvement

As described in the EA (p. 72, CONSULTATION WITH OTHERS), public involvement efforts consisted of a series of briefings for Members of the House and Senate and State agency officials, Tribal governments and a variety of other organizations. Written input was both from persons who were briefed and from others who were not. Appendix E of the EA contains a list of briefings and correspondence from April 1992 to June 1994.

An EA and proposed FONSI were completed in March 1994 and distributed for public review and comment. The Agencies have considered the comments received and modified the EA in response (Appendix F). A list of the individuals and organizations submitting comments on the EA and proposed FONSI is found in Appendix E. The FONSI is based on the analysis in the EA and on consideration and analysis of all information submitted in public comments, from consultation, and from information found in other related environmental documents as noted in the FONSI.

VI. Summary of Modifications Made to the EA Dated March 1994

The EA was modified based on public comments, consultation with the FWS and the NMFS, and additional review of scientific literature. These modifications were made to provide greater clarity and consistency among standards and guidelines, to provide additional information, and to correct errors. These modifications do not alter the analyses of effects described in the March 1994 EA. These modifications are summarized here and are discussed in more detail in the responses to public comments (Appendix F).

**** The Agencies have concluded consultation with the FWS and the NMFS on the effects of Alternative 4 on threatened and endangered species. The FWS, through a letter of concurrence, found that the proposed action would have a neutral or beneficial effect on listed species under their jurisdiction. The NMFS, through a biological opinion, found that the proposed action is not likely to jeopardize the continued existence of listed species under their jurisdiction or result in the destruction or adverse modification of critical habitat. The documents are included as Appendix J to the EA.

- Additional discussion has been added to explain the circumstances for modification of RMOs and RHCAs (Appendix C, pp. C-5, C-7).
- The Timber management standard has been clarified to identify that Watershed Analysis will be conducted prior to salvage cutting in RHCAs in watersheds with listed salmon or designated critical habitat. A Recreation Management standard (RM-1) has been similarly clarified to identify that Watershed Analysis will be conducted prior to construction of new recreation facilities in RHCAs. The standards as originally drafted stipulate that these activities will be allowed only where they would not adversely affect RMOs. Watershed Analysis will provide the means by which these stipulations will be observed (Appendix C, pp. C-10, C-13).
- A standard has been added to the General Riparian Area Management standards and guidelines that addresses storage of fuel and other toxicants and refueling in RHCAs (Appendix C, p. C-17).
- Discussion has been added to the chapter on Affected Environment and Environmental Consequences to detail how cumulative effects have been analyzed in the EA and how cumulative effects will be addressed at other planning levels (EA, pp. 38 - 39).
- Discussion has been added to the economic analysis section to provide greater documentation of how the analysis was conducted, and to correct errors in the calculation of anticipated timber harvest reductions and the interpretation of timber prices (EA, pp. 65 - 67, Appendix F, pp. F-23 - F-24).
- Several terms have been added to the glossary and some definitions have been clarified to facilitate more consistent application of the interim direction (EA Glossary).
- The Riparian Management Objective (RMO) for water temperature has been changed to provide a more effective objective and to provide greater detail (EA, Appendix C, p.C-6, Appendix F, p. F-15).
- The wording of many standards and guidelines has been modified to provide greater consistency among the standards and guidelines (EA, Appendix C, pp. C-10 - C-18).
- The discussion of the application of the interim direction has been modified to clarify which ongoing projects and which new projects will be subject to the standards and guidelines (EA, Appendix C, p. C-9).
- The criteria for identification of Key Watersheds have been clarified to provide the general criteria, and describe the process by which more specific criteria will be developed (EA, p. 17, Appendix C, p. C-19, Appendix F, p. F-21).
- Discussion has been added to the Watershed Analysis section to clarify the process by which Watershed Analysis protocols will be developed and applied during the interim period (EA, p. 17, Appendix C, p. C-19 - C-21, Appendix F, p. F-21).

- Monitoring requirements have been more explicitly defined (EA, Appendix C, pp. C-22 - C-23).
- In response to Conservation Recommendations in the NMFS Biological Opinion, two standards and guidelines, MM-1 and RF-3c, have been reworded to provide greater clarity and consistency.
- Clarification has been provided that the decision amends FS Regional Guides for the Northern, Intermountain, Pacific Southwest and Pacific Northwest Regions as well as individual forest plans.

VII. NFMA Finding of Non-Significance for Amendment of Regional Guides and Forest Plans

For the Forest Service only: Under the National Forest Management Act (NFMA) (16 U.S.C. 1604(f)(4) Regional Guides and forest plans must "be amended in any manner whatsoever after final adoption and after public notice, and, if such amendment would result in a significant change in such plan, in accordance with subsections (e) and (f) of this section and public involvement comparable to that required by subsection (d) of this section." The NFMA regulations at 36 CFR 219.10(f) state: "Based on an analysis of the objectives, guidelines, and other contents of the forest plan, the Forest Supervisor shall determine whether a proposed amendment would result in a significant change in the plan." Neither NFMA nor its implementing regulations define the term "significant". Instead, the regulations place full discretion to determine whether or not a proposed amendment will be significant in the hands of the Forest Service.

Under NFMA and its regulations, an amendment that does not result in a significant change in a forest plan must be undertaken with public notice and appropriate NEPA compliance. If a change to a forest plan is determined to be significant, the Regional Forester must follow the same procedure required for the development of the forest plan, including preparation of an EIS.

The Forest Service Land and Resource Management Planning Handbook (FSH 1909.12) provides more detailed guidance for exercising this discretion. This guidance offers a framework for consideration, but does not demand mechanical application. No one factor is determinative and the guidelines make clear that other factors may be considered.

Under section 5.32, FSH 1909.12 lists four factors to be used when determining whether a proposed change to a forest plan is significant or not significant: timing; location and size; goals, objectives, and outputs; and management prescriptions. It also states that "[o]ther factors may also be considered, depending on the circumstances." The determination if a proposed change to a forest is significant or not depends on an analysis of all of these factors. While these factors are to be used, they do not override the statutory criterion that there be a significant change in the plan. Basically, the decision-maker must consider the extent of the change in the context of the entire plan affected, and make use of the factors in the exercise of his or her professional judgement. The Forest Service has carefully evaluated the interim strategy and concluded that it does not constitute a significant

amendment of the Regional Guides for the FS's Northern, Intermountain, Pacific Southwest, and Pacific Northwest Regions and 15 forest plans in eastern Oregon and Washington, Idaho, and portions of California.

Timing

The timing factor examines at what point, over the course of the forest plan period, the plan is amended. Both the age of the underlying document and the duration of the amendment are relevant considerations. The handbook indicates that the later in the time period, the less significant the change is likely to be. All of the forest plans here are at least half-way through the first planning period. Even so, because the interim direction will be in place for only 18 months, we do not expect the direction to be in place for the remainder of the planning period. As noted in the EA (p. 1), the action is limited in time and changes to the plans are not intended to be permanent. The fact that these interim guidelines, by definition, will only be in place until the current analysis of a longer-term strategy is completed supports the determination that they do not constitute significant amendments of the Regional Guides and forest plans.

Location and Size

The key to the location and size is context or "the relationship of the affected area to the overall planning area" (FSH 1909.12, sec. 5.32(d)). As further discussed in FSH 1909.12, sec. 5.32(d): "the smaller the area affected, the less likely the change is to be a significant change in the forest plan." As discussed in the FONSI (pp. 1 and 2) and the EA (p. 16), the interim strategy applies only to projects within Riparian Area Conservation Areas (RHCAs) or projects outside the RHCAs that would degrade RHCA condition. The size of the area affected is very small when compared to the overall planning area.

The appropriate inquiry when considering the significance of plan amendments is the change made on each Forest, and not the cumulative change on all the involved Forests. The cumulative change on all the involved Forests is assessed to determine whether the amendment of the Regional Guides is significant. In both cases, the areas in the planning unit affected by the interim standards and guidelines is not so large in size as to mandate a significant amendment (EA, pp. 12-13).

Goals, Objectives, and Outputs

The goals, objectives, and outputs factor involves the determination of "whether the change alters the long-term relationship between the levels of goods and services in the overall planning area" (FSH 1909.12, sec. 5.32(c)). This criterion concerns analysis of the overall forest plan and the various multiple use resources that may be affected. There is no guarantee under NFMA that output projections will actually be produced. As discussed in the FONSI (p. 2) and the EA (pp. 17-19), the interim strategy would apply only to proposed or new projects and activities and ongoing projects and activities that pose an unacceptable risk. Thus, the interim strategy does not significantly alter the long-term relationships between the levels of goods and services projected by the forest plans. For example, the effects on timber supply and other commodity resources are short-term. The interim strategy will have

short-term beneficial effects upon some resources such as water quality and riparian resources. Table 3 in the EA (p. 66) shows the relatively small estimated changes in recreation use, timber harvested and animals grazed with adoption of the interim strategy. There may be opportunities to substitute other areas and activities for those ongoing or proposed projects affected by PACFISH. The interim strategy does not involve a demand for any new service or good not discussed in or contemplated by the existing forest plans or Regional Guides. Furthermore, the interim strategy will only be in effect until a longer-term strategy is developed and examined in an EIS -- approximately 18 months. The guidance in FSH 1909.12, sec. 5.32(c) explains: "In most cases, changes in outputs are not likely to be a significant change in the forest plan unless the change would forego the opportunity to achieve an output in later years". Any short term temporary reductions in outputs do not foreclose opportunities to achieve such outputs in later years. Thus, the interim strategy does not foreclose the achievement of existing goals and objectives.

Management Prescriptions

The management prescriptions factor involves the determination of (1) "whether the change in a management prescription is only for a specific situation or whether it would apply to future decisions throughout the planning area" and (2) "whether or not the change alters the desired future condition of the land and resources of the land and resources or the anticipated goods and services to be produced" (FSH 1909.12, sec. 5.32(d)).

The desired future conditions and long-term levels of goods and services projected in current plans would not be substantially changed by the interim strategy. The interim strategy will work to accomplish an element of the multiple use desired future condition of the Regional Guides and forest plans by providing for protection of threatened, endangered, and sensitive species. As noted above, the interim strategy is temporary and applies only to a portion of the overall planning area. Thus, the "anticipated goods and services" will not be greatly affected by interim direction. The interim strategy only affects limited areas where selected projects are occurring or may be proposed and does not alter the management framework for the vast majority of lands within the overall planning area. In adopting the interim strategy (essentially mitigation measures) until a longer-term strategy is developed, the plan amendments retain or improve the environmental status quo on a portion of the affected national forests.

Other Factors

The handbook guidance allows for the consideration of other factors. It is crucial that the agency be able to respond to scientific information and changing environmental conditions. By responding to changing circumstances, the Forest Service will be better able to manage the national forests for multiple use resources and assure a continuous supply of goods and services from the national forests for the long term.

In the case of the interim strategy, the "other factors" include the ability of the Forest Service to adapt to changing conditions and protect threatened, endangered and sensitive species for a short period of time

until a longer-term strategy can be analyzed and adopted. The interim strategy is merely a temporary attempt to preserve the environmental status quo, thereby maintaining management options, while longer-term direction can be evaluated. By taking the active step of adopting interim guidelines pending the development of longer-term options, the Forest Service is better able to achieve its goals of managing the National Forests for sustainable multiple uses, and to avoid drastic emergency measures in the future.

The process of adapting forest management to changing social and environmental conditions is not finished. The long-term environmental impact statements will also analyze similar issues concerning environmental protection and commodity production. The interim strategy provides a short-term response to complex, changing circumstances.

VIII. Site-Specific Project-Level Decisions

The Agencies will employ different approaches to interim management direction (EA, pp. 19 - 20). This strategy applies to proposed and new projects and activities and to ongoing projects and activities that pose an unacceptable risk involving the management of timber, roads, grazing, recreation resources, riparian areas, minerals, fire and fuels, and land uses such as leases permits, rights-of-way and easements, as well as the restoration of watershed, fisheries, and wildlife habitat within RHCAs or that degrade RHCAs on lands administered by the Agencies within anadromous watersheds in Oregon, Washington, Idaho, and California (excluding areas under the Northern Spotted Owl ROD) (EA, p. 17, Appendix C, p. C-9). This is an interim strategy and will expire in 18 months from the date of this Decision Notice/ Decision Record.

FS Approach:

The Regional Foresters for the Pacific Northwest, Pacific Southwest, Northern, and Intermountain Regions are responsible for compliance this decision on the Bitterroot, Boise, Challis, Clearwater, Lassen, Los Padres, Malheur, Nez Perce, Ochoco, Okanogan, Payette, Salmon, Sawtooth, Umatilla, and Wallows-Whitman National Forests as well as the Sawtooth National Recreation Area and the Columbia River Gorge National Scenic Area.

Under the authority of 36 CFR 219.10(f), this decision amends Regional Guides for the FS's Northern, Intermountain, Pacific Southwest, and Pacific Northwest Regions and 15 forest plans (EA, Appendix D, pp. D-3 to D-6) to add explicit goals and objectives for anadromous fish habitat condition and function, and identify RHCAs where management activities will meet new comprehensive standards and guidelines for an 18-month period following the date of this decision (EA, Appendix C). These interim standards and guidelines replace existing conflicting direction described in these 15 forest plans except where the forest plan direction provides more protection for anadromous fish habitat (EA, p. 14). The decision documents for projects where these new standards and guidelines are applied will contain a finding that the project is consistent with the LRMPs as amended by these interim standards and guidelines.

BLM Approach:

The State Directors for California, Idaho, and Oregon/Washington are responsible for compliance with this decision on the Bakersfield and Ukiah Districts in California; the Salmon and Coeur d'Alene Districts in Idaho; and the Prineville, Spokane, and Vale Districts in Oregon/Washington. Following this decision the BLM director will issue instruction to state directors to review the conformance of the interim direction with existing LUPs.

The BLM will incorporate the interim direction (Alternative 4) that is consistent with current LUPs into all proposed and new projects and activities, and certain ongoing projects and activities.

If the interim direction is not consistent with existing LUPs, the BLM will seek to amend or revise the LUP so that the interim direction is consistent with the LUP. Until the LUP is amended or revised, the BLM will use the existing LUP direction, or will attempt to implement the management direction for certain ongoing projects and activities through negotiation with the use authorization holders (e.g., grazing permittees, right-of-way holders, recreation permit holders), or will seek other remedy within the terms of the existing authorization, including modifying, suspending, or cancelling authorization.

IX. Administrative Review Opportunities

These decisions are the final decisions of the Agencies. Parties may petition for administrative review in accordance with the following procedures.

Department of Agriculture: This decision may be appealed in accordance with the provisions of 36 CFR 217.7(a) by filing a written notice of appeal, in duplicate, within 45 days of the date of publication of the legal notice of availability for this decision. The Decision is effective 7 days after publication of legal notice, 36 CFR 217.10(a). The appeal must be filed with the Secretary of Agriculture. Review by the Secretary is wholly discretionary.

The notice of appeal must include sufficient narrative evidence and argument to show why this decision should be changed or reversed (36 CFR 217.9).

Department of the Interior: This decision may be appealed to the Department of the Interior, Board of Land Appeals, in accordance with the provisions of 43 CFR 4.20 to 4.31 and 43 CFR 4.400 to 4.415, by filing a written notice of appeal. This notice must be filed with the Director of the BLM within 30 days of the date of publication of the legal notice of availability for this decision. The notice of appeal may include a statement of reasons for the appeal, a statement of standing, and any arguments the appellant wishes to make. A party filing an appeal may request a stay of this decision, in accordance with 43 CFR 4.21. The notice of appeal, request for stay, and other documents shall be served as specified in 43 CFS 4.413 and 4.401(c).

X. Administrative or Supporting Record

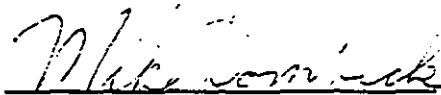
Records documenting the preparation and review of this interim strategy are available at:

USDA FOREST SERVICE
WILDLIFE, FISH AND RARE PLANTS STAFF
AUDITORS BUILDING
14TH AND INDEPENDENCE AVENUES, SW
WASHINGTON, DC 20250

XI. Signatures

By signing this Decision Notice/Decision Record together, we exercise our respective authorities over only those portions relevant to our authority.


JACK WARD THOMAS
Chief, USDA Forest Service


MIKE DOMBECK
Acting Director, USDI Bureau
of Land Management

Date: February 24, 1995

Date: February 24, 1995

FINDING OF NO SIGNIFICANT IMPACT

**FOR THE
INTERIM STRATEGIES FOR
MANAGING ANADROMOUS FISH-PRODUCING WATERSHEDS
IN EASTERN OREGON AND WASHINGTON, IDAHO,
AND PORTIONS OF CALIFORNIA**

USDA Forest Service and USDI Bureau of Land Management

FINDING OF NO SIGNIFICANT IMPACT

For The Interim Strategies For Managing Anadromous Fish-Producing Watersheds In Eastern Oregon And Washington, Idaho, And Portions Of California

USDA Forest Service and USDI Bureau of Land Management

BACKGROUND

The Chief of the Forest Service and the Director of the Bureau of Land Management (BLM) have analyzed a proposal for interim direction intended to arrest the degradation and begin the restoration of habitat for Pacific anadromous fish (salmon, steelhead and sea-run cutthroat trout). The proposal addresses habitat on lands administered by the Forest Service and the Bureau of Land Management in Eastern Oregon and Washington, Idaho, and portions of California. The proposal does not include areas under the Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl (Northern Spotted Owl ROD).

The proposal for interim management and four alternatives, associated design features, and potential mitigation measures were described and analyzed in an Environmental Assessment (EA) dated March 18, 1994. The Proposed Finding of No Significant Impact (FONSI) and the EA were made available for public review and comment. Although the public comments did not warrant a modification in the FONSI, the EA has been modified to disclose the nature of the comments and the Agencies' responses to them. The modified EA also affords the Agencies opportunity to provide clarification on selected points.

Other related environmental documents which were taken into account include: Regional Guides, Land and Resource Management Plans (forest plans) and associated National Environmental Policy Act (NEPA) documents in the 15 national forests, the Land Use Plans (LUPs) and associated NEPA documents in the 7 BLM districts, and the Northern Spotted Owl ROD and associated NEPA documents.

REASONS FOR FINDING OF NO SIGNIFICANT IMPACT

In consideration of the analysis documented in the EA and in light of the reasons set forth below, we find that adoption of Alternative 4 as the interim strategy will not significantly impact the human environment.

1. The interim strategy would be limited in geographic application (40 CFR 1508.27(a)). The interim strategy would apply to projects within Riparian

Habitat Conservation Areas (RHCAs) or that degrade RHCAs on lands administered by the Agencies in the States of Oregon, Washington, Idaho, and California (excluding those areas under the Northern Spotted Owl ROD) (EA, p. 16 and Appendix C, p. C-9).

2. The interim strategy would be limited to certain projects and activities. The interim strategy would apply only to proposed or new projects and activities* and ongoing projects and activities that pose an unacceptable risk** involving the management of timber, roads, grazing, recreation resources, riparian areas, minerals, fire and fuels, and land uses such as leases permits, rights-of-way and easements, as well as the restoration of watershed, fisheries, and wildlife habitat (EA, p. 16 and Appendix C, p. C-9). Thus, resource effects would not be significant, given the short duration of interim direction and the ability of the Agencies to relocate activities outside the RHCAs. The interim strategy will reduce the potential environmental impacts of project decisions.
3. The interim strategy would not significantly affect public health or safety (40 CFR 1508.27(b)(2)). The interim strategy does not, on its own, authorize any ground-disturbing activities or direct changes to the environmental status quo. Instead, it provides programmatic direction and mitigation measures to be applied to site-specific projects and activities. New project decisions will be preceded by site-specific NEPA and Endangered Species Act (ESA) analysis (EA, pp. 17, 36). Thus, the selected alternative does not have significant effects on human health and safety beyond those already documented in existing plan EISs and site-specific analyses of ongoing projects and activities or might be identified in such future analyses of proposed projects and activities. Environmental effects on some resources (e.g., aquatic, riparian) will be reduced. These beneficial effects will not be significant due to the short time frame involved, the limited area affected, and the limited intensity of the beneficial effects.

*"Proposed or new projects and activities" are defined as those actions that have not been implemented, or for which contracts have not been awarded, or for which permits have not been issued, or (within the range of listed anadromous fish) continuing actions for which the Biological Assessments have not been prepared and submitted for consultation, prior to signing of this decision (EA, pp. 17 and Glossary-5).

**"Ongoing projects and activities" are defined as those actions that have been implemented, or that have contracts awarded, or permits issued, and (within the range of listed anadromous fish) for which Biological Assessments have been prepared and submitted for consultation, prior to the signing of this decision (EA, p. Glossary-5). The Glossary defines "unacceptable risk" as a level of risk from an ongoing activity or group of ongoing activities that is determined through NEPA analysis or the preparation of Biological Assessments/Evaluations, or their subsequent review, to be: --"likely to adversely affect" listed anadromous fish or their designated critical habitat, or --"likely to adversely impact" non-listed anadromous fish (EA, pp. 18 and Glossary-7).

4. The interim strategy would not significantly affect any unique characteristics of the geographic area (40 CFR 1508.27(b)(3)), does not adversely affect anything listed or eligible for listing in the National Register of Historic Places, nor does it cause loss or destruction of significant scientific, cultural, or historic resources (40 CFR 1508.27(b)(8)). As discussed in the EA, the interim strategy does not alter the environmental protection afforded to such unique lands and resources as wild and scenic rivers (EA, p. 61), ecologically important plant communities such as are found in riparian areas (EA, pp. 45, 48 - 49, 52, and 55), cultural resources (EA, p. 60), and Tribal heritage sites with archeological and religious importance (EA, pp. 61 - 62). The interim strategy is not applied to any park lands or prime farm land.
5. The interim strategy does not involve physical or biological effects that are likely to be highly controversial (40 CFR 1508.27(b)(4)). The scientific basis for this interim direction has been thoroughly evaluated (EA, pp. 2 to 6, 8 to 11, and Appendix A). The declines of anadromous fish stocks and degradation of their associated freshwater habitat have not been disputed. Any controversy pertains to the best approach to correct the problems or maintain the status quo while the long-term environmental analyses are completed, not the magnitude of the problem (EA, Appendix F, Response to Public Comments).
6. The interim strategy does not involve social or economic effects that are likely to be highly controversial (40 CFR 1508.27(b)(4)). Controversy in this context refers to cases where there is substantial dispute as to the size, nature, or effect of the Federal action, rather than to opposition to its adoption. Some individuals who are likely to experience adverse economic effects, however, have taken exception to the proposal (EA, p. 59 and Appendix F). Others argued for more restrictive protective measures than the proposed action, and urged the adoption of Alternative 5. On the acres affected, the short-term nature of the effects is within allowed fluctuations in the ten year planning period.
7. The interim strategy would not impose any highly uncertain, unique, or unknown environmental risks (40 CFR 1508.28(b)(5)). The best available scientific information provided the foundation for designing the interim strategy (EA, pp. 2 to 6, 8 to 11, 36-39, Appendix A, Appendix C). Measures similar to the ones described in Appendix C are used for management of anadromous fish habitat in areas subject to the Northern Spotted Owl ROD.
8. The interim strategy does not establish a precedent for future actions with significant effects and does not represent a decision in principle about a future consideration (40 CFR 1508.27(b)(6)), nor is it related to other actions with individually insignificant but cumulative significant impacts (40 CFR 1508.27(b)(7)). The interim strategy is a short-term effort to retain the environmental status quo while the Agencies develop and evaluate long-term strategies. The interim strategy will be applied during a limited period of 18 months from the date of the decision. The temporary nature of the interim strategy will limit its effects (EA, p. 12). The EA discloses the cumulative environmental effects of short-term incremental

improvements in habitat conditions and trends on lands within the anadromous watersheds that are administered by the Agencies (EA, pp. 38 - 39).

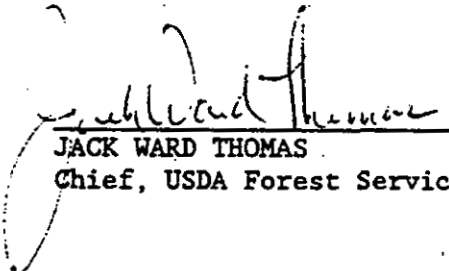
The environmental analyses being prepared for the long-term environmental strategies will produce long-term cumulative effects information. Because recovery processes within riparian areas and aquatic habitats are gradual, such short-term adjustments in management practices are unlikely to result in significant effects on future actions on these Federal lands (EA, pp. 38 - 39). The interim strategy is not binding on any future decisions made on long-term strategies (EA, p. 20).

9. The interim strategy will not adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act (40 CFR 1508.27(b)(9)). A Biological Evaluation and a Biological Assessment completed by the Agencies' scientists have concluded that adoption of the proposed measure would not produce significant impacts. Because fish listed pursuant to the ESA are involved, the Agencies have consulted with the United States Department of the Interior, Fish and Wildlife Service (FWS) and the United States Department of Commerce, National Marine Fisheries Service (NMFS) in accordance with established requirements. The FWS, through a letter of concurrence, found that the proposed action would have a neutral or beneficial effect on listed species under their jurisdiction. The NMFS, through a biological opinion, has determined that the proposed action is not likely to jeopardize the continued existence of listed species under their jurisdiction or result in destruction or adverse modification of critical habitat. The EA reflects the results of these consultations, and the consultation documents are included as Appendix J to the EA. Site specific projects will be preceded by biological evaluations where listed species may be affected.

10. The interim strategy does not threaten a violation of Federal, State or local law or requirements imposed for the protection of the environment (40 CFR 1508.27(b)(10)). The Forest Service and the Bureau of Land Management have jointly issued notices announcing the development of the long-term environmental analyses (EA, Appendix I). In accordance with Section 1506.1(a) of the Council on Environmental Quality regulations implementing NEPA, upon issuance of a Notice of Intent, and until issuance of a Record of Decision, the Agencies will take no actions which have an adverse environmental impact or limit the choice of reasonable alternatives. Additionally, adoption of the preferred alternative would not significantly affect the following elements of the human environment, which are specified in statute, regulation, or executive order: Air Quality, Areas of Critical Environmental Concern, Cultural Resources, Farm Lands (prime or unique), Floodplains, Native American Religious Concerns, Threatened or Endangered Species, Hazardous or Solid Wastes, Water Quality, Wild and Scenic Rivers, and Wilderness.

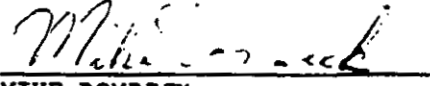
DETERMINATION

On the basis of the information and analysis contained in the attached EA and all other information available as summarized above, it is our determination that adoption of the interim direction over the next 18 months (while environmental analyses of long-term strategies are being prepared) does not constitute a major Federal action significantly affecting the quality of the human environment. Therefore, an Environmental Impact Statement is not needed.



JACK WARD THOMAS
Chief, USDA Forest Service

Date: February 24, 1995



MIKE DOMBECK
Acting Director, USD: Bureau of
Land Management

Date: February 24, 1995

ENVIRONMENTAL ASSESSMENT

**INTERIM STRATEGIES FOR MANAGING ANADROMOUS
FISH-PRODUCING WATERSHEDS ON FEDERAL LANDS IN EASTERN
OREGON AND WASHINGTON, IDAHO, AND PORTIONS OF
CALIFORNIA**

USDA Forest Service and USDI Bureau of Land Management

PURPOSE OF AND NEED FOR ACTION

Background

The U.S. Department of Agriculture Forest Service (FS) and the U.S. Department of the Interior Bureau of Land Management (BLM) [hereinafter jointly referred to as "the Agencies"] are developing an ecosystem-based, aquatic habitat and riparian-area management strategy (commonly referred to as PACFISH) for Pacific salmon, steelhead, and sea-run cutthroat trout habitat on lands they administer. The strategy is being developed in response to new information documenting broad declines in naturally reproducing Pacific salmon, steelhead, and sea-run cutthroat trout [hereinafter referred to as anadromous fish], and widespread degradation of the habitat upon which these anadromous fish depend.¹ This environmental assessment analyzes a range of interim strategies for arresting the degradation and beginning the restoration of aquatic and riparian ecosystems during the next 18 months while a longer-term strategy is developed and evaluated. Recent studies warrant consideration of an interim strategy for management of aquatic and riparian ecosystems on lands administered by the Agencies.

In March-April 1991, the American Fisheries Society (AFS), a professional society of fisheries research scientists and fisheries managers, published a report² that identified 214 stocks of naturally reproducing anadromous fish in California, Oregon, Washington, and Idaho, that were considered to be "at risk" of extinction or "of special concern." The report also documented 106 additional stocks that already are extinct. The depressed status of 214 stocks reflects the interaction of inherently variable environmental conditions, such as ocean productivity and weather patterns, with a variety of management activities. In general, stock survival is threatened by some combination of dam construction and operation, water diversions, habitat modifications, fish hatchery operations, and fish harvest. Reasons for the decline of anadromous fish vary by species and geographic area (e.g., dams are a primary factor affecting the status of some stocks, but have a negligible effect on others), however, degradation of freshwater habitat is a common feature affecting all at-risk stocks. A 1992 report³ calculated that of the 192 stocks of anadromous fish in the Columbia River Basin, 35 percent are extinct, 19 percent were at high risk of extinction, 7 percent were at moderate risk of extinction, 13 percent were of special concern, and 26 percent were presumed secure.

¹USDA Forest Service Pacific Salmon Work Group and Field Team. 1992. *Informational Report - Background Report for the Development of the Forest Service Management Strategy for Pacific Salmon and Steelhead Habitat.*

²W. Nehlsen, J. E. Williams, and J. A. Lichatowich. 1991. *Pacific Salmon at the Crossroads: Stocks at Risk from California, Oregon, Idaho, and Washington.* Fisheries 16 (2): 4-21.

³J.E. Williams, J.A. Lichatowich, and W. Nehlsen. 1992. *Declining Salmon and Steelhead Populations: New Endangered Species Concerns for the West.* Endangered Species Update. 9(4):1-8.

Subsequent surveys in California⁴, Oregon⁵, and Washington⁶ confirmed the scope but broadened the magnitude of the decline.

Assessments by researchers indicate that stream systems throughout California, Oregon, Washington, and Idaho, have been degraded considerably by human-induced cumulative effects from such activities as livestock use, road construction, timber harvest, recreational use, channelization, and other watershed management projects and activities (based on the following studies listed in Appendix A: Platts, 1989; Platts, 1991; Meehan, 1991; NMFS 1993; and Idaho Department of Fish and Game, 1992). For example, from 1987 to 1992, researchers from the Pacific Northwest Research Forest and Range Experiment Station resurveyed 116 stream systems in Oregon, Washington, and Idaho, and compared the number of large, deep pools per stream mile—a primary indicator of high quality, in-channel habitat condition—to the number documented during surveys conducted between 1935 and 1945. Their report⁷ documents substantial decreases in the quality and quantity of large, deep pools throughout managed areas of the region. The number of large, deep pools decreased 58 percent in the Cowlitz River Basin, 41 percent in the Lewis River, 84 percent in the Elochoman River Basin, and 85 percent in the Yakama River Basin, all in Washington State; 78 percent in the Lewis and Clark River and 85 percent in the Clatskanie River, both in Oregon; and 52 percent in the Salmon River Basin of Idaho. Pool-riffle ratios have decreased from historic levels of about 50:50 to 20:80 or 10:90 according to Oregon Game Commission surveys in the 1960s and Forest Service surveys in the 1970s (unpublished data).

Despite implementation of gradually improving best management practices through national forest Land and Resource Management Plans (forest plans) and BLM Land Use Plans (LUPs), riparian and aquatic habitat conditions on Federal lands have continued to decline. Generally, anadromous fish habitat on lands administered by the Agencies have 30-70 percent fewer large, deep pools, more fine sediments in spawning gravels, and greater disturbance of riparian vegetation than is acceptable. Such factors reflect a general reduction in fish habitat

⁴P. Higgins, S. Dobush, and D. Fuller. 1992. *Factors in Northern California Threatening Stocks With Extinction*. American Fisheries Society, Humboldt Chapter. 25 pp.

⁵T.E. Nickelson, J.W. Nicholas, A.M. McGie, R.B. Lindsay, D.L. Bottom, R.J. Kaiser, and S.E. Jacobs. 1992. *Status of Anadromous Salmonids in Oregon Coastal Basins*. Oregon Dept. of Fish and Wild., Portland. 83 pp.

⁶Washington Department of Fisheries, Washington Department of Wildlife, and Western Washington Treaty Indian Tribes. 1993. *Washington-State Salmon and Steelhead Stock Inventory*. Washington Dept. of Fisheries., Olympia. 212 pp.

⁷B.A. McIntosh, J.R. Sedell, J.E. Smith, R.C. Wissman, S.E. Clark, G.H. Reeves, and L.A. Brown. *Management History of Eastside Ecosystems: Changes in Fish Habitat over 50 years, 1935-1992*. USDA/FS PNW Research Station, General Technical Report PNW-GTR-321, February 1994.

capability.⁸ Many streams have become simplified, having lost the structural complexity vital to the productivity and well-being of many aquatic species.

Agency-administered lands provide substantial habitat for remaining stocks of anadromous fish. The Agencies estimate that of the 214 stocks identified in the AFS published report as at risk of extinction, 134 occur on FS-administered lands and 109 on BLM-administered lands.⁹ The National Marine Fisheries Service (NMFS) has determined that the Snake River sockeye salmon is endangered,¹⁰ and the Snake River fall and spring/summer chinook salmon is threatened¹¹ pursuant to provisions of the Endangered Species Act of 1973, as amended (ESA). Since initial publication of this environmental assessment (EA), NMFS announced an emergency action to reclassify the status of the Snake River spring/summer chinook salmon and fall chinook salmon from threatened to endangered.¹² The emergency action will be in effect until April 15, 1995. During this time, NMFS will publish a proposed rule to reclassify these chinook stocks. The NMFS determination was based on a projected decline in adult Snake River chinook salmon abundance. The Sacramento River winter chinook salmon was listed as threatened¹³ in 1990. The NMFS recently determined that reclassifying the Sacramento River winter chinook salmon as endangered was warranted.¹⁴ Additional stocks have been, or are expected to be, petitioned for listing.¹⁵ Further, all anadromous fish in the Snake River Basin have been designated as sensitive species by the FS and are being considered for such designation by the BLM.

The 1994 adult spring chinook salmon count at Bonneville Dam was 20,132 (Fish Passage Center 1994), about 43 percent of the previous record low return. The expected 1994 return of combined Snake River spring and summer chinook salmon runs to Lower Granite Dam is

⁸R.J. Naiman, T.J. Beechie, L.E. Benda, et al. 1992. *Fundamental Elements of Ecologically Healthy Watersheds in the Pacific Northwest Coastal Ecoregion*. Pp. 127-188. In: Naiman, R.J. ed. *Watershed Management Balancing Sustainability and Environmental Change*. New York, NY. Springer-Verlag. P.A. Bisson, T.P. Quinn, G.H. Reeves, and S.V. Gregory. 1992. *Best Management Practices, Cumulative Effects, and Long-term Trends in Fish Abundance in Pacific Northwest River Systems*. Pp. 189-232. In: Naiman, R.J. ed. *Watershed Management Balancing Sustainability and Environmental Change*. New York, NY. Springer-Verlag.

⁹J.E. Williams and C. D. Williams. ms. *An Ecosystem-based Approach to Management of Salmon and Steelhead Habitat*. Ms. prepared for Pacific Salmon and Their Ecosystems Conference. Seattle, WA. January 1994.

¹⁰NMFS determination in 56 FR 58619; November 20, 1991. Added to list in 57 FR 212; January 3, 1992. Critical Habitat designated in 58 FR 68543; December 28, 1993.

¹¹NMFS determination in 57 FR 14654; April 22, 1992 [Corrected in 57 FR 23458; June 3, 1992]. Added to list in 58 FR 49880; September 23, 1993. Critical Habitat designated in 58 FR 68543; December 28, 1993.

¹²NMFS determination in 59 FR 42529; August 18, 1994.

¹³NMFS determination in 55 FR 46515; November 5, 1990. Added to list in 55 FR 49623; November 30, 1990. Critical Habitat designated in 58 FR 33212; June 16, 1993.

¹⁴NMFS determination in 59 FR 440; January 4, 1994.

¹⁵In particular, the Illinois River winter steelhead in Oregon, other coastal and interior steelhead, the mid-Columbia River chinook, and the coho (silver) salmon throughout their range in the lower 48 States.

projected to yield only 14 to 28 percent of the recent 10-year average for spawning redds (NMFS and Fish and Wildlife Service (FWS) 1994). Based on the 1994 spring chinook jack count at Bonneville Dam, the 1995 run will likely be even lower than in 1994. The projected 1994 return of listed fall chinook salmon to the Columbia River is 803, the second lowest on record. When mortality is considered, NMFS estimates that only 300 adults will reach Lower Granite Dam. The 1995 forecast suggest that the fall chinook run will be about 60 percent of 1994 (NMFS and FWS 1994).

The Agencies have taken a number of independent actions to respond to declines in anadromous fish stocks and the degradation of habitat. Both participated in the 1990-1991 "Salmon Summit," which was convened by Senator Mark Hatfield to examine restoration of Columbia River Basin anadromous fish. The Agencies were instrumental in developing the Habitat Section of the Summit Report,¹⁶ and have undertaken a number of the near-term actions identified in that report. They have developed and are implementing a variety of anadromous fish program initiatives¹⁷ for management of their respective anadromous fish habitat resources. To date, however, even in light of ongoing efforts outside the range of the northern spotted owl, neither Agency has implemented a comprehensive approach to ecosystem-based management of aquatic and riparian habitats. In addition, as required by the ESA, projects and activities on 10 national forests and 4 BLM districts are subject to consultation with the NMFS on threatened and endangered anadromous fish in the Snake River Basin. During consultation the Agencies have found that adoption of habitat protection standards similar to those explored in this environmental assessment generally has become the accepted method of meeting threatened and endangered anadromous fish habitat requirements.

On January 25, 1994, the Agencies joined with the National Park Service (NPS), FWS, and NMFS in signing an Interagency Memorandum of Understanding (Interagency MOU) to cooperate in management of federally administered lands for the conservation of species that are tending towards Federal listing as threatened or endangered pursuant to the ESA. The Interagency MOU describes the protection and proper management of habitats as an important tool for preventing additional listings of species. The Interagency MOU was executed to facilitate compliance with ESA Section 7(a) obligations requiring all Federal agencies to proactively manage lands and resources within their jurisdictions for the conservation of rare species.

The strategy being developed by the Agencies would provide a consistent approach for maintaining and restoring aquatic and riparian habitat conditions, and would contribute to the sustained natural production of anadromous fish. The Agencies established two technical teams--the FS/BLM Field Team and Washington Office Work Group--and one Washington Office Policy Group, to coordinate strategy development. All three were composed of Agency research scientists and managers. The information developed by these groups provided the foundation for the aquatic and riparian components of the Scientific Analysis

¹⁶Report of the Salmon Summit. 1991. Submitted by Governors Roberts (OR), Gardner (WA), Andrus (ID), and Stephens (MT) to Senator Hatfield (OR).

¹⁷USDI Bureau of Land Management. 1993. *Anadromous Fish Habitat Management and Funding Strategy for the Columbia and Snake River Basins*. USDA Forest Service, Regions 1, 4, and 6. 1991. *Columbia River Basin Anadromous Fish Habitat Management Policy and Implementation Guide*.

Team Report¹⁸ and the Forest Ecosystem Management Assessment Team (FEMAT) Report.¹⁹ Measures for maintaining and restoring anadromous fish habitat are included in the *Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl* (Northern Spotted Owl FSEIS) for all or parts of the 15 national forests and 6 BLM districts²⁰ that are within the range of the northern spotted owl and which accommodate naturally reproducing stocks of anadromous fish.

Over the next 18 months, the Agencies will cooperatively prepare several geographically-specific environmental analyses (e.g., environmental impact statements (EISs)) to examine longer-term management strategies for protecting or restoring anadromous fish-producing watersheds in areas considered in this environmental assessment.²¹ These analyses will build on the information developed by the Agencies' technical teams and policy group, and determine if amendments to forest plans, LUPs, or regional guides in California, Idaho, Oregon, and Washington are necessary.

Because new information documents that nearly one-half of the anadromous fish stocks are at risk of extinction, and habitat degradation is a common causal factor, the Agencies are analyzing a range of interim strategies, based on the work of the technical teams and policy group, for immediately arresting the decline in habitat conditions, initiating habitat restoration, and protecting remaining high quality habitat until the geographically-specific environmental analyses are completed. The Agencies want to make their best effort to ensure that nothing done on national forests and BLM public lands in the interim results in the extinction or further endangerment of at-risk anadromous fish stocks, or otherwise precludes options that will be considered in the geographically-specific environmental analyses. Improved management of aquatic and riparian ecosystems on lands administered by the Agencies, combined with improvements in hydropower operations, hatchery practices, and fish harvest management, can prevent additional stocks from becoming extinct and preclude the need to extend the protection of the Endangered Species Act to other anadromous fish stocks in California, Idaho, Oregon, and Washington.

In accordance with congressional direction provided in the Fiscal Year 1994 Interior and Related Agencies Appropriations Act, the FS will not implement new anadromous fish habitat management direction during fiscal year 1994 on the Tongass National Forest in Alaska, but will conduct studies and monitor current management practices on the Tongass. In

¹⁸J.W. Thomas, M.G. Raphael, R.G. Anthony, E.D. Forsman, A.G. Gunderson, R.S. Holthausen, B.G. Marcot, G.H. Reeves, J.R. Sedell, and D.M. Solis. March 1993. *Viability Assessments and Management Considerations for Species Associated with Late-Successional and Old-Growth Forests of the Pacific Northwest - The Report of the Scientific Analysis Team*. USDA, Forest Service. Portland, OR.

¹⁹Forest Ecosystem Management Assessment Team. 1993. *Forest Ecosystem Management: an Ecological, Economic, and Social Assessment*, USDA, Forest Service. Portland, OR.

²⁰The Mt. Hood, Rogue River, Siskiyou, Siuslaw, Umpqua, Willamette, Gifford-Pinchot, Mt. Baker-Snoqualmie, a portion of the Okanogan, Olympic, Wenatchee, Klamath, Shasta-Trinity, Mendocino, and Six Rivers National Forests; and the Coos Bay, Medford, Eugene, Roseburg, and Salem BLM Districts in Oregon; and the Arcata and Redding Resource Areas of the Ukiah BLM District in California.

²¹The notices initiating these analyses are included in Appendix I.

subsequent years, as determined necessary for stewardship of anadromous fish habitat in Alaska and evaluated as required by the National Environmental Policy Act (NEPA), both Agencies will incorporate appropriate measures into regional guides and forest plans and LUPs for management of all lands and resources within their respective jurisdictions in Alaska.

Although neither Agency has jurisdiction over other factors affecting anadromous fish, each will remain alert for opportunities to coordinate its efforts to improve habitat condition on Agency-administered lands with the efforts taken by others to address such factors as dams, hatcheries, fish harvesting, and private-land habitat condition. Full recovery of listed anadromous fish and conservation of other anadromous fish that are at risk of extinction will depend on the development of a response to all factors affecting their decline, including those factors outside the Agencies' jurisdictions. Regardless of any action or inaction by other responsible agencies or organizations that might affect populations of anadromous fish stocks, the Agencies have responsibilities to proceed with action to restore degraded habitat and protect good-quality habitat.

The FS, BLM, and National Marine Fisheries Service and others signed a Memorandum of Understanding in January, 1994 to "[w]ork together and participate in the conservation of selected plant and animal species and their habitats to reduce, mitigate, and possibly eliminate the need for their listing under the ESA by developing habitat conservation assessments leading to Conservation Agreements." This MOU was signed to facilitate the agencies working cooperatively to assess and protect habitat in an effort to conserve at-risk species, avoiding the need to list them as threatened or endangered under the ESA.

In recognition of the alarming decline of some Pacific Northwest salmon stocks and the need for the federal government to respond in a coordinated fashion, the Departments of the Interior and Agriculture signed a Memorandum of Agreement with other Departments, the White House Office on Environmental Policy, and the Environmental Protection Agency to establish a framework to facilitate the development of a coordinated and comprehensive salmon restoration plan in October, 1994. The Agreement is intended to ensure that federal agencies work together in a coordinated manner that maximizes the use of federal expertise and resources, and eliminates unnecessary duplication and inefficiencies. The Agreement established a plan for salmon, and a regional Coordinating Committee to "assume primary responsibility for developing and implementing a coordinated Federal effort to conserve and restore Pacific salmon and their associated habitats."

Purpose

The purpose of this environmental assessment is to provide decision makers with analysis of a range of interim strategies for arresting the degradation and beginning the restoration of riparian and aquatic ecosystems in watersheds where anadromous fish habitat is present or easily could be reestablished (hereinafter referred to as anadromous watersheds); to publicly disclose the possible environmental consequences that adoption of each strategy would bring, and to provide continuing opportunities to incorporate the latest scientific information into resource plans and management practices. Alternative strategies presented in this environmental assessment are designed to maintain options for more comprehensive mitigation or environmental protection measures that may be found necessary through the geographically-specific environmental analyses that will be prepared for the affected area.

To protect the good quality anadromous fish habitats, arrest the degradation, and begin restoration of anadromous fish habitat, as well as to respond to a wide array of new scientific information on the status of various anadromous fish stocks and the condition of aquatic and riparian habitat, the Agencies are reevaluating all management projects and activities in anadromous watersheds not considered in the Northern Spotted Owl FSEIS. Because the preparation of geographically-specific environmental analyses that will examine longer-term options for protecting this habitat is scheduled to take 18 months, and because recent assessments of the short- and long-term risks to maintenance and recovery of anadromous fish stocks under current management direction are high, the Agencies believe that a range of interim strategies must be examined for possible adoption. Such strategies are an attempt to ensure that management actions taken in the interim do not have adverse environmental effects that could result in extinction or further endangerment of anadromous fish stocks or otherwise limit the range or number of reasonable alternatives that are to be evaluated in the geographically-specific environmental analyses (40 Code of Federal Regulations (CFR) 1506.1). The interim strategies are intended to bridge the time gap between existing forest plans and whatever long-term strategy is finally adopted.

The FS, in accordance with 36 CFR 219.19, develops land and resource management plans to manage fish and wildlife habitat to maintain viable populations of existing native and desired non-native vertebrate species in the particular planning area. Because of the complexity and dynamic nature of the national forest resources managed under the NFMA, there is no specific or precise standard or technique for satisfying this requirement, as recognized by the scientific community and many courts (see *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl* (NSO ROD)), pp. 43-47). The BLM, in accordance with the Federal Land Policy and Management Act of 1976 (FLPMA), 43 U.S.C. 1701.8, is required to manage public lands to protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values. Both agencies are required by the Clean Water Act, 33 U.S.C. 1251, 1329, to see that activities occurring on lands they administer comply with requirements concerning the discharge or run-off of pollutants. In compliance with their own laws and regulations, and in accordance with the Interagency MOU, the Clean Water Act, and applicable Council on Environmental Quality (CEQ) regulations, the Agencies jointly propose to develop and adopt a coordinated, interim strategy for protecting quality anadromous fish habitat; and arresting the degradation and beginning the restoration of aquatic and riparian ecosystems that constitute anadromous fish habitat.

Interim direction also would facilitate the ability of managers of Federal land within the range of listed anadromous fish to more efficiently and effectively prepare project-specific decisions that will successfully meet requirements of the ESA. Because consultation with the NMFS and the FWS on the interim direction has been completed prior to any adoption, the interim direction would establish guidance that incorporates during initial project design those measures generally determined necessary for compliance with the ESA. This would result in an approach to project design that is more efficient and cost-effective than awaiting project-specific consultation to incorporate all necessary provisions. Interim direction also would increase Agency consistency with and responsiveness to riparian and aquatic habitat concerns across the range of anadromous fish habitat in the western contiguous United States. This, in turn, would reduce the probability that some additional stocks of anadromous fish will need to be listed as threatened or endangered.

There is a noted and continuing decline of habitat elements essential to anadromous fish; and not all forest plans or LUPs include standards, guidelines, and procedures that allow managers

to efficiently and effectively address measures suggested by the NMFS for protection of listed anadromous fish species. Further, not all these planning documents ensure the maintenance and restoration of habitat for other anadromous fish stocks. To better meet responsibilities to provide habitat for listed and other at-risk anadromous fish stocks, and to avoid gridlock in the management of the national forests and BLM public lands and help stabilize the flow of goods and services from these lands, both Agencies believe there is an immediate need to examine appropriate modifications in management direction.

Need

The need for interim management has been made clear by the rapidly declining status of numerous anadromous fish stocks and numerous studies that have demonstrated that declining freshwater habitat condition is a common causal factor in those declines. Furthermore, independent investigations by Agency scientists have confirmed the declining habitat conditions on Agency-administered lands and the dependency of anadromous fish upon high quality habitat conditions. Because of this decline in habitat elements, there is a need to adopt an interim strategy now.

In 1991, the AFS published the first comprehensive report on the status of anadromous fish stocks.²² The AFS report documents the results of a 4-year effort by the AFS Endangered Species Committee to gather, interpret, and summarize information compiled from previously published literature and unpublished data on the status of anadromous fish in California, Idaho, Oregon, and Washington. Information contained in that report was gathered from fish management agencies, Native American tribes, Oregon and Idaho chapters of the AFS, and sportfishing and conservation groups as well as from published scientific journals, proceedings, and books. The authors used a wide variety of available data, including spawning escapements, redd counts, adult counts, recreational catch, dam counts, and anecdotal information. The report documented 1 stock that in 1991 already was listed pursuant to the ESA, another 101 stocks at high risk of extinction, 58 at moderate risk of extinction, and 54 of special concern. Thirty-nine of these stocks occur in California, 58 on the Oregon Coast, 76 in the Columbia River Basin, and 41 in the Washington Coast/Puget Sound area. The present or threatened destruction, modification, or curtailment of habitat or range was cited as one of the primary causal factors in the decline of 195 (91 percent) of the at-risk anadromous fish stocks.

Since the AFS Endangered Species Committee report was published, three State-specific reviews of at-risk anadromous fish stocks have been conducted. In northern California, the Humboldt Chapter of the AFS published a report²³ identifying 49 stocks of anadromous fish stocks in streams between the Russian River and the Oregon border. That report generally agreed with the AFS report except that coastal cutthroat were considered by the Humboldt Chapter to be more seriously affected and were reclassified from "of special concern" to "at moderate risk" of extinction, and many of the summer and winter steelhead stocks were subdivided into smaller stock units.

²²Report by W. Nehlsen, J.E. Williams, and J.A. Lichatowich, cited in footnote 2.

²³Report by P. Higgins, S. Dobush, and D. Fuller, cited in footnote 4.

For the Oregon coast, the Oregon Department of Fish and Wildlife (ODFW) conducted a review of anadromous fish stocks in the coastal basins.²⁴ In this report, the ODFW ranked stocks differently than had the AFS and the Humbolt Chapter reports. The ODFW used the terms "of special concern" to note a high-risk stock, and "depressed" to note a moderate-risk stock. The ODFW report also included the terms "unknown" and "healthy." Although they agreed with documentation of the widespread declines reported by the AFS, the ODFW added many additional stocks to the list from the AFS Report, and also considered several stocks to be in a somewhat better condition than reported by the AFS. Because the ODFW report reviewed only coastal stocks, all of their data applied to stocks within the range of the northern spotted owl and outside the range of this environmental assessment.

The Washington Department of Fisheries (WDOF) reported²⁵ on the status of anadromous fish stocks throughout the State. In addition to the WDOF, the Washington Department of Wildlife and technical staffs of 23 Native American tribes also contributed to the report. That report identified 78 salmon and 44 steelhead stocks as "depressed" (defined the same as "at moderate risk" of extinction in the AFS published report), and 11 salmon stocks and 1 steelhead stock as "critical" (defined the same as "at high risk" of extinction in the AFS published report). Of the 134 stocks in Washington identified by WDOF as depressed and critical, 71 occur in the Columbia River Basin.

²⁴Report by T.E. Nickelson, J.W. Nichols, A.M. McGie, R.B. Lindsay, D.L. Bottom, R.J. Kaiser, and S.E. Jacobs, cited in footnote 5.

²⁵Report by Washington Department of Fisheries, Washington Department of Wildlife, and Western Washington Indian tribes, cited in footnote 6.

The FEMAT report²⁶ reviewed and compared the above referenced reports. In general, each succeeding report added or subdivided stocks from the original list in the AFS published report. Including data from the AFS report, the Humboldt Chapter report, the ODFW report, and the WDOF report, FEMAT found a total of 314 anadromous fish stocks at-risk just within the range of the northern spotted owl, more than doubling that number originally reported for the same area in the AFS report (an increase of 178 over the original 136).

Assessments by researchers indicate that stream systems throughout California, Oregon, Washington, and Idaho have been degraded considerably by human-induced cumulative effects. Such activities as livestock use, road construction, timber harvest, recreational use, channelization, and other watershed management projects and activities are the most common causal factors. The effects of livestock grazing and timber harvest related activities on anadromous fish and their habitat have been specifically demonstrated in the geographic range of the interim direction. For example, in the Upper Grande Ronde River basin in northeastern Oregon, over 80 percent of the drainage is considered to be in a deteriorated state because of high water temperatures, high sediment levels, and low levels of woody debris caused primarily by livestock grazing, timber harvest, road-building, and other land management activities (Wallowa-Whitman National Forest 1992). Chapman and Witty (1993) cite work of Rich et al. (1992) which demonstrated that, in the Middle Fork of the Salmon River, streams not grazed by livestock possessed ten times the number of juvenile chinook salmon compared to Bear and Elk Creeks, which receive heavy grazing pressure. The Idaho Department of Fish and Game (1992) found that Chamberlain Creek, a tributary of the Salmon River which has been protected from major human impacts by wilderness designation, has higher parr densities than other streams which have been exposed to multiple development-related impacts.

Between 1987 and 1992, researchers from the Pacific Northwest Research Forest and Range Experiment Station (PNW) resurveyed 116 stream systems in Oregon, Washington, and Idaho, and compared the number of large, deep pools per stream mile—a primary indicator of high-quality, in-channel habitat condition, to the number documented during surveys conducted between 1935 and 1945. The PNW report²⁷ documents substantial decreases in the quality and quantity of large, deep pools throughout managed areas of the region. The number of large, deep pools decreased 58 percent in the Cowlitz River Basin, 41 percent in the Lewis River, 84 percent in the Elochoman River Basin, and 85 percent in the Yakama River Basin, all in Washington State; 78 percent in the Lewis and Clark River and 85 percent in the Clatskanie River, both in Oregon; and 52 percent in the Salmon River Basin of Idaho.

Pool-riffle ratios are a gauge of aquatic habitat diversity, and are an indicator of the degree to which streams are capable of producing and supporting a varied and complex community of fish species. According to Oregon Game Commission surveys in the 1960s and Forest Service surveys in the 1970s (unpublished data), pool-riffle ratios have decreased from historic levels of about 50:50 to 20:80 or 10:90, indicating a dramatic loss of diversity and diminution of fish habitat capability. BLM scientists found that of the 211 miles of anadromous fish habitat in that Agency's Salem District of western Oregon, 42 percent was in

²⁶Report by Forest Ecosystem Management Assessment Team, cited in footnote 19.

²⁷Report by B.A. McIntosh et al., cited in footnote 7.

poor condition, 35 percent in fair condition, and 23 percent in good condition.²⁸ On Forest Service-administered lands, 80 percent of fish habitat in the upper Grande Ronde Basin fails to meet current forest plan standards and guidelines for water temperature, sediment levels, and riparian condition. Seventy percent of stream habitats of the Middle Fork Clearwater and Lochsa Rivers on Idaho's Clearwater National Forest fail to meet current forest plan standards and guidelines. These results provide confirmation that Agency-administered lands also have experienced deterioration of anadromous fish habitat condition.

Several papers recently have reviewed and reconfirmed the dependency of healthy anadromous fish stocks on high-quality freshwater habitats. Studies by R.J. Naiman and others defined ecologically healthy watersheds by the delivery and routing of water, sediment, and woody debris.²⁹ Healthy riparian areas provide the primary control for this delivery and routing. Riparian areas are critical to the maintenance of water temperature, habitat complexity, pools, sediment levels, and instream structure, which are necessary for the natural reproduction of anadromous fish stocks.³⁰

The Agencies independently have examined the results of these and other studies (Appendix A) and believe that the conclusions regarding declining status of anadromous fish stocks, degradation of aquatic and riparian habitat condition, and the causal link between the two are consistent with the Agencies' own studies. Forest plans and LUPs were intended by Congress to be readily adaptable to new information to make adjustments that assure sound resource management. A reasoned response to new information is crucial to the Agencies' success in meeting the "continuing compliance" obligations of NEPA, National Forest Management Act of 1976 (NFMA), FLPMA, ESA, and other environmental laws. By using the latest scientific information, the Agencies will better be able to contribute to the long-term conservation of anadromous fish species and the continuing production of goods and services from public lands.

Decision Framework

Analyses and findings described in this environmental assessment will help the Agencies decide:

- (1) whether to continue with management direction described in current forest plans and LUPs, or to increase protection through interim management direction until longer-term management options proposed in the geographically-specific environmental analyses are evaluated and an alternative is approved and implemented;
- (2) what direction would be necessary to arrest the degradation, begin the restoration of, and protect aquatic and riparian ecosystems during the interim period;

²⁸R.A. House. 1992. *Management of Anadromous Salmon and Trout Habitat and Their Status in the Salem District*. Report of Bureau of Land Management, Salem, OR.

²⁹Report by Naiman, R.J., T.J. Beechie, L.E. Benda, et al., cited in footnote 8.

³⁰S.V. Gregory, F.J. Swanson, W.A. McKee, and K.W. Cummins. 1991. *An Ecosystem Perspective of Riparian Zones*. BioScience. 41:540-551. R.J. Naiman, and H. Decamps. (eds.). 1990. *The Ecology and Management of Aquatic-terrestrial Ecotones*. UNESCO, Paris. Report by R.J. Naiman, T.J. Beechie, L.E. Benda, et al., cited in footnote 8.

- (3) which watersheds would be subject to interim direction; and
- (4) whether interim direction would apply to:
 - a. only proposed or new projects and activities;
 - b. all proposed or new projects and activities and all ongoing projects and activities;
or
 - c. all proposed or new projects and activities and some ongoing projects and activities.

The geographically-specific environmental analyses will evaluate longer-term management direction for anadromous fish habitat within all or portions of the 15 national forests and 7 BLM districts described under *Proposed Action*, and may include alternatives that are not considered for interim application in this environmental assessment. The geographically-specific environmental analyses will complement aquatic and riparian provisions of the Northern Spotted Owl FSEIS and provide consistently sound habitat management practices on lands administered by the Agencies throughout the range of anadromous fish in California, Oregon, Washington, and Idaho. The Agencies are examining the need for NEPA analyses of possible longer-term modifications in anadromous fish habitat management direction for the 2 national forests and 5 BLM districts in Alaska.

PROPOSED ACTION

Geographic Range and Duration

The proposed action in this environmental assessment is to establish interim management direction that would arrest the degradation and begin the restoration of anadromous fish habitat within all or portions of 15 national forests³¹ in 4 Forest Service Regions in 4 States, and 7 BLM districts in 4 States while the Agencies examine longer-term options that will be developed in geographically-specific environmental analyses. The geographically-specific environmental analyses are scheduled to be completed in 18 months. The proposed action together with the NSO ROD would provide an aquatic and riparian management strategy for all anadromous fish-producing watersheds on FS- and BLM-administered lands in the western contiguous United States. The proposed action would be a short-term effort to preserve or initiate improvement in the environmental status quo while the Agencies develop and evaluate a longer-term policy. The temporary nature of the proposed action would limit effects of the interim direction.

³¹These are all or part of those national forests listed in Appendix A of the *Informational Report--Background Report for the Development of the Forest Service Management Strategy for Pacific Salmon and Steelhead Habitat* (December 1992), which are not included in the Northern Spotted Owl FSEIS. This management direction would apply to any anadromous fish-producing watersheds located in Idaho, Washington, Oregon, and California, outside the areas implementing the Northern Spotted Owl ROD.

Areas considered in the proposed action are those anadromous watersheds in the western contiguous United States excluding areas implementing the Northern Spotted Owl ROD (Figure 1). The national forests considered in this assessment include:

STATE	REGION	NATIONAL FOREST
California	5	Lassen and Los Padres
Idaho	1 4	Bitterroot, Clearwater, Nez Perce, Boise, Challis, Payette, Salmon, and Sawtooth ³²
Oregon	6	Malheur, Ochoco, Umatilla, and Wallowa-Whitman
Washington	6	Okanogan

By State, the BLM districts include:

STATE	BLM DISTRICT
California	Bakersfield and Ukiah ³³
Idaho	Coeur d'Alene and Salmon
Oregon	Prineville and Vale
Washington	Spokane

Appendix B displays the estimated acreage in anadromous watersheds for each of the 7 BLM districts and 15 national forests. Approximately 16 million acres of anadromous watersheds are considered in this environmental assessment; however, the standards and guidelines proposed under the various alternatives examined would apply only to protect the defined Riparian Habitat Conservation Areas (RHCAs) within anadromous fish watersheds. Projects and activities that are not within defined RHCAs would continue to operate under direction in current forest plans and LUPs—except in those cases where NEPA analyses (or screening of ongoing actions) indicate that those projects and activities would degrade RHCA conditions. As a consequence, there would be few effects upon existing resource users outside the defined RHCAs.

³²The Sawtooth National Recreational Area and the Columbia River Gorge National Scenic Area also are included.

³³This includes "Eastside" portions of the Okanogan National Forest and the BLM's Ukiah District that are not implementing the Northern Spotted Owl ROD.

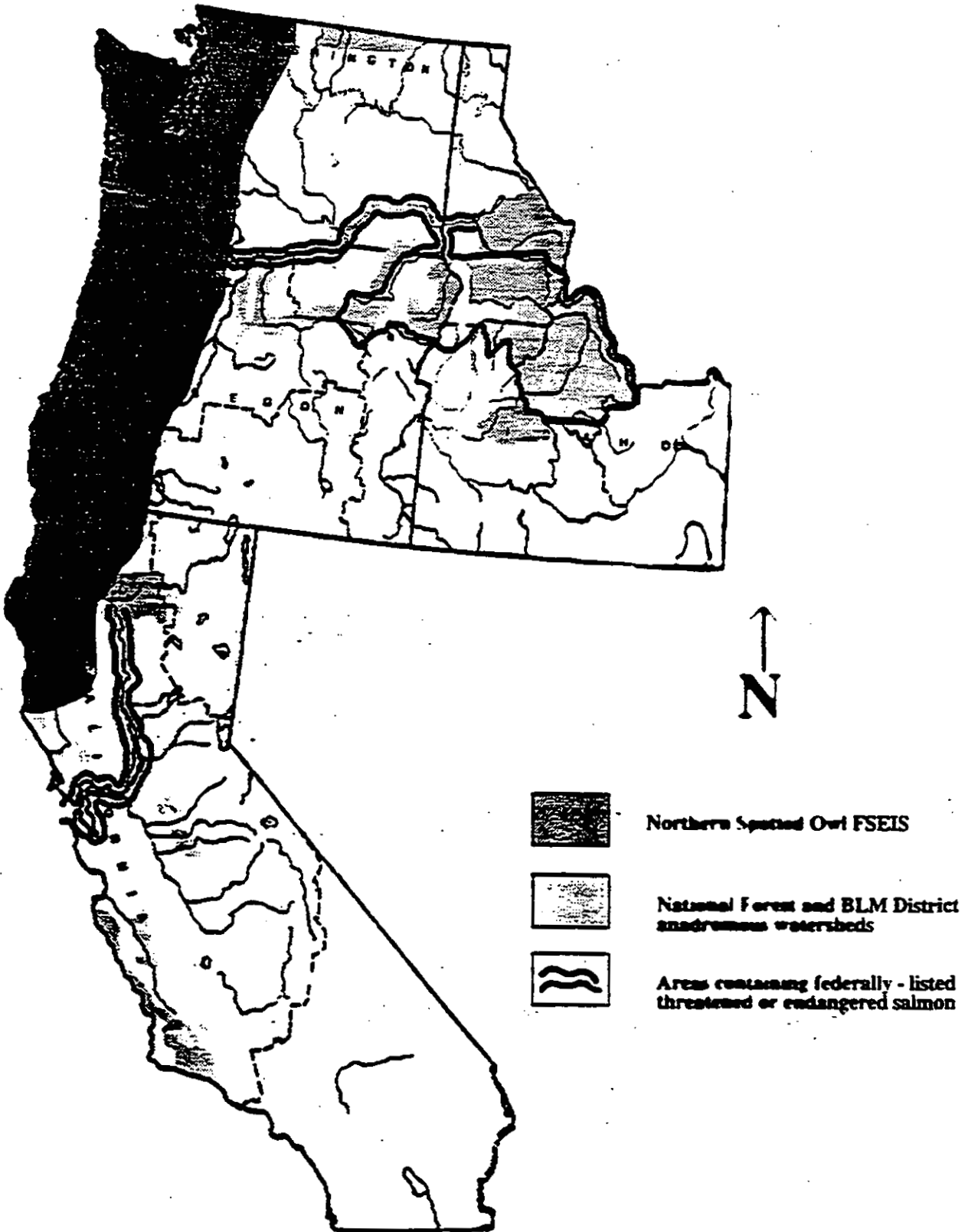
As part of the analysis for the Northern Spotted Owl FSEIS, "riparian reserves" were modeled using substantially the same criteria as is specified for RHCAs in the proposed action. In Key Watersheds, the reserves generally encompassed 40-50 percent of the westside watersheds, in non-key westside watersheds the reserves generally encompassed 25-45 percent.³⁴ Within the proposed action area, this estimate would constitute 4-7 million acres in RHCAs. Because drainage networks generally are less dense within the proposed action area than within the range of the northern spotted owl, the actual area delineated as RHCAs will likely be less than this estimate.

Management Direction

The Agencies propose to adopt mitigation and management measures specified under Alternative 4 (PREFERRED). This alternative, which is described in detail in Appendix C, would provide interim management direction that would supplement LUPs and would amend current regional guides and forest plans to add new riparian goals, interim Riparian Management Objectives (RMOs), and standards and guidelines for application to all new and proposed and some ongoing projects and activities to protect the condition and function of RHCAs. The standards and guidelines serve to provide adequate environmental safeguards for proposed or new and ongoing projects and activities that pose an unacceptable risk within RHCAs or that degrade RHCAs. For the FS, these interim standards and guidelines replace conflicting direction described in the existing forest plans, except where that direction provides more protection for anadromous fish habitat. No additional mitigation measures are identified here. It also would provide for identification of a network of Key Watersheds and development and trial application of a protocol for Watershed Analysis.

³⁴J.R. Sedell. 1994. *Personal Communication*. Pacific NW Research Station, Corvallis, OR.

Figure 1. General Location of Proposed Action Area.



Riparian Goals would establish a common set of characteristics of healthy, functioning watersheds, riparian areas, and associated fish habitats. Because the quality of water and fish habitat in aquatic systems is inseparably related to the integrity of upland and riparian areas within the watersheds, the proposed action articulates several goals for watershed, riparian, and stream channel conditions, including the maintenance or restoration of: water quality, stream channel integrity, channel processes, sediment regime, instream flows, natural timing and variability of the water table elevation in meadows and wetlands, and the diversity and productivity of native and desired non-native plant, vertebrate, and invertebrate communities. These goals focus on ecological processes and functions under which the riparian and aquatic ecosystems developed and the unique genetic anadromous fish stocks evolved.

RMOs would establish measurable habitat parameters that together define good anadromous fish habitat and serve as indicators against which attainment, or progress toward attainment, of the goals can be measured. The proposed action would establish 6 landscape-scale interim RMOs (including 1 key and 5 supplemental features) that are indicative of ecosystem health and are easily quantified and subject to accurate, repeatable measurements. For all areas (including forested and non-forested ecosystems) the key feature is the number of deep pools per mile of stream and supplemental features include water temperature and width-to-depth ratio. In forested ecosystems the amount of woody debris in the stream also is a supplemental feature. In non-forested ecosystems, stream bank stability and lower bank angle also are supplemental features.

Proposed standards and guidelines have been developed for management of timber, roads, grazing and recreation resources, minerals, fire and fuels, and general riparian areas, as well as for land uses such as those governed by leases, permits, rights-of-way, and easements. Standards and guidelines also have been developed for the restoration of watershed, fisheries, and wildlife habitat. The proposed standards and guidelines would provide management direction believed necessary to halt degradation and begin restoration to meet Riparian Goals and RMOs for stream channel, riparian area, and watershed. Standards and guidelines specified under the proposed action, for activities and projects within RHCAs or that degrade RHCAs, in combination with standards and guidelines that have been established in current forest plans and LUPs, have been designed to provide a benchmark for mitigation of management activities, to recognize the need for increased sensitivity to ecological balances, and to foster a continuing commitment to ecosystem management. The complete text of the standards and guidelines specified under the proposed action is included in Appendix C, pages C-9 through C-18.

The proposed action would establish interim RHCAs to identify areas in watersheds that are most sensitive to management. The standards and guidelines of the proposed action would be applied within all RHCAs and to projects and activities outside RHCAs that would degrade RHCA condition. Interim RHCAs would be based on geomorphic features such as the edges of the active stream channels, the top of the inner gorge, the extent of the 100-year flood plain, the outer edges of riparian vegetation, the height of site-potential trees, and the extent of unstable soils. Generally, interim RHCAs would include the following areas: 300 feet on either side of fish-bearing streams, 150 feet on either side of permanent non-fish-bearing streams, and around ponds, reservoirs, and wetlands greater than one acre, and 100 feet in Key Watersheds (50 feet in non-key watersheds) on either side of seasonally flowing or intermittent streams, and around wetlands less than one acre, and landslides and landslide-prone areas. In non-forested rangeland ecosystems, the interim RHCA width for permanently flowing fish-bearing and non-fish-bearing streams would be the extent of the 100-year flood plain.

The proposed action would provide for Key Watersheds within the proposed action area. Actual designation of Key Watersheds will be addressed in the geographically-specific environmental analyses to be prepared for eastern Oregon/Washington, Idaho, and portions of California outside of areas implementing the Northern Spotted Owl ROD. Designation would be based on information developed through ecological assessments (e.g., Interior Columbia River Basin Assessment). Key Watersheds would likely be selected from among those that are important to at-risk anadromous fish stocks, or those that are providing, or are readily capable of being restored to provide "good" anadromous fish habitat, and that would contribute to a network of watersheds across the landscape that provide for the long-term conservation of anadromous fish. During the period of interim direction, all watersheds with listed anadromous fish or with designated critical habitat for anadromous fish will be treated as if they are Key Watersheds. Identified Key Watersheds would receive priority for Watershed Analysis, as well as maintenance and restoration projects and activities. RHCAs within Key Watersheds would include a larger area than in non-key watersheds. Specifically, more area around seasonally flowing or intermittent streams, wetlands, and landslide or landslide-prone areas would be included within RHCAs in Key Watersheds. The proposed action would provide for watershed-specific tailoring of the interim RMOs and RHCAs through watershed and site-specific analyses or as a result of ESA consultation.

A Watershed Analysis protocol would be established under the proposed action to characterize watershed/fish habitat conditions and contributing factors, and identify areas that are in need of immediate, corrective management. As per conservation recommendations provided by NMFS in consultation on the proposed action, the guidelines and procedural manuals developed by the Interagency Watershed Analysis Coordination Team and other potentially relevant procedures (e.g., the Cumulative Watershed Effects Process for Idaho, etc.) will be considered and used, where appropriate, in development of the protocol. This more complete assessment would identify watershed restoration objectives, strategies, and priorities, and would provide the scientific basis for watershed-specific adjustments to the interim RMOs and interim RHCAs. To provide accountability, the proposed action would establish a certification process to that the analysis has been conducted and completed according to expected scientific standards.

The proposed action includes both management measures (e.g., Watershed Analysis) and mitigation measures (e.g., standards and guidelines). Adoption of interim direction would establish a management regime and system of mitigation measures that would maintain or protect environmental conditions until the more geographically-specific environmental analyses are completed. Under the proposed action, subsequent decisions that would affect the environment (i.e., proposed projects and activities within RHCAs or that degrade RHCAs) would be subject to the interim standards and guidelines. Evaluation of all proposed projects and activities would continue through site-specific analyses that are required by NEPA to assure consistency with interim RMOs. Further, the standards and guidelines also would apply to high-priority, ongoing projects and activities within RHCAs or that degrade RHCAs.

Proposed or new projects and activities include those initiated during the interim period, as well as those that have been approved but not yet implemented, or for which contracts have not been awarded, or for which permits have not been issued. Within the range of listed anadromous fish, continuing actions for which biological assessments (BAs) have not been prepared and submitted for consultation, prior to signature of the decision notice for the proposed action, will also be treated as new projects or activities.

"Ongoing projects and activities that pose an unacceptable risk" are those determined on the basis of a case-by-case evaluation to pose unacceptable risk to anadromous fish.

Unacceptable risk is defined as a level of risk from an ongoing activity or group of ongoing activities that is determined through review of biological assessments/evaluations to be:

"likely to adversely affect" listed anadromous fish or their designated critical habitat, or

"likely to adversely impact" non-listed anadromous fish. Biological assessments/evaluations

or environmental analyses for all ongoing projects and activities will be reviewed with a

checklist to screen for unacceptable risk. When applying these screens, managers will

consider such factors as the condition of the watershed, the status of anadromous fish stocks

in the watershed, and the magnitude, frequency, duration, and timing of the impacts caused by

the ongoing project or activity.

The unacceptable risk determination triggers application of the interim standards and guidelines to ongoing projects. There will be appropriate level of involvement in this process for contract holders and those whose ongoing projects are affected. A common understanding of the term is critical to consistent application of interim direction. Where ongoing projects and activities may affect listed anadromous fish, this common understanding also facilitates effects determinations made in BAs prepared by Forest Service and BLM biologists that can be concurred with by NMFS. Definitions of "adverse effect" (for listed anadromous fish) and "adverse impact" (for non-listed anadromous fish) provided in the glossary are a key component of evaluating unacceptable risk. The following guidelines build upon the definition of "adverse effect" used by the Forest Service and NMFS to conduct Section 7 consultation.³⁵ These more explicit guidelines are provided to facilitate expedient review of ongoing actions that may affect listed anadromous fish or their designated critical habitat and promote consistent determination of unacceptable risk.

Checklists for Unacceptable Risk

Checklists to screen ongoing projects and activities for unacceptable risk will be developed for both within and outside of the area of listed anadromous fish.

Within the Area of Listed Anadromous Fish: If either of the following results is probable or foreseeable as a result of an ongoing action or group of actions, that action or group of actions will be considered to pose an unacceptable risk and the interim standards and guidelines would be applied to avoid adverse effects.

- 1. One or more of the essential features of critical habitat for listed anadromous fish is affected such that the value of that habitat to contribute to the survival and recovery of listed anadromous fish is diminished.**
- 2. The action or group of actions results in increased mortality, reduced growth, or other adverse physiological changes, harassment of fish, physical disturbance of redds, reduced reproductive success, delayed or premature migration, or other adverse behavioral changes.**

Ongoing actions outside of Riparian Habitat Conservation Areas that may affect listed anadromous fish or their designated critical habitat may also pose an unacceptable risk based on whether these results are probable or foreseeable.

³⁵USDA Forest Service. June 22, 1992. *Anadromous Fish (Snake River Basin) Guide for Section 7 Consultation*. Portland, OR.

Outside the Area of Listed Anadromous Fish: If either of the following results is probable or foreseeable as a result of an ongoing action or group of actions, that action or group of actions will be considered to pose an unacceptable risk and the interim standards and guidelines would be applied to avoid adverse impacts.

1. Environmental changes that may cause a species to become threatened or endangered.
2. Environmental changes that decrease the estimated numbers and distribution of reproductive individuals such that the continued existence of the population throughout its existing range is at risk.

Draft copies of the checklists for screening ongoing actions within and outside areas with listed anadromous fish are provided in Appendix K.

Application of the screen to identify ongoing projects and activities within watersheds with listed fish that pose unacceptable risk will be completed within 30 days of publication of the decision notice for the proposed action. Application of the screen to identify ongoing projects and activities in other watersheds that pose unacceptable risk will be completed within 60 days of publication of the decision notice.

Those ongoing projects and activities that may pose an unacceptable risk might require additional NEPA analysis to incorporate the interim direction encompassed by the proposed action. Within the range of listed salmon, ongoing projects and activities that may pose an unacceptable risk shall be suspended until completion of ESA consultation. Affected contract or permit holders will be notified of their applicant status and right to participate in the consultation. Depending on the importance and scope of such projects, it is possible that some may need to be examined as part of the geographically-specific environmental analyses. Ongoing projects considered not to pose unacceptable risk will be allowed to continue during the interim period under the direction that was in effect at the time of project approval, even if such projects are not fully in compliance with standards, guidelines, and other provisions of the proposed action.

The Agencies' Approaches

The FS and the BLM propose to apply interim direction by means of different administrative procedures.

BLM Approach:

Under the provisions of the Federal Land Policy and Management Act, BLM will incorporate management direction (i.e., goals, objectives, RHCAs, standards, guidelines, and procedures) that are consistent with current LUPs into certain ongoing and all proposed or new projects. When proposed management direction is not consistent with existing LUPs, BLM will attempt to apply proposed standards, guidelines, and procedures for applicable ongoing projects through negotiation. If agreement with the affected permittee or applicant cannot be reached, direction as described in the existing LUP will be applied.

Management direction, consistent with the existing LUPs, would be incorporated during the site-specific analysis and documentation process for all future projects, including those that have not yet been authorized (e.g., contracted, permitted, etc.). Additionally, in accordance

with NEPA regulations (CFR 1506.1), upon issuance of a Notice of Intent, and until issuance of a ROD, BLM will take no actions that limit the choice of reasonable alternatives being analyzed or that have an adverse environmental impact.

FS Approach:

For the FS, under provisions of the NFMA, the proposed interim direction would amend regional guides and forest plans for each of the 15 national forests listed to incorporate new goals, objectives, standards, guidelines, and management direction (see Appendix L for overview of Forest Service land management planning). These new standards, guidelines, and direction will supersede or replace conflicting direction described in forest plans that provide less protection. Thereafter, future and, depending on the alternative selected, some or all ongoing projects and activities would be evaluated to determine if modifications are warranted. The FS believes the preferred alternative would not be a significant amendment as defined by NFMA for the following reasons: (1) It would be applied for a limited time. (2) It would result in only minor modifications to standards and guidelines in existing forest plans. (3) It would not substantially modify the goals and objectives developed in the existing forest plans. (4) It would not alter long-term levels of goods and services projected by current forest plans.

On its own, none of the alternatives examined in this environmental assessment would change the physical environment. Any subsequent proposed actions that would change the environment will be subject to mitigation measures prescribed under the interim direction adopted. Any action proposed within lands administered by the Agencies during the interim period would be subject to appropriate, site-specific analyses required by NEPA and, where appropriate, provisions of the ESA, as well as relevant planning regulations. Thus, the site-specific effects of application of the standards and guidelines specified under any alternative would be disclosed at the project level of decision making, depending on the previous level of environmental analysis. Such projects or activities would be carried out only after the Agencies have undertaken the appropriate level of NEPA analysis. For more information on this process (including provisions for public notice, review and comment, and administrative appeal) refer to 40 CFR 1500-1508 as well as the FS NEPA Handbook FSH 1909.15 and FS Manual FSM 1950 and the BLM NEPA Handbook, Manual 1792. Further, those ongoing projects and activities that pose an unacceptable risk to aquatic and riparian habitat and at-risk anadromous fish stocks would require additional NEPA analysis prior to incorporating modifications in project direction. In addition, consultation with the NMFS and the FWS pursuant to the ESA will be completed by the Agencies prior to project level decisions.

The geographically-specific environmental analyses for long-term management, which are scheduled to be completed in 18 months, could result in decisions that would supersede the interim direction and require further modifications to projects and activities. The decision regarding which alternative is appropriate for the interim period would not preclude consideration in the geographically-specific environmental analyses of any alternatives that may be developed for long-term management.

ISSUES

From questions raised in briefings with Members of Congress and in conversation and correspondence with employees of the Agencies, as well as with representatives from other Federal and State agencies, Tribal governments, service and commodity interests, and conservation organizations, the Interdisciplinary Team (ID Team) identified five issues as relevant to the proposed action. These issues, which have been addressed in formulating and evaluating action alternatives, are:

1. Maintaining stocks of anadromous fish: A number of anadromous fish stocks have been listed by the NMFS as threatened or endangered, in part as a result of habitat modifications caused by past and ongoing resource management practices on Federal, State, and private land. Dam construction and operation, water diversions, fish hatchery operations, fish harvest, and random natural events (e.g., drought, unfavorable ocean conditions) also have contributed to the listings. Additional anadromous fish stocks have been identified as at risk of extinction, and in the near future may be petitioned for listing pursuant to the ESA. The Agencies have an obligation to provide habitat conditions necessary to conserve the viability of listed anadromous fish stocks and protect or restore designated critical habitat. They also have Section 7(a) obligations to conserve anadromous fish stocks not now listed under the ESA and to manage habitat in ways that would halt or reverse trends toward future listing.

2. Providing management direction to facilitate consultation required by the Endangered Species Act: Where there are listed stocks of anadromous fish, management activities conducted under current forest plans and LUPs must undergo consultation pursuant to the ESA--incorporating, where appropriate, protective measures identified by NMFS as necessary to avoid jeopardy to listed species or adverse modification of designated critical habitat or minimize adverse effects. Protective measures identified during ESA consultation may result in changes in project design and/or project-specific amendments of regional guides and forest plans and LUPs. Rather than designing projects only according to standards described in current forest plans and LUPs, and risk having to redesign projects following consultation, land managers and project proponents may find it more efficient and cost-effective to incorporate into initial project planning those measures that are necessary to avoid jeopardy to listed species or adverse modification of critical habitat.

3. Considering the ability of national forests and BLM districts to provide traditional amounts and kinds of goods and services: The adoption of any proposed interim strategy, including the alternative to continue management under current forest plan and LUP direction, may affect the flow of goods and services that are provided from Federal lands and may directly or indirectly affect management activities conducted on other Federal, State, and private lands. Any interim management strategy must consider the demand for and the supply of goods and services, and the often conflicting issues that can affect supply. It is important to note, however, that the production of goods and services from the national forests is contingent upon compliance with the mandates of federal environmental laws such as the ESA, Clean Water Act, and 36 CFR 219.19. If commodity production cannot be conducted within the parameters of these laws, then development will not go forward. Decisions resulting in an irretrievable or irreversible commitment of resources are made during project-level planning. Thus, there is no guaranteed or assured level of commodity production in national forest planning. It is important to note, however, that the production of goods and services from FS- and BLM-administered lands is contingent upon compliance with the mandates of Federal environmental laws, such as the ESA, Clean Water Act, NFMA, and FLPMA. If commodity production cannot be conducted within the parameters of these laws, then development will

not go forward. Decisions resulting in an irretrievable or irreversible commitment of resources are made during project level planning. Thus, there is no guaranteed or assured level of commodity production in forest plans or LUPs.

4. Integrating proposed interim direction for management of anadromous fish habitat with other planning efforts: The development of an appropriate interim strategy for managing anadromous fish habitat must take into account other strategies and approaches that have been proposed or implemented within or adjacent to the areas considered in this environmental assessment. The Northern Spotted Owl FSEIS, pending legislative or administrative action on Rangeland Reform, mining reform, etc., has described the need for flexible, coordinated resource management strategies that would help maintain and restore the health of riparian and aquatic ecosystems that are necessary for the survival of listed and other anadromous fish stocks. Any interim strategy for the proposed action area must be coordinated with other habitat management efforts and be based on cooperative management of aquatic and riparian ecosystems throughout the range of anadromous fish. In addition, any interim strategy must take into account and be coordinated with efforts undertaken to address other non-habitat factors influencing the status of anadromous fish (e.g., dam construction and operation, water diversions, fish hatchery operations, and fish harvest practices).

5. Integrating new scientific knowledge into the management of anadromous fish: As explained above, new scientific knowledge on the status of anadromous fish stocks and the condition of anadromous fish habitat has become available. Research on these and other matters is ongoing. Any interim strategy must allow for the application of new scientific knowledge and provide a mechanism for adapting management direction to watershed-specific conditions. Further, any interim strategy must include "implementation and effectiveness monitoring" and must include mechanisms for adapting management practices in response to the information gained.

COMPONENTS OF THE ALTERNATIVES

The development of alternatives included in this environmental assessment focused around three component parts that define the range of alternatives for interim direction. These three components are:

- (1) the geographic range of the proposed action;
- (2) the range of interim management direction, including the standards, guidelines, and procedures; and
- (3) the range of projects and activities to which interim standards, guidelines, and procedures would apply.

Formulating alternatives around these three components was not a hierarchical process, i.e., deciding on the range of projects and activities, then prescribing direction and geography, or vice versa. Rather, the alternatives for interim direction were formulated through an iterative process, which considered various combinations of the three aspects (geography, management direction, and projects and activities covered) that fit logically together.

Geographic Range

The ID Team determined that most of the new information regarding declines in anadromous fish stocks and the degradation of aquatic and riparian habitat is more relevant to changes of habitat within the western contiguous United States than in the State of Alaska. Management direction has already been evaluated for that part of the anadromous fish range in the western contiguous United States that is also within the range of the northern spotted owl. As a result, interim direction is proposed for lands administered by the Agencies within anadromous watersheds in California, Oregon, Washington, and Idaho, excluding areas implementing the Northern Spotted Owl ROD.

Range of Management Direction

The range of standards, guidelines, and procedures considered for interim direction is based on 10 preliminary proposals, or management direction options, developed by Agency researchers and managers from Oregon, Washington, California, Idaho, and Alaska. The management direction options contain one or more of the seven components defined below:

Riparian Goals: Riparian goals establish a common set of the characteristics of healthy, functioning watersheds, riparian areas, and associated fish habitats (e.g., maintaining or restoring water quality, stream channel integrity, channel processes, sediment regime, instream flows, natural timing and variability of the water table elevation in meadows and wetlands, and the diversity and productivity of plant communities).

Riparian Management Objectives: RMOs establish a number of instream- and streamside-habitat conditions that together define good anadromous fish habitat at the landscape scale, and serve as indicators against which attainment, or progress toward attainment, of the goals can be measured. These objectives consist of such parameters as the number of deep pools per mile of stream, water temperature, amount of woody debris in the stream, stream bank stability, width-to-depth ratio, and bank angle. Several alternatives provide for landscape-scale interim objectives that can be refined and tailored to specific watershed conditions through the Watershed Analysis process or be modified as a result of ESA consultation.

Standards and Guidelines: Standards and guidelines constrain how riparian and other important areas (such as landslide and landslide-prone areas) are managed. They provide management direction believed necessary to meet Riparian Goals and RMOs for stream channel, riparian, and watershed conditions.

Riparian Management Areas: Riparian management areas describe portions of the watershed that require special management attention, and to which the standards and guidelines generally apply. These areas most directly affect the hydrologic, geomorphic, and ecologic processes of the riparian ecosystem and, depending on the alternative, can include permanent and intermittent streams, wetlands, ponds, lakes, reservoirs, and landslide or landslide-prone areas. Several alternatives establish interim RHCAs with widths dependent on the type of stream or area and which, on average, vary from 50 feet to 300 feet on either side of the water body. Interim RHCAs can be refined and tailored to specific watershed conditions through the Watershed Analysis process or be modified as a result of ESA consultation.

Key Watersheds: Key Watersheds are selected from among those watersheds important to anadromous fish stocks, or those that are providing, or are readily capable of being restored to

provide "good" anadromous fish habitat. Key Watersheds are selected to contribute to a network of watersheds across the landscape that provide for the long-term conservation of anadromous fish. Key Watersheds receive priority for Watershed Analysis, as well as maintenance and restoration projects and activities. Key Watersheds may be afforded stricter management standards, guidelines, and procedures than non-key watersheds.

Watershed Analysis: Watershed Analysis identifies areas within a watershed that need immediate corrective management, and it provides a more complete assessment of cumulative effects. Watershed Analysis also provides the scientific basis for watershed-specific adjustments to the interim RMOs and interim RHCAs. The extent of Watershed Analysis will vary by alternative.

Watershed Restoration: Several alternatives provide guidance for landscape/watershed-scale restoration. Key Watersheds would receive priority for aquatic and riparian habitat restoration.

Range of Projects and Activities

For the application of interim management direction to projects and activities within RHCAs on Agency-administered lands, this environmental assessment considers three options:

1. Apply the standards, guidelines, and procedures to only proposed or new projects and activities (i.e., those projects and activities initiated during the interim period, as well as those that have been approved but not yet implemented, or for which contracts have not been awarded, or for which permits have not been issued, and within the range of listed anadromous fish, continuing actions for which BAs have not been prepared and submitted for consultation, prior to signature of the decision notice/decision record for the proposed action.)
2. Apply the standards, guidelines, and procedures to proposed or new projects and activities and to those ongoing projects and activities that, through case-by-case evaluation, are determined to pose an unacceptable risk to anadromous fish stocks.
3. Apply the standards, guidelines, and procedures to all proposed or new projects and activities, and all ongoing projects and activities.

ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED STUDY

Outside Agency Jurisdiction Option Eliminated

One option was considered that would address all the principal factors limiting anadromous stock survival that were discussed on page 1, but the option was eliminated from detailed study.

This option would have considered the broad geographical area within the range of Pacific anadromous fish and evaluated the principal human actions that influence anadromous fish populations, including dam construction and operation, water diversions, habitat modifications, fish hatchery operations, and fish harvest. This option would have evaluated management direction for all limiting factors, and would have involved the coordination of a number of Federal and State agencies that have jurisdiction over commercial, sport, and subsistence fish

harvest, hatcheries, dams, and habitat, including, for example, the NMFS, FWS, State fish and game departments, and Federal and State water quality regulatory agencies. This option was not analyzed in detail because efforts by responsible agencies to develop management strategies for dam construction and operation, water diversions, fish hatchery operations, and fish harvest practices, although underway, are at the formative stage. The time required to develop reasonable alternatives that address all factors affecting anadromous fish stocks and complete the coordinated and highly complex analyses would substantially delay application of measures necessary to effectively manage habitat on Agency-administered lands. Both Agencies remain alert for opportunities to coordinate their efforts to improve habitat conditions with efforts by other Federal and State agencies to evaluate the non-habitat related factors. Each will take into consideration the evaluations of the other Federal and State agencies.

Geographic Options Eliminated

Three geographic options were eliminated from detailed study:

Alternative A: The option of applying interim direction to lands administered by the Agencies only within specific, designated Key Watersheds of the western contiguous United States that contain at-risk stocks of anadromous fish was eliminated from detailed study because it fails to provide a level of protection necessary to provide habitat conditions that would support viable and sustainable anadromous fish populations, and fails to assure adequate water quality in non-key watersheds. By applying interim direction only to Key Watersheds there would be no assurance that options that will be considered in the geographically-specific environmental analyses would not be compromised by actions taken in non-key watersheds during the interim period.

Alternative B: The option of applying interim direction to Agency-administered lands in Alaska was eliminated for the following reasons:

1. Generally, anadromous fish stocks and habitat conditions in Alaska are not as degraded as those in the western contiguous United States. Agency biologists and others have determined that these stocks generally are not in need of interim protection to maintain future options are maintained.

2. The Fiscal Year 1994 Interior and Related Agencies Appropriations Act contains language that prohibits the application of PACFISH standards and guidelines to the Tongass National Forest during fiscal year (FY) 1994.³⁶

3. During FY 1994, the Agencies conducted stream analyses and studies and reviewed procedures regarding land management to evaluate the effectiveness of current stream protection and determine the need for additional protection of lands and resources they administer in Alaska. Analysis of these findings will be completed in FY 1995.

Alternative C: The option of applying interim direction to watersheds beyond the range of anadromous fish, but where there is habitat important to at-risk resident fish species--such as the bull trout--was eliminated because it is beyond the scope of this environmental

³⁶P.L. 103-138. November 11, 1993. 107 Stat. 1379. Department of Interior and Related Agencies Appropriation Act of 1994.

assessment, and because independent initiatives to address resident fish habitat management already have begun.³⁷ This option will be further examined in the geographically-specific environmental analyses, being prepared for long-term management, which will consider local conditions and the status of various resident fish stocks.

Public involvement during the scoping process for the geographically-specific environmental analyses will examine options for management after the interim period and may produce alternatives that include some of the geographic options considered but eliminated from detailed study.

Management Direction Options Eliminated

A number of management direction options for standards, guidelines, and procedures were considered, ranging from current direction to alternatives specifying riparian goals, interim riparian management objectives, standards and guidelines, a new definition of riparian area, Key Watershed identification, and increasing levels of road and/or watershed analysis.

Six management direction alternatives were eliminated from detailed study:

Alternative A: This alternative generally assumed that forest plan and LUP goals, objectives, standards, guidelines, riparian areas, and procedures are sufficient for interim protection. However, it would have modified current direction by (1) applying draft Forest Service Pacific Southwest Region (R5) minerals management standards and guidelines within riparian areas; and (2) requiring the identification of Key Watersheds and specifying "no net gain" in road mileage within them. This alternative would have provided for neither road nor Watershed Analyses.

Alternative B: Similar to Alternative A, this alternative would have modified current direction with R5 minerals management standards and guidelines within riparian areas. It also would have applied riparian standards and guidelines that were developed for the Willamette National Forest³⁸ and required a reduction in road mileage within Key Watersheds. This alternative would not have provided for road or Watershed Analyses.

Alternative C: This alternative was derived from R5 draft standards and guidelines for riparian management. It would have imposed standards, guidelines, and procedures adopted from R5's riparian management direction for Zones 1 and 2.³⁹ It would have required identification of Key Watersheds. Roads standards would have specified construction that

³⁷For example, a Habitat Conservation Assessment (HCA) to determine bull trout habitat requirements and habitat condition has been completed, and HCAs for several inland cutthroat trout species are underway. In addition, the FWS, BLM, NPS, FS, NMFS have held preliminary interagency planning meetings to initiate development of an agreement regarding habitat management to conserve bull trout throughout its range. The Bureau of Indian Affairs and the Soil Conservation Service are expected to join the interagency effort.

³⁸Gregory, S. Askenas, L. 1990. *Riparian management guide*. Willamette National Forest, Portland, OR, USDA-Forest Service, Pacific Northwest Region. 120 p.

³⁹These standards and guidelines are included in the draft forest plans for the Klamath, Mendocino, Shasta-Trinity, and Six Rivers National Forests.

would accommodate 100-year flood events in non-key watersheds and 150-year flood events in Key Watersheds. It provided for road analysis, but not for Watershed Analysis.

Alternative D: This alternative would have modified current direction by applying the minerals area management guidance described in Appendix C for Alternatives 3 and 4. Further, it would have applied the remaining standards and guidelines and RHCAs described in Appendix C for Alternatives 3 and 4 in Key Watersheds and areas not meeting current standards and guidelines. In all other watersheds, Alternative D would have applied the riparian guidance described under Alternative C. This alternative would have provided for Watershed Analysis.

Alternative E: This alternative would have modified current direction by applying the goals, interim RMOs, standards and guidelines, interim RHCAs, Key Watershed identification, and Watershed Analysis protocol specified in Appendix C for Alternatives 3 and 4. This alternative differed from Alternatives 3 and 4 by specifying a 180- to 200-year timber rotation within all watersheds. This alternative would have provided for Watershed Analysis.

Alternative F: This alternative is identical to Alternative 9 in the Northern Spotted Owl Draft Supplemental Environmental Impact Statement (DSEIS). The goals, standards and guidelines, Riparian Reserves, Key Watershed identification, and Watershed Analysis protocol of this alternative are substantially the same as those described for Alternatives 3 and 4 in Appendix C. However, it differed from Alternatives 3 and 4 in two ways: (1) Alternative F would have limited the construction of new roads in roadless areas; a provision not included in Alternatives 3 and 4. Nonetheless, the presence or absence of this provision would not make a substantial difference, because current direction requires a project-level analysis of any entry into roadless areas that could be expected to extend beyond the interim period, and Alternatives 3 and 4 also require completion of Watershed Analysis prior to road or landing construction in an RHCAs. (2) Alternative F would not have included interim RMOs (the objectives specified for this alternative were comparable to the goals contained in Alternatives 3 and 4), but instead would depend on Watershed Analyses to establish RMOs, i.e., interim RMOs would not have been established to guide decisions prior to completion of Watershed Analyses.

Alternatives A, B, and C were not analyzed in detail for interim direction because they would not have provided comprehensive direction addressing the full suite of management actions that can occur on lands administered by the Agencies. Further, these three alternatives would not have included a Watershed Analysis protocol providing for a comprehensive and consistent evaluation of watershed condition, which would facilitate tailoring landscape-scale information and expectations to the capabilities of specific watersheds. By adopting any of these alternatives for a short, interim period, there would have been no assurance that options to be considered in the geographically-specific environmental analyses would not be compromised by management activities not covered by the direction described by them. In addition, the standards, guidelines, and procedures of Alternatives A, B, and C were not believed to be sufficient to facilitate successful ESA consultation with the NMFS on projects and activities in those areas where anadromous fish are listed as threatened or endangered.

Alternatives D, E, and F were not analyzed in detail for interim direction because they include management direction similar to that contained in Alternatives 3, 4, and 5, which are carried forward for detailed evaluation in this environmental assessment. Also, as discussed above, the differences among Alternatives D, E, and F, when compared to Alternatives 3, 4, and 5, were not considered substantial over the interim period.

ALTERNATIVES CONSIDERED IN DETAIL

This environmental assessment examines five alternatives in detail. The alternatives considered in detail represent combinations of four options for management direction and three options for the range of projects and activities. All are applied only to those anadromous watersheds outside the range of the northern spotted owl and within the western contiguous United States.

This area includes anadromous watersheds on the 15 national forests and 7 BLM districts listed under the *PROPOSED ACTION*. The five alternatives are compared in Table 1. Standards, guidelines, and procedures specified for the five alternatives are described in detail in Appendix C, and the special riparian management areas are depicted in Figures 2-4. The alternatives were designed to provide progressively more protection of habitat and resources within the affected area. For example, riparian goals and objectives, special standards and guidelines, riparian areas, special procedures, and other management actions afford more habitat protection under Alternative 2 than under the no-action alternative, and protection is increased further under Alternative 3. Alternative 5 affords the most protection, although certain tradeoffs in resource outputs may make it more impractical than another alternative.

A summary discussion of the scientific basis and ecological principles supporting elements of the five alternatives is included in the process records.⁴⁰ The alternatives, particularly Alternatives 3-5, include provisions to facilitate incorporation of new information and Agency responsiveness to changed circumstances. The five alternatives assume that geographically-specific environmental analyses to evaluate the need for longer-term modifications to management direction will be completed, and that decisions resulting from the longer-term analyses could result in changes to forest plans, LUPs, or regional guides.

Alternative 1. Under this alternative, the Agencies would manage national forest and public land resources under direction specified in current forest plans and LUPs, without any adjustment during the interim period. NEPA compliance would be required for all projects and activities. Under provisions of the ESA, consultation with either the NMFS (for anadromous fish species and marine mammals) or the FWS (for terrestrial and freshwater species) would be necessary where projects and activities may affect listed species or designated critical habitat. Responsible officials also would be required to identify any reasonable and prudent alternatives that may be needed to avoid jeopardy to a listed species or the destruction or adverse modification of critical habitat.

Alternative 2. This alternative would provide management direction that would modify current direction (as specified in Alternative 1). It would include standards and guidelines for road systems construction and reconstruction, logging slash treatment and prescribed fire, livestock grazing, and riparian and fish-habitat restoration. It would provide riparian protection zones of approximately 300 feet on either side of fish-bearing streams, 150 feet on either side of permanent water courses, and 50 feet on either side of intermittent streams in areas with moderately to highly unstable soils. It also would require the identification of Key

⁴⁰USDA Forest Service - USDI Bureau of Land Management. 1994. Summary of scientific principles followed in developing alternatives for an *Environmental Assessment: Interim Strategies for Managing Anadromous Fish-Producing Watersheds on Federal Lands in Eastern Oregon and Washington, Idaho, and Portions of California*. Internal report to the ID Team.

Watersheds and provide for road- and cumulative-effects analyses. The direction provided under this alternative includes the riparian and aquatic provisions of the watershed and fish habitat emphasis option detailed in the October 8, 1991, report by the Scientific Panel on Late-Successional Forest Ecosystems (Scientific Panel Report), which was presented to the Agriculture Committee and the Merchant Marine and Fisheries Committee of the U.S. House of Representatives.⁴¹ Standards, guidelines, and procedures specified under this alternative would apply only to proposed projects and activities, and would have no effect on ongoing projects and activities.

Alternative 3. This alternative would provide management direction that would modify current direction (as specified in Alternative 1). It would include riparian goals, interim RMOs, and standards and guidelines for all kinds of projects and activities. Interim RHCAs would be established to identify areas of watersheds most sensitive to management. RHCAs would be based on geomorphic features and would include the following (approximate) areas: 300 feet on either side of fish-bearing streams, 150 feet on either side of permanent non-fish bearing streams, and around ponds, reservoirs, and wetlands greater than one acre, and 100 feet in Key Watersheds (50 feet in non-key watersheds) on either side of seasonally flowing or intermittent streams, and around wetlands less than one acre, as well as landslides and landslide-prone areas. In non-forested rangeland ecosystems, the interim RHCA width for permanently flowing streams would be the extent of the 100-year floodplain. This alternative also would require identification of Key Watersheds and development of a protocol for Watershed Analysis. It is not anticipated that extensive Watershed Analysis would be initiated under this alternative. The standards, guidelines, and procedures would apply only to proposed projects and activities. They would not apply to ongoing projects and activities.

Alternative 4 (PREFERRED): This alternative would provide management direction that would modify current direction (as specified in Alternative 1) with the management direction that is specified under Alternative 3. It would include riparian goals, interim RMOs, and standards and guidelines for all kinds of projects and activities. RHCAs would be established to identify areas of watersheds most sensitive to management. RHCAs would be based on geomorphic features and would include the following (approximate) areas: 300 feet on either side of fish-bearing streams, 150 feet on either side of permanent non-fish bearing streams, and around ponds, reservoirs, and wetlands greater than one acre, and 100 feet in Key Watersheds (50 feet in non-key watersheds) on either side of seasonally flowing or intermittent streams, and around wetlands less than one acre, as well as landslides and landslide-prone areas. In non-forested rangeland ecosystems, the interim RHCA width for permanently-flowing streams would be the extent of the 100-year floodplain. It also would provide for identification of a network of Key Watersheds and development and trial application of a protocol for Watershed Analysis. During the period of interim direction, the Agencies will complete at least four or five prototype watershed analyses within the Snake River Basin.

Management direction would apply to all new and proposed projects and activities and ongoing projects and activities determined, on a case-by-case evaluation, to pose unacceptable risk to anadromous fish stocks.

⁴¹K.N. Johnson, J.F. Franklin, J.W. Thomas, and J. Gordon. 1991. *Alternatives for Management of Late-Successional Forests of the Pacific Northwest*. A report to the Agriculture Committee and Merchant Marine Fisheries Committee of the U.S. House of Representatives.

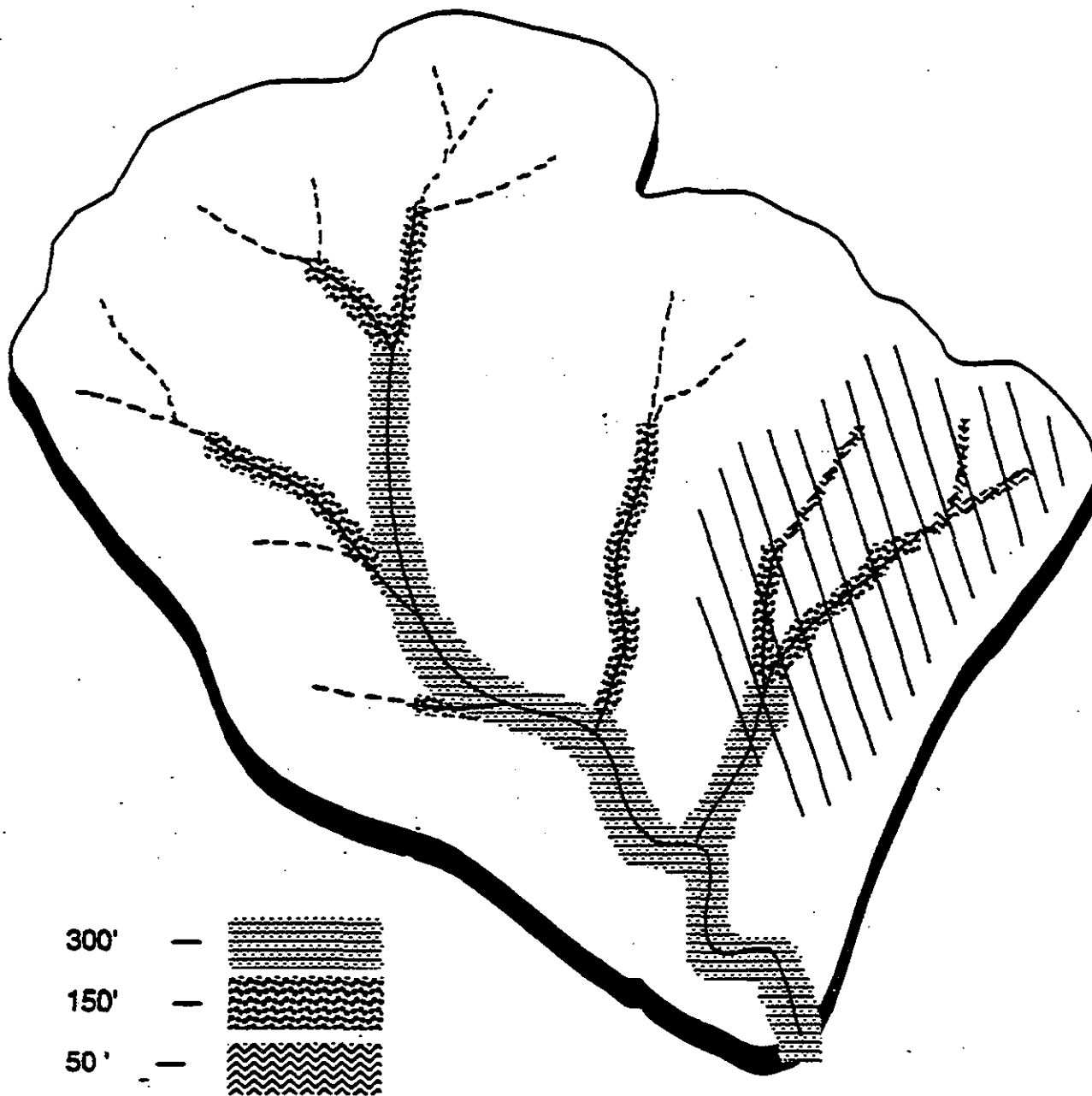
Alternative 5: This alternative would provide management direction that would modify current direction (as specified in Alternative 1). It would include the same riparian goals, interim RMOs, and standards and guidelines for all kinds of projects and activities as specified in Alternatives 3 and 4. RHCA's would be established to identify watershed areas most sensitive to management. RHCA's would be based on geomorphic features and would include the following (approximate) areas in all watersheds: 300 feet on either side of fish-bearing streams, 150 feet on either side of permanent non-fish bearing streams, and around ponds, reservoirs, and wetlands greater than one acre, and 100 feet on either side of seasonally flowing or intermittent streams, and around wetlands less than one acre as well as landslides and landslide-prone areas. In non-forested rangeland ecosystems, the interim RHCA width for permanently-flowing streams would be the extent of the 100-year floodplain. It also would require identification of Key Watersheds and require that Watershed Analysis be initiated in all Key Watersheds during the interim period and be completed prior to initiation of new projects and activities in these areas. Management direction would be applied to all ongoing and proposed projects and activities.

Table 1. Summary Comparison of Alternatives Considered in Detail.

ALTERNATIVE	RIPARIAN GOALS/ OBJECTIVES	SPECIAL STANDARDS AND GUIDELINES	RIPARIAN AREAS	SPECIAL PROCEDURES	AFFECT- ED MANAGE- MENT ACTIONS
1	Current plan goals and objectives	Current plan S&Gs	Current plan riparian buffers	Watershed Analysis/Key Watershed designation not required	Proposed
2	Scientific Panel Report goals & objectives	Scientific Panel Report S&Gs for roads, logging slash treatment & fire, range, restoration	Riparian areas: fish bearing = 300 feet permanent = 150 feet some intermittent = 50 feet	Road analysis and cumulative effects analysis initiated/Key Watershed designation required	Proposed
3	New riparian goals and quantified interim riparian management objectives	Increased S&Gs for all activities: timber, roads, grazing, recreation, minerals, fire/fuels, lands, general riparian area, and fisheries and wildlife management, and watershed and habitat restoration	RHCA zones: fish bearing streams = 300 feet permanent non-fish bearing streams, ponds, reservoirs, and wetlands > 1 acre = 150 feet intermittent streams, wetlands < 1 acre, and landfills or landfills prone areas = 100 feet in Key Watersheds and = 50 feet in non-key watersheds	Watershed Analysis Initiated/Key Watershed designation required	Proposed

Table 1, cont. Summary Comparison of Alternatives Considered in Detail.

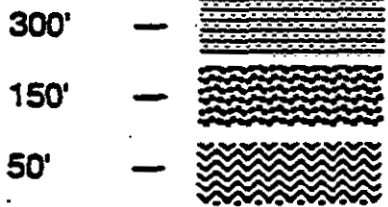
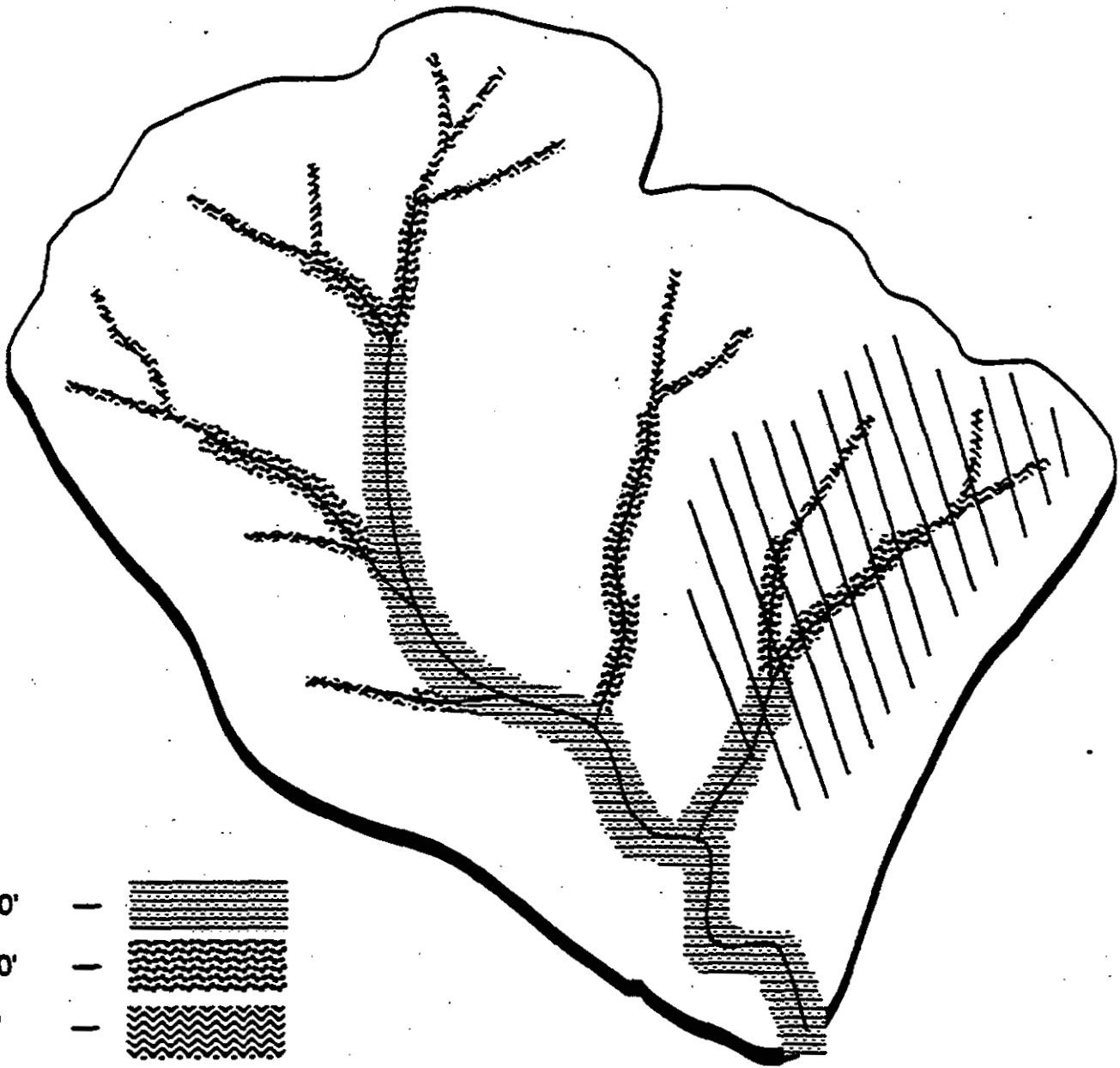
AFFECT- ED MANAGE- MENT ACTIONS	SPECIAL PROCEDURES	RIPARIAN AREAS	SPECIAL STANDARDS AND GUIDELINES	RIPARIAN GOALS/ OBJECTIVES	ALTERNATIVE
Proposed and some ongoing	Watershed Analysis Initiated/Key Watershed designation required	RIPCA zones: fish bearing streams = 300 feet permanent non-fish bearing streams, ponds, reservoir, and wetlands > 1 acre = 150 feet intermittent streams, wetlands < 1 acre, and landslide or landslide prone areas = 100 feet in Key Watersheds and = 50 feet in non-key watersheds	Increased B&G for all activ- Use: timber, roads, grazing, recreation, minerals, fire/fuels, lands, general riparian area, and fisheries and wildlife management, and watershed and habitat restoration	New riparian goals and quantified interim riparian management objectives	4
Proposed and all ongoing	Complete Watershed Analysis required in Key Watersheds prior to Initia- tion of new projects & activities/Key Watershed designation required	RIPCA zones: fish bearing streams = 300 feet permanent non-fish bearing streams, ponds, reservoir, and wetlands > 1 acre = 150 feet intermittent streams, wetlands < 1 acre, and landslide or landslide prone areas = 100 feet	Increased B&G for all activ- Use: timber, roads, grazing, recreation, minerals, fire/fuels, lands, general riparian area, and fisheries and wildlife management, and watershed and habitat restoration	New riparian goals and quantified interim riparian management objectives	5



300' — [horizontal hatching]
 150' — [wavy hatching]
 50' — [zigzag hatching]

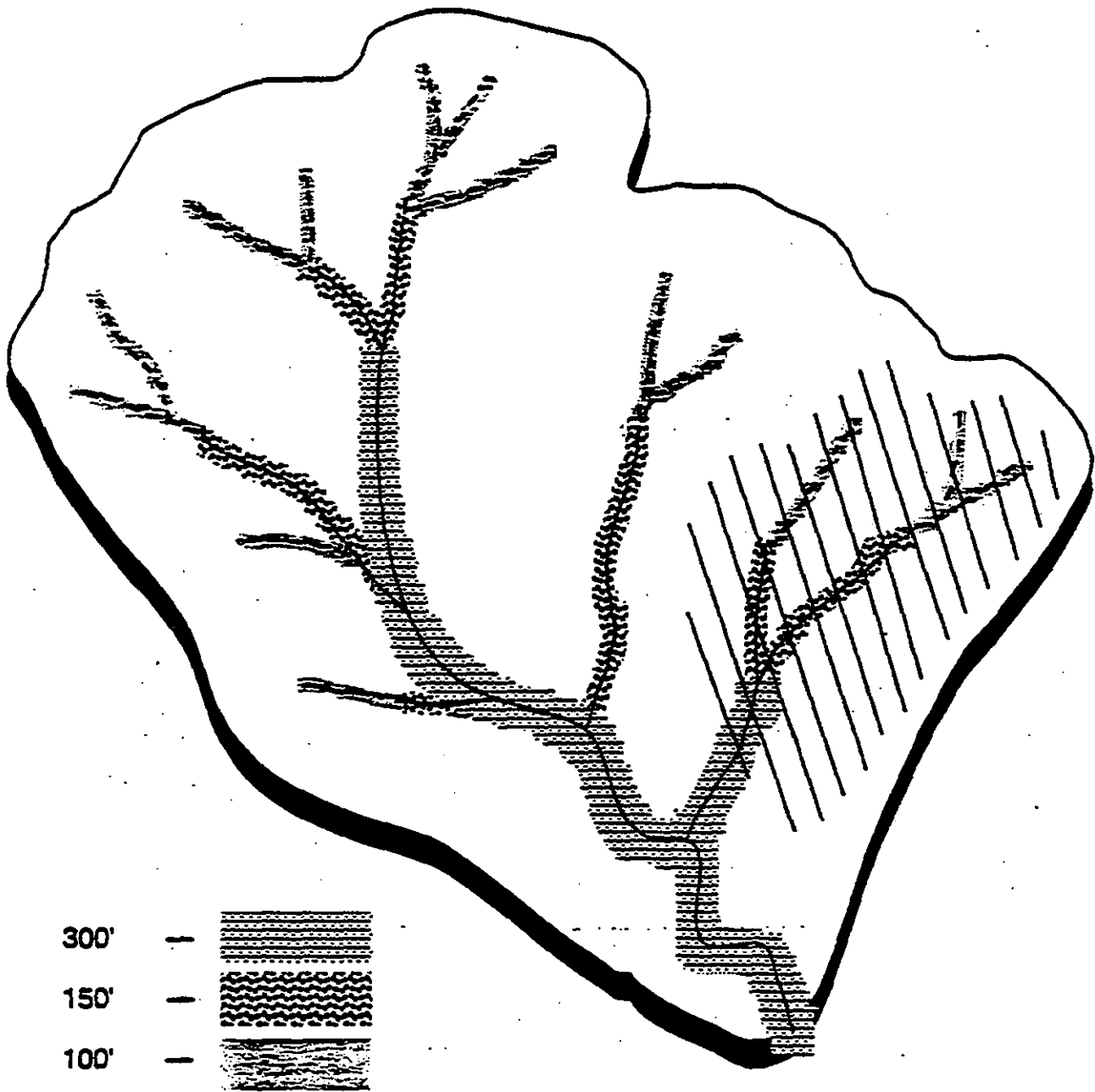
Boundary on each side of stream

Figure 2. Schematic Delineation of Riparian Area Under Alternative 2. Hatch area denotes landslide-prone area.



Boundary on each side of stream

Figure 3. Schematic Delineation of Riparian Habitat Conservation Areas in Non-Key Watersheds Under Alternatives 3 and 4. Hatch area denotes landslide-prone area.



Boundary on each side of stream

Figure 4. Schematic Delineation of Riparian Habitat Conservation Areas in Key Watersheds Under Alternatives 3 and 4, and all Watersheds Under Alternative 5. Hatch area denotes landslide-prone area.

AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

None of the alternatives examined in this environmental assessment would, on its own, change the physical environment within RHCAs. However, any subsequent proposed projects and activities within RHCAs that would change the environment would be subject to mitigation measures prescribed under the interim direction adopted. Such projects and activities would be carried out only after the Agencies have undertaken the appropriate level of NEPA analysis and completed ESA Section 7 consultation. Depending on the alternative selected, some or all ongoing projects and activities within RHCAs also would be subject to the mitigation measures following appropriate NEPA and ESA analysis.

To provide the decision maker with a means of comparing the possible effects of the alternatives, the ID Team prepared reports on components of the environment (i.e., physical, biological, and human) that would be affected by the proposed action. The following discussion describes the direct, indirect, and cumulative effects that the alternatives would have on each component during the interim period. Virtually all of the environmental consequences disclosed in this environmental assessment are "cumulative effects," because they are the environmental and management impacts of an accumulation of management actions that would occur locally within the proposed action area. Appendix D lists those forest plans and LUPs that have been prepared for lands within the proposed action area that are under the Agencies' jurisdictions and the EISs from which those plans were developed. On a watershed-specific basis, those forest plans, LUPs, and EISs describe current riparian and aquatic environments in greater detail than is presented in this environmental assessment.

Analyses of environmental consequences are based primarily on estimates of the effects of predicted changes in livestock grazing, recreational use, and timber harvesting, as well as the road construction and reconstruction activities associated with those uses, which would result from implementation of each of the alternatives. A report of the estimated changes in these resource outputs for each alternative is included in the process records.⁴² The changes were determined as follows:

The estimated effects of each alternative on timber, range, and recreation programs were based on preliminary analyses⁴³ conducted by field and research economists who collected data from the 15 affected national forests and 7 BLM districts. As originally conceived, the preliminary analyses considered environmental effects over a 10-year period. The assumption underlying the preliminary analysis was that during that time, management direction on the scope of projects and activities would be consistent with that which is described for Alternative 4, the preferred alternative in this environmental assessment. The results of the preliminary analyses were based on forest plan and LUP output projections, as well as data from current, actual outputs. A key concept of the study was the incremental change that

⁴²USDA Forest Service - USDI Bureau of Land Management. 1993. *Determination of Managed Activities Affected by Alternatives Described in the Environmental Assessment for Managing Anadromous Fish-producing Watershed on Federal Lands in Eastern Oregon and Washington, Idaho, and Portions of California*. Process paper to the ID Team.

⁴³C.S. Hansen-Murray, N.A. Bolon, and R.W. Haynes. 1993. *The Estimated Impacts on the Timber, Range, and Recreation Programs on National Forest and Bureau of Land Management Lands From Adopting the Proposed PACFISH Strategy*. Draft internal report to the WO PACFISH Policy Group.

would result from adoption of new management direction. The economists followed a 3-step process that included: (1) identification and delineation of anadromous watersheds, (2) definition of interim boundaries for RHCAs, described in terms of width-in-feet for each category of stream or water body, and (3) estimated changes in management activities and output levels within the RHCAs, which would result from applying proposed standards and guidelines to achieve RMOs. Full consideration of changes in outputs will require the more site-specific analyses that will be developed, analyzed, and displayed in the separate and distinct geographically-specific environmental analyses and project level NEPA documents.

Data from the preliminary analyses were used as a basis for estimating the effects, in terms of the physical outputs and the costs to the Government, of implementing Alternative 4, the preferred alternative, during the interim period. The changes in outputs described in Alternatives 2, 3, and 5, were extrapolated from data that were computed for Alternative 4 (Preferred) by an interagency, interdisciplinary technical advisory group.

All cost data in this environmental assessment are reported in 1993 dollars. Costs and effects not reported include those related to additional impacts to road and trail systems construction, reconstruction, and maintenance, minerals extraction, and water management programs, as well as costs incurred by private operators and users. More complete costs will be developed, analyzed, and displayed in economic reports prepared for and included in the geographically-specific environmental analyses.

The Agencies have participated in extensive consultation with the NMFS about listed salmon in the Snake River Basin and the effects of ongoing and proposed activities there. These consultations indicate that the greatest changes to resource outputs would be expected in timber, range, and recreation resources. Nonetheless, some minor changes in other activities--such as mining, wildlife habitat improvement, and the use of prescribed fire--also would be expected.

In analyzing the alternatives considered in detail, the ID Team assumed the following:

1. On their own, the alternatives considered will not result in any ground-disturbing activities or direct changes to the environmental status quo. The alternatives provide a range of management regimes and mitigation measures to be applied to projects and activities. The mitigation measures may result in the delay or modification of projects and activities. New project decisions will be preceded, as appropriate, by site-specific NEPA analysis.
2. Alternative 1 represents no deviation from the level and intensity of ongoing or proposed projects and activities. Conditions and trends would not change substantially, and all ongoing and proposed projects and activities would proceed, in accordance with approved forest plans and LUPs, and in compliance with Agency regulations, provisions of the ESA, and direction provided by the Congress.
3. The affected environment is the present environment. Analyses in this environmental assessment consider trends and changes associated primarily with ongoing and proposed timber harvesting, livestock grazing, and recreation uses during the interim period. Net changes to the affected environment are the basis for comparison of alternatives.
4. Environmental effects of the alternatives considered in detail are based solely on the implementation of any new strategy within the geographic scope of the proposed action.

Management direction described for each alternative would apply only to lands within anadromous watersheds that are administered by the Agencies.

5. The effects of the alternatives are considered only for the interim period. Because recovery processes within riparian and aquatic habitats are gradual, short-term adjustments in management practices may not result in dramatic habitat improvement during the interim period. However, redirection of trends, shifts in rates of change, establishment of different risk factors, or changes in the time frames of ongoing or proposed projects and activities may occur. Incremental improvement in habitat condition and trends is necessary to contribute to the protection or restoration of some anadromous fish stocks.
6. Any changes in environmental conditions that may result are attributable to modifications in management practices within RHCAs and increased understanding of watershed condition that is gained through Watershed Analysis. The ID Team analyzed the net effect of modifications in management practices, based on differences among the alternatives in the size, number, and distribution of RHCAs, as well as in the breadth of standards and guidelines, the scope of projects and activities covered, and the degree to which Watershed Analysis is conducted.
7. No Alternative Considered in Detail would require the removal or obliteration of roads or facilities during the interim period. However, closure or a reduction in use of such facilities may occur.
8. Projects and activities within the range of listed anadromous fish, and for which ESA consultation with the NMFS has been completed will be considered to be in compliance with any interim direction alternative that is selected.
9. Implementation of any interim strategy for protecting anadromous fish would not begin until analysis of the public's comments on this environmental assessment is completed, and ESA consultation provisions are met. The Agencies have incorporated corrections, clarifying language, and minor modifications based on these reviews.

Cumulative Effects

Cumulative effects result from the incremental impact of individually minor, but collectively important effects, taking place over a period of time. Virtually all of the environmental consequences disclosed in this environmental assessment are "cumulative effects," as they are the potential environmental impacts of management actions which may occur throughout anadromous fish-producing watersheds on FS- and BLM-administered lands. Those cumulative effects that are reasonably foreseeable at this programmatic stage of planning are discussed on a resource-by-resource basis for the various alternatives in the following sections of this chapter.

The potential cumulative effects of this action would be limited by the nature of the interim direction itself. No ground-disturbing actions would be authorized, funded, or carried-out by the interim direction. The interim direction would not involve any irreversible or irretrievable commitment of resources. In this programmatic environmental assessment, the Agencies are merely considering the impacts of various interim strategies for protecting anadromous fish habitat over an 18-month period. The intended effect of the interim direction is to maintain the environmental status quo while long-term management strategies are being developed.

The standards and guidelines presented in the various alternatives are intended to limit or mitigate the effects of human activity on anadromous fish habitat on FS- and BLM-administered lands. The potential cumulative effects of this action would also be limited by the short time period in which this interim direction will be in effect.

The interim direction would not be the sole or final direction for anadromous fish habitat protection on FS- and BLM-administered lands. Potential cumulative effects of habitat protection measures would continue to be assessed at several planning levels. For example the environmental analyses for the long-term management strategies will assess cumulative effects at a broad scale. Several alternatives for interim direction include procedures for Watershed Analysis and monitoring which would provide more detailed analysis of cumulative effects (Appendix C). Additionally, cumulative effects will be assessed as specific project and activities are proposed and analyzed. Site-specific, detailed cumulative effects analysis can only be conducted as specific projects and activity proposals crystalize the environmental consequences of the project decision. At the programmatic level of this interim direction, analysis of these cumulative effects is not possible, because such analysis would require speculation as to the scope, character, and environmental consequences of future project and activity decisions. Because it is not possible to provide a meaningful analysis of potential site-specific effects at this interim, programmatic level, analysis of the cumulative effects of projects and activities will not be complete until particular projects and activities are proposed and analyzed.

Other Federal agencies that have jurisdiction over factors that influence Pacific anadromous fish populations are preparing management plans, operation plans, or other actions that may have an cumulative effect on anadromous fish populations. However, at this stage in the preparation of those actions, it would be speculative to attempt to analyze what cumulative effect on anadromous fish populations may result. Furthermore, however these actions might develop, they would not have a reasonably foreseeable cumulative effect on anadromous fish habitat on FS- and BLM-administered lands.

Reasonably foreseeable related future actions, such as the development of long-term management strategies for anadromous fish-producing watersheds, were considered in the analysis presented in this chapter. At this time, the preparation of these long-term management strategies is not complete, and it would be speculative to attempt to analyze what, if any, cumulative effects may result. It is not clear at this time if any part of the interim strategy will be adopted as part of the long-term strategies. There is no precedent established by this interim strategy. Moreover, in the process of developing the long-term strategies, additional analyses are now underway which will produce additional scientific information and may effect the assumptions underlying the interim strategy. Any actions or mitigation measures adopted in the long-term strategy will be based on the best scientific information available at that time. Any cumulative effects that do arise from such related future actions would likely be beneficial to the protection of anadromous fish habitat and other related natural resources.

This analysis incorporates by reference the analysis and discussion of potential cumulative effects in existing EISs -- including the discussion of cumulative effects of watershed protection measures -- prepared for the affected forest plans and LUPs (Appendix D). Similarly, this analysis incorporates by reference the analysis and discussion in the NSO FSEIS of cumulative effects of an aquatic conservation strategy similar to several alternatives presented in this analysis (NSO FSEIS, Chapters 3&4, pp. 51-82).

Physical Environment

WATERSHED & WATER RESOURCES

Important water resource issues are related to water quality (primarily the delivery, movement, and disposition of sediment); temperature changes (extremes and fluctuations); flow regimen adjustments (flooding and low flows); stream channel conditions (including the stability characteristics of erosion and deposition); and channel morphology (structural components, width-depth ratio, bank angle). These elements often are functionally related.⁴⁴ Further, they are influenced by natural soil erosion hazards, potential and actual mass stability hazards, geomorphology, and the status of other riparian-area components including flood-prone areas, wetlands, and proximal upslope or terrestrial lands that buffer or directly influence riparian areas.

The response of water and associated aquatic and riparian resources is a function of the entire river basin and the cumulative effects of activities in the river basin. The interim standards and guidelines evaluated in this analysis apply to activities within riparian areas or RHCAs or degrading RHCAs; however, their application may indirectly affect or be affected by management activities elsewhere in the watershed.

AFFECTED ENVIRONMENT

The proposed action encompasses much of the Columbia River Basin upstream and east of the Cascade Mountains in Oregon and Washington, and large areas of Idaho, as well as portions of the Sacramento, San Joaquin, and south coastal drainages in California. Below are summary descriptions of the affected areas. *More complete, watershed-specific* descriptions of the affected physical environment are included in the forest plans, LUPs, and EISs listed in Appendix D.

Columbia River Basin: The Columbia and its tributaries flow through several geomorphic provinces. The area within the scope of the proposed action is dominated by the intrusive granites and metasediments associated with the Idaho Batholith and Bitterroot Ranges, the extruded basalts and other igneous rocks associated with the Columbia Plateau, and various sedimentary and wind-deposited formations. Glacial actions and mountain uplift defined the morphology of most of the higher elevations. Volcanic activity influences much of the western and central basins.

Streamflow from the headwaters generally is snow-dominated. A significant snowpack accumulates from late fall through spring. Snow melt in spring and early summer results in a notable runoff surge that usually is sustained well into the summer. Water temperatures tend to be cool year-round. Generally, water quality is excellent in the headwaters.

In general, the rivers and streams are relatively steep in the headwaters, controlled by bedrock and glacially-derived formations. Falls, step-pools, and cascades are not uncommon. High mountain lakes are common in the headwaters. Relatively gentle gradient meadow reaches are frequent, but they are not dominant over most tributary lengths near the headwaters.

⁴⁴L.B. Leopold, M.G. Wolman, and J.P. Miller. 1964. *Fluvial Processes in Geomorphology*. W.H. Freeman and Co., San Francisco, CA.

Lower in the drainage where gradients are less, channels are not as confined, and depositional landforms dominate, the streams often exhibit meandering characteristics with lateral adjustments taking place. Wide flood-prone areas become more frequent. Channels tend toward pool-riffle-run systems.

Sacramento River Basin: The Sacramento River and its tributaries drain four geomorphic provinces: the Coast Range on the west side of the Sacramento Valley; the Siskiyou Mountains to the north and northwest; the southern Cascade volcanics on the northeastern side of the valley; and the northern Sierra Nevada mountains on the east side. The area of the proposed action--the southern Cascades--is derived from layers of quaternary and Pliocene volcanics overlaying extensions of some Sierra Nevada formations, with Mt. Shasta and Mt. Lassen being dominant terrain features. The lower reach of the Sacramento flows mostly through recent alluvium that forms the floor of the Central Valley.

Main channel flows are heavily regulated by releases from major dams, including Folsom, Oroville, and Shasta. Most of the tributary streams are obstructed at multiple locations by dams for hydroelectric power and irrigation. In the area proposed for action Deer Creek, Mill Creek, and Antelope Creek are the last, unobstructed anadromous streams in interior California. They all drain southern Cascade volcanic formations and flow southwest, directly into the Sacramento River below Shasta Dam. Streamflows in these tributaries mostly are supplied by snowmelt, with sustaining base flows from springs and groundwater seepage. Deer, Mill, and Antelope Creeks are all young drainages, with few perennial tributaries to their main channels and without a well-developed, dendritic tributary drainage pattern.

Temperature regimes in the anadromous "transport" reaches of the Sacramento River are affected primarily by release flows from Shasta Dam and by irrigation diversions and returns. Deer, Mill, and Antelope creeks have a minor effect on the temperature of the Sacramento, compared to that of other major tributaries and to outflows from Shasta Dam.

Temperatures in Deer, Mill, and Antelope creeks are determined almost entirely by elevation. Their upper and middle reaches have cold water, flowing mostly in deeply-incised, mainstream canyons through moderate gradient reaches. Streambeds are dominated by riffles, interspersed with deep pools scoured into volcanic bedrock. Their upper reaches include a few alluvial meadows on the main channels. The lower reaches maintain somewhat warmer temperatures in similar gradient and streambed conditions, without cooling perennial tributaries. The lowest reaches have general warming through their lowest canyon and foothill sections to the valley floor and their confluences with the Sacramento River. Water quality is excellent on all three streams.

San Joaquin River Basin: The San Joaquin River drains the Sierra Nevada mountains to the east, the related Tehachapi Mountains to the south, and the Coast Range to the west. The primary source of flows is snowmelt from the high mountain snowpacks in the Sierra. Geology in the major tributaries is dominated by extensive areas of granitics, with notable areas of metavolcanic and metasedimentary bedrock. On the arid west side of the San Joaquin Valley, small ephemeral streams drain the east side of the Coast Range but rarely reach the San Joaquin River. From the wetter Sierra Nevada, west slope snowpacks supply numerous streams and three major rivers--the Merced, Tuolumne, and Stanislaus Rivers. The Consumnes, Mokelumne, and Calaveras Rivers are significant, smaller tributaries. The San Joaquin and its major tributaries all are obstructed by one or more large dams in their deep, middle reach canyons. Below the impoundments, the rivers' gradients are moderate, and their channels include a variety of boulder rapids and gentle pool-riffle sequences.

The anadromous, "transport" reaches of the San Joaquin River are affected by nutrient, mineral, and heat loading from agricultural return flows and by pumped import flows from the Sacramento River system. Riparian woodlands and floodplain areas have been vastly reduced by agricultural development and expanding urbanization. The San Joaquin system, which once maintained one of the largest spring-run chinook salmon fisheries on the Pacific Coast, now provides habitat for only a limited escapement of fall-run chinook salmon in the foothill regions below the tributary dams. Most of the eastern tributaries have cold flows, with good to excellent water quality.

South Coastal Drainages: Most of the coastal watersheds in central and southern California once supported substantial runs of steelhead. Coastal watersheds in central California also supported coho salmon. These runs have been reduced gradually and some may no longer be in existence. Dams, channelization, and habitat modification, combined with ground and surface water withdrawals, have limited steelhead runs.

The South Coast Drainages flow through several geomorphic provinces. The area within the range of the proposed action is dominated by metamorphic rock intermixed with various sedimentary formations and igneous rock of the Central Coast Subregion and various sedimentary formations intermixed with metamorphic and igneous rocks of the South Coast and Transverse Ranges. The bedrock of the area has been intensively folded, fractured, and faulted. Major faults in the area are considered active or potentially active. Seismic activity influences much of the morphology of the area.

Generally, streamflow from the headwaters is rainstorm-event dominated. Snow accumulates in the higher elevations but is not a significant part of the winter precipitation. Most drainages are dependant on winter rainfall and year-round springs and seeps. Generally, water quality is good, although lime cementation of the substrate, either due to natural mineral content or upstream mining operations, may cause degradation of habitat. Late summer water flows and high temperatures may become limiting in some areas. Flooding sometimes occurs along major stream courses during and following extended rains. The worst flooding results from high intensity winter rains falling on burned watersheds, increasing peak flows and enabling increased transport of sediment loads within the channel. Large deposits of sand at river mouths often form coastal lagoons and sand bars that may block fish passage during low flows. During periods when river mouths close, dissolved oxygen levels and water temperatures may stress trapped aquatic life.

In general, the rivers and streams flow through deep and relatively moderate to high gradient canyons. Bedrock outcrops, cascades, and falls historically limited fish passage in the headwaters. Deep pools separated by short, shallow glides and large-cobble/small-boulder riffles and runs, dominate the historically accessible reaches.

Lower in the drainages where gradients are less, channels are not as confined, depositional landforms dominate the streams, and stream courses often exhibit meandering characteristics with lateral adjustments taking place. Wider flood prone areas become more frequent. Channels tend toward pool-riffle-run systems.

ENVIRONMENTAL CONSEQUENCES

Past and continuing management practices are causing erosion and sedimentation in various forms and by varying degrees throughout the project area. In central Idaho, for example, where granite bedrock rapidly weathers into highly mobile, coarse sand, these phenomena are prevalent. Inadequately located, designed, and constructed roads, as well as poorly designed timber-harvest units, have provided a substantial mechanism for delivering sediments to and through major stream systems throughout the project area.

Mass erosion has been accelerated in many locations where instability is a common natural feature of the landscape. Reduction of tree root holding capacity, increases in slope subsurface water, and undercutting the toe of unstable slopes have resulted in significant sources of downstream sedimentation and local channel damage.

Local extremes in water temperature have been significantly increased by a reduction of shading from bank and other vegetation, flattening of bank angles, and reduction of overall water depth in the summer months from sedimentation as well as water diversion. Temperature effects tend to be localized in the mountainous areas, but in the lower gradient and non-timbered stream reaches, temperature change can be geographically extensive.

Channel condition and channel stability have been and continue to be affected, especially in areas of extensive or long term management. Grazing animals, road construction, logging practices, and recreational use in some areas have destabilized stream banks resulting in bank erosion, loss of cover and shading, widening and filling of channels, and accelerated lateral migration. Recently developed and implemented Best Management Practices, forest plans, and LUPs have reduced the frequency with which new stream destabilization occurs; however, existing channel condition and stability problems are not expected to be significantly corrected if present trends continue.

Channel structure, which is a natural control mechanism for maintaining water quality and the stream's ability to handle flooding and provide appropriate fish habitat, has been widely modified throughout the basin. In forested systems, habitat complexity and channel structure are created and maintained largely by the effects of large woody debris. In non-forested systems, healthy riparian communities contribute to the creation and maintenance of structure and complexity as exhibited by the presence of deep pools and undercut banks.

Logging and other associated timber management activities can affect water resources in several ways. Removal of trees and stream-side brush can reduce the complexity of habitat and channel structure by influencing the amount of large woody debris available for recruitment into stream systems. By altering stream shading, such activities can affect water temperature regimes and eliminate stream habitat cover. Removal of vegetation also can destabilize marginally stable slopes by increasing the subsurface water load, lowering root strength, and altering water flow patterns in the slope. Skid trails, logging roads, and road crossings can be direct sources of sediment to the creek and can provide direct conduits for water yield and sediment from other local sources. Roads, road crossings, and skid trails also can partially constrict or channelize flows and impede a stream's ability to maintain pools.

Grazing patterns in and around riparian areas can alter the vigor, composition, and amount of the natural vegetation. This in turn can affect the site's ability to control erosion, provide stability to stream banks, and provide shade and cover to the stream. Mechanical compaction

can reduce the productivity of the soils appreciably and cause bank slough and erosion. Mechanical bank damage often leads to channel widening, lateral migration (channel erosion), and excess sedimentation.

Recreation sites in riparian areas attract and concentrate human use in and around stream channels. Heavy and continuous use often results in severe compaction and bank sloughing, not unlike the effects of heavy livestock use. Erosion and gully formation can follow. Bank and near-bank vegetation often is damaged and the potential for important woody riparian vegetation replacement can be compromised.

Water diversions and impoundments that alter flow regimes (i.e., peaks flows, low flows, and duration of flows) directly reduce available fish habitat, and reduce the stream's ability to move sediment and woody debris, maintain its structural integrity and form, and prevent vegetative encroachment.

Alternative 1: Because this alternative is limited to providing only those protection measures provided in current plans and through NEPA and the ESA, present trends in riparian and aquatic habitat condition would be expected to continue. Modifications to projects and activities to comply with the requirements of current plans or the ESA may reduce recreation visitor days (RVDs), animal unit months (AUMs) of permitted grazing, or timber harvest. However, to the extent these reductions occur, they are independent of any decision by the Agencies regarding adoption of interim direction.

Where soil is compacted from heavy use, additional erosion and stream degradation would be expected. Localized benefits would be limited primarily to areas protected by special designation or subject to ESA Section 7 consultation.

Alternative 2: Because this alternative is limited to certain kinds of proposed projects and activities, expected effects on watershed and water resources would be limited and randomly dispersed over the planning area. However, modifications to proposed projects and activities would result in fewer RVDs and reduced timber harvest. The level of permitted grazing would not be affected.

This alternative would apply standards and guidelines that are designed to prevent further stream degradation to some specified kinds of proposed projects and activities within riparian areas would meet. Those measures would be taken to contribute to the maintenance of effective habitat.

In some areas, where soils have not been compacted by heavy use, and ongoing activities are not contributing to substantial habitat degradation, revegetation would begin. Localized benefits could be large where a large number of proposed projects and activities occur within the affected riparian areas. However, it is not likely that improvements in basin-wide water resources and stream conditions would be measurable as a result of actions taken during the interim period.

Alternative 3: Because additional standards and guidelines would apply to all proposed projects and activities within RHCAs or that degrade RHCAs, localized risks associated with all proposed projects or activities would be reduced.

Modifications to proposed projects and activities would lead to reductions in some resource outputs. These modifications would account for fewer RVDs and a modest reduction in timber harvest. The level of permitted grazing would not be affected.

In areas where soils have not been compacted by heavy use, and ongoing activities are not contributing substantially to habitat degradation, revegetation would begin. Localized benefits could be large where a large number of proposed projects and activities are conducted within the affected RHCAs.

Although measurable improvements in basin-wide water resource and stream conditions would be unlikely, because standards and guidelines would be applied to all proposed projects and activities, and RHCAs would include more of the watershed than would be protected under Alternative 2, some additional protection of anadromous fish would occur.

Alternative 4 (PREFERRED): On a case-by-case basis, land managers would evaluate ongoing projects and activities within RHCAs and modify those that are determined to be causing unacceptable risk. Modifications to proposed projects and activities and to some ongoing projects and activities would lead to a reduction in resource outputs. Those modifications would account for fewer RVDs, a reduction in timber harvest, and fewer AUMs of permitted grazing within certain streamside areas.

Several existing dispersed and developed recreation sites, where continued use would prevent attainment of Riparian Management Objectives or adversely affect listed anadromous fish, would be closed during the interim period. Such closures would allow some recovery in riparian areas and streams where heavy human uses have degraded riparian and aquatic habitat, although soil compaction resulting from extended use would inhibit such recovery.

Where grazing and timber harvest have caused impacts, adoption of this alternative would provide improved soil stability, additional stream shading, and continuing supplies of large woody debris to affected streams. Where grazing has contributed to unstable stream banks, loss of vegetative cover and shade, and increased sedimentation, the trend toward such habitat degradation would be reversed. This action would be expected to arrest habitat degradation and initiate recovery.

Protection measures prescribed for timber-, recreation-, and grazing-related activities, as well as other activities, would be widely dispersed throughout the area of the proposed action. Where such measures are applied, associated risks to water resources would be reduced. Where they are not applied, associated risks will be few. Risks associated with sediment loading, bank damage, loss of shade, and water temperature increases, or the loss of large woody debris from the riparian area would be substantially reduced from current and expected levels. The degree of recovery would be contingent on the extent of damage, the sensitivity of the affected site and stream channel to modifications in management direction, and the availability of moisture during the interim period. Although improvements to watersheds and water resources could be noticeable at a few sites, measurable improvement in habitat condition during the interim period would not likely be substantial because recovery processes are gradual.

Alternative 5: Watershed Analyses would be required within all Key Watersheds prior to initiation of proposed projects and activities in RHCAs, and all activities within RHCAs in all watersheds would be modified to comply with new standards and guidelines. Modifications to ongoing projects and activities would lead to a reduction in resource outputs. Those

modifications would result in fewer RVDs, a reduction in timber harvest, and fewer AUMs of livestock grazing within streamside areas.

Many dispersed and developed recreation sites likely would be closed during the interim period. Such closures would allow some recovery in riparian areas and streams where heavy human uses have degraded riparian and aquatic habitat, although soil compaction resulting from extended use would inhibit such recovery.

Adoption of this alternative would provide improved soil stability, additional stream shading and continuing supplies of large woody debris to affected streams. Where grazing, timber, and other activities have contributed to unstable stream banks, loss of vegetative cover and shade, and increased sedimentation, the trend toward such habitat degradation would be slowed or reversed. This action would be expected to arrest habitat degradation and initiate recovery.

Protection measures prescribed for timber-, recreation-, and grazing-related activities, as well as other activities, would be dispersed widely throughout the area considered in this environmental assessment. Associated risks to water resources would be reduced. Risks associated with sediment loading, bank damage, loss of shade and water temperature increases, or the loss of large woody debris from the riparian area would be substantially reduced from current and expected levels. The degree of recovery would be contingent on the extent of damage, the sensitivity of the affected site and stream channel to modifications in management direction, and the availability of moisture during the interim period, although measurable improvements to watersheds and water resources could be noticeable at a few sites. The overall health of affected areas and any substantial improvement in habitat conditions would occur gradually, and would not be expected to improve substantially during the interim period.

Biological Environment

NON-FORESTED VEGETATION

AFFECTED ENVIRONMENT

Non-forested uplands within the affected area consist mostly of sagebrush plant communities. Wyoming, Basin Big, and Mountain Big sagebrush are the most common species. Other common shrubs include bitterbrush, wild rose, and rabbitbrush. Typical perennial grasses are Bluebunch wheatgrass, Idaho fescue, Western wheatgrass, and Giant wild rye. Various forbs, including buckwheats, daisies, phlox, and dandelions, are common.⁴⁵ Upland sagebrush communities typically occur in areas where precipitation averages 10-18 inches per year and comes as snow or rain in the winter and spring.

Riparian vegetation in non-forested areas consists mainly of herbaceous species such as Kentucky bluegrass, although sedges, forbs, and woody species such as willow, alder, and cottonwoods are common. Vegetative cover is absent or much diminished in severely degraded riparian areas, and stream banks in such areas have been increasingly exposed to severe erosion. Moderately degraded areas typically have a good cover of Kentucky

⁴⁵T.N. Shiflet, ed. 1994. *Rangeland Cover Types of the United States*. Soc. Range Mgmt.

bluegrass and other plant species but often are lacking in woody species. Riparian areas in good condition have a cover of sedges and/or a variety of different age classes of willows, alders and, in some cases, cottonwoods.

Non-forested vegetation in the Sacramento Valley is principally of four cover types. The Valley Foothill Hardwood type is comprised of various oak species (blue, valley, Engleman, interior live, coast live and canyon live oaks). The Valley riparian type has cottonwood, California sycamore, and valley oak as dominant species; with white alder, boxelder, and Oregon ash as subcanopy types. The mixed chaparral type is characterized by species which vary with precipitation, aspect, and soil type. Included are California scrub oak, chaparral oak, manzanita species, *mountain mahogany*, *ceanothus* species, and chemise.

The non-forested vegetation along the Pacific coast is represented by chaparral and oak-woodland types, with cottonwood and willows occurring in riparian zones.

More complete, watershed-specific descriptions of the affected non-forested vegetation environment are included in the forest plans, LUPs, and EISs listed in Appendix D.

ENVIRONMENTAL CONSEQUENCES

Most negative effects to riparian vegetation have been caused by excessive grazing, although excessive recreational use is important in some areas. Popular summer recreation areas, as well as areas where year-round grazing or grazing during the hot, mid-summer months occurs, have experienced degradation of riparian and aquatic habitat. Normally, changes in ecological condition resulting from a modification in the percent composition of plant species do not occur in the short term. Changes in ecological condition require at least 5 years and in most cases 10 or more years.

The time frame in which measurable change can be expected is dependent on the precipitation zone and the plant community. In higher precipitation areas (where more than 12 inches of precipitation per year is common), improved management regimes in upland plant communities may effect changes in ecological condition within 5-10 years. In drier, more arid areas (where less than 10 inches of precipitation per year is common), improvement in ecological condition may take 30 years or longer. Unlike the uplands, where ecological recovery may take 5-10 years or longer, vegetative improvement in riparian areas may occur within a relatively short time, because water usually is available for plant growth during the entire growing season.

Alternative 1: Effects on non-forested uplands would continue, as modified in some areas by consultation provisions of the ESA. Uplands would not be expected to show measurable improvement in overall ecological condition, although some proposed projects or activities that are determined likely to affect listed anadromous fish species would be cancelled or modified as a result of ESA consultation. The result of consultation would be the application of standards, guidelines, and procedures determined by the NMFS as necessary to conserve listed species and their habitat.

Due to the proximity of water and the resultant concentration of livestock and people, uplands adjacent to riparian areas, which are typically some of the most productive, have been some of the most adversely affected. In those upland areas not receiving additional protection, a

continued concentration of livestock grazing and dispersed recreational use would continue to cause degradation of upland vegetation.

Non-forested riparian areas would not be expected to show measurable improvement. Current forest plan and LUP direction would apply to all ongoing and proposed actions. The condition of riparian areas where appropriate protection measures are taken (e.g., "riparian emphasis areas" and those areas where projects and activities are subject to consultation under provisions of the ESA) would improve somewhat. But the condition of riparian and aquatic habitat not designated as riparian emphasis areas, as well as those areas for which consultation does not occur, would not be expected to improve. A downward trend may be evident in some of those areas. In other, severely degraded areas, where sloughing banks and erosion have resulted in a major loss of soil, degradation would continue.

Alternative 2: Under this alternative, specific new standards and guidelines would apply to some kinds of activities. Other proposed projects and activities and ongoing projects and activities would continue, as modified in some areas by provisions of the ESA. Uplands would not be expected to show measurable improvement in their overall ecological condition, although some projects and activities that are determined likely to affect listed fish species would be cancelled or modified as a result of consultation, and some other proposed projects and activities would be modified as a result of the new standards and guidelines. Standards, guidelines, and procedures would apply only to some proposed projects and management activities, and not to any ongoing projects and activities.

Livestock grazing, timber harvesting, and recreational uses would continue at near-current levels. However, during the interim period some proposed projects and activities would be modified. Some incremental reduction in the risks to upland and riparian vegetation would be expected; although for the duration of the interim period the improvement in habitat conditions would be negligible.

Alternative 3: During the interim period, the effects on non-forested uplands would continue, as modified in some areas by provisions of the ESA and in all RHCAs by standards, guidelines, and procedures applied to proposed projects and management activities. These more comprehensive measures would help see that all new projects and activities would be developed in a manner that is responsive to new information on stock status and habitat condition. However, because ongoing projects and activities would continue under direction prescribed in current forest plans and LUPs, there would be negligible effects on much of the upland and riparian vegetation.

Livestock grazing, timber harvesting, and recreational uses would continue at near-current levels. However, during the interim period all proposed projects and activities would be subject to new standards and guidelines. Some incremental reduction in the risks to riparian vegetation would be expected, although adoption for the duration of the interim period would result in negligible improvement in habitat conditions.

Alternative 4 (PREFERRED): Under this alternative, the negative effects on non-forested uplands would be somewhat reduced, not only by modifications of proposed projects and activities within RHCAs, but also by the application of standards and guidelines to those ongoing projects and activities within RHCAs that are determined to be posing an unacceptable risk to aquatic and riparian habitat and anadromous fish stocks. This more comprehensive application of direction would help see that ongoing projects and activities, as

well as all new projects and activities, would be carried out in a manner that is responsive to new information on stock status and habitat condition.

Accordingly, livestock grazing, for example, would be modified if current grazing practices pose an unacceptable risk. Modification in such practices could include such things as a reduction in numbers of livestock or season of use, changes in handling practices, or the complete removal of livestock from RHCAs. Similar modifications in management of recreation and other activities would occur as needed. The amount of improvement of non-forested uplands would be dependent on the type and number of modifications adopted.

In riparian areas where current projects and activities are modified or halted, habitat conditions would be expected to improve, although the amount of improvement would depend on the extent of degradation that has occurred and the overall health of the riparian community. In some areas, the vegetative response to improved management would be expected to be measurable, and in some less degraded areas, substantial. Most vegetated riparian areas would be expected to show an increase in desirable riparian vegetation such as sedges and/or young willows.

With the modification or elimination, during the interim period, of projects that are determined to be causing unacceptable risk, as well as the application of protective measures in all future projects and activities, some improvement in upland and riparian habitat would be expected, and new causes of degradation would be avoided.

Alternative 5: Because standards and guidelines would apply to all ongoing projects and activities as well as all proposed projects and activities, and larger RHCAs would be established within all watersheds, land managers would be more likely to see that projects and activities are carried out in a manner that is responsive to new information on stock status and habitat condition.

Livestock grazing could be modified by changing permits to reduce the number of livestock or the season of use, changing handling practices that result in habitat degradation; and, in some cases, requiring the complete removal of livestock from previously permitted areas. Recreational uses, as well as other activities, also could be modified or, if necessary, reduced. The amount of improvement in non-forested uplands would be dependent on the type and number of modifications implemented.

Measures required under this alternative would further contribute to improvement of the ecological condition of all non-forested upland and riparian areas. In areas where current projects and activities are modified or halted, habitat conditions would be expected to improve, although the amount of improvement would depend on the extent of degradation that has occurred and the relative health of the upland or riparian community. In some areas the vegetative response to improved management would be expected to be measurable, and in some less degraded areas, substantial. Desirable riparian vegetation, such as sedges and/or willow, would be expected to increase in most affected areas.

FORESTED VEGETATION

AFFECTED ENVIRONMENT

The major forest types found in the affected areas include Fir-Spruce, Ponderosa pine, and Lodgepole pine in eastern Oregon and eastern Washington; Fir-Spruce, Ponderosa pine, Lodgepole pine, White pine, and Larch in Idaho; Fir-Spruce and Ponderosa pine in northern California; and Monterey pine, Redwood, and Valley hardwoods in southern California.⁴⁶ Although the predominant tree species are softwoods, there also are hardwoods such as aspen, cottonwood, willow, and various oaks associated with many of the foregoing forest types, as well as a wide range of understory plant species. More complete, watershed-specific descriptions of the affected forested vegetation environment are included in the forest plans, LUPs, and EISs listed in Appendix D.

Forest types that would be affected are primarily those found in Idaho, because most of the timber harvesting that would be affected by the proposed interim direction is within RHCAs in the national forests in Idaho.

Forests in the affected areas developed over time under conditions of periodic disturbance by fire (natural and human-caused), catastrophic insect and disease infestations, windstorms, and logging. In terms of tree growth rates and biomass production, the forests are very productive, particularly those areas in or near riparian systems that often are characterized by deep soils and high-moisture regimes. Forest vegetation provides habitat for many species of wildlife and is critical to ensuring the integrity of aquatic ecosystems and the life-forms they support.

The condition of forests on the affected areas varies considerably. Those forests represent a full range of successional stages, from young-growth stands to late-successional stands approaching the end of their biological life-span, often referred to as old growth. Old-growth forests range in age from 100 years for species such as aspen, to many hundreds of years for species such as Douglas fir. The diversity of tree and other vegetative species varies considerably, on a site-by-site basis, as does the extent of canopy closure and vertical and horizontal structure. Forest health as viewed in terms of endemic tree mortality generally is a function of tree age; however, insect and disease infestations and adverse climatic conditions cause mortality in both young and old forests. High mortality rates are particularly prevalent in the affected areas in eastern Oregon and are described in detail in the *Eastside Forest Ecosystem Health Assessment*.⁴⁷

⁴⁶W.M. Harlow, E.S. Harrar, and F.M. White. 1979. *Textbook of Dendrology*. McGraw-Hill.
C.S. Schopmeyer. 1989. *Seeds of Woody Plants in the United States*. Ag. Handbook 450.

⁴⁷USDA Forest Service Pacific Northwest Region. 1991. *Eastside Forest Ecosystem Health Assessment*. April 1993.

ENVIRONMENTAL CONSEQUENCES

Forest riparian areas normally constitute a strip along and adjacent to water courses, meadows, and water bodies. Timber harvesting would be permitted in some of these areas--using best management practices and in consideration of other requirements described under Alternative 1. Alternatives 2 through 5 prescribe progressively wider riparian protection areas or RHCAs, in which timber harvesting generally is not permitted. In general, when viewed in the context of forest-wide vegetative conditions and successional time scales, adoption of any of the 5 alternatives during the interim period would have little effect on forest vegetation.

Alternative 1: Under this alternative, implementation of forest plans and LUPs would continue. All proposed projects and management activities would undergo NEPA analyses, which would be presented for formal public review and comment; and all proposed projects and activities that may affect listed species or adversely affect designated critical habitat would be subject to consultation provisions of the ESA.

The major environmental impact on forest vegetation would result from timber harvesting, which interrupts natural successional stages of stand development and reduces biomass and structural diversity. Because timber harvest would continue to the extent prescribed in current forest plans and LUPs, with modifications made necessary by consultation provisions of the ESA, adoption of this alternative would result in a continuation of the rate at which degradation of riparian and aquatic habitat is occurring. Species composition and structural diversity of forest vegetation following timber harvest is dependent, in part, on the harvest method prescribed in forest plans and LUPs and employed in affected areas. The number of living and dead trees and the amount of material that is involved, which is comprised of down woody material and other vegetation that remains on cut-over areas also depends on the harvest method selected. In general, timber harvest simulates natural events that create an early-seral stage in forest succession. Under this alternative, more overall acreage would be returned to those early stages than under the action alternatives.

Alternative 2: Under this alternative, specific new standards and guidelines regarding timber management projects and activities, logging-slash treatment and the use of prescribed fire, as well as road construction, reconstruction, and maintenance, livestock grazing, and riparian and fish habitat restoration, would apply to proposed projects and activities.

Generally, timber harvesting would not be permitted within riparian areas. The exclusion of proposed timber harvesting in the affected areas would permit the natural succession of forest vegetation and rely more heavily on natural events, such as fire and insect and disease infestations, to influence or shape forest succession. Consequently, increases in tree mortality and the associated risk of fire, insects, and disease would be expected, although less than would be expected under any of the other action alternatives, which provide more extensive protection to riparian areas. However, during the interim period the effect would be minimal.

Alternative 3: Specific new standards and guidelines regarding timber management actions described under Alternative 2 would apply to all proposed projects and activities within RHCAs.

Timber harvesting generally would not be permitted within RHCAs. The exclusion of proposed timber harvesting in RHCAs would permit the natural succession of forest vegetation and rely more heavily on natural events, such as fire and insect and disease infestations, to influence or shape forest succession. Consequently, tree mortality and the

associated risk of fire, insects, and disease could be expected to increase somewhat from levels expected under Alternative 2. However, during the interim period the effect would be minimal.

Alternative 4 (PREFERRED): Specific new standards and guidelines regarding timber management projects and activities described under Alternative 3 would apply to some ongoing projects and activities within RHCAs, as well as all proposed projects and activities.

Timber harvesting generally would not be permitted within RHCAs. The exclusion of proposed timber harvesting in RHCAs--and in other areas where it is determined that such activities would pose an unacceptable risk to aquatic and riparian habitat or anadromous fish--would permit the natural succession of forest vegetation and rely more heavily on natural events, such as fire and insect and disease infestations, to influence or shape such succession. Consequently, tree mortality and the associated risk of fire, insects, and disease could be expected to increase somewhat from levels expected under Alternative 2 or 3. However, during the interim period the effect would be minimal.

Alternative 5: Specific new standards and guidelines regarding timber management projects and activities described under Alternative 3 would apply to all ongoing and proposed projects and activities within RHCAs.

Timber harvesting generally would not be permitted within RHCAs. The exclusion of timber harvesting would permit the natural succession of forest vegetation and rely more heavily on natural events, such as fire and insect and disease infestations, to influence or shape forest succession. Consequently, tree mortality and the associated risk of fire, insects, and disease could be expected to increase from levels expected under the other action alternatives. However, during the interim period the effect would be minimal.

FISHERY RESOURCES

AFFECTED ENVIRONMENT

Within the area considered in this environmental assessment, approximately 16 million acres of lands provide diverse riparian and aquatic habitats for a variety of fish species, including cutthroat, rainbow, brook, brown, golden, and bull trout; sockeye, chinook, and coho salmon, and steelhead trout; and white sturgeon, northern squawfish, suckers, chubs, dace, shiners, sculpins, and other lesser known species.⁴⁵ More complete, watershed-specific descriptions of the affected fishery resource environment are included in the forest plans, LUPs, and EISs listed in Appendix D. Several fish species, including many salmon and trout stocks, are threatened, endangered, State-sensitive, or at risk of becoming "special status" species. Of the 214 anadromous fish identified in the AFS published report as at-risk or of special concern, 39 are from California, 58 are from the Oregon coast, 76 are from the Columbia River basin in Idaho, Oregon and Washington, and 41 are from the Washington coast/Puget Sound area. Activities in areas used by those species that are threatened, endangered, or proposed for listing, are subject to ESA provisions that require consultation or special consideration. See

⁴⁵P.B. Moyle. 1976. *Inland Fishes of California*. Univ. CA Press, Berkeley. C.E. Bond. 1973. *Keys to Oregon Freshwater Fishes*. Tech. Bull 58. OSU Ag. Exp. Sta., Corvallis, OR. R.S. Wydoski and R.R. Whitney. 1979. *Inland Fishes of Washington*. Univ. WA Press, Seattle. J. Simpson and R. Wallace. 1978. *Fishes of Idaho*. Univ. Press of ID, Moscow.

pages 1-11 above for further description of recent studies on aquatic and riparian habitat degradation and anadromous fish population declines.

Generally, State agencies manage fish resources, although sovereign Tribes and some regulatory Federal agencies also have responsibility for management of fishery resources. The Agencies' responsibilities are focused on management of habitat that is within their jurisdictions. Close cooperation among the various other agencies, governments, and jurisdictions is necessary to provide proper management of fishery resources.

Anadromous fish are widely distributed throughout the area and tend to thrive in streams that are characteristic of most watersheds within the area of consideration. Figure 1 shows known anadromous watersheds within the proposed area. Anadromous fish require a marine environment to complete their life cycles, and they spend varying amounts of time in the ocean during their major growth phase. Over the past 50-80 years, freshwater anadromous fish habitats have been adversely affected by human population growth and factors associated with that growth.

Generally, anadromous fish streams currently contain 30-70 percent fewer large, deep pools, more fine sediments in spawning gravels, and greater disturbance of riparian vegetation than is acceptable. As a result, the fish habitat capability of those streams has diminished. The number of anadromous fish returning to freshwater systems has declined substantially from the levels recorded in years past. This decline stems from a variety of factors, including excessive ocean and freshwater harvest, habitat losses from logging, grazing, mining, recreation, and other surface-disturbing activities, genetic and disease problems associated with hatchery supplementation efforts, and problems with passage and flow associated with hydropower installations and other impoundment and diversion facilities located in critical watersheds. Future human population growth is expected to continue to increase pressures on these habitats. Management changes that work to improve habitat capability and fish populations will be necessary to ameliorate these pressures.

ENVIRONMENTAL CONSEQUENCES

Anticipated effects on anadromous fish and riparian and aquatic habitats traditionally have been estimated by the effects on representative habitats and species. By ensuring that such representative habitats and species are adequately considered, sufficient habitat quality and diversity are presumed to exist where all species using similar habitats are protected and/or restored. Adoption of alternatives presented here would serve, by varying degrees, to preserve or restore existing riparian and aquatic habitats and related aquatic resources, with special emphasis on anadromous fish habitat. To gain a crucial perspective on how best to manage riparian and aquatic habitat, it is necessary not only to focus on specific representative habitats and species, but also on those habitats' processes and functions.

Management activities can adversely affect fishery habitats and fish populations by altering riparian vegetation amount, composition, diversity and vigor, reducing streambank vegetation and cover, reducing streambank stability, modifying water quantity, timing, and quality, and by changing delivery of structural elements, nutrients, and sediments to the water. Livestock grazing, timber harvest, and recreational use, with their associated road building and site development, are the most prevalent activities affecting riparian and aquatic habitats and anadromous fish populations. Application of management constraints or prescriptions serves to alleviate problems with habitat and anadromous fish populations. Improvements in habitat

quality and quantity and anadromous fish population diversity and abundance can result from application of management prescriptions that produce improved riparian health and increased aquatic habitat diversity.

Alternative 1: Under this alternative, the effects of ongoing and proposed projects and activities would continue, pursuant to guidance provided in current forest plans and LUPs, and in compliance with NEPA procedures and ESA provisions. Direct, indirect, and cumulative effects to fishery resources--from grazing, timber harvesting, recreation uses, mining, and other discretionary activities--would be expected to continue at current levels.

The severity of effects on fisheries and aquatic and riparian habitat would be proportional to the level of ground-disturbing activities associated with ongoing and future activities that are permitted within riparian areas. Overall trends in habitat degradation and declines in anadromous fish populations indicate that ESA provisions may result in modifications to projects and activities, amendments to current regional guides and forest plans and LUPs where anadromous fish already are listed, and the listing of additional species in the near future.

Alternative 2: Under this alternative, specific new standards and guidelines would apply to proposed livestock grazing, logging slash treatment and the use of prescribed fire, road construction and reconstruction, and riparian and fish-habitat restoration. Other proposed projects and activities, and all ongoing projects and activities, would continue, pursuant to guidance provided in current forest plans and LUPs, and in compliance with NEPA procedures and consultation provisions of the ESA.

The effects of this alternative on anadromous fish habitat would be related to the level of permitted ground-disturbing activities associated with future livestock grazing, logging slash treatment and prescribed fire, road systems, and riparian and fish habitat restoration activities within riparian areas. It would see that these kinds of proposed projects and activities would meet standards and guidelines that are designed to prevent further stream degradation.

Because the scope of this alternative is limited to certain kinds of proposed projects and activities, expected beneficial effects on anadromous fish habitat would be limited and randomly dispersed over the planning area. Localized benefits to anadromous fish habitat could be large where large percentages of proposed projects and activities occur within affected watersheds. However, improvements in anadromous fish habitat condition are gradual, and can take decades.

Alternative 3: Because this alternative would broaden the scope of management direction to include new standards and guidelines for all proposed projects and activities within RHCAs or that degrade RHCAs, and because RHCAs would be established in all watersheds and would be larger in Key Watersheds, some measure of additional protection of riparian and aquatic habitat and anadromous fish would occur.

Adoption of this alternative would not result in permanently foregoing any proposed activity within the RHCAs, but some actions could be deferred or modified during the interim period, resulting in a slight, short-term beneficial effect on certain anadromous fish species. Ongoing projects and activities would not be modified as a result of interim direction. No measurable effects on riparian or aquatic habitat would be expected, although potential benefits would include incremental improvements resulting from modifications to proposed projects and

activities and from proposed riparian restoration projects. Although improved aquatic habitat condition and the attainment of RMOs eventually would be an expected result of this management direction, such benefits would not be achieved through adoption during the interim period, nor would the rate of restoration be increased substantially.

Alternative 4 (PREFERRED): Because this alternative would broaden the application of management direction by including new standards and guidelines to all proposed projects and activities and some ongoing projects and activities within RHCAs or that degrade RHCAs, and because large RHCAs would be established in all Key Watersheds, additional protection of riparian and aquatic habitat would occur.

Although there would be no permanent cessation of activities in RHCAs, some actions would be modified or deferred during the interim period. As a result, some adverse effects on riparian and aquatic habitats within RHCAs would be reduced. Because the restoration of riparian and aquatic habitat complexity typically occurs over a much longer time than is considered in this environmental assessment, benefits through adoption during the interim period would be expected to be negligible. However, because case-by-case reviews would be made of ongoing actions, and those actions determined to pose an unacceptable risk would be modified, some benefits to anadromous fish populations, including a reduction in risks, would be expected.

Potential benefits would include the initiation of riparian vegetative recovery that would result from a reduction in human activities and livestock use within riparian areas. Although this eventually would result in improved aquatic habitat condition and the attainment of RMOs, such benefits would not likely be apparent during the interim period.

Alternative 5: Because this alternative would broaden the scope of management direction to include new standards and guidelines for all proposed and ongoing projects and activities within RHCAs or that degrade RHCAs, and because large RHCAs would be established in all watersheds, additional protection of riparian and aquatic habitat would occur, and the associated risks associated with management would be reduced.

Although there would be no permanent cessation of activities, some actions would be modified or deferred during the interim period. As a result, some adverse effects on riparian and aquatic habitats within RHCAs would be reduced. Because the restoration of riparian and aquatic habitat complexity typically occurs over a much longer time than is considered in this environmental assessment, benefits through implementation during the interim period would be expected to be negligible. However, because large RHCAs would be established in all anadromous watersheds, and because all ongoing and proposed actions would be modified as needed to comply with the management direction, some benefits, including a reduction in risks to anadromous fish populations, would be expected.

Potential benefits would include the initiation of riparian vegetative recovery that would result from a reduction in human activities and livestock use within riparian areas. Although this eventually would result in improved aquatic habitat condition and the attainment of RMOs, such benefits would not likely be apparent through implementation during the interim period.

THREATENED, ENDANGERED, AND SENSITIVE SPECIES

Numerous threatened, endangered, and sensitive plant species occur within the proposed project area (50 CFR 17.12).⁴⁹ Projects that might affect plant species listed as threatened or endangered under the Endangered Species Act are subject to consultation with FWS. To avoid negative effects on individual plants or populations, projects sometimes are modified or, in some rare instances, cancelled. Generally, plant species designated as "sensitive" by the Agencies are inventoried during project planning, so that potential impacts can be avoided or mitigated. None of the proposed alternatives would affect this direction.

A number of threatened, endangered, and sensitive terrestrial vertebrate and invertebrate species occur on lands administered by the Agencies (50 CFR 17.11). Among the federally-listed threatened and endangered species that occur within the area are bald eagle, peregrine falcon, grizzly bear, and gray wolf. More complete, watershed-specific descriptions of the affected threatened, endangered, and sensitive species environment are included in the forest plans, LUPs, and EISs listed in Appendix D.

Under the ESA, activities that may have an effect on threatened or endangered wildlife species are subject to consultation with FWS or NMFS. Requirements for consultation would remain in effect under any of the interim strategies. Management of sensitive wildlife species varies by national forest or BLM district, and usually is conducted in cooperation with State wildlife agencies. On lands administered by the Agencies, managers are directed to plan and implement projects in ways which would avoid impacts which could move any species towards Federal listing.

The Agencies have concluded consultation with FWS and NMFS on the effect of the proposed action on listed species. The FWS, through a letter of concurrence, found that the proposed action would have a neutral or beneficial effect on listed species under their jurisdiction.⁵⁰ NMFS, through a biological opinion, has determined that the proposed action is not likely to jeopardize the continued existence of listed species under their jurisdiction or result in destruction or adverse modification of critical habitat.⁵¹

⁴⁹R.J. Meinke. 1982. *Threatened and endangered vascular plants of Oregon: an illustrated guide*. U.S. Fish and Wildlife Service.

⁵⁰Letter to Forest Service Chief Jack Ward Thomas, dated June 27, 1994, from Fish and Wildlife Service, Portland, OR, signed by Regional director Marvin L. Plenert.

⁵¹NMFS Biological Opinion, dated January 23, 1995.

WILDLIFE RESOURCES

AFFECTED ENVIRONMENT

The 15 national forests and 7 BLM districts included in the proposal provide an array of wildlife habitats, ranging from the alpine meadows and mesic, old-growth coniferous forests of northern Washington and Idaho to the semi-arid sagebrush steppes, alkali flats, and volcanic formations of the Great Basin and northern California. These diverse landforms and plant communities, in turn, support a large number of species. For example, over 400 species of terrestrial vertebrates have been identified on the Okanogan National Forest (Okanogan Land and Resource Management Plan, 1989). More complete, watershed-specific descriptions of the affected wildlife environment are included in the forest plans, LUPs, and EISs listed in Appendix D.

During the preparation of forest plans, indicator species were selected to represent either featured species or groups of species that respond to environmental variables in similar ways. Specific allocations and management practices were established to contribute to the continued viability and sustainability of indicators and the species groups they represent. More than 30 bird, mammal, and amphibian indicator species are identified in the forest plans. Many of these species have either complex habitat requirements or are closely associated with unique or scarce habitats. Riparian habitats are critical to the conservation of many species in the more arid interior portions of the West and, in general, support greater species richness and density than any other habitat type. Riparian habitats in the West are in short supply, both naturally and as a result of human manipulation, and account for less than 10 percent of the total land base considered in this environmental assessment.

Many indicator species are considered old-growth-associated or old-growth-dependent. A combination of circumstances (including steep slopes, inaccessibility and/or long fire-return intervals) have resulted in the survival of remnant old-growth stands along many streams in the inland Northwest. Although often highly fragmented, these stringers of late-successional forest still provide micro-climates and forest structure important for a variety of species—from salamanders to bald eagles to Rocky Mountain elk.

ENVIRONMENTAL CONSEQUENCES

Any of the action alternatives would have potential beneficial effects on wildlife habitats and populations, either by avoiding habitat loss, allowing incremental improvement of degraded habitat in the absence of further disturbance, providing the potential for increased reproductive success (on a site-specific basis), or simply by the retention of options for future protection under measures prescribed in the geographically-specific environmental analyses. However, the degree of benefit varies by alternative.

Alternative 1: Current forest plans and LUPs would remain in effect. Standards and guidelines within those plans call for protection of wildlife species and their habitats, as do ESA provisions. Both would govern proposed and ongoing projects and activities. No change of benefit or risk would be expected to result from project implementation.

Alternative 2: This alternative applies the aquatic and riparian components of the "watershed and fish habitat emphasis option," which were developed by the Scientific Panel on Late-Successional Forest Ecosystems, to anadromous watersheds considered in this environmental assessment. This strategy would augment reserve areas already in place for indicator species and maintain important refugia for other species, including big-game hiding cover.

Because the construction of new roads would be minimized, habitat effectiveness and reduced stresses on big-game species would increase, particularly during hunting seasons.

Because restrictions on livestock grazing, timber management, logging slash treatment and prescribed fire, road systems construction and reconstruction, and riparian and fish-habitat restoration would apply to proposed projects and activities only, substantial improvements in riparian wildlife habitats would not be expected during the interim period.

Alternative 3: Standards, guidelines, and procedures for riparian habitat conservation would apply to all proposed projects and activities. Such measures would contribute to the protection of wildlife species and their habitats, although the effects of adoption during the interim period would likely not be measurable.

Alternative 4 (PREFERRED): Standards, guidelines, and procedures for riparian habitat conservation would apply to all proposed projects and activities and those ongoing projects and activities within RHCAs that are determined to pose unacceptable risk to anadromous fish stocks. Because RHCAs would be designated within all watersheds, and larger RHCAs would be established in Key Watersheds, the distribution and size of those areas would contribute to the protection of wildlife species and their habitats. However, during the interim period the effects of adoption likely would not be measurable.

Modifications to livestock grazing programs, although representing only about 4 percent of current AUMs, are within RHCAs. Generally, this small decrease would have very little effect on wildlife habitat, except perhaps within those specific local project areas where unacceptable impacts are occurring. Some benefits to habitats and populations would result from road closures, but overall beneficial effects would be expected to be small.

Alternative 5: Standards, guidelines, and procedures for riparian habitat conservation would apply to all proposed projects and activities, as well as all ongoing projects or activities. Because large RHCAs would be designated within all watersheds, the distribution and size of those areas would contribute to the protection of wildlife species and their habitats. However the effects of adoption during the interim likely would not be measurable.

Changes to livestock grazing programs, although representing only about 8-10 percent of the total AUMs, would be within RHCAs. Generally, this small decrease would have very little effect on wildlife habitat, except perhaps within those specific local project areas where unacceptable impacts are occurring. Some benefits to habitats and populations would result from road closures, but overall beneficial effects would be expected to be small.

Human Environment

SOCIAL

SOCIAL VALUES

A wide range of social values are assigned to the resources administered by the Agencies. More complete, watershed-specific descriptions of these values are included in the forest plans, LUPs, and EISs listed in Appendix D.

Hoover (1993)⁵² has provided an overview of non-economic values that are assigned to anadromous fish in the Pacific Northwest, by both native and non-native peoples. Symbolic values, cultural and spiritual values, subsistence uses, and psychological and social benefits describe some of the importance that people assign to those species.

In an attempt to prevent further degradation of anadromous fish habitat and declines in fish populations, the Agencies also are seeking an appropriate means of preventing losses in the social, cultural, and psychological investment that people have made in anadromous fish.

However, during the interim period, adoption of any of the alternatives likely would have no direct or immediate effect on any human values associated with anadromous fish. Such effects would be brought about by the presence or absence of fish. Modifications in management practices affect habitat conditions only gradually, and changes in habitat conditions, whether positive or negative, bring about changes in fish populations only over a period of years. For this reason, the best available information suggests that adoption of any of the alternatives considered in this environmental assessment would be of little consequence during the interim period. Perhaps the greatest effect that adoption of an interim strategy would have on those people and communities that value anadromous fish would be associated with the perception that action was being taken to protect a valued resource.

Others in the Pacific Northwest feel that their lifestyle and economic stability are threatened by actions such as are proposed in this environmental assessment, as well as a variety of other Federal actions, such as Rangeland Reform, Northern Spotted Owl ROD, and provisions of the Endangered Species Act. Some local communities and individuals believe that recent changes in natural resource management on Federal lands are designed to remove users and to redefine the relationship between Federal land management agencies and traditional user groups.

A variety of factors contributes to social stress and disruption, but perhaps none is so pervasive as the prospect of unprecedented change. Involuntary changes in lifestyle, impending threats to independence and financial stability, and direct confrontation with values and motives other than our own, often lead to stasis and social uncertainty. The prospects seem unequivocal:

⁵²A.P. Hoover. 1993. *Non-economic values of Pacific salmon and steelhead: U.S. Forest Service Pacific salmon and steelhead habitat management strategy*. Paper prepared for the PACFISH Washington Office Working Group. Policy Analysis Staff.

job losses, a kind of Federal management that would seem to be taking away the availability of predictable volumes of raw materials and our open access to public lands and resources, for the possible protection of species other than our own.

Effects that the interim strategies considered in this environmental assessment would have on the human community would vary, depending on the Agencies' capacity to adapt to internal and external forces, as well as the consequences of adopting any of them. A community's capacity to adapt to such forces depends on its ability to pursue collective goals, the skills, experience, and educational levels of people in the community; the size and diversity of local businesses; and access to financial capital, transportation, markets, and raw materials.

Generally, small, isolated communities are more vulnerable to external forces due to their less active leadership, weaker links to centers of political and economic influence, lower levels of economic diversity, and lack of control over resources and capital. Small communities are more likely to experience unemployment, increased poverty, and social disruption in the face of shifts in natural resource management policy.

The social effects of adopting any of the alternatives would be manifested in a variety of ways. Because the amount of real change in resource use during the interim period would be relatively small, it is not anticipated that adoption of any of the alternatives would have substantial positive or negative social implications. Further, any social effects would differ from individual to individual and community to community.

CULTURAL RESOURCES

Watershed-specific descriptions of the cultural resources (e.g., archaeological and historical sites) within the proposed action area are included in the forest plans, LUPs, and EISs listed in Appendix D. Effects to cultural resource sites include direct, indirect, and cumulative impacts that would result from either intentional or inadvertent damage to those sites. In general, such effects would be the result of ground-disturbing activities in the vicinity of cultural resources. Such activities are constrained by forest plan and LUP standards and guidelines. Surveys for archaeological resources are accomplished prior to approval of ground-disturbing projects and activities. However, there is a potential for effects on this resource when ground-disturbing projects and activities are implemented. The action alternatives, by varying degrees, would provide additional, incremental protection to cultural resources in riparian and associated upland areas, depending on the application of standards and guidelines and the size of riparian areas or RHCAs in which they are principally applied. However, during the interim period, no alternative would be expected to substantially threaten or benefit cultural resources. Alternatives 2 and 3 would provide some additional measure of protection to cultural resources by applying additional standards, guidelines, and procedures to proposed projects and activities. Alternative 4 (Preferred) would increase the benefits by also applying these provisions to some ongoing activities. Alternative 5 would offer the most additional protection by applying management direction to all proposed and ongoing projects and activities, and by establishing large RHCAs within all anadromous watersheds on lands administered by the Agencies.

WILD AND SCENIC RIVERS

Watershed-specific descriptions of the Wild and Scenic Rivers System within the proposed action area are included in the forest plans, LUPs, and EISs listed in Appendix D. Waters included in, or determined eligible for inclusion in, the National Wild and Scenic Rivers System are governed by legislation, regulations, and management plans designed to achieve goals and objectives similar to those considered in Alternatives 2-5. Anadromous fish typically are considered to be "outstandingly remarkable" features of waters in the System. Wild and Scenic River corridors always are wholly included within the definition of riparian areas described in Alternative 2, and of RHCA's described in Alternatives 3-5. Therefore, adoption of any alternative would have essentially no direct effect on the condition or response of Wild and Scenic Rivers. Indirect and cumulative effects also would be negligible.

INDIAN TRIBES

Indian Tribal governments in Oregon, Washington, and Idaho have interests in the planning area (see Table 2). Several of these governments have reserved certain off-reservation rights involving resources on Federal lands managed by the Agencies; the Klamath Tribe exercises rights in former reservation lands. All of the Tribal governments maintain interests in the management of Federal lands and resources, beyond the scope of treaty-reserved rights, which include protection of sacred areas, burial locations, and archaeological sites, as well as the perpetuation of traditional practices. Further description of the affected Indian Tribes are included in the forest plans, LUPs, and EISs listed in Appendix D.

Treaties negotiated in Oregon and Washington between 1851 and 1855 enumerated a variety of specific reserved rights in addition to the reservation of lands as homes for the tribes. Treaties with the Warm Springs, Umatilla, Nez Perce, and Yakama reserve the right to fish, hunt, gather roots and berries, pasture horses and cattle, and erect temporary buildings for curing fish in off-reservation areas. More specific to fishing, the Warm Springs and Umatilla treaties state as follows:

"Provided also, that the exclusive right of taking fish in the streams running through and bordering said reservation is hereby secured to said Indians, and at all other usual and accustomed stations in common with citizens of the United States, and of erecting suitable buildings for curing the same."

The Yakama and Nez Perce treaties include slight variations of the language. The scope and extent of fishing at "usual and accustomed places in common with citizens" have been defined through numerous court decisions. Exclusive rights to certain resources are limited to streams running through or bordering reservations, whereas other rights off-reservation are to be shared with non-Indians. One primary intent of the treaties was to provide a right of access to the tribes' resources and a certain share of those resources. The Fort Bridger treaty only addresses off-reservation hunting, but has been held by the Supreme Court of Idaho to include the right to fish as well as the right to hunt.

Even though the Klamath Tribe was terminated in 1964, the courts have held that the Tribe retained hunting, fishing, and trapping rights on former reservation lands still in public ownership (the Winema National Forest). The Klamath Tribe was restored to Federal recognition in 1986.

The courts, Federal legislation, and policy of the Department of the Interior recognize that Federal land managing agencies have a continuing trust responsibility to honor the terms of the treaties and to protect the rights of Indian governments, as well as the resources subject to those rights. In addition, a number of laws, court decisions, and executive orders have increasingly sustained the rights of Tribal governments in public resources. There is an obligation and a responsibility for Federal agencies to consult, cooperate, and coordinate resource management programs and activities upon public lands with Tribes with reserved treaty rights or other interests in those lands.

The five alternatives offer increasingly protective management strategies for trust resources, with Alternative 5 being most protective. Perpetuation of the ability to exercise treaty rights is legally guaranteed under all alternatives, but Alternatives 3-5 offer greater flexibility in the exercise of those rights and the conducting of other traditional practices on Federal lands. The sections addressing water quality and water resources, fisheries, plants, riparian areas, and wildlife address the impacts more specifically.

Other Tribal heritage concerns, including protection of archaeological sites and locations of religious importance, are considered in the cultural resources and social values sections.

Table 2 - Tribal Governments Affected by Proposed Interim Direction

Pacific Northwest Tribal Governments

- + Confederated Tribes of the Warm Springs Reservation, *Treaty of Middle Oregon, 1855. (12 Stat 963)*
- + Klamath Indian Tribe of Oregon, *Klamath Treaty of 1864 (16 Stat 7 07)*
- + Confederated Tribes of the Umatilla Indian Reservation, *Walla-Walla, Coyuse Treaty of 1855. (12 Stat 945)*
- + Nez Perce Tribe, *Nez Perce Treaty of 1855 (12 Stat 957)*
- + Yakama Nation, *Yakama Treaty of 1855 (12 Stat 951)*
- + Confederated Salish and Kootenai Tribes of the Flathead Reservation, *Treaty with the Flatheads of 1855 (12 Stat 975)*
- + Northwestern Band of Shoshoni Nation, *Treaty of 1868*
- Shoshone-Bannock Tribes of the Fort Hall Reservation, *Treaty with the Eastern Band Shoshoni and Bannock of 1868*
- Confederated Tribes of the Colville Reservation, *Executive Order of April 9, 1872*
- Spokane Tribe, *Executive Order of March 23, 1914*
- Kahispel Indian Community, *Executive Order of March 23, 1914*
- Burns Paiute Tribe, *Executive Order of 1897*
- Coeur D'Alene Tribe, *Executive Order of January 18, 1881*
- Kootenai Tribe of Idaho, *Executive Order of March 8, 1859*

California Tribal Governments

- Alturas Rancheria (Pit River Tribe), *Act of June 21, 1906 (34 Stat 325-333)*
- Big Bend Rancheria (Pit River Tribe), *Act of June 21, 1906*
- Big Lagoon (Yurok-Tolowa Tribes), *Restored December 15, 1983*
- Cohua Rancheria (Wintun), *Secretarial action. June 21, 1907*
- + Greenville Rancheria (Maidu), *Restored December 22, 1983*
- + Grindstone Creek Rancheria (Nomlaki-Wintu-Wailaki-Numok), *Act of June 21, 1906*
- + Jackson Rancheria (Miwok), *Act of March 3, 1893*
- + Lookout Rancheria (Miwok) *Act of June 21, 1906*
- + Montgomery Creek Rancheria (Maidu Band of Pit River), *Act of June 30, 1913*
- + Moorstown Rancheria (Maidu), *restored December 22, 1983*
- + Pit River Tribe of California
- + Redding Rancheria (Wintu/Pit River), *restored December 15, 1983*
- Roaring Creek Rancheria (Pit River Tribes), *Act of August 31, 1915*
- Covelo Indian Community (Yuki/Pit River/Achomawi/Pomo/Konkow/Wyjacki/Nomlaki/Wintun), *Act of April 8, 1864*
- Rumsey Rancheria (Wintun), *Act of 1907*
- Sheep Ranch (Miwok), *established April 5, 1916*
- Shingle Springs Rancheria (Miwok), *established December 16, 1916*
- Sussexville Rancheria (Paiute, Maidu, Pit River, Achomawi, Atsugwi, Washoe), *established August 15, 1923*
- Tuolumne Rancheria (Miwok, Yokut), *Act of June 21, 1906*
- Chico Rancheria (Wailaki and Maidu)
- Guidiville Rancheria (Northern Pomo)
- Lytton Rancheria (Pomo)
- Scotts Valley Rancheria (Northern Pomo)

+ Tribes with off-reservation treaty rights

ECONOMIC

The economic effects analysis presents, by alternative, information about impacts to resources that would be expected to result from interim direction as it applies to timber, range, and recreation programs. Estimated effects on physical output levels and budget costs to the Agencies that would result from interim direction are reported by alternative. Further consideration of changes in outputs and costs to the Agencies will be developed, analyzed, and displayed in more complete economic studies, which will be prepared for the geographically-specific environmental analyses.

An essential concept used to conduct the economic analysis is incremental change. The resource impacts presented are estimates attributable only to the adoption of interim direction. Decisions already made and actions already taken--to provide some degree of protection to aquatic and riparian ecosystems and anadromous fish habitat--are part of the baseline for assessing the economic effects of interim direction. Those prior decisions and actions already are in place and will continue to have their effect, regardless of whether interim direction is adopted. The focus of the economic effects discussion in this environmental assessment is to identify the additional or incremental effects that may be expected as a result of interim direction. Because of ESA requirements and the presence of listed anadromous fish stocks, both Agencies' field units in the Snake River Basin generally are operating under more stringent management requirements than are called for under current forest plans or LUPs. These units already have experienced reductions in many activities and output levels as a result of consultation and other ESA provisions. This environmental assessment examines the incremental economic effects that can be expected, over and above those brought about by actions that will proceed regardless of interim direction.

With a proposal of this nature, there are two main categories of economic interest. The first category is concerned with changes in economic value to society, as reflected by changes in actual revenue and cash flows (market prices and administrative fees) and by changes in economic value to individuals which are not measured by market prices (nonmarket values). The second category includes changes in levels of economic activity (employment and income) that are associated with potential modifications in management actions. More complete descriptions of the affected economic environment (including economic values and economic activity levels) are included in the forest plans, LUPs, and EISs listed in Appendix D.

The alternatives analyzed in this document include management and mitigation measures that may affect the way Agency-administered lands are used. As a result, adoption of any alternative would in some way affect the associated production of consumer goods and services from those lands. Effects on environmental goods and services, such as healthy and abundant anadromous fish populations and clean water, are considered in previous discussions of the effects on the physical and biological environment. Consumer goods and services have economic values associated with them. They may be marketed directly, as is the case with timber stumpage. They may be subject to prices that are administratively set, such as for livestock grazing on public lands or for camping in developed campsites. These administrative fees do not generally capture the full economic value of the goods or services. Finally, some goods or services may provide aesthetic or other benefits that are not purchased directly but for which people would still be willing to pay, such as river floating or driving for pleasure. This "consumer surplus" is another way to measure economic value associated with goods and services.

The alternatives also would have direct budget costs associated with them. These costs are economically relevant, but are discussed under Agency Effects.

The geographic area described in this environmental assessment includes large parts of four States, and is economically complex. There are substantial amounts of timber, forage, recreation, water, fish, wildlife, minerals, and other resources or resource uses provided from national forest and BLM lands in the area under consideration. The economic value associated with these resources uses is substantial. State and private lands provide additional amounts of many of those resources and resource uses, but those uses are not addressed in this document because the management direction applies only to lands administered by the Agencies.

The total geographic area also encompasses many cities, towns, and rural populated areas. Each of these population centers or areas has its own economic structure, which is integrated with a wider subregional economy, which, in turn, is part of an even larger regional economy. All are affected by State, national, and international economic activity and events to a greater or lesser degree.

ECONOMIC VALUES

The Agencies used preliminary analyses conducted by field and research economists⁵³ and modified for the purposes of this environmental analysis,⁵⁴ to assess potential effects of the proposed alternatives on market and non-market economic values. The available information relates primarily to expected changes over the interim period in outputs of timber, use of grazing lands, and recreation use on the national forests and BLM districts. Some information also is available regarding changes in mineral exploration and development activities. The estimated resource changes displayed in Table 3 focus on timber, range, and recreation activities because the greatest impacts during the interim period would be expected there. Impacts from mineral exploration and development activities, development of small hydroelectric sites, or new road or trail construction would not be expected to be substantial during the interim period. Long-term resource impacts will be examined in detail in the geographically-specific environmental analyses.

Some indication of the estimated direct revenue and non-market economic values associated with the timber, range, and recreation programs is possible. These figures do not constitute the basis for an economic analysis in the classical sense of the term. Rather, they are broad indicators of the magnitude of economic value changes that may be expected over the interim period. There are other economic benefits and values that will be experienced in the longer term if anadromous fish habitat degradation and the decline of anadromous fish populations is slowed, stopped, and reversed. These values would include increased recreational fishing opportunities, success rates, and quality of experience; increased fish availability for commercial and subsistence fisheries; and increased existence and option values (passive-use values) for people who would not necessarily use the fisheries directly, but value the fact that they exist and would exist in a healthier state.

⁵³Report by C.S. Hansen-Murray, N.A. Bolon, and R.W. Haynes, cited in footnote 43.

⁵⁴Process paper cited in footnote 42.

There are also other economic direct and opportunity costs that may be experienced in the interim period that were not measured or available. These could include such things as higher costs of operation of minerals development, changes in operation of existing permitted hydroelectric facilities, and delay in development of proposed hydro sites. A major cost area not analyzed for this environmental assessment is that of road closures and the probable effects on various resource activities and uses. These costs will be examined in the geographically-specific environmental analyses.

Table 3. Comparison of Changes in Resource Yields by Alternative.

Alternative	Recreation Use (M RVDs)	Timber Harvested (MMBF)	Animals Grazed (M AUMs)
1	0	0	0
2	-710.4	-27	0
3	-789.3	-36	0
4	-789.3	-58	-42.1
5	-868.2	-81	-84.2

Under current law, 25 percent of the gross receipts collected by the Forest Service from timber sales, grazing permits, campground fees, and other special use permits are returned to the counties which contain the National Forest System lands (based on all receipts over an entire year for the forest). The payments to counties are based on gross receipts. In the case of timber stumpage payments, gross receipts are defined by law to include not only the stumpage payments, but also the purchaser road credits going to timber purchasers. (Purchaser road credits allow timber purchasers to deduct a certain amount of the costs they incur for building timber harvest roads from the price they pay to the U.S. government for the timber stumpage they have purchased.) These payments to counties are transfer payments from the Federal government back to the local governments. They are not additive to revenue effects from changes in use of the Federal lands, but are a subset of the changes in the level of those revenues collected.

For BLM lands within the geographic scope covered by this EA, timber receipts are not shared with local governments. However, under the Taylor Grazing Act, receipts from grazing permits and leases administered by the BLM are shared with the States where the fees are collected. For fees from grazing permits within grazing districts 12.5 percent is returned to the States. For fees from grazing leases outside grazing districts, 50 percent is returned to the States. The changes in resource outputs and associated market and non-market economic values for timber, range, and recreation resources are discussed below.

Effects on Timber Harvesting: The timber harvest change estimate reflects the number of timber sales that would be partly or totally deferred, suspended, or relocated during the interim period. Only the Clearwater, Nez Perce, and the Malheur National Forests, and the BLM Coeur d'Alene District reported expected deferment of planned or cancellation of active timber sales; of that total, about 90 percent would be from the Clearwater. It is expected that less than 2 percent of the affected sales would be on BLM-administered lands. Timber yields would be reduced by 27 million board feet (mmbf) under Alternative 2, by 36 mmbf under Alternative 3, 58 mmbf under Alternative 4, and by 81 mmbf under Alternative 5. In addition, up to 50 miles of road construction and reconstruction would be affected.

Recent timber price calculations made for the upcoming Resources Program and Assessment (RPA) 1995 updates indicate that stumpage values foregone (which reflect gross revenues) would be about \$3.7 million under Alternative 2 and increase to about \$11.0 million under Alternative 5 (in 1993 dollars). Recent analysis of timber prices⁵⁵ also indicates there is about a 20 percent increment of consumer surplus value on timber prices, compared with straight stumpage values. Timber values foregone for the interim period, including consumer surplus, would be about \$4.2 million under Alternative 2 and increase to about \$12.6 million under Alternative 5 (in 1993 dollars).

Timber harvest reductions would be accompanied by reductions in the 25 percent payments to counties from timber harvested on National Forest System lands. For the 18-month period of interim direction, this reduction in payments to counties would range from about \$900,000, plus 25 percent of any purchaser road credits, for Alternative 2, up to about \$2.7 million, plus 25 percent of any purchaser road credits, for Alternative 5. This impact would be concentrated in the north-central Idaho counties that have National Forest System lands in the Clearwater and Nez Perce National Forests, as these two forests account for almost 94 percent of the estimated timber harvest reductions that would be associated with the adoption of the proposed interim direction.

The Agencies might incur costs for compensating timber purchasers holding existing contracts for active or awarded sales (sales under contract). Field units report that sales under contract are limited to 45 mmbf of timber on the Clearwater National Forest. Under Alternatives 1, 2, and 3, no active or awarded sales would be cancelled, and there would be no potential cost for compensation. The economic analysis assumes that under Alternative 4, half of the sales under contract (22.5 mmbf) might be cancelled, and that under Alternative 5, all sales under contract (45 mmbf) might be cancelled. The potential cost for compensation for cancelled contracts would depend heavily on sale-specific conditions and on the difference between recent 6-month average bid prices for stumpage and the value of stumpage under contract at the time of sale cancellation. While specific cost estimates are not possible to make at this time, the range of sale cancellation costs would be about \$225,000 to \$450,000 for Alternative 4, and \$450,000 to \$900,000 for Alternative 5.

Effects on Range Resources: Alternatives 1-3 would not require adjusting ongoing livestock grazing activities. Therefore, no changes in grazing use during the interim period, as measured in AUMs, would be expected. The changes in grazing use under Alternatives 4 and

⁵⁵R. W. Haynes. 1993. *Personal Communication*. Forestry Sciences Laboratory, PNW, Portland, OR.

5 would be spread across 13 of the 21 national forests and BLM districts and would occur within the anadromous watersheds. Individual unit changes range from under 5 percent to over 30 percent. For the entire grazing program in anadromous watersheds across all units considered in this environmental assessment, estimated changes would range from 6-12 percent decreases. This translates to decreases of 42.1 thousand AUMs under Alternative 4, and 84.2 thousand AUMs under Alternative 5. Approximately 9 percent of the estimated reduction in AUMs is anticipated to occur on BLM-administered lands.

Fee income from grazing use that would be foregone by the Agencies would be \$0 for Alternatives 1-3, and from about \$90 thousand under Alternative 4 (Preferred) to about \$180 thousand under Alternative 5 (in 1993 dollars). Grazing fees are set by administrative formula and are significantly below comparable private market values. The "fair market rental values" are estimated to be 2-3 times higher than the administrative price. There are not good consumer surplus studies for range values, although a study using linear programming and ranch budgeting⁵⁶ showed shadow prices of forage ranging between \$6 and \$12 (1993 dollars) per AUM for the geographic area considered in this environmental assessment. "Fair market values" from grazing use that would be foregone would be \$0 under Alternatives 1-3, about \$230 thousand under Alternative 4 (Preferred), and about \$460 thousand under Alternative 5 (in 1993 dollars).

Grazing reductions would be accompanied by reductions in the payments shares to counties and States—primarily in 25 percent payments to counties—as grazing reductions on National Forest System lands would account for about 94 percent of the total. For the 18-month period of interim direction, there would be no reduction in these payments for Alternatives 1-3. The reduction would be about \$22,500 for Alternative 4 and about \$45,000 for Alternative 5, spread across a large number of the counties within the geographic scope of this EA.

Effects on Recreation Resources: Changes in recreation use would be concentrated along rivers and streams. Areas most affected would be developed and dispersed camping, boating and floating, and fishing. Changes would come from seasonal closures or permanent closures necessary to meet the proposed alternative standards and guidelines and riparian management objectives.

Almost 85 percent of the estimated change in recreation use during the interim period would be on the Wallowa-Whitman, Los Padres, and Boise National Forests. The balance of the expected changes would occur on the Prineville BLM District and the Clearwater and Malheur National Forests. About 9 percent of the estimated reduction in recreation use would occur on BLM-administered lands. Individual unit changes would range from under 5 percent to over 30 percent. For recreation use in anadromous watersheds across all units covered by the proposed action, the estimated changes range between 5 percent and 6 percent. This translates to 710.4 thousand RVDs under Alternative 2, 789.3 thousand RVDs under Alternatives 3 and 4, and 868.2 thousand RVDs under Alternative 5.

As suggested by these figures, there would be little expected difference among the alternatives during the interim period. Alternative 2 would provide for somewhat less stringent consideration of recreation uses in the anadromous watersheds. Alternative 5 would extend

⁵⁶W.F. Hahn, T.L. Crawford, K.E. Nelson, and R.A. Bowe, 1989. *USDA Economic Research Staff Report 89-51*. (Also available from Range Management Staff, USDA Forest Service, Washington, D.C.)

more protection to intermittent streams and small wetlands. This would result in a somewhat greater effect, primarily on dispersed camping uses in those areas.

Sufficient data were not available to determine expected revenues foregone from developed campground use that would not be allowed during the interim period. Recreation values are represented primarily by consumer surplus, because only a small part is paid as fee-for-use, typically in developed facility settings. They are predominantly "non-market" values. Recreation values foregone, based on consumer surplus estimates, are around \$19 million under Alternative 2, about \$22 million under Alternatives 3 and 4, and almost \$24 million for Alternative 5 (all in 1993 dollars) during the interim period.

ECONOMIC IMPACTS ON EMPLOYMENT

Impacts on employment are very difficult to estimate with any degree of confidence because of the short duration of this proposed action, the scope of analysis, the widely varied economies (both in size and in complexity), and the relative concentration of estimated effects in certain geographic areas. The employment multipliers or "response coefficients" developed during earlier planning efforts are generally based on input-output models. These models provided estimates of direct, indirect, and induced employment changes. In reality, such changes generally take place over a period of several years, as the changes in economic activity work their way through the economy. Therefore, they are likely to overstate the effects for an 18-month time frame. The response coefficients also were developed for areas of local economic influence, and are not technically additive with others over this much larger geographic area.

However, it is possible to give an indication of the relative magnitudes of what might be expected from adoption of the alternatives considered in detail, both by alternative and by resource area. Employment response coefficients (again, including direct, indirect, and induced employment) for timber-stumpage sales average in the neighborhood of 10 jobs per mmbf of timber harvested, expressed on a basis of annual jobs. Range coefficients appear to be between 0.3 and 0.6 total jobs per thousand AUMs grazed. Recreation coefficients vary widely, with developed recreation providing more total jobs per thousand RVDs than dispersed motorized or dispersed nonmotorized recreation. Generally, the more equipment, food, lodging, etc., associated with a recreation activity (e.g., developed camping, hunting, skiing), the larger the associated employment factor. Sample response coefficients for recreation range from around 1 job per thousand RVDs for dispersed, nonmotorized recreation, to around 6 jobs for developed, equipment-intensive recreation. Again, these figures are highly dependent on the structure, size, and diversity of the local economy.

Given the above discussion, and looking at the various resource outputs reported by alternative, one can conclude that over the entire geographical area the magnitude of jobs affected on an annual basis would probably be in the low tens for range, the low hundreds for timber, and the low thousands for recreation.

AGENCY EFFECTS

The best available information indicates that adoption of Alternative 5 could cost the Agencies up to \$54 million. However, both Agencies have limited experience conducting the new, more rigorous Watershed Analyses included under some of the alternatives. In addition, different levels of technical skills, inventory completeness, and monitoring capability exists between the Agencies as well as among the 15 national forests and 7 BLM districts. Finally, no funds have been budgeted specifically for adoption of interim direction. It was assumed that, for the interim period, funds largely would need to be redirected from within current funding levels regardless of which alternative is adopted. However, new funds probably would be required to fully implement the more costly alternatives (Table 4). The range of costs varies from no additional costs under Alternative 1 to about \$54 million under the most expensive alternative (Alternative 5). In addition, the government may be required to pay compensation to timber purchasers for timber sales under contract that could not be relocated under Alternatives 4 and 5. This compensation could range from under \$100,000 to several million dollars, depending on sale-specific circumstances. These costs break out in the following three categories:

Watershed Analysis - Up to \$20.0 million. For simplicity, costs to complete inventories and conduct supplemental training were included as analysis costs. Monitoring was estimated as a separate category of cost, although a portion of those costs relates directly to the conduct of Watershed Analysis. The BLM makes up about 40 percent of total Watershed Analysis costs, despite managing about 12 percent of the anadromous watershed acreage covered by the proposed interim direction. The BLM estimates represent the full costs estimated to conduct Watershed Analysis, including substantial inventory work, which is not funded within current budget levels. Because some of the activities necessary to conduct Watershed Analysis already are funded in current FS budgets, the FS estimates represent only a 30 percent incremental increase over current funding levels. Without actual experience conducting the more rigorous Watershed Analyses anticipated, these preliminary cost estimates could be substantially over- or understated.

To estimate the costs of conducting Watershed Analysis under Alternatives 3 and 4, costs were calculated as 5 percent and 10 percent, respectively, of the \$20 million estimated for Alternative 5. Additional funds of \$1.5 million were added to the estimate for Alternative 4 (Preferred), based on the assumption that analyses of all ongoing projects and activities would need to be conducted for all watersheds to identify projects with unacceptable levels of risk. Watershed Analysis would be optional under Alternative 3, and under Alternative 2 costs would be incurred only for roads inventory and analysis on a limited number of new projects.

Monitoring - Up to \$25 million. Complete monitoring costs have not been developed by either Agency. However, given historical underfunding of this activity, and based on current levels of investment for managing timber, recreation, and range resources, a surrogate 15 percent increase was calculated to cover additional monitoring activities. This estimate assumes that much of the programmatic monitoring would be covered under ongoing program budgets. The increase represents the increment associated with adoption of interim direction, 80 percent of which would be incurred by the FS. Under Alternatives 3 and 4, costs were

estimated at 20 percent and 40 percent, respectively, of Alternative 5. Alternatives 1 and 2 would incur no additional monitoring costs.

Program Management - Up to \$9 million. Almost 80 percent of these costs would be incurred by the FS. These costs may be significantly overstated for the interim period. They were derived from preliminary estimates developed for multiple-year application of Alternative 4 (Preferred) and, therefore, contain costs associated with mitigation of effects on timber, range, and recreation program resources that would not be anticipated during the interim period. For instance, the livestock-grazing component of the above figure is overstated due to the assumed cost of fencing that would be necessary to restrict livestock access to riparian zones. During the interim period, however, livestock may be kept off the range to avoid the additional cost of fence building. Annual costs, appropriately included as costs that would be incurred during the interim period, include additional program administration, enforcement, and educational expenses. Site and facility modification, or reconstruction, and other mitigation costs would not be incurred to a significant extent during the interim period. Estimates of costs under Alternatives 2 and 3 were reduced from Alternative 4 (Preferred) by 25 percent each and increased 25 percent under Alternative 5. The previous "Economic Values" section discusses changes in resource outputs in more detail. Potential costs to the Agencies of compensating timber purchasers for cancelled contracts range from \$225,000 to \$450,000 for Alternative 4 and from \$450,000 to \$900,000 for Alternative 5.

Research - Not estimated. In keeping with approximate amounts that have been budgeted to implement the Northern Spotted Owl ROD, it was assumed that funds would need to be redirected toward applied research on ecosystem management. It was not clear whether new funds would be required or if existing funds would be "reprogrammed" from current projects. For the interim period, the investment could probably be less than \$2 million. The level of investment would probably not differ substantially among the alternatives.

Table 4. Comparison of Incremental Costs to Implement Alternatives (Dollars in Millions)

Alternative	1	2	3	4	5
Watershed Analysis	0	0.5	1.0	3.5	20.0
Monitoring	0	0	5.0	10.0	25.0
Program Management	0	4.0	5.0	7.0	9.0
TOTAL	0	4.5	11.0	20.5	54.0

CONSULTATION WITH OTHERS

The Agencies' public involvement efforts began with a series of briefings for Members of the House and Senate, Federal and State agency officials, Tribal governments, and a variety of other organizations. Written input was received from Members of Congress, and from others for whom briefings were held and from those not briefed. The briefings held and letters of comment received are listed in Appendix E.

Such initial public involvement is consistent with guidance issued by the Council on Environmental Quality. Summaries of these meetings, letters, and other information relative to the Agencies' public involvement efforts are documented in the process records.

The process of determining appropriate direction included a period for public comment, and consultation with NMFS and FWS relative to the effects of the proposed action on listed species. The documentation from these consultations with NMFS and FWS is presented as Appendix J. The 45-day public comment period was extended by 15 days to facilitate broad review of the direction being proposed for the interim period. Consultation with NMFS took place over several months and examined all aspects of the interim direction. Modifications to clarify the interim direction were made in response to public comments and consultation with NMFS and FWS. An overview of the comments received and Agencies' response to those comments are presented as Appendix F.

The public also will be involved in the development of the longer-term strategy and future regional guide, forest plan and LUP amendments. Additional administrative appeal opportunities will be available. The public is encouraged to provide any information they feel is relevant to the consideration of interim direction and the development of future plan amendments.

GLOSSARY

Adverse Effects - Adverse effects include short- or long-term, direct or indirect management-related impacts of an individual or cumulative nature, such as mortality, reduced growth or other adverse physiological changes, harassment of fish, physical disturbance of redds, reduced reproductive success, delayed or premature migration, or other adverse behavioral changes to listed anadromous fish at any life stage. Adverse effects to designated critical habitat include effects to any of the essential features of critical habitat (e.g., as described in 58 FR 68543) that would diminish the value of the habitat for the survival and recovery of listed anadromous fish.

Adverse Impacts - As used to define unacceptable risk, the term refers to management-related, short- or long-term, direct or indirect impacts of an individual or cumulative nature that is likely to contribute to the need for listing of a non-listed anadromous salmonid population.

The Agencies - U.S. Department of the Interior Bureau of Land Management and U.S. Department of Agriculture Forest Service.

Anadromous Fish - Fish that are spawned and reared in freshwater, move to the ocean to grow and mature, and return to freshwater to reproduce. For purposes of this Environmental Assessment, "anadromous fish" refers to Pacific salmon, steelhead, and sea-run cutthroat trout.

Anadromous Watershed - Watersheds where anadromous fish habitat is present or easily could be reestablished.

At Risk Stocks - Stocks of Pacific anadromous fish that have been identified by professional societies, fish management agencies, and in the scientific literature as being in need of special management consideration because of low or declining populations.

Attain RMOs - Meet riparian management objectives for the given attributes. For habitats below the objective level, recovery will be initiated during the period the interim strategy is in place. For habitats at or better than the objective level, maintain at least the current condition. Actions that "degrade" habitat conditions (as defined elsewhere) would be considered inconsistent with the concept of attaining RMOs.

Avoid - Apply pre-project planning, best available technology, management practices, and scientific knowledge to eliminate known management induced impacts to the greatest extent practicable and minimize the risk of other potential impacts.

Best Conventional - Most effective existing techniques, methods, and/or management practices.

Biological Diversity - The variety of life forms and processes, including the complete natural complex of species, communities, genes, and ecological functions.

Consultation - A formal interaction between the National Marine Fisheries Service or U.S. Fish and Wildlife Service and another Federal agency when it is determined that the agency's action may affect a species that has been listed as threatened or endangered or its critical habitat.

Critical Habitat - Under the Endangered Species Act, critical habitat is defined as (1) the specific areas within the geographic area occupied by a federally listed species on which are found physical and biological features essential to the conservation of the species, and that may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by the listed species, when it is determined that such areas are essential for the conservation of species.

Cumulative Effects - Those effects on the environment that result from the incremental effect of the action when added to the past, present, and reasonably foreseeable future actions regardless of what agency (Federal or nonfederal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.

Degrade - Measurably change an RMO feature in a way that :

--further reduces habitat quality where existing conditions meet or are worse than the objective values.

--reduces habitat quality where existing conditions are better than the objective values.

Designated Critical Habitat - Those habitats designated by the National Marine Fisheries Service or U.S. Fish and Wildlife Service under the provisions of the Endangered Species Act that include (1) the specific areas within the geographical area occupied by a federally listed species on which are found physical or biological features essential to the conservation of the species, and that may require special management considerations or protection, and (2) specific areas outside the geographical area occupied by a listed species, upon determination by the Secretary of Commerce or Interior that such areas are essential for the conservation of the species.

Drainage - An area (basin) mostly bounded by ridges or other similar topographic features, encompassing part, most, or all of a watershed.

Eastside - Generally, east of the crest of the Cascade Range in the States of Oregon and Washington.

Ecosystem Approach - A strategy or plan to manage ecosystems to provide for all associated organisms, as opposed to a strategy or plan for managing individual species.

Effects - Effects, impacts, and consequences, as used in this environmental assessment, are synonymous. Effects may be direct, indirect or cumulative.

Endangered Species - Any species of plant or animal defined through the Endangered Species Act as being in danger of extinction throughout all or a significant portion of its range, and published in the Federal Register.

Environmental Analysis - An analysis of alternative actions and their predictable short-term and long-term environmental effects, incorporating physical, biological, economic, and social considerations.

Environmental Assessment (EA) - A systematic analysis of site-specific or programmatic activities used to determine whether such activities have a significant effect on the quality of the physical, biological, and human environment and whether a formal *environmental impact statement* is required; and to aid an agency's compliance with the National Environmental Policy Act when no environmental impact statement is necessary.

Federal Land Policy and Management Act (FLPMA) - A law passed in 1976 applying to the BLM directing the management of lands administered by that agency including the requirement to develop land use plans and prepare regulations to guide that development.

Fish-bearing Streams - Stream segments that support fish during all or a portion of a typical year.

Forest Plans - Land and Resource Management Plans developed by the Forest Service pursuant to requirements of the National Forest Management Act to guide land management.

Ongoing Projects and Activities That Pose an Unacceptable Risk - Those ongoing projects and activities occurring on lands administered by the Agencies that are determined on a case-by-case examination to pose an unacceptable risk to anadromous fish stocks. Such factors as the condition of the watershed, the status of anadromous fish stocks in the watershed, and the magnitude, frequency, duration, and timing of the impacts caused by the ongoing action shall be considered when determining if an unacceptable threat is being posed.

High Water Quality - Water with the physical, biological, and chemical attributes necessary to meet the life-history requirements and provide for the naturally attainable productivity of anadromous fish.

Interdisciplinary Team - A group of individuals with varying areas of specialty assembled to solve a problem or perform a task. The team is assembled out of recognition that no one scientific discipline is sufficiently broad enough to adequately analyze the problem and propose action.

Interim Direction - Management direction that would guide management decisions on lands administered by the Agencies during the 18 month period that Environmental Impact Statements are being prepared to examine longer-term options for management.

Intermittent Stream - Any non-permanent flowing drainage feature having a definable channel and evidence of annual scour or deposition. This includes what are sometimes referred to as ephemeral streams if they meet these two criteria.

Key Watershed - A watershed that (1) is important to at risk anadromous fish, or (2) provides good anadromous fish habitat, or (3) is readily capable of providing good anadromous fish habitat, and is selected to contribute to a network across the landscape that provides for the long-term conservation of anadromous fish.

LUPs - Land Use Plans developed by the Bureau of Land Management pursuant to the Federal Land Policy and Management Act.

Minimize - Apply pre-project planning, best available technology, management practices, and scientific knowledge to limit, to the greatest extent practicable, the magnitude, extent, and/or duration of an activity and/or effect.

Mitigation Measures - Modifications of actions that (1) avoid impacts by not taking a certain action or parts of an action; (2) minimize impacts by limiting the degree or magnitude of the actions and its implementation; (3) rectify impacts by repairing, rehabilitating, or restoring the affected environment; (4) reduce or eliminate impacts over time by preservation and maintenance operations during the life of the action; or (5) compensate for impacts by replacing or providing substitute resources or environments.

Monitoring - A process of collecting information to evaluate if objective and anticipated or assumed results of a management plan are being realized (effectiveness monitoring) or if component activities are proceeding as planned (implementation monitoring).

National Environmental Policy Act - An act passed in 1969 to declare a National policy that encourages productive and enjoyable harmony between humankind and the environment, promotes efforts that prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of humanity, enriches the understanding of the ecological systems and natural resources important to the nation, and establishes a Council on Environmental Quality.

National Forests - Lands administered by the USDA Forest Service.

National Forest Management Act (NFMA) - A law passed in 1976 as an amendment to the Forest and Rangeland Renewable Resources Planning Act, requiring the preparation of Forest Plans and the preparation of regulations to guide that development.

Non-forested Rangelands - Land on which the native vegetation is predominantly grasses, grass-like plants, forbs, or shrubs. In determining what minimum interim RHCA boundary widths apply, there may be instances where the widths for non-forested rangelands apply to one side of a stream and the widths for forested lands apply to the other side of the stream (based on the vegetative cover of adjacent uplands).

Ongoing Projects and Activities - Those actions that have been implemented, or that have contracts awarded, or permits issued, and (within the range of listed anadromous fish) for which biological assessments have been prepared and submitted for consultation, prior to signature of the decision notice for the proposed action (PACFISH Interim Direction).

PACFISH - An inter-agency ecosystem management approach for maintaining and restoring healthy, functioning watersheds, riparian areas, and aquatic habitats within the range of Pacific anadromous fish on Federal lands managed by the USDI-Bureau of Land Management and the USDA-Forest Service.

Permanently Flowing, Non Fish-bearing Streams - Stream segments that contain running water throughout a typical year, but do not support fish during any portion of a typical year.

Prevent Attainment of RMOs - Preclude attainment of habitat conditions that meet RMOs. Permanent or long-term modification of the physical/biological processes or conditions that determine the RMO features would be considered to prevent attainment of RMOs.

Proposed or New Projects and Activities - Those actions that have not been implemented, or for which contracts have not been awarded, or for which permits have not been issued, or (within the range of listed anadromous fish) continuing actions for which biological assessments have not been prepared and submitted for consultation, prior to

signature of the decision notice for the proposed action (PACFISH Interim Direction).

Public Lands - Lands administered by the USDI Bureau of Land Management.

Retard Attainment of RMOs - Measurably slow recovery of any identified RMO feature (e.g., pool frequency, water temperature, etc.) that is worse than the objective level. Degradation of the physical/biological process or conditions that determine RMO features would also be considered to retard attainment of RMOs.

Riparian Area - A geographic area containing an aquatic ecosystem and the adjacent upland areas that directly affect it. This includes floodplain, and associated woodland, rangeland, or other related upland areas.

Riparian Goals - The characteristics of healthy, functioning watersheds, riparian areas, and associated fish habitats that are established as a common expectation.

Riparian Management Objectives (RMOs) - Quantifiable measures of stream- and stream-side conditions that define good anadromous fish habitat, and serve as indicators against which attainment, or progress toward attainment, of the goals will be measured.

Riparian Habitat Conservation Areas (RHCA) - Portions of watersheds where riparian-dependent resources receive primary emphasis, and management activities are subject to specific standards and guidelines. RHCAs include traditional riparian corridors, wetlands, intermittent headwater streams, and other areas where proper ecological functioning is crucial to maintenance of the stream's water, sediment, woody debris and nutrient delivery systems.

Riparian Zone - Those terrestrial areas where the vegetation complex and microclimate conditions are products of the combined presence and influence of perennial and/or intermittent water, associated high water tables, and soils that exhibit some wetness characteristics. Normally used to refer to the zone within which plants grow rooted in the water table of these rivers, streams, lakes, ponds, reservoirs, springs, marshes, seeps, bogs, and wet meadows.

Salmon Summit - A regional effort convened by Senator Mark Hatfield that involved all interested parties in an effort during 1990-1991 to examine restoration of Columbia River Basin anadromous fish, and identify those actions that could eliminate the need to list Columbia River Basin anadromous fish under the Endangered Species Act.

Sensitive Species - Those plant or animal species for which population viability is a concern as evidence by a significant current or potential downwards trend in population numbers, distribution, density, or habitat capability.

Short-term Habitat Impacts - Impacts of short duration--generally days or weeks--that would not retard or prevent attainment of RMOs.

Special Status Species - Those plant or animal species that are listed or are candidate or proposed for listing pursuant to the Federal Endangered Species Act; or those species that are listed pursuant to a State law or regulation, or those species that are designated as sensitive by the Forest Service or the BLM.

Standards and Guidelines - The primary instructions for land managers. Standards address mandatory actions, while guidelines are recommended actions necessary to a land management decision.

Stock - A group of fish that spawn in a particular river system (or portion of it) during a particular season, and do not interbreed to any substantial degree with any other group of fish.

Threatened Species - Those plant or animal species likely to become endangered species throughout all or a significant portion of their range within the foreseeable future. A plant or animal identified and defined in accordance with the 1973 Endangered Species Act and published in the Federal Register.

Unacceptable Risk - A level of risk from an ongoing activity or group of activities that is determined through NEPA analysis or the preparation of biological assessments/evaluations, or their subsequent review, to be:

--"likely to adversely affect" listed anadromous fish or their designated critical habitat,
or

--"likely to adversely impact non-listed anadromous fish.

Viable Population - A viable population is one which has such numbers and distribution of reproductive individuals as to provide a high likelihood that species will continue to exist and be well-distributed throughout its range.

Watershed - The drainage basin contributing water, organic matter, dissolved nutrients, and sediments to a stream or lake.

Watershed Analysis - A systematic procedure for characterizing watershed and ecological processes to meet specific management and social objectives. Watershed analysis is a stratum of ecosystem management planning applied to watersheds of approximately 20 to 200 square miles.

Watershed Restoration - Actions taken to improve the current conditions of watershed to restore *degraded habitat*, and to provide long-term protection to natural resources, including riparian and aquatic resources.

Westside - Generally, west of the Cascade Range in the States of Oregon and Washington.

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Appendix A

List of Scientific References

APPENDIX A - LIST OF SCIENTIFIC REFERENCES

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Appendix B

Amount of Anadromous Watershed
Acreage

APPENDIX B – AMOUNT OF ANADROMOUS WATERSHED ACREAGE

State/Administrative Unit	Size of Administrative Units in Millions of Acres	Anadromous Watersheds in Millions of Acres	Anadromous Watersheds as a Percent ¹ of Total Administrative Unit
California			
Bakersfield BLM	1.9	<0.1	<1%
Lassen NF	1.8	0.4	13%
Los Padres NF	1.2	0.2	20%
Ukiah BLM	0.7	0.1	15%
Idaho			
Boise NF	2.3	0.7	17%
Bitterroot NF	1.6	0.4	26%
Challis NF	2.5	1.6	83%
Clearwater NF	1.8	0.8	45%
Coeur d'Alene BLM	0.2	0.1	52%
Nez Perce NF	2.2	2.0	100%
Payette NF	2.3	1.7	77%
Salmon BLM	1.2	1.0	83%
Salmon NF	1.8	1.7	98%
Sawtooth NRA	0.8	0.3	80%
Oregon			
Malheur NF	1.5	0.7	50%
Ochoco NF	0.8	0.2	20%
Prineville BLM	1.6	1.2	12%
Umatilla NF	1.4	0.5	98%
Vale BLM	5.2	0.1	01%
Wallowa-Whitman NF	2.4	1.7	59%
Washington			
Spokane BLM	0.4	0.1	36%
Okanogan NF	1.7	0.3	20%
TOTAL	37.3¹	15.8¹	42%

¹Any discrepancies are a result of rounding.

Appendix C

Description of Alternatives Considered in Detail

APPENDIX C - DESCRIPTION OF ALTERNATIVES CONSIDERED IN DETAIL

ALTERNATIVE 1

Alternative 1 is the "no action" alternative. Management of all ongoing and proposed projects and activities would continue pursuant to current direction contained in existing Forest Service (FS) Land and Resource Management Plans (forest plans) and Bureau of Land Management (BLM) Land Use Plans (LUPs) as modified by Endangered Species Act (ESA) section 7 consultations in those situations where there are species listed pursuant to the ESA. Under this alternative, goals, objectives, standards and guidelines, and special areas (such as riparian management areas, wilderness areas, roadless areas, wild and scenic rivers, etc.) would be as defined in existing plans. No Watershed Analysis would be required. Grazing, minerals, and other activities would be managed with existing levels of administration.

ALTERNATIVE 2

Alternative 2 applies the aquatic and riparian components of the watershed and fish habitat emphasis option from the October 8, 1991, report to the Agriculture Committee and the Merchant Marine and Fisheries Committee of the U.S. House of Representatives by the Scientific Panel on late-successional forest ecosystems (footnote 41, EA, p. 29) to all proposed projects and activities. Ongoing projects and activities would continue to be managed in accordance with current management direction specified in existing forest plans and LUPs. The main points regarding aquatic and riparian management from the Scientific Panel Report are summarized as follows:

Within the geographic area being considered in this environmental assessment, the Scientific Panel Report specifies that Wilderness, Wild and Scenic Rivers, and the most ecologically significant late-successional, old growth forests be identified as "reserve areas." Reserve areas would be managed to maintain and/or enhance their ecological integrity. In general, removing merchantable timber from reserve areas is not appropriate. Such prohibitions are applied to timber sales under preparation but not yet awarded to buyers. Many other management activities may be appropriate in reserve areas during the interim, including fire suppression/prescription, precommercial silvicultural treatments of young stands, and restoration of aquatic habitats. Public use of these areas, such as for recreation, hunting, and fishing, may be allowed to continue as long as the activities are managed so that they do not impair attainment of the overall objectives. Scientific use of reserves is encouraged.

The Scientific Panel Report watershed and fish habitat emphasis option specifies the

following Riparian Management Areas on lands administered by the Agencies:

- (1) Wild, Scenic, and Recreational rivers designated or under study: no-harvest area 1/4 mile on each side of the stream or the width of the 100-year floodplain, whichever is larger, where water quality, fish, or other ecological values are described as part of the stream's outstandingly remarkable features.
- (2) Major streams draining at least 30 square miles: no-harvest area 1/8 mile on each side of the stream or the width of the 100-year flood plain, whichever is larger.
- (3) Fish-bearing streams: 300-foot no-harvest area on each side of the stream.
- (4) Permanently flowing non-fish-bearing streams: 150-foot no-harvest area on each side of the stream.
- (5) Seasonally flowing or intermittent streams: 50-foot no-harvest area on each side of the stream in areas of moderate and high soil instability.

No-harvest areas will vary with topographic and on-site conditions, but the horizontal width of such areas, implemented in practice, should reach the objectives expressed as averages here.

The Scientific Panel Report watershed and fish habitat emphasis option specifies the following additional standards and guidelines to augment those in current forest plans and LUPs:

For road systems and related road-drainage problems:

- (1) Reduce and minimize road system mileage:
 - (a) Minimize construction of new roads, and construct no new roads in current roadless areas identified in the forest plans and LUPs.
 - (b) Remove (return to a natural condition) spur roads and other nonessential roads.
- (2) Conduct a forest road-system analysis by national forest and BLM district to identify road locations and practices that will reduce impacts to riparian areas of existing and new roads.
- (3) Road drainage:
 - (a) Increase maintenance of road network during the rainy season.

(b) Upgrade culverts to larger sizes on existing and planned roads.

(c) Increase frequency of culverts on new and existing roads.

For logging slash treatment/prescribed fire:

(1) Eliminate hot burns on steep grounds.

(2) Eliminate burns in riparian management areas.

For livestock grazing:

(1) Include temporary and permanent exclusion from riparian areas to promote the reestablishment of shrubs, hardwoods, and fringe wetlands, and maintenance of stream-bank integrity.

For riparian and fish-habitat restoration:

(1) Establish a program that will contribute to long-term stream-habitat stability.

For cumulative effects:

(1) Conduct an analysis by national forest and BLM district to aid in the timing and location of timber harvest and location of roads and landings.

ALTERNATIVES 3 AND 4

Goals, objectives, standards, guidelines, and procedures (together referred to as "management direction") are the same for Alternatives 3 and 4. In Alternative 3, the management direction is applied only to proposed projects and activities. In Alternative 4, the management direction is applied to proposed projects and activities, as well as ongoing projects and activities that pose an unacceptable risk.

The adoption of these alternatives could lead to deferring or suspending some resource management projects and activities within the Riparian Habitat Conservation Areas (RHCAs, described below) or that degrade RHCAs during the interim period. Adoption of these requirements during the interim period would not lead to the permanent removal of any project or activity from the RHCAs. The potential for permanent removal or elimination of any activity from the RHCAs is being examined in the geographically-specific environmental analyses.

RIPARIAN GOALS (GOALS)

The goals establish an expectation of the characteristics of healthy, functioning

watersheds, riparian areas, and associated fish habitats. Since the quality of water and fish habitat in aquatic systems is inseparably related to the integrity of upland and riparian areas within the watersheds, Alternatives 3 and 4 articulate several goals for watershed, riparian, and stream channel conditions. The goals are to maintain or restore:

- (1) water quality to a degree that provides for stable and productive riparian and aquatic ecosystems;
- (2) stream channel integrity, channel processes, and the sediment regime (including the elements of timing, volume, and character of sediment input and transport) under which the riparian and aquatic ecosystems developed;
- (3) instream flows to support healthy riparian and aquatic habitats, the stability and effective function of stream channels, and the ability to route flood discharges;
- (4) natural timing and variability of the water table elevation in meadows and wetlands;
- (5) diversity and productivity of native and desired non-native plant communities in riparian zones;
- (6) riparian vegetation to:
 - (a) provide an amount and distribution of large woody debris characteristic of natural aquatic and riparian ecosystems;
 - (b) provide adequate summer and winter thermal regulation within the riparian and aquatic zones; and
 - (c) help achieve rates of surface erosion, bank erosion, and channel migration characteristic of those under which the communities developed.
- (7) riparian and aquatic habitats necessary to foster the unique genetic fish stocks that evolved within the specific geo-climatic region; and
- (8) habitat to support populations of well-distributed native and desired non-native plant, vertebrate, and invertebrate populations that contribute to the viability of riparian-dependent communities.

RIPARIAN MANAGEMENT OBJECTIVES (RMOs)

Landscape-scale interim RMOs describing good habitat for anadromous fish were

developed using stream inventory data for pool frequency, large woody debris, bank stability and lower bank angle, and width to depth ratio. Applicable published and non-published scientific literature was used to define favorable water temperatures. All of the described features may not occur in a specific segment of stream within a watershed, but all generally should occur at the watershed scale for stream systems of moderate to large size (3rd to 7th order).

Interim RMOs may be modified to better reflect conditions that are attainable in a specific watershed or stream reach based on local geology, topography, climate, and potential vegetation. Generally, RMO modifications will require completion of watershed analysis to provide the ecological basis for the change. However, RMOs may be modified in the absence of watershed analysis where watershed or stream reach specific data support the change. In all cases, RMO modifications, the rationale supporting those changes, and the effects of the changes will be documented. Within the range of listed salmon, modification of RMOs will be done in consultation with NMFS.

The interim RMOs for stream channel conditions provide the "criteria" against which attainment, or progress toward attainment, of the riparian goals is measured. Interim RMOs provide the target toward which Agency managers will be aiming as they conduct resource management activities across the landscape. However, interim RMOs are not to establish a ceiling for what constitutes good habitat conditions. Actions that reduce habitat quality, whether existing conditions are better or worse than objective values, are inconsistent with the purpose of this interim direction. Without the benchmark provided by measurable RMOs habitat suffers a continual erosion. As indicated parenthetically below, some of the objectives apply to forested ecosystems only, some to non-forested ecosystems, and some to all ecosystems regardless of whether or not they are forested. Objectives for six environmental features have been identified, including one key feature (kf) and five supporting features (sf). these features are good indicators of ecosystem health, are quantifiable, and are subject to accurate, repeatable measurements."

Interim RMOs apply to streams in watersheds with anadromous fish. Each of the interim objectives must be met or exceeded before general habitat conditions would be considered good for anadromous fish. However, application of the interim RMOs requires thorough analysis. That is, if the objective for an important feature such as pool frequency is met or exceeded, there may be some latitude in assessing the importance of the objectives for other features that contribute to good habitat conditions. For example, in headwater steelhead streams with an abundance of pools created by large boulders, fewer pieces of large wood might still constitute good habitat. The goal is to achieve a high level of habitat diversity and complexity, through a combination of habitat features, to meet the life-history requirements of the anadromous fish community inhabiting a watershed.

INTERIM RIPARIAN MANAGEMENT OBJECTIVES

Habitat Feature	Interim Objectives
Pool Frequency (kf) (all systems)	Varies by channel width, see below:
wetted width in feet:	10 20 25 50 75 100 125 150 200
number pools per mile:	96 56 47 26 23 18 14 12 9
Water Temperature (sf)	No measurable increase in maximum water temperature.*
	Maximum water temperatures below 64F within migration and rearing habitats and below 60F within spawning habitats.
Large Woody Debris (sf) (forested systems)	Coastal California, Oregon, and Washington. >80 pieces per mile; >24 inch diameter; >50 foot length.
	East of Cascade Crest in Oregon, Washington, Idaho. >20 pieces per mile; >12 inch diameter; >35 foot length.
Bank Stability (sf) (non-forested systems)	>80 percent stable.
Lower Bank Angle (sf) (non-forested systems)	>75 percent of banks with <90 degree angle (i.e., undercut).
Width/Depth Ratio (sf) (all systems)	<10, mean wetted width divided by mean depth

*7-day moving average of daily maximum temperature measured as the average of the maximum daily temperature of the warmest consecutive 7-day period.

RIPARIAN HABITAT CONSERVATION AREAS (RHCAs)

Interim RHCAs will be delineated in every anadromous watershed on Agency-administered lands within the geographic range of the proposed action. RHCAs are portions of watersheds where riparian-dependent resources receive primary emphasis, and management activities are subject to specific standards and guidelines. RHCAs include traditional riparian corridors, wetlands, intermittent streams, and other areas

that help maintain the integrity of aquatic ecosystems by (1) influencing the delivery of coarse sediment, organic matter, and woody debris to streams, (2) providing root strength for channel stability, (3) shading the stream, and (4) protecting water quality (Naiman et al. 1992).

Interim RHCA widths adequate to protect streams from non-channelized sediment inputs should be sufficient to provide other riparian functions, including delivery of organic matter and woody debris, stream shading, and bank stability (Brazier and Brown 1973, Gregory et al. 1984, Steinblums et. al 1984, Beschta et al. 1987, McDade et al. 1990, Sedell and Beschta 1991, Belt et al. 1992). The effectiveness of riparian conservation areas in influencing sediment delivery from non-channelized flow is highly variable. A review by Belt et al. (1992) of studies in Idaho (Haupt 1959a and 1959b, Ketcheson and Megehan 1990, Burroughs and King (1985 and 1989) and elsewhere (Trimble and Sartz 1957, Packer 1967, Swift 1986) concluded that non-channelized sediment flow rarely travels more than 300 feet and that 200-300 foot riparian "filter strips" are generally effective at protecting streams from sediment from non-channelized flow.

The interim RHCA widths may be increased where necessary to achieve riparian management goals and objectives, or decreased where interim widths are not needed to attain RMOs or avoid adverse effects to listed salmon. Generally, RHCA modifications will require completion of Watershed Analysis to provide the ecological basis for the change. However, RHCAs may be modified in the absence of Watershed Analysis where stream reach or site-specific data support the change. In all cases, RHCA modifications, the rationale supporting those changes, and the effects of the changes will be documented. Within the range of listed salmon, modification of RHCAs will be done in consultation with NMFS.

STANDARD WIDTHS DEFINING INTERIM RHCAs

Four categories of stream or water body, and the standard widths for each are:

Category 1 - Fish-bearing streams: Interim RHCAs consist of the stream and the area on either side of the stream extending from the edges of the active stream channel to the top of the inner gorge, or to the outer edges of the 100-year floodplain, or to the outer edges of riparian vegetation, or to a distance equal to the height of two site-potential trees, or 300 feet slope distance (600 feet, including both sides of the stream channel), whichever is greatest.

Category 2 - Permanently flowing non-fish-bearing streams: Interim RHCAs consist of the stream and the area on either side of the stream extending from the edges of the active stream channel to the top of the inner gorge, or to the outer edges of the 100-year flood plain, or to the outer edges of riparian vegetation, or to a distance equal to the height of one site-potential tree, or 150 feet slope distance (300 feet, including both sides of the stream channel), whichever is greatest.

Category 3 - Ponds, lakes, reservoirs, and wetlands greater than 1 acre: Interim RHCAs consist of the body of water or wetland and the area to the outer edges of the riparian vegetation, or to the extent of the seasonally saturated soil, or to the extent of moderately and highly unstable areas, or to a distance equal to the height of one site-potential tree, or 150 feet slope distance from the edge of the maximum pool elevation of constructed ponds and reservoirs or from the edge of the wetland, pond or lake, whichever is greatest.

Category 4 - Seasonally flowing or intermittent streams, wetlands less than 1 acre, landslides, and landslide-prone areas: This category includes features with high variability in size and site-specific characteristics. At a minimum the interim RHCAs must include:

- a. the extent of landslides and landslide-prone areas.
- b. the intermittent stream channel and the area to the top of the inner gorge.
- c. the intermittent stream channel or wetland and the area to the outer edges of the riparian vegetation.

d. for Key Watersheds, the area from the edges of the stream channel, wetland, landslide, or landslide-prone area to a distance equal to the height of one site-potential tree, or 100 feet slope distance, whichever is greatest.

e. for watersheds not identified as Key Watersheds, the area from the edges of the stream channel, wetland, landslide, or landslide-prone area to a distance equal to the height of one-half site potential tree, or 50 feet slope distance, whichever is greatest.

In non-forested rangeland ecosystems, the interim RHCA width for permanently flowing streams in categories 1 and 2 is the extent of the 100-year flood plain.

STANDARDS AND GUIDELINES

Project and site-specific standards and guidelines listed below will apply to all RHCAs and to projects and activities in areas outside RHCAs that would degrade them. The combination of the standards and guidelines for RHCAs specified below with the standards and guidelines of existing forest plans and LUPs will provide a benchmark for management actions that reflects increased sensitivities and a commitment to ecosystem management.

Under Alternative 3, the standards and guidelines would be applied only to proposed projects and activities. Ongoing projects and activities would continue during the interim period in accordance with management direction in current forest plans and LUPs.

Under Alternative 4, the standards and guidelines listed below would be applied to proposed projects and activities, as well as ongoing projects and activities that pose unacceptable risk to anadromous fish. Due to the short-term duration of this interim direction, provisions for development and implementation of road/transportation management plans and the relocation, elimination, or reconstruction of existing roads, facilities, and other improvements (i.e., RF-2 c, RF-3 a and c, RF-4, RF-5, GM-2, RM-1, and MM-2) will be initiated but are unlikely to be completed during the interim period. Where existing roads, facilities, and other improvements found to be causing an unacceptable risk cannot be relocated, eliminated, or reconstructed, those improvements will be closed. The option of relocation, elimination, or reconstruction of existing improvements will be explored as part of the long-term strategy being developed in the geographically-specific environmental analyses. Also, due to the short-term duration of this direction, adjustments to management not within the sole discretion of the Agencies (i.e., RF-1, LH-3, RA-1, WR-2, FW-3, and FW-4) will be initiated but are unlikely to be completed during the interim period.

Timber Management

- TM-1. Prohibit timber harvest, including fuelwood cutting, in Riparian Habitat Conservation Areas, except as described below. Do not include Riparian Habitat Conservation Areas in the land base used to determine the Allowable Sale Quantity, but any volume harvested can contribute to the timber sale program.
- a. Where catastrophic events such as fire, flooding, volcanic, wind, or insect damage result in degraded riparian conditions, allow salvage and fuelwood cutting in Riparian Habitat Conservation Areas only where present and future woody debris needs are met, where cutting would not retard or prevent attainment of other Riparian Management Objectives, and where adverse effects on listed anadromous fish can be avoided. For watersheds with listed salmon or designated critical habitat, complete Watershed Analysis prior to salvage cutting in RHCAs.
 - b. Apply silvicultural practices for Riparian Habitat Conservation Areas to acquire desired vegetation characteristics where needed to attain Riparian Management Objectives. Apply silvicultural practices in a manner that does not retard attainment of Riparian Management Objectives and that avoids adverse effects on listed anadromous fish.

Roads Management

- RF-1. Cooperate with Federal, Tribal, State, and county agencies, and cost-share partners to achieve consistency in road design, operation, and maintenance necessary to attain Riparian Management Objectives.
- RF-2. For each existing or planned road, meet the Riparian Management Objectives and avoid adverse effects on listed anadromous fish by:
- a. completing Watershed Analyses prior to construction of new roads or landings in Riparian Habitat Conservation Areas.
 - b. minimizing road and landing locations in Riparian Habitat Conservation Areas.
 - c. initiating development and implementation of a Road Management Plan or a Transportation Management Plan. At a minimum, address the following items in the plan:
 1. Road design criteria, elements, and standards that govern construction

and reconstruction.

2. Road management objectives for each road.
3. Criteria that govern road operation, maintenance, and management.
4. Requirements for pre-, during-, and post-storm inspections and maintenance.
5. Regulation of traffic during wet periods to minimize erosion and sediment delivery and accomplish other objectives.
6. Implementation and effectiveness monitoring plans for road stability, drainage, and erosion control.
7. Mitigation plans for road failures.

d. avoiding sediment delivery to streams from the road surface.

1. Outsloping of the roadway surface is preferred, except in cases where outsloping would increase sediment delivery to streams or where outsloping is infeasible or unsafe.
2. Route road drainage away from potentially unstable stream channels, fills, and hillslopes.

e. avoiding disruption of natural hydrologic flow paths.

f. avoiding sidecasting of soils or snow. Sidecasting of road material is prohibited on road segments within or abutting RHCAs in watersheds containing designated critical habitat for listed anadromous fish.

RF-3. Determine the influence of each road on the Riparian Management Objectives. Meet Riparian Management Objectives and avoid adverse effects on listed anadromous fish by:

a. reconstructing road and drainage features that do not meet design criteria or operation and maintenance standards, or that have been shown to be less effective than designed for controlling sediment delivery, or that retard attainment of Riparian Management Objectives, or do not protect designated critical habitat for listed anadromous fish from increased sedimentation.

b. prioritizing reconstruction based on the current and potential damage to listed anadromous fish and their designated critical habitat, the ecological value of the riparian resources affected, and the feasibility of options such as helicopter logging and road relocation out of Riparian Habitat Conservation Areas.

c. closing and stabilizing or obliterating, and stabilizing roads not needed for future management activities. Prioritize these actions based on the current and potential damage to listed anadromous fish and their designated critical habitat, and the ecological value of the riparian resources affected.

- RF-4. Construct new, and improve existing, culverts, bridges, and other stream crossings to accommodate a 100-year flood, including associated bedload and debris, where those improvements would/do pose a substantial risk to riparian conditions. Substantial risk improvements include those that do not meet design and operation maintenance criteria, or that have been shown to be less effective than designed for controlling erosion, or that retard attainment of Riparian Management Objectives, or that do not protect designated critical habitat from increased sedimentation. Base priority for upgrading on risks to listed anadromous fish and their designated critical habitat and the ecological value of the riparian resources affected. Construct and maintain crossings to prevent diversion of streamflow out of the channel and down the road in the event of crossing failure.
- RF-5. Provide and maintain fish passage at all road crossings of existing and potential fish-bearing streams.

Grazing Management

- GM-1. Modify grazing practices (e.g., accessibility of riparian areas to livestock, length of grazing season, stocking levels, timing of grazing, etc.) that retard or prevent attainment of Riparian Management Objectives or are likely to adversely affect listed anadromous fish. Suspend grazing if adjusting practices is not effective in meeting Riparian Management Objectives and avoiding adverse effects on listed anadromous fish.
- GM-2. Locate new livestock handling and/or management facilities outside of Riparian Habitat Conservation Areas. For existing livestock handling facilities inside the Riparian Habitat Conservation Areas, assure that facilities do not prevent attainment of Riparian Management Objectives or adversely affect listed anadromous fish. Relocate or close facilities where these objectives cannot be met.

- GM-3. Limit livestock trailing, bedding, watering, salting, loading, and other handling efforts to those areas and times that will not retard or prevent attainment of Riparian Management Objectives or adversely affect listed anadromous fish.
- GM-4. Adjust wild horse and burro management to avoid impacts that prevent attainment of Riparian Management Objectives or adversely affect listed anadromous fish.

Recreation Management

- RM-1. Design, construct, and operate recreation facilities, including trails and dispersed sites, in a manner that does not retard or prevent attainment of the Riparian Management Objectives and avoids adverse effects on listed anadromous fish. Complete Watershed Analysis prior to construction of new recreation facilities in Riparian Habitat Conservation Areas. For existing recreation facilities inside Riparian Habitat Conservation Areas, assure that the facilities or use of the facilities will not prevent attainment of Riparian Management Objectives or adversely affect listed anadromous fish. Relocate or close recreation facilities where Riparian Management Objectives cannot be met or adverse effects on listed anadromous fish avoided.
- RM-2. Adjust dispersed and developed recreation practices that retard or prevent attainment of Riparian Management Objectives or adversely affect listed anadromous fish. Where adjustment measures such as education, use limitations, traffic control devices, increased maintenance, relocation of facilities, and/or specific site closures are not effective in meeting Riparian Management Objectives and avoiding adverse effects on listed anadromous fish, eliminate the practice or occupancy.
- RM-3. Address attainment of Riparian Management Objectives and potential effect on listed anadromous fish and designated critical habitat in Wild and Scenic Rivers, Wilderness, and other Recreation Management plans.

Minerals Management

- MM-1. Avoid adverse effects to listed species and designated critical habitat from mineral operations. If the Notice of Intent indicates a mineral operation would be located in a Riparian Habitat Conservation Area, or could affect attainment of Riparian Management Objectives, or adversely affect listed anadromous fish, require a reclamation plan, approved Plan of Operations (or other such governing document), and reclamation bond. For effects that

cannot be avoided, such plans and bonds must address the costs of removing facilities, equipment, and materials; recontouring disturbed areas to near pre-mining topography; isolating and neutralizing or removing toxic or potentially toxic materials; salvage and replacement of topsoil; and seedbed preparation and revegetation to attain Riparian Management Objectives and avoid adverse effects on listed anadromous fish. Ensure Reclamation Plans contain measurable attainment and bond release criteria for each reclamation activity.

MM-2. Locate structures, support facilities, and roads outside Riparian Habitat Conservation Areas. Where no alternative to siting facilities in Riparian Habitat Conservation Areas exists, locate and construct the facilities in ways that avoid impacts to Riparian Habitat Conservation Areas and streams and adverse effects on listed anadromous fish. Where no alternative to road construction exists, keep roads to the minimum necessary for the approved mineral activity. Close, obliterate and revegetate roads no longer required for mineral or land management activities.

MM-3. Prohibit solid and sanitary waste facilities in Riparian Habitat Conservation Areas. If no alternative to locating mine waste (waste rock, spent ore, tailings) facilities in Riparian Habitat Conservation Areas exists, and releases can be prevented and stability can be ensured, then:

a. analyze the waste material using the best conventional sampling methods and analytic techniques to determine its chemical and physical stability characteristics.

b. locate and design the waste facilities using the best conventional techniques to ensure mass stability and prevent the release of acid or toxic materials. If the best conventional technology is not sufficient to prevent such releases and ensure stability over the long term, prohibit such facilities in Riparian Habitat Conservation Areas.

c. monitor waste and waste facilities to confirm predictions of chemical and physical stability, and make adjustments to operations as needed to avoid adverse effects to listed anadromous fish and to attain Riparian Management Objectives.

d. reclaim and monitor waste facilities to assure chemical and physical stability and revegetation to avoid adverse effects to listed anadromous fish, and to attain the Riparian Management Objectives.

e. require reclamation bonds adequate to ensure long-term chemical and physical stability and successful revegetation of mine waste facilities.

- MM-4. For leasable minerals, prohibit surface occupancy within Riparian Habitat Conservation Areas for oil, gas, and geothermal exploration and development activities where contracts and leases do not already exist, unless there are no other options for location and Riparian Management Objectives can be attained and adverse effects to listed anadromous fish can be avoided. Adjust the operating plans of existing contracts to (1) eliminate impacts that prevent attainment of Riparian Management Objectives and (2) avoid adverse effects to listed anadromous fish.
- MM-5. Permit sand and gravel mining and extraction within Riparian Habitat Conservation Areas only if no alternatives exist, if the action(s) will not retard or prevent attainment of Riparian Management Objectives, and adverse effects to listed anadromous fish can be avoided.
- MM-6. Develop inspection, monitoring, and reporting requirements for mineral activities. Evaluate and apply the results of inspection and monitoring to modify mineral plans, leases, or permits as needed to eliminate impacts that prevent attainment of Riparian Management Objectives and avoid adverse effects on listed anadromous fish.

Fire/Fuels Management

- FM-1. Design fuel treatment and fire suppression strategies, practices, and actions so as not to prevent attainment of Riparian Management Objectives, and to minimize disturbance of riparian ground cover and vegetation. Strategies should recognize the role of fire in ecosystem function and identify those instances where fire suppression or fuel management actions could perpetuate or be damaging to long-term ecosystem function, listed anadromous fish, or designated critical habitat.
- FM-2. Locate incident bases, camps, helibases, staging areas, helispots, and other centers for incident activities outside of Riparian Habitat Conservation Areas. If the only suitable location for such activities is within the Riparian Habitat Conservation Area, an exemption may be granted following a review and recommendation by a resource advisor. The advisor will prescribe the location, use conditions, and rehabilitation requirements, with avoidance of adverse effects to listed anadromous fish a primary goal. Use an interdisciplinary team, including a fishery biologist, to predetermine incident base and helibase locations during presuppression planning, with avoidance of potential adverse effects to listed anadromous fish a primary goal.
- FM-3. Avoid delivery of chemical retardant, foam, or additives to surface waters. An exception may be warranted in situations where overriding immediate

safety imperatives exist, or, following a review and recommendation by a resource advisor and a fishery biologist, when the action agency determines an escape fire would cause more long-term damage to anadromous fish habitats than chemical delivery to surface waters.

- FM-4. Design prescribed burn projects and prescriptions to contribute to the attainment of the Riparian Management Objectives.
- FM-5. Immediately establish an emergency team to develop a rehabilitation treatment plan to attain Riparian Management Objectives and avoid adverse effects on listed anadromous fish whenever Riparian Habitat Conservation Areas are significantly damaged by a wildfire or a prescribed fire burning out of prescription.

Lands

- LH-1. Require instream flows and habitat conditions for hydroelectric and other surface water development proposals that maintain or restore riparian resources, favorable channel conditions, and fish passage, reproduction, and growth. Coordinate this process with the appropriate State agencies. During relicensing of hydroelectric projects, provide written and timely license conditions to the Federal Energy Regulatory Commission (FERC) that require fish passage and flows and habitat conditions that maintain/restore riparian resources and channel integrity. Coordinate relicensing projects with the appropriate State agencies.
- LH-2. Locate new hydroelectric ancillary facilities outside Riparian Habitat Conservation Areas. For existing ancillary facilities inside the RHCA that are essential to proper management, provide recommendations to FERC to assure that the facilities will not prevent attainment of the Riparian Management Objectives and that adverse effects on listed anadromous fish are avoided. Where these objectives cannot be met, provide recommendations to FERC that such ancillary facilities should be relocated. Locate, operate, and maintain hydroelectric facilities that must be located in Riparian Habitat Conservation Areas to avoid effects that would retard or prevent attainment of the Riparian Management Objectives and avoid adverse effects on listed anadromous fish.
- LH-3. Issue leases, permits, rights-of-way, and easements to avoid effects that would retard or prevent attainment of the Riparian Management Objectives and avoid adverse effects on listed anadromous fish. Where the authority to do so was retained, adjust existing leases, permits, rights-of-way, and easements to eliminate effects that would retard or prevent attainment of the

Riparian Management Objectives or adversely affect listed anadromous fish. If adjustments are not effective, eliminate the activity. Where the authority to adjust was not retained, negotiate to make changes in existing leases, permits, rights-of-way, and easements to eliminate effects that would prevent attainment of the Riparian Management Objectives or adversely affect listed anadromous fish. Priority for modifying existing leases, permits, rights-of-way, and easements will be based on the current and potential adverse effects on listed anadromous fish and the ecological value of the riparian resources affected.

- LH-4. Use land acquisition, exchange, and conservation easements to meet Riparian Management Objectives and facilitate restoration of fish stocks and other species at risk of extinction.

General Riparian Area Management

- RA-1. Identify and cooperate with Federal, Tribal, State and local governments to secure instream flows needed to maintain riparian resources, channel conditions, and aquatic habitat.
- RA-2. Trees may be felled in Riparian Habitat Conservation Areas when they pose a safety risk. Keep felled trees on site when needed to meet woody debris objectives.
- RA-3. Apply herbicides, pesticides, and other toxicants, and other chemicals in a manner that does not retard or prevent attainment of Riparian Management Objectives and avoids adverse effects on listed anadromous fish.
- RA-4. Prohibit storage of fuels and other toxicants within Riparian Habitat Conservation Areas. Prohibit refueling within Riparian Habitat Conservation Areas unless there are no other alternatives. Refueling sites within a Riparian Habitat Conservation Area must be approved by the Forest Service or Bureau of Land Management and have an approved spill containment plan.
- RA-5. Locate water drafting sites to avoid adverse effects to listed anadromous fish and instream flows, and in a manner that does not retard or prevent attainment of Riparian Management Objectives.

Watershed and Habitat Restoration

- WR-1. Design and implement watershed restoration projects in a manner that promotes the long-term ecological integrity of ecosystems, conserves the genetic integrity of native species, and contributes to attainment of Riparian Management Objectives.
- WR-2. Cooperate with Federal, State, local, and Tribal agencies, and private landowners to develop watershed-based Coordinated Resource Management Plans (CRMPs) or other cooperative agreements to meet Riparian Management Objectives.
- WR-3. Do not use planned restoration as a substitute for preventing habitat degradation (i.e., use planned restoration only to mitigate existing problems, not to mitigate the effects of proposed activities).

Fisheries and Wildlife Restoration

- FW-1. Design and implement fish and wildlife habitat restoration and enhancement actions in a manner that contributes to attainment of the Riparian Management Objectives.
- FW-2. Design, construct, and operate fish and wildlife interpretive and other user-enhancement facilities in a manner that does not retard or prevent attainment of the Riparian Management Objectives or adversely affect listed anadromous fish. For existing fish and wildlife interpretive and other user-enhancement facilities inside Riparian Habitat Conservation Areas, assure that Riparian Management Objectives are met and adverse effects on listed anadromous fish are avoided. Where Riparian Management Objectives cannot be met or adverse effects on listed anadromous fish avoided, relocate or close such facilities.
- FW-3. Cooperate with Federal, Tribal, and State wildlife management agencies to identify and eliminate wild ungulate impacts that prevent attainment of the Riparian Management Objectives or adversely affect listed anadromous fish.
- FW-4. Cooperate with Federal, Tribal, and State fish management agencies to identify and eliminate adverse effects on native anadromous fish associated with habitat manipulation, fish stocking, fish harvest, and poaching.

KEY WATERSHEDS

Key Watersheds already have been designated in California, Oregon, and Washington within areas implementing the Northern Spotted Owl Record of Decision (ROD).

Similar criteria will be considered to designate Key Watersheds in the 15 national forests and 7 BLM districts:

- (1) watersheds with stocks listed pursuant to the Endangered Species Act, or stocks identified in the 1991 American Fisheries Society report as "at risk" or subsequent scientific stock status reviews; or
- (2) watersheds that contain excellent habitat for mixed salmonid assemblages; or
- (3) degraded watersheds with a high restoration potential.

Key Watersheds will be identified through broad scale ecological assessments and addressed in the geographically-specific environmental analyses. During the period of interim direction, all watersheds that contain designated critical habitat for listed anadromous fish will be treated as Key Watersheds. The intent of designating Key Watersheds is to provide a pattern of protection across the landscape where habitat for anadromous fish would receive special attention and treatment. Priority within these watersheds would be to protect or restore habitat for listed stocks, stocks of special interest or concern, or salmonid assemblages of critical value for productivity or biodiversity. Areas in good condition would serve as anchors for the potential recovery of depressed stocks, and also would provide colonists for adjacent areas where habitat had been degraded by land management or natural events. Those areas of lower quality habitat with high potential for restoration would become future sources of good habitat with the implementation of a comprehensive restoration program.

WATERSHED ANALYSIS

Watershed Analysis is a systematic procedure for determining how a watershed functions in relation to its physical and biological components. This is accomplished through consideration of history, processes, landform, and condition. Because management direction applies only to proposed projects and activities under Alternative 3, it is not anticipated that extensive Watershed Analysis would be initiated under this alternative. Generally, under Alternative 3 Watershed Analysis would be initiated where the interim RMOs and the interim RHCA widths do not adequately reflect specific watershed capabilities. Under Alternative 4, the guidelines and procedural manuals being developed by the Interagency Watershed Analysis Coordination Team and other potentially relevant procedures (e.g., the Cumulative Watershed Effects Process for Idaho, etc.) will be considered and used, where

appropriate, in development of a Watershed Analysis protocol. As per consultation with the National Marine Fisheries Service (NMFS), during the period of interim direction, the Agencies will complete at least four or five prototype Watershed Analyses within the Snake River Basin.

Watershed Analysis is a prerequisite for determining which processes and parts of the landscape affect fish and riparian habitat, and is essential for defining watershed-specific boundaries for Riparian Habitat Conservation Areas and for Riparian Management Objectives. Watershed Analysis forms the basis for evaluating cumulative watershed effects; defining watershed restoration needs, goals and objectives; implementing restoration strategies; and monitoring the effectiveness of watershed protection measures. Watershed Analysis employs the perspectives and tools of multiple disciplines, especially geomorphology, hydrology, geology, aquatic and terrestrial ecology, and soil science. It is the framework for understanding and carrying out land use activities within a geomorphic context, and is a major component of the evolving science of ecosystem analysis. Watershed Analysis is an iterative process which includes monitoring, evaluation, and adjustment to incorporate detected changes.

Watershed Analysis consists of a sequence of activities designed to identify and interpret the processes operating in a specific landscape. The components and intensity of the analysis will vary depending on level of activity and significance of issues involved. The overall goals of Watershed Analysis are to:

1. Screen current watershed condition:
 - a. Characterize the geomorphic, ecologic, and hydrologic context of a watershed, and identify the uses in the watershed.
 - b. Determine the type, extent, frequency, and intensity of watershed processes, including mass soil movements, fire, peak and low streamflows, surface erosion, and other processes affecting the flow of water, sediment, organic material, and nutrients through a watershed.
 - c. Determine the distribution, abundance, life histories, habitat requirements, and limiting factors for fish and other aquatic and riparian dependent species.
 - d. Identify parts of the landscape, including hill slopes and channels, that are either sensitive to specific disturbance processes or are critical to beneficial uses, key anadromous fish stocks or other species.
2. Interpret watershed history, including the effects of previous natural disturbances and land use activities on watershed processes.

3. Provide information necessary to establish ecologically and geomorphically appropriate boundaries of Riparian Habitat Conservation Areas.
4. Provide information necessary to establish ecologically and geomorphically appropriate Riparian Management Objectives.
5. Identify potentially necessary adjustments to resource output projections (e.g., board-feet, animal unit months, and recreation visitor days projected in forest plans, LUPs and other planning documents).
6. Identify appropriate watershed restoration objectives, strategies, and priorities.
7. Provide information necessary to design approaches to evaluate and monitor the effectiveness of standards and guidelines for mitigating impacts of current uses and contributing to the attainment of Riparian Management Objectives, and the effectiveness of restoration efforts in correcting past degradation.
8. Monitor and identify appropriate modifications to projects and activities to improve or maintain watershed condition.

To provide accountability, Watershed Analysis includes a process by which the Agencies certify the analysis has been conducted and completed according to the expected scientific standards. The certification process will be addressed in the geographically-specific environmental analyses.

WATERSHED RESTORATION

Watershed restoration comprises actions taken to improve the current conditions of watersheds to restore degraded habitat, and to provide long-term protection to natural resources, including riparian and aquatic resources. Alternatives 3 and 4 assume that no additional funds will be available for watershed restoration during the interim period, but that some existing funds will be retargeted, as necessary, to establish a watershed restoration management program that includes:

- 1) A regional strategy that looks across landscapes and ownerships within the watershed to identify where restoration efforts are likely to be most effective.
- 2) Use of Watershed Analysis to adapt restoration strategies to specific landscapes, taking into account unique watershed histories, conditions, and resources.

- 3) Use of Watershed Analysis to establish a specific set of habitat objectives for each watershed.
- 4) Restoration/mitigation practices based on the results of Watershed Analysis, which are designed to ameliorate the impacts of human activities within the watershed.
- 5) Monitoring and evaluation to define and refine restoration objectives and track the effectiveness of restoration efforts.

Priority in conducting watershed restoration will be given to Key Watersheds.

MONITORING

Monitoring is an important component of the proposed interim direction. It will be used to verify that the standards and guidelines were applied during the project implementation (i.e., implementation monitoring) and to assess whether those protective measures are adequate to attain Riparian Goals and Management Objectives (i.e., effectiveness monitoring).

Those national forests and BLM districts adopting interim direction will be required to conduct implementation monitoring as outlined in the Section 7 Monitoring Protocol for the Upper Columbia River Basin (USDA Forest Service 1994) for each project. Implementation monitoring will entail onsite verification and written/photographic documentation that standards and guidelines were applied. The format provided in the Section 7 protocol, which serves as a basic outline for implementation monitoring, will be refined and used for monitoring implementation of the interim direction.

Assessing effectiveness is logistically more complex and difficult than implementation monitoring, and in many cases will require a time period greater than that of the interim direction. Individual national forests and/or BLM districts will focus their efforts and combine resources to address the most important effectiveness issues. Stratification based on eco-regions, watershed characteristics, and the presence of listed or at-risk anadromous fish will be used to identify specific monitoring sites and priorities. Study designs with clear objectives, statistically valid sampling techniques, replication, and comparisons with "reference" conditions will direct effectiveness monitoring efforts.

The Section 7 monitoring protocol provides detailed descriptions of how each RMO element is to be monitored. This document is to be used as a guide. Individual monitoring efforts will be coordinated by the Interagency Implementation Team to make every effort to ensure applicable effectiveness issues are addressed. Monitoring results will be summarized annually, with conclusions drawn in regard to how effective

standards and guidelines are in contributing to meeting Riparian Goals and Management Objectives. Complex ecological processes and long time frames are inherent in the RMOs, and it is unrealistic to expect that the planned monitoring will generate conclusive results within 18 months. Nevertheless, it is critical to begin monitoring to establish a baseline against which effectiveness can be assessed through time.

A third type of monitoring (i.e., validation monitoring) is intended to ascertain the validity of the assumptions used in developing the interim direction. Because of the short-term nature of the management direction, no specific requirements are included for validation monitoring. The geographically-specific environmental analyses will address longer-term validation monitoring and research needs.

ALTERNATIVE 5

Alternative 5 applies the same riparian goals, interim Riparian Management Objectives, Riparian Habitat Conservation Areas, and standards and guidelines; uses the same protocol for Key Watershed identification and Watershed Analysis; and applies the same criteria for watershed restoration as Alternatives 3 and 4, with the following exceptions. In Alternative 5:

1. Interim RHCA widths are the same as in Alternatives 3 and 4, except that for category four (seasonally flowing or intermittent streams, wetlands less than 1 acre, landslides, and landslide-prone areas). Alternative 5 does not distinguish between Key and non-Key Watersheds. For category four areas in all watersheds, Alternative 5 specifies that the interim RHCAs must include:
 - a. the extent of landslides and landslide-prone areas;
 - b. the intermittent stream channel and the area to the top of the inner gorge;
 - c. the intermittent stream channel or wetland and the area to the outer edges of the riparian vegetation; and
 - d. the area from the edges of the stream channel, wetland, landslide, or landslide-prone area to a distance equal to the height of one site-potential tree, or 100 feet slope distance, whichever is greatest.
2. Watershed Analysis, although conducted as described for Alternatives 3 and 4, must be completed in Key Watersheds prior to initiation of any new projects and activities therein.
3. The management direction is applied to all proposed and all ongoing projects and activities.

Appendix D

List of BLM Land Use Plans and FS Land and Resource Management Plans

APPENDIX D - LIST OF BUREAU OF LAND MANAGEMENT LAND USE PLANS AND FOREST SERVICE LAND AND RESOURCE MANAGEMENT PLANS (FOREST PLANS)

Bureau of Land Management

CALIFORNIA

BAKERSFIELD DISTRICT

USDI Bureau of Land Management, California State Office. 1984. *Hollister Management Framework Plan*. August 1984. Bakersfield District, Hollister Resource Area. Bakersfield, California.

UKIAH DISTRICT

USDI Bureau of Land Management, California State Office. 1993. *Redding Resource Management Plan and Environmental Impact Statement*. June 1993. Ukiah District, Redding Resource Area. Ukiah, California.

IDAHO

SALMON DISTRICT

USDI Bureau of Land Management, Idaho State Office. 1979. *Challis Management Framework Plan*. July 1979. Challis Resource Area, Salmon District. Salmon, Idaho.

USDI Bureau of Land Management, Idaho State Office. 1982. *Ellis-Pahsimeroi Management Framework Plan*. September 1982. Challis Resource Area, Salmon District. Salmon, Idaho.

USDI Bureau of Land Management, Idaho State Office. 1984. *Mackay Management Framework Plan*. January 1984. Challis Resource Area, Salmon District. Salmon, Idaho.

USDI Bureau of Land Management, Idaho State Office. 1987. *Lemhi Resource Management Plan and Environmental Impact Statement*. April 1987. Salmon District, Lemhi Resource Area. Salmon, Idaho.

COEUR D'ALENE DISTRICT

USDI Bureau of Land Management, Idaho State Office. 1981. *Chief Joseph Management Framework Plan*. November 1981. Coeur d'Alene District, Cottonwood Resource Area, Coeur d'Alene, Idaho.

OREGON/WASHINGTON

PRINEVILLE DISTRICT

USDI Bureau of Land Management, Oregon State Office. 1985. *John Day Resource Management Plan and Environmental Impact Statement*. August 1985. Prineville District. Prineville, Oregon.

USDI Bureau of Land Management, Oregon State Office. 1986. *Two Rivers Resource Management Plan and Environmental Impact Statement*. June 1986. Prineville District. Prineville, Oregon.

USDI Bureau of Land Management, Oregon State Office. 1989. *Brothers Lapine Resource Management Plan and Environmental Impact Statement*. July 1989. Prineville District. Prineville, Oregon.

SPOKANE DISTRICT

USDI Bureau of Land Management, Oregon State Office. 1987. *Spokane Resource Management Plan and Environmental Impact Statement*. May 1987. Spokane District. Spokane, Washington.

VALE DISTRICT

USDI Bureau of Land Management, Oregon State Office. 1989. *Baker Resource Management Plan and Environmental Impact Statement*. July 1989. Vale District, Baker Resource Area. Vale, Oregon.

Forest Service

CALIFORNIA

LASSEN NATIONAL FOREST

USDA Forest Service, Pacific Southwest Region. 1992. *Final Environmental Impact Statement for the Land and Resource Management Plan - Lassen National Forest*. 1992. Lassen National Forest. Susanville, California.

USDA Forest Service, Pacific Southwest Region. 1992. *Land and Resource Management Plan - Lassen National Forest*. 1992. Lassen National Forest. Susanville, California.

LOS PADRES NATIONAL FOREST

USDA Forest Service, Pacific Southwest Region. 1988. *Final Environmental Impact Statement, Land and Resource Management Plan - Los Padres National Forest*. March 1988. Los Padres National Forest. Goleta, California.

USDA Forest Service, Pacific Southwest Region. 1988. *Land and Resource Management Plan - Los Padres National Forest*. March 1988. Los Padres National Forest. Goleta, California.

IDAHO

BITTERROOT NATIONAL FOREST

USDA Forest Service, Northern Region. 1987. *Final Environmental Impact Statement for the Bitterroot National Forest Land and Resource Management Plan*. September 1987. Bitterroot National Forest. Hamilton, Montana.

USDA Forest Service, Northern Region. 1987. *Bitterroot National Forest Land and Resource Management Plan*. September 1987. Bitterroot National Forest. Hamilton, Montana.

BOISE NATIONAL FOREST

USDA Forest Service, Intermountain Region. 1990. *Final Environmental Impact Statement for the Boise National Forest Land and Resource Management Plan*. April 1990. Boise National Forest. Boise, Idaho.

USDA Forest Service, Intermountain Region. 1990. *Boise National Forest Land and Resource Management Plan*. April 1990. Boise National Forest. Boise, Idaho.

CHALLIS NATIONAL FOREST

USDA Forest Service, Intermountain Region. 1987. *Final Environmental Impact Statement for the Challis National Forest Land and Resource Management Plan*. June 1987. Challis National Forest. Challis, Idaho.

USDA Forest Service, Intermountain Region. 1987. *Challis National Forest Land and Resource Management Plan*. June 1987. Challis National Forest. Challis, Idaho.

CLEARWATER NATIONAL FOREST

USDA Forest Service, Northern Region. 1987. *Final Environmental Impact Statement for the Clearwater National Forest Land and Resource Management Plan*. September 1987. Clearwater National Forest. Orofino, Idaho.

USDA Forest Service, Northern Region. 1987. *Clearwater National Forest Land and Resource Management Plan*. Spetember 1987. Clearwater National Forest. Orofino, Idaho.

NEZ PERCE NATIONAL FOREST

USDA Forest Service, Northern Region. 1987. *Final Environmental Impact Statement for the Nez Perce National Forest Plan*. October 1987. Nez Perce National Forest. Grangeville, Idaho.

USDA Forest Service, Northern Region. 1987. *Nez Perce National Forest Plan*. October 1987. Nez Perce National Forest. Grangeville, Idaho.

PAYETTE NATIONAL FOREST

USDA Forest Service, Intermountain Region. 1988. *Final Environmental Impact Statement for the Land and Resource Management Plan for the Payette National Forest*. May 1988. Payette National Forest. McCall, Idaho.

USDA Forest Service, Intermountain Region. 1988. *Land and Resource Management Plan for the Payette National Forest*. May 1988. Payette National Forest. McCall, Idaho.

SALMON NATIONAL FOREST

USDA Forest Service, Intermountain Region. 1988. *Final Environmental Impact Statement for the Salmon National Forest Land and Resource Management Plan*. January 1988. Salmon National Forest. Salmon, Idaho.

USDA Forest Service, Intermountain Region. 1988. *Salmon National Forest Land and Resource Management Plan*. January 1988. Salmon National Forest. Salmon, Idaho.

SAWTOOTH NATIONAL FOREST

USDA Forest Service, Intermountain Region. 1987. *Final Environmental Impact Statement for the Sawtooth National Forest Land and Resource Management Plan*. September 1988. Sawtooth National Forest. Twin Falls, Idaho.

USDA Forest Service, Intermountain Region. 1987. *Sawtooth National Forest Land and Resource Management Plan*. September 1988. Sawtooth National Forest. Twin Falls, Idaho.

OREGON/WASHINGTON

MALHEUR NATIONAL FOREST

USDA Forest Service, Pacific Northwest Region. 1990. *Final Environmental Impact Statement - Malheur National Forest - Land and Resource Management Plan*. May 1990. Malheur National Forest. John Day, Oregon.

USDA Forest Service, Pacific Northwest Region. 1990. *Malheur National Forest - Land and Resource Management Plan*. May 1990. Malheur National Forest. John Day, Oregon.

OCHOCO NATIONAL FOREST

USDA Forest Service, Pacific Northwest Region. 1989. *Final Environmental Impact Statement - Land and Resource Management Plans - Ochoco National Forest and Crooked River National Grassland*. August 1989. Ochoco National Forest. Prineville, Oregon.

USDA Forest Service, Pacific Northwest Region. 1989. *Land and Resource Management Plans - Ochoco National Forest and Crooked River National Grassland*. August 1989. Ochoco National Forest. Prineville, Oregon.

OKANOGAN NATIONAL FOREST

USDA Forest Service, Pacific Northwest Region. 1989. *Final Environmental Impact Statement - Land and Resource Management Plan - Okanogan National Forest*. 1989. Okanogan National Forest. Okanogan, Washington.

USDA Forest Service, Pacific Northwest Region. 1989. *Land and Resource Management Plan - Okanogan National Forest*. 1989. Okanogan National Forest. Okanogan, Washington.

UMATILLA NATIONAL FOREST

USDA Forest Service, Pacific Northwest Region. 1990. *Final Environmental Impact Statement - Forest Land and Resource Management Plan - Umatilla National Forest*. 1990. Umatilla National Forest. Pendleton, Oregon.

USDA Forest Service, Pacific Northwest Region. 1990. *Forest Land and Resource Management Plan - Umatilla National Forest*. 1990. Umatilla National Forest. Pendleton, Oregon.

WALLOWA-WHITMAN NATIONAL FOREST

USDA Forest Service, Pacific Northwest Region. 1990. *Final Environmental Impact Statement - Wallowa-Whitman National Forest Land and Resource Management Plan*. April 1990. Wallowa-Whitman National Forest. Baker, Oregon.

USDA Forest Service, Pacific Northwest Region. 1990. *Wallowa-Whitman National Forest Land and Resource Management Plan*. April 1990. Wallowa-Whitman National Forest. Baker, Oregon.

Appendix E

List of Briefings and Correspondence

APPENDIX E – LIST OF BRIEFINGS AND CORRESPONDENCE

Table E-1. External Briefings.

Name of Organization Briefed	Date of Briefing
<p>House and Senate Senate Agriculture Committee House Agriculture Committee – Subcommittee on Speciality Crops and Natural Resources House Merchant Marine and Fisheries Committee – Fisheries Subcommittee Personal staffs of Alaska Congressional delegation House and Senate Congressional staff Staffs ID, OR, CA Congressional delegation (Field and Washington, DC offices)</p>	<p>May 24, 1993 October 21, 1993 October 7, 1993 August 5, 1993 April 1992; January 1993 March 25, 1994</p>
<p>Federal Agencies Council on Environmental Quality Environmental Protection Agency USDA Soil Conservation Service USDC National Marine Fisheries Service USDI Bureau of Indian Affairs USDI Fish and Wildlife Service</p> <p>US Department of Justice</p> <p>National Biological Survey Bureau of Indian Affairs, Washington, DC and Portland, Oregon Office of American Indian Trust/Dept. of Interior USDI, Bureau of Reclamation USDA Agriculture Stabilization and Conservation Service, California USDA Forest Service, Pacific Southwest Region USDA Soil Conservation Service, California USDC National Marine Fisheries Service, Santa Rosa USDI Bureau of Reclamation, Mid-Pacific Region USDI Fish and Wildlife Service, Region 1 USDI National Park Service, Western Region Bull Trout Interagency Meeting (BLM, FWS), Idaho FISHNET Conference, Idaho BLM/EPA Workshop, Idaho</p>	<p>January & March 1994 August 1993; June 1994 August 4 & 10, 1993 July 1992; October 15, 1993 August 4, 1993 July 1992; July 28, 1993; February 10, 1994 October 1992; Summer 1993; February 1994 March 2, 1994 March 2, 1994 March 2, 1994 April 15, 1994 June 1994 June 1994 June 1994 May 10, 1994 June 1994 June 1994 June 1994 March 10, 1994 June 2, 1994 June 28, 1994</p>
<p>State Agencies Alaska Governor's Office (et al.) Alaska Dept. of Commerce and Economic Development Alaska Department of Fish and Game Columbia Basin Fish & Wildlife Authority International Association of Fish & Wildlife Agencies</p>	<p>September 8-9, 1993 September 8-9, 1993 September 8-9, 1993 April, October 1993 April 1992; September 14, 1993</p>

Table E-1. External Briefings (Cont.)

Name of Organization Briefed	Date of Briefing
Non-point Source Water Quality Monitoring Workshop	January 4, 1993
Oregon Department of Fish & Wildlife	September 1993
University of Washington	January 11, 1993
Virginia State University and Polytechnic Institute	February 1, 1994
Western Legislative Forestry Task Force	September 18, 1993
California Department of Conservation	June 1994
California Department of Fish and Game	June 1994
California Department of Food and Agriculture	June 1994
California Department of Forestry and Fire Protection	June 1994
California Department of Parks and Recreation	June 1994
California Department of Water Resources	June 1994
California State Lands Commission	June 1994
California State Resources Agency	June 1994
Idaho Governor's Staff	June 1994
Idaho Governor	January 10, 1994
Idaho Department of Fish and Game	March 25, 1994
University of Idaho (Natural Resources Conference)	March 26, 1994
	March 30, 1994
Tribal Governments	
Tribal Governments of the Northwest	Jul., Nov., Dec., 1992
Columbia River Intertribal Fish Commission	July 25-30, 1993
Nez Perce	July 25-30, 1993
Northwest Indian Fisheries Commission	July 25-30, 1993;
	March 2, 1994
Shoshone-Bannock	July 25-30, 1993
Umatilla	July 25-30, 1993
Warm Springs	July 25-30, 1993
Yakama	July 25-30, 1993
Hoopa Valley Indian Reservaton (California)	May 18, 1994
Organizations	
Alaska Trollers Association	September 1993
American Fisheries Society	April 1992; April 14, November
	15, September 16, 1993
Bonneville Power Administration	June 1993
Klamath Restoration Alliance	May 20, 1993
National Cattlemen's Association	September 21, 1993
Natural Resources Defense Council	September 16, 1993
Northwest Forestry Association	August 1993
Northwest Hydroelectric Association	February 2, 1993
Northwest Power Planning Council	June 1992; June 1993
Oregon Cattlemen's Association	September 1992
Pacific Coast Federal of Fishermen's Associations	September 1993
Pacific Rivers Council	April 1992; April 14,
	December 2, 1993
Public Info Meetings: Boise, Lewiston, Grangeville	Apr. 6-27, 1994
McCall, New Meadows, Ketchum, Stanley, Challis,	
Salmon, and Idaho Falls, ID	

Table E-1. External Briefings (Cont.)

Name of Organization Briefed	Date of Briefing
Public Lands Council Society for Range Management Society of American Foresters Southeast Alaska Conservation Council Sport Fishing Institute Trout Unlimited	September 1992; June 9, 1993 June 9, 1993 June 9, 1993 September 19, 1993 April 1992; April 14, 1993 Apr., Aug. 1992; Mar., Apr. Aug., Oct., 1993
United Fisherman of Alaska Weyerhaeuser The Wilderness Society The Wildlife Society California Association of Resource Conservation Districts	September 3, 1993 September 19, 1993 April 1992 June 9, 1993 June, 1994
California Cattlemen's Association California Farm Bureau California Indian Legal Service California Sheep Growers	May 23, 1994 May 23, 1994 May 18, 1994 May 23, 1994
Idaho Cattle Association: four meetings: Salmon, Idaho Grangeville, Idaho Boise, Idaho Emmett, Idaho	April 16, 1994 April 18, 1994 April 19, 1994 May 10, 1994
Idaho Conservation League Idaho Sporting Congress The Wilderness Society, Idaho Pacific Rivers Council Western Legislative Task Force	March 26, 1994 March 26, 1994 March 26, 1994 March 2, 1994 April 21, 1994
Senate Senator Jim Duncan Senator Ted Stevens (News Release) Senator Ted Stevens (News Release)	September 30, 1993 September 15, 1993 October 6, 1993
Federal Agencies Environmental Protection Agency Environmental Monitoring and Assessment Program Office of the Chief Scientist USDC National Marine Fisheries Service USDI Fish and Wildlife Service	August 26, 1993 December 14, 1993 January 27, 1994 November 8, 1993 August 26, 1993
State Governments Alaska Department of Commerce and Economic Development Alaska Office of the Governor Board of Commissioners - County of Coos, Oregon California Department of Forestry Columbia Basin Fish & Wildlife Authority Oregon Water Resources Department Western Legislative Forestry Task Force	September 27, 1993 August 1993 October 14, 1993 December 12, 1993 January 27, 1994 November 1993 October 6, 1993

Table E-2. Letters Received.

Name of Correspondent	Date of Letter
Tribal Governments Confederated Tribes and Bands of the Yakima Indian Nation Nez Perce Tribal Executive Committee	July 29, 1993 July 27, 1993
Organizations The AFSEEE Activities (News Article) Alaska Center for the Environment Alaska Center for the Environment, et. al. (News Release) Alaska Trollers Association Alaska Council of Trout Unlimited American Fisheries Society – Alaska Chapter American Fisheries Society – Humboldt Chapter American Fisheries Society – Idaho Chapter American Fisheries Society - Virginia Tech Chapter American Fisheries Society, et. al. ¹ American Rivers American Rivers (News Release) B.A.S.S. Inc. Black Hills Audubon Society Canadian Wildlife Federation Coalition for the Conservation of Aquatic Habitat Environmental Defense Fund Health to the Salmon National Audubon Society National Forestry Associaton Northwest Forestry Association Oregon Trout Preston, Thorgrimson, Shidler, Gates & Ellis United Fishermen of Alaska Weyerhaeuser	August 1993 September 3, 1993 September 28, 1993 September 18, 1993 October 10, 1993 September 23, 1993 April 24, 1993 September 13, 1993 September 1, 1993 September 21, 1993 August 5, 1993 September 28, 1993 September 27, 1993 September 8, 1993 March 26, 1993 November 5, 1993 January 27, 1994 January 27, 1994 September 24, 1993 August 9, 1993 August 9, 1993 January 27, 1994 October 25, 1993 September 3, 1993 September 23, 1993
Individuals Thomas Angenent Pat & Bill Bleha Charles Chesney Stew Churchwell Margaret Conradsen William and Ramona Crooks James H. Delano Marv D. Dorni Bob Finhaus Doug Goodall	August 20, 1993 September 7, 1993 November 1993 August 27, 1993 September 3, 1993 August 30, 1993 August 29, 1993 Updated Undated Undated

¹Letter to the Interior Appropriations Conference.

Table E-2. Letters Received (Cont.)

Name of Correspondent	Date of Letter
Individuals (Cont.)	
Marnie Graham	September 10, 1993
Gary Gunsstrom	November 2, 1993
Dennis Honkomp	Undated
H. James Howe	August 22, 1993
John Hurburn	Updated
Robert R. Jammes	August 26, 1993
Alberta Kittleson	August 27, 1993
Rebecca J. Knight	September 10, 1993
James Lichatowich (Mobrand Biometrics)	January 27, 1994
Tad Mastersen	September 16, 1993
Gertrude C. Minnix	August 27, 1993
Richard T. Myren	September 8, 1993
John and Karyn Nelson	August 28, 1993
Kyle Nelson	September 9, 1993
Nancy R. Norsen	August 28, 1993
Dr. Robert L. Olson	August 25, 1993
David Patenavde	September 2, 1993
Dr. Nathaniel A. Peters & Juanita I. Peters	September 8, 1993
David W. Roberts	January 27, 1994
Peggy Robinson	September 25, 1993
Ron and Martha Robinson	August 23, 1993
Dr. John A. Satterwhite	September 1, 1993
Bill Scarborough	August 28, 1993
Dr. Dan Silver	August 25, 1993
Carol Soth	August 30, 1993
Kersten Tanner	Undated
Sal Tromba	Undated
Robert Tuck	January 27, 1994
Kathleen VanWihl	August 27, 1993
Jay S. Wakefield	August 20, 1993
Bud Wakeland	September 2, 1993
Howard J. Whitaker	August 31, 1993
Ray White	January 27, 1994
Ron Yockim	February 23, 1993

Table E-3. Respondents to Draft Proposal

Name of Respondent	Organization
Arkansas Charles F. Gauvin Victoria E. McDonald John Peterson Steven A. Brink	Trout Unlimited Seafish Greater Ketchikan Chamber of Commerce Tongass NF Plan Revision Team Leader
Alaska Roger D. Snippen	State of Alaska Project Analyst
Arizona David E. McGillivray	U.S. Department of the Interior Fish/WI
California V. Louise Knowe Odean Griffin Doris E. Cole James L. Woods Joanna Nelson Rodney M. Fujita W. James Edwards Not Signed R. Brett Matzke Felica Pace Susie Van Kirk Betty Ball Richard W. Harter Ed Dunkley Harold Madsen Steven L. Evans Tim McKay Edwin P. Pister Barbara C. Turner Kevin Turner John L. Braly Clifton Hodge Eric P. Simmen Andrew J. & Elois Fischer Bill Devall John B. Merz Bill Wilson Virginia Russell Stephen C. Volker Ryan M. Henson Marcia H. Armstrong John Nelson Karyn Nelson Barbara Pascoe	Environmental Defense Fund California Trout, Inc. Sierra Nevada Mgr Klamath Forest Alliance Pgrm.Coordinator Sierra Club Redwood Chapter North Group Mendocino Environmental Center California Association of 4WD Clubs, Inc. Friends of the River - Conservation Dir. The Northcoast Environmental Center Desert Fishes Council California Cattlemen's Association 9X Ranch Sacramento River Presentation Trust Modoc County Cattlemen's Assn. Sierra Club Legal Defense Fund, Inc. California Wilderness Coalition Siskiyou County Farm Bureau

Table E-3. Respondents to Draft Proposal (Cont.)

Name of Respondent	Organization
California (Cont.)	
Kent Pascoe	
Janet Reynolds	
John M. Richards	
Randy Bailey	American Fisheries Society
Kerry L. Burke	
Daniel Hall	The Pacific Forest Trust
Circle S Ranch	
James Sinton	Avenales Cattle Co.
Steve Sinton	Avenales Cattle Co.
Richard S. Cincino	
Colorado	
Kerry L. Burke	
Jim Connolly	Connolly Properties, Inc.
Paul Wilbert	
District of Columbia	
Thomas J. Cassidy, Jr.	American Rivers
Charles B. Rumburg	Society for Range Mgmt. Executive VP
Ruth T. McWilliams	U.S.D.A. Forest Service
Larry Craig	United States Senate
Jerry T. Williams	U.S.D.A. Forest Service
William G. Myers III	Public Lands Council-Executive Director
Larry E. Craig	United States Senate
Idaho	
Richard Scully	American Fisheries Society
Marvin Park	
Lara L. Ellsworth	
Jacqueline E. Moore	
Darci Daniels	
Bill Steele	
Sabrina Ellsworth	
MariAne Evans	
Randy Hess	White Otter Outdoor Adventures
H.L. Solom	
Dan Crawford	
Darcy Estes	
Edward Smith	
Geo Poleson	
Robert Manhill	
Carrol Stewart	
Gerald Lohman	
Elwin Hutchins	Hutchins Lumber, Inc.
Emerald Hutchins	Hutchins Lumber, Inc.
Lisa Lombardi	Clearwater Forest Watch Coalition

Table E-3. Respondents to Draft Proposal (Cont.)

Name of Respondent	Organization
Idaho (Cont.)	
Randy Hartshorn	
M. Clemenhagen	
James Sorenson	
Verle Pfefferkorn	
Linn Kincannon	Idaho Conservation League
George Kurts	
Sabrina Ellsworth	
Kip Dieringer	
Wade Gruhl	
Wendell M. Stark	
Al Espinosa	
Alan S. Wright	
Rayola Jacobsen	Idaho Farm Bureau Federation
Robert C. Sears	Idaho Cattle Association
Kathy Richmond	
Pam Lewis	
Roland Craft	
Phillip L. Mikearmy	
Dick Kolbrener	
M. Keene Hueftle	
Michael Fish	
Lyle Maynard	
Ed Coates	Louisiana-Pacific Corporation
Helen Rice	
Lawrence Armacost	
Richard Uberuaga	
Joyce Broodsword	
Bill Summers	
Patrick Donovan	
Jeff Carlson	
Daniel G Johnson	R.O.O.T.S.
Neil R. Rimbey	Univ. of Idaho Cooperative Extension
Jack Buell	County of Benewah
Rudy J. Verschoor	
Dennis Baird	Idaho Environmental Council
Hadley B. Roberts	
Ernest Pendell	City of St. Maries
Don Pischner	Driftwood Heights Ranch
Steve Paulson	
Doug Thompson	
James W. Guthrie	
James D. Wassmuth	
Russ Moritz	Kaniksu Bioregional Council
Robert L. Leffert	
Mike Mihelich	National Audubon Society
Jane M. Miller	

Table E-3. Respondents to Draft Proposal (Cont.)

Name of Respondent	Organization
Idaho (Cont.)	
Michael Kirk	
Nick R. Butler	
Homer Hasfurth	
Jerry Klemm	Pulp & Paperworker's Resource Council
Brenda Dammarell	
Kris Nesbitt	
Josephine Brown	
Peter De Lisser	
Ivan I. Taylor	Custer County Board of Commissioners
Elaine D. Hedenstrom	
Paul A. Lang	
Dan C. Miller	
Jasper Purdey	
David C. Burns	
Warren Rice	
William K. Terry	Snake River Cutthroats-VP/Conservation
Lori Barnes	
Larry Isenberg	
Geoff Schneider	
Karolyn R. Zierold	
Alan Peterson	
Tim Christopherson	Clearwater Resource Coalition
James R. Bennetts	
Char Roth	
Joan Vanhorn	
Bill DeVeney	
Julia Irby	
Mark Klingerman	
Lynne K. Stone	
Class	Landscape Ecology
Doug Cruthirds	
Shirley Gerback	
Debra L. Yeoman	
Gene P. Deasy	
Fred L. Edmiston	County Extension Agent
Barbara Fabin	
Win Green	
James N. Hawkins	Custer County Extension Agent
Mike Medberry	
Shaun Robertson	The Shoshone-Bannock Tribes
Tom Coates	
Steve Bliss	
Joe Osborne	
Steve Pittman	
Jack Linnemeyer	LaJack Timber, Inc.
Larry Linnemeyer	LaJack Timber, Inc

Table E-3. Respondents to Draft Proposal (Cont.)

Name of Respondent	Organization
Idaho (Cont.)	
Myma Linnemeyer	LaJack Timber, Inc.
Stieg Gabrielsen	
Richard K. Kelly	
Jon Johnson	
Suzette Zenner	
Darrell Daubert	
Elma & Kenneth Bradbury	
Jason Charley	
N.M. Stigum	
Patrick Young	
Bob Smeltz	
Scott K. Campbell	
Bill Vargovich	
Kile L. Parris	
Kenny Howell	
David Duto, Jr.	
Kevin Paris	
Rocky Vargovich	
John A. Curtis	
John A. Curtis	
David N. Stamper	
David N. Stamper	
James L. Caswell	US Forest Ser. Clearwater NF Supervisor
Alex Irby	Clearwater Soil & Water Conservation
Bob Sears	Idaho Cattle Association
Tom Geary	Idaho Farm Bureau Federation
Janice R. Hartig	
Raymond F. Coon	
Ron W. Hartig	
David L. Foushee	
Joseph M. Hinson	Intermountain Forest Industry Assoc.
Nick Chenoweth	
Terice B. Childers	
Patricia M. Duren	
John Goffinet	
Shirley J. Johnson	
Monica J. Jones	
Paul Lang	
Arthur G. Osterberg	
Deniece M. Osterberg	
Lee C. Peppinger	
Paul Peppenger	
Gordon A. Thiessen	
Dennis Thompson	
Jeffrey Wicks	
Nancy Spencer	

Table E-3. Respondents to Draft Proposal (Cont.)

Name of Respondent	Organization
Idaho (Cont.)	
Julie Chenoweth	
Dennis Harper	
Steve Law	
Donna R. Leach	
Amy London	
Rob O. Miller	
David L. Washburn	
Charles E. Pace	Regional Services, Inc.
Pat Ford	
Off. Of The Gover	State of Idaho
John McCarthy	Idaho Conservation League
Charles Ray	Idaho Rivers United
Rhonda Norland	
Ron Norland	
Mike Hanna	
Norman West	
Sharon Arnold	
Wayne & Sue Thornton	
James A. Little	
Wayne T. Stelles	
V. James Wilson	Board of County Commissioners
Mike Kerttu	Bennett Lumber Products, Inc.
Chet Bowers	Bowers Aero-Photo
Bill Mulligan	Weyerhaeuser - Resource Manager
Tom Lanman	
Ola Vevie	
Jonathan H. Marvel	
George L. Rawley	
Damon M. Carpenter	
Cheryl Woehler	
Frank Woehler	
Dave Elliot	
Kenneth G. Watson	
Dale Adams	
Lorene Sutton	
Ron C. Meredith	
Carl Ellsworth	
Pete Ellsworth	
Andy Frei	
Arlene C. Kolar	County of Boise District Court
Julie Hershey	
Peter M. K. Frost	Potlatch Corporation
Stanley P. McCoy	
Philip H. Feucht	
Gary W. Heringartner	
Todd Riggers	

Table E-3. Respondents to Draft Proposal (Cont.)

Name of Respondent	Organization
Idaho (Cont.)	
Doug Clark	
Donald Jones	
Linda D. Rauch	
Jim Hershey	
Thomas L. Snyder	
Andy Gilder	
Vern Uhlorn	
Ron Wetmore	
Terri Rothwell	
E.D. Coy	
Albert Low	
B. Hoidal	
James T. Vandegrift	
J. L. Ross	
Jerry D. Chambers	
B. Rauch	
Michelle Poesy	
Britt Carpenter	
Gillis Kelly	
Teresa M. Quimby	
Tom Wolny	
Alvin Minden	
Roger Caubie	
Suzanne R. Wilson	
Doug Litchfield	
Bill Lundgren	
Darrell Tumelson	
Hal R. Covey	
Will Ingram	
Gordon Fulton	
Richard C. Reimers	
Gary Cantrell	
Zella Cantrell	
Patrick E. Long	
Gordon E. Mohr	
Gorold E. Clionte	
Marvin L. Hutchins	
William C. Liedkie	
Robert A. Sauls	
Gary W. Riddle	
Ike Coleman	GEM Community Committee
Elaine Cook	GEM Community Committee
Patricia Dobson	GEM Community Committee
Shannon Eisenmeth	GEM Community Committee
Bob Hyde	GEM Community Committee
Mariene Hyde	GEM Community Committee

Table E-3. Respondents to Draft Proposal (Cont.)

Name of Respondent	Organization
Idaho (Cont.)	
Sandra L. Lawrence	GEM Community Committee
Kathyn Lefferts	GEM Community Committee
Sandy Luts	GEM Community Committee
Lori McMillen	GEM Community Committee
Mike McMillian	GEM Community Committee
Patty J. Ramey	GEM Community Committee
Michael D. Snyder.	GEM Community Committee
Shannon Snyder	GEM Community Committee
Shelly Stewart	GEM Community Committee
Billie L. Waide	GEM Community Committee
Chris Walsh	GEM Community Committee
Ted Walsh	GEM Community Committee
R. D. Willhite	
Marguerite McLaughlin	Idaho State Senate
Thomas B. Beamish	
Maurice Pae	
Ed Hall	Idaho County Farm Bureau
Calvin J. Whittaker	
Carol Whittaker	
Paul Belzer	
Ben Salisbury	
Lyle Maynard	
Jim Hayes	
Craig Nelson	
Maine	
Jim Gerber	
John R. Swanson	
John R. Swanson	
P. John Marryan	
Tim Dodson	
Walter Lindsey	
Gary Estlund	
Missy Keys	
Duane Ash	
Steven G. Libey	
Janet Crowley	Connecting Point for Public Lands
Ron Watters	
Jennifer Davis	
Jack R. Palmer	
Rosemary McQueen	
Brian Nesbitt	
Mike D. Moore	
Patey Acree	
Daryne Nice	
Terry E. Byrd	
Ray K. Ongstad	

Table E-3. Respondents to Draft Proposal (Cont.)

Name of Respondent	Organization
Idaho (Cont.) Don Wilson Jess Mooney Erin Donley Cathy Baer Kathy Richmond Stew Churchwell	Sawtooth Wildlife Council Salmon River Environmental Ed. & Defense
Montana John R. Swanson Arlene Montgomery Patrick Graham	Friends of the Wild Swan Montana Dept of Fish, Wildlife & Parks
Nevada William Patric Kevin Whitener	Mineral Policy Center
Oregon Diane Valantine J.F. Edmonds CJ Andersen George T. Gant John Swanson James McCauley John T. Cheslock William MacKenzie Steven J. Courtney L.E. Bedell Stuart J. Shelk, Jr. Dale White Jack L. Beebe Bev Owen Gordon Ross Arleigh G. Isley Pat Wortman Kevin Campbell Bob Kimberling Sondra Lino Barry Carter Dale Oberlag Louis A. Carlson Joyce Morgan Doug Robertson Doris Wadsworth John J. Howard Terry Thompson Paula Burgess	Oregon Natural Resources Council American Fisheries Society Associated Oregon Loggers, Inc. Oregon Small Woodlands Association Malheur Timber Operators, Inc. Ochoco Lumber Company County Court for Harney County Coos County Board Of Commissioners Coos County Board Of Commissioners Coos County Board Of Commissioners Wallowa County Court Wallowa County Court County Court of Grant County County Court of Grant County County Court of Grant County Blue Mtn. Native Forest Alliance County Court, Morrow County Judge Board of Commissioners Board of Commissioners Board of Commissioners IAC Idaho Assn. of Oregon Counties IAC Idaho Association of Counties Office of the Governor

Table E-3. Respondents to Draft Proposal (Cont.)

Name of Respondent	Organization
Washington (Cont.)	
David Long	Grande R Adventures
Brian Fox	
Joe Labelle	
Steve Purcell	
Don Weza	
Clinton Carlyle	
Lori Long	
Robert Freres, Jr.	Freres Lumber Co., Inc.
Betty L. White	
Mary L. Water	
Georgia Columbia	
Bobbi Turner	
Lauri Vigue	
Jack McClellan	
Stella Renald	
Renea Martin	
Doug & Lucy Pearce	
Wley Hollingsworth	
Bonnie Phillips-Howard	Pilchuck Audubon Society
Derek Lutz	
Richard A. McNeilly	McNeilly Ranch, Inc.
Guadalupe Flores	
Mitch Friedman	Greater Ecosystem Alliance
David A. Hoppens	David A. Hoppens - ENGINEERS
Bill Erickson	
John R. Norberg	U. S. Dept. Of Interior-Bureau of Mines
Brad AlBoucq	
Marshall Ward	
George Boyd	
James D. Tank	
Doug Campbell	Pacific Northwest Ski Areas Assoc.
Kaare Norland	
James N. Hall	U.S. DOT Fed Hwy Adm. Division Engineer
Karl F. Moore	
Kathy Veit	U.S. Environmental Protection Agency
Alfred Amyotte	
James W. Simpson	
Adam Berger	Sierra Club Legal Defense Fund, Inc.
John P. McMahon	Weyerhaeuser
Ken Davis	Washington Cattlemen's Association
Ron Mason	
Decker K. Johnson	
Carroll Palmer	Yakima Indian Nation
Deborah A. Sivas, Esq.	Inland Empire Public Lands Council
David L. Scott	
Thomas A. Weza	
Robert D. Wilcoxon	

Table E-3. Respondents to Draft Proposal (Cont.)

Name of Respondent	Organization
Washington (Cont.)	
John Shaver	R.C.G.N.W. - United For Multiple Use
Dave Somers	The Tulalip Tribes
Maxine Keesling	
Bill Burley	
Johnny M. Floon	
S. Pacha	
Raiph Coyle	
Mike Erickson	
Kurt Bell	
Dennis Lebold	
Don M. Bailly	
Ross Emery	
Jim R. Schroeder	
Chuck Parker	BUSE Timber & Sales, Inc.
David Kliegman	Tonasket Forest Watch
Bruce Kenyon	
Richard Weber	
Ed Harris	
Greg Paris	
Thomas L. Vandevanter	
Wayne Hirschel	
Norm McClure	Washington Rangeland Committee
Lovern Payton	
Gary Warnecke	
Henry A. Burt	
Gary E. Johnser	
Jack A. Aubrey, Jr.	
Marcie Jo Oppenheimer	
John A. Sharp	
Margie Sharp	
Melanie McFarland	U. S. Forest Service - Lassen NF
No Name No Name	
Terry Braden	
Steve Blankinship	
Dan Peer	
Cherylene J. Engle	
Gary Van Scotter	
Brad Hollenbeck	
Mike Bailey	
Ronald S. Yockim	Grant and Harney County Courts
Bonnie Lawrence	Okanogan Resource Council

Appendix F

Response to Public Comment

APPENDIX F - RESPONSE TO PUBLIC COMMENT

A. Summary of Public Comments

A notice of availability for the Environmental Assessment (EA) and proposed Finding of No Significant Impact (FONSI) was published in the *Federal Register* March 25, 1994 (58 FR 14356), with a 45-day public comment period scheduled to close May 9, 1994. A notice published May 4, 1994 (85 FR 23049), extended the public comment period for two weeks, until May 23, 1994.

The Forest Service (FS) and the Bureau of Land Management (BLM) received approximately 500 written comments. Over 90 percent of these were from within the geographic range of the proposed action (Idaho, California, Oregon, and Washington). Over half of the comments were from Idaho alone. The remaining letters came from areas outside the range of the proposed action, including the District of Columbia, Pennsylvania, Alaska, Virginia, Minnesota, Arizona, Colorado, Montana, Nevada, Ohio, and Alabama. Commentors included individuals as well as representatives of national and local interest groups, other Federal agencies, State, local, and Tribal governments, and the academic community. The length of written comments received ranged from several sentences to over a hundred pages.

Comments reflected a wide range of positions from recommendations to take no action (Alternative 1) to recommendations to take greater protective measures than proposed in any of the five alternatives. Some felt the standards and guidelines (S&Gs) were too restrictive, while others felt they were not restrictive enough. Many commentors questioned the interim widths for Riparian Habitat Conservation Areas (RHCAs); some felt that they were arbitrary and too wide, and others felt the RHCAs should be wider. Some commentors proposed strategies for management of anadromous fish habitat other than the alternatives considered in the EA. The Agencies reviewed these proposals, and though some were quite detailed, none adequately addressed the purpose and need of the interim direction or adequately responded to the issues identified in the EA (pp. 6-11, 21-22).

The limited scope of the proposal and alternatives concerned some, who noted that the EA does not address other causes of fish decline (dams and excessive fish harvesting, for example); focuses only on freshwater (and not marine or estuarine) habitat; focuses only on anadromous fish; applies only to lands administered by the FS and BLM; and is limited to an 18-month time period. Some commentors expressed skepticism that the interim direction would be applied for only 18 months. Many commentors felt the geographic range of the proposal should be extended to

include the range of the bull trout (which extends into parts of Montana). Some suggested extending the geographic range of the proposal to include Alaska. Others wanted all watersheds to be included. Many of the comments were more applicable to the longer-term strategies that will be analyzed in geographically-specific environmental analyses for long-term management. Accordingly, those comments will be forwarded to the appropriate interdisciplinary teams working on the environmental analyses for long-term management.

Native Americans described restoration of salmon populations as a significant benefit to Tribal social and economic conditions, but expressed concern about access to Tribal use areas and consideration given to inherent treaty interests and treaty-reserved rights.

Many fisheries and conservation groups commented on the social and economic impact of the decline of anadromous fish. Other commentors expressed concerns about the costs associated with adopting PACFISH and impacts to local economies. Others expressed objection simply because adoption would impose more Federal regulation.

Additional concerns included potential adverse impacts to the grazing, timber, mining, and associated service industries; whether the measures proposed in the preferred alternative would be adequate to restore habitat; whether restoration of habitat would affect anadromous fish populations; and whether an environmental impact statement (EIS) was required instead of an EA.

This appendix contains a distillation of the concerns identified by the commentors and the Agencies' response to these concerns. In addition, this appendix documents where clarifications and pertinent additional information were added to the EA in response to public comments.

B. Response to public comments on PACFISH interim direction

Concern 1

Whether interim direction is the appropriate management action

Response:

The need for immediate action has been made clear by the rapidly declining status of anadromous fish stocks; the contributing role of degraded habitat condition in these declines; and the poor habitat conditions on Agency-administered lands (EA pp. 8-11).

The Agencies are proposing the interim direction while geographically-specific environmental analyses are being developed for long-term management of anadromous fish-producing watersheds. The analyses for long-term management are underway, but these will not be completed for 18 months. While these analyses are being prepared, the Agencies should take no actions which would have an adverse environmental impact or limit the choice among reasonable alternatives for the long-term management, as directed by the implementing regulations promulgated under the National Environmental Policy Act (NEPA).

The Agencies are attempting to facilitate their compliance with the Endangered Species Act of 1973 (ESA) and foster a more consistent and efficient project-level ESA consultation process. In developing the interim direction, the Agencies are working to maintain stocks of anadromous fish, while giving consideration to the ability of national forests and BLM districts to provide goods and services. The long-term provision of goods and services from Agency-administered lands will depend in part on avoiding the need for further listings of anadromous fish under the ESA.

1a: The Agencies have the necessary authority now to do the job if they would follow existing regulations.

Response:

The proposed interim direction is consistent with existing regulation and seeks to provide a consistent approach across Agency-administered lands as part of a multi-step planning process. Existing goals, objectives, standards, and guidelines for the 15 national forests and 7 BLM districts are not all consistent or detailed enough to address the purpose of the proposed action. Each of these national forests and districts could individually develop standards and guidelines for management of anadromous fish-producing watersheds (and conduct the requisite NEPA analysis), but this would be a burdensome and redundant effort, and would not insure a consistent approach. The interim direction will bridge the time gap between the existing forest plans and LUPs and the development of long-term management strategies that are now underway.

The proposed interim direction will also foster project decisions that meet the requirements of the ESA. The completed consultation with the Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS) on the programmatic interim direction will facilitate site-specific, project-level consultations; the standards and guidelines of the interim direction will insure that those measures generally determined necessary for compliance with the ESA will be incorporated during initial project design, rather than awaiting results of project consultation. This will result in a more efficient and effective project consultation process.

1b: The Agencies do not have adequate staffing and funding to conduct the necessary actions, such as Watershed Analysis, monitoring, and restoration, to implement interim direction.

Response:

Implementation of this strategy will not require significant additional staffing or funding on the interim basis. The Agencies will need to shift some existing funds and staff to meet short-term requirements. The Agencies have recognized this requirement and feel that interim direction is the appropriate management action. The long-term management may require significant additional funding or re-allocation of staff and funding. If so, these needs will be identified in the geographically-specific environmental analyses and associated decision documents.

1c: The FS cannot adopt the proposed interim direction without amending existing Regional Guides.

Response:

Based upon public comments and FS review of existing regional direction, the FS has determined that the Regional Guides should be amended pursuant to 36 CFR 219.10(f). Thus, the proposed interim management direction would amend the Regional Guides for the affected Regions (Northern, Intermountain, Pacific Southwest, and Pacific Northwest Regions) and the forest plans for the 15 affected national forests. Implementation procedures for the proposed interim direction will be discussed more fully in the Decision Notice/Decision Record.

1d: The BLM cannot adopt the proposed interim direction without amending existing Land Use Plans (LUPs).

Response:

The proposed interim direction would not amend the existing LUPs. The Biological Assessment for the EA is incorrect on this point: adoption of the proposed interim direction would amend FS forest plans, but not BLM LUPs. The guidance in the existing LUPs in the geographic scope of the proposed action does not need to be changed, but instead requires additional, more specific direction to assist managers in achieving the goals of the existing LUPs.

Under the provisions of regulations developed pursuant to the Federal Land Policy Management Act, BLM will incorporate the proposed interim direction following a review of the conformance of the action with existing LUPs. Following a decision on the proposed interim direction, the BLM Director would issue instruction to State Directors to review the conformance of the interim direction with existing LUPs and, if in conformance, adopt the interim direction into all proposed and new projects and activities, and certain ongoing projects and activities.

If the interim direction were found to be not in conformance with existing LUPs, BLM would seek to amend or revise the LUP so that the interim direction would be in conformance with the LUP. Until the LUP were to be amended or revised, BLM would use the existing LUP direction, or would attempt to implement the management direction for certain ongoing projects and activities through negotiation with the use authorization holders (e.g., grazing permittees, right-of-way holders, recreation permit holders), or would seek other remedy within the terms of the existing authorization, including modifying, suspending, or cancelling authorization. However, preliminary review of existing LUPs has indicated that the interim direction would be found to be in conformance and therefore could be adopted directly. Implementation procedures will be discussed more fully in the Decision Notice/Decision Record.

Concern 2

Whether an EA is adequate for the proposed interim direction

Response:

An EA is adequate for the proposed interim direction because the nature of the proposed action is to maintain the environmental status quo. That is, the interim direction would restrict disruption of natural processes and avoid degradation of the physical environment. The proposed interim direction does not authorize any ground-disturbing activities, and in no way obviates the need for site-specific, project-level NEPA analysis.

The EA meets the twin aims of NEPA, informed decisionmaking and disclosure of potential environmental impacts. As noted in the NEPA regulations, 40 CFR Sec. 1500.1(b), (c), the purpose is not to generate paperwork or create encyclopedic documents. NEPA documents are to concentrate on the issues that are truly important to the action rather than amassing detail. An environmental assessment is to be a concise document, 40 CFR Sec. 1508.9. The detail required in disclosing potential environmental effects depends upon the nature and scope of the proposed action. This EA was prepared for temporary, programmatic measures to retain the environmental status quo while the long-term decisionmaking process (including preparation of additional environmental analyses) underway is completed. The intent of the proposed action is to prevent adverse environmental change. The thorough discussion of potential environmental effects arising from the programmatic decision considered in this EA is adequate.

2a: An EIS should have been prepared for interim direction because it is a highly controversial, major Federal action which would significantly affect the human environment.

Response:

The proposed FONSI, which was made available for public comment in March 1994, presented the reasons why this interim direction, through the use of goals, objectives, standards and guidelines, would not have a significant effect on the human environment. NEPA regulations provide for the preparation of an EA under certain circumstances. An EA is a concise public document which serves to:

--briefly provide evidence of analysis sufficient for determining whether to prepare an EIS or a FONSI, and

--facilitate preparation of an EIS when one is needed, or aid Agency compliance with NEPA when no EIS is needed.

The standard for determining whether an EIS is needed is the significance of the environmental impacts of the action, 40 CFR 1508.27.

As was discussed in the proposed FONSI, the proposed interim direction would not have a significant impact because it is limited both in scope and time. The proposed interim direction does not affect all projects throughout entire planning areas, but instead provides standards and guidelines for certain projects on certain lands. The proposed interim direction will remain in effect for only 18 months until the geographically-specific environmental analyses for long-term management are prepared.

As was discussed in the proposed FONSI, the proposed interim direction does not involve effects on the quality of the human environment that are likely to be highly controversial. Controversy in this context refers to substantial dispute as to the size, nature, or environmental effect of the proposed action, rather than to opposition to the adoption of the proposed action. In the preparation of the EA, the Agencies examined all relevant information to determine the short-term and long-term effects that would be expected to result from the proposed interim direction. Because the interim period is limited to 18 months, there will be little impact on the affected environment; the goal of the proposed action is to avoid degradation of the physical environment during the interim period. Though the proposed interim direction is anticipated to cause a decrease in resource outputs of some areas in the short-term, resource output levels projected in forest plans and LUPs may still be attainable over the long-term.

2b: An EIS should have been prepared for interim direction because the action is programmatic rather than site-specific.

Programmatic decisions do not necessarily require an EIS. The interim direction is programmatic in that the proposed action does not make site-specific decisions or commitment of resources that result in environmental effects. A programmatic NEPA document may be prepared as part of a large-scale, multi-step process to address actions which share common goals and objectives and/or share a common timing or geography. Programmatic documents, such as this EA, are followed by additional NEPA analyses for site-specific projects within the broader geographic area. This planning concept, referred to as tiering, is provided for in the NEPA regulations and FS NEPA Procedures FSM 1950.3, paragraph 4; FSH 1909.15 Chapter 42.1.

The programmatic nature of the proposed interim direction limits the level of detail that must be disclosed at this level of decisionmaking. As noted above, site-specific effects will be disclosed in environmental analyses prior to any decision at the project level. The proposed interim direction would not involve any resource or ground-disturbing action, but instead would guide future decisionmaking by providing direction for additional resource protection. Further mitigation measures might be necessary for some site-specific proposals; this would be determined by project level environmental analyses. The proposed interim direction does not propose, authorize, fund, or carry-out any site-specific project decisions. The proposed interim direction would maintain the environmental status quo. It would therefore be premature and speculative to assess possible site-specific impacts in this programmatic NEPA document.

2c: An EIS should have been prepared for interim direction because the action would constitute a significant amendment of forest plans.

Under the National Forest Management Act (NFMA) and the NFMA regulations, a significant amendment of a forest plan requires the preparation of an EIS. However, an amendment that does not result in a significant change in a forest plan only requires public notice and appropriate NEPA compliance. As was discussed in the proposed FONSI, an EA constitutes appropriate NEPA compliance for the proposed interim direction.

The proposed interim direction would not result in a significant change in the 15 forest plans because: (1) it is limited in time and will only be in place until the current analysis of a longer term strategy is completed; (2) the size of the area affected is very small when compared to the overall planning area because the interim strategy applies only to projects within RHCAs or projects outside the RHCAs that would degrade RHCA condition; (3) it will not alter the long-term relationship between the levels of goods and services in the planning area because it would only apply to proposed or new projects and activities and ongoing projects and activities that pose

an unacceptable risk until a longer-term strategy is developed and examined in an EIS within 18 months; (4) any short term reductions in outputs do not foreclose opportunities to achieve such outputs in later years; (5) it only applies to site-specific areas where selected projects are occurring or are scheduled to occur and does not alter the management framework for the vast majority of lands within the planning area; (6) it is merely a temporary attempt to preserve the environmental status quo, thereby maintaining management options while a longer-term policy can be evaluated; and (7) by taking the active step of adopting interim guidelines pending the development of longer-term options, the Forest Service is better able to achieve its goals of managing the national forests for sustainable multiple uses, and to avoid drastic emergency measures in the future.

The Decision Notice/Decision Record will more fully discuss the significance under NFMA of the amendments to forest plans.

2d: There should have been a formal public scoping process, and other agencies and/or groups should have been involved in the preparation of the EA.

Response:

Although a public scoping process is not required for actions which do not have a significant impact on the human environment, the Agencies held various meetings and briefings with members of Congress, other Federal and State agencies, Tribal governments, and a variety of organizations and individuals (EA, Appendix E). This public involvement is consistent with guidance issued by the Council on Environmental Quality (CEQ) for proposed actions that would not have a significant impact on the human environment. Appendix E of the EA identifies the briefings held and letters received prior to completion of the revised EA. Consultation under Section 7 of the ESA has been conducted with FWS and NMFS.

Concern 3

Whether the alternatives were addressed adequately

3a: Alternatives were not given equal treatment.

Response:

As detailed in the EA (pp. 28-30), each of the five alternatives considered in detail was described by the same components:

- Riparian goals and objectives.
- Special standards and guidelines.
- Treatment of riparian areas.
- Special procedures.
- Management actions affected.

These components are summarized in the EA for comparison of the alternatives (Table 1, pp. 31-32). The environmental consequences of each alternative are analyzed in the EA (pp. 43-71), detailing consequences for the physical, biological, and human environment. The consistent description of alternatives and analysis of consequences provides a sufficient basis for a reasoned choice among alternatives.

3b: Alternative 4 should not have been identified as the preferred alternative.

Response:

An alternative is identified in the EA as the Agencies' preferred alternative to help focus public comments and Agency consultations. The identification of a preferred alternative in the EA does not constrain the selection of an alternative. The selection of an alternative and the rationale for selection will be discussed in the Decision Notice/Decision Record. For this selection, the alternatives will be evaluated based, in part, on meeting the stated purpose of the interim direction within the context of the five issues identified in the EA (pp. 21-22):

- (1) Maintaining stocks of anadromous fish.
- (2) Providing management direction to comply with consultation required by the ESA.
- (3) Considering the ability of national forests and BLM districts to provide traditional amounts and kinds of goods and services.
- (4) Integrating proposed interim direction for management of anadromous fish habitat with other planning efforts.
- (5) Integrating new scientific knowledge into the management of anadromous fish.

3c: The range of alternatives for interim direction is too narrow.

Response:

The EA considered five alternatives in detail, including a no-action alternative. An additional 10 alternatives were considered but eliminated from detailed study. The range of alternatives analyzed in the EA was directly related to the scope of the proposed action. The range of alternatives that must be considered decreases as the environmental impact of its proposed action becomes less substantial. The scope of the proposed action, an interim strategy for managing anadromous fish-producing watersheds, does not involve adverse environmental effects or an irretrievable commitment of resources. The Agencies have focused their analysis of possible alternatives on a manageable but broad range of alternatives, making the best use of the Agencies' limited resources. Moreover, the Agencies' ability to accomplish the purpose and need of the interim strategy would not be enhanced by the addition of further alternatives, particularly those that are infeasible under federal environmental protection laws (e.g., ESA and 36 CFR 219.19).

The EA set forth alternatives sufficient to permit a reasoned choice. The Agencies are not required to examine alternatives whose adoption is remote or speculative, nor are they required to analyze alternatives that would not achieve the purpose of the proposed action. The discussion of the five alternatives in the EA met NEPA's twin aims of informed decisionmaking and disclosure of environmental effects. The EA considered a broad range of approaches to interim management of anadromous fish-producing watersheds.

The range of alternatives considered in this EA for interim direction will not constrain the range of alternatives that will be considered in the geographically-specific environmental analyses for long-term management. Those analyses will consider a broad range of alternatives for management of anadromous fish-producing watersheds and will be developed with public participation and early opportunities for public comment. These alternatives may include some of the interim direction alternatives, including those considered but eliminated from detailed study.

Concern 4

Whether the proposed interim direction addresses the true causes of declines of anadromous fish

Response:

The proposed interim direction addresses anadromous fish habitat on Agency-administered lands. The EA acknowledges there are numerous other factors, both biological and physical, which are contributing to the decline of Pacific salmon, steelhead, and sea-run cutthroat trout. Most, if not all, of the observed declines are

due to a combination of freshwater and ocean conditions and management activities. Nonetheless, all anadromous fish require freshwater habitat to complete their life cycles. Even where non-habitat factors contribute to decline, the highest egg-to-smolt survival occurs in watersheds with the best habitat (Chapman and Witty 1993). As discussed in the EA, research has indicated that land management activities can degrade anadromous fish habitat. The EA has been modified to include additional discussion of the impacts of land management activities on anadromous fish habitat.

The Agencies are required by law and regulation to maintain freshwater anadromous habitat, regardless of which factor is determined to be the most limiting to fish production in a given situation. The Forest Service is required to manage freshwater habitat on national forests to maintain viable populations of anadromous fish and other native and desirable non-native species. The BLM is required to protect the quality of the water resources of lands under its administration. Relevant to all Federal agencies is the ESA, as amended, which: (1) identifies the responsibilities of Federal agencies in the recovery and conservation of the four anadromous fish stocks that are currently listed as threatened or endangered species within the geographic range of the interim direction, and (2) prohibits Federal actions which might contribute to the potential listing of the candidate or sensitive listed species as threatened.

The Agencies cannot, during the interim period alone, restore habitat necessary for the recovery of at-risk anadromous stocks. Furthermore, in parts of the geographic range of interim management, the Agencies administer a highly fragmented land base that constitutes only a small portion of the regional anadromous fish habitat, and cannot, by themselves, restore habitat conditions necessary for recovery of at-risk anadromous stocks. The Agencies must act to arrest degradation and begin the restoration on Agency-administered lands, but the Agencies must also encourage others to join in partnerships to develop strategies across watersheds and river basins. These partners must include other Federal agencies, States, local governments, Tribal governments, and private landowners.

In October, 1994, the Departments of the Interior and Agriculture signed a Memorandum of Agreement with the White House Office on Environmental Policy and other federal government agencies to establish a framework to facilitate development of a coordinated and comprehensive salmon restoration plan. The agreement is intended to ensure that federal agencies work together in a coordinated manner that maximizes the use of federal expertise and resources, and eliminates unnecessary duplication and inefficiencies. The Agreement established a Task Force to address policy issues governing the restoration plan for salmon, and a regional Coordinating Committee to "assume primary responsibility for developing an implementing a coordinated Federal effort to conserve and restore Pacific salmon and their associated habitats." The interim strategy for anadromous fish habitat is consistent with the purposes of the October, 1994 Agreement.

Concern 5

Whether the scope and geographic range of the EA should be changed

5a: The geographic range of the interim direction should be expanded to include Alaska.

Response:

As discussed in the EA (pp. 5-6, 25), the option of applying interim direction to Agency-administered lands in Alaska was eliminated for the following reasons:

—Research in Alaska has not identified declines of anadromous fish stocks and degradation of habitat conditions comparable to those in the western contiguous United States.

—The Fiscal Year 1994 Interior and Related Agencies Appropriation Act prohibits the application of PACFISH standards and guidelines to Agency-administered lands in Alaska during fiscal year 1994.

The Agencies will conduct stream studies and will review land management activities to evaluate the effectiveness of current fish habitat protection measures and needs for additional protection of resources on Agency-administered lands in Alaska.

5b: The scope of the interim direction should be expanded to include other species, such as bull trout and other resident fish.

Response:

Though the interim direction is focused on anadromous fish, it will also benefit resident fish, as well as other aquatic and riparian-dependent terrestrial species. The Riparian Goals of the interim direction have the underlying principle of maintaining or restoring aquatic and riparian ecosystem health and function, which will promote conservation of all components of the aquatic community within the geographic range of the interim direction.

As discussed in the EA (pp. 25-26), an option was considered that would apply interim direction to watersheds beyond the range of anadromous fish, but where there is habitat important to at-risk resident fish species. The option was eliminated from detailed study because it is beyond the scope of the stated purpose and need of interim direction, and because independent initiatives to address resident fish habitat management (such as habitat conservation agreements in Idaho and Montana) have already begun. The geographically-specific environmental analyses for long-term management for the Eastside Ecosystem Management Project and the Upper

Columbia River Basin Project will consider the management of habitat for resident fish as well as other species.

5c: The interim direction is not ecosystem-based, because it deals only with riparian management in watersheds containing anadromous fish.

Response:

The primary purpose of the proposed interim direction is to arrest the degradation and begin the restoration of aquatic ecosystems in anadromous watersheds. The interim direction would reach well beyond the stream channel to provide proper functioning of aquatic ecosystems. Interim RHCAs include not only the immediate riparian zone, but extend to the 100-year floodplain on all permanently-flowing streams and to the headwaters on all intermittent streams, and incorporate all wetlands and landslide-prone areas. The interim direction also proposes a landscape-scale network of Key Watersheds. All watersheds in which NMFS has designated critical habitat for anadromous fish will be treated as Key Watersheds for the interim period. These components of the interim direction combine to create an aquatic-based management strategy that will initiate restoration of the structure, function, and processes of healthy aquatic ecosystems.

Concern 6

Whether other goals and objectives should have been used

Response:

The goals and objectives were selected because, for the interim period, they best address Agency intent to:

- minimize impacts to anadromous fish habitat;
- provide a consistent approach to the management of anadromous fish habitat;
and
- demonstrate the commitment of the Agencies to protecting anadromous fish.

Goals and objectives for long-term management of anadromous fish-producing watersheds will be developed in the geographically-specific environmental analyses.

6a: There should be goals for fish population numbers.

Response:

The focus of the proposed interim direction is habitat management, not fish population numbers. Important factors other than habitat affecting anadromous fish population numbers, such as hydro-power facility operations, fish harvest, and hatchery operations, are beyond the control of the Agencies. However, the Agencies are required by law and regulations to manage habitat within their jurisdictions. Thus, within the context of this proposed interim direction, it is appropriate for the Agencies to establish goals for habitat, which is under the control of the Agencies, rather than goals for fish population numbers, which are only partially under the control of the Agencies.

However, goals for fish population numbers are being established through other efforts. For example, under the auspices of the Northwest Power Planning Council, fish population goals and objectives were developed for 32 sub-basins in the Columbia River Basin (USDA 1993). Population goals and objectives are also being established collaboratively for the Snake River Basin, where NMFS is coordinating salmon recovery (NMFS 1993). In both instances, population goals are established across jurisdictions and not on the basis of a single production factor, such as freshwater habitat.

6b: The Riparian Management Objectives (RMOs) are not adequate for the purpose and need.

Response:

The interim RMOs make an essential contribution to meeting the purpose of the proposed action, which is to develop a consistent approach for arresting the degradation and beginning the restoration of anadromous fish habitat while long-term management strategies are being developed. Interim objectives are needed until Watershed Analysis provides data on which more specific objectives can be based.

The interim RMOs were selected because they are reasonable indicators of ecosystem health, are easily quantified, and are subject to accurate and repeatable measurements. Protocols for monitoring these variables are found in the Section 7 Monitoring Protocol Procedures for the Snake River Basin Forests (USDA 1994). The interim RMOs are broad averages developed from data collected in over 100 watersheds. It is recognized that aquatic systems are naturally dynamic and diverse. Therefore, the interim RMOs are not intended to represent fixed threshold levels of habitat components, but are criteria against which managers can measure progress towards attainment of riparian goals. Measurable RMOs help prevent the decline in habitat condition that may occur without such a benchmark.

The interim RMOs provide an initial framework which can be tailored to watershed-specific conditions by Watershed Analysis. Additional or alternative RMOs may be selected based on local conditions following completion of Watershed Analysis and site-specific analysis. Finally, the geographically-specific environmental analyses for long-term management will address riparian objectives, which may include refinements of the interim RMOs, or development of additional or alternative riparian objectives.

6c: The riparian objective for water temperature is not adequate to protect Pacific anadromous fish.

Response:

Based on public comment, consultation with NMFS, and additional review of scientific literature, the interim RMO for water temperature has been changed to provide a more effective and detailed objective. The RMO now consists of a temperature objective for migration and rearing habitat, and a temperature objective for spawning habitat, and a clause identifying the objective of no measurable increase in maximum water temperature (EA, Appendix C, p. C-6). This latter clause is consistent with the purpose of the proposed interim direction, which is to arrest the degradation and begin the restoration of anadromous fish-producing watersheds, and is particularly relevant given pervasive water temperature problems throughout the geographic range of the proposed interim direction (USEPA 1992). This change does not alter the analysis of environmental effects. The temperature objective values were developed through consultation with NMFS and were based on review of current scientific literature (Brett 1971, McCollough 1993). The temperature values are below those demonstrated to result in direct mortality to anadromous fish, and were selected as necessary to maintain healthy anadromous fish populations capable of carrying out all life history requirements, including spawning (McCollough 1993). The temperature RMO, like all of the interim RMOs, provides broad values that may not be appropriate in all stream sections of all watersheds, but together with the other RMOs provides a picture of good habitat for managers to work toward during the interim direction period. This interim temperature RMO can be refined for local conditions through Watershed Analysis and site-specific analysis.

6d: There should be a riparian objective for sediment.

Response:

Good quality habitat for Pacific anadromous fish is in large part dependent upon the balance among delivery, storage, and transport of sediment in stream systems. Although several measures are possible for evaluating this balance, the interim RMOs best meet the criteria of being reasonable indicators of ecosystem health, are easily quantified, and are subject to accurate and repeatable measurements. Direct measures of sediment delivery to streams or stream substrate condition would not

provide effective interim RMOs, because they are naturally too variable both within watersheds and across the range of the interim direction (Reid 1993).

A synthesis of the interim RMOs for pool frequency, large woody debris, bank stability, and width/depth ratios is particularly useful in directing management activities to avoid sediment impacts to anadromous fish habitat. Pool frequency and width/depth ratios integrate the delivery of sediment with the capacity of the stream to store and transport sediment. Frequent pools and low width/depth ratios indicate that sediment delivery to the stream does not exceed storage and transport capacities, and thus, indicate that excessive sediment is not accumulating in the stream channel. Large woody debris helps create pools, and thus, more pieces of debris indicate a greater capacity of the stream to store sediment. Highly stable banks indicate a reduced potential for erosion and subsequent sediment delivery to the channel.

RMOs are only one mechanism in the interim direction to maintain and restore the sediment balance in stream systems. Interim standards and guidelines for timber management, grazing, and road management were designed to minimize sediment delivery to streams. Furthermore, the riparian goal addressing sediment instructs management to maintain or restore stream channel integrity, channel processes, and the sediment regime (including elements of timing, volume, and character of sediment input and transport under which the riparian and aquatic ecosystems developed).

It may be appropriate in some watersheds to develop riparian objectives directly related to sediment delivery to streams or stream substrate condition. In such situations, changes or additions to the interim RMOs would be made through Watershed Analysis.

6e: There should be a riparian objective for dissolved oxygen.

Response:

The interim RMO for water temperature should facilitate dissolved oxygen concentrations meet requirements of anadromous fish. Some management activities may increase biological or chemical oxygen demand. However these conditions are generally associated with water temperature increases, which are addressed by the interim RMOs. Should it be determined that dissolved oxygen concentrations are inadequately addressed by the temperature RMO, a watershed-specific RMO for dissolved oxygen would be developed through Watershed Analysis.

Concern 7

Whether the Riparian Habitat Conservation Areas (RHCAs) and standards and guidelines are adequate for the purpose and need

Response:

Interim minimum widths for RHCAs and the standards and guidelines were developed by an interdisciplinary team and are based on the best available science to meet the purpose and need of interim direction. Most of the standards and guidelines direct management activities so as not to retard or prevent attainment of the RMOs and to avoid adverse effects to listed species.

7a: Interim RHCAs should apply to all stream sections in a watershed.

Response:

The RHCAs do apply to all streams within watersheds (approximately 20-200 square miles) containing anadromous fish. For example, if only the lower mile of a stream or river contains anadromous fish, then RHCAs would be applied to all tributary streams within that watershed. Within anadromous-fish producing watersheds, tributary streams which do not themselves support anadromous fish contribute to the functionality of downstream sections. Proper function in downstream sections is in part dependent upon delivery from upstream sections of water, nutrients, sediment, and woody debris. To halt the degradation and begin the restoration of anadromous fish habitat, it is necessary to guide land management activities in upstream areas to avoid altering the natural delivery pattern of these materials. Therefore, it is appropriate that riparian-dependent resources receive primary emphasis during the interim direction period in RHCAs throughout the watershed.

7b: The effectiveness of the interim RHCA widths has not been proven.

Response:

Interim RHCA widths have been designed to protect aquatic ecosystems against unforeseen events and to incorporate scientific uncertainties. The Agencies are attempting to make every effort to see that management activities on Agency-administered lands over the next 18 months do not result in further endangerment of at-risk fish stocks, or otherwise preclude options that will be considered in the geographically-specific environmental analyses for long-term management. The interim RHCA widths are consistent with this purpose. The EA has been modified to provide additional discussion on the factors considered in the determination of the interim RHCA widths (EA, Appendix C, pp. C-6-9).

Riparian areas are particularly dynamic portions of the landscape, subject to disturbances characteristic of uplands, such as fire and windthrow, and disturbances unique to streams, such as lateral channel erosion, deposition by floods, and debris flows (Naiman et al. 1992, Gregory et al. 1991). To avoid foreclosing the development of alternatives for longer-term management, the interim direction provides measures that minimize disturbances to aquatic ecosystems from management activities and do not exacerbate the effects of natural disturbances. The interim direction provides a level of riparian protection that allows for scientific uncertainties and information gaps until Watershed Analysis can provide a basis for watershed-specific RHCA widths.

Some commentors argued that the interim RHCA widths are arbitrary and too wide and cited scientific studies that they feel support their argument. These studies were considered in the development of the proposed interim direction. Many of these studies are specifically cited in the EA. Most of the cited studies suggest that particular individual stream functions (such as water temperature as influenced by stream shading) could be largely protected with narrower RHCAs. Although RHCAs narrower than the interim widths might be adequate to protect certain individual stream functions, the EA states that interim widths need to be sufficient to protect a variety of stream functions. Specifically, the EA identifies that interim widths adequate to protect streams from non-channelized sediment inputs should be sufficient to protect other stream functions (EA, Appendix C, p. C-7).

7c: Designation of RHCAs must be site-specific according to NFMA.

Response:

Interim RHCAs, standards and guidelines, and the Watershed Analysis process for modifying RHCA widths are consistent with NFMA direction which stipulates that streams be protected from degradation. Regulations to implement the NFMA state that special attention shall be given to land and vegetation for approximately 100 feet from edges of all water bodies, and that this area shall at least correspond to the recognizable area dominated by riparian vegetation. The regulations go on to state that site-specific conditions, as well as management objectives and other factors, shall be considered in determining what management practices may be performed within these areas, but that no management practices that cause detrimental temperature increases, sedimentation, or other degradation are to be permitted.

NFMA does not require site-specific RHCAs or site-specific plan amendments of any kind. With regard to amendments, NFMA, 16 U.S.C. Sec. 1604(f)(4) merely states that forest plans shall "be amended in any manner whatsoever after final adoption after public notice, and, if such amendment would result in a significant change in such plan, in accordance with the provisions of subsections (e) and (f) of this section and public involvement comparable to that required by subsection (d) of this section." Other NFMA provisions require protection of water resources (Section 1604(g)(3)(E)).

However, the NFMA does not require plan amendments or standards and guidelines which are site-specific.

The interim strategy includes standards and guidelines (essentially mitigation measures to guide future decisions) to prevent adverse environmental effects. Additional site-specific mitigation measures may be developed during project-level analysis.

7d: The standards and guidelines and interim RHCAs should have been developed based on the Idaho Forest Practices Act and the Idaho draft Cumulative Watershed Effects (CWE) process.

Response:

The Idaho Forest Practices Act may not provide a level of fish habitat protection sufficient to meet the legal and regulatory obligations of the Agencies (Idaho Department of Lands 1990, Belt et al. 1992). For Class I streams (those used for domestic water supply or "important" for the spawning, rearing, or migration of fish), the protection zone is the area encompassed by a slope distance of 75 feet on either side of the ordinary high water marks. For Class II streams (headwater streams or minor drainages used by only a few, if any, fish for spawning or rearing), the protection zone is the area encompassed by a slope distance of 5 feet on either side of the ordinary high water marks. Based on the Idaho Forest Practices Act standards, many perennial and all intermittent streams identified for protection in the PACFISH interim direction would fall into the Class II category and receive only a 5-foot protection area. This level of protection would be inadequate where fish habitats are at risk of degradation or where habitats have already been degraded and need to be restored.

The draft CWE process establishes procedures for making watershed assessments and does not involve an analysis resulting in riparian protection standards, riparian conservation area delineation, or riparian management objectives. Thus, it does not serve the purpose and need of the interim direction. However, the CWE might be used to screen those management activities contributing to habitat degradation, and managers might utilize the CWE procedures as part of the Watershed Analysis and assessment of restoration needs.

7e: The standards and guidelines should prohibit new road construction in all inventoried roadless areas.

Response:

Programmatic decisions prohibiting all road-building in all roadless areas within the geographic scope of the proposed action would be beyond the scope of an

environmental assessment for interim direction on management of anadromous fish-producing watersheds. The issue of road construction in roadless areas will be considered in the geographically-specific environmental analyses for long-term management. The road management standards in the interim direction will maintain options for management of anadromous fish-producing watersheds during the interim direction period and are adequate to meet the purpose of the interim direction. Additionally, any project decisions that include road-building will be made only with the requisite NEPA analysis and, where appropriate, consultation under Section 7 of the ESA. FS NEPA procedures, FSH 1909.15; 20.6, require preparation of an EIS prior to development of roadless areas of 5000 acres or more.

7f: The standards and guidelines should prohibit all mining in RHCAs.

Response:

The Agencies' authority to prohibit mining is limited under existing laws and regulations. However, consistent with the Agencies' authorities, the standards and guidelines:

- prohibit sand and gravel extraction within RHCAs;
- prohibit surface occupancy in RHCAs for exploration and development of leasable minerals where contracts and leases do not already exist;
- require mining structures, support facilities and roads to be located outside of RHCAs; and
- prohibit placement of solid and sanitary waste facilities in RHCAs unless no other options exist, and the RMOs can be attained, and adverse effects to listed anadromous fish can be avoided. The standards and guidelines also include monitoring and reclamation requirements to assure that attainment of RMOs is not retarded, and that adverse effects on listed anadromous fish are avoided (EA, Appendix C, p. C-14).

7g: It is not clear which ongoing activities are subject to the standards and guidelines.

Response:

The standards and guidelines apply to ongoing activities that pose an unacceptable risk to anadromous fish. The definition of unacceptable risk has been clarified in the modified EA, based on public comment and consultation with NMFS (EA, Glossary-7). Also, the EA describes an approach to promote a consistent determination of unacceptable risk (EA, pp.18-19).

Concern 8

Whether procedures for Watershed Analysis and identification of Key Watersheds are adequately defined

Response:

Watershed analysis protocols, suitable for application to a broad range of ecosystem management issues, are being developed for the geographic area of the interim direction. As discussed in the EA, these protocols are being addressed by the Interagency Watershed Analysis Coordination Team in cooperation with the Eastside Ecosystem Management Project's Science Integration Team. Regionally specific procedures for Watershed Analysis will be developed compatible with guidelines in the *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl* (Northern Spotted Owl ROD). Other potentially relevant processes, such as the Idaho "Cumulative Watershed Effects" process and the Washington "Watershed Analysis" process, will be considered in the development of regionally-specific procedures. The modified EA also identifies that during the period of interim direction, four or five prototype Watershed Analyses will be conducted in the Snake River Basin (EA, Appendix C, p. C-20).

The EA identifies general criteria for identification of Key Watersheds (EA, p. 17, Appendix C, p. C-19-21). More specific criteria and data with which to identify a network of Key Watersheds will be primary products of the scientific assessment being prepared for the Columbia River Basin. Designation of Key Watersheds will be addressed by geographically-specific environmental analyses for long-term management. Until a network of Key Watersheds is designated, all watersheds containing critical habitat for listed anadromous fish or in which NMFS has designated critical habitat for listed anadromous stocks will be treated as Key Watersheds, as described in the proposed interim direction (EA, p. 17, Appendix C, p. C-19).

Concern 9

Whether the effects analyses are adequate to support the proposed interim direction

9a: The analysis of environmental, economic, and social effects is incomplete, inadequately quantified, and/or is not site-specific.

Response:

According to NEPA regulations, an EA is to be a concise public document that shall include brief discussions of the environmental impacts of the proposed action and alternatives. This EA has been completed in accordance with NEPA to determine whether the proposed interim direction would significantly affect the human

environment while the geographically-specific environmental analyses for long-term management are being developed. The effects analyses in the EA are necessarily general because of the broad scope and programmatic nature of the EA. The effects analyses are sufficient to allow the Agencies to make a reasoned choice among alternatives for interim direction.

The analysis of the effects of adopting the proposed interim direction on timber, range, and recreation programs was based on the best available information provided by the affected national forests and BLM districts. The estimates are based on the proposed RHCA widths and on the actual resource uses versus expected uses in those RHCAs, with and without the proposed interim direction. The analysis of a proposed action was of the incremental change expected if the action were adopted, compared to what would happen if the action were not adopted.

As discussed in the EA (pp. 38-39), the Agencies have considered actions which may have a cumulative or synergistic environmental effect. Based on this analysis, the Agencies have concluded that there would be limited, if any, adverse cumulative effects resulting from the adoption of the proposed interim direction because of the nature of the action and its limited time and applicability.

The geographically-specific environmental analyses for long-term management will comprehensively evaluate and document long-term environmental, economic, and social effects. Project-level analyses will evaluate site-specific effects, including quantitative measurements of environmental and economic effects.

NEPA requires the Agencies to be informed of and disclose the potential consequences of the interim strategy with regard to the environment. The Agencies are not required to assess every impact or effect of the proposed action, but only the effect or impact on the environment. NEPA does not contemplate detailed monetary cost-benefit analysis.

"Human environment" in the NEPA context is interpreted comprehensively as the natural and physical environment and the relationship of people with the environment. Thus, economic or social effects are not intended by themselves to require preparation of an environmental impact statement. The EA disclosed the potential socio-economic effects that were interrelated to the natural and environmental effects of the proposed action, including the potential impact upon estimated timber and grazing production. The level of socio-economic analysis in the EA provided a reasoned consideration of the relative differences between alternatives by the public and the decisionmaker.

9b: The impacts on timber programs are understated or not fully disclosed, and should include the allowable sale quantity (ASQ) of timber that will be foregone.

Response:

The current actual operating annual ASQ for the field units within the geographic scope of the EA is about 740 million board-feet (mmbf), or about 1,110 mmbf for an 18-month period. A 58 mmbf reduction (Alternative 4) would be about 5 percent of this total. The timber harvest reductions were calculated as follows for Alternatives 1-5, respectively:

- (1) No change.
- (2) 75 percent of the reductions in Alternative 3 (27 mmbf).
- (3) All harvest from currently proposed sales over the next 18 months (36 mmbf).
- (4) All harvest from currently proposed sales plus 50 percent of harvest from currently active sales over the next 18 months (58 mmbf).
- (5) All harvest from both currently proposed and currently active sales over the next 18 months (81 mmbf).

There was an error in the timber harvest reductions shown in Table 3 for Alternatives 2, 3, and 5 because of a mistake in the Nez Perce figures reported in the process paper. These totals, along with the related values cited in the text, have been corrected in the modified EA.

As recognized by several courts, the NFMA's ASQ found in forest plans is simply the maximum amount of timber or "ceiling" on the level of timber that could possibly be sold over a 10-year period, taking into account other multiple-use resources and forest plan standards and guidelines. Forest plan standards and guidelines take precedence over program outputs if there is a conflict between them. The Forest Service is not mandated by law to offer any particular level of timber for sale. Project decisions must be consistent with forest plan standards and guidelines as required by NFMA and Forest Service policy (Chief's Letter of February 23, 1990).

Since NFMA and FLPMA do not mandate the production of any particular level of timber, there is no commitment or guarantee in forest plans or LUPs to sell any specified volume of timber. The ASQ level in a forest plan is merely part of a 10-year management framework which assumes that many adjustments will be made over the planning period. Thus, without any certain level of timber guaranteed in the existing plans, any change resulting from the interim strategy is more apparent than real. While it is appropriate to estimate the possible consequences of the interim strategy in

the EA, the volume of timber that would have been sold in the absence of the interim strategy, cannot be predicted with certainty. The effect of the interim strategy on timber volume offered therefore can only be approximately estimated, since there is no guaranteed level to be offered in the existing forest plans, regional guides, or LUPs. (See, Preamble to Advanced Notice of Proposed Rulemaking, 36 CFR Part 219, 56 Fed. Reg. 6519-20 February 15, 1991).

The ASQ is calculated as an annual average maximum allowable sale level over a 10-year period for an entire national forest or BLM district, not by watershed. Because the duration of the proposed interim direction is only 18 months, expected changes in ASQ for the national forests and BLM districts were not used in the EA. Rather, information from the field units on expected timber sale cancellations or modifications within the 18-month period was used. For this 18-month period, it is expected that, in most field units, sales which would have been located within RHCAs could be replaced by other sales outside the RHCAs.

An error was made in the interpretation of the timber prices for the 1995 Resources Program and Assessment (RPA) update (Haynes 1993, EA, p. 67). The corrected version of the prices is taken from the 1995 RPA update. The prices used are close to recent "cut" prices for timber in the Northern Region (northern Idaho and Montana); better reflect the timber revenue and associated payments to counties that will be foregone in the 18-month implementation period of proposed interim direction; and are not subject to a particular high or low in the timber price cycle. The timber values foregone have been corrected in the modified EA (p. 67).

Two additional discussions have been added to the modified EA: the potential cost to the Agencies of compensating timber purchasers for canceled contracts (EA, p. 67) and estimates of payments to counties (EA, pp. 66-67).

9c: The impacts on grazing programs are understated or inaccurate, and the economic analysis used for grazing is flawed.

Response:

The RPA values for grazing are close to the current grazing fees and are appropriate to use for this analysis. It was assumed for this analysis that no grazing allotment permits would require renewal during the 18-month period, that additional structures would be deferred, and that no existing structures would be removed.

There would be no changes to grazing under Alternatives 1-3, since grazing constitutes "ongoing" activity. Under Alternative 4, interim standards and guidelines would be applied to some ongoing activities (-42.1 thousand animal unit months (AUMs)), an overall 6 percent reduction in grazing within the anadromous watersheds. Under Alternative 5, interim standards and guidelines would be applied to all ongoing

activities plus an additional reduction in grazing caused by constraints in more of the uplands (-84.2 thousand AUMs). This increased constraint on uplands would be caused by the greater RHCA widths along intermittent streams.

NFMA and FLPMA do not mandate a particular level of livestock grazing. Issuance of livestock grazing permits is discretionary and does not create any right, title or interest in federal lands or resources. Thus, the projected grazing levels in the existing forest plans and LUPs are mere estimates based upon the best information available and professional judgment. It is appropriate to estimate the potential impacts of the interim strategy upon the projected level of livestock grazing. However, it is not certain what the level of grazing would be in the absence of the interim strategy, since there is no guaranteed level of grazing in the existing forest plans, regional guides, or LUPs. The impact of the interim strategy can only be estimated, since there is no guaranteed level of livestock grazing in the existing plans or regional guides.

9d: The impacts on employment are underestimated.

Response:

The employment response coefficients for timber and range include direct, indirect, and induced employment (EA, p. 69).

Timber employment response coefficients developed for the 1991 Forest Service Timber Sale Program Information Reporting System (TSPIRS) showed coefficients for national forests along the eastern edge of Oregon and Washington (within the scope of the proposed interim direction) that ranged from 8 to 10 jobs/mmbf. In addition, the timber employment response coefficient for the Clearwater National Forest plan, based on 1980 data, was 11.7 jobs/mmbf of softwood sawtimber harvest. The use of 10 jobs/mmbf as an indicator of the relative magnitude of the timber-related employment changes that may occur during the interim period is reasonable and supported by the above figures.

The range-related employment response coefficients (0.3 to 0.6 jobs per thousand AUMs) are for total jobs. These response coefficients were taken from forest planning documents completed during the 1980s and were generally for multi-county areas of influence around a national forest.

9e: Adoption of proposed interim direction would have a serious impact on local communities and economies.

Response:

Because the duration of the proposed interim direction is only 18 months, the overall economic effects of adoption of interim standards and guidelines would be marginal

and short-term. Adoption of interim direction may have some localized negative impacts on communities, particularly in the area of the Clearwater and Nez Perce National Forests in north-central Idaho, related to reductions in timber harvesting. The effects of adoption of the interim direction on grazing would be relatively minor: over the 18-month period, the reduction from total current grazing use within anadromous watersheds would be about 6 percent. This reduction would be spread relatively evenly across anadromous fish-producing watersheds on Agency-administered lands and would be a smaller percentage if expressed in terms of all grazing allotments, including those on non-anadromous watersheds.

Concern 10

Whether the long-term management strategies should consider other species besides anadromous fish

Response:

The scope, geographic range, and range of alternatives for long-term management will be determined with public participation and will not be constrained by the proposed interim direction. Notices of Intent (NOIs) to prepare an EIS for the Eastside Ecosystem Management Project (EEMP) for eastern Oregon and eastern Washington, and an EIS for the Upper Columbia River Basin Project (UCRBP), which includes Idaho, have been published. For portions of California outside the area implementing the Northern Spotted Owl ROD, a notice has been published requesting public comment on the development of a long-term management strategy for anadromous fish-producing watersheds. Copies of these notices are included with this document (EA, Appendix I). For the EEMP, the Agencies have already determined through the scoping process that the EIS will address a wide range of ecosystem management issues, well beyond the direct needs of anadromous fish. For the UCRBP, the Agencies are considering expanding the scope similarly, and will make this determination through the public scoping process.

Concern 11

Whether the proposed action violates the ESA by designating critical habitat

Response:

The proposed interim direction does not designate critical habitat for any listed species, nor does it contradict the critical habitat designated by NMFS on December 23, 1993. The Agencies will comply fully with the ESA and are committed to working within existing laws to avoid the need for future listings. For example, on January 25, 1994, the Agencies joined the National Park Service, FWS, and NMFS in signing an interagency Memorandum of Understanding (MOU) in which they pledge to coordinate

efforts on Federally-administered lands that will conserve species tending toward extinction. The MOU describes the protection and proper management of habitats as important tools in preventing listings under the ESA. The interagency MOU was executed to make the best effort to ensure Agencies comply with ESA Section 7(a) obligations that require all Federal agencies to manage lands and resources proactively within their jurisdictions to conserve rare species. Any adoption of the proposed interim direction will be made in accordance with the ESA, the MOU, and Agency laws and regulations.

Appendix G
Biological Evaluation

BIOLOGICAL EVALUATION
FOR THE

ENVIRONMENTAL ASSESSMENT FOR THE
INTERIM STRATEGIES FOR MANAGING ANADROMOUS
FISH-PRODUCING WATERSHEDS ON FEDERAL LANDS
IN EASTERN OREGON AND WASHINGTON, IDAHO,
AND PORTIONS OF CALIFORNIA

U.S.D.A. Forest Service and U.S.D.I. Bureau of Land Management

A. INTRODUCTION

This Biological Evaluation (BE) analyzes the potential effects, from a programmatic standpoint, of the alternatives considered and developed in the Environmental Assessment (EA) on species listed under the Endangered Species Act (ESA) and those species identified as sensitive by the U.S.D.A. Forest Service (FS) and U.S.D.I. Bureau of Land Management (BLM), (collectively referred to as Agencies.). The purpose of this evaluation is to determine if implementation of the alternatives considered and developed in the EA would result in a "may effect" or "no effect" to the species and/or critical habitat listed or proposed under the ESA; the evaluation will also determine if implementation of the alternatives considered and developed in the EA would result in a loss of viability of the sensitive species or move sensitive species toward federal listing under the ESA.

B. AREA COVERED BY THE EVALUATION

This evaluation will only address those species and their habitats known or suspected to be within the anadromous fish-producing watersheds on all or part of 15 National Forests and seven BLM Districts in the four states. Those administrative units are:

Bureau of Land Management

<u>State</u>	<u>BLM District</u>
California	Bakersfield and Ukiah
Idaho	Coeur d' Alene and Salmon
Oregon	Prineville and Vale
Washington	Spokane

Forest Service

<u>State</u>	<u>National Forest</u>
California	Lassen and Los Padres
Idaho	Bitterroot, Clearwater, Nez Perce, Boise, Challis, Payette, Salmon, Sawtooth, and Sawtooth National Recreation Area
Oregon	Malheur, Ochoco, Umatilla, Wallowa-Whitman, and Columbia Gorge National Scenic Area
Washington	Okanogan (area outside of spotted owl habitat)

For a more specific description of the areas covered refer to the EA.

C. SPECIES CONSIDERED IN THIS EVALUATION

((E)-endangered, (T)-threatened, (P)-proposed, (CH)-critical habitat)

Species listed under the ESA are: Snake River sockeye salmon (Oncorhynchus nerka) (E,CH), Snake River fall and spring/summer chinook salmon (O. tschawytscha) (T,CH), Sacramento River winter chinook salmon (O. tschawytscha) (T,CH), northern bald eagle (Haliaeetus leucocephalus) (T/E), California condor (Gymnogyps californianus) (E), American peregrine falcon (Falco peregrinus anatum) (E), grizzly bear (Ursus actos) (T), gray wolf (Canis lupus) (E), MacFarland's four-o'clock (Mirabilis macfarlanei) (E), California least tern (Sterna antillarum browni) (E), least Bell's vireo (Vireo bellii pusillus) (E,CH), western snowy plover (Charadrius alexandrinus nivosus) (T), tidewater goby (Eucyclogobius newberryi) (E), unarmored threespine stickleback (Gasterosteus acleatus williamsoni) (E), salt marsh bird's beak (Cordylanthus maritimus ssp. maritimus) (E), marsh sandwort (Arenaria paludicola) (E), Gambel's water crest (Rorippa gambellii) (E), delta smelt (Hypomesus transpacificus) (T), California freshwater shrimp (Syncaris pacifica) (E), valley elderberry longhorn beetle (Desmocerus californicus dimorphus) (T), loch lemond coyote-thistle (Eryngium constancei) (E), Burke's goldfields (Lasthenia burkei) (E), southwestern willow flycatcher (Empidonax traillii extimus) (P), California redlegged frog (Rana aurora draytonii) (P), arroyo southwestern toad (Bufo microscaphus californicus) (P), California seablite (Sueda californica) (P), Sacramento splittail (Pogonichthys macrolepidotus) (P), vernal pool fairy shrimp (Branchinecta lynchi) (P), vernal pool tadpole shrimp (Lepidurus packardii) (P), California linderiella (Linderiella occidentalis) (P), Hoover's spurge (Chamaesyce hooveri) (P), pilose Orcutt grass (Orcuttia pilosa) (P), slender Orcutt grass (O. tenuis) (P), and Greene's tuctoria (Tuctoria greenei) (P). (NMFS and FWS species lists)

For a list of sensitive species, designated by the Agencies, see the FS Land and Resource Management Plans (LRMPs) and BLM Land Use Plans (LUPs)(collectively Plans) for the administrative units listed above. The programmatic nature of this evaluation does not warrant the listing of those species here.

D. LIMITATIONS OF THIS EVALUATION

The BE process was designed to evaluate the potential effects of site-specific activities on listed and sensitive species and their habitats. The process does not lend itself well to assessing potential effects of a programmatic decision. Potential, site-specific effects of implementing any of the alternatives, on any given species or habitat, will be evaluated in a second level project analysis. Therefore, the discussions in this BE will be qualitative, not quantitative.

E. POTENTIAL EFFECTS OF THE ALTERNATIVES ON LISTED AND PROPOSED SPECIES AND CRITICAL HABITAT

(For a full description of the alternatives, see the EA.)

The proposed action is to implement direction, on an interim basis, through the amendment of existing Plans, that would establish interim Riparian Habitat Conservation Areas (RHCA) and standards and guidelines for managing resources within them. The RHCA by definition would be applied to that part of a watershed needed to maintain the hydrologic, geomorphic, and ecological process of riparian ecosystems.

Implementation of the No Action Alternative would continue the direction outlined in the existing Plans. On a project by project basis, the

implementation of the current direction has the potential to affect listed and proposed species and/or designated critical habitat. Therefore, the implementation of the No Action Alternative would constitute a "may affect" under the ESA. Implementation of the four Action Alternatives, on a project by project basis, could lead to potential effects to listed and proposed species and/or designated critical habitats. Therefore, the implementation of the Action Alternatives would constitute a "may affect" under the ESA.

The four Action Alternatives would have less of an impact than the No Action Alternative due to the more constraining nature of the proposed interim direction. Due to the interim nature of the RHCAs and a lack of site-specific information, the relative degree of potential effects from the Action Alternatives is assumed to be inversely related to the constraints that would result from the implementation of proposed standards and guidelines, and the actions those constraints are applied. Therefore, Alternative 5, being the most constraining and applying to all ongoing and proposed actions, would have the least risk, followed by Alternatives 3 and 4, with Alternative 2 having the most risk.

F. POTENTIAL EFFECTS OF THE ALTERNATIVES ON SENSITIVE SPECIES

As stated above the criterion for evaluating potential effects to sensitive species are:

1. Would implementation of the alternatives result in a loss of viability or distribution throughout the planning area of the sensitive species; or
2. Would implementation of the alternatives move sensitive species toward federal listing under the ESA.

An assumption made here is that all regulations, policies, and direction of the Agencies would be followed with the implementation of any alternative. Therefore, none of the alternatives, if fully implemented, would fail to meet the two criterion. However, impacts to sensitive species could occur, to some extent, with the implementation of the alternatives. As with the listed species, specific impacts to a given sensitive species cannot be determined due to the programmatic nature of the interim direction.

Relative to the No Action Alternative, the Action Alternatives, with more constraining interim direction, would have potentially less impacts to sensitive species. Among the Action Alternatives, Alternative 5, being the most constraining and applying to the most actions, would have the least risk to sensitive species, followed by Alternatives 3 and 4, with Alternative 2 having the most risk.

Frank Bird 2/29/94
Frank Bird Date
Fisheries Biologist
U.S.D.I. Bureau of Land Management
Salmon, Idaho

Rick Roberts 2-28-94
Rick Roberts Date
Wildlife Biologist
U.S.D.A. Forest Service
Portland, Oregon

Appendix H

Biological Assessment

BIOLOGICAL ASSESSMENT
FOR THE

ENVIRONMENTAL ASSESSMENT FOR THE
INTERIM STRATEGIES FOR MANAGING ANADROMOUS
FISH-PRODUCING WATERSHEDS ON FEDERAL LANDS
IN EASTERN OREGON AND WASHINGTON, IDAHO,
AND PORTIONS OF CALIFORNIA

U.S.D.A. Forest Service and U.S.D.I. Bureau of Land Management

A. INTRODUCTION

This Biological Assessment (BA) analyzes the potential effects, from a programmatic standpoint, of Alternative 4 of the Environmental Assessment (EA) on species listed under the Endangered Species Act (ESA) and/or designated critical habitats. Implementation of Alternative 4 would result in amendments, on an interim basis, of Forest Service Land and Resource Management Plans (LRMPs) and BLM Land Use Plans (LUPs)(collectively Plans).

B. AREA COVERED BY THE ASSESSMENT

This BA will only address those species and their habitats known or suspected to be within the anadromous fish-producing watersheds on all or part of 15 National Forests and seven BLM Districts in the four states. Those administrative units are:

Bureau of Land Management

<u>State</u>	<u>BLM District</u>
California	Bakersfield and Ukiah
Idaho	Coeur d' Alene and Salmon
Oregon	Prineville and Vale
Washington	Spokane

Forest Service

<u>State</u>	<u>National Forest</u>
California	Lassen and Los Padres
Idaho	Bitterroot, Clearwater, Nez Perce, Boise, Challis, Payette, Salmon, Sawtooth, and Sawtooth National Recreation Area
Oregon	Malheur, Ochoco, Umatilla, Wallowa-Whitman, and Columbia Gorge National Scenic Area
Washington	Okanogan (area outside of spotted owl habitat)

For a more specific description of the areas covered refer to the EA.

C. SPECIES CONSIDERED IN THIS ASSESSMENT

(NMFS and FWS species list; (E)-endangered, (T)-threatened, (CH)-critical habitat)

Species listed under the ESA are: Snake River sockeye salmon (Oncorhynchus nerka) (E,CH), Snake River fall and spring/summer chinook salmon (O. tshawytscha) (T,CH), Sacramento River winter chinook salmon (O.

rschawytscha) (T,CH), northern bald eagle (Haliaeetus leucocephalus) (T/E), California condor (Gymnogyps californianus) (E), American peregrine falcon (Falco peregrinus anatum) (E), grizzly bear (Ursus actos) (T), gray wolf (Canis lupus) (E), MacFarland's four-o'clock (Mirabilis macfarlanei) (E), California least tern (Sterna antillarum browni) (E), least Bell's vireo (Vireo bellii pusillus) (E,CH), western snowy plover (Charadrius alexandrinus nivosus) (T), tidewater goby (Eucyclogobius newberryi) (E), unarmored threespine stickleback (Gasterosteus acleatus williamsoni) (E), salt marsh bird's beak (Cordylanthus maritimus ssp. maritimus) (E), marsh sandwort (Arenaria paludicola) (E), Gambel's water crest (Rorippa gambellii) (E), delta smelt (Hypomesus transpacificus) (T), California freshwater shrimp (Syncaris pacifica) (E), valley elderberry longhorn beetle (Desmocerus californicus dimorphus) (T), loch lemond coyote-thistle (Eryngium constancei) (E), and Burke's goldfields (Lasthenia burkei) (E).

Species proposed for Federal listing are: southwestern willow flycatcher (Empidonax traillii extimus), California redlegged frog (Rana aurora draytonii), arroyo southwestern toad (Bufo microscaphus californicus), California seablite (Sueda californica), Sacramento splittail (Pogonichthys macrolepidotus), vernal pool fairy shrimp (Branchinecta lynchi), vernal pool tadpole shrimp (Lepidurus packardii), California linderiells (Linderiella occidentalis), Hoover's spurge (Chamaesyce hooveri), pilose Orcutt grass (Orcuttia pilosa), slender Orcutt grass (O. tenuis), and Greene's tuctoria (Tuctoria greenei).

D. LIMITATIONS OF THIS ASSESSMENT

The BA process was designed to evaluate the potential effects of site-specific activities on listed species and their habitats. The process does not lend itself well to assessing potential effects of a programmatic decision. Potential, site-specific effects of implementing Alternative 4 on any given listed species or critical habitat, would be evaluated in second level project analyses. Therefore, the discussions in this BA will be qualitative, not quantitative.

E. DESCRIPTION OF ALTERNATIVE 4

Alternative 4 specifies riparian goals and riparian management objectives (RMOs); specifies standards and guidelines; provides Riparian Habitat Conservation Areas (RHCA) with minimum interia widths (on each side of the stream) of 300 feet for anadromous fish bearing streams, 150 feet for permanent non-fish bearing streams, ponds, reservoirs, and wetlands greater than one acre, 100 feet in Key Watersheds (50 feet in non-Key Watersheds) for seasonally flowing or intermittent streams, wetlands less than one acre and landslides and landslide-prone areas; requires identification of Key Watersheds; and provides for Watershed Analysis. The standards, guidelines, procedures, and other requirements would apply to some high priority ongoing projects and activities, as well as proposed projects and activities, and projects and activities that have been decided but for which contracts or permits have not been issued. The high priority ongoing projects and activities would be identified as those determined, on a case-by-case basis, as having an unacceptable risk to species and/or habitats. See Appendix C of the EA for the specific standards and guidelines and the criteria for establishing the width of the RHCA.

F. POTENTIAL EFFECTS OF ALTERNATIVE 4 ON LISTED SPECIES OR CRITICAL HABITAT

The proposed action is to implement direction, on an interim basis, through the amendment of existing Plans, that would establish interim Riparian Habitat Conservation Areas (RHCAs) and standards and guidelines for managing resources within them. The RHCAs by definition would be applied to that part of a watershed needed to maintain the hydrologic, geomorphic, and ecological process of riparian ecosystems.

Implementation of Alternative 4, on a project by project basis, could lead to potential effects to listed species. Due to the interim nature of the RHCAs, the constraining nature of the associated direction applied to activities within them, and the intent of improving habitat conditions for anadromous fish, the degree of potential direct and indirect effects, during the interim period, from Alternative 4 are considered to be insignificant.

The criteria for evaluating potential effects to designated critical habitat is whether or not the action would result in adverse modification or destruction of critical habitat. The programmatic nature of Alternative 4 does not allow for specific evaluation of effects. However, the implementation of Alternative 4 would have the potential to "may affect" any such critical habitats within the RHCAs, but would not result in the adverse modification or destruction of critical habitat.

G. POTENTIAL EFFECTS TO PROPOSED SPECIES

The question to be answered is whether or not the implementation of Alternative 4 would jeopardize the continued existence of the proposed species. Due to the interim nature of the RHCAs, the constraining nature of the associated direction applied to activities within them, and the intent of improving habitat conditions for anadromous fish, the implementation of Alternative 4 would not result in the jeopardy of any of the proposed species. The improvement of habitat conditions for anadromous fish would also result in improvement of habitat conditions for riparian dependent species.

H. INTERRELATED AND INTERDEPENDENT ACTIONS

There are no interrelated or interdependent actions associated with the implementation of Alternative 4.

I. CUMULATIVE EFFECTS

The proposed action is part of a large array of activities taking place throughout the range of anadromous fish, within the area covered by this analysis. In addition to Federal interests, private, state, and local interests are interspersed within the area which are essentially unregulated by federal agencies. The actions of private land owners include livestock management and timber management, mining, agriculture, recreation and private residences, and other commercial uses. The type of actions conducted or allowed by State agencies are similar to those on private lands. State agencies and a number of private land owners are taking positive steps to reduce potential impacts to listed species; however, it is impossible to estimate the potential cumulative effects

associated with these actions due to the interim nature of the proposed action.

J. DETERMINATION

We have determined that the implementation of Alternative 4, which would amend the Plans on an interim basis, would constitute a "may effect" to listed species and designated critical habitat within the anadromous fish producing watersheds covered by this analysis.

Frank Bird 2/28/94
Frank Bird Date
Fisheries Biologist
U.S.D.I. Bureau of Land Management
Salmon, Idaho

Rick Roberts 2-28-94
Rick Roberts Date
Wildlife Biologist
U.S.D.A. Forest Service
Portland, Oregon

Appendix I

Notices of Intent

(3410-11)

DEPARTMENT OF AGRICULTURE

Forest Service

Eastside Ecosystem Management Strategy, Pacific Northwest Region,

DEPARTMENT OF INTERIOR

Bureau of Land Management, States of Oregon and Washington

[OR-015-94-4410-02; G4-047]

AGENCIES: Forest Service, USDA; Bureau of Land Management, USDI

ACTION: Revised Notice of Intent to prepare an environmental impact statement

SUMMARY: At the time the original Federal Register and local media announcements of our Notice of Intent were published (February 1, 1994, 59 FR 4680), the geographic area to be addressed in this environmental impact statement (EIS) had not been completely identified. The geographic area to be included in the analysis for the EIS has now been decided by the Oregon/Washington Bureau of Land Management (BLM) State Director and Forest Service Regional Forester. It will include all land east of the crest of the Cascade Mountains in the States of Oregon and Washington managed by the Forest Service and the BLM. The areas being added include lands managed by the BLM within the Vale, Lakeview, and Burns Districts in portions of Malheur, Harney, and Lake counties in southeast Oregon. The subject BLM managed lands are covered by the Northern Malheur, Southern Malheur, Andrews, High Desert, and Warner Lakes Management Framework Plans, all of which may be amended or revised to incorporate the new ecosystem management strategy and rangeland reform standards and guidelines. The entire BLM Prineville District area in north central Oregon and all portions of the Baker Resource Area in northeastern Oregon will also be addressed in the EIS.

It has also been decided to hold additional public meetings throughout this area for the purposes of identifying public issues. These scoping meetings will be held in the following locations:

May 23, 1994

Walla Walla, Washington

May 25, 1994

Lakeview, Oregon

Burns, Oregon

Okanogan, Washington

May 31, 1994

Spokane, Washington

La Grande, Oregon

June 2, 1994

Seattle, Washington

May 24, 1994

Bend, Oregon

John Day, Oregon

Wenatchee, Washington

May 26, 1994

Klamath Falls, Oregon

Vale, Oregon

Colville, Washington

June 1, 1994

Portland, Oregon

Yakima, Washington

Specific locations for the meetings within these communities will be published in local newspapers of record. All meetings start at 7:00 PM PDT except the one in Vale, OR which starts at 7:00 PM MDT.

DATE: It is important for comments to be postmarked by July 2, 1994 to be considered in the formulation of alternatives in this environmental impact statement.

ADDRESS: Send written comments concerning issues to be addressed in this EIS to Eastside Ecosystem Management Project, Attn: Scoping, 122 East Poplar Street, Walla Walla, Washington 99362.

FOR FURTHER INFORMATION CONTACT: George R. Pozzuto, EIS Team Leader,
122 East Poplar Street, Walla Walla, Washington 99362, phone (509)
522-4030.

/s/ Nancy Graybeal

May 17, 1994

NANCY GRAYBEAL
Deputy Regional Forester

Date

/s/ Robert D. Rheiner, Jr.

May 17, 1994

ROBERT D. RHEINER, JR.
Associate State Director

Date

{3410-11}

DEPARTMENT OF AGRICULTURE
Forest Service

DEPARTMENT OF INTERIOR
Bureau of Land Management

Opportunity to comment on development of long-term strategy for management of anadromous fish-producing watersheds in California

AGENCIES: Forest Service, USDA (lead agency), and Bureau of Land Management, USDI (cooperating agency)

ACTION: Notice; opportunity for public comment

SUMMARY: The USDA Forest Service (FS) (lead agency) and the USDI Bureau of Land Management (BLM) (cooperating agency) will develop and implement a long-term strategy for management of anadromous fish-producing watersheds in California. The objective of the strategy is to maintain and restore ecological functions and processes that create good habitat for Pacific salmon and steelhead trout. The area to be addressed includes portions of Mill, Deer, and Antelope Creek watersheds managed by the Lassen National Forest; portions of nine watersheds managed by the Los Padres National Forest; portions of the Redding Resource Area, Ukiah District, of the BLM; and portions of the Carmel River Watershed in the Hollister Resource Area, Bakersfield District, of the BLM. Areas managed by the FS and BLM already implementing direction from the President's Forest Plan for the Pacific Northwest are not included because long-term management direction for anadromous fish-producing watersheds is already provided. The Mendocino, Shasta-Trinity, Klamath, and Six Rivers National Forests and other areas managed by the FS and BLM within the range of the northern spotted owl are therefore excluded. The geographic area to be addressed is that covered by PACFISH interim management direction for anadromous fish-producing watersheds in California. (PACFISH refers to the proposed interim management strategy analyzed in the Environmental Assessment for the Implementation of Interim Strategies for Managing Anadromous Fish-producing Watersheds in Eastern Oregon and Washington, Idaho, and portions of California (PACFISH EA)).

Preliminary review indicates that implementation of FS land and resource management plans and BLM resource management plans for the affected areas already provides protection of anadromous fish habitat. However, the adequacy of those plans and consistency among plans and between the FS and BLM is being reviewed in light of information developed for the PACFISH EA. The analysis conducted for the PACFISH EA indicates that implementation of PACFISH will have minor environmental effects in California because of the relatively small size, discontinuous, and

geographically dispersed ownership pattern of the affected FS and BLM administered lands, and because of the protection already afforded by the implementation of existing management plans.

The PACFISH interim management strategy is intended to arrest degradation of riparian and aquatic habitat and initiate ecosystem recovery across four western States while long term strategies are prepared. In addition to the relatively small area in California, the interim strategy also covers an extensive area of FS and BLM administered lands in Oregon, Washington, and Idaho. Long-term strategies for the management of anadromous fish-producing watersheds will be developed for those areas within the context of the Eastside Ecosystem Management Project and the Upper Columbia River Basin Project.

For the development of a long-term management strategy in California, this comment process will be used by the FS and BLM to help determine whether existing management plans (with or without the addition of PACFISH interim direction) adequately protect anadromous fish habitat; what, if any, additional issues need to be addressed; the appropriate level of National Environmental Policy Act analysis for the development of such a strategy; and the level of interagency coordination necessary to insure a consistent approach to management on FS and BLM administered lands in California.

DATE: Comments concerning the analysis should be received in writing by [insert date 90 days from date of publication in the Federal Register].

ADDRESS: Send written comments to Katherine Clement, Director, Land Management Planning, 630 Sansome Street, San Francisco, CA 94111.

FOR FURTHER INFORMATION CONTACT: Katherine Clement, Director, Land Management Planning, (415) 705-1834.

SUPPLEMENTARY INFORMATION:

Pacific salmon and steelhead trout occur naturally from southern California northward to the Arctic Ocean. These fish populations comprise a large number of stocks, or populations that originate from specific watersheds during specific times of year as juveniles, migrate to the ocean, and generally return to reproduce in their natal watersheds. Of the more than 400 stocks from California, Idaho, Oregon, and Washington recently evaluated in a report published by the American Fisheries Society, 106 were found to be extinct, 214 were considered to be at "moderate" or "high" risk of extinction or of "special concern," and about 120 were considered "secure."

The analysis conducted for the PACFISH EA indicates that implementation of the interim management will have minor environmental effects in California because of the relatively small size, discontinuous, and geographically dispersed ownership

geographically dispersed ownership pattern of the affected FS and BLM administered lands, and because of the protection already afforded by the implementation of existing management plans.

The PACFISH interim management strategy is intended to arrest degradation of riparian and aquatic habitat and initiate ecosystem recovery across four western States while long term strategies are prepared. In addition to the relatively small area in California, the interim strategy also covers an extensive area of FS and BLM administered lands in Oregon, Washington, and Idaho. Long-term strategies for the management of anadromous fish-producing watersheds will be developed for those areas within the context of the Eastside Ecosystem Management Project and the Upper Columbia River Basin Project.

For the development of a long-term management strategy in California, this comment process will be used by the FS and BLM to help determine whether existing management plans (with or without the addition of PACFISH interim direction) adequately protect anadromous fish habitat; what, if any, additional issues need to be addressed; the appropriate level of National Environmental Policy Act analysis for the development of such a strategy; and the level of interagency coordination necessary to insure a consistent approach to management on FS and BLM administered lands in California.

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The analysis conducted for the PACFISH EA indicates that implementation of the interim management will have minor environmental effects in California because of the relatively small size, discontinuous, and geographically dispersed ownership

pattern of the affected BLM and FS administered lands, and because of the protection already afforded by the implementation of existing management plans. Details follow.

Lassen National Forest - Mill, Deer, and Antelope Creek watersheds

The existing Lassen National Forest Plan includes direction for protection and improvement of anadromous fish habitat. Three anadromous fish-producing watersheds exist on the Forest: Mill, Deer, and Antelope Creeks. Along most of their lengths, these creeks are managed as proposed Wild and Scenic Rivers under the existing forest plan. Outside the Wild and Scenic River corridors established by the plan, watershed disturbance is limited by other standards and guidelines established by the plan. All lands in and adjacent to lakes, streams, ephemeral and perennial wetlands, bogs, seeps, and pothole lakes are assigned the riparian/fish prescription. Activities within riparian zones are limited to those that enhance riparian objectives. Final widths of riparian zones are set following site-specific evaluation. The forest plan directs preparation of detailed anadromous fish and Wild and Scenic River management plans following site-specific analyses. Other prescriptions that limit watershed disturbance include primitive recreation, late-successional, research natural area, and existing and proposed Wilderness.

In addition, the Lassen National Forest Plan will be amended by the California Spotted Owl EIS that is under preparation for the ten national forests in the Sierran province. Alternatives considered in that EIS include enhanced riparian standards and guidelines, with special provisions for the anadromous fish-producing watersheds on the Lassen. The standards and guidelines are based on the Aquatic Conservation Strategy in the President's Forest Plan for the Pacific Northwest, and on the proposed PACFISH interim management direction. A decision on this EIS is expected in 1995. The alternative selected may further limit disturbance in anadromous fish-producing watersheds.

Los Padres National Forest - Nine Coastal Watershed Areas

The existing Los Padres National Forest Plan includes direction for protection and improvement of anadromous fish habitat. The forest has developed a Riparian Conservation Strategy to aid in implementation of the forest plan direction. Standards and guidelines for watershed protection and programs for in-stream habitat improvements and prescribed fire for chaparral management are included in the plan. Wildfires in chaparral and riparian woodlands are identified in the plan as having the greatest effect on anadromous fish habitat. Scheduled timber harvest is not

permitted under the plan (the allowable sale quantity is zero).

BLM - Redding and Hollister Resource Areas

In California, BLM manages two areas with anadromous fish-producing watersheds outside the area implementing the President's Forest Plan for the Pacific Northwest. BLM has reviewed the current resource management plans (RMPs) for the Redding Resource Area, Ukiah District, and the Hollister Resource Area, Bakersfield District, and has determined that PACFISH interim management direction is in conformance with the existing plans.

The Redding Resource Areas includes about 24 miles in scattered parcels along the Upper Sacramento River and tributaries, including Battle, Clear, Deer, and Paynes Creeks. The enhancement of anadromous fisheries is identified as an objective in the Redding RMP.

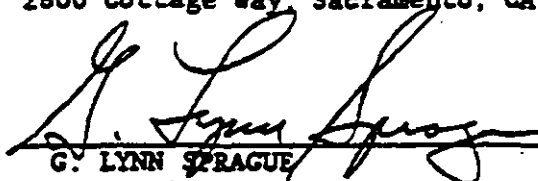
The Hollister Resource Area includes a parcel of approximately 1300 acres of upland area within an anadromous fish-producing watershed in the upper Carmel River drainage. The Hollister RMP identifies watershed enhancement as a major land use objective.

Elements of the PACFISH interim management, including interim Riparian Management Objectives and Riparian Habitat Conservation Area widths, may need to be refined for long-term management, in light of specific conditions in California.

Written comments from the public on this analysis should be submitted as indicated at the beginning of this notice. Comments would be most useful if sent by the date specified and if they address clearly the proposed action: development and implementation of a long-term strategy for the management of anadromous fish-producing watersheds on FS and BLM administered lands in California, outside areas implementing the President's Forest Plan for the Pacific Northwest. Alternatives that may be considered include continuation of existing management direction for the affected national forests and BLM resource areas; integration of PACFISH interim management with features of existing plans that provide equal or greater long-term protection of anadromous fish habitat; and application of the Aquatic Conservation Strategy from the President's Forest Plan for the Pacific Northwest in all anadromous fish-producing watersheds of the Lassen National Forest and Redding Resource Area. The analysis of public comments and review of existing management plans could reaffirm the adequacy of existing plan direction, or it could lead to amendment of those plans, documented with one or more environmental analyses. If more than one analysis is conducted, they may be structured by unit, by agency, or by geography. For example, two joint FS/BLM analyses might be

conducted -- one for portions of the Lassen National Forest and Redding Resource Area, and another for portions of the Los Padres National Forest and Hollister Resource Area. A decision on the nature, scope, and structure of the analysis necessary for long-term management is expected by April 1995.

The responsible official for the FS is G. Lynn Sprague, Regional Forester, 630 Sansome Street, San Francisco, CA 94111. The responsible official for the BLM is Ed Hastey, State Director, 2800 Cottage Way, Sacramento, CA 95825.



G. LYNN SPRAGUE
Regional Forester

SEP 1994

Date

Also, environmental objections that

could be raised at the draft EIS stage but that are not raised until after completion of the final EIS may be waived or

dismitted by the court. (*City of Angoon v. Hotel, 603 F.2d 1016, 1022 (9th Cir. 1986)*) and *Wisconsin Heritage, Inc. v. Harris, 490 F. Supp. 1334, 1338 (E.D. Wis. 1980)*. Because of these court

rulings, it is very important that those interested in this proposed action participate by the close of the 90-day

comment period on the draft EIS, so that substantive comments and objections are made available to the Team at a time

when it can meaningfully consider them and respond to them in the final EIS.

To assist the Team in identifying and considering issues and concerns on the proposed action, comments on the draft

EIS should be as specific as possible. It also is helpful if comments refer to specific pages or chapters of the draft

statement. Comments also may address the adequacy of the draft EIS or the

merits of the alternatives formulated and discussed in the statement.

Reviewers may wish to refer to the Council on Environmental Quality Regulations for implementing the

procedural provisions of the National Environmental Policy Act at 40 CFR

1503.3 in addressing these points. It is expected that the final EIS will

be filed with the Environmental Protection Agency approximately 6

months after the draft EIS is published. The record of decision for National

Forest System Lands will be issued with the final EIS and will be subject to

Forest Service appeal regulations (36 CFR 217). The BLM's proposed plan

amendment decision will be published with the final EIS and will be subject to

BLM protest regulations (43 CFR 1610.5-2). The BLM's record of decision

will be published following resolution of any protests.

David F. Jolly,
Regional Forester, Northern Region

Dale N. Boward,
Regional Forester, Intermountain Region

Alan R. Pierson,
Acting State Director, Idaho

Larry E. Hamilton,
State Director, Montana

FR Doc. 94-30085 Filed 12-6-94; 8:45 am
BILLING CODE 4310-CC-4

the Forest Service or BLM); (3) support

the needs of dynamic ecosystems that change over time and space; and (4)

recognize the role that disturbance mechanisms play in the evolution and

maintenance of ecosystems. Scoping meetings are tentatively

planned for Coeur d'Alene, Moscow, Orofino, Cranegville, McCall, Salmon,

Challis, Idaho Falls, Pocatello, Twin Falls, Ketchum, and Boise in Idaho;

Kalispell, Libby, Kalispell, Hamilton, Helena, and Butte, in Montana; Jackson,

Wyoming; Salt Lake City, Utah; and Elko, Nevada. Specific dates, times and

locations for the meetings will be announced in local newspapers of

general distribution. The Bureau of Land Management and

the Forest Service will act as joint lead agencies to prepare the EIS. The two

agencies will consult with Tribal Governments and coordinate with state

and local governments and other federal agencies. The Fish and Wildlife Service

and the National Marine Fisheries Service will be consulted pursuant to

the Endangered Species Act. The responsible officials for National

Forest System lands will be the Regional Foresters for the:

—Intermountain Region, Federal Building, 324 25th Street, Ogden, Utah 84401; and

—Northern Region, P.O. Box 7669, Missoula, Montana

The responsible officials for public lands administered by the Bureau of

Land Management will be the State Directors for:

—Idaho, 3380 Americans Terrace, Boise, Idaho 83706;

—Montana, Granite Tower, 222 N. 32nd Street, Billings, Montana 59101;

—Wyoming, P.O. Box 1828, Cheyenne, Wyoming 82003;

—Utah, 324 South State Street, Suite 307, Salt Lake City, Utah 84111; and

—Nevada, P.O. Box 12000, Reno, Nevada 89520.

The draft EIS is expected to be filed with the Environmental Protection Agency in October, 1995, and will be available for public review at that time. A public comment period of 90 days will be provided for the draft EIS. The UICRB EIS Team (Team) believes it is important to give reviewers notice at this early stage of several court rulings related to public participation in the environmental review process. First, reviewers of draft EISs must structure their participation in the environmental review of the proposal so that it is meaningful and alerts an agency to the reviewer's position and contentions. (*Vermont Yankee Nuclear Power Corp. v. NRC, 435 U.S. 519, 553 (1978)*).

This section of the FEDERAL REGISTER contains documents other than rules or proposed rules that are applicable to the public. Notices of hearings and investigations, committee meetings, agency decisions and rulings, delegations of authority, filing of petitions and applications and agency statements of organization and functions are examples of documents appearing in this section.

DEPARTMENT OF AGRICULTURE

Forest Service

Upper Columbia River Basin
Ecosystem Management Strategy,
Northern and Intermountain Regions

DEPARTMENT OF THE INTERIOR

Bureau of Land Management

[D-990-05-1610-00-UCRB]

Upper Columbia River Basin
Ecosystem Management Strategy,
States of Idaho, Montana, Wyoming,
Utah, and Nevada

AGENCIES: Forest Service, USDA; Bureau
of Land Management, USDI.

ACTION: Notice of intent to prepare an
environmental impact statement (EIS)
and conduct planning activity which
may amend Forest Service Regional
Guides and will amend Forest Service
and Bureau of Land Management land
use plans.

SUMMARY: The Forest Service and the
Bureau of Land Management (BLM)
propose to develop a scientifically
sound, ecosystem-based strategy for
management of the lands under their
jurisdiction in the Upper Columbia
River Basin (UCRB) in Idaho, Montana,
Utah, Nevada, Wyoming, and a small
part of Washington that is administered
by Region 1 of the Forest Service. This
strategy will modify existing land use
plans. The modification will include a
coordinated ecosystem management
strategy for National Forest System and
BLM public lands. This strategy will be
consistent with the "Framework for
Ecosystem Management in the Interior
Columbia River Basin" that is being
completed by the Scientific Integration
Team of the Eastside Ecosystem
Management Project. The EIS that will
accompany this strategy will use the
information from the "Scientific
Assessment for Ecosystem Management

in the Interior Columbia River Basin"
and information received from the
public as a basis for issue determination
and for evaluating alternative strategies.
Additional information may be
collected as necessary.

The strategy will be adopted in the
form of decisions about desired ranges
of future conditions for ecosystems, and
related standards and guidelines for
management of National Forest System
and BLM public lands on all or parts of
the UCRB. The EIS will consider
alternative strategies for management of
National Forest System and BLM-
administered lands and their effects in
the entire UCRB. At a minimum:

A. The strategy will include direction
which will protect and enhance aquatic
ecosystems within the range of
threatened or endangered anadromous
fish through amendments to Forest
Plans and Resource Management Plans.
This direction will supersede any
interim direction resulting from the
Environmental Assessment for the
Implementation of Interim Strategies for
Managing Anadromous Fish-producing
Watersheds in Eastern Oregon and
Washington, Idaho, and Portions of
California (commonly referred to as
"PACFISH").

B. The strategy also will include other
necessary guidance applicable to the
Basin as a whole, or to broad subregions
within the basin. This guidance will
address forest ecosystem health;
rangeland ecosystem health; aquatic and
riparian ecosystem health; integration of
social and economic considerations;
population viability; and the long-term
sustainability of threatened,
endangered, and sensitive species. The
guidance also will be developed by
examining other issues identified by the
public through the scoping process.
This guidance will be adopted as
amendments to the Forest Service
Regional Guides for Regions 1 and 4
and/or amendments to Forest Service
and BLM land use plans.

C. The third part of the strategy may
identify changes to the ways current
plans are implemented or budgets
developed, that can improve capability
to achieve ecosystem management
objectives. The strategy may also help
establish priorities for revising forest
plans and developing or amending
resource management plans. This part of
the strategy does not require

environmental analysis, but may be
addressed within the scope of this EIS.
DATES: Comments concerning the scope
of the analysis should be received in
writing by 30 days following the date of
the last scoping meeting to receive full
consideration in the development of
alternatives. Dates of those meetings
will be published in local and regional
newspapers.

ADDRESSES: Send written comments
concerning this proposal to Stephen P.
Mealey, Project Manager, 304 North 8th
St., Room 253, Boise Idaho 83702.

FOR FURTHER INFORMATION CONTACT: Gary
Wyke or Cindy Deacon Williams, EIS
Team Co-leaders, 304 North 8th St.,
Room 253, Boise, Idaho 83702, phone
(208) 334-1770.

SUPPLEMENTARY INFORMATION: The
purpose of this action is to develop and
analyze a scientifically sound,
ecosystem-based strategy for
management of lands administered by
the United States Department of
Agriculture (USDA) Forest Service and
the United States Department of the
Interior (USDI) Bureau of Land
Management that are in the UCRB in
Idaho, Montana, Wyoming, Utah, and
Nevada and that portion of Washington
administered by the Forest Service's
Northern Region. The strategy will focus
on ecosystem health, including its
forest, rangeland, and aquatic/riparian,
landscape, and social/economic
components, with emphasis on
population viability and the
sustainability of threatened,
endangered, and sensitive species.

The EIS team will prepare a proposed
action that responds to problems
described in the statement of purpose
and need. Formal scoping meetings will
follow the development of the proposed
action. The purpose and need statement
and proposed action will serve to focus
formal scoping meetings by giving the
public a better understanding of the
agencies' early thoughts about, or initial
approximations of, what the UCRB
ecosystem strategy might be. The theme
of the proposed action will be the
restoration of ecological resiliency in
forest, rangeland, and aquatic/riparian
ecosystems within the UCRB. (Aldo
Leopold, in his essay *The Land Ethic*,
defines the health of the land as "the
capacity of the land for self-renewal."
We speak of ecological resiliency as the
capacity of an ecosystem, including its
physical, biological and human

components, for self-renewal. We do not imply that all human wants will be satisfied by a resilient ecosystem.) Alternatives to the proposed action will be developed largely in response to public comments on the proposed action in formal scoping meetings.

This EIS will address all BLM lands within the Columbia River Basin east of Oregon and Washington and all National Forest System lands in the Columbia River Basin within the agency's Northern and Intermountain administrative Regions. (This includes National Forest System and BLM public lands in all of Idaho except the southeast corner that drains into the Great Basin. It also includes the portion of the Panhandle National Forest in Washington, that portion of Montana west of the Continental Divide, a small portion of west-central Wyoming, the north-west corner of Utah, and the northeastern corner of Nevada.) The selected alternative may result in amendment to the Forest Service Regional Guides for the Northern and Intermountain Regions and amendment of the land use plans for the Forest Service and Bureau of Land Management as follows:

Forest Service: Boise, Bridger-Teton, Caribou, Challis, Humboldt, Payette, Salmon, Sawtooth, and Targhee National Forests in the Intermountain Region; and Panhandle, Clearwater, Nez Perce, Kootenai, Lolo, Flathead, Helena, Deerlodge, and Bitterroot National Forests in the Northern Region.

Bureau of Land Management: Boise, Burley, Idaho Falls, Salmon, Shoshone, and Coeur d'Alene Districts in Idaho; Butte District in Montana; Rock Springs District in Wyoming; Salt Lake District in Utah; and Ely and Winnemucca Districts in Nevada.

The BLM Challis Resource Area (Salmon District), Bennett Hills Resource Area (Shoshone District), and Owyhee Resource Area (Boise District) now are preparing Resource Management Plans (RMPs) that are expected to incorporate ecosystem management strategies. Similarly, the Targhee National Forest is revising its forest plan, and the Clearwater National Forest expects to revise its forest plan. The schedule for the Clearwater forest plan revision process will be announced at the time a notice of intent for that purpose is published. These five planning efforts will continue. The Challis, Bennett Hills, and Owyhee RMPs are expected to be completed in 1995. The Targhee forest plan revision is expected to be complete in 1996, and the Clearwater forest plan revision is expected to be completed sometime after the completion of the UCRB EIS.

To the extent possible, those planning efforts will be coordinated with development of the UCRB ecosystem management strategy. The UCRB EIS may lead to a Record of Decision that amends one or more of those five plans following completion of on-going planning efforts. If the UCRB EIS is completed prior to completion of any of these five on-going efforts, adjustments may be made to on-going efforts to ensure consistency with the UCRB ecosystem management strategy.

BLM lands subject to potential plan amendments through the UCRB effort total approximately 14 million acres in five states. The National Forest System lands subject to potential plan amendment total approximately 31.5 million acres.

Concurrent with this EIS, a basin-wide assessment known as the "Scientific Assessment for Ecosystem Management in the Interior Columbia River Basin" is under development. (The "Interior Columbia River Basin" has been defined as the lands in the continental United States tributary to the Columbia River east of the crest of the Cascade Mountain Range.) This Scientific Assessment will cover broad ecosystems, and describe social, economic, and biophysical processes and functions. The natural resources within this broad geographic area have been altered over time by many factors including drought, fire suppression, global climate change, livestock grazing, mining, timber harvest, urbanization, and water uses. The results of the Scientific Assessment will be used, in part, to analyze the effects of past management and present management under current land use plans as a baseline to help determine the need to change management direction, and to determine the effects of different approaches to ecosystem management.

The EIS will analyze a number of alternatives. One will be no action, defined as current land use plan direction without modification of any decision resulting from the Environmental Assessment for the Implementation of Interim Strategies for Managing Anadromous Fish-producing Watersheds in Eastern Oregon and Washington, Idaho, and Portions of California (commonly referred to as the "PACFISH" strategy). Another will be current management direction as modified by any decision issued as interim direction resulting from the "PACFISH" environmental assessment. As indicated, further alternatives will be developed in response to issues identified during the public scoping process as defined in the Council on Environmental Quality's National

Environmental Policy Act (NEPA) implementing regulations to identify a range of reasonable alternatives.

Issues that are expected to be addressed in detail through the development and analysis of alternatives (in addition to the management of anadromous fish habitat) include ecosystem health and its forest, rangeland, and aquatic/riparian components with emphasis on population viability and long-term sustainability of threatened, endangered, and sensitive species. The use of public lands and resources in the production of goods and services within the context of sustainability will also be examined. The evaluation of these alternatives and others will consider people's expectations for public lands and resources, along with the capability of the ecosystems to provide and sustain these values through time. Information will be used from the basin-wide Scientific Assessment, Tribal governments, state and local governments, other federal agencies, and other appropriate sources.

The direction being developed through this process will serve as an ecosystem management strategy to move from current conditions to more ecologically sustainable and socially desirable conditions, leaving options available for future generations. The strategy will, at least, establish desired ranges of future conditions for broad forest, rangeland, and aquatic/riparian habitat types and inter-related social, economic and landscape systems. Achievement of desired ranges of future conditions by practices and activities developed and implemented at the national forest and BLM district level, will result in restoration of ecosystem health and restoration of ecological processes that maintain ecosystems over time. Ecosystem restoration to, and maintenance within, sustainable ranges by identifying appropriate goals and objectives and management practices, can also help promote viability of associated social and economic systems. The strategy will be based on integration of social values, ecological capabilities, and economic relationships, and will recognize treaty rights reserved by various Native American Tribes on ceded lands and will fulfill United States government trust responsibilities to the Tribes. The strategy will (1) assure habitat condition needed to support species viability within the context of desired ecosystem function and structure; (2) address the needs of species and habitats of concern (currently listed or being considered for listing under the Endangered Species Act or designated as sensitive species by

Appendix J

Letter from FWS, NMFS Biological
Opinion



United States Department of the Interior

FISH AND WILDLIFE SERVICE

911 NE. 11th Avenue
Portland, Oregon 97232-4181

IN REPLY REFER TO:

JUN 27 1994

Jack Ward Thomas, Chief
U.S.D.A. Forest Service
Washington, D.C. 20240

Dear Mr. Thomas:

The U.S. Fish and Wildlife Service (Service) has reviewed the biological evaluation (BE) attached to your April 1, 1994, letter in which you requested that we provide our biological opinion on the implementation of Interim Standards and Guidelines for Managing Anadromous Fish-producing Areas in Eastern Oregon and Washington, Idaho, and Portions of California (PACFISH). The Service concurs with the Environmental Assessment (EA) for the Implementation of Interim Strategies, which concludes that the preferred alternative (number 4), if selected, would have a neutral or beneficial effect on listed and proposed species. Our recommendation is that there is no need to enter into formal consultation with the Service at this time. The Service does, however, feel that there will be a need to consult both informally and formally in the future as the Forest Service and the Bureau of Land Management (BLM) continue to work over the next 18 months on geographically specific environmental impact statements for PACFISH implementation. The Service anticipates providing section 7 consultations that will address planning at scales larger than individual projects. Efforts will be made to consult on the largest area practicable to eliminate unnecessary delays in management planning. There is also a continuing need to do section 7 consultation for individual ongoing and proposed activities for both of your agencies in the coming months and years as you perform watershed analyses. Any projects that require additional consultation pursuant to 50 CFR Sec. 402.13 of our interagency regulations governing section 7 of the Endangered Species Act should be addressed separately.

The Service provides the following comments for your consideration as you prepare to implement the interim PACFISH standards and guidelines:

1. Bull trout (Salvelinus confluentus), a petitioned species, has received considerable attention from our respective agencies in the last 18 months. The Service determined that the listing of the bull trout was warranted, but precluded by other pending proposals of higher priority, for the population segments residing in the coterminous United States. The Service determined that listing the bull trout was not warranted in Canada and Alaska. This finding was made on June 6, 1994, and announced in the Federal Register on June 10, 1994 (59 FR 30254). In addition, the Service has worked closely with the States of Idaho and Montana, Regions 1 and 4 of the Forest Service and the Idaho BLM to draft bull trout conservation agreements that will conserve and protect this species. It was our understanding that National Environmental Policy Act (NEPA) compliance for bull trout conservation would be linked to PACFISH. There is no evidence of this in either the EA or the

BE. The Service, therefore, recommends that bull trout and their habitat be included with anadromous fish in the present habitat management effort, as well as any NEPA document that you develop for public disclosure. Key watersheds have been identified, and a conservation strategy that could serve as a model or template for lands that encompass the remainder of the bull trout's range has been developed for the State of Idaho.

2. Alternative 4 (preferred) of the EA states that the interim standards and guidelines will apply to all proposed and some of the ongoing activities on lands managed by your agencies. To us, this means that a group of management activities, potentially large in size and impacts, will be exempt from the interim standards and guidelines. The EA should explain what the analysis criteria will be for determining "acceptable" and "unacceptable" risk to fish, wildlife and plant species of interest.

3. A monitoring plan, developed in cooperation with the Service, National Marine Fisheries Service, and other interested parties, should be made part of the interim strategy. This is especially important for activities that proceed in key watersheds prior to watershed analysis. The results would be useful immediately for proposed activities and future watershed analysis efforts.

Thank you for the opportunity to provide these comments. If you have questions or need clarification on our position regarding your request for formal consultation, please contact Vicki M. Finn of my staff at 503-231-6241.

Sincerely,



MARVIN L. PLENER

Regional Director



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
1335 East-West Highway
Silver Spring, MD 20910
THE DIRECTOR

JAN 23 1995

REC'D FOREST SERVICE

Mr. Jack Ward Thomas, Chief
U.S. Department of Agriculture
Forest Service
Washington, D.C. 20090

FEB 9 1995

CHIEFS OFFICE

Dear Mr. Thomas:

Enclosed is the biological opinion prepared by the National Marine Fisheries Service (NMFS) under section 7 of the Endangered Species Act on Implementation of Interim Strategies for Managing Anadromous Fish-producing Watersheds in Eastern Oregon and Washington, Idaho, and Portions of California (PACFISH).

As stated in the biological opinion, NMFS has determined that the proposed action is not likely to jeopardize the continued existence of endangered Snake River salmon species or result in the destruction or adverse modification of their designated critical habitat. In part, these conclusions were based on NMFS's expectation that the interim PACFISH guidance would be in place for a period not to exceed 18 months and that ongoing consultation on U.S. Forest Service Land and Resource Management Plans will be completed in a timely manner. Should this timeframe be exceeded, you should reinitiate consultation.

The Forest Service, Bureau of Land Management, and NMFS have worked together closely for more than 8 months at the staff level to make the interim PACFISH guidance clearer, more consistent, and to improve protective measures for listed salmon. Successful implementation of the PACFISH strategy will depend on continued close coordination between our respective agencies through the PACFISH Implementation Team, during consultations on Forest Service Land and Resource Management Plans, and during project-specific consultations. In particular, I call your attention to the conservation recommendations contained in this biological opinion and urge you to implement these recommendations to the maximum extent practicable.

Sincerely,

Rolland A. Schmitt

Enclosure





UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
1335 East-West Highway
Silver Spring, MD 20910
THE DIRECTOR

JAN 23 1995

Mr. Mike Dombeck, Acting Director
U.S. Department of the Interior
Bureau of Land Management
Washington, D.C. 20240

Dear Mr. Dombeck:

Enclosed is the biological opinion prepared by the National Marine Fisheries Service (NMFS) under section 7 of the Endangered Species Act on Implementation of Interim Strategies for Managing Anadromous Fish-producing Watersheds in Eastern Oregon and Washington, Idaho, and Portions of California (PACFISH).

As stated in the biological opinion, NMFS has determined that the proposed action is not likely to jeopardize the continued existence of endangered Snake River salmon species or result in the destruction or adverse modification of their designated critical habitat. In part, these conclusions were based on NMFS's expectation that the interim PACFISH guidance would be in place for a period not to exceed 18 months and that ongoing consultation on U.S. Forest Service Land and Resource Management Plans will be completed in a timely manner. Should this timeframe be exceeded, you should reinitiate consultation.

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Sincerely,

Rolland A. Schmitt

Enclosure

THE ASSISTANT ADMINISTRATOR
FOR FISHERIES



Endangered Species Act -
Section 7 Consultation

BIOLOGICAL OPINION

Implementation of Interim Strategies for
Managing Anadromous Fish-producing
Watersheds in Eastern Oregon and
Washington, Idaho, and Portions of
California (PACFISH)

Agency: U.S. Department of Agriculture, Forest Service and
U.S. Department of Interior, Bureau of Land Management

Consultation Conducted By: National Marine Fisheries Service,
Northwest Region

Date Issued: 1/23/95

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I. BACKGROUND

On April 1, 1994, the USDA Forest Service (FS) and USDI Bureau of Land Management (BLM) requested the initiation of formal Endangered Species Act (ESA) section 7 consultation with the National Marine Fisheries Service (NMFS) on the "Implementation of Interim Strategies for Managing Anadromous Fish-producing Watersheds in Eastern Oregon and Washington, Idaho, and Portions of California" (commonly referred to as the interim PACFISH strategy, or, in this document, as PACFISH). Included with the request for consultation was a March 18, 1994 biological assessment (BA) and environmental assessment (EA) on the PACFISH strategy. The BA concluded that implementation of PACFISH "may affect" listed species and designated critical habitat, but did not include a determination as to whether or the proposed action was "likely to adversely affect" or "not likely to adversely affect" listed species and designated critical habitat. NMFS staff met with the staff of the FS and BLM (action agencies) on May 3, 1994 to discuss the PACFISH March 18, 1994 EA and Endangered Species Act (ESA) section 7 consultation. NMFS staff also met with the action agencies on July 12, July 20, August 16, and October 13, 1994 to discuss the PACFISH section 7 consultation.

As a result of both public comment through the NEPA process and as a result of ESA section 7 consultation, the action agencies made several clarifications and minor changes to their original proposed action as expressed in alternative 4 of the March 18, 1994 PACFISH EA. These included clarifications on implementation of the interim direction, the interim locations of key watersheds, and clarifications and changes to the proposed standards and guidelines. This biological opinion (Opinion) analyzes the original proposed action, with the clarifications and changes described in an October 11, 1994 letter from Gray F. Reynolds, FS, and Al Wright, BLM, to Rollie Schmitten, NMFS. Unless stated otherwise, the source of all information in this Opinion is the March 18, 1994 PACFISH EA, its attached BA, and the October 11, 1994 letter.

The objective of this Opinion is to determine whether the interim PACFISH strategy is likely to jeopardize the continued existence of Snake River (SR) sockeye salmon (*Oncorhynchus nerka*), SR spring/summer chinook salmon (*O. tshawytscha*), or SR fall chinook salmon (*O. tshawytscha*), or result in the destruction or adverse modification of their designated critical habitat.

II. PROPOSED ACTION

The proposed action for consultation includes goals, identification of key watersheds, riparian habitat conservation areas (RHCAs), riparian management objectives (RMOs), standards and guidelines (S&Gs), and procedures that would apply to

project-level actions in the action area. PACFISH itself does not propose any ground-disturbing actions, but sets in place certain riparian management goals and management direction with the intent of arresting the degradation and beginning the restoration of riparian and stream habitats. Although PACFISH sets in place common goals, objectives, and standards and guidelines that may facilitate project- or watershed-level consultations, its implementation following conclusion of consultation does not eliminate the requirement to consult at other levels, such as on site-specific actions.

PACFISH would provide interim guidance for each of the affected national forests and BLM districts while long-term management approaches are evaluated via geographically specific environmental analyses. The Environmental Impact Statements (EIS) for Oregon, Washington and Idaho will be developed based on scientific and technical information produced by the Interior Columbia Basin Ecosystem Management Project. The action agencies initiated the Oregon/Washington EIS in fall 1993, and published notices of intent in fall 1994 to prepare an EIS for Idaho and to complete an environmental analysis for California. See 59 FR 4880 (February 1, 1994) and 59 FR 63071 (December 7, 1994). The action agencies expect all three environmental analyses to have decisions within 18 months of PACFISH implementation. Therefore, NMFS expects that PACFISH would not apply more 18 months beyond the effective date in the decision notice.

The FS and BLM would apply PACFISH by means of different administrative procedures. For the BLM, if provisions of the proposed interim direction are not in conformance with existing LUPs (e.g. S&Gs and procedures) the LUPs would have to be amended prior to implementation of the proposed interim direction. For the FS, the proposed interim direction provided by PACFISH would amend LRMPs for each of the affected national forests to include new goals, riparian management objectives, S&Gs and monitoring requirements.

For the PACFISH consultation, the FS and BLM requested consultation on alternative 4 of the March 18, 1994 EA (the preferred alternative). Under alternative 4, the interim management direction would be applied to all proposed land management actions and to those ongoing land management actions that "pose unacceptable risk to habitat condition or at-risk anadromous fish." During consultation, the action agencies defined "unacceptable risk"¹ and developed a draft set of

¹NMFS understands that "unacceptable risk" will be defined in the revised EA as "A level of risk from an ongoing activity or group of ongoing activities that is determined through NEPA analysis or the preparation of biological assessments/evaluations, or their subsequent review, to be likely to adversely affect listed anadromous fish or their designated critical habitat, or likely to adversely impact the viability of non-listed anadromous fish." (Glossary

guidelines for determining whether ongoing actions pose an unacceptable risk (October 18, 1994 fax transmittal of September 2, 1994 draft from Harv Forsgren, FS to Jeff Lockwood, NMFS). A PACFISH Field Implementation Team, which will include a NMFS representative (October 13, 1994 meeting) will issue final definitions and guidelines for determining unacceptable risk and would address consistency of application of PACFISH S&Gs. It is expected that this Team will reach these decisions consistent with this opinion.

The Components of PACFISH

The interim PACFISH strategy is comprised of the following components: riparian goals, interim riparian management objectives (RMOs), riparian habitat conservation areas (RHCA's), standards and guidelines (S&Gs), key watersheds, watershed analysis, and watershed restoration.

Goals - The goals of PACFISH (March 18, 1994 EA p. C-4) are to "maintain or restore" characteristics of healthy, functioning watersheds, riparian areas, and fish habitat, and include elements such as water quality; stream channel integrity, channel processes and sediment regime; instream flows; water table elevations; diversity and productivity of riparian vegetation; riparian vegetation functions such as large woody debris recruitment, thermal regulation, and bank stability; and riparian and stream habitats necessary to foster the genetically-unique fish stocks that have evolved within the geographic region.

Riparian Management Objectives - The interim RMOs provide a set of targets for land managers in planning land-disturbing activities. The action agencies averaged existing stream survey data on stream characteristics for unmanaged watersheds across the entire area covered by PACFISH (including areas outside of the SR Basin) to set interim RMOs for pool frequency, temperature, large woody debris, bank stability, lower bank angle, and width/depth ratio (Harv Forsgren, FS, pers. comm. with Jeffrey Lockwood, NMFS, October 28, 1994). Watershed analysis "generally" would be required to adjust the RMOs (November 10, 1994 letter from Gray Reynolds, Forest Service, and Tom Walker, BLM to Rollie Schmitten, NMFS). However, the RMOs also "may be modified in the absence of Watershed Analysis where watershed or stream reach specific data support the change" in consultation with NMFS (November 10, 1994 letter from Gray Reynolds, Forest Service, and Tom Walker, BLM to Rollie Schmitten, NMFS).

Each of the interim RMOs must be met or exceeded before habitat would be considered "good" for anadromous fish. Based on the

transmitted from Gordon Haugen, USFS to Jeffrey Lockwood, NMFS, October 20, 1994)
Also see definitions in Appendix A.

March 18, 1994 EA, meetings with the action agencies, and the proposed definition for "attain RMO" (August 30, 1994 fax from Harv Forsgren, FS to Jeffrey Lockwood, NMFS; see Appendix A), NMFS understands the RMOs to be minimum targets for land managers. Thus areas where "good" habitat is surpassed would not be subjected to incremental degradation down to the level of "good". However, according to the March 18, 1994 EA, if the interim RMO for the only key element (pool frequency) is met or exceeded, some latitude would exist for meeting the other, supporting RMOs. No time frame for attaining the RMOs was described in the March 18, 1994 EA, nor was there any indication of the kinds, quality or duration of data needed to demonstrate that an RMO has been attained. However, clarifications to the proposed interim direction provide consistent language specifying that actions (with some exceptions; see discussion of standards and guidelines below) not retard or prevent attainment of the RMOs, thus setting an expectation of habitat improvement at natural rates or faster. During consultation, the action agencies agreed to change the water temperature RMO to be more protective of listed and non-listed anadromous fish (October 11, 1994 letter; see Appendix A of this Opinion).

Riparian Habitat Conservation Areas - Interim RHCAs would be delineated in every anadromous fish-bearing watershed on lands administered by the FS and BLM within the geographic range of the proposed interim direction. Interim RHCAs are areas where the PACFISH management direction automatically applies for proposed projects and those ongoing projects that pose an unacceptable risk; however, they do not exclude some ongoing or proposed management activities (livestock grazing, mining, watershed restoration, and fisheries enhancement). New road and landing construction (March 18, 1994 EA), new recreation facilities (October 11, 1994 letter), and timber salvage (October 13, 1994) are prohibited in RHCAs until after watershed analysis (see definition and discussion below). Standard widths defining interim RHCAs are listed in Appendix A of this Opinion.

The interim RHCAs for intermittent streams in PACFISH alternative 4 are reduced by one-half in non-key watersheds, relative to key watersheds. Also, the RHCAs for PACFISH alternative 4 stop at the edge of the 100-year floodplain (regardless of width) for non-forested rangeland ecosystems.

RHCAs "generally" would not be adjusted without watershed analysis; however, the RHCAs "may be modified in the absence of watershed analysis where stream reach or site specific data support the change", in consultation with NMFS (November 10, 1994 letter from Gray Reynolds, Forest Service, and Tom Walker, BLM to Rollie Schmitt, NMFS).

Key Watersheds - According to the March 18, 1994 EA, the following criteria would be used to designate key watersheds

following the implementation of PACFISH: (1) watersheds with stocks listed pursuant to the ESA or stocks identified as "at risk" by Nehlson et al. (1991); or, (2) watersheds that contain "excellent habitat" for mixed salmonid assemblages; or, (3) degraded watersheds with a high restoration potential. During consultation, the action agencies informed NMFS that all watersheds with designated critical habitat for SR salmon would be identified as key watersheds during the interim PACFISH period (July 20, 1994 meeting and October 11, 1994 letter). Final key watersheds would be designated in the EISs for ecosystem management in eastern Oregon/Washington and Idaho.

During consultation, the action agencies indicated that for actions in watersheds that do not contain designated critical habitat, but that serve as potential sources of high quality water to designated critical habitat (i.e. the Clearwater River Basin excluding the North Fork Clearwater River above Dworshak Dam), BAs submitted after the date that PACFISH is implemented shall provide available data and analysis needed to describe potential downstream effects on water quality (e.g. temperature, sediment load, and contaminants), and peak flow timing and volume within designated critical habitat (July 20, 1994 meeting). However, with respect to the Clearwater basin, NMFS does not anticipate receiving many additional project-specific BAs for proposed actions nor any project-specific BAs for ongoing actions during the period PACFISH is in effect, because BAs prepared in 1992 by the Clearwater National Forest concluded that all ongoing management actions, with the exception of wildfire suppression, in the Lolo Creek, Middle Fork Clearwater River, and Lochsa River watersheds had "no effect" on listed SR salmon.

Watershed Analysis - Watershed analysis is described in the March 8, 1994 EA as "a systematic procedure for determining how a watershed functions in relation to its physical and biological components. This is accomplished through consideration of history, processes, landform, and condition." Watershed analysis as it is being developed pursuant to the FSEIS/Record of Decision on Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl emphasizes the importance of determining watershed status, resilience and capabilities, examining fish ecological relationships, and identifying watershed restoration and monitoring objectives, strategies, and priorities prior to planning actions in the watershed (Interagency Watershed Analysis Coordination Team 1994).

During consultation with NMFS, the action agencies indicated that watershed analysis procedures for the SR Basin would not be completely developed and tested during the period PACFISH is in effect (July 12, 1994 meeting). A limited number of watersheds (four to five) would be subject to prototype or pilot analyses during PACFISH (July 12 meeting and October 11, 1994 letter).

Watershed Restoration - Under Alternative 4, the action agencies assume that no additional funds will be available for watershed restoration during the interim period, but that existing funds will be re-targeted, "as necessary", to establish a watershed restoration program. Priority for restoration would be given to key watersheds. No further information was provided concerning the scope or timing of watershed restoration, although the March 18, 1994 EA ties restoration to priorities and strategies identified by watershed analysis.

Standards and Guidelines - The S&Gs address management of timber, roads, grazing, minerals, fire/fuels management, lands, riparian areas, watershed and habitat restoration, and fisheries and wildlife restoration. The S&Gs would apply only to RHCAs (see clarifications below).

The PACFISH S&Gs proposed in the March 18, 1994 EA would allow activities to proceed under a variety of scenarios: if there are no "impacts" or "adverse effects" that are "inconsistent with attainment of RMOs" (e.g. TM-1a, GM-1, LH-2, LH-3); "only when RMOs are not adversely affected" (e.g. TM-1b); or "in a manner that 'assures' (TM-1c) or is 'consistent with' attainment of the RMOs" (FW-2).

Clarifications to the S&Gs include the following: (1) applying consistent requirements that actions must not retard or prevent attainment of the RMOs (for certain existing facilities, the standard would be limited to not preventing attainment of the RMOs); (2) applying the S&Gs not only to the RHCAs, but to actions outside the RHCAs that could degrade (see list of definitions in Appendix B) the RHCAs (this decision would be made during the planning of individual actions); and (3) adding an emphasis on avoiding adverse effects to listed anadromous salmonid fishes and designated critical habitat.

The action agencies have added S&Gs that: (1) prohibit sidecasting of road material on road segments within or abutting RHCAs in watersheds containing designated critical habitat; (2) prohibit storage of fuel and other toxicants in RHCAs; (3) prohibit refueling within RHCAs; and (4) direct land managers not to use mitigation or planned restoration as a substitute for preventing habitat degradation (October 11, 1994 letter). During the October 13, 1994 meeting, the action agencies agreed to delay salvage and fuelwood cutting in RHCAs until after watershed analysis. However, RHCAs could be adjusted based on either watershed analysis or site-specific analysis (November 10, 1994 letter from Gray Reynolds, FS and Tom Walker, BLM to Rollie Schmitt, NMFS; see discussion under Riparian Habitat Conservation Areas, above).

IV. LISTED SPECIES AND CRITICAL HABITAT

There are three species under the jurisdiction of NMFS listed as endangered under the ESA that occur within Federal lands and may be affected by the proposed action as described in the draft EA: SR sockeye salmon (listed on November 20, 1991, 57 FR 58619); SR fall chinook salmon, and SR spring/summer chinook salmon. SR fall chinook salmon and SR spring/summer chinook salmon were listed as threatened on April 22, 1992 (57 FR 14653) and reclassified as endangered on August 18, 1994 (59 FR 42529). Endangered Sacramento River winter run chinook salmon (*O. tshawytscha*) do not occur on Federal lands addressed by the March 18, 1994 EA, but could be affected by PS or BLM land management actions in watersheds with tributaries to the Sacramento River. However, NMFS does not expect PACFISH to adversely affect Sacramento River winter run chinook salmon.

Critical habitat was designated for SR sockeye salmon, SR spring/summer chinook salmon, and SR fall chinook salmon on December 28, 1993 (58 FR 68543), effective on January 27, 1994. The designation of critical habitat provides notice to Federal agencies and the public that these areas and features are essential to the conservation of listed SR salmon.

Essential SR salmon habitat consists of four components: (1) Spawning and juvenile rearing areas, (2) juvenile migration corridors, (3) areas for growth and development to adulthood, and (4) adult migration corridors. Components 1, 2, and 4 are present within the range of PACFISH.

Essential features of the spawning and juvenile rearing areas for SR sockeye salmon include adequate: (1) Spawning gravel, (2) water quality, (3) water quantity, (4) water temperature, (5) food, (6) riparian vegetation, and (7) access.

Essential features of the spawning and juvenile rearing areas for SR spring/summer chinook salmon and SR fall chinook salmon include adequate: (1) Spawning gravel, (2) water quality, (3) water quantity, (4) water temperature, (5) cover/shelter, (6) food, (7) riparian vegetation, and (8) space.

Essential features of the juvenile migration corridors for SR sockeye salmon, SR spring/summer chinook salmon, and SR fall chinook salmon include adequate: (1) Substrate, (2) water quality, (3) water quantity, (4) water temperature, (5) water velocity, (6) cover/shelter, (7) food, (8) riparian vegetation, (9) space, and (10) safe passage conditions.

Essential features of the Columbia River adult migration corridor for SR sockeye salmon, SR spring/summer chinook salmon, and SR fall chinook salmon include adequate: (1) Substrate, (2) water quality, (3) water quantity, (4) water temperature, (5) water

velocity, (6) cover/shelter, (7) riparian vegetation, (8) space, and (9) safe passage conditions.

V. BIOLOGICAL INFORMATION

A. Snake River Sockeye Salmon

SR sockeye salmon adults enter the Columbia River primarily during June and July. Arrival at Redfish Lake, which now supports the only remaining run of SR sockeye salmon, peaks in August and spawning occurs primarily in October (Bjornn et al. 1968). Eggs hatch in the spring between 80 and 140 days after spawning. Fry remain in the gravel for three to five weeks, emerge in April through May and move immediately into the lake, where juveniles feed on plankton for one to three years before they migrate to the ocean (Bell 1986). Migrants leave Redfish Lake from late April through May (Bjornn et al. 1968), and smolts migrate almost 900 miles to the Pacific Ocean. For detailed information on the SR sockeye salmon, see Waples et al. (1991a) and 56 FR 58619 (November 20, 1991).

Downstream passage at Lower Granite Dam (the first dam on the SR downstream from the Salmon River) occurs from late April to July, with peak passage from May to late June (Fish Passage Center 1992). Once in the ocean, the smolts remain inshore or within the Columbia River influence during the early summer months. Later, they migrate through the northeast Pacific Ocean (Hart 1973; Hart and Dell 1986). SR sockeye salmon usually spend 2 to 3 years in the Pacific Ocean and return in their fourth or fifth year of life.

Historically, the largest numbers of SR sockeye salmon returned to headwaters of the Payette River, where 75,000 were taken one year by a single fishing operation in Big Payette Lake (Bevan et al. 1994). During the early 1880s, returns of SR sockeye salmon to the headwaters of the Grande Ronde River in Oregon (Wallowa Lake) were estimated between 24,000 and 30,000 minimum (Cramer 1990, cited in Bevan et al. 1994). During the 1950s and 1960s, adult returns to Redfish Lake numbered more than 4,000 fish (Bevan et al. 1994).

SR sockeye salmon escapement to the SR has declined dramatically in recent years. Counts made at Lower Granite Dam since 1975 have ranged from 531 in 1976 to zero in 1990. In 1988, IDFG conducted spawning ground surveys that identified four adults and two redds (gravel nests in which the eggs are deposited). In 1989, one adult reached Redfish Lake and one redd and a second potential redd were identified. No redds or adults were identified in 1990. In 1991, three males and one female returned to Redfish Lake. One male SR sockeye salmon returned to Redfish

Lake in 1992. Six male and two female SR sockeye salmon returned to Redfish Lake in 1993.

Since 1991, adults returning to Redfish Lake have been collected for the captive broodstock program. Therefore, only progeny of residual sockeye salmon (which NMFS has determined to be listed SR sockeye salmon; March 19, 1993, letter from N. Foster {NMFS} to constituents) are expected to migrate from Redfish Lake in 1994. Between 119 and 2550 juvenile SR sockeye salmon may be tagged with passive integrated transponders (PIT-tags) by the Idaho Department of Fish and Game and released into the SR system in 1994 (NMFS 1994a).

As of October 9, 1994, one adult sockeye salmon had returned to Redfish Lake in 1994. The Columbia River Technical Staffs (1993) predicted a return of three fish to the Columbia River mouth during 1994 based on the 1989-1993 average proportion of sockeye salmon counted at Ice Harbor and Priest Rapids dams. Dygert (1993) also estimated a return of three with an expected range from one to five SR sockeye salmon based on smolt counts and subsequent escapement to Redfish Lake. Numbers of returning adults in 1997 and beyond may be higher as a result of captive rearing program releases planned for 1995 and 1996.

B. Snake River Spring/Summer Chinook Salmon

1. Life History Summary

The present range of naturally-spawned-origin SR spring/summer chinook salmon is primarily limited to the Salmon, Grand Ronde, Imnaha, and Tucannon subbasins. Most SR spring/summer chinook salmon enter individual subbasins from May through September. Juvenile SR spring/summer chinook salmon emerge from spawning gravels from February through June (Perry and Bjornn 1991). Typically, after rearing in their nursery streams for about 1 year, smolts begin migrating seaward in April through May (Bugert et al. 1990; Cannamela 1992). After reaching the mouth of the Columbia River, spring/summer chinook salmon probably inhabit nearshore areas before beginning their northeast Pacific Ocean migration, which lasts 2 to 3 years. For detailed information on the life history and stock status of SR spring/summer chinook salmon, see Matthews and Waples (1991), NMFS (1991a), and 56 FR 29542 (June 27, 1991).

2. Population Status and Trends

The estimated number of wild adult SR spring/summer chinook salmon returning to spawn was estimated by Bevan et al. (1994) as more 1.5 million fish annually. By the 1950's the population had declined to an estimated 125,000 adults. Escapement estimates indicate that the population continued to decline through the 1970's. Redd count data also show that the population continued

to decline through about 1980. The estimated annual number of wild adult SR spring/summer chinook salmon returning over Lower Granite Dam (escapement) averaged 9,674 fish from 1980 through 1990, with a low count of 3,343 fish in 1980 and a high count of 21,870 fish in 1988 (Matthews and Waples 1991). Estimated escapement of wild adult SR spring/summer chinook salmon in 1991 and 1992 was 5,520 and 9,344 fish, respectively (1994-1998 biological assessment for the Federal Columbia River Power System (FCRPS). In 1993, escapement of wild adult spring/summer chinook salmon was estimated at 7,803 fish (ESA section 10 permit application, Army Corps of Engineers, Juvenile Fish Transportation Program, November 15, 1993, revised December 7, 1993). Returns of spring/summer chinook salmon were at an all-time record low in 1994. Only 3,915 adults were counted at Lower Granite Dam; this is about 15% of the recent ten year average (Fish Passage Center 1994).

In small populations, random processes can lead to two major types of risk: demographic and genetic. Demographic risk is the risk of extinction due to environmental fluctuations, random events affecting individuals in the population, and possible reductions in reproduction or survival at low population sizes. Genetic risk is the risk of loss of genetic variability and/or population fitness through inbreeding and genetic drift. Both types of risk increase rapidly as population size decreases.

Severe, short-term genetic problems from inbreeding are unlikely unless population size remains very low for a number of years. However, the erosion of genetic variability due to low population size is cumulative, so long-term effects on the population (even if it subsequently recovers numerically) are also a concern.

The SR spring/summer chinook salmon evolutionarily significant unit consists of more than 30 local spawning populations spread over large geographic areas (Lichatowich et al. 1993). Therefore, the total number of fish returning to local spawning populations would be much less than the total run size. Based on recent trends in redd counts in major tributaries of the Snake River, many local populations could be at critically low levels, with subpopulations in the Grande Ronde River, Middle Fork Salmon River, and Upper Salmon River basins at particularly high risk. Both demographic and genetic risks would be of concern for subpopulations, and in some cases, habitat might be so sparsely populated that adults would not find mates.

C. Snake River Fall Chinook Salmon

1. Life History Summary

Adult SR fall chinook salmon enter the Columbia River in July and migrate into the SR from August through October. Natural spawning for SR fall chinook salmon is primarily limited to the

SR below Hells Canyon Dam, and the lower reaches of the Clearwater, Grand Ronde, Imnaha, Salmon, and Tucannon rivers. Fall chinook salmon generally spawn from October through November, and fry emerge from March through April. Downstream migration generally begins within several weeks of emergence (Becker 1970; Allen and Meekin 1973) with juveniles rearing in backwaters and shallow water areas through mid-summer prior to smolting and migration. The fish will spend 1 to 4 years in the Pacific Ocean before beginning their spawning migration. For detailed information on the life history and stock status of SR fall chinook salmon, see Waples et al. (1991b), NMFS (1991b) and 56 FR 29542 (June 27, 1991).

2. Population Status and Trends

Reliable historic estimates of abundance are unavailable for SR fall chinook salmon (Bevan et al. 1994). Estimated returns of SR fall chinook salmon declined from 72,000 annually between 1938 and 1949, to 29,000 from 1950 through 1959 (Bjornn and Horner 1980, cited in Bevan et al. 1994). Estimated returns of naturally-spawned adult SR fall chinook salmon fell to a low of 78 fish in 1990, but since have increased to 318 in 1991, 533 in 1992 (WDF 1993), and 742 in 1993 (WDF 1994).

Based on the preseason forecast, the expected 1994 escapement of naturally-spawned SR fall chinook salmon to the Columbia River is 803 fish (NMFS and USFWS 1994). Accounting for estimated inter-dam adult fall chinook losses of 56%, and a preliminary estimated post-season harvest rate of 15% on Snake River fall chinook salmon, a preliminary estimate of 1994 escapement of naturally-spawned SR fall chinook salmon to Lower Granite Dam is 300 fish (Peter Dygert, NMFS, pers. comm. with Jeffrey Lockwood, NMFS, November 2, 1994).

Although risks associated with small population sizes are also a general concern for SR fall chinook salmon, currently there is no evidence of multiple subpopulations of naturally-spawning SR fall chinook salmon. The anticipated short-term reduction in escapement during the next few years would not raise major genetic concerns of inbreeding, but certainly would raise demographic concerns. Genetic and demographic risks increase dramatically with increasing number of consecutive years of depressed populations.

D. Environmental Baseline

NMFS defines the action area for this consultation as the mainstem SR Basin (below Hells Canyon Dam), and the Salmon, Grande Ronde, Tucannon, Imnaha and Clearwater (excluding the North Fork Clearwater River above Dworshak Dam) River subbasins. In large part, the sharp decline of salmon production in the action area has resulted from a variety of activities that have

degraded habitat and increased egg to smolt mortality, including hydropower development, water withdrawals, unscreened water diversions, road construction, timber harvest, livestock grazing, mining, and outdoor recreation. In general, land management actions that disturb ground and remove vegetation have: (1) reduced connectivity (i.e. the flows of energy, organisms and materials) between streams, riparian areas, floodplains, and uplands; (2) drastically increased watershed sediment yields, leading to pool filling and elimination of spawning and rearing habitat; (3) reduced or eliminated recruitment of large woody debris that traps sediment, stabilizes stream banks, and helps form pools; (4) reduced or eliminated the vegetative canopy that minimizes temperature fluctuations; (5) caused streams to become straighter, wider, and shallower, and in the worst case incised, with concomitant reduction in spawning and rearing habitat and increased thermal fluctuations; (6) altered peak flow volume and timing, leading to channel changes and probably altered fish migration timing; and (7) altered water tables and base flows, resulting in riparian wetland and stream dewatering (Eastside Forests Scientific Society Panel 1993; FEMAT 1993; McIntosh et al. 1994; Wissmar et al. 1994).

As stated on page 3 of the March 18, 1994 EA, "major portions of the lands administered by the FS and BLM have poor habitat conditions for anadromous fish, characterized by: 30-70 percent fewer large, deep pools; excessive fine sediments in spawning gravels; and greater disturbances of riparian vegetation than is acceptable." For example, streams in the Upper Grande Ronde River subbasin have been heavily impacted by livestock grazing, road construction, timber harvest, mining, and stream channelization on private and Federal lands (McIntosh et al. 1994). Ten streams resurveyed in the Grande Ronde River Basin showed declines in the frequency of large pools by 20 - 90% over the period 1941 - 1990, with a total decline of 66% (McIntosh et al. 1994). Dominant substrate particle size generally decreased in the basin over the same period of time. Large woody debris was scarce in recent surveys of managed watersheds of the basin. Peak flows in the Upper Grande Ronde River shifted over the period to as much as 30 days earlier in the spring. Similar kinds of habitat damage are widely distributed throughout managed watersheds in the Columbia River Basin studied by McIntosh et al. (1994).

The environmental baseline on lands managed by the action agencies in watersheds that may affect listed SR salmon is degraded in most areas, and in further decline in many of those areas (Eastside Forests Scientific Society Panel 1993; March 18, 1994 PACFISH EA; McIntosh et al. 1994; Wissmar et al. 1994). Maintaining or worsening existing conditions would contribute to the continuing decline and possible extinction of the listed species. The historic and existing management regimes on FS and BLM lands have allowed this habitat degradation to occur because

they have not adequately provided for the needs of salmon and their habitats during the planning and execution of land management actions and during land allocation planning. Principal among the ways in which the historic and existing land management regimes have contributed to the decline of salmon habitat are: (1) historic overemphasis on production of non-fishery commodities at the expense of riparian and fish habitat; (2) failure to take a biologically conservative or risk-averse approach to planning land management actions when inadequate information exists about the relationships between land management actions, fish habitat, and fish production; (3) failure to incorporate known scientific information into the planning of actions; (4) planning actions on a site-specific basis, rather than based on watershed and river basin conditions and capabilities; and (5) reduction in the number, size and distribution of remaining high-quality habitat areas (such as roadless and lightly developed areas) that could serve as refugia for salmon subpopulations and sources of genetic material for eventual recolonization of unoccupied habitat.

VI. EFFECTS OF THE PROPOSED ACTION

This biological opinion provides two levels of analysis relating to the effects of PACFISH to listed species and their designated critical habitat. The first level discusses the specific effects of implementation of PACFISH independent of existing management direction. This requires an analysis of the components of PACFISH, such as the S&Gs, RMOs, etc., and how they may be applied.

However, to fully address the effects of PACFISH, NMFS must consider the broader relationship to existing land management actions and direction, including those projects that could be proposed and carried out consistent with existing management direction (LRMPs and LUPs, for example). Therefore, the second level involves consideration of effects of project-level land management actions carried out under existing management direction that may affect listed species but are not necessarily expressly addressed by PACFISH. Even though NMFS will evaluate these effects at the programmatic level in the consultation on the LRMPs and in the development of and consultation on the geographically-specific EISs, and through project-level consultations it considers these effects in this opinion in order to properly assess the relative effects of implementing PACFISH to the current condition of critical habitat.

A. Effects to Listed Species and Designated Critical Habitat

1. Determining Effects of Proposed Actions

The framework for evaluating actions affecting listed SR Salmon during section 7 consultations is provided by section 7(a)(2) of the ESA and the NMFS/Fish and Wildlife Service joint consultation regulations (50 CFR Part 402). For each listed species, NMFS uses the best scientific and technical data available to evaluate the current status of the species and its designated critical habitat, as well as the effects of the proposed action (as defined in 50 CFR §402.02), which would be added, with any cumulative effects, to the existing environmental baseline. On the basis of this evaluation, NMFS determines whether the proposed actions, taken together with cumulative effects, are likely to jeopardize the continued existence of the listed species or result in the destruction or adverse modification of the species' designated critical habitat.

NMFS is currently re-examining its approach for determining the particular requirements for each species' continued existence to address concerns raised in the recent court decision in the case of Idaho Department of Fish and Game v. NMFS, Civil No. 92-973-MA (D.C.Or., decided March 28, 1994). While this re-examination is underway, NMFS takes a conservative approach in reaching its ESA determinations and places particular emphasis upon the current risk of extinction faced by each species, and the likelihood of survival and recovery for each species. An objective of increasing the likelihood of both survival and recovery for each species, in this and all ESA consultations, will ensure that the effects of proposed actions will not likely jeopardize their continued existence.

To evaluate the likely effects of a proposed action on designated critical habitat, NMFS examines the effects of a proposed action on the components of designated critical habitat (described in section IV) and determines whether those effects reduce the value of any essential feature of a habitat component. NMFS then considers the significance of a reduction in the habitat's value in relation to the species current status, risk of extinction, and the likelihood of both survival and recovery.

The "effects of the action," as defined at 50 C.F.R. 402.02, consist of:

the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action, that will be added to the environmental baseline. . . . Indirect effects are those that are caused by the proposed action and are later in time, but are still reasonably certain to occur. Interrelated actions are those

that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration.

50 C.F.R. 402.02.

2. Specific effects of PACFISH

Successful restoration of watersheds and concomitant improvements in fish habitat depend on a thorough understanding of watershed conditions, processes and capabilities, and of linkages between land management actions and effects to fish habitat (Forest Ecosystem Management Team {FEMAT} 1993). Procedures for addressing these issues over time are being developed by the Interagency Watershed Analysis Coordination Team, the Interior Columbia Basin Ecosystem Management Project, and research efforts by various Federal, state, tribal and academic entities. Even if begun today, the most significant benefits of watershed restoration likely would not be realized except over a scale of decades to centuries. In consideration of these limitations, BMS focused its analysis on PACFISH as a short-term strategy for preventing further degradation of RHCAs and initiating habitat recovery, rather than on the necessary additional components of a comprehensive, long-term approach to fish habitat that is being addressed in the actions described above.

PACFISH is a commendable effort by the action agencies to develop an interim approach to addressing concerns for degraded salmon habitat that exist on USFS and BLM lands. By improving protective measures for riparian and aquatic habitats, PACFISH should help reduce adverse effects to listed species and designated critical habitat from future land management actions in many instances, relative to what might have occurred by following the existing guidance in LRMPs and LUPs. PACFISH also provides an consistent starting point from which to analyze effects of actions at the project level.

The final determinant of PACFISH's effectiveness will be how it is interpreted in project-specific implementation. Where PACFISH provides specific direction, it is likely to be applied consistently in project-specific implementation. However, in some respects, interim PACFISH guidance leaves room for discretion in the interpretation and the possibility that it may not be applied consistently across watershed and administrative boundaries. Decisions resulting from implementing PACFISH will also be subject to ESA consultation through project-level consultations. These decisions include: (1) the application of standards and guidelines across watersheds and administrative boundaries; (2) determinations as to whether particular actions assist, retard, or prevent the attainment of RMOs, or adversely

affect listed species or designated critical habitat; (3) the quality and consistency of the scientific information used to modify RMOs and RHCAs; and (4) the adequacy of monitoring to verify that protective measures were implemented as planned and that the measures were effective in protecting salmon and their habitat from adverse effects. These added levels of consultation should help that ensure that the likelihood of adverse effects resulting from PACFISH interim direction is relatively small. NMFS participation on the PACFISH Implementation Team should also reduce the likelihood of adverse effects resulting from inconsistent implementation.

a. Riparian Management Objectives

The RMOs provide a consistent set of target conditions for riparian areas and fish habitat. In most managed watersheds, current habitat conditions are degraded relative to unmanaged watersheds (McIntosh et al. 1994), and likely do not meet the RMOs. Thus the PACFISH RMOs should have a positive effect to listed species and their designated critical habitat relative to what may occur in the absence of PACFISH direction, since land managers will have to proceed cautiously in order to protect habitat and allow natural restoration to begin.

NMFS believes that the RMOs generally are an acceptable set of variables to describe salmon habitat, with some caveats: 1) The ability of the one key and five supporting features to serve as adequate surrogates for all other stream and riparian habitat factors that can affect the growth, survival, and reproductive success of salmon needs to be validated; 2) some of the RMOs (such as large woody debris and bank stability) are set at levels that are surpassed by some Snake River watersheds, or that could be surpassed following watershed restoration. As above, the specific needs to minimize these problems are discussed in the following section regarding project-level consultation.

The March 18, 1994 EA did not clearly instruct land managers to prevent habitat degradation in areas that currently surpass the minimum requirements of the broad regional criteria set by the RMOs. The final PACFISH guidance will include a definition of "attain RMOs" (July 12, 1994 meeting and August 30, 1994 fax from Harv Forsgren, FS to Jeff Lockwood, NMFS) that includes an element of maintaining conditions that are better than the RMOs, and specifies that "actions that would degrade the RMOs are inconsistent with the concept of attaining RMOs." This should reduce the potential for damage to the riparian features from land management decisions, relative to the guidance described in the March 18, 1994 PACFISH EA, although the guidance is somewhat indirect as a result of being part of the definitions. NMFS also will address this problem where it occurs in watershed consultations.

b. Riparian Habitat Conservation Areas (RHCAs)

The proposed RHCAs (described in Appendix A) provide a consistent starting point for addressing riparian and aquatic habitat concerns. For the most part, the RHCAs are similar to or larger than the areas commonly subject to special management consideration as riparian areas in many of the biological assessments previously submitted to NMFS for consultation in the SR Basin. However, this has not been consistent across administrative boundaries or action categories. For example, some national forests have used riparian buffers similar to the RHCAs for timber sales, but have not specified how riparian areas subject to different livestock management are defined, or have used definitions that are either more or less restrictive than PACFISH. By improving consistency, the proposed RHCAs should help reduce adverse effects to listed species from future activities in many instances, relative to what might have occurred under the existing guidance in the LRMPs and LUPs. Although designation of RHCAs in and of itself will not restore habitat that already is degraded, the designation will foster the beginning of natural habitat restoration.

c. Key Watersheds

NMFS agrees with the action agencies' decision to include watersheds containing Snake River salmon critical habitat as key watersheds. However, The action agencies' decision to include only watersheds with designated critical habitat in the initial identification of key watersheds may have implications for SR fall chinook salmon in the lower mainstem Clearwater River. This decision increases the risk of water quality degradation and sedimentation due to reduced protection for intermittent streams, relative to key watersheds. NMFS also recognizes that this decision could affect other species currently undergoing status review for listing, such as steelhead, although this concern is beyond the scope of this Opinion (for more information, see NMFS [1994c]). NMFS' representation on the Interior Columbia Basin Ecosystem Management Project should help ensure NMFS' participation in the final designation of key watersheds for the SR Basin (July 20, 1994 meeting).

d. Watershed Restoration

NMFS does not expect PACFISH to significantly alter the amount or kinds of watershed restoration actions carried out during the interim period it is in effect. Thus PACFISH alone will not enable the action agencies to achieve part of their stated purpose (begin the restoration of anadromous fish habitat) and to improve the already-deteriorated environmental baseline for SR spring/summer chinook salmon and SR fall chinook salmon. However, watershed restoration may be more effective and cost-efficient following watershed analysis (FEMAT 1993). Also,

designation of RHCAs will allow natural restoration to begin in areas where further damage from mining or grazing is prevented. Due to the lack of significant watershed restoration during the interim period from PACFISH, and because of the degraded condition of critical habitat in many areas, it is especially important that PACFISH prevent further adverse effects to listed species and designated critical habitat.

e. Standards and Guidelines (S&Gs)

The S&Gs described generally in the October 11, 1994 letter and specifically in an August 30, 1994 fax from Harv Forsgren, FS to Jeffrey Lockwood, NMFS specify consistently (with the exception of proposed mining activity) that actions that would retard or prevent attainment of the RMOs, or that adversely affect listed species or their designated critical habitat, should be modified or eliminated². However, most of the RMOs (with the exception of water temperature, lower bank angle, and streambank stability) are features that change only gradually. Reliance on these objectives means that some short-term adverse effects to SR spring/summer and SR fall chinook salmon, and their designated critical habitat from land management actions may be overlooked.

- 3. Implications for project-level consultations

While all project-level actions that may affect listed species are subject to consultation, it is relevant to discuss the implementation of PACFISH in relation to project-level consultations. In particular, NMFS is concerned about: (1) the consistency of the application of its standards and guidelines across watersheds and administrative boundaries by the action agencies; (2) the consistency of determinations as to whether particular actions assist, retard, or prevent the attainment of RMOs, or adversely affect listed species or designated critical habitat; (3) the quality and consistency of the scientific information used to modify RMOs and RHCAs; and (4) the adequacy of monitoring to verify that protective measures were implemented as planned and that the measures were effective in protecting salmon and their habitat from adverse effects.

For example, in current ongoing site-specific and watershed consultations, there are some classes of ongoing actions that the FS and BLM may not be treating consistently for effects determinations at the project-specific level. This can lead to inconsistent application of protection measures for listed salmon and designated critical habitat. For example, under existing

²The standards and guidelines would apply to proposed actions and the ongoing actions determined to pose an "unacceptable risk" of adverse effects to listed species or designated critical habitat.

guidance on effects determinations, road maintenance may be considered "no effect" by one forest manager but "may affect" by another, even under similar conditions with similar risks to listed species.

The screening process for "unacceptable risk" ongoing actions developed by the action agencies and NMFS during this consultation should identify most of the ongoing actions that are likely to adversely affect listed SR salmon or their designated critical habitat, provided that the screens are consistently applied in a biologically risk-averse manner. Some adverse effects from ongoing actions may not be prevented by PACFISH during the lag time between PACFISH implementation and completion of the screens. This is a relatively minor concern if the screens can be completed during the winter when relatively few actions are active.

a. Riparian Management Objectives

As stated, the RMOs provide a consistent set of target conditions for riparian areas and fish habitat. However, there are a number of problems remaining with the RMO approach: (a) PACFISH does not provide a decision framework for determining whether or not potentially harmful land use actions will assist, retard or prevent attainment of the RMOs; (b) PACFISH does not provide a timeframe for attainment of the RMOs; (c) PACFISH does not address the amount, quality, or timeframe of data necessary to determine whether RMOs are being met prior to management actions being taken that could alter the key or supporting features; (d) validation monitoring is needed to support the setting of the RMOs at the given levels and the ability of the one key and five supporting features to serve as adequate surrogates for other stream and riparian habitat elements; (e) PACFISH does not clearly instruct managers to prevent degradation of areas that currently surpass the RMOs; (f) PACFISH allows RMOs to be adjusted based on site-specific analysis; and (g) PACFISH does not provide guidance for areas where existing data indicates that watershed or stream reach habitat capabilities surpass the RMOs. These problems are further discussed below:

1) No decision framework - PACFISH allows potentially harmful actions such as livestock grazing or prescribed burning to proceed in RHCAs if land managers determine they will not retard or prevent attainment of the RMOs, or adversely affect listed species. However, PACFISH does not provide a decision framework for determining whether or not these potentially harmful land use actions will assist, retard or prevent attainment of the RMOs. For example, the S&Gs for mining do not explicitly prohibit mining actions that would retard or prevent RMOs or adversely affect listed species. Depending on existing habitat conditions, the location of salmon habitat, the nature, magnitude and duration of the action, and other factors, such

actions may adversely affect listed species and their designated critical habitat by increasing sediment loads and raising water temperatures (grazing, prescribed burning and mining) or contaminating streams with acid drainage and heavy metals (mining) or excessive nutrients (grazing). While NMFS believes that such a decision framework needs to be developed in order to standardize the action agencies' approach to mining activities and thereby minimize adverse effects to listed species and their designated critical habitat at the earliest opportunity, adverse effects of many actions can be addressed to a large extent during consultation at other levels, albeit with less efficiency, less expediency and perhaps less uniformity. NMFS's participation on the PACFISH Implementation Team should also reduce the potential for adverse effects from inconsistent implementation.

2) No timeframe for attainment of the RMOs - Although PACFISH is expected to be in effect for 18 months, PACFISH does not include specific timeframes for attainment of the RMOs. NMFS assumes that the requirement developed during consultation that actions not retard attainment of the RMOs is equivalent to a requirement that actions should not impede natural habitat recovery rates, nor should they reduce the quality of the key or supporting features.

3) Data requirements not described for determining whether RMOs are met - PACFISH does not address the amount, quality, or timeframe of data necessary to determine whether RMOs are being met prior to management actions being taken that could alter the key or supporting features. However, this complex problem is being addressed through the ongoing consultations on LRMPs and through consultations at other levels. Any of the adverse effects described under VI.D. below could result from actions that are allowed to proceed where inadequate data exists to demonstrate that RMOs have been attained or whether attainment of RMOs are being retarded. However, NMFS expects to address these adverse effects during both LRMP and watershed consultations.

4) Suitability of RMOs - Fine substrate sediment in spawning and rearing areas is a habitat feature not included in the RMOs that can significantly affect salmon survival and recovery. Although pool frequency (included as an RMO) is sensitive to sediment loads, its response time likely is too slow to be of much value in identifying actions, conditions and processes that are responsible for elevating sediment delivery to levels that could adversely affect listed species and designated critical habitat. NMFS and the FS are addressing the evaluation and monitoring of fine sediment in the ongoing consultations on the LRMPs.

5) No direct guidance to prevent degradation of areas that currently surpass the RMOs - The March 18, 1994 EA did not clearly instruct land managers to prevent habitat degradation in

areas that currently surpass the minimum requirements of the broad regional criteria set by the RMOs. The final PACFISH guidance will include a definition of "attain RMOs" (July 12, 1994 meeting and August 30, 1994 fax from Harv Forsgren, FS to Jeff Lockwood, NMFS) that includes an element of maintaining conditions that are better than the RMOs, and specifies that "actions that would degrade the RMOs are inconsistent with the concept of attaining RMOs." This should reduce the potential for damage to the riparian features from land management decisions, relative to the guidance described in the March 18, 1994 PACFISH EA, although the guidance is somewhat indirect as a result of being part of the definitions. NMFS also will address this problem where it occurs in watershed consultations.

6) PACFISH allows RMOs to be adjusted based on site-specific analysis - Without watershed analysis, adjustment of RMOs could fail to prevent adverse effects to designated critical habitat, thereby reducing the ability of the habitat to support listed salmon. NMFS believes that RMOs should not be adjusted to be less protective until after watershed analysis, but should be adjusted in a more protective direction, where data suggests this course of action, on an interim basis until watershed analysis is complete. Although these effects normally would be addressed when the action agencies and NMFS consult on proposed RMO modifications during watershed consultations, such consultations do not take advantage of economies of scale that could otherwise be achieved through this consultation.

7) No clear guidance for areas where existing data (prior to watershed analysis) indicates that watershed or stream reach habitat capabilities surpass the RMOs. - PACFISH would not prohibit management practices that maintain conditions that meet or surpass the RMOs, but are below watershed or reach capability, possibly placing a cap on egg to smolt survival prior to watershed analysis. Due to its interim nature and the lack of a significant restoration component, PACFISH will not be able to overcome this problem in many areas where habitat is degraded, regardless of whether decisions are made in a biologically conservative manner. However, NMFS will be able to specify habitat objectives during watershed consultations which should reduce the potential for adverse effects.

b. Riparian Habitat Conservation Areas

The proposed RHCAs may not be adequate to fully protect fish habitats in all cases. The proposed RHCAs stop at the edge of the 100-year floodplain (regardless of width) in non-forested rangeland ecosystems. This may not provide adequate protection from land management actions for SR spring/summer chinook salmon in streams with narrow floodplains. The proposed RHCA for fish-bearing and permanently flowing non fish-bearing streams may not adequately protect meandering, low-gradient, permanently

flowing streams with floodplains wider than 600 feet and so may be subject to further restrictions when brought to ESA section 7 consultation at the project level. This would include some areas of high historic productivity for SR spring/summer chinook salmon, such as Bear Valley in Idaho. PACFISH would not necessarily prevent potentially harmful activities such as road construction or mining at the edge of the floodplain, if forest managers decide the proposed action will not degrade the RHCA. Depending on whether or not these decisions are made in a biologically conservative manner, such actions could result in increased sedimentation or other impacts to the floodplain, and hence the stream during floods or when the stream changes its course within the floodplain. PACFISH would only apply to actions outside of RHCAs if forest managers decide that those actions pose an unacceptable risk (for ongoing actions) or if they decide those actions would degrade the RHCAs. Thus PACFISH does not consistently control adverse effects from actions outside of RHCAs, since it defers such decisions to local land managers without providing a clear decision framework. However, NMFS and the action agencies will address the full range of potential actions outside of RHCAs in consultations on the LRMPs, and in project-specific consultations.

The RHCAs would be subject to modification following watershed analysis or site-specific analysis. The action agencies have not described the goals and procedures for site-specific analysis under PACFISH, other than a statement in the November 10, 1994 letter that "RHCAs may be modified in the absence of watershed analysis where stream reach or site specific data support the change". NMFS is concerned that site-specific analyses, by definition, would not include watershed-scale factors that should help shape the RHCAs. Also, without scientifically valid guidance on procedures, the analyses used to adjust RHCAs likely will vary in uniformity and quality. This would result in uneven protection for listed species and designated critical habitat, and increase the risk of adverse effects to listed species from sedimentation (SR spring/summer chinook salmon and SR fall chinook salmon), temperature increases (all three listed species of SR salmon), and reduced recruitment potential for large woody debris (SR spring/summer chinook salmon and SR fall chinook salmon). NMFS will further address these possible adverse effects in watershed and ongoing LRMP consultations, which should reduce the likelihood of adverse effects.

The RHCAs are generally larger than traditional riparian buffer areas used by the action agencies, and should offer adequate protection from land management actions in most cases (FEMAT 1993). However, until watershed analysis using the interagency manual (Watershed Analysis Coordination Team, 1994) is completed, their effectiveness in protecting fish habitat is somewhat uncertain in the circumstances described above, because of the importance of site-specific factors such as slope, soil types,

vegetative cover, and hillslope stability (Belt et al. 1992; FEMAT 1993) that would be examined in watershed analysis.

c. Standards and Guidelines

Following are comments on specific S&Gs. The concerns addressed here will be addressed at project- and watershed-level consultations. The following abbreviations apply: TM, timber management; MM, minerals management; and FM, fire/fuels management.

MM-1. This guideline addresses mine reclamation requirements "for impacts that cannot be avoided" in RHCAs, but does not clearly instruct managers to avoid impacts from mining. In effect, it may be interpreted to allow future mining activity in RHCAs so long as reclamation bonds and plans are prepared.

MM-1, MM-2, MM-3. No guidance is provided on how forest managers should decide whether "impacts (from mineral operations)... cannot be avoided" (MM-1), "no alternative to siting facilities in RHCAs exists" (MM-2) and "no alternative to locating mine waste... facilities in RHCAs exists". This may allow some mines with harmful effects to proceed through to watershed consultation, making those consultations more complex.

TM-1a. Under the proposed guidance, salvage logging and fuelwood cutting is permitted in RHCAs after watershed analysis if it will not retard or prevent attainment of RMOs (October 11, 1994 letter and October 13, 1994 meeting). These actions could allow some incremental risk of altered water temperatures, reduced inputs of large woody debris, and increased sedimentation to the designated critical habitat of SR spring/summer chinook salmon (Chamberlin et al. 1991). This is true mainly where watershed conditions or capabilities are demonstrated by watershed analysis to surpass the RMOs. However, this problem could be minimized by adjusting the RMOs to reflect the results of the watershed analysis using the interagency manual (Watershed Analysis Coordination Team, 1994). The adjustment of RHCAs following site-specific analysis without watershed analysis (as described in the November 10, 1994 letter) may result in similar adverse effects as described above.

Roads Management: Under the March 18, 1994 EA and the October 11, 1994 letter, PACFISH only would apply to ongoing road management activities if they posed an "unacceptable risk". NMFS believes that, because of the difficulty of sorting out the accumulated effects of individual roads on watersheds, roads in watersheds that may affect listed salmon should be consistently managed to avoid adverse effects from sedimentation, fish passage problems, and altered hydrologic response, and to attain or surpass the RMOs. The PACFISH S&Gs for roads management are a reasonable approach to this problem and should be implemented in

all "may affect" watersheds (i.e. roads management should not be put through the screens for "unacceptable risk."

Guideline RF-3b was changed during consultation from a directive to meet RMOs by "closing and stabilizing, or obliterating and stabilizing roads not needed for future management activities" to "prioritizing closing and stabilizing, or obliterating and stabilizing roads not needed for future management activities." Although the intent of the action agencies to prioritize these actions is apparent, the guideline should be changed to reemphasize the need to carry out these actions, not merely prioritize them.

B. Relationship to existing management direction

In its analysis and conclusion, NMFS considered several factors regarding the relationship of PACFISH to the overall Federal land-use planning process:

(1) The land-use planning processes of FS and BLM involve a variety of tiered, interrelated actions, beginning with broad administrative requirements at the national level and ending with approval of individual actions at the project-specific level. Under the ESA and its implementing regulations, and existing agency policies, agencies should avoid or mitigate adverse effects to listed species and their designated critical habitat at their earliest opportunity. In this regard, NMFS believes that section 7 consultations may be both required and appropriate at several levels this planning process, where such planning actions identify elements (e.g., standards and guidelines, management objectives and goals, land use allocations, etc., as well as actual ground-disturbing actions) that may affect listed species or designated critical habitat. Consultation on PACFISH is one of several consultations on the various components of land-use planning either completed or underway; these consultations include those for Rangeland Reform 94, individual LRMPs, and project-specific actions.

In particular, the analysis and conclusion in this biological opinion is based on the assumption that consultation on the LRMPs for the Sawtooth National Recreation Area, and the Boise, Salmon, Payette, Challis, Nez Perce, Umatilla and Wallowa Whitman National Forests shall be completed by March 1, 1995.

(2) NMFS similarly recognizes the temporal relationship of PACFISH with other aspects of the land-use planning process. As stated above, NMFS has analyzed the effects of PACFISH with the understanding that PACFISH will be in effect for 18 months. That PACFISH addresses only a portion of all land-use planning activities that adversely affect listed species is compensated by the interim nature of PACFISH, and the fact that the action agencies shall consult on other components of land-use planning

subsequently. Consequently, the analysis and conclusion in this biological opinion is based on the assumption that consultation on the EISS for ecosystem management in eastern Oregon, Washington and Idaho shall be completed no later than publication of the Record of Decision for those EISS 18 months from the date that PACFISH is implemented.

(3) Upon implementation of PACFISH, but prior to completion of the ongoing consultations on LRMPs, NMFS further believes that application of section 7(d) of the ESA to site-specific actions [through the consultation on the LRMPs] will reduce the potential for adverse effects to listed species and their designated critical habitat.

PACFISH is not intended to address every action or class of actions adversely affecting listed salmon that may be carried out in accordance with existing LRMPs or LUPs. However, the difference between those potentially harmful actions that PACFISH effectively addresses and those that it leaves in place or does not address are a reasonable effect to analyze under the regulatory definition of "effects of the action". The conclusions made by NMFS on the questions of whether implementation of PACFISH is likely to jeopardize the continued existence of the listed salmon or adversely modify their designated critical habitat are based on the significance of these adverse effects and the likelihood that they will be addressed by alternative approaches and mechanisms beyond the scope of PACFISH. The FS initiated ESA section 7 consultation with NMFS on the LRMPs for the Umatilla and Wallowa-Whitman National Forests on August 3, 1994, and initiated consultation on the LRMPs for the Sawtooth National Recreation Area and the Boise, Payette, Salmon, Challis, and Nez Perce National Forests in Idaho on September 12, 1994. NMFS is addressing the issues described below in more detail during the consultations on the LRMPs and will address these issues further in the geographically specific EISS.

By making protective measures for riparian and aquatic habitats more conservative and consistent, the proposed RMOs, RHCAs and S&Gs should help prevent adverse effects to listed species from future project-specific activities in many instances, relative to what might have occurred consistent with the existing guidance in LRMPs and LUPs.

However, there are potential effects to listed species and critical habitat that may only be addressed at the broad scale of PACFISH because they may not be adequately addressed in project-specific consultations. Currently, section 7 consultations for land management actions are being carried out by watershed, subwatershed or individual project. The combined effects of Federal actions on salmon subpopulations that may be distributed across more than one watershed may not be adequately

considered by consultations at these scales (particularly at the project scale). For example, potential broad-scale adverse effects include the effects of road construction and timber harvest in roadless areas and other areas of remaining high-quality habitat on the availability and quality of habitat refugia for remaining subpopulations of listed salmon. The adequacy of remaining refugia cannot be determined by examining one action or even one watershed at a time. The importance of such refugia and combined impacts of projects upon refugia across several watersheds can only be assessed by broad-scale strategies such as PACFISH and the upcoming EISs for ecosystem management.

Because the existing decision framework may not be adequate to fully determine how proposed actions will affect attainment of the RMOs, listed species, and designated critical habitat, and because of other reasons described below, some actions that would adversely affect listed salmon, or their designated critical habitat may be not be prevented by PACFISH at earlier planning stages. Such actions may include: road construction and maintenance (Reid and Dunne 1984; Furniss et al. 1991); logging and yarding (Bisson et al. 1987; Carlson et al. 1990; Chamberlain et al. 1991; Hicks et al. 1991a) following site-specific adjustment of RHCAs without watershed analysis; livestock grazing (Clary and Webster 1989; Platts 1991; Burton et al. 1993), and mining (Nelson et al. 1991). These activities may alter stream temperatures, raise fine sediment loads, and reduce channel complexity. Such adverse effects likely will be minimized or eliminated where the action agencies complete both watershed analysis and project-specific analysis prior to adjusting RHCAs. These project-level decisions will be preceded by NEPA and ESA review.

1. Riparian Management Objectives

As stated previously, RMOs provide a consistent set of target conditions for riparian areas and fish habitat and should have a positive effect to listed species and their designated critical habitat over what is currently occurring, since land managers will have to proceed cautiously in order to protect habitat and allow natural restoration to begin. However, because the environmental baseline consists of widespread poor habitat conditions on USFS- and BLM-administered lands and because PACFISH does not provide specific direction to achieve RMOs, and because of the time necessary to recover habitat, NMFS believes that poor habitat conditions will persist on BLM and USFS lands, even with the implementation of the PACFISH direction.

The PACFISH water temperature RMOs, as amended by the October 11, 1994 letter (see Appendix B), are adequate to support salmon spawning, where RMOs are attained. However, the RMOs leave little room for unforeseen events or conditions that could raise water temperatures. The amended temperature RMO of 64 F in

rearing and migratory habitat is set at a level where sublethal stress to rearing juvenile SR spring/summer chinook salmon and migrating adult SR spring/summer chinook salmon and SR sockeye salmon is possible (Armour 1991). However, in many, if not most, watersheds containing designated critical habitat, water temperatures currently exceed the RMOs. This is particularly true in mainstem rivers that constitute migratory habitat for all three listed species. Because the RMOs for temperature do not accommodate any temperature increases from FS or BLM land management actions in watersheds with designated critical habitat, the RMOs should guide land managers to avoid further reductions in stream shade and channel widening. Also, the general S&G requirement that most kinds of actions not retard attainment of the RMOs should help restore the conditions and processes needed begin the reduction of water temperatures where they are too warm. NMFS will further address actions that affect stream temperatures in watershed and ongoing LRMP consultations.

2. Riparian Habitat Conservation Areas (RHCAs)

Although the proposed RHCAs provide a consistent starting point for Federal land managers, and are, in most cases, more protective of aquatic habitat than found in existing management direction, the proposed RHCAs may still not be adequate to fully protect fish habitats in all cases. For example, the proposed RHCA for fish-bearing and permanently flowing non fish-bearing streams may not adequately protect meandering, low-gradient, permanently flowing streams with floodplains wider than 600 feet. This would include some areas of high historic productivity for SR spring/summer chinook salmon, such as Bear Valley in Idaho. PACFISH would not necessarily prevent potentially harmful activities such as road construction or mining at the edge of the floodplain, if forest managers decide the proposed action will not degrade the RHCA. Depending on whether or not these decisions are made in a biologically conservative manner, such actions could result in increased sedimentation or other impacts to the floodplain, and hence the stream during floods or when the stream changes its course within the floodplain. PACFISH would only apply to actions outside of RHCAs if forest managers decide that those actions pose an unacceptable risk (for ongoing actions) or if they decide those actions would degrade the RHCAs. Thus PACFISH does not consistently control adverse effects from actions outside of RHCAs, since it defers such decisions to local land managers without providing a clear decision framework. However, NMFS and the action agencies will address the full range of potential actions outside of RHCAs in consultations on the LRMPs, and in project-specific consultations. NMFS participation on the PACFISH Implementation Team should also reduce the likelihood of adverse effects.

The proposed RHCAs stop at the edge of the 100-year floodplain (regardless of width) in non-forested rangeland ecosystems. This

may not provide adequate protection from land management actions for SR spring/summer chinook salmon in streams with narrow floodplains. However, NMFS can address this problem in watershed or site-specific consultations, where these conditions occur.

Ground disturbance within or outside of RHCAs (caused by timber yarding, mining, livestock grazing, or recreation activities) could increase surface erosion and raise watershed fine sediment yields. RHCAs would, in most situations, buffer streams from sediment carried in unchannelized flows, but may not effectively protect streams from sediment produced in upslope areas that is carried in channelized flows such as through culverts (Belt et al. 1992). Laboratory and field studies summarized by Chapman and McLeod (1987) and Hicks et al. (1991a) demonstrated that for a variety of salmonids, including chinook salmon, increasing proportions of fine sediment (variously defined as particles that would pass sieve openings from 0.83 mm to 9.5 mm in size) reduced fish survival from egg to emergence of fry, and caused earlier emergence of surviving fry. Smaller fry could be expected to suffer higher mortality rates.

The proposed RHCAs are reduced in size by half in non-key watersheds, relative to key watersheds (see Appendix A). The action agencies have not presented an analysis of potential downstream effects of reduced protection for intermittent streams in the Clearwater River Basin that are outside of designated critical habitat. Because of the reduced RHCA size in non-key watersheds, management activities along intermittent streams in the Clearwater River Basin could result in stream temperature changes (Beschta et al. 1987, Chamberlin et al. 1991) reduced recruitment of large woody debris that helps moderate sediment transport (Bisson et al. 1987), increased sediment generation (Chamberlin et al. 1991), and reduced sediment filtration (Belt et al. 1992, FEMAT 1993). Depending on the extent of the impacts described above, this could result in water temperature alterations or sediment depositions in the designated critical habitat of SR fall chinook salmon in the mainstem Clearwater River. Higher stream temperatures in the Clearwater River could alter the timing of adult and juvenile SR fall chinook salmon migrations to less than optimum (Fall Chinook Meeting, Dworshak National Fish Hatchery, January 14, 1994). Water temperatures reduced below natural in the Clearwater River during winter are of particular concern for fall chinook salmon due to the possibility of delayed fry emergence (Arnsberg et al. 1992). This problem is due in part to water management at Dworshak Dam past and in part to forest management practices in the Clearwater National Forest that removed riparian vegetation.

Because of the great distances involved between designated critical habitat and the affected streams, NMFS is uncertain whether measurable downstream effects will occur from reduced intermittent stream protection. However, there likely is some

incremental risk to listed SR fall chinook salmon from potential project level actions by the action agencies consistent with the interrelated LRMPs and LUPs. These project level actions will be subject to ESA consultation as well as NEPA compliance. NMFS and the action agencies will further address the suitability of limiting key watersheds to those watersheds with designated critical habitat in ongoing consultations on LRMPs (October 13, 1994 meeting). Also, NMFS will address this issue in its recovery plan for SR salmon. However, NMFS cannot address this during watershed consultations since, with the exceptions described under Section II's Key Watersheds discussion above, the action agencies are not consulting with NMFS on actions taken in the Clearwater River.

3. Key Watersheds

A broad-scale effect of PACFISH concerns the extent and timing of watershed analysis, which is an essential prerequisite for identifying the combined effects of the range of actions affecting the ecosystem as a whole. FEMAT (1993), the FSEIS/Record of Decision on Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl (U.S. Department of Agriculture and U.S. Department of the Interior 1994), and the interagency Watershed Analysis Coordination Team (1994) described watershed analysis as a set of procedures that would examine watershed status, resilience and capabilities as a basis for planning land management actions, monitoring and restoration. Although the PACFISH S&Gs do represent a significant improvement over existing planning practices, PACFISH would not require decisions about individual projects to be based on a comprehensive understanding of watersheds (with the exception of road and landing construction, new recreation facilities, and timber salvage in RHCAs), and therefore may not prevent adverse effects (as described in the sections on RMOs and S&Gs) to listed salmon arising from site-specific actions authorized consistent with the LRMPs/LUPs. The action agencies do not expect watershed analysis procedures for use in the range of PACFISH to be fully developed and field-tested during the period the interim PACFISH strategy is in effect. NMFS and the action agencies will further address the relationship between watershed analysis and proposed actions in current consultations on LRMPs and through the geographically-specific EISs.

4. Standards and Guidelines (S&Gs)

Fire/fuels Management: These guidelines are a reasonable starting point for wildfire suppression activities. However, the guidelines would allow prescribed burning and "fuels management" to occur within or outside RHCAs if land managers predict that they will not prevent attainment of the RMOS. Because of inherent risks of excessive vegetation removal, sedimentation,

and escaped fires, it may be prudent to limit these actions within RHCAs to situations where they are needed to attain RMOS, and then only after watershed analysis.

5. Roadless Areas

Road construction has been a primary cause of salmonid habitat decline (Eastside Forests Scientific Society Panel 1993, FEMAT 1993, The Wilderness Society 1993, Everett et al. 1994, Wissmar et al. 1994). FEMAT (1993) summarized Furniss et al. (1991) as follows:

Roads may have unavoidable effects on streams, no matter how well they are located, designed or maintained... Roads modify natural hillslope drainage networks and accelerate erosion processes. These changes can alter physical processes in streams, leading to changes in streamflow regimes, sediment transport and storage, channel bank and bed configurations, substrate composition, and stability of slopes adjacent to streams. These changes can have significant biological consequences that affect virtually all components of stream ecosystems.

Roadless areas contain much of the remaining high-quality habitat for anadromous fish. They can be considered havens for weak stocks and may facilitate the future recolonization of restored habitats (FEMAT 1993, Eastside Forests Scientific Society Panel 1993). Consideration of land allocations, including roadless areas, was a crucial factor in estimating salmonid population viability under different alternatives in the final supplemental EIS for managing Federal lands in the range of the northern spotted owl.

PACFISH would not directly prohibit construction of new roads, or require a reduction in total road mileage in key watersheds in inventoried roadless areas not proposed for wilderness designation in LRMPs. However, considerable (albeit temporary) protection for these areas will be afforded by the requirement to complete watershed analysis prior to constructing roads in RHCAs. Current FS practice includes the requirement of an EIS prior to entry into roadless areas. This should preclude construction of valley bottom or mid-slope roads until watershed analysis procedures are developed, tested, and finalized, since stream (and therefore RHCA) crossings generally would be required.

A strategy for identifying and protecting remaining areas of high quality salmon habitat at the landscape scale is crucial to the survival and recovery of listed salmon (Eastside Forests Scientific Society Panel 1993, FEMAT 1993, Frissell et al. 1993, The Wilderness Society 1993). However, the analysis of habitat refugia is beyond the scope of PACFISH, and the length of time it would require would foreclose the opportunity to issue the

interim PACFISH guidance. NMFS expects that the action agencies, in cooperation with NMFS, will identify potential refugia in the Eastside Ecosystem Management Assessment and Upper Columbia River Basin Assessment. NMFS will focus this consultation on the proposed scope of PACFISH as an interim riparian management strategy in place until these more comprehensive analyses can be completed. NMFS and the action agencies also will address potential refugia in ongoing consultations on the LRMPs.

C. Cumulative Effects

Cumulative effects are defined in 50 CFR 402.02 as "those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." For the purposes of this analysis, the action area includes all USFS and BLM lands in all watersheds that contain designated critical habitat for listed SR salmon, or that do not contain designated critical habitat but in which land management actions are subject to section 7 consultation for "may affect" actions (this has at times included portions of the Clearwater River basin excluding the North Fork Clearwater River above Dworshak Dam.

In the SR Basin, non-Federal lands have been subjected to as great or greater degradation of fish habitat than Federal lands. Although no information on non-Federal lands was provided in the PACFISH BA, it is apparent that most of the remaining high-quality fish habitat is on Federal lands since non-Federal lands generally are less remote, more accessible, and subject to a somewhat larger array of impacts than Federal lands. However, a substantial portion of historic salmon spawning and rearing habitat does occur on non-Federal lands. Many of these areas have been degraded by the effects of agriculture, water withdrawals and diversions, urbanization, riparian road building, logging, and livestock grazing (Bevan et al. 1994, Wissmar et al. 1994). This has resulted in loss of riparian vegetation, increased water temperature, increased nutrient loading, loss of pools, and increased fine sediment (for an example of stream conditions on non-Federal land see the discussion of the Tucannon River in USDA 1982a and Theurer et al. 1985). These impacts have substantially reduced survival for SR spring/summer chinook salmon in many watersheds, and for SR fall chinook salmon in some river reaches.

To some extent, the protective measures included in PACFISH may reduce the availability of Federal timber, rangeland, mineral and recreational resources to local user groups. The draft EA predicted cancellation of some timber sales within the Clearwater and Nez Perce National Forests and in the BLM Coeur d'Alene District due to restrictions in PACFISH. The draft EA also predicted a reduction in livestock grazing in RECAPs of affected areas. Depending on other economic factors that are

impossible to predict within the scope of this Opinion, these restrictions could lead to increased resource use on non-Federal lands with accompanying damage to riparian and fishery habitats. However, there is inadequate information to determine whether these changes to non-Federal actions are reasonably certain to occur.

VII. CONCLUSION

In general, PACFISH represents an improvement over existing planning direction. The implementation of PACFISH should avoid and reduce degradation of designated critical habitat, and prevent increases in habitat-related salmon mortality, from most classes of ongoing and future land management actions, relative to what would have occurred under the LRMPs and LUPs without PACFISH. PACFISH is likely to be most effective in ameliorating problems from timber harvest, road construction, and road maintenance; however, its effectiveness in controlling ongoing and future habitat degradation from livestock grazing and mining is less certain. Possible adverse effects from these actions are subject to the restrictions of ESA section 7(d) due to the initiation of consultation on LRMPs, and individual projects through watershed BAs, and will be addressed by NMFS in subsequent biological opinions.

NMFS has determined that, based on the available information, the interim PACFISH guidance is not likely to jeopardize the continued existence of SR sockeye salmon, SR spring/summer chinook salmon, or SR fall chinook salmon, or result in the destruction or adverse modification of critical habitat.

Implementation of PACFISH could foster the beginning of natural habitat restoration in some areas of designated critical habitat. However, since PACFISH will be in place for a relatively short time, and does not contain an active watershed restoration component, it is unlikely that its implementation will significantly reduce mortality of listed salmon caused by existing degradation of the environmental baseline. Possible cumulative effects occurring in the action area from implementation of PACFISH are difficult to predict but are not likely to be significant.

Under the ESA and its implementing regulations, and existing agency policies, agencies must avoid or minimize incidental take at their earliest opportunity. Therefore programmatic measures that will reduce the potential for taking are an appropriate result of a consultation on a programmatic action. Consultations and further measures to avoid or minimize incidental take may still be necessary at the LRMP and project/permit levels, where more comprehensive and quantitative information about proposed actions and likely effects on listed salmon and designated critical habitat will be available.

VIII. REINITIATION OF CONSULTATION

Consultation must be reinitiated if: (1) new information reveals effects of the action that may affect listed species in a way not previously considered; the action, as described in the March 18, 1994 EA and amended by the October 11, 1994 letter, (2) PACFISH is modified in a way that causes an effect on listed species or their designated critical habitat that was not previously considered; or, (3) a new species is listed or critical habitat is designated that may be affected by the action (50 CFR 402.16).

Because the proposed PACFISH direction does not provide specific guidance for monitoring the overall effectiveness of PACFISH implementation, the conservation recommendations provided in this opinion outline elements that are strongly suggested to be included in such a monitoring plan. Results of this monitoring may reveal new information that may trigger reinitiation of consultation.

NMFS would consider the extension of PACFISH beyond 18 months after its implementation be a modification of the proposed action that would require reinitiation of consultation. Consultation shall be reinitiated in the event that consultation on the geographically-specific EISs in eastern Oregon, Washington and Idaho is not completed by 18 months from the effective date of the record of decision for PACFISH.

NMFS' conclusion on PACFISH is based in part on the assumption that some of the adverse effects from interrelated actions not prohibited by PACFISH will be addressed in consultations on the LRMPs for the Sawtooth National Recreation Area and the Boise, Salmon, Payette, Challis, Nez Perce, Umatilla, and Wallowa-Whitman National Forests. Although NMFS expects consultation to be completed on these LRMPs by February 1, 1995, consultation on PACFISH shall be reinitiated in the event that consultation on the EISs for these LRMPs is not concluded and a biological opinion issued for these LRMPs by March 1, 1995.

IX. CONSERVATION RECOMMENDATIONS

Conservation recommendations are discretionary measures suggested to minimize or avoid adverse effects of a proposed action on listed species, to minimize or avoid adverse modification of designated critical habitat, to develop additional information, or to assist the Federal agencies in complying with their obligations under section 7(a)(1) of the ESA. NMFS believes the following conservation recommendations are consistent with these obligations, and therefore should be implemented by the FS and BLM.

For clarity, NMFS has organized conservation recommendations into categories of actions that NMFS believes will assist the USFS and

BLM in minimizing their impacts to listed salmon and designated critical habitat at the earliest opportunity. These are organized into categories of (1) suggested clarifications to PACFISH interim direction to provide further consistency and clearer protection for listed salmon; (2) recommended elements for monitoring the effectiveness of PACFISH; (3) expectations of data requirements NMFS will need for section 7 consultations at the project- or watershed level for actions conducted under PACFISH interim direction; (4) recommended elements for the geographically-specific EISs.

A. Clarifications to PACFISH interim direction to provide further consistency and protection for listed salmon

1. The FS and BLM, in coordination with the Interior Columbia Basin Ecosystem Management Project (ICBEMP), should provide to NMFS following the issuance of this biological opinion the following information to facilitate project-level consultations that will be occurring during the period PACFISH is in place. The USFS and BLM should use this information in evaluating potential impacts of road construction during consultations on ongoing or proposed actions that include any road construction in roadless areas:

- a. a map of roadless areas to include inventoried and non-inventoried roadless areas in the Snake River Basin;
- b. descriptions of the roadless areas including names, locations, sizes and general geomorphological characteristics;
- c. a description of any planned road construction in these areas during the period PACFISH will be in effect;
- d. additional road construction likely to be proposed during the period PACFISH will be in effect; and
- e. an analysis of the impacts of the proposed road system on designated critical habitat.

2. RMOs

a. To provide the maximum benefit for listed salmon, NMFS strongly recommends that where existing data or watershed analysis indicate that watershed or stream reach habitat capabilities surpass the RMOs, the RMOs should be adjusted on a reach or watershed basis to reflect the naturally attainable levels for the key and supporting features for that reach or watershed. However, RMOs should not be adjusted to reflect less optimum habitat conditions than the interim RMOs unless supported by the results of watershed analysis and permitted by section 7 consultation for the subject watershed.

b. Proposed or ongoing actions in watersheds containing designated critical habitat or in the Clearwater River Basin (excluding the North Fork Clearwater River above Dworshak Dam)

that are likely to degrade habitat conditions in designated critical habitat that currently meet or surpass the minimum criteria set by the interim RMOs should be modified or eliminated. Exceptions to this condition may be made as a result of section 7 consultation with NMFS.

3. RHCAs

a. All stream reaches presently or historically accessible to listed Snake River salmon (except reaches above impassable natural falls, and Dworshak and Hells Canyon Dams) in designated critical habitat should be included in the proposed RHCA for Category 1 - Fish-bearing streams.

b. Actions or groups of actions outside of RHCAs but that may affect RHCAs, due to their proximity to the RHCAs or other factors (such as areas where the 100-year floodplain is 300 feet wide or greater {600 feet including both sides of the stream channel}, or non-forested rangeland ecosystems with floodplains less than 100 feet wide) should be specifically addressed by the FS and BLM in their biological assessments on specific actions or groups of actions submitted for section 7 consultation.

c. The interim RHCAs for non-forested rangeland ecosystems should include the 100-year floodplain and adjacent riparian areas.

d. Interim PACFISH RHCA widths should not be made smaller unless appropriate data is provided that meets requirements, which will be mutually agreed to by NMFS and action agency biologists, or unless supported by the results of watershed analysis and permitted by section 7 consultation for the subject watershed.

e. The FS and BLM should use procedures equivalent to the Federal Wetlands Manual (U.S. Army Corps of Engineers et al. 1987) to identify riparian areas within RHCAs. The FS and BLM should provide NMFS with these procedures for review.

f. The FS and BLM should apply PACFISH RHCAs for key watersheds in the Clearwater River Basin (excluding the North Fork Clearwater River above Dworshak Dam) in those watersheds where land management actions may affect water quality in designated critical habitat.

4. Key Watersheds

a. During the period PACFISH interim guidance is in place, and until final key watersheds are designated in the Record of Decision based on the EISS for ecosystem management, the FS and BLM should treat as interim key watersheds those watersheds that

contain salmonids proposed for listing or proposed critical habitat.

b. The FS and BLM should coordinate with NMFS, through NMFS' representatives to the ICBEMP, on proposed and final designation of key watersheds for the Snake River Basin.

c. If any anadromous salmonid species (occurring within the geographic range of PACFISH direction) is proposed for listing under the ESA during the period that PACFISH direction is in place, the FS and BLM should, in coordination with NMFS, analyze and report to NMFS on the need to designate additional key watersheds.

5. Watershed Analysis

a. NMFS recommends that watershed analysis be designed and carried out to meet the goals described on p. C-18 to C-19 of the March 18, 1994 PACFISH EA, in accordance with the following steps and timeframes:

(1) The FS and BLM should provide to NMFS as soon as possible, a list and description of watershed analyses currently underway in the Snake River Basin, and should provide NMFS with copies of documentation for the resulting analyses when completed.

(2) The FS and BLM should coordinate with NMFS, through NMFS' representatives to the Interagency Watershed Analysis Coordination Team and the ICBEMP, regarding priorities and initial procedures for prototype watershed analyses, means of peer review and other evaluation of results, and revision of procedures.

(3) Upon the revision of watershed analysis procedures used in the prototype watershed analyses described in 3(a)(2) above, watershed analysis should be carried out in key watersheds prior to planning and implementing new land management actions that could cause an irreversible or irretrievable commitment of resources that would foreclose the action agencies' ability to formulate alternatives, in the geographically-specific EISs, to avoid jeopardy to listed species or adverse modification of designated critical habitat. New actions are defined as those for which biological assessments have not been submitted to NMFS for section 7 consultations as of the date revision of watershed analysis procedures is completed.

b) For new mineral exploration and extraction actions authorized or permitted by the FS or BLM that may adversely affect listed salmon, the agencies should complete watershed analysis prior to

authorizing or permitting those actions in RHCAs of watersheds with designated critical habitat.

c) The FS and BLM should evaluate means and possible benefits of withdrawal of RHCAs for new mineral entry in areas where watershed analysis indicates mining would degrade designated critical habitat or adversely affect listed salmon to the extent allowed under applicable law.

d) The FS and BLM should begin using, to the extent practicable, the watershed analysis procedures developed by the Interagency Watershed Analysis Coordination Team as soon as they are amended and released (expected in July 1995), for planning actions that are likely to adversely affect listed salmon or designated critical habitat.

e) Where possible, the FS and BLM should complete watershed analysis prior to planning and carrying out prescribed burning and fuels management actions inside RHCAs.

6. Watershed Restoration

The FS and BLM should begin identifying areas that are in need of watershed restoration immediately upon implementation of PACFISH, and should begin planning for and carrying out watershed restoration in those areas as soon as possible. Priorities should be based on existing and potential risks and effects to listed salmon and their critical habitat, as well as the likely effectiveness of the restoration effort.

7. Standards and Guidelines

a. The FS and BLM should attempt, to the extent practicable, to complete Road Management Plans and Transportation Management Plans within the period of PACFISH implementation.

b. The following guidance should be added to the beginning of guideline MM-1: "Avoid adverse effects to listed species and designated critical habitat from mineral operations."

c. The FS and BLM should provide guidance to land managers on how to decide in a consistent and biologically risk-averse manner whether "no alternative to siting facilities in RHCAs exists" (MM-2) and "no alternative to locating mine waste... in RHCAs exists" (MM-3). This guidance shall be submitted to NMFS for review within 3 months of the implementation of PACFISH.

d. Guideline RF-3b should be amended to read as follows: "closing and stabilizing, or obliterating and stabilizing roads not needed for future management activities. Prioritize these actions based on the current and potential damage to listed anadromous fish and their designated critical habitat, and the ecological value of the riparian resources affected."

B. Recommended elements for monitoring the effectiveness of PACFISH

1. The FS and BLM, in cooperation with NMFS, should develop a quality control team to oversee the application of the "unacceptable risk" screens for ongoing actions. This team would address the consistency of scientific and technical information used to make determinations using the screens, and should develop inter-regional review methodologies.

2. Monitoring the implementation of PACFISH interim direction is critical to documenting the progress towards achieving the stated goals of PACFISH. The results of such monitoring are needed to assist in identifying the long-term needs of the species. The FS and BLM should prepare and submit a joint report to NMFS within one year of PACFISH implementation:

a. A section describing progress on the identification and designation of key watersheds.

b. A section describing progress on the implementation of prototype watershed analyses, including a description of analysis status, a summary of peer review comments (with complete copies of peer review comments attached as an appendix), an evaluation of results for any completed analyses, and a description of planned revision of procedures.

c. A section describing results of stream inventory and monitoring efforts, and relating those results to status of attainment of riparian management objectives and protection of listed salmon, by watershed.

d. A section describing progress on the identification of riparian management objectives that are specific to watersheds or ecoregions, by National Forest and BLM District.

e. A summary of land management actions (e.g. timber harvest by acres, changes in equivalent clearcut acreage, road miles constructed, reconstructed, and obliterated, recreation developments, mining activity, grazing activity, and watershed restoration) begun, carried out, or completed that are in, or modify, RHCAs, or that affect attainment of RMOs, by watershed. This section should include an analysis of whether the actions were implemented in accordance with the PACFISH interim guidance.

f. A section describing the effectiveness of the PACFISH interim guidance in avoiding adverse effects to listed species and designated critical habitat, by watershed.

3. The FS and BLM should, in coordination with the ICBEMP, plan and initiate validation monitoring to examine the assumptions used in designing the PACFISH RHCAs, RMOs and S&Gs as protective measures for listed anadromous salmonid fishes and their designated critical habitat. The FS and BLM should report to NMFS on progress in developing validation monitoring plans within one year of PACFISH implementation.

C. Recommendations to simplify project- or watershed-level consultations (see also recommendations on monitoring)

1. The FS and BLM should jointly (preferably) or singly develop a comprehensive strategy that addresses fire suppression and fuels management for all watersheds that contain designated critical habitat for Snake River salmon and for watersheds that may affect water quality in designated critical habitat (i.e. the

Clearwater River Basin excluding the North Fork Clearwater River above Dworshak Dam). In order to facilitate consultation and to reduce the need for emergency consultations during fire season, the FS and BLM should attempt to complete the fire management BA prior to the anticipated start of the 1995 fire season in the Snake River Basin.

2. Biological assessments submitted by the FS or BLM to NMFS after the date that PACFISH is implemented for actions in the Clearwater River Basin (excluding the North Fork Clearwater River above Dworshak Dam) should provide the available data and analysis needed to describe potential downstream effects on water quality (e.g. temperature, sediment load, and contaminants), and peak flow timing and volume within designated critical habitat.

X. Incidental Take Statement

Section 9 of the ESA prohibits any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of endangered species without a specific permit or exemption. Generally, when a proposed Federal action is found to be consistent with Section 7(a)(2) of the ESA (i.e., the action is found not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of critical habitat) and that action may incidentally take individuals of listed species, NMFS will issue an incidental take statement that (1) specifies the impact of any incidental taking of endangered or threatened species; (2) specifies the reasonable and prudent measures that are necessary to minimize impacts; and (3) sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures. Any incidental taking that is in compliance with the terms and conditions of the incidental take statement are exempt from the taking prohibition pursuant to section 7(o) of the ESA.

In the case of PACFISH, NMFS is not specifying any incidental take level. NMFS will be better able to identify the amount or extent of incidental taking and more comprehensively identify those reasonable and prudent measures necessary to monitor and reduce take in future biological opinions. Therefore no incidental take statement is provided, and no take is authorized incidental to USFS or BLM activities under PACFISH.

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XII. Appendix A

INTERIM RIPARIAN MANAGEMENT OBJECTIVES AND
RIPARIAN HABITAT CONSERVATION AREAS
FINAL PROPOSAL IDENTIFIED BY USFS AND BLM
DURING SECTION 7 CONSULTATION
ON INTERIM PACFISH DIRECTION

INTERIM RIPARIAN MANAGEMENT OBJECTIVES

<u>Interim Objectives</u>	<u>Habitat Feature</u>
Pool Frequency (all systems)	Varies by channel width, see below:
wetted width in feet:	10 20 25 50 75 100 125 150 200
number pools per mile:	96 56 47 26 23 18 14 12 9
Water Temperature	
No measurable increase in maximum water temperature.*	
Maximum water temperatures below 64 F within migration and rearing habitats, and below 60 F within spawning habitats.	
*7-day moving average of daily maximum temperature measured as the average of the maximum daily temperature of the warmest consecutive 7-day period.	
Large Woody Debris Washington. (forested systems) diameter; >50	Coastal California, Oregon, and >80 pieces per mile; >24 inch foot length. East of Cascade Crest in Oregon, Washington, Idaho. >20 pieces per mile; >12 inch diameter; >35 foot length.
Bank Stability (non-forested systems)	>80 percent stable.
Lower Bank Angle (non-forested systems)	>75 percent of banks with >90 degree angle (i.e. undercut).
Width/Depth Ratio (all systems)	<10, mean wetted width divided by mean depth

RIPARIAN HABITAT CONSERVATION AREAS (RHCAs)

The interim RHCA widths would apply until (1) Watershed Analysis is completed, (2) a site-specific analysis is conducted and described and the rationale for modification of interim RHCA boundaries is presented, or (3) the termination of the interim direction.

STANDARD WIDTHS DEFINING INTERIM RHCAs

Four categories of stream or water body, and the standard widths for each are:

Category 1 - Fish-bearing streams: Interim RHCAs consist of the stream and the area on either side of the stream extending from the edges of the active stream channel to the top of the inner gorge, or to the outer edges of the 100-year floodplain, or to the outer edges of riparian vegetation, or to a distance equal to the height of two site-potential trees, or 300 feet slope distance (600 feet, including both sides of the stream channel), whichever is greatest.

Category 2 - Permanently flowing non-fish-bearing streams: Interim RHCAs consist of the stream and the area on either side of the stream extending from the edges of the active stream channel to the top of the inner gorge, or to the outer edges of the 100-year flood plain, or to the outer edges of riparian vegetation, or to a distance equal to the height of one site-potential tree, or 150 feet slope distance (300 feet, including both sides of the stream channel), whichever is greatest.

Category 3 - Ponds, lakes, reservoirs, and wetlands greater than 1 acre: Interim RHCAs consist of the body of water or wetland and the area to the outer edges of the riparian vegetation, or to the extent of the seasonally saturated soil, or to the extent of moderately and highly unstable areas, or to a distance equal to the height of one site-potential tree, or 150 feet slope distance from the edge of the maximum pool elevation of constructed ponds and reservoirs or from the edge of the wetland, pond or lake, whichever is greatest.

Category 4 - Seasonally flowing or intermittent streams, wetlands less than 1 acre, landslides, and landslide-prone areas: This category includes features with high variability in size and site-specific characteristics. At a minimum the interim RHCAs must include:

- a. the extent of landslides and landslide-prone areas,

b. the intermittent stream channel and the area to the top of the inner gorge,

c. the intermittent stream channel or wetland and the area to the outer edges of the riparian vegetation, and

d. for Key Watersheds, the area from the edges of the stream channel, wetland, landslide, or landslide-prone area to a distance equal to the height of one site-potential tree, or 100 feet slope distance, whichever is greatest;

e. for watersheds not identified as Key Watersheds, the area from the edges of the stream channel, wetland, landslide, or landslide-prone area to a distance equal to the height of one-half site potential tree, or 50 feet slope distance, whichever is greatest.

In non-forested rangeland ecosystems, the interim RHCA width for permanently flowing streams in category 1 and 2 is the extent of the 100 year flood plain.

XIII. Appendix B.

FINAL DEFINITIONS PROPOSED BY USFS AND BLM
DURING SECTION 7 CONSULTATION
ON INTERIM PACFISH DIRECTION

Adverse Effects: Adverse effects include short or long-term, direct or indirect management-related, impacts of an individual or cumulative nature, such as mortality, reduced growth or other adverse physiological changes, harassment of fish, physical disturbance of redds, reduced reproductive success, delayed or premature migration, or other adverse behavioral changes to listed anadromous salmonids at any life stage. Adverse effects to designated critical habitat include effects to any of the essential features of critical habitat (e.g., as described at 58 FR 68543) that would diminish the value of the habitat for the survival and recovery of listed anadromous salmonids.

Adverse Impacts: As used to define unacceptable risk, the term refers to management-related, short or long-term, direct or indirect impacts of an individual or cumulative nature that jeopardize the viability of, or which may cause a non-listed anadromous salmonid population to become threatened or endangered.

Attain RMOs: Meet riparian management objectives for the given attributes. For habitats below the objective level, recovery will be initiated during the period the interim strategy is in place. For habitats at or better than the objective level, maintain at least the current condition. Actions that "degrade" habitat conditions (as defined elsewhere) would be considered inconsistent with the concept of attaining RMOs.

Avoid to the Greatest Extent Practicable/Possible: Apply pre-protect planning, best available technology, management practices, and scientific knowledge to eliminate known management induced i-acts and minimize the risk of potential impacts.

Best Conventional: Most effective existing techniques, methods and/or management practices.

Degrade: Measurably change an RMO feature in a way that:

-- further reduces habitat quality, where existing conditions meet or are worse than the objective values.

-- reduces habitat quality, where existing conditions are better than the objective values.

Designated Critical Habitat: Those habitats designated by the National Marine Fisheries Service or US Fish and Wildlife Service, under provisions of the Endangered Species Act, that

include (1) the specific areas within the geographical area occupied by a Federally listed species on which are found physical or biological features essential to the conservation of the species, and that may require special management considerations or protection, and (2) specific areas outside the geographical area occupied by a listed species, upon determination by the Secretary of Commerce or Interior that such areas are essential for the conservation of the species.

Fish-bearing Streams: Stream segments that support fish during all or a portion of a typical year.

High-water Quality: Water with the physical, biological and chemical attributes necessary to meet the life-history requirements and provide for the naturally-attainable productivity of anadromous salmonids.

Minimize: Apply pre-protect planning, best available technology, management practices, and scientific knowledge to reduce the magnitude, extent and/or duration of impacts.

Non-Forested Rangelands: Land on which the native vegetation is predominately grasses, grass-like plants, forbs, or shrubs. In determining what minimum interim RHCA boundary widths apply, there may be instances where the widths for non-forested rangelands apply to one side of a stream and the widths for forested lands apply to the other side of the stream (based on the vegetative cover of adjacent uplands).

Ongoing Actions: Those actions that have been implemented, or have contracts awarded, or permits issued and (within the range of listed anadromous salmonids) for which BA's have been prepared and submitted for consultation, prior to signature of the decision notice for the proposed action (PACFISH Interim Direction).

Permanently Flowing, Non-Fish-bearing Streams: Stream segments that contain running water throughout a typical year, but do not support fish during any portion of a typical year.

Prevent Attainment of RMOs: Preclude attainment of habitat conditions that meet RMOs. Permanent or long-term modification of the physical/biological processes or conditions that determine the RMO features would be considered to prevent attainment of RMOs.

Proposed or New Actions: Those actions that have not been implemented, or for which contracts have not been awarded, or for which permits have not been issued, or (within the range of listed anadromous salmonids) continuing actions for which BA's have not been prepared and submitted for consultation, prior to

signature of the decision notice for the proposed action (PACFISH Interim Direction).

Retard Attainment of RMOs: Measurably slow recovery of any identified RMO feature (e.g., pool frequency, water temperature, etc.) that is worse than the objective level. Measurable degradation of the physical/biological process or conditions that determine RMO features would be considered to retard attainment of RMOs.

Short-Term Habitat Impacts: Impacts of a short duration - generally days or weeks - that would not retard or prevent attainment of RMOs.

Unacceptable Risk: A level of risk from an ongoing activity or group of ongoing activities that is determined through NEPA analysis, and/or through the preparation or subsequent review of biological assessments/evaluations to be:

-- "likely to adversely affect" listed anadromous salmonids or their designated critical habitat or

-- "likely to adversely impact" the viability of non-listed anadromous salmonids.

Appendix K

Draft Unacceptable Risk Checklist

PROTOCOL FOR SCREENING FOREST SERVICE & BLM ONGOING ACTIONS
IN WATERSHEDS WITH LISTED ANADROMOUS FISH FOR
DETERMINING UNACCEPTABLE RISK

PURPOSE

Alternative 4, the agencies' proposed interim direction to arrest the degradation and begin restoration of aquatic and riparian ecosystems that support Pacific anadromous salmonids, provides for application of standards and guidelines to all new projects and activities and selected ongoing projects and activities that pose an "unacceptable risk" to salmon and steelhead. The Environmental Assessment equates unacceptable risk for listed anadromous salmonids to a determination of "likely to adversely affect." A protocol is described below to facilitate screening of ongoing "may affect" projects and activities to determine which are likely to adversely affect listed anadromous salmonids or their designated critical habitat, and to which PACFISH interim direction (e.g., standards and guidelines) shall be applied to avoid adverse effects.

APPROACH

Forest Service and Bureau of Land Management fisheries biologists* will use the checklist outlined below - in conjunction with the Biological Assessments prepared and submitted for ongoing projects and activities, other relevant information, and professional judgement - to evaluate all ongoing actions that may affect listed anadromous salmonids. The "screen" will be applied to actions for which consultation has been initiated but not completed - with the exception of a small number of actions for which consultation is nearly complete (see attached list). The checklist will be applied to Section 7 Watershed Scale Biological Assessments to assess cumulative effects of individual actions. One document (screen) will be completed for each Biological Assessment. When making the determination each ongoing project or group of like ongoing projects addressed in the Biological Assessment will be tested against the criteria. Where appropriate, Forest Service and Bureau of Land Management biologist who prepared the initial Biological Assessments are encouraged to work together to complete the screens. Ongoing actions for which consultation has been completed will not be screened.

Based on the results of the checklist, the biologist will determine if the ongoing action is likely to adversely affect listed salmon. Screening results will be forwarded to the National Marine Fisheries Service (NMFS) to supplement the Biological Assessment.

Ongoing actions that are likely to adversely affect listed salmon will be suspended or modified through application of PACFISH interim direction to avoid the adverse effects, until consultation is concluded. Ongoing actions that are determined not likely to adversely affect listed salmon or their critical habitat, based on the results of the checklist, may continue pending conclusion of consultation with the NMFS.

* Fisheries biologist who signed the Biological Assessment for the ongoing action or group of ongoing actions will apply the screen. Where that is not possible, a fisheries biologist with appropriate experience and knowledge will apply the screen criteria.

CHECKLIST FOR SCREENING ONGOING ACTIONS
IN WATERSHEDS WITH LISTED ANADROMOUS FISH FOR
DETERMINING UNACCEPTABLE RISK

Forest/BLM Unit: _____

BA Being Evaluated: _____

Description of Ongoing Actions or Group of Actions within BA that are being tested against screens: _____

Initial determination made in the BA for these Ongoing Actions or Group of Actions:

- _____ Beneficial Effect
- _____ Not Likely to Adversely Affect
- _____ Likely to Adversely Affect

Fisheries Biologist Performing Evaluation: _____

Telephone Number: _____ Date: _____

CHECKLIST

Respond with a Y (Yes) or N (No) to each component of the following two questions. Provide a brief rationale for responses, (i.e., Cite the applicable page numbers of the BA, other relevant information, or, in the absence of data, the professional judgement that supports the response).

1. Is it probable or foreseeable that the ongoing actions or group of ongoing actions would affect any of the following essential features of critical habitat, diminishing the value of that habitat (relative to the current condition)? (Answer "yes" if the ongoing action is currently resulting, or will likely result, in a measurable or observable change in an essential feature of critical habitat, (i.e., a yes to any element of this question would result in checking one or more elements of the second question).

Migration, Spawning and Rearing Habitats

_____ Water quality (e.g., chemical, suspended sediment, temperature)

Rationale: _____

_____ Water quantity (i.e., magnitude, duration, timing of high/low flows)

Rationale: _____

_____ Water velocity

Rationale: _____

_____ Safe passage conditions

Rationale: _____

_____ Amount of spawning area

Rationale: _____

_____ Substrate characteristics

Rationale: _____

_____ Space

Rationale: _____

_____ Cover/shelter

Rationale: _____

_____ Riparian vegetation (does the action degrade/retard recovery?)

Rationale: _____

_____ Amount or quality of food (available to rearing/migrating juveniles)

Rationale: _____

2. Are any of the following impacts on listed anadromous salmonids occurring, or are foreseeable, as a result of the ongoing action or group of ongoing actions? (In responding, consider adverse effects resulting from modifications of essential features of critical habitat and direct effects on the listed salmon themselves.)

_____ Increased mortality (to eggs, juveniles, or adults)

Rationale: _____

_____ Reduced growth

Rationale: _____

_____ Other adverse physiological changes (describe: _____)

Rationale: _____

_____ Harassment

Rationale: _____

_____ Physical disturbance of redds

Rationale: _____

_____ Reduced reproductive success

Rationale: _____

_____ Delayed/premature migration

Rationale: _____

_____ Other adverse behavioral changes (describe: _____)

Rationale: _____

ADVERSE EFFECTS DETERMINATION

Based on the screen checklist*, I certify that the ongoing actions described in the _____ Biological Opinion are not likely to adversely affect listed anadromous salmonids, or their critical habitat and support the original determination of not likely to adversely affect. No additional management direction is needed.

EXCEPTIONS:

1. The following ongoing projects or group of projects are exceptions to the above determination: _____

2. PACFISH Standards and Guides were applied to the following projects to reverse the likely effect determinations: _____

3. PACFISH Standards and Guides as applied were not able to reverse the determination and the following project or projects are to be cancelled or terminated until a watershed analysis is completed: _____

Signature of Fisheries Biologist

Date

* A determination of "likely to adversely affect" will be made for any ongoing action or group of actions that result in a positive response to one or more of the checklist elements.

Appendix L

Overview of Forest Planning

APPENDIX L: OVERVIEW OF FOREST SERVICE LAND MANAGEMENT PLANNING

Introduction

The 156 National Forests and Grasslands comprise about 191 million acres or 8.5 percent of the United States (58 Fed. Reg. 19369). Forest Service line officers issue an estimated 40,000 decisions a year accompanied by National Environmental Policy Act (NEPA) documentation (EIS, EA, or categorical exclusion) most of which are subject to administrative appeal. Since 1989 more than 1200 administrative appeals have been filed annually alleging environmental law violations. About 30 new lawsuits are filed each year involving various Forest Service decisions and environmental law compliance.

Under the National Forest Management Act (NFMA), National Forest System lands are administered for multiple use resources. 16 U.S.C. Secs. 528-531, 1604(e), 1607, and 1609. The courts have distinguished the multiple-use and sustained-yield mandate of national forests from other Congressional management mandates, such as national parks. See, Cronin v. United States Department of Agriculture, 919 F.2d 439, 444 (7th Cir. 1990) ("The national forests, unlike national parks, are not wholly dedicated to recreational and environmental values."); Sierra Club v. Robertson, 845 F. Supp. 485, 489 (S.D. Ohio 1994) ("harvesting of timber is and always has been one of the purposes of the National Forest System"); Krichbaum v. Kelly 844 F. Supp. 1107, 1115 (W.D. Va. 1994) ("Every pro diversity command in the regulatory scheme is qualified to permit multiple-use goals"); Resources Ltd. v. Robertson, 789 F. Supp. 1529, 1540 (D. Mont. 1991) aff'd and reversed in part, 8 F.3d 1394 (9th Cir. 1993) ("the Forest Service is faced with a nearly impossible task of serving many different interests"); Sierra Club v. Espy, 38 F.3d 792, 800 (5th Cir. 1994) ("Maintenance of a pristine environment where no species' numbers are threatened runs counter to the notion that NFMA contemplates both even- and uneven-aged timber management...That protection means less than preservation of the status quo but more than eradication of species suggests that this is just the type of policy-oriented decision Congress wisely left to the discretion of experts – here, the Forest Service.").

The Forest Service must harmonize its NFMA multiple-use, sustained-yield mandate with the requirements of other environmental laws such as the National Environmental Policy Act (NEPA), Endangered Species Act (ESA), and Clean Water Act. The agency adopted a multiple level decisionmaking process to ensure compliance with applicable laws. As noted below, this process involves discrete levels of programmatic and project decisions.

How Do Forest Plans Fit into Forest Service Decisionmaking?

There are four levels of Forest Service decisionmaking:

- | | |
|--------------------|---|
| National | RPA Program (5 years); RPA Assessment (10 years), 16 U.S.C. Secs. 1601, -1602. |
| Regional | Regional Guide and EIS (not required by statute, required by 36 CFR 219.4; nine regions in U.S.) |
| Forest Plan | Plan and EIS required for administrative units of National Forest System; NFMA does not require an EIS for plan approval or revision (16 U.S.C. Sec. 1604(g)(1)) but an EIS is required by 36 CFR 219. The area for a forest plan is a national forest administrative unit, usually about 1-2 million acres. Forest plans must be revised every 10 to 15 years. The decision document for plan approval, amendment, or revision is subject to administrative appeal under 36 CFR 217. |
| Project | Project decisions (critical decisions that change the environment) require additional NEPA and environmental law compliance (some uses such as oil and gas leasing, grazing and recreation developments have multi-step consideration at the project level). In 1992 Congress added requirements for notice and comment and administrative appeal of projects. Section 322, Interior Appropriations Act Fiscal Year 1993 (106 Stat. 1419); 36 CFR 215. |

The decisionmaking process is not sequential, but is continuous within and between each level. Continuous plan monitoring, evaluation, amendment or revision is undertaken. All project decisions are subject to site-specific compliance with federal environmental law such as NEPA, ESA, and the Clean Water Act, despite multiple levels of programmatic disclosure. Judicial review is available for decisions that represent "final agency action" and present a justiciable controversy.

The Forest Service Planning Handbook sets describes the plan and project levels of decisionmaking:

Planning for units of the National Forest System involves two levels of decisions. The first is the development of a Forest Plan that provides direction for all resource management programs, practices, uses, and protection measures. . . . The second level planning involves the analysis and implementation of management practices designed to achieve the goals and objectives of the Forest Plan. This level involves site-specific analysis to meet NEPA requirements for decisionmaking. FSM 1922, 53 Fed. Reg. 26807, 26809 (July 15, 1988).

Congress ratified this multiple level decisionmaking approach by enacting a statutory notice, comment, and administrative appeal right for project decisions, 16 U.S.C. Sec. 1612(note).

(106 Stat. 1419). Further discussion of the nature of plan and project decisionmaking may be found in:

Advanced Notice of Proposed Rulemaking, 36 CFR 219,
56 Fed. Reg. 6508, 6519-21, (February 15, 1991);

Proposed Administrative Appeal Regulation, 36 CFR 215,
58 Fed. Reg. 19369, 19370-71 (April 14, 1993);

Final Administrative Appeal Regulation, 36 CFR 215,
58 Fed. Reg. 58904, 58909 (November 4, 1993); and

Proposed Rule for Management of Grazing Use Within Rangeland
Ecosystems, 59 Fed. Reg. 22074, 22076 (April 28, 1994).

What is the Relationship Between Forest Plan and Project Decision Levels?

Forest Plans

An approved national forest plan (LRMP) is the product of a comprehensive notice and comment process established by Congress in NFMA. Forest plans must be formulated using an "interdisciplinary approach to achieve integrated consideration of physical, biological, economic and other sciences." 16 U.S.C. Secs. 1604(b), 1604(f), 1604(g), and 1604(i). Forest plans provide direction to assure coordination of multiple-use resources (outdoor recreation, range, timber, watershed, wildlife and fish, and wilderness) and sustained yield of products and services. 16 U.S.C. Secs. 528-531, 1604(e). NFMA sets forth three plan-level actions: approval (16 U.S.C. Sec. 1604(d) and (j)), amendment (16 U.S.C. Sec. 1604(f)(4)), and revision (16 U.S.C. Sec. 1604(f)(5)). Approval of a forest plan results in:

1. establishment of forest multiple-use goals and objectives, 36 CFR 219.11(b);
2. establishment of forest-wide standards and guidelines to fulfill NFMA requirements (e.g. 16 U.S.C. Sec. 1604(g); see also 36 CFR 219.13 to 219.27);
3. establishment of management areas and management area direction (or "prescriptions") applying to future activities in that management area (resource-integration and minimum specific management requirements), 36 CFR 219.11(c);
4. designation of suitable timber land (16 U.S.C. Sec. 1604(k), 36 CFR 219.14) and establishment of allowable timber sale quantity (16 U.S.C. Sec. 1611 and 36 CFR 219.16);
5. nonwilderness allocations or wilderness recommendations where 36 CFR 219.17 applies; and

6. establishment of monitoring and evaluation provisions, 36 CFR 219.11(d). See Citizens for Environmental Quality v. Lyng, 731 F.Supp. 970, 977-78 (D. Colo. 1989).

Somewhat like a zoning ordinance, the forest plan allows or prohibits some uses and establishes standards and guidelines which regulate future decisions. See Advance Notice of Proposed Rulemaking, 36 CFR 219, 56 Fed. Reg. at 6519-20. The heart of a forest plan is the forest-wide and management area standards and guidelines ("prescriptions"). Plans rarely, if ever, authorize any ground-disturbing activities or make an irretrievable or irreversible commitment of resources. Plans are routinely adapted to new information and changing science or social values through monitoring and evaluation, amendment, or revision.

Project Decisions

The key to the relationship between plan and project levels of decisionmaking is NFMA's consistency requirement, 16 U.S.C. Sec. 1604(i), which requires contracts, permits, licenses, resource plans and activities to conform to plan standards and guidelines. If future project decisions cannot be carried-out consistent with the parameters established by the plan standards and guidelines, then the development cannot proceed. However, a plan may be amended (36 CFR 219.10(f)) to allow a proposed project to proceed. See Preamble, USDA Oil and Gas Resource Regulation, 36 CFR 228.100, 55 Fed. Reg. 10423, 10430 (March 21, 1990); see also Wilkinson and Anderson, 64 Oregon L. Review 1, 10-12.

The Forest Service's regulatory scheme in 36 CFR Part 200 contains examples of the multiple levels of national forest decisionmaking. Forest plans contain mandatory mitigation measures (i.e. standards and guidelines) and project decisions (irretrievable commitment of resources) are made only after site-specific review. Examples of site-specific review at the project level prior to "irretrievable commitment" of resources include: hardrock minerals operating plans 228.4, land exchanges 254.10, timber 223.30, range 222.2, special uses, 251.54 and wilderness uses 293.3.

Even the project decisionmaking level itself may have several discrete steps:

- a. grazing allotment management plans and grazing permits (36 CFR 222.1 to 222.3): Chief's Appeal Decision Toiyabe National Forest LRMP #1694 and 1696, May 3, 1988) and Proposed Rule, 36 CFR 222, 222.3, 59 Fed Reg. 22074, 22076-78, 22093 (April 28, 1994) Nevada Land Action Ass'n. v. United States Forest Service, 8 F.3d 713, 718 (9th Cir. 1993);
- b. multi-step recreational development, such as ski areas: Robertson v. Methow Valley Citizens Council, 490 U.S. 322, 336-37 (1989);
- c. hardrock mining operating plans for prospecting, exploration or development (36 CFR 228.1 to 228.15): Cabinet Mountain Wilderness v. Peterson, 685 F.2d 678, 683-84 (D.C. Cir. 1982);

- d. multiple decision steps in oil and gas leasing, exploration and development (31 U.S.C. Sec. 226(g) and (h)). See USDA Oil and Gas Resource Regulations, 36 CFR 228, 228.102 (55 Fed. Reg. 10423, March 21, 1990) and Chief's Appeal Decision #0192, pp. 5-7, October 1, 1990 (Bridger-Teton LRMP); Chief's Appeal Decision #2042, pp. 5-7, October 1, 1990 (Custer LRMP).

In summary, plans provide programmatic direction for projects, but do not authorize, carry-out, or fund site-specific actions. Projects are independent decisions preceded by environmental analysis (NEPA, ESA, etc.) and generally subject to notice, comment, and administrative appeal under 36 CFR Part 215.

Inter-Regional, Multiple Plan Amendments for Ecosystem Management

Forest plan amendments are essential to keep the management direction current. A "significant" plan amendment requires additional administrative procedures under NEPA and NFMA regulations. If a proposed amendment is determined to be a NEPA "significant" change to the Regional Guide or forest plan an EIS must be prepared pursuant to 36 CFR 219.9 and 219.10. Guidance for determining NFMA "significance" of amendments is found in Forest Service Planning Handbook, Chapter 5.32 (53 Fed. Reg. 26807, 26836, July 15, 1988). If an amendment is "significant" under NFMA, then the same procedure required for plan approval must be followed, 36 CFR 219.10(f).

Under NFMA, all amendments must receive public notice to be effective, 16 U.S.C. Sec. 1604(f)(4); see also Forest Service Planning Manual and Handbooks FSM 1920 and FSH 1909.12 (53 Fed. Reg. 26807, July 15, 1988). Citizens may file a petition to amend forest plans, Oregon Natural Resources Council v. Lowe, 836 F.Supp. 727, 736 (D. Or. 1993); Nevada Land Action Ass'n v. United States, 88-889 Slip Op. at 17 (D. Nev. Feb. 21, 1992); aff'd on other grounds, 8 F.3d 713 (9th Cir. 1993).

Some environmental issues are better addressed over broad ecosystem areas rather than on an administrative unit basis, especially those issues involving wildlife and fish species (i.e. salmon) with a broad habitat range. The Forest Service has used an ecosystem approach to promulgate new wildlife protection standards, guidelines, and land allocations across broad ecosystems rather than plan-by-plan adjustments. Some examples of inter-regional, multiple plan amendments include:

- o **Southern Pine Beetle Control.** EIS and ROD amended 15 forest plans throughout Forest Service Southern Region issued April 7, 1987.
- o **Red Cockaded Woodpecker.** Interim Standards and Guidelines; Environmental Assessment; Finding of No Significant Impact and Decision Notice amended forest plans with red-cockaded woodpeckers, except Texas National Forests. See, Southern Timber Purchasers Council v. Alcock, 736 F.Supp. 267 (N.D. Ga. 1990), aff'd. on standing grounds, 993 F.2d 800 (11th Cir. 1993), cert. denied, January 10, 1994.

- o **Northern Spotted Owl and Old-growth Forest Species.** Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl-Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest Related Species within the Range of the Northern Spotted Owl (April 13, 1994), amended 13 forest plans and 2 regional guides. Judge Dwyer sustained the inter-regional, multiple plan, ecosystem-based amendment in Seattle Audubon Society v. Lyons, 92-479 Slip Opinion pp 30-35, 48 (W.D. Wash. Dec. 21, 1994).
- o **California Spotted Owl.** Interim Standards and Guidelines; Environmental Assessment; Finding of No Significant Impact and Decision Notice amended 10 Pacific Southwest Region forest plans and Regional Guide (January 13, 1993). DEIS issued February 6, 1995. Litigation pending, California Forestry Association v. Thomas, (D. D.C. filed March 23, 1994).
- o **Interim Strategies for Managing Anadromous Fish-Producing Watersheds (PACFISH).** Notice of Availability of Environmental Assessment and Proposed Finding of No Significant Impact, March 25, 1994 (59 Fed. Reg. 14356). Proposed amendments to 15 forest plans in 4 Forest Service Regions and interim management direction for 7 BLM Districts.
- o **Mexican Spotted Owl and Northern Goshawk.** Proposed amendments to 10 forest plans in Forest Service Southwestern Region. DEIS issued September 1994. ESA and NFMA compliance for Mexican Spotted Owl in litigation in Silver v. Thomas, (D. Ariz. filed August 1994).

The ESA and federal court orders such as Seattle Audubon Society v. Evans, 771 F.Supp. 1081 (W.D. Wash. 1991), *aff'd.*, 931 F.2d 590 (9th Cir. 1991) compelled protective measures for the entire habitat range of the northern spotted owl. NFMA's administrative unit focus must be harmonized with the ecosystem view of NEPA and ESA, see, Seattle Audubon Society v. Espy, 998 F.2d 699, 704 (9th Cir. 1993) ("gap in planning that cannot closed"); Seattle Audubon Society v. Lyons, 92-479 Slip Opinion pp 30-35 (W.D. Wash. Dec. 21, 1994) ("[g]iven the current condition of the forests, there is no way the agencies could comply with environmental laws without planning on an ecosystem basis.")"

In some situations, the public has asserted "new information" exists and urged supplementation of the forest plan EIS and amendment of the plan, Oregon Natural Resources Council v. Lowe, 836 F.Supp. 727, 736 (D. Or. 1993); see also Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council, 435 U.S. 519, 554-555 (1978). The Tenth Circuit has held that the Forest Service is not required to cease all non-significant amendments once a significant amendment of a forest plan has begun. In Sierra Club v. Cargill, 11 F.3d 1545 (10th Cir. 1993), the court found that prohibiting non-significant amendments during the pendency of a significant amendment would "thwart the purpose of the regulations." The remedy in a forest plan administrative appeal or lawsuit if a legal error is found, has been an order to go through the plan amendment process. See Citizens for Environmental Quality

v. Lyng, 731 F.Supp. 970 (D. Colo. 1989) and Sierra Club v. Cargill, 732 F.Supp. 1095 (D. Colo. 1990).

Judicial Review of Forest Plan and Project Decisions

Numerous courts have upheld the Forest Service's harmonization of NFMA and other environmental laws through multiple level decisionmaking: Idaho Conservation League v. Mumma, 956 F.2d 1508, 1511-12 (staged decisionmaking) and 1523 (plan level EIS is merely programmatic) (9th Cir. 1992) and Swan View Coalition v. Turner, 824 F. Supp. 923, 935 (D. Mont. 1992); National Wildlife Federation v. Coston, 773 F.2d 1513, 1518 (9th Cir. 1985); City of Tenakee Springs v. Block, 778 F.2d 1402, 1406 (9th Cir. 1986); Cronin v. United States Dept. of Agriculture, 919 F.2d 439, 447-49 (7th Cir. 1990); Idaho Conservation League v. Mumma, 956 F.2d 1508, 1511-12 (9th Cir. 1992); Resources Ltd, Inc. v. Robertson, 789 F. Supp. 1529 (D. Mont. 1991), aff'd. in part, (NEPA, NFMA) and reversed in part (ESA), 8 F.3d 1394 (9th Cir. 1993), amended, 35 F.3d 1300; Sierra Club v. Robertson, 810 F.Supp. 1021 (W.D. Ark 1992), rev'd. on standing grounds, in the alternative affirmed lower court on the merits, 28 F.3d 753 (8th Cir. 1994); Seattle Audubon Society v. Lyons, Slip Opinion, 92-479 (W.D. Wash. Dec. 21, 1994).

The case of Swan View Coalition v. Turner, 824 F.Supp. at 935, contains a particularly good exposition of the programmatic nature of forest plans:

the Forest Plan is a broad framework for the management of a National Forest which does not directly commit to development. Allowing for additional review at each subsequent stage of development recognizes both the managerial purpose of a Forest Plan to provide mechanisms for monitoring and regulating future development as well as its inherent limitations in predicting what development will actually occur.

The court concluded that:

the standards and guidelines operate as parameters within which all future development must take place. If a development project cannot be maintained within those parameters, the safeguard mechanisms in the Plan will prevent such development from going forward.

* * *

Finally, Plaintiffs argue that [U.S. Fish and Wildlife Service] should be compelled to analyze the resource production objectives [included in LRMP] so that the Forest Service can look at the "big picture" before adopting the Plan. As stated above, these resource production objectives simply represent a ceiling on timber production and do not mandate that such quantities actually be harvested.

Likewise, in Sierra Club v. Robertson, 28 F.3d 753, 758-59 (8th Cir. 1994) the court focused upon the nature of the forest plan as a framework for future project decisions in denying plaintiffs standing to sue:

The mere existence of the Ouachita Forest Plan does not produce an imminent injury in fact. A forest plan, such as the Ouachita Plan, is a general planning tool. It provides guidelines and approved methods by which forest management decisions are to be made for a period of ten to fifteen years. Adoption of the Plan does not effectuate any on-the-ground environmental changes. Nor does it dictate that any particular site-specific action causing environmental injury must occur. Indeed, before an environmental change can come about, several events must transpire. First, a site-specific action (e.g., a timber sale) must be proposed and found to be consistent with the Plan. Next, the action is subject to NEPA and NFMA analysis and public comment. Finally, the Forest Service must adopt the action. Finding an environmental injury based on the Plan alone, without reference to a particular site-specific action, would "take [] us into the area of speculation and conjecture." O'Shea v. Littleton, 414 U.S. 488, 497 (1974).

* * * *

...Thus, when a site-specific action in the Ouachita Forest, such as a timber sale, is proposed, and all administrative appeals are exhausted, persons threatened by an imminent injury in fact may seek judicial review of the proposed action. At that time, such persons may assert that the proposed site-specific action is not consistent with the Plan, or that the Plan as it relates to the proposed action is inconsistent with the governing statutes, or both. Here, however, as we already have emphasized, appellants mount their attack on the Plan per se, their arguments devoid of reference to the particularities of any proposed site-specific action that might give rise to an injury in fact.

The Ninth Circuit has acknowledged that EISs prepared in conjunction with forest plan approval are "an early stage, where the EIS is 'merely' programmatic." Idaho Conservation League v. Mumma, 956 F.2d at 1523. The Circuit has also ruled that when a programmatic EIS "is prepared, site-specific impacts need not be fully evaluated until a 'critical decision' has been made to act on site development." Salmon River Concerned Citizens v. Robertson, 32 F.3d 1346, 1357 (9th Cir. 1994); Resources Ltd. Inc., 35 F.3d at 1306, 1307.

However, there is a fundamental disagreement between the Eighth and Ninth Circuits as to the nature of forest plans (i.e. whether plan approval without a project decision presents a justiciable controversy). The Eighth Circuit said, "[w]e are aware that on several occasions the Ninth Circuit has entertained challenges to forest plans similar to the Plan here in issue. [citations deleted]...we decline to apply them [Ninth Circuit decisions] as a basis for finding that the appellants have standing to attack the Plan outside the context of a proposed site-specific action that causes or threatens to cause injury in fact." Sierra Club v. Robertson, 28 F.3d 753, 759-60 (8th Cir. 1994). See also, Wilderness Society v. Alcock, 867 F.Supp.

1026 (N.D. Ga. 1994) (on appeal to Eleventh Circuit) (plaintiffs' claims against Cherokee National Forest Plan not a justiciable controversy). The Seventh Circuit recently declined to follow the Eighth Circuit view and found that environmental organizations did have standing to challenge forest plan approval, Sierra Club v. Marita, 94-1736 and 94-1827 (7th Cir. January 28, 1995).

It is worth noting that administrative appeal or litigation of a programmatic plan does not preclude judicial review of any project decisions. The courts have held that project decisions are reviewable even if plaintiff did not appeal or litigate the plan. See, Cronin v. United States Dept. of Agriculture, 919 F.2d 439 (7th Cir. 1990); Northern Alaska Environmental Center v. Lujan, 961 F.2d 886, 891 (9th Cir. 1992); Salmon River Concerned Citizens, 32 F.3d at 1357-58; Mitchell Smith v. Forest Service, 93-36187, Slip Op. at 9482-84 (9th Cir. August 22, 1994). Moreover, Congress rejected estoppel based upon the failure to administratively appeal or litigate the plan by mandating a statutory right of notice, comment, and appeal of project decisions in the Section 322 of Interior Appropriations Act Fiscal Year 1993 (16 U.S.C. Sec. 1612(note), 106 Stat. 1419). In Section 322(d)(4), Congress linked project notice, comment, and administrative appeal to Administrative Procedure Act judicial review.

The complex and broad nature of the congressional delegation to the Secretary of Agriculture under the Property Clause, Article IV, Section 3, Clause 2, U.S. Constitution, to plan, manage, and administer uses of the national forests has generally led to limited judicial review. See, Griffin v. Yeutter, 88-1415f (S.D. Cal. November 1, 1989) 20 ELR 20400 (1990), pages 3-4, *aff'd.*, 944 F.2d 908 (9th Cir. 1991) (limited judicial review of Cleveland National Forest Plan approval); Sierra Club v. Hardin, 325 F. Supp. 99, 123 (D. Alaska 1971), *rev'd sub nom* on grounds of new evidence; Sierra Club v. Butz, 3 ELR 20,292 (9th Cir. 1973) (limited review of preference between multiple use resources); Hi-Ridge Lumber Co. v. United States, 443 F.2d 452, 455 (9th Cir. 1971) (court deference to rejection of timber sales bids); Ness Investment Corp. v. United States Dept. of Agriculture, 512 F.2d 706, 712 (9th Cir. 1975) (court refrained from second guessing special use permit decision); Perkins v. Bergland, 608 F.2d 803 (9th Cir. 1979) (limited review of grazing decision the court stated that MUSYA "breathes discretion at every pore"); United States v. Means, 858 F.2d 404, 410 (8th Cir. 1988) (denial of special-use permit sustained by agency record); Big Hole Ranchers Ass'n v. U.S. Forest Service, 686 F. Supp. 256, 264 (D. Mont. 1988) (Forest Service has wide discretion to weigh and decide proper uses); Wind River Multiple Use Advocates v. Espy, 835 F.Supp. 1362, 1372-1373 (D. Wyo. 1993) (MUSYA does not contemplate that every acre of national forest will be managed for every multiple use); Resources Limited, Inc. v. Robertson, 789 F. Supp. 1529, 1540 (D. Mont. 1991) *aff'd in part and reversed in part*, 8 F.3d 1394 (9th Cir. 1993), *amended*, 35 F.3d 1300 (9th Cir. 1994) (court isn't to substitute its judgment as to alternative to select for Forest Plan); Sierra Club v. Robertson, 845 F. Supp. 485, 503 (S.D. Ohio 1994) (Congress has vested the Forest Service with discretion to make the decision on land management plans and its decision must be upheld unless arbitrary, capricious or contrary to law). See also, Wilkinson and Anderson, 64 Oregon L. Rev. 1, 52-75 (1985) for overview of judicial review of Forest Service decisions.

