

APPENDIX G
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50 CFR Part 223

Endangered and Threatened Species;
Salmon and Steelhead; Final Rules

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 223

[Docket No. 991207324-0148-02; I.D. 081699C]

RIN 0648-AK94

Endangered and Threatened Species; Final Rule Governing Take of 14 Threatened Salmon and Steelhead Evolutionarily Significant Units (ESUs)

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Final rule.

SUMMARY: Under section 4(d) of the Endangered Species Act (ESA), the Secretary of Commerce (Secretary) is required to adopt such regulations as he deems necessary and advisable for the conservation of species listed as threatened. NMFS now issues a final ESA 4(d) rule adopting regulations necessary and advisable to conserve fourteen listed threatened salmonid ESUs. This final rule applies the prohibitions enumerated in section 9(a)(1) of the ESA to one coho salmon ESU, three chinook salmon ESUs, two chum salmon ESUs, one sockeye salmon ESU and seven steelhead ESUs. NMFS does not find it necessary and advisable to apply the take prohibitions described in section 9(a)(1)(B) and 9(a)(1)(C) to specified categories of activities that contribute to conserving listed salmonids or are governed by a program that adequately limits impacts on listed salmonids. This final rule includes 13 such limits on the application of the ESA section 9(a)(1) take prohibitions.

DATES: Effective September 8, 2000. Applicability dates: In § 223.203 for the Snake River Basin, Lower Columbia River, Middle Columbia River, Upper Willamette River, Central Valley, California, Central California Coast, and South-Central California Coast steelhead ESUs, this final rule is applicable September 8, 2000. In § 223.203 for the Snake River spring/summer, Snake River fall, Puget Sound, Lower Columbia River and Upper Willamette River chinook, Oregon Coast, Central California Coast, and South/Central California Coast coho, Hood Canal summer-run and Columbia River chum, and Ozette Lake sockeye ESUs, this final rule is applicable January 8, 2001.

ADDRESSES: Branch Chief, NMFS, Northwest Region, Protected Resources Division, 525 NE Oregon St., Suite 500,

Portland, OR 97232-2737; Regional Administrator, Northwest Region, 7600 Sand Point Way, NE, BIN C15700, Building 1, Seattle, WA 98115-0070; Assistant Regional Administrator, Protected Resources Division, NMFS, Southwest Region, 501 West Ocean Blvd., Suite 4200, Long Beach, CA 90802-4213; Regional Administrator, NMFS, Southwest Region, 501 West Ocean Blvd., Long Beach, CA 90802-4213; Salmon Coordinator, Office of Protected Resources, NMFS, 1315 East-West Highway, Silver Spring, MD 20910.

FOR FURTHER INFORMATION CONTACT: Garth Griffin at 503-231-2005 or Craig Wingert at 562-980-4021.

Electronic Access

Reference materials regarding this rule can also be obtained from the internet at www.nwr.noaa.gov.

SUPPLEMENTARY INFORMATION:**Background**

On August 18, 1997, NMFS published a final rule listing the Snake River Basin (SRB), Central California Coast (CCC), and South/Central California Coast (SCCC) steelhead (*Onchorynchus mykiss*) ESUs as threatened species under the ESA (62 FR 43937). On March 19, 1998, NMFS published a final rule listing the Lower Columbia River (LCR) and Central Valley, California (CVC) steelhead ESUs as threatened species under the ESA (63 FR 13347). On March 25, 1999, NMFS published a final rule listing the Middle Columbia River (MCR) and Upper Willamette River (UWR) steelhead ESUs as threatened (64 FR 14517). Those final listing documents describe the background of the steelhead listing actions and provide summaries of NMFS' conclusions regarding the status of the listed steelhead ESUs. On August 10, 1998 (63 FR 42587), NMFS, on behalf of the Secretary, published a final rule listing the Oregon Coast (OC) ESU of coho salmon (*Oncorhynchus kisutch*, or *O. kisutch*) as threatened. By a final rule published on March 24, 1999 (64 FR 14308), NMFS listed as threatened the Puget Sound (PS), Lower Columbia River (LCR) and Upper Willamette River (UWR) ESUs of west coast chinook salmon (*Oncorhynchus tshawytscha*, or *O. tshawytscha*) in Washington and Oregon. By a final rule published on March 25, 1999 (64 FR 14508), NMFS listed as threatened the Hood Canal Summer-run (HCS) and Columbia River (CR) chum salmon ESUs (*Oncorhynchus keta*, or *O. keta*) in Washington and Oregon. By a final rule published on March 25, 1999 (64 FR 14528), NMFS

listed as threatened the Ozette Lake ESU of sockeye salmon (*Oncorhynchus nerka*, or *O. nerka*) in Washington. Those final rule listing notifications describe the background of the listing actions and provide a summary of NMFS' conclusions regarding the status of the threatened coho, chinook, chum, and sockeye salmon ESUs.

Section 4(d) of the ESA provides that whenever a species is listed as threatened, the Secretary shall issue such regulations as he deems necessary and advisable to provide for the conservation of the species. Such protective regulations may include any or all of the prohibitions that apply automatically to protect endangered species under ESA section 9(a)(1). Those section 9(a)(1) prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to take (including harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect; or to attempt any of these), import or export, ship in interstate commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce any wildlife species listed as endangered, without written authorization. It is also illegal under ESA section 9(a)(1) to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. Section 11 of the ESA provides for civil and criminal penalties for violation of section 9 or of regulations issued under the ESA.

Whether section 9(a)(1) prohibitions or other protective regulations are necessary and advisable is in large part dependent upon the biological status of the species and potential impacts of various activities on the species. These threatened species are likely to become endangered species within the foreseeable future. Their current threatened status cannot be explained by natural cycles in ocean and weather conditions. NMFS has concluded that threatened chinook, coho, chum, sockeye, and steelhead are at risk of extinction primarily because their populations have been reduced by human "take". West Coast populations of these salmonids have been depleted by take resulting from harvest, past and ongoing destruction of freshwater and estuarine habitats, hydropower development, hatchery practices, and other causes. "Factors for Decline: A Supplement to the Notice of Determination for West Coast Steelhead" (NMFS, 1996) and "Factors Contributing to the Decline of Chinook Salmon: An Addendum to the 1996 West Coast Steelhead Factors for Decline Report" (NMFS, 1998)

concludes that all of the factors identified in section 4(a)(1) of the ESA have played some role in the decline of the species. It is necessary and advisable then to apply the ESA section 9(a)(1) prohibitions to these listed ESUs, in order to provide for their conservation.

These listings have created a great deal of interest among states, counties, and others in adjusting their programs that may affect the listed species to ensure they are consistent with salmonid conservation. Although the primary purpose of state, local, and other programs is generally to further some activity other than conserving salmon, such as maintaining roads, controlling development, ensuring clean water or harvesting trees, some entities have adjusted one or more of these programs to protect and conserve listed salmonids. NMFS believes that with appropriate safeguards, many such activities can be specifically tailored to minimize impacts on listed threatened salmonids to an extent that makes additional Federal protections unnecessary for conservation of the listed ESU.

NMFS, therefore, proposes a mechanism whereby entities can be assured that an activity they are conducting or permitting is consistent with ESA requirements and avoids or minimizes the risk of take of listed threatened salmonids. When such a program provides sufficient conservation for listed salmonids, NMFS does not find it necessary and advisable to apply ESA section 9(a)(1) take prohibitions to activities governed by those programs. In those circumstances (see descriptions to follow), additional Federal ESA regulation through imposing the take prohibitions is not necessary and advisable because it would not enhance the conservation of the listed ESUs. In fact, declining to apply take prohibitions to such programs likely will result in greater conservation gains for a listed ESU than would blanket application of section 9(a)(1) prohibitions, through the program itself and by demonstrating to similarly situated entities that practical and realistic salmonid protection measures exist. NMFS will monitor the activities under a program where NMFS has granted a "limit" on the application of the ESA take prohibitions for unexpected harm, as well as for harmful activities resulting in take that do not obey the requirements of the limit and, therefore, are subject to NMFS ESA enforcement. An additional benefit of this approach is that NMFS can focus its enforcement efforts on activities and programs that have not yet adequately

addressed the conservation needs of listed ESUs.

Substantive Content of Final Regulation

NMFS had previously proposed protective regulations for three of the salmonid ESUs subject to this final rule. When NMFS first proposed the Oregon Coast coho for listing (60 FR 38026, July 25, 1995), it proposed to apply the prohibitions of ESA section 9(a)(1) to that ESU. When NMFS first proposed the LCR and SRB steelhead ESUs for listing (61 FR 41541, August 9, 1996), it also proposed to apply the prohibitions of ESA section 9(a)(1) to those ESUs. These proposed protective regulations, however, were never finalized. NMFS has since proposed application of the section 9(a)(1) prohibitions for seven listed steelhead ESUs (64 FR 73479, December 30, 1999), and seven listed salmonid ESUs (65 FR 170, January 3, 2000). This final rule applies the prohibitions of ESA section 9(a)(1) to all 14 listed ESUs.

NMFS concludes that the prohibitions generally applicable for endangered species are necessary and advisable for conservation of these listed ESUs. Additionally, NMFS determines that section 9(a)(1) prohibitions on listed salmonids in the 14 listed ESUs need not be applied when it results from a specified subset of activities described herein. These are activities that are conducted in a way that contributes to conserving the listed ESUs and where NMFS determines that added protection through Federal regulation is not necessary and advisable for conservation of an ESU. Therefore, NMFS will now apply ESA section 9(a)(1) prohibitions to these 14 threatened salmonid ESUs, but will not apply the take prohibitions to the 13 programs described in this document as meeting that level of protection. Of course, the entity responsible for any habitat-related programs might equally choose to seek an ESA section 10(a)(1)(b) permit, or be required to satisfy ESA section 7 consultation if Federal funding, management or approval is involved. This final rule does not impose restrictions beyond those applied in other sections of the ESA, but provides another option beyond the section 7 and 10 tools to authorize incidental take.

Working with state and local jurisdictions and other resource managers, NMFS has identified 13 programs and criteria for future programs for which it is not necessary and advisable to impose ESA section 9(a)(1) prohibitions because they contribute to conserving the ESU. Under specified conditions and in appropriate

geographic areas, these programs and criteria include: (1) activities conducted in accord with ESA incidental take authorization; (2) ongoing scientific research activities, for a period of 6 months from the publication of this final rule; (3) emergency actions related to injured, stranded, or dead salmonids; (4) fishery management activities; (5) hatchery and genetic management programs; (6) activities in compliance with joint tribal/state plans developed within *United States* (U.S.) v. *Washington* or *U.S. v. Oregon*; (7) scientific research activities permitted or conducted by the states; (8) state, local, and private habitat restoration activities; (9) properly screened water diversion devices; (10) routine road maintenance activities; (11) certain park pest management activities; (12) certain municipal, residential, commercial, and industrial (MRCI) development and redevelopment activities; and (13) forest management activities on state and private lands within the State of Washington. The language which follows describes each limit. These are programs or criteria for future programs where NMFS will limit the application of the section 9(a)(1) prohibitions. More comprehensive descriptions of each limit and discussions regarding the scientific basis for this final rule are contained in "A Citizen's Guide to the 4(d) Rule" (NMFS, 2000). In the future, NMFS anticipates adding new limits for more activities that are deemed necessary and sufficient for the conservation of the species.

NMFS emphasizes that these limits are not prescriptive regulations. The fact of not being within a limit does not mean that a particular action necessarily violates the ESA or this regulation. Many activities do not affect these species, and thus, need not be included in the 13 limits listed earlier. The limits describe circumstances in which an entity or actor can be certain it is not at risk of violating the take prohibitions or of consequent enforcement actions, because the take prohibitions would not apply to programs or activities within those limits. Jurisdictions, entities, and individuals are encouraged to evaluate their practices and activities to determine the likelihood of take occurring. NMFS can provide ESA coverage through section 4(d) rules, section 10 research and enhancement permits, or incidental take permits; or through section 7 consultations with Federal agencies. If take is likely to occur, then the jurisdiction, entity or individual should modify its practices to avoid take of a threatened species or seek protection from potential ESA

liability through section 7, section 10, or section 4(d) processes.

Jurisdictions, entities, and individuals are not required to seek inclusion in a section 4(d) limit from NMFS. In order to reduce its liability, a jurisdiction, entity, or individual may also informally comply with a limit by choosing to modify its programs to be consistent with the evaluation considerations described in an individual limit. Finally, a jurisdiction, entity, or individual may seek to qualify its plans or ordinances for inclusion in a limit by obtaining the 4(d) limit authorization from the appropriate NMFS Regional Administrator (see **ADDRESSES**).

NMFS wishes to continue to work collaboratively with all affected jurisdictions, entities, and individuals to recognize management programs that conserve and meet the biological requirements of salmonids, and to strengthen other programs toward conservation of listed salmonids. This final rule may be amended to add new limits on the take prohibitions, or to amend or delete limits as circumstances warrant.

State, county and local efforts such as Clark, Cowlitz, Kitsap, the Puget Sound Tri-County Initiative in Washington state; and the City of Portland and Clackamas County in Oregon are working with NMFS to make their ordinances and practices fish friendly and to be adopted in future 4(d) rulemaking. NMFS also acknowledges the important progress being made by Metro, the directly-elected regional government in Portland, Oregon. NMFS is enthusiastic about Metro's current planning efforts and encourages its progress in regional planning to address salmonid conservation.

NMFS acknowledges, and is participating in, the State of Washington's Agricultural, Fish, and Water negotiation process currently underway in Washington State. The process currently underway is intended to address the requirements of the ESA and the Clean Water Act (CWA). The negotiations are designed to address agricultural practices and processes including but not limited to: Field Office Technical Guides (FOTGs), Comprehensive Irrigation District Management Plans (CIDMP), Ditch Maintenance Plans (DMPs) and Pesticide Management as needed to comply with ESA and CWA. It is anticipated that completed FOTGs, CIDMPs, DMPs, and Pesticide Management, if acceptable to NMFS, will be included in future ESA 4(d) rulemaking.

NMFS strongly encourages comprehensive conservation planning for programs at the state level. State level conservation programs can be one of the most efficient methods to implement effective conservation practices across the board and achieve comprehensive benefits for listed fish and their habitats. Other examples of these state-based conservation programs include the completed forestry agreement in Washington state; ongoing reviews of Oregon and California forestry practices; and development of coastal states' shoreline management programs. NMFS is working with Washington State Department of Ecology on development of a model shoreline program. Alternatively, a local jurisdiction seeks inclusion in a limitation of the take prohibition by adopting this model program, NMFS expects to address the potential "take" issues associated with the shorelines program through an ESA section 7 consultation with the National Ocean Service in the coming months. This may obviate the need for a 4(d) limit for shoreline-related activities under the authority of the Department of Ecology.

Concurrent with this final rule, NMFS is publishing a final rule describing a limit on the section 9(a)(1) prohibitions for actions in accord with any tribal resource management plan that the Secretary has determined will not appreciably reduce the likelihood of survival and recovery of a threatened ESU (published elsewhere in this **Federal Register** issue).

Following is a section entitled "Notice of Availability" which lists seven documents referred to in the regulation. The purpose of making these documents available to the public is to inform governmental entities and other interested parties of the technical components NMFS expects to be addressed in programs submitted for its review. These technical documents provide guidance to entities as they consider whether to submit a program for a 4(d) limit. The documents represent several kinds of guidance, and are not binding regulations requiring particular actions by any entity or interested party.

For example, NMFS' Viable Salmonid Policy (VSP) paper referenced in the fishery and harvest management limits provides a framework for identifying populations and their status as a component of developing adequate harvest or hatchery management plans. This rule asks that FMEPs and HGMPs "utilize the concepts of 'viable' and 'critical' salmonid population thresholds, consistent with the concepts contained in the [VSP paper]." Thus,

state fishery agencies preparing such programs are put on notice of the technical analysis needed to support decisions within a program. Similarly, NMFS' Fish Screening Criteria explicitly recognize that they are general in nature and that site constraints or particular circumstances may require adjustments in design, which must be developed with the NMFS staff member, or authorized officer, to address site specific considerations and conditions. Finally, research involving electrofishing comes within the scientific research limit only if conducted in accordance with NMFS' Guidelines for Electrofishing. The guidelines recognize that other techniques may be appropriate in particular circumstances, and NMFS can recognize those as appropriate during the approval process.

Of the state or local documents referenced in the rules, two (Oregon Department of Transportation's (ODOT) road maintenance program to govern routine maintenance activities and Portland Parks' integrated pest management program) are existing programs already being implemented that NMFS has found adequate and made effective as limits. Those entities, thus, need no further approval for the programs. Other jurisdictions may come within the road maintenance limit if they use the ODOT program or provide other practices found by NMFS to be equivalent or more protective of salmonids. The State of Washington's Forests and Fish Report will not trigger a limit until the Washington Board of Forestry adopts regulations that NMFS finds are at least as protective as the report. Thus, the report indicates a set of conditions that will allow NMFS to approve the limit, but recognizes that the Board may design regulations that are not identical to, but are at least as protective as, the report language.

In sum, where the rule cites a document, a program's consistency with the guidance is "sufficient" to demonstrate that the program meets the particular purpose for which the guidance is cited. However, the entity or individual wishing a program to be accepted as within a particular limit has the latitude to show that its variant or approach is, in the circumstances where it will apply and affect listed fish, equivalent or better.

NMFS will continue to review the applicability and technical content of its own documents as they are used in the future and make revisions, corrections or additions as needed. NMFS will use the mechanisms of the rule to take comment on revisions of any of the referenced state programs. If any of

these documents is revised and NMFS relies on the revised version to provide guidance in continued implementation of the rule, NMFS will publish in the **Federal Register** a notice of its availability stating that the revised document is now the one referred to in the specified 223.203(b) subsection.

Notice of Availability

The following is a list of documents cited in the regulatory text of this final rule. Copies of these documents may be obtained upon request (see **ADDRESSES**).

1. Oregon Department of Transportation (ODOT) Maintenance Management System Water Quality and Habitat Guide (June, 1999).
2. City of Portland, Oregon Parks and Recreation Department Pest Management Program (March 1997) with Waterways Pest Management Policy updated December 1, 1999.
3. State of Washington, Forests and Fish Report (April 29, 1999).
4. Guidelines for Electrofishing Waters Containing Salmonids Listed Under the Endangered Species Act (NMFS, 2000a).
5. Juvenile Fish Screen Criteria, National Marine Fisheries Service, Northwest Region, Revised February 16, 1995, with Addendum of May 9, 1996.
6. Fish Screening Criteria for Anadromous Salmonids (January 1997).
7. Viable Salmonid Populations and the Recovery of Evolutionarily Significant Units. (NMFS, 2000b).

Copies of all references, reports, related documents and "A Citizen's Guide to the 4(d) Rule" (NMFS, 2000) are also available upon request (see **ADDRESSES**).

The limits on the take prohibitions do not relieve Federal agencies of their duty under section 7 of the ESA to consult with NMFS if actions they fund, authorize, or carry out may affect listed species. To the extent that actions subject to section 7 consultation are consistent with a circumstance for which NMFS has limited the take prohibitions, a letter of concurrence from NMFS will greatly simplify the consultation process, provided the program is still consistent with the terms of the limit.

Applicability to Specific ESUs

In the regulatory language in this final rule, the limits on applicability of the take prohibitions to a given ECU are accomplished through citation to the Code of Federal Regulations' (CFRs') enumeration of threatened marine and anadromous species, 50 CFR 223.102. For the convenience of readers of this notice, 50 CFR 223.102 refers to

threatened salmonid ESUs through the following designations:

- (a) (1) Snake River spring/summer chinook
- (a) (2) Snake River fall chinook
- (a) (3) Central California Coast coho
- (a) (4) Southern Oregon/Northern California Coast coho
- (a) (5) Central California Coast steelhead
- (a) (6) South-Central California Coast steelhead
- (a) (7) Snake River Basin steelhead
- (a) (8) Lower Columbia River steelhead
- (a) (9) Central Valley, California steelhead
- (a) (10) Oregon Coast coho
- (a) (12) Hood Canal summer-run chum
- (a) (13) Columbia River chum
- (a) (14) Upper Willamette River steelhead
- (a) (15) Middle Columbia River steelhead
- (a) (16) Puget Sound chinook
- (a) (17) Lower Columbia River chinook
- (a) (18) Upper Willamette River chinook
- (a) (19) Ozette Lake sockeye

Summary of Comments in Response to the Proposed Rules

Between January 10, 2000, and February 22, 2000, NMFS held 25 public hearings to solicit comments on the proposed ESA 4(d) rules: 7 in Washington, 8 in Oregon, 3 in Idaho, and 7 in California (64 FR 73479, December 30, 1999; 65 FR 170, January 3, 2000; 65 FR 7346, February 14, 2000; 65 FR 7819, February 16, 2000). During the 65-day public comment period, NMFS received 1,146 written comments on the proposed rules from Federal, state, and local government agencies; Indian tribes; non-governmental organizations; the scientific community; and individuals. In addition, numerous individuals provided oral testimony at the public hearings.

Based on these public hearings and comments, NMFS now issues its final protective regulations for these 14 salmon and steelhead ESUs. The preamble section of this rule refers to the prohibitions of ESA section 9(a)(1). In addition to the commonly referred to take prohibitions of section 9(a)(1)(B) and 9(a)(1)(C), section 9(a)(1), also includes prohibitions on the import, export, sale, delivery, or transport in interstate commerce of endangered species. The public comments NMFS received almost exclusively focused on the section 9 take prohibitions. The following comments and responses, therefore, refer to the "take"

prohibitions of section 9(a)(1)(B) and 9(a)(1)(C), not to the other prohibitions described in section 9(a)(1). Accordingly, for the rest of this preamble and in the regulation, the term "prohibition" refers to the prohibition of take within the 13 specified limits.

New information and a summary of comments received in response to the proposed rules are summarized as follows.

Comments and Responses

Take Guidance

Comment 1: Some commenters stated that a primary focus of the proposal was to encourage development of local tailor-made measures that protect salmonids and they requested further guidance on how their programs could be included in future ESA 4(d) rules.

Response: Credible local initiatives are indeed needed to help save these species, and guidance on how local programs can be included in 4(d) rules is available in *The ESA and Local Governments: Information on 4(d) Rules, May 7, 1999*. In addition, NMFS staff will be available to offer advice and otherwise help individual jurisdictions and entities ensure that their actions do not take listed fish.

Comment 2: Some commenters wanted a simplified process (e.g., a "letter of approval" from NMFS staff) for including local programs in future ESA 4(d) rules.

Response: NMFS worked with state and local authorities to identify several categories of activities where local programs can be certified to comply with ESA requirements if they meet the conditions described in the rule. This simplified process would be available for land-use development activities, water diversion screening, road maintenance, hatchery operations, fisheries harvest, fisheries related research, and habitat restoration activities. Other governmental entities are encouraged to step forward and work with NMFS. First, to ensure that local programs meet the salmon's biological requirements and the mandates of the ESA, and second, to streamline the administration of any program.

Comment 3: A number of commenters stated that the proposed take guidance was too vague (e.g., guidance in the limit for new urban density development). Others commented that the guidance was too prescriptive, and still others stated that the guidance was less stringent for some categories of activities and more stringent for others.

Response: To be approved for a limit from ESA take prohibitions, a program

must conserve salmon and meet their biological requirements. This criterion is the same for all programs. These species span the entire west coast from coastal rainforests to arid inland areas to high mountain regions nearly a thousand miles from the ocean and, thus, specific requirements will naturally differ from place to place. Some jurisdictions have asked for NMFS' help in learning how to avoid or limit adverse impacts on these species. General guidance is provided in this rule. This final 4(d) rule addresses concerns about vague guidance by providing additional specificity and by requiring that once specific programs designed to meet NMFS' criteria are produced (and before determining whether they are adequate), NMFS will publish the proposed program for review and comment.

Comment 4: Some commenters stated that NMFS must wait to apply take prohibitions until more specific guidance is published on how other programs can qualify for a limit on the take prohibitions. Others requested that NMFS delay take prohibitions until many more local programs were ready to be included in an ESA 4(d) rule, or that NMFS phase in the take prohibitions as programs qualify for a limit.

Response: These species are, by definition, likely to become endangered in the foreseeable future and undue delay in protecting them would likely increase the difficulty and expense of recovering them. At the same time, NMFS recognizes these rules are novel and complicated and some time is needed for regulated parties to better understand them. NMFS has balanced these considerations by adopting a final rule that puts needed regulations in place within 60 days for the steelhead ESUs and within 180 days for the salmon ESUs, which allows a reasonable period before they become effective (6 months).

Comment 5: A few commenters wanted NMFS to grant a grace period from the take prohibitions to those jurisdictions making good faith efforts to conserve the species.

Response: The proposed rule already states that while enforcement may be initiated against activities that take protected salmonids, NMFS' clear preference is to work with persons or entities to promptly shape their programs and activities to include credible and reliable conservation measures.

Comment 6: Some commenters asked NMFS to apply prohibitions against take to all programs without exception.

Response: Any jurisdiction or individual under United States authority is subject to the take prohibitions. Jurisdictions or individuals wanting assurance that an activity they are conducting or permitting is consistent with ESA requirements can be covered under a section 7 consultation (if Federal funding, authorization, or management is involved), seek an ESA section 10 permit, or qualify for a limit under a 4(d) rule. To qualify for any of these options, the activity must show that it sufficiently conserves the listed species.

Comment 7: Some commenters wanted NMFS to define the action types and magnitudes that would constitute illegal take. Others held that the array of activities described in the proposed rule that are "likely to injure or kill listed salmonids" was overly inclusive and discussed actions that exceeded NMFS' authority to regulate. Still others requested that NMFS assert that state and local governments are not required to use their regulatory authorities to satisfy ESA requirements.

Response: It is NMFS' policy to increase public awareness of and identify those activities that would or would not likely injure or kill a protected species. Take guidance appearing at the end of this document does just that. It is only possible in this final rule to describe categories of actions that may have adverse impacts on fish and describe their consequences (e.g., blocking fish from reaching their spawning grounds, dewatering incubating eggs, etc.). NMFS understands that there is considerable interest in knowing as much as possible about what constitutes "take" and changes have been incorporated in this final rule to accommodate this interest. Determining whether an individual local program or activity is likely to injure or kill a protected species will require credible assessments that take into account local factors and conditions. Regarding the issue of authority, regulations against killing or injuring protected species apply to any person subject to the jurisdiction of the United States (section 9(a)(1) of the ESA). The term "person" means an individual, corporation, partnership, trust, association, or any other private entity; or any officer, employee, agent, department, or instrumentality of the Federal Government, of any State, municipality, or political subdivision of a State, or of any foreign government; and State, municipality, or political subdivision of a State; or any other entity subject to the jurisdiction of the United States (ESA section 3(12)).

Comment 8: A few commenters requested that NMFS make clear that "take" prohibitions would not be violated unless a protected species were injured or killed, and that determinations of whether "take" is likely to occur will be handled on a case-by-case basis.

Response: The term "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, a listed species or to attempt to engage in any such conduct (ESA section 3(18)). The term "harm" refers to an act that actually kills or injures a protected species (64 FR 215 (November 8, 1999)). Harm can arise from significant habitat modification or degradation where it actually kills or injures protected species by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering. After conducting a self-assessment to determine whether an activity is likely to "take" a listed species, persons or entities may choose to adjust their program to avoid take, or pursue ESA coverage through a section 10 permit, a section 7 consultation with Federal agencies, or through a 4(d) rule.

Comment 9: Commenters requested that adequate monitoring and oversight be required to ensure that programs included in an ESA 4(d) rule are effective.

Response: A program is incomplete without a mechanism to track its implementation and effectiveness. NMFS reiterates language in the proposed rule which states that for any program included in an ESA 4(d) rule, "NMFS will evaluate on a regular basis the effectiveness of the program in protecting and achieving a level of salmonid productivity and/or habitat function consistent with the conservation of the listed salmonids." If a program does not meet its objectives, NMFS will work with the relevant jurisdiction to adjust the program accordingly. If the responsible entity chooses not to adjust the program accordingly, NMFS will publish notification in the **Federal Register** and announce that the program will no longer be free from ESA take prohibitions because it does not sufficiently conserve listed salmonids.

Comment 10: There were a number of requests for NMFS to grant limits on the take prohibitions to additional programs. Examples included, the Natural Resources Conservation Service's FOTGs, California's Lake and Streambed Alteration Program, Oregon Concrete and Aggregate Producer's suggestions for a limit focused on Department of Geology regulation, Washington's Tri-County initiative, and

The Oregon Plan for Salmon and Watersheds.

Response: The ESA 4(d) rule provides an option for state and other jurisdictions to assume leadership for species conservation at the state and local level over and above the conventional tools for processing state and local conservation planning under the ESA through section 7 consultations and section 10 permitting. NMFS is assembling all the Federal, tribal, state, and local programs needed to save salmonids and has offered to collaborate with any entity interested in this 4(d) option. NMFS is especially interested in state-level conservation efforts because state-level programs tailored to meet the needs of the listed stocks can be a very efficient and comprehensive method to provide for the conservation of listed stocks and their habitat. A number of state and local entities have stepped forward to work with NMFS and we are anxious to work with them. However, limits that were not outlined in the proposed rule for public comment will have to be dealt with in a future amendment.

Comment 11: Commenters requested that NMFS clarify that activities conducted pursuant to an approved state or Federal permit are free from the ESA section 9 take prohibitions.

Response: Activities conducted pursuant to an approved state or Federal permit are subject to take prohibitions. Individual programs can seek relief from any take liability through a section 7 consultation, a section 10 permit process, or a program approved under a 4(d) limit.

Comment 12: Commenters argued that the nature of some programs (e.g., road construction, gravel mining, water withdrawals, levee construction, and certain development) should disqualify them from consideration for limits on take prohibitions under an ESA 4(d) rule.

Response: Under the proposal, all programs must fulfill the same standard to be included in an ESA 4(d) rule (i.e., they must conserve the species and meet their biological requirements). The important issue here is that threatened salmonids need meaningful, practical, and reliable conservation measures. Some programs will naturally have more difficulty meeting that standard than others. The ESA 4(d) rule simply applies the take prohibitions and allows for the development and implementation of conservation measures.

Comment 13: Several commenters suggested that the use of pesticides and herbicides should be considered a resource management tool and,

therefore, be included as a limit by NMFS in the 4(d) rule. Several commenters argued that the proposed take guidance violates the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) and, thereby, trespasses unlawfully into Environmental Protection Agency (EPA) authorities and violates the take exemption provided for FIFRA-registered pesticides.

Response: NMFS acknowledges that some view the current use of pesticides as essential to successful commercial crop production on agricultural lands, certain types of habitat restoration projects, and dealing with invasive exotic species. NMFS does not currently have specific information on the potential effects on listed salmonids of the very large number of pesticide products currently in use. Accordingly, NMFS is not able to conclude that the otherwise lawful use of these products is sufficiently benign to warrant an explicit limitation of the take prohibition in this rule. NMFS, therefore, has not incorporated such a limit.

For the same reason, NMFS is also unable to make an affirmative finding that the otherwise-lawful use of these products may cause harm to listed salmonids in potential violation of this final rule.

NMFS will continue to conduct scientific research into the potential for adverse effects upon salmonids of a variety of pesticides. NMFS intends to work closely with EPA and state authorities which have primary responsibility for ensuring the proper use of these products under relevant Federal and state regulatory regimes. Should information come forward to suggest that the otherwise lawful use of a pesticide harms or injures listed salmonids and might be in violation of this rule, NMFS anticipates addressing the concern through a section 7 consultation with EPA, NRCS, or United States Fish and Wildlife Service (FWS) as appropriate, or corresponding discussions with responsible state authorities. NMFS prefers this approach rather than use its enforcement authorities against an individual applicator for the otherwise-lawful use of the pesticide. Similarly, if NMFS, with due consideration of any more restrictive state requirements for a pesticide's use, finds that a limitation on the prohibition against take for the use of selected pesticides is necessary and advisable for the conservation of listed salmonids, it may amend this rule accordingly. Through such a programmatic approach, NMFS believes that it will be able to achieve an orderly and comprehensive analysis of the use

of pesticides and their effects on listed salmonids.

Comment 14: A few commenters argued that ESA Habitat Conservation Plans (HCPs) should not be free from take prohibitions under a 4(d) rule.

Response: A section 10 incidental take permit (issued after analyzing the accompanying habitat conservation plan) authorizes a specified level of take. Including incidental take permits in the first limit of this rule is, thus, consistent with the structure and intent of the ESA.

Comment 15: A few commenters requested that NMFS prescribe standards (temporary or otherwise) for agricultural activities to be included in an ESA 4(d) rule.

Response: Different entities (including agricultural interests) have expressed a strong preference for standards developed at the local level (not one-size-fits-all standards). The 4(d) rule was written to foster local interest and support tailor-made programs and NMFS stands ready to work with any interested entity in forging such standards. On the issue of agricultural practices in particular, NMFS is working with a number of agricultural entities to explore conservation practices which might contribute to the conservation of salmonids and their habitats, and is hopeful that these discussions will yield further details on proper conservation practices to help conserve salmon.

Comment 16: A few commenters asked NMFS to work closely with FWS to clarify each other's roles to establish universal standards that cover all listed species.

Response: The two services do work closely together on ESA implementation. For example, NMFS and FWS share identical definitions of "harm" and the proposed rule does state that "as it evaluates any program against the criteria in this rule to determine whether the program warrants a limitation on take prohibitions, NMFS will coordinate closely with FWS regional staffs." This comment, however, is well taken and NMFS will continue to work closely with FWS to coordinate and streamline ESA implementation. NMFS notes that it is commonly requested to distinguish biological requirements of salmonids from biological requirements of other species (some under the jurisdiction of FWS).

Comment 17: Commenters asked NMFS to establish a funding mechanism (e.g., an escrow account) to support habitat restoration activities.

Response: Millions of dollars in Federal funding have been granted to

state programs that fund specific habitat restoration projects. NMFS will continue to support funding for these programs in the future.

Comment 18: Several commenters argued that current conditions are a result of past practices, not current practices. They believed that NMFS has failed to justify why the little remaining habitat is important to listed fish and failed to provide detailed scientific rationale to support the agency's contention that certain activities (e.g., urban development) result in take.

Response: NMFS disagrees. The list of examples in this final rule (see Take Guidance) as well as those provided in the proposed rule give general guidance on the types of current activities that are very likely to take threatened salmonids. While not exhaustive, this list was based on direct experience with managing salmonid populations in their natural environment and a thorough understanding of the scientific literature. The ESA listing process for these threatened salmonids has documented the decline of salmonid populations in the four western states and has identified the historic and current causes of these declines. The commenters correctly note that past practices have caused the decline of salmonid populations; however, current human activity can also kill or injure listed salmonids. Development and other human activities within riparian areas or elsewhere in the watershed alter the properly functioning condition of riparian areas. These activities can alter shading (and hence stream temperature), sediment transport and supply, organic litter and large wood inputs, bank stability, seasonal streamflow regimes, and flood dynamics. The natural functions of riparian areas and the ways in which human activities affect those processes and functions are described in the publication entitled "An Ecosystem Approach to Salmonid Conservation" (NMFS, 1996).

Comment 19: Some commenters requested maps of "sensitive resource sites" at a large scale so local jurisdictions that deal with small land parcels may use them. Some commenters stated that NMFS should focus on areas where redds or fish are actually present, not on general definitions such as "spawning gravels."

Response: NMFS acknowledges the value of producing maps that identify resource sites important for the different salmonid life cycle stages. NMFS will continue to work with state entities, local jurisdictions, co-managers and citizens to increase our knowledge of threatened salmonids. NMFS will also

continue to increase its own capabilities for mapping resource areas and watersheds. Because there were so many comments requesting that NMFS identify which activities have a high likelihood of resulting in take and will be priorities for enforcement action, the take guidance has been revised to focus on high risk activities. The language referring to "spawning gravels" has, therefore, been removed.

Comment 20: One commenter requested that NMFS add the word "intentional" to clarify the take guidance regarding promotion of predator populations associated with habitat alterations.

Response: NMFS must respectfully disagree. Whether the action is intentional or unintentional, NMFS considers habitat alterations that promote predation on listed species to be undesirable. Such actions may in fact cause injury or harm to listed salmonids.

Comment 21: Several commenters recommended adding sediment discharge to the list of toxic chemicals and other pollutants that are very likely to injure or kill salmonids. Other commenters requested that NMFS clarify which chemicals and pollutants it is referring to in this section.

Response: NMFS refers to toxic chemicals or other pollutants being discharged or dumped and then gives examples by listing sewage, oil, gasoline, and others. Sedimentation from timber harvest and other land use activities may plug the interstitial spaces in gravel spawning areas reducing salmon egg survival during their incubation period as well as many other deleterious effects. Based on these comments and the fact that sediment discharge may harm listed salmonids by physically disturbing or blocking streambed gravels, NMFS added soil disturbances to the list of actions that are likely to kill or injure salmonids.

Comment 22: One commenter urged NMFS to add language in the activity category dealing with the chemical and pollutant discharge or dumping to recognize that take can also occur when these activities are carried out with a valid permit. Another commenter recommended that NMFS clarify which permits are considered "valid," and one commenter stated that this potential "take" should only apply to waters supporting the listed salmonids.

Response: NMFS agrees that chemical and pollutant discharge may take listed fish whether or not there is a valid permit for the discharge. In order to clarify this point, NMFS has deleted the words "particularly when done outside of a valid permit for the discharge" from

the take guidance. Regarding the suggestion that take prohibitions should only be applied to waters supporting listed salmonids, the take guidance applies throughout the ESU for the listed species whether or not there are salmonids present in individual rivers or streams.

Comment 23: One commenter noted that the introduction of non-native species likely to prey upon or displace listed species should be expanded to include non-native species that may adversely affect salmonid habitat.

Response: NMFS agrees that non-native species may alter salmonid habitat to such an extent that the habitat may no longer provide all the functions and characteristics that support listed salmonids. The take guidance language now reflects this suggestion.

Comment 24: Numerous commenters argued for language changes and refinements in the descriptions of actions that may injure or kill listed salmonids. The first suggestion is to expand the list of ways fish passage can be blocked to include human-induced physical, chemical, and thermal blockages.

Response: NMFS has revised the take guidance to address this comment and to clarify its enforcement priorities.

Comment 25: Several commenters suggested adding language to the list of activities "very likely to injure or kill salmonids" to address activities that further contribute to or maintain water quality impairments in those water bodies on the 303(d) list of the CWA.

Response: NMFS agrees that this is an important issue and that activities that degrade water quality or maintain degraded conditions can injure listed species. This issue is already addressed in the section on discharging or dumping toxic chemicals or other pollutants into water or riparian areas and in the language changes discussed in the previous comment.

Comment 26: Some commenters urged NMFS to state that water withdrawals can affect salmonids in more ways than adversely modifying spawning and rearing habitat. One commenter also requested that NMFS note that water withdrawals can adversely affect groundwater by capturing flow that might otherwise discharge to surface waters.

Response: NMFS considers "spawning, rearing, and migrating" to be "essential behavioral patterns." The word "migrating" will be added to the take guidance regarding water withdrawals. Regarding the second comment about the potential impact of water withdrawals on groundwater and surface water, NMFS cannot provide

further detail in this take guidance because the actual impacts of a given act depend on situation-specific conditions.

Comment 27: Several commenters asked NMFS to expand the discussion of impacts arising from water diversion and flow discharges to include impacts other than changes in stream temperature.

Response: NMFS agrees that water diversions and discharge may have other deleterious effects on salmonid habitat. These may include impacts on sediment transport, turbidity, and stream flow alterations. The actual likelihood that these actions would result in take depends on situation-specific conditions. Based on public comments, the take guidance in the final rule has been revised to clarify NMFS' intent regarding which activities are very likely to injure or kill salmonids and to identify priorities for NMFS enforcement action.

Comment 28: Several commenters recommended moving the topics "water withdrawals" and "violation of federal or state CWA discharge permits" from the section where actions may injure or kill listed fish to the section where actions are "very likely to injure or kill salmonids."

Response: NMFS has revised the take guidance. One change is that water withdrawals have been added to the list of activities that are very likely to injure or kill salmonids. However, the likelihood that take will actually occur depends on the individual action. The issue of actions that violate Federal and state CWA discharge permits is not specifically addressed in the new take guidance language.

Comment 29: One commenter urged NMFS to consider land use activities that affect more than just salmonid habitat. They highlighted the fact that adverse effects include impacts on floodplain function, natural hydrologic patterns, riparian function, and water quality. They also recommended expanding the list of land use activities identified in the proposed rule.

Response: In a section of the preamble of the proposed rule entitled Aids for Understanding the Limits on the Take Prohibition, under Issue 2: Population and Habitat Concepts, NMFS describes properly functioning habitat conditions that create and sustain the physical and biological features essential to conserving the species. These habitat conditions recognize the importance of floodplain function and channel migration and emphasize the dynamic nature of natural systems. NMFS intends the term "salmonid habitat" to be consistent with the habitat functions and processes described in the Habitat

Concepts preamble language. NMFS recognizes that different types of land use activities can impact salmonid habitat to such an extent that take may occur. Language has been added to the revised take guidance to address floodplain gravel mining and floodplain development.

Comment 30: Several commenters argued that the take guidance needs to be clarified so that the public can understand what NMFS means in its different categories of take.

Response: NMFS agrees that the take guidance language in the proposed rule caused confusion about which activities can result in take and what actions will be priorities for enforcement. NMFS has revised the take guidance section to focus on those activities that are very likely to injure or kill salmonids.

Comment 31: One commenter suggested amending the proposed language concerning take due to water withdrawals by using Oregon Department of Fish and Wildlife (ODFW) minimum flows to regulate water withdrawals.

Response: NMFS does not reference specific state, local, or private regulations or programs that might prevent take because there is such a large number of programs (and partial programs) in the different states that could be cited. Absent a program approved under section 7 or 10 of the ESA or under this rule, individual jurisdictions and private entities will need to develop, adopt, and implement programs that prevent take.

Comment 32: One commenter suggested that NMFS clarify its intent by using the language "actually impact water quality" in the context of take occurring due to violations of Federal or state CWA discharge permits.

Response: NMFS notes the comment. However, due to changes in the final rule's take guidance language, this specific category of activity has been eliminated.

Comment 33: Some commenters asserted that rural areas were unfairly singled out for engaging in activities that take listed species while urban areas were given ESA 4(d) limits.

Response: NMFS applies the prohibition against take uniformly across the landscape encompassed by the threatened species' ESUs. This take prohibition applies equally to rural areas and urban areas and the take guidance identifies activities that can occur in urban and rural areas. Limits on the take prohibitions were given to complete programs that were shown to conserve salmon and steelhead.

Comment 34: One commenter asked that NMFS clarify the relationship

between take avoidance and the designation of critical habitat.

Response: Critical habitat is a geographic description of the areas essential for a species' conservation. These designations highlight important habitat features as well as management actions that may require special management considerations. Take avoidance relates to critical habitat in that special management actions taken (or authorized) by Federal agencies must avoid adversely modifying critical habitat.

Viable Salmonid Populations (VSP)

Comment 35: Several commenters said that NMFS should not base policy on a document that is not complete and has not been reviewed in its final form.

Response: Comments on the December 13, 1999, VSP draft were solicited from over 50 peer reviewers plus tribal and state co-managers. In addition, the document has been available for public comment since the draft ESA 4(d) rules were released. We have received approximately 20 peer and co-manager reviews, plus numerous public comments. These reviews, particularly those from peer-reviewers, have generally been very positive, and the document will require little substantive revision before publication as a NOAA Technical Memorandum in June of 2000.

Comment 36: Several commenters stated that populations are generally smaller than a "distinct population segment" as defined in the ESA and NMFS has "gone too far" in proposing protection of individual populations.

Response: In applying the VSP principles, NMFS does not mean to require equal protection of every single population. The unit requiring protection under the ESA is a "distinct population segment" (i.e., ESU). Therefore, it is the ESU that NMFS must ensure has a minimal risk of extinction. A population is the appropriate biological unit for scientifically evaluating salmonid extinction risk. The status of an ESU can be determined in large part by analyzing the individual populations that constitute the ESU, and determining how their individual statuses combine to affect ESU viability.

Comment 37: Many commenters said that VSP is too vague to be implemented.

Response: Where possible, NMFS has endeavored to provide numerical guidelines for viability thresholds. However, VSP generally does not provide generic quantitative criteria that can be applied to all salmonid populations because the thresholds vary by species and location. This means that

applying the VSP principles will require population- and ESU-specific evaluations. This will not be very satisfying to managers looking to VSP for "the answer," but is the only scientifically sound course at this time. NMFS will continue to explore whether generic guidelines (or modeling approaches) may be appropriate for some criteria (e.g., minimum population size), but this requires further analysis and will not be a part of the VSP paper finalized in June. As geographically-specific VSP applications are completed, more general numerical guidelines may be possible.

Comment 38: Several commenters noted that NMFS does not define the relationship of the VSP terms "viable" and "critical" to the ESA terms "threatened" and "endangered."

Response: The VSP paper does not attempt to define "threatened" and "endangered" under the ESA. Defining "threatened" and "endangered" requires policy decisions about the acceptable levels of risk to an ESU that the VSP concept does not address. It is also important to note that the terms viable and critical in VSP are often applied to populations, whereas the unit of interest with regard to the ESA is the ESU.

Comment 39: Several commenters wanted the effects of potential actions to be evaluated on scales other than the population (some desired smaller, some larger).

Response: Although a population is the appropriate unit for studying many biological processes, it may also be appropriate to evaluate management actions that affect units at smaller or larger spatial and temporal scales. For example, ocean harvest plans may affect multiple populations, while a habitat restoration plan only affects a small portion of a single population's habitat. The VSP concept does not preclude establishing goals at these different scales. However, management actions ultimately need to be related to population and ESU viability.

Comment 40: Several commenters said that VSP does not adequately consider the importance of freshwater habitat.

Response: VSP does not attempt to establish the habitat requirements for recovering populations. Habitat criteria are captured, generally, in the concept of Properly Functioning Conditions (PFC) discussed within this rule.

Comment 41: A few commenters said that VSP does not consider important components of recovery planning, such as ecological interactions.

Response: The VSP concept attempts to describe the population level

attributes of viable salmonid populations; it does not prescribe how to recover populations. Recovery will require the entire suite of factors that impact salmon throughout their life cycle to be considered and evaluated—including ecological interactions and habitat needs. These are important issues that will need to be dealt with during recovery planning.

Comment 42: Several commenters said that data needed to evaluate VSP parameters will not be available and, therefore, VSP concepts cannot be applied.

Response: Data will generally not be available to thoroughly evaluate every VSP parameter. In developing the VSP guidelines, NMFS tried to consider all the processes that need to be evaluated in order to determine a population's status. If all of these processes cannot be evaluated, the VSP guidelines suggest the type of data that need to be collected. If a VSP guideline cannot be evaluated, managers must explicitly recognize the uncertainty associated with current management decisions because of a data-poor environment. The fact that VSP facilitates this recognition is, in itself, a valuable contribution.

Comment 43: A few commenters said that VSP makes several references to "historic conditions" for evaluating population status, but does not define the time frame for "historic."

Response: Historic conditions are used as a reference point in evaluating population status because under historic conditions populations were assumed to have been viable. The time frame, then, refers to a period in time where the population or ESU was considered self-sustaining and may represent different eras for different groups of fish. However, it should be noted that while historical data can be a valuable tool in evaluating population status, it should not suggest that NMFS will require all populations to be at historic levels in order to be viable. The value placed on historic data and the relationship between recovery goals and historic levels will be ESU- and population-specific.

Comment 44: One commenter argued that given the high levels of uncertainty associated with the ESU viability guidelines, the default assumption should be that all populations need to be viable in order to produce a viable ESU.

Response: This seems to be an appropriately precautionary approach, but responses to uncertainty entail policy decisions that can only be made after carefully analyzing a specific situation.

Comment 45: One commenter said that by defining populations, VSP claims that straying always has negative effects on viability.

Response: In the process of identifying populations, there is no blanket assumption that straying has a negative effect on viability. Straying is a natural process, and appropriate levels of straying within and among viable populations will depend on a balance between the risks and benefits of straying. Indeed, the VSP document acknowledges the potentially critical role that straying plays in extinction and recolonization dynamics among salmonid subpopulations and populations. It should also be noted that human factors (such as stock transfers, blockage of migratory routes, and other habitat alterations) have the potential to increase rates of genetic exchange by one to two orders of magnitude over historic levels. These changes are unlikely to be beneficial.

Comment 46: Several commenters stated that VSP does not consider certain factors to be important when evaluating population status. These factors included (1) marine-derived nutrients, (2) diversity, (3) temporal and spatial structure, and (4) genetic drift.

Response: These topics are covered in the current draft of the VSP document, and some topics may be clarified or expanded during the revision process.

Comment 47: A few commenters said that in evaluating VSP parameters, juvenile fish counts should be considered as well as (or instead of) adult spawner counts.

Response: Although the VSP paper discusses using juvenile fish counts, the guidelines generally focus on adult spawners counts—and not other life stages—because spawner count data sets are prevalent throughout the region and they can be related to the extensive body of conservation biology principles with relative ease. However, NMFS does not go into great detail on monitoring and evaluation programs and should consider any scientifically defensible strategy that allows population status to be evaluated. In some cases, it may be more feasible to collect data on juveniles than adults and it may be possible to assess population viability based primarily on juvenile counts. However, the population evaluation would still need to address the principles outlined in VSP regarding all four parameters (i.e., abundance, productivity, spatial structure, and diversity).

Comment 48: One commenter said NMFS does not take an "ecosystem approach."

Response: It is true that VSP focuses only on Pacific salmonid populations and the ecological processes that directly or indirectly affect them. The paper does not deal explicitly with other species or ecosystem processes that do not affect salmonids. However, given the large geographic scale and the presumed keystone role of salmonids in many ecosystems, an "ecosystem approach" is likely to emerge. Defining the management processes that may support an "ecosystem approach" is outside VSP's scope and intent.

Comment 49: One commenter said that VSP is a framework, not a benchmark, and asserted that the states should have the latitude to develop some of their own benchmarks within this framework.

Response: As noted in a previous response, VSP generally does not provide generic quantitative criteria. Quantitative criteria will be required in setting recovery goals for specific ESUs. In some contexts (often in reference to broad landscapes), the standard is expressed as "seeking to attain or maintain PFC." "Contribute to PFC" is a phrase often used in reference to near-term actions that put habitat on a course to attain PFC over time and is consistent with the standard. Finally, in some circumstances (often in referring to more site-scale decisions), the standard may be expressed as "not precluding PFC." There is no distinction in practice between these expressions of the standard.

Evaluating Habitat Conditions—Properly Functioning Conditions (PFC)

Comment 50: Several commenters opined that PFC should be more clearly defined. Others suggested that specific numeric criteria be included.

Response: Both the preamble and rule texts have been modified to more clearly define PFC and its central role in habitat evaluations. Proper functioning conditions create and sustain over time the physical and biological characteristics that are essential to conservation of the species, whether important for spawning, breeding, rearing, feeding, migration, sheltering, or other functions. Habitat-affecting processes include, but are not limited to vegetation growth, bedload transport through rivers and streams, rainfall runoff patterns, and river channel migration. The concept of proper function recognizes that natural patterns of habitat disturbance, such as through floods, landslides and wildfires, will continue.

NMFS measures conditions on the landscape to evaluate whether and how PFC is likely to be affected, attained or

maintained by an activity. The indicators vary between different landscapes based on unique physiographic, geologic or other features. Although the indicators used to assess functioning condition may entail instantaneous measurements, they are chosen, using the best available science, to detect the health of underlying processes, not static characteristics.

The scope of any given activity is important to NMFS' analysis. The scope of the activity may be such that only a portion of the habitat forming processes in a watershed are affected by it. For NMFS to find that an activity is consistent with the conservation of the listed salmonids, only the effects on habitat functions that are within the scope of that activity will be evaluated. For example, an integrated pest management program may affect habitat forming processes related to clean water, but have no effect on physical barriers preventing access by fish to a stream.

NMFS' evaluation of an activity includes an analysis of both direct and indirect effects of the action. "Indirect effects" are those that are caused by the action and are later in time but are still reasonably certain to occur. They include the effects on species or critical habitat of future activities that are induced by the original action and that occur after the action is completed. The analysis also takes into account direct and indirect effects of activities that are interrelated or interdependent with the proposed action. "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. NMFS has published an extensive discussion of the effects of activities in its Consultation Handbook—Procedures for Conducting Consultation and Conference Activities Under section 7 of the Endangered Species Act (March, 1998).

Though there is more than one valid analytical framework for determining effects of an activity, NMFS has developed an analytic methodology it has documented in a Matrix of Pathways and Indicators (MPI; often called "The Matrix"). The MPI can help NMFS and others identify any risks to PFC. The pathways for determining the effects of an action are represented as six conceptual groupings (e.g., water quality, channel condition, and dynamics) of 18 habitat condition indicators (e.g., temperature, width/depth ratio). Default indicator criteria (mostly numeric, though some are

narrative) are laid out for three levels of environmental baseline condition: properly functioning, at risk, and not properly functioning. The effect of the action upon each indicator is classified by whether it will restore, maintain, or degrade the indicator.

The MPI provides a consistent, but geographically adaptable, framework for effects determinations. The pathways and indicators, as well as the ranges of their associated criteria, are amenable to alteration through the process of watershed analysis. The MPI, and variations on it, are widely used in consultations under Section 7 of the ESA on the effects of federal actions and will be similarly used to evaluate activities pursuant to this rule. The MPI is also used in other venues to determine baseline conditions, identify properly functioning condition, and estimate the effects of individual management prescriptions. While this assessment tool originally was developed to address forestry activities, NMFS intends to work with state, tribal, and other experts to facilitate its use in other ecological settings such as lakes, estuaries and urban settings.

Comment 51: One commenter objected that the conservation standard for PFC was "jeopardy" or survival, which is inadequate for ESA 4(d) rules and for recovery.

Response: PFC is not calibrated to provide for population persistence at some level less than full recovery, nor does NMFS believe that the best available science holds out the possibility of such an incremental approach to habitat conservation. Land and resource managers are required to demonstrate that their proposed activities will allow for the recovery of all essential functions of salmon habitat.

Comment 52: Several letters addressed the applicability of the "properly functioning conditions" concept to urban settings and questioned whether PFC could ever be attained in urban environments.

Response: It is widely recognized that urbanization alters the hydrologic behavior of once unpaved, undeveloped lands. Within this context, common goals for the management of urban landscapes include controlling stormwater runoff and protecting water quality. An urban watershed can become properly functioning if the ecological functions essential for listed salmonids within the watershed—such as storage, attenuation of peak flows, and water quality mitigation—can be restored by increasing watershed storage and providing buffers to attenuate water quality problems emanating from urban landscapes. In this context, the PFC goal

is to restore the hydrologic function in the urban watershed by modifying peak flow events, providing storage, protecting water quality and habitat, and allowing passage.

Comment 53: One commenter stated that the draft VSP concept and NMFS' established PFC approach were inconsistent.

Response: The VSP concept is being developed to serve as a population management analog to PFC's role in evaluating habitat-affecting actions. The intent of VSP is to serve as a consistent conservation standard, equivalent to PFC, that can be applied in diverse analyses. The VSP emphasizes measurable fish population parameters because that is how fish harvest and culture activities' environmental effects are most immediately and evidently expressed. Conversely, PFC indicators are typically physical habitat characteristics because they most readily and measurably show the effects of land and water management regimes. In essence, PFC is a description of conditions that support salmonid productivity at a viable level. However, because the standards are applied at widely different geographic scales, NMFS cannot currently describe the quantitative relationships between fine-scale habitat characteristics and salmon population levels. Though the two approaches measure effects on different salmonid biological requirements, they consistently strive toward the same end: determining the effects of various activities, placing them in the context of the species' life histories, and using that data to ascertain the best means of recovering the salmon.

Legal/National Environmental Policy Act (NEPA)/Reg Flex/Direct Take

Comment 54: Commenters asserted that the proposed rule exceeds NMFS' authority, either by reaching too far in protections or failing to meet ESA mandates by not being protective enough. Many commenters raised questions about the legal standards underlying limits and about the relationship between section 4(d) and section 7 consultations or section 10 habitat conservation plans. Several asserted that the standards for all three functions should be the same; others emphasized that the standard for 4(d) is more protective, stating that it must conserve the listed species.

Response: Many of those comments focus more on the limits provided than on the legally enforceable outcome of the rule (the take prohibitions). This response will first set forth in a general fashion the basis for this final rule, and then respond to the remainder of legal

issues that are not included in the overall description.

First, section 4(d) regulations are those "necessary and advisable to provide for conservation" of the threatened salmonids. This final rule imposes one major regulatory prohibition (in addition to the less significant prohibitions of section 9(a)(1) or interstate commerce and import/export): that is, that actors are to avoid taking threatened salmonids of the 14 listed ESUs. The take prohibitions are what the ESA imposes by statute to protect endangered species and, if perfectly implemented, would provide the most protection possible. There is no question but that take prohibitions "provide for the conservation" of the species.

Nor can there be any real question about the advisability of imposing take prohibitions at all. NMFS' listings were based on findings that the ESUs are at risk and specifically that there are factors (set forth in ESA section 4(a)(1)) that have caused and are continuing to cause the listed ESUs' populations to decline. See "Factors for Decline: A Supplement to the Notice of Determination for West Coast Steelhead" (NMFS, 1996); Coastal Coho Habitat Factors for Decline and Protective Efforts in Oregon" (NMFS, 1997), and "Factors Contributing to the Decline of Chinook Salmon: An Addendum to the 1996 West Coast Steelhead Factors for Decline Report" (NMFS, 1998). Many of these factors (habitat destruction, overutilization, inadequate regulatory systems) are state, local, or private, and have no link to Federal actions. Prohibiting take for these ESUs is, therefore, the most direct way of protecting the listed species. NMFS listed two additional chinook ESUs as threatened in September of 1999 and will be proposing ESA 4(d) protections for them in the near future.

This final rule also establishes 13 circumstances in which NMFS does not find it necessary and advisable to apply the take prohibitions. NMFS believes that by describing (wherever possible) a program or the components of a program that will adequately protect the species, it provides valuable guidance to agencies or individuals wishing to play a part in salmonid protection and will minimize their legal risks under the ESA as well. NMFS further believes that it is appropriate to limit the take prohibitions for such programs provided that NMFS' salmonid conservation goal (and legal responsibility) is not compromised—that is, so long as the rule provides for conservation of the listed ESUs. Thus, this final rule limits the application of the take prohibitions

selectively. NMFS is confident that given the stringency of the fish protections in the programs receiving limits on the take prohibitions, this final rule meets the section 4(d) conservation standard.

In determining that take prohibitions are not necessary and advisable for a particular program, NMFS has ensured that each program—including programs that NMFS will evaluate in the future to determine whether they fit within one of the 13 limits—will not jeopardize the species. That is, none will appreciably reduce the likelihood of survival and recovery of any of the ESUs in the wild.

Further, for some programs involving sectors which have had particularly destructive impacts on habitat or bear other significant responsibility for decline of the species, there must be a demonstration above and beyond "not jeopardizing." Just as a Federal agency has a responsibility not only to conduct its affairs in a way that does not jeopardize but also to use its authorities in furtherance of the conservation of the species, ESA 4(d) regulations as a whole must provide measures necessary and appropriate to conserve the species. Hence, while for many actions or programs "not jeopardizing" may be equivalent to not precluding or impairing recovery, for others it may be necessary to include commitments for specific positive contributions that are vital to recovery because of past impacts from those sectors. NMFS has taken those considerations into account when evaluating potential programs (or establishing approval criteria) to determine if they qualify for inclusion in one of the limits.

By statutory definition, species conservation equates to those methods and procedures that will bring a species to the point at which it no longer needs the protections of the ESA and may be delisted. Those methods and procedures encompass the full array of actions that will contribute to recovery: Federal efforts to avoid jeopardy and conserve the species under section 7; efforts taken in accord with section 10 conservation plans; state, tribal, local, or private initiatives undertaken to improve the prospects of listed fish quite independent of any ESA requirement; efforts to avoid taking listed species; and habitat improvements accomplished under numerous regulatory programs for protecting other resources, such as the CWA, state and Federal regulations governing fill and removal in waterways, and the like.

NMFS believes this final rule reflects the necessary and appropriate level of protections for conserving these threatened ESUs given our current

knowledge. As the preamble to the proposed rule noted, NMFS recognizes that new information may lead to changes in the final rule. NMFS has not yet completed recovery planning for the species subject to this final rule, nor does the ESA command that recovery planning precede enactment of 4(d) regulations. Once recovery planning is complete, NMFS may amend the 4(d) protections with any combination of new or amended limits, impose the take prohibitions if a limit were found not to be consistent with a necessary and appropriate recovery measure, or require enhancements or prescriptions.

Comment 55: A few commenters asserted that NMFS gives no indication that it intends to comply with ESA sections 7 or 10 in promulgating or implementing these rules.

Response: Promulgation of a section 4(d) rule is a Federal action requiring consultation under section 7 of the ESA. NMFS must ensure through its internal consultation process that the 4(d) rule being promulgated is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of their critical habitat. NMFS completed the required consultation and concluded that promulgation of this rule greatly improves protections for threatened salmonids and their habitat, and is not likely to adversely affect either those ESUs or other listed species. NMFS has complied with its section 7 consultation requirements.

Where take prohibitions are imposed, those pursuing actions that may take listed salmonids may choose to apply for a section 10 permit at any time. Section 10 permits are issued on a case-by-case basis supported by individual analysis and section 7 consultation. Where NMFS has found it not necessary to impose take prohibitions, there would be no basis for issuing research or enhancement or incidental take permits through section 10, provided the action is carried out in accordance with the requirements of the applicable limit.

Comment 56: One commenter urged that NMFS make clear that no state or local rule shall hinder NMFS or citizens from taking legal actions to ensure salmon recovery. Another asked that NMFS provide for citizen enforcement and appeal of local government permits re ESA issues. A third commenter suggested that the limits be revised to reflect the idea that they extend only so far as local governments' reasonable interpretation and application of its own rules.

Response: This final rule does not in any way alter the ESA's enforcement

provisions, including the rights of third parties to enforce under appropriate circumstances. Second, NMFS believes the proposed rules clearly established that in any enforcement proceeding where there is a question whether an action is "in compliance with" one of the described limits, it is ultimately the defendant's (or respondent's) responsibility to assert that issue as an affirmative defense and establish facts that show compliance. In order to dispel any confusion by the public on this point, NMFS has added a subsection, "Affirmative defense," to spell out that it will be the defendant's or respondent's obligation to plead application of and compliance with a limit as an affirmative defense. This approach is consistent with the structure of the proposed rule and with ESA section 1539(g) which states "In connection with any action alleging a violation of section 1538 [the section 9 prohibitions] of this title, any person claiming the benefit of any exemption or permit under this chapter shall have the burden of proving that the exemption or permit is applicable, has been granted, and was valid and in force at the time of the alleged violation." NMFS anticipates that in most cases, the applicability of individual limits will be resolved early in an enforcement investigation. Enforcement personnel will make reasonable efforts to attempt to rule out the applicability of 4(d) limits by, for example, evaluating circumstantial evidence, or through direct contact with the potential violator and subsequent confirmation through reliable third party sources. However, ultimately it is not the agency's responsibility to determine the existence or nonexistence of every exculpatory fact relating to an alleged ESA violation. This clarification is also consistent with existing case law, which generally holds that the burden of raising and proving affirmative defenses rests with the defendant, not with the government (see, e.g., *Patterson v. New York*, 97 S.Ct. 2319 (1977)).

As to the third comment, once a state or local government program comes within a limit (for instance, local development ordinances found by NMFS to meet the standards of the rule), it will be up to the local government to implement that ordinance, including any necessary exercise of reasonable judgement. If monitoring or other information indicates that the ordinance, as implemented, is not providing adequate protections, then the adaptive mechanisms in the 4(d) rule will trigger changes in the ordinance, imposition of the take prohibitions, or

imposition under the ESA of affirmative requirements.

Comment 57: One commenter suggested that the standards set in the 4(d) rule to qualify for a limit are higher than landowners would otherwise be required to meet to avoid take. Another stated that there was no consistent conservation standard applied in evaluating potential limits.

Response: NMFS must respectfully disagree. The limits described in this final rule do not in every circumstance avoid all take. To do so would require much more stringent steps in some cases. Rather, the limits reflect NMFS' judgement that activities in compliance with such a program or approach are what current information indicates will be necessary and advisable for that activity sector to conserve the ESUs. Activities in compliance with such a program or approach will not appreciably reduce the likelihood of survival and recovery of the species in the wild and, where necessary, will include other conservation measures to repair or improve conditions. Nonetheless, it is expected—and in some cases demonstrable—that activities satisfying the conditions for inclusion within one of the limits will still take listed salmonids.

In evaluating fishery management programs to determine if they qualify for a limit, NMFS relies on the concept of viable salmonid populations and its associated use of viable and critical thresholds for management decisions. The limits require that relevant biological parameters be identified so individual population status can be evaluated and the program may be placed in an appropriate context for determining whether it will support population viability. Land management related programs being considered for limits are assessed according to their ability to help attain or maintain properly functioning conditions (i.e., those conditions NMFS considers necessary for supporting viable salmonid populations).

Comment 58: Several commenters noted that NMFS had not made the case that take prohibitions (or any ESA 4(d) rules) are needed for these ESUs, or for specific sectors of activity. Some assert that NMFS should first demonstrate that conservation activities applicable to Federal activities have been fully tapped before applying 4(d) rules to private lands.

Response: NMFS must respectfully disagree. While the contribution of non-Federal actions to the overall decline of the ESUs affected by this final rule varies, depending in part on the ratio of Federal to non-Federal lands and in part

on the concentration of habitat modifications and non-Federal hatchery or harvest impacts, NMFS could not justify placing all hope of sustaining and recovering these ESUs on Federal agency actions alone. The record upon which NMFS listed these ESUs is abundantly clear that the decline of the ESUs is substantially influenced by actions other than those with some Federal nexus. While section 4(d) provides the Secretary some discretion in determining what protective regulations are necessary and advisable in a given circumstance, the structure of the section strongly supports the appropriateness of a determination to impose take prohibitions.

Comment 59: At least one commenter, while agreeing that the limits are not prescriptive rules, states that the rule making record does not support "this wide-ranging prescriptive rule" which the commenter believes prohibits "a very wide variety of activities that might occasionally "take" listed species" without NMFS' permission.

Response: To repeat the preamble text from the proposed rules, "[t]he fact of not being within a limit would not mean that a particular action necessarily violates the ESA or this regulation." NMFS has attempted to make even clearer in this final rule that activities that are not within a limit are not prohibited. What is prohibited is taking a threatened salmonid through any activities not within a limit. Those conducting activities that are not within a limit are subject to liability only if it can be demonstrated that their activities in fact have taken a threatened salmonid. An actor believing that its actions result in incidental take may apply for an incidental take permit under ESA section 10 to ensure that no enforcement liability accrues.

Comment 60: Two commenters noted that they had requested the decision-making record (for the proposed rule) and were told that it was "unavailable for public review."

Response: Both proposed 4(d) rules included a "References" section that offered a list of the references relied on. These documents were available to the public. That is all that informal rulemaking requires.

Comment 61: A few commenters noted that it is inconsistent with the ESA to apply the "jeopardy" standard (to not appreciably reduce the likelihood of survival and recovery in the wild) in a 4(d) rule; also, doing so for tribal plans is inconsistent with the standard applied for other "exemptions." One commenter urged that NMFS model all of the limits after the limit for tribal plans, which

provides a process for NMFS to determine a plan's consistency with ESA standards, but does not set out specific requirements or standards.

Response: NMFS believes that none of the limits will jeopardize the listed species' survival or recovery and that each habitat-related limit will contribute to placing habitat on a trajectory toward proper function and populations on a trajectory toward viability. It is worth noting that in practical application, distinctions between what is needed for survival and recovery and between providing for recovery and not jeopardizing the likelihood of survival and recovery are speculative at best and perhaps specious. The limit for tribal plans applies that same standard but without specific requirements or standards, in deference to tribal sovereignty and the government-to-government basis on which NMFS interacts with tribes. It is important to note that while there is less specific guidance with respect to tribal resource management plans, they will be assessed against the fundamental ESA standard (whether they will appreciably reduce the likelihood of survival and recovery in the wild), as have the other limits, and that any determination regarding tribal resource management plans will be accompanied by a description of the biological rationale for its outcome.

Comment 62: One commenter believed that the ESA 4(d) limits are "negotiated," "second class" HCPs appropriate only to larger governmental entities and that they consign jurisdictions with smaller population bases to the fringes of the process. Another urged that all limits should be drafted so that they are made available to any government wanting to participate and get coverage under the limit.

Response: While NMFS does not agree with the commenter's characterization of the limits, we have broadened some of the limits' availability and modified others in such a way that they are more adaptable for smaller or more rural jurisdictions. For instance, the development limit no longer targets only to "urban density" development, and the road maintenance limit is available to any jurisdiction. These sorts of adjustments are the very heart of the 4(d) limit process—they illustrate NMFS' intention to create an open process of public review and adapt our proposals (when we may) in accordance with the feedback we receive.

Comment 63: One commenter suggested that NMFS should create "categorical exclusions" for activities

not requiring the ongoing review and monitoring required in the proposed rules. The commenter points to FWS regulations that permit the Utah prairie dog to be taken under Utah state permits.

Response: In this final rule NMFS has made a number of adjustments to make limits more broadly available and to minimize requirements for oversight. However, the prairie dog provision the commenter cites makes very clear that if those takings interfere with conserving the species, FWS may immediately prohibit further such takings. Similarly, NMFS believes that the level of "tracking" required in this final rule will ensure that impacts from non-prohibited activities are consistent with conserving the threatened salmonids.

Comment 64: Some commenters asserted that the "proposed requirement" for protecting flows for listed species should be addressed in a local government's ordinance is beyond the scope and authority of a local government.

Response: Evaluation consideration "J" for the MRCI limit asks that the local government ordinances ensure that [new] development-related water supply demands can be met without impacting flows needed for threatened salmonids. This request does not require local government to regulate water rights or otherwise control flows; it asks only that new development demonstrate that its new water demands can be satisfied without undercutting flows required by threatened salmonids.

Comment 65: One commenter suggested NMFS should delegate to state and local officials authority to limit the take prohibition or provide a "certificate of safe harbor." Another commenter suggested that ESA section 9 take prohibitions cannot apply within a state unless the state has also adopted those regulations. This comment relies on the reference within 4(d) to section 6(c) ("...such regulations shall apply in any State which has entered into a cooperative agreement pursuant to section 6(c) of this Act only to the extent that such regulations have also been adopted by such State").

Response: The approach NMFS takes in this final rule aims to recognize and encourage state and local programs wherever NMFS finds them adequate. Nothing within the ESA would give NMFS the authority to delegate the functions suggested, unless a state had the full set of authorities required under section 6 of the ESA for state "assumption" of a program. No state has as yet met those qualifications, which would include having all authorities necessary to conserve the listed species

(such as the ESA provides through section 9, etc.). Therefore, the cited text of section 4(d) does not apply.

Comment 66: Another commenter suggested NMFS lacked authority to "delegate" scientific research permit authority to the states.

Response: As discussed in response to an earlier comment, this final rule does not delegate permit authority to states. For a subset of all research activities, this final rule does not apply take prohibitions, leaving those research activities subject only to state permitting. For other research, ESA constraints are still in place and researchers should seek ESA section 10 permits (for instance, for research in which private parties intentionally take listed fish.)

Comment 67: Several comments assert that the ESA 4(d) rules will result in takings of private property. One asked that the rule provide greater flexibility for redevelopment to prevent takings of private property.

Response: The legal effect of this final rule is to prohibit take of threatened salmonids. Complying with that mandate will certainly cause some changes in land management and use and that may affect the economic value of certain activities on the land to a greater or lesser extent—depending on the circumstance. This final rule does not, on its face, prohibit property use in any way that would rise to the level of a constitutional taking, nor does NMFS believe that the adjustments necessary to avoid taking threatened salmonids will be so draconian as to amount to a constitutional taking in any case.

Although NMFS does not agree that this final rule would likely cause a constitutional taking of property, NMFS did intend that the development limit should be broadly available and has amended and clarified the regulation to accomplish that purpose, including specifically naming redevelopment as one of the activities that individual ordinances could cover within the limit.

Comment 68: Many commenters desired that NMFS clarify the status of the limits: either wanting to be sure they are not prescriptive, or believing they should be hard requirements. Commenters also wanted to know if activities outside a limit constituted a violation of the rule.

Response: The limits are not prescriptive. They are not even enforceable requirements; rather, an entity wishing assurance that its actions are consistent with the ESA may take the necessary steps—as outlined in the regulations—to come within a limit on the take prohibitions. No enforcement action can be taken based on a charge

that someone has failed to follow a limit. Enforcement actions must allege (and ultimately prove) that a listed fish has been taken.

NMFS understands that some commenters would prefer the agency to promulgate specific, detailed regulations to govern particular sectors of activity. For a variety of reasons, NMFS has not chosen that course at this time. Specific proscriptions are an effective protective mechanism where, as with threatened sea turtles, a very specific cause of mortality can be addressed with precision. In the case of Pacific salmonids, where impacts are caused by a large array of activities and where the circumstances leading those impacts to constitute a take are extremely site- or circumstance-specific, NMFS believes it extremely difficult to design a single set of prescriptive rules to cover all of those situations. In addition, prescriptive regulations would likely impose unnecessary costs on some individuals. This is because state, local and individual strategies for avoiding take can be more closely adapted to the local geography or fishery opportunities than can rules that cover an entire landscape. Thus they are equally as effective (or more so) at avoiding take of listed species and less costly than regionwide, blanket proscriptions. The approach taken in this final rule, recognizing limits but not requiring all entities or actors to be within a limit, offers an opportunity to test particular combinations of approaches without requiring everyone to invest in them immediately. Finally, as noted elsewhere in these responses, once recovery planning is complete it may identify specific areas needing more prescriptive attention.

Comment 69: Numerous comments suggested that the rule intrudes impermissibly on state water law. Commenters questioned NMFS' understanding of western water law and authority to regulate water.

Response: First, as discussed elsewhere, this rule does not directly regulate water use or water rights in any way. Rather, water diversion was identified as an activity likely to result in take under particular circumstances. There is nothing in the ESA that would carve water use out of the bundle of activities that might lead to an enforceable take of salmonids, nor that would excuse senior water users from responsibility for any take that occurs as a result of their actions. NMFS does not disagree that on a case-by-case basis, questions or priority may be germane to determining causal responsibility for particular impacts. In "A Citizen's Guide to the 4(d) Rule" (NMFS, 2000),

NMFS provides more information on how water users may evaluate the level of risk of take associated with their diversions and explores options for reducing that risk.

Comment 70: One commenter asked NMFS to clarify whether ESA section 7 compliance "is a substitute for" compliance under the rule. Another requested that NMFS include an explicit limit for any entity whose actions have been the subject of an informal consultation in which NMFS has concurred that the action is not likely to adversely affect the threatened species.

Response: Section 7 compliance is an adequate substitute for compliance under this rule. So long as an entity is acting within a completed formal ESA section 7 consultation and compliant with terms and conditions imposed, if any, then section 7(o)(2) provides an exception to the prohibitions on taking. Actions subject to informal consultation have a very low probability of take and are thus in the category of activities that do not need to pursue a limit.

Comment 71: Take prohibitions should be applied to California's Central Valley, especially the Yuba River area.

Response: The Central Valley steelhead ESU is subject to this final rule. NMFS expects to propose ESA 4(d) protections for the Central Valley spring chinook ESU (listed in September of 1999) within the coming months. Meanwhile, that ESU will benefit from habitat protection afforded by steps taken to avoid taking Central Valley steelhead.

Comment 72: One commenter stated that contrary to the Executive Order on Federalism (E.O. 13132), this final rule's intervention (monitoring and reporting/adjustment of limitations) in state and local land use governance exceeds NMFS' authority by unnecessarily infringing on state sovereignty. Another suggested that the final rule should state that NMFS is not requiring consistency between state and local regulatory programs and objectives of the ESA.

Response: NMFS does not agree that this rule intrudes upon state or local authorities or sovereignty. This rule does not require states to undertake any particular set of actions. It requires that states (like all other actors) refrain from taking threatened salmonids. It provides one mechanism that actors (including states for some of the limits) may pursue to ensure that they do not violate take prohibitions. A state could instead choose to pursue ESA section 10 permits. Where there is a Federal nexus, state actions may receive ESA scrutiny and legal assurance through an ESA section 7 consultation initiated by the action agency. Or, in appropriate cases,

a state may determine in its own judgement that particular activities do not carry a risk of taking listed fish, or it may modify its activities in such a way as to reduce any risk of take to an acceptable level.

Comment 73: One commenter argues that the VSP paper is inconsistent with the statutory requirements of the ESA, because of the statement in the preamble to the proposed rules that a "viable population threshold refers to a condition where the population is self sustaining, and not at risk of becoming endangered in the foreseeable future." The commenter suggests this implies a threatened species can be allowed to remain in threatened condition perpetually, and still be considered viable.

Response: The commenter has identified an imprecise characterization that was included in the preamble to the proposed rules. This statement has been removed. As explained in response to other comments on VSP, the VSP paper does not attempt to define "threatened" or "endangered" under the ESA.

Comment 74: Some commenters stated that NMFS is abusing its discretion by not invoking section 9 prohibitions, and instead relying upon promised conservation efforts and future actions that are not currently operational.

Response: This final rule relies upon a determination that a conservation program approved for a limit of the take prohibition has a high degree of certainty that it will be implemented. NMFS may require a commitment to mitigate if implementation of a program is terminated prior to completion.

Comment 75: One commenter asserted that NMFS should not or cannot incorporate guidance by reference unless it has undergone ESA section 7 analysis.

Response: First, because of modifications made in response to comments, this final rule incorporates far fewer documents by reference. Second, while there is no requirement for a section 7 consultation on such documents, those referenced in the final rule have been analyzed to ensure that actions under them will not appreciably reduce the likelihood of survival and recovery of the listed ESUs in the wild.

Comment 76: One commenter wanted the rules modified to prohibit Federal agencies from activities that "take" threatened salmonids.

Response: In most cases this final rule does not specifically address Federal agency actions. Once take prohibitions are in effect, they apply to all actors—Federal and non-Federal alike. Second, the ESA requires that Federal actions be

assessed under section 7(a)(2), and nothing written in a 4(d) rule would excuse that obligation. Once NMFS has issued a biological opinion and incidental take statement for Federal agency actions, section 7(o) of the ESA relieves the agency of liability for take.

Comment 77: One commenter asserted that the rules could make the controllers of certain activities (such as noxious weed control) vulnerable to third-party lawsuits. Commenters expressed concern about municipal and irrigation district liability for issuing permits that result in take. One commenter stated that municipal entities cannot be held liable for take if the entity does not have discretion in issuing a permit.

Response: The first commenter is correct that under the ESA the take prohibitions are enforceable by NMFS or by third parties. This final rule does not create any enforcement routes not specified in the ESA. The take prohibitions apply to all actors, so municipalities and irrigation districts certainly face the possibility of liability; actual liability would depend on specific factual circumstances and the degree of connection between the permit and the take that actually occurs. As to the suggested legal interpretation that a municipal entity's lack of discretion in deciding to issue a permit would be an absolute defense to liability, NMFS believes that question must be addressed in the specific enforcement context in which it arises.

Comment 78: One commenter noted that in cases where documents create new legal rights or duties, they are considered "substantive rules" and must be either published in the **Federal Register** or be incorporated by reference through the Director of the Federal Register. Therefore, NMFS should clarify how subsequent amendments to these referenced documents will be treated.

Response: There are seven documents referred to in the regulatory text of this final rule. The purpose of making these documents available to the public is to inform governmental entities and other interested parties of the technical components NMFS expects to be addressed in programs submitted for its review. These technical documents provide guidance to entities as they consider whether to submit a program for a 4(d) limit. The documents represent several kinds of guidance, and are not binding regulations requiring particular actions by any entity or interested party. NMFS will continue to review the applicability and technical content of its own documents as they are used in the future and make

revisions, corrections or additions as needed. NMFS will use the mechanisms of this final rule to take comment on revisions of any of the referenced state programs. If any of these documents is revised and NMFS relies on the revised version to provide guidance in continued implementation of the rule, NMFS will publish in the **Federal Register** a notice of its availability stating that the revised document is now the one referred to in the specified 223.203(b) subsection.

Comment 79: One commenter suggested that NMFS clarify the regulation regarding withdrawal of a take limit, believing those in the proposed rule to be unnecessarily harsh.

Response: NMFS has modified the language throughout this final rule to clarify this point.

Comment 80: One commenter stated that the final rule should be non-severable, so that if any or all limits are overturned in a legal challenge, the take prohibitions will not remain in effect. Another suggested that no take prohibition should be imposed until broad limits are available for virtually all sectors of human activity.

Response: A fundamental precept of this final rule is NMFS' determination that the subject ESUs require 4(d) protections. Given that, it would be inconsistent with NMFS' ESA responsibilities to the threatened fish to defer any protections in that manner. NMFS has clarified this point by making it explicit that the agency intends the provisions of this rule to be severable.

Comment 81: Because NMFS broadly applies PFC as standards with a regulatory effect, PFC guidance and supporting science should be subject to public notice and comment before it is formally applied to ESA 4(d) limitation approvals.

Response: PFC requires the maintenance of habitat functions essential to the survival and recovery of listed salmonids. As such, the use of the PFC approach as an analytical tool adds no standard to that already established in the ESA, but rather assists NMFS and the users in evaluating effects of activities on conservation of the species.

Comment 82: One commenter asked NMFS to clarify whether the take prohibition applies throughout the range of the ESUs or only in designated critical habitat. Another asserted that NMFS has created a de facto extension of critical habitat.

Response: The take prohibition applies throughout the range of the affected ESUs. Critical habitat designation gives guidance to Federal agencies, and is not directly linked to ESA section 4(d) in any way. As to the

assertion that the rule creates "de facto" critical habitat, NMFS must respectfully disagree. Contrary to the commenter's perception, this rule does not suggest that "highly burdensome and expensive 'safe harbors' are what it takes to avoid ESA section 9 take liability." The rule provides one method of ensuring that no ESA section 9 take liability accrues, but there are other methods such as section 10 permits. Or, an actor may determine in its own judgement that particular activities do not carry a risk of taking listed fish, or modify its activities in such a way as to reduce any risk of take to an acceptable level.

Direct Take

Comment 83: Some commenters contended that under the ESA, and court decisions interpreting it, NMFS does not have the discretion to "allow" or "authorize" direct take of listed species through 4(d). The commenters cite cases in which the courts have determined that FWS could not authorize hunting of threatened wolves or grizzly bears unless it had first determined that "population pressures within the animal's ecosystem cannot otherwise be relieved."

Response: In these rules the Secretary is making an initial determination as to what protective regulations are "necessary and advisable to provide for the conservation of" the listed salmonids. In making that determination, the Secretary is not required to impose take prohibitions. In fact, section 4(d) goes on to state that "[t]he Secretary may by regulation prohibit with respect to any threatened species any act prohibited under section 9(a)(1)..." Thus, the Secretary has discretion to assess the status of the listed ESUs and to determine, as he has here, that blanket application of the take prohibitions is not necessary and advisable, and to describe the circumstances in which take prohibitions will not be applied. The Secretary has found that in certain circumstances, activities are sufficiently regulated by other entities or processes that Federal take prohibitions are not necessary and advisable.

In a variety of circumstances, take prohibitions might not be found necessary and advisable to provide for the conservation of a threatened species. For instance, if a threatened species is located almost exclusively on Federal lands and impacted largely by a Federal activity on those lands, the Secretary might determine that section 7 consultations will provide all the protections necessary to allow the species to recover. Or, a threatened species might be threatened because of

negative impacts from a narrow class of human activity. In that circumstance, the Secretary might choose to impose prescriptive regulations tailored specifically to alter those activities in a manner that would allow the species to recover.

More importantly, the biological impact of take on the ESU is the same, whether a particular number of listed fish are lost as a result of incidental impacts or intentional (directed) impacts. Situations in which this final rule would limit the application of take prohibitions for intentional taking of threatened salmonids are extremely limited and consistent with the conservation and recovery goals of the ESA. Scientific research activities conducted by fisheries experts, in accord with specific guidance, and permitted by a state, can be within the limit. Harvest activity will have direct impacts in very few situations—generally where the status of the affected population is already considered viable, even though the status of the larger ESU is not. Taking listed broodstock for artificial propagation might occur for conservation purposes (or, only after the species' conservation needs are met, for secondary purposes such as fisheries).

Comment 84: A few commenters stated that in excusing direct take through harvest, NMFS is placing a far more demanding burden on other sectors (such as land use) in terms of minimizing and avoiding incidental take. They asserted that the demands/standards should be equivalent.

Response: This final rule is far from "excusing direct take through harvest" in any blanket fashion, as the comment may be read to suggest. Rather, in setting out the standards by which any fishery harvest program will be judged, NMFS has emphasized the means by which a management scheme maintains or achieves viable status for a population rather than on the specific mechanism by which that impact may be incurred. This final rule does not give a pass to any specific management plan at this time; each plan must be made available for public comment and reviewed against the standards for an Fishery Management and Evaluation Plan (FMEP). NMFS anticipates few instances, especially in the early stages of recovery, where such plans will include impacts targeted on threatened salmonids.

The standards by which NMFS will judge the suitability of any program for a limit are the same, whether the program manages fishery harvest or some type of land management activity. In both instances, such a program may

have some impact on the listed ESU, but at a level that will not appreciably reduce the likelihood of its survival and recovery in the wild. Because current habitat conditions are in most cases far below those needed to support viable populations in the wild, additional impacts on habitat must be carefully constrained and in many cases, accompanied by mitigative measures.

Comment 85: One commenter stated that the proposed rule does not (but should) address commercial harvest and noted that NMFS recently increased the allowable commercial take of salmon which will unavoidably include some listed fish.

Response: The prohibition against take applies to all activities subject to U.S. jurisdictions, including commercial, recreational, and tribal harvest. The commenter refers to commercial harvest in the marine context, which is evaluated through section ESA 7 consultations. Any commercial activity in non-ocean fisheries would have to be governed by an FMEP in compliance with all of the standards of these rules.

NEPA

Comment 86: Some commenters wanted NMFS to clarify the extent to which NEPA applies to the ESA 4(d) rules.

Response: NEPA applies to the ESA 4(d) rules and, as the proposed rule states, NMFS completed environmental assessments (EAs) for this action. Those EAs were made available upon request and on NMFS' web site during the comment period.

Comment 87: Several commenters suggested that the EAs failed to examine a full range of alternatives (such as the Oregon Plan) or that they did not adequately discuss and evaluate the impacts of the proposed action.

Response: While none of the alternatives focus specifically on the Oregon Plan by name, Alternative B contemplates that a state "would have developed a fully adequate comprehensive salmon conservation plan ...to ameliorate all factors for decline for ...an ESU." The EA assesses what impacts a fully adequate plan would have on the environment, assuming that NMFS recognized such a plan by not applying the take prohibitions to actions in conformance with it. NMFS has reexamined the EAs in light of these comments and believes they explored an appropriate set of alternatives.

Comment 88: One commenter noted that NEPA requires a quantitative assessment of consequences of the proposed rule and that agencies should

ensure the scientific integrity of discussions and analyses in NEPA documentation—including explicit reference to the sources relied upon in making the determination.

Response: The comment would be appropriate to an Environmental Impact Statement (EIS). However, an EA should not contain long descriptions or detailed data. Rather, it should contain a brief discussion of the need for the proposal, alternatives, and the environmental impacts of the proposed action and the alternatives. Hence, NMFS believes the level of detail provided is adequate for an EA, which is expected to be a concise, brief document.

Comment 89: Some commenters asserted that the ESA 4(d) rules will allow significant negative impacts from logging, water withdrawal, agriculture, etc. to continue; hence, NMFS should draft an EIS disclosing these significant impacts. Others stated that the simple act of proposing the 4(d) rules required documentation in an EIS and that the final rules should be delayed until such an EIS has been written.

Response: While such activities may have significant negative impacts on the human environment, they do not occur as a result of the ESA 4(d) rules. The comment argues for regulations that will reduce those negative impacts. As the EAs reflect, the take prohibitions will do that. While the commenters may question whether the take prohibitions are the best tool for reining in those negative impacts, the final 4(d) rules as written do not cause any of those impacts. Therefore, no EIS is required for the 4(d) rules.

Take prohibitions are the sole legally enforceable component of these 4(d) rules, and will impact the environment in a positive manner, phasing in over a long period of time (especially with regard to habitat impacts). The Council of Environmental Quality regulations make clear that the fact that an action will have net beneficial environmental impacts does not excuse preparation of an EIS where there are also significant negative impacts (40 CFR 1508.27—definition of “significantly”). In this case the EAs reveal no significant negative environmental impacts, and NMFS believes the EAs satisfactorily address NEPA. Economic impacts need be evaluated only when required as part of the process of preparing an EIS, not as a reason for doing one. (See 40 CFR 1508.14, “This means that economic or social effects are not intended by themselves to require preparation of an environmental impact statement. When an environmental impact statement is prepared and economic or social and natural or physical environmental

effects are interrelated, then the environmental impact statement will discuss all of these effects on the human environment.”) Finally, a belief that the take prohibitions do not go far enough to stop activities that harm the environment is not an argument for an EIS.

Comment 90: One commenter stated that NMFS incorrectly asserts in the EAs that all environmental effects resulting from actions that respond to the ESA 4(d) rule are the independent analytical burden of state and local governments and NMFS will not need to consider or address them. They further stated that NMFS must grapple with the environmental effects of its proposed actions, many of which will be negative for irrigation, noxious weed control, use of pesticides, livestock grazing, etc.

Response: NMFS agrees that this statement in the EAs should have been drafted more clearly. It must be read in the context in which it appeared. The immediately preceding sentence stated “In addition, any future regulation, policy, program, or plan that NMFS feels is protective of [listed salmonids] and for which NMFS limits the section 9(a) prohibitions, will further reduce the impacts of the 4(d) rule.” In that context, the following modified statement would have been clearer: “All of the potential impacts attributable to any future limits will be due to those state or other governmental regulations, policies, programs, or plans, rather than to the 4(d) take prohibitions.”

Economics/Regulatory Flexibility Analysis

Comment 91: Several commenters raised issues related to E.O. 12866, and stated that NMFS should do a cost/benefit analysis on the promulgation of this rule.

Response: NMFS has prepared a Regulatory Impact Review (RIR), which is available on our web site at www.nwr.noaa.gov. Some of the comments, however, were based on a misunderstanding of the legal effect of this 4(d) rule and were made in the belief that the rule mandated compliance with particular limits. That is not so; this 4(d) rule does not (for instance) mandate watershed conservation plans. This final rule provides a limit on the take prohibitions for habitat restoration activities consistent with watershed conservation plans that meet certain standards, but does not require any person or entity to prepare watershed plans or pursue that limit; they may avoid violating the take prohibition by whatever mechanism they choose.

Comment 92: One commenter stated that in addition to demonstrating how each limit contributed to recovery, NMFS should discuss economic and social impacts of each limit.

Response: It is NMFS' responsibility to assess the economic impacts of the regulation overall; those impacts accrue from the take prohibition, not from the limits. NMFS completed an initial regulatory flexibility analysis (IRFA) and made it available for public comment through the proposed rules. Based on comments received, NMFS has broadened many of the limits to make them available to more jurisdictions, or to simplify the processes associated with them. For instance, the road maintenance limit is now available to any state, city, county or port. The development limit is available for any city, county, or regional ordinances or plans that cover development, or categories such as wetland or shoreline regulation. NMFS has supplemented the IRFA to consider some additional categories of economic activity, such as real estate, as well. The Final Regulatory Flexibility Act concludes that at the present time there is no legally viable alternative to the modified rule that would have less impact on small entities and still fulfill the agency's obligations to protect listed salmon and steelhead.

Comment 93: One commenter stated that NMFS should (and failed to) consult with every state and local entity regarding effects of the rules on those entities.

Response: The huge number of such entities within the geographic range covered by this rule makes such consultation far beyond NMFS' resources. However, NMFS held 25 public hearings, accepted comment on the rules for 60 days, and after publishing the proposed rules, held three workshops for state and local government officials in Olympia and the Tri-Cities in Washington and in Salem, Oregon. More than 150 city, county, and state jurisdictions participated in these workshops.

Comment 94: One commenter stated that the IRFA was inadequate in its analysis of alternatives, and that it “fails to even list” the small businesses related to residential and commercial development in its Table of Sectors.

Response: NMFS stands by the IRFA and affirms that it presents as much information on the possible effects of the take prohibition as could be obtained through any reasonable means. Moreover, comments were solicited on the proposed rules, but NMFS received none suggesting additional sources of relevant data. The IRFA Table of Sectors

included Heavy Construction and Highway and Street Construction, which would encompass a large proportion of the activity related to residential and commercial development. We have also added information on real estate and rental leasing to the Final Regulatory Flexibility Analysis. In addition, the RIR discusses the implications of the 4(d) rule in the urban setting—including activities associated with residential and commercial development.

Comment 95: One commenter stated that an independent third party should perform an analysis of the ESA 4(d) rules' economic impacts using economic information developed by the Federal Reserve. The commenter further stated that provisions for landowner compensation and exemption from property tax assessments must also be included as part of this rule.

Response: There is no requirement for third party analyses, nor that NMFS use information from any particular source in its analyses. In fact, NMFS has searched broadly for economic information that might provide more quantitative estimates of the potential costs of avoiding take. The Federal Reserve does not develop such data. NMFS has no authority to provide for landowner compensation or to alter property tax assessments. One of the reasons for the approach taken in this final rule is NMFS' hope that by working with local and state government entities toward comprehensive ESA solutions, there will be smaller impacts on individual actors than might accrue from take-avoidance strategies they might otherwise adopt. Also, as is the case for small landowners under the Forests and Fish Report strategy adopted by Washington and recognized in this final rule, in some circumstances local or state governments may elect to provide offsetting compensation.

Comment 96: Several commenters disagreed with aspects of the IRFA prepared for the proposed rules. A major concern was that the rule requires extensive reporting and paperwork.

Response: This final rule requires only one thing: that actors refrain from taking listed fish. That performance standard does not require reporting. While taking advantage of a limit does require some level of paperwork, that course is not required; an individual or entity may choose simply to modify its actions to avoid take. Nonetheless, NMFS is aware that in some circumstances the paperwork burden is likely to increase and we stand ready to help streamline the process, give

technical advice, and in general decrease that burden wherever we can.

Recovery/Delisting

Comment 97: Many commenters raised issues regarding the timing of and relationships between ESA 4(d) rules and recovery planning. Several stated that NMFS should move forward quickly to develop recovery plans for listed species. Some requested that NMFS publish de-listing goals concurrent with the publication of the final 4(d) rules or withdraw the 4(d) rules until a recovery plan was complete. Related comments questioned whether, in the absence of recovery goals, NMFS could adequately assess the contribution to recovery made by the programs approved as limits on the take prohibition. Other commenters wondered whether the establishment of de-listing goals would require NMFS to reevaluate limits already approved or change the standards for evaluating additional limits. One commenter expressed concern that future recovery plans would simply "rubber stamp" 4(d) rules and their limits.

Response: Recovery planning, as required by ESA section 4(f), is one of NMFS' highest priorities, and NMFS agrees that it is important to move forward quickly to establish recovery plans for listed species. NMFS does not agree that it is either necessary or advisable to publish de-listing goals and final recovery plans concurrently with, or prior to, the final 4(d) rules.

There are no statutory or regulatory requirements regarding the timing or relationships between 4(d) rules and section 4(f) recovery plans. In fact, the basic structure of the ESA itself provides that the protective mechanisms of sections 7 and 10 take effect upon the listing of a species as threatened or endangered while recovery planning follows its course through subsequent activities. Recovery plans will provide biological goals for recovery and identify an entire suite of actions needed for recovery. Thus, they may provide a more specific framework for future 4(d) rules or amendments, but the essential protective function of 4(d) rules is independent of recovery plans; that function is to prohibit take of listed species where needed. If the 4(d) rules were not promulgated until de-listing goals were developed or recovery plans completed, the species would be placed at unacceptable risk, and more stringent and costly measures would be necessary to save them.

Moreover, by applying the VSP and PFC concepts it is possible to make judgments about the contributions certain programs make to recovery.

These judgments will not prejudice the comprehensive recovery planning process.

For habitat actions, NMFS may find that it is not necessary or advisable to apply the take prohibition to programs that will help attain or protect properly functioning habitat. For FMEPs, NMFS may find it is not necessary or advisable to apply the take prohibition when the program contains specific management measures that adequately limit take and otherwise protect the ESU. For Hatchery and Genetic Management Plans (HGMPs), NMFS may find that it is not necessary or advisable to apply the take prohibition when a plan is designed to minimize and adequately limit take and promote species conservation. NMFS believes that these standards are all consistent with recovery, and expects that most programs approved as limits will provide a foundation for later recovery planning measures. NMFS also anticipates that the VSP and PFC concepts will continue to evolve and provide the analytical framework for evaluating potential limits and recovery measures.

Through the process of recovery planning, NMFS may develop more specific information about measures needed for recovery or about specific areas needing more prescriptive attention. In addition, each take limit incorporated into the 4(d) rules includes provisions for continued review of its implementation and effectiveness. Thus, NMFS intends to continually reevaluate the limits. If these evaluations, or information developed through recovery planning, or any other information, indicates that a limit is inadequate for recovery, NMFS will revisit the limit.

Finally, NMFS is moving forward as quickly as resources allow to develop recovery plans. NMFS has appointed Technical Recovery Teams (TRTs) for Puget Sound and for the Willamette/Lower Columbia River Basins and Southwest Washington. These teams have begun to identify delisting goals. To conduct the more policy-oriented aspects of recovery planning, NMFS will work with state, local, tribal, and private entities to craft a recovery planning process suited to specific areas and situations. Formal recovery planning efforts will be expanded to additional geographic domains as resources permit.

Comment 98: Several commenters addressed the issue of federal trust responsibilities to tribes in developing protection and conservation goals, plans, and measures. These commenters held that NMFS needs to make every effort to ensure that treaty rights and trust responsibilities are met through its

regulatory actions, and that thresholds, goals, and recovery plans support healthy, productive, and harvestable fish populations.

Response: NMFS approaches the ESA 4(d) rules as a vital component of conserving the species until the protections of the ESA are no longer needed. These protections will no longer be needed only if the abundance of fish is sufficient to satisfy treaty fishing rights and to fulfill the trust obligations of the United States.

Cumulative Impacts

Comment 99: A number of commenters questioned the reasoning behind NMFS including in the take guidance a category of activities that, while individually unlikely to injure or kill listed salmonids, may collectively have significant detrimental impacts. Commenters asserted that regulating such activities was beyond NMFS' purview. Others questioned how NMFS would enforce the prohibitions when take resulted from such activities.

Response: NMFS agrees somewhat with this comment. The discussion of activities that do not cause take individually but that cumulatively may have significant detrimental impacts on salmonids was intended to be advisory and informative in nature and no enforcement actions in response on these activities were being contemplated. The category of activities raised a number of concerns however, and the language has been struck from the rule. Nonetheless, it is important to note that a myriad of decisions made by individuals and institutions on a daily basis, while negligible in the individual case, may have, in the aggregate, a significant detrimental impact on the ecosystem processes that support salmon and steelhead.

Comment 100: Many commenters raised the issue of cumulative impacts. Some expressed concern that the 4(d) proposed rules did not assess the cumulative impact of all the take limits combined. Some also expressed concern that the individual take limits did not address cumulative impacts of activities covered under that limit. Several commenters requested that the final rules include an analysis of cumulative impacts as well as a mechanism for evaluating cumulative impacts caused by any future take limits. One commenter asked how and when NMFS would provide opportunities for the public to review and comment on ESU-wide assessments of cumulative take.

Response: The suggestions regarding cumulative impacts have great merit, and NMFS is moving toward implementing a method for assessing

total take across broad sectors. That function, however, would not be specific to the 4(d) context. Impacts on listed species accumulate from natural conditions as well as from illegal and unauthorized take and from actions to which the take prohibition does not apply because they fall in the realm of some other ESA mechanism (section 10 permits; section 7 consultations, or specific provisions of a 4(d) rule). Cumulative impact assessment is problematic because there are very few methods for adequately assessing cumulative impacts of habitat-modifying activities. Nonetheless, NMFS has explicitly incorporated consideration of cumulative impacts into the 4(d) rules where feasible. For example, FMEPs will evaluate the cumulative mortality of all fisheries, and HGMPs will track the number of listed fish taken as broodstock. In addition, NMFS believes that by requiring habitat-modifying activities within a limit to attain or maintain properly functioning condition, and all activities within a limit to contribute to viable salmonid populations, cumulative impacts are, to an extent, accounted for. Moreover, during the process of developing comprehensive recovery plans, NMFS and recovery teams will address the issue of cumulative impacts more systematically. The public will have the opportunity to comment on ESU-wide assessments of cumulative levels of take during the recovery plan public review process.

Comment 101: A number of commenters recommended ways for NMFS to assess cumulative effects. One commenter asserted that meaningful assessments of cumulative risk at the ESU level would require linkage between VSP and PFC and development of a common method for evaluating the effects various activities have on populations and habitats. Another urged that NMFS adopt comprehensive habitat productivity standards to evaluate cumulative effects of habitat programs granted limits on the take prohibition. One commenter suggested that NMFS require all habitat-modifying activities to account for habitat-modification-related mortality. Another suggested that NMFS focus on cumulative take rather than dealing with take in its various permutations individually. Another suggested that the rules should mandate an annual cumulative take assessment (based on life cycle stages) for each population in an ESU. In addition, they desired that NMFS (a) examine mortality in the various populations and determine whether take

from a particular sector is placing them at risk, and (b) separate human-induced mortality from that attributable to fluctuating environmental conditions and thereby adjust take regulations to provide more protection during times of environmental stress.

Response: NMFS agrees that all of these suggestions have great merit and, as mentioned previously, NMFS is moving toward implementing a method for assessing total take across broad sectors. Also, as mentioned earlier, assessing cumulative impacts is a difficult process. In most cases, there are no adequate standards for habitat productivity and developing them is a complex and long-term task. NMFS intends to work with co-managers to develop the necessary standards and assessment techniques. In addition, during the ESA recovery planning process, NMFS will assess the mortality burdens for each ESU and life-cycle stage.

Comment 102: One commenter asserted that limits for urban development should be analyzed within the cumulative impact context.

Response: NMFS agrees that cumulative effects should be an important consideration in analyzing the effects of MRCI development and redevelopment. To the extent that NMFS must prioritize the evaluation process, comprehensive MRCI plans with relatively broader scopes of activities, authorities, effects, and geography (and therefore greater cumulative effects) will generally be evaluated before plans with relatively smaller scopes. Applicants with smaller-scale plans should take particular care that their effects analyses take cumulative impacts into account.

Comment 103: Several commenters questioned whether NMFS had completed requisite cumulative effects analysis under ESA section 7 and NEPA.

Response: NMFS has complied with section 7 consultation requirements on the adoption of the 4(d) rules by consulting both internally and with FWS. In addition, NMFS has completed an EA for this action pursuant to NEPA.

Comment 104: One commenter asserted that the cumulative impacts consideration required by § 223.203(b)(8)(iii)(A) is unreasonable due to lack of clear scientific consensus on how to do so.

Response: Cumulative impacts analysis has been routinely required by NEPA, ESA, and many other Federal and state authorities for several decades and NMFS does not believe it presents an insurmountable obstacle to development of acceptable watershed

conservation plans (WCPs). In fact, it would be difficult to complete an adequate watershed analysis without having considered cumulative impacts. NMFS is confident that state WCP guidelines will be able to offer sufficient technical advice so that entities developing WCPs will be able to meet the cumulative impacts requirement.

Comment 105: Some commenters held that the rules failed to regulate activities consistent with their incremental effects, and that the effect of the rules would be to focus NMFS staff time on urbanized areas, while greater benefit could be gained by identifying habitat areas where the most good could be achieved at the least cost, and then bringing Federal, state, and local resources to bear upon those areas. Other commenters expressed concern that the rules would disproportionately regulate the impacts of habitat modification compared to the impacts of harvest activities.

Response: NMFS does not believe that the 4(d) rules fail to regulate activities consistent with their incremental effects. The 4(d) rules "regulate" primarily by putting into place the ESA section 9 take prohibitions. This take prohibition applies to all activities, regardless of their incremental impact on a listed species. The rules then identify certain activities that already conserve the species and for which no additional ESA regulation (i.e., take prohibitions) are necessary. These activities span a broad range and include research, aiding stranded salmonids, managing harvest and hatcheries, and land uses such as forestry, development, and road maintenance. NMFS hopes to continually expand the scope of these limits to encompass additional activities not currently addressed by limits, wherever such efforts are biologically warranted.

Limits for Scientific Research and Rescue/Salvage

Comment 106: Several commenters stated that the ESA 4(d) limit for scientific research activities (research limit) would place excessive reporting requirements on state fisheries agencies and that these agencies lacked the funding and staffing to accommodate the additional workload.

Response: NMFS acknowledges that, as a result of promulgating the take prohibitions, state fisheries agencies will now have a higher level of accountability for reporting take of listed salmonids and that some ESA-related reporting will be new for these agencies. However, all of the affected agencies currently oversee research

permit processes for fish sampling in state waters and NMFS believes that the workload associated with this limit should be comparable with state reporting/recordkeeping requirements already in place. Much of the information NMFS is requiring under the research limit is currently generated by the state's permit process, which presently covers all entities (e.g., Federal, academic, private, and other state agency researchers) other than biologists employed by the state fisheries agency. However, these agency biologists typically produce research summaries that NMFS believes could be efficiently translated into the annual state reports supporting this limit.

Moreover, a major impetus for providing the research limit is to allow the state fisheries agencies to continue to oversee and coordinate research efforts for listed salmonids. The ESA's section 10 permitting process does not always facilitate state oversight/coordination and NMFS believes that it is advisable to minimize research impacts by streamlining the research review process in a manner that fosters active participation by state fisheries agencies. It is worth noting that as a result of previous 4(d) rulemaking (50 CFR 223.204(a)(4)), ODFW has successfully coordinated and reported scientific takings per a 1997 research limit involving listed coho salmon in southern Oregon. NMFS will work closely with all of the affected states and research entities to expand on this success while minimizing the reporting workload by incorporating existing state processes into those supporting the 4(d) limit for scientific research.

Comment 107: Some commenters asked whether research involving direct take of listed salmon and steelhead would still require a section 10 permit and whether incidental take would be covered under the ESA 4(d) rule.

Response: Research and monitoring activities involving either directed or incidental take of the 14 ESUs identified in this rule are covered by this 4(d) limit. Therefore, state-approved activities covered by this limit would not need to go through a separate section 10 permit process. However, if the research is not covered by the research limit, then an applicant would need to obtain an ESA section 10 permit before conducting research that could take a listed salmonid.

Comment 108: Several commenters were confused by the language describing provisions under "Continuity of Scientific Research" and requested clarification as to what applications were needed and when take prohibitions would become effective.

Response: As described in the proposed rules, NMFS is concerned with the potential for disrupting ongoing scientific research, monitoring, and conservation activities, especially during the coming summer/fall field seasons. Therefore, the agency is providing a temporary limit on the take prohibitions to allow such activities to continue until March 7, 2001 so that the necessary paperwork can be processed. However, to qualify for this "temporary" limit, researchers must submit a section 10 permit application to the Assistant Administrator for Fisheries (AA), NOAA by October 10, 2000 for research activities affecting listed fish in any of the 14 salmon or steelhead ESUs identified in this rule. Applicants would be subject to take prohibitions only after their permit application is denied, rejected as insufficient, or the "temporary" limit period expires, whichever occurs earliest. Researchers failing to submit an application by October 10, 2000 would be subject to take prohibitions beginning on September 8, 2000 for the seven steelhead ESUs and on January 8, 2001 for the seven salmon ESUs. NMFS will make every effort to respond to applicants in a timely fashion. However, researchers are advised to prepare for unavoidable delays that may result from the anticipated load of section 10 permit applications that will be presented to NMFS.

Parties requesting coverage under the ESA 4(d) limit on scientific research activities should consult with the ODFW, the California Department of Fish and Game (CDFG), the Idaho Department of Fish and Game (IDFG), or the Washington Department of Fish and Wildlife (WDFW) to determine when related applications are due to these oversight/coordination agencies. By October 10, 2000, NMFS will expect these agencies to submit a letter of intent to the AA, NOAA, summarizing the types of research to be covered under the 4(d) limit for any of the 14 salmon or steelhead ESUs identified in this rule. This letter will serve as a placeholder for these agencies (and the entities identified in their letter) until they can submit to NMFS a more comprehensive assessment of scientific research activities planned for the 2001 research season. Take prohibitions for these applicants would become effective after their application for the 4(d) limit is either rejected by NMFS or the "temporary" limit period expires, whichever occurs earliest. Applicants failing to submit a letter of intent by October 10, 2000 would be subject to take prohibitions beginning on

September 8, 2000 for the seven steelhead ESUs and on January 8, 2001 for the seven salmon ESUs. NMFS will work closely with the affected state agencies and researchers to select suitable reporting time frames and minimize the disruption of research efforts.

Comment 109: Several commenters requested that NMFS expand the ESA 4(d) limit on scientific research activities to include research by tribal fisheries biologists. Others requested that NMFS include a regulatory obligation for the states and NMFS to include tribes in reviewing scientific research and monitoring efforts subject to the ESA 4(d) limit.

Response: NMFS has provided a separate 4(d) rule for Tribal Plans (including research and monitoring activities) (published elsewhere in this *Federal Register* issue) the purpose of which is to establish a process that will meet the conservation needs of listed species while respecting tribal rights, values, and needs. A tribe intending to conduct research-related actions that may take threatened salmonids could submit a Tribal Plan to NMFS for consideration under the 4(d) rules. In addition, tribes have the opportunity to have tribal research activities covered under the research limit for salmon and steelhead, so long as the activities are in accord with state reporting requirements specified in that limit.

NMFS does not believe it is necessary to include a regulatory obligation under 4(d) that requires states to include a tribal co-manager review and concurrence process for research/monitoring activities. There are ample opportunities—both formal and informal—for Federal, state, and tribal co-managers to coordinate salmonid research and monitoring efforts and NMFS will continue to encourage such collaborative efforts. In addition, NMFS recognizes its responsibilities to confer with the tribes on ESA issues and will use this dialogue to ensure that tribal concerns are addressed. NMFS will make available to interested parties the documents describing the research and monitoring conducted under either the tribal 4(d) limit or the salmon/steelhead research limit.

Comment 110: Some commenters stated that the research limit was too narrowly defined and should be expanded to apply to other state and non-governmental entities (e.g., state water quality agencies, watershed councils, and sportsman groups). Others requested that NMFS clarify what is meant in the research limit by “oversight” and “coordinated.”

Response: NMFS believes that the state fisheries agencies are in the best position to oversee and coordinate scientific research and monitoring efforts involving listed salmonids. While other entities (e.g., other state agencies, academics, consultants, etc.) have considerable expertise in fisheries research, none have the clear management responsibility for salmonids that is vested with the state fisheries agencies. Moreover, NMFS is concerned that expanding this limit to include numerous entities would hinder the coordination of research efforts. NMFS encourages coordination as a means to minimize research impacts on listed salmonids while facilitating data exchange and interpretation.

NMFS agrees that minor modifications to this limit's description will help clarify the agency's intent for “oversight” and “coordination.” For example, with respect to “oversight,” NMFS does not believe that a state fishery agency must directly supervise or inspect every research project. Instead, NMFS intended that research efforts covered by the ESA 4(d) limit should merely be identified and approved by the appropriate state fishery agency. The identification and approval processes should constitute nominal extensions of the pre-existing system for obtaining a state research/ collection permit. In addition, NMFS' emphasis on “coordination” was to encourage the state fisheries agencies to establish and improve upon mechanisms for organizing research and monitoring of listed salmonids. Such coordination could occur at a state-wide level (e.g., the Oregon Plan for Salmon and Watersheds), at a level addressing a particular ESU (e.g., Washington's Hood Canal and Eastern Strait of Juan de Fuca Summer Chum Recovery Plan), or watershed. No matter what the level, however, the state fisheries agencies will still need to provide NMFS with the requisite annual reports. NMFS will continue to work with the affected states to better define the reporting requirements supporting this limit, maximize the information being gathered on fish and wildlife species (while minimizing impacts on threatened and endangered species), and ensure that sound research proceeds unencumbered by regulatory/permitting requirements.

Comment 111: Some requested that this limit be made available to Federal researchers and asked for clarification on the relationship between this limit and ESA section 10 permits.

Response: NMFS clarifies that Federal research and monitoring activities could be covered under the research limit.

Federal lands encompass vast areas of salmonid habitat in the Pacific Northwest and California, and Federal research efforts contribute vital information about these species. Therefore, NMFS believes it is necessary and advisable to provide the opportunity for Federal researchers to receive coverage under the research limit. Such coverage would obviate the need for an ESA section 10 permit for these Federal researchers. Still, in deference to the need for close coordination with state and other efforts (plus the fact that Federal researchers will still need research and collection permits from the state fisheries agencies), Federal research will only be covered under the ESA 4(d) limit when that research is overseen by or coordinated with a state fisheries agency that is willing and able to report on the Federal research effort. Also, it is important to note that coverage under the research limit would not relieve Federal agencies of their duty under section 7 of the ESA to consult with NMFS if actions they fund, authorize, or carry out may affect listed species.

Comment 112: Some commenters contended that NMFS was placing unnecessary constraints on electrofishing as a sampling technique. Several requested clarifications and revisions to specific protocols described in NMFS' “Guidelines for Electrofishing Waters Containing Salmonids Listed Under the Endangered Species Act” (NMFS, 2000a), in particular they sought revisions in the guidelines pertaining to numeric standards/settings and documenting crew experience and sampling history. One commenter requested that NMFS expand the limit and guidelines to address electrofishing from boats.

Response: NMFS contends that the guidelines are both reasonable and necessary for the conservation of listed salmon and steelhead ESUs. The literature is replete with evidence to support NMFS' concerns that electrofishing can be particularly harmful to salmonids and other fishes (see review by Nielsen, 1998). Before distributing the existing guidelines in 1998, NMFS held a workshop and distributed the subsequent guidelines for peer review. The resulting guidelines reflect reasonable and prudent measures for minimizing the adverse effects of electrofishing. NMFS will continue to encourage researchers to use other less invasive techniques (e.g., traps and snorkeling surveys), but recognizes that electrofishing has utility, or is the only practical alternative in certain study designs.

With respect to specific concerns about the electrofishing guidelines, NMFS disagrees with most of the issues raised and believes that only minor modifications are warranted in these protocols. For example, the agency disagrees with several commenters that requiring conductivity measurements would impose an onerous and costly burden on researchers. It is well known that water conductivity is one of the most critical parameters determining electrofishing impacts and conductivity meters are both inexpensive and readily available. The concerns that NMFS is requiring too much documentation (e.g., logging crew experience and data on sampling results) are also unsound. Most, if not all, researchers record the time spent (e.g., time counters are an integral part of most backpack units) and results of electrofishing surveys (e.g., numbers of fish encountered, injuries observed, site conditions, etc.). These logs aid fish by helping to improve the researcher's technique and can form the basis for training new operators.

With respect to boat electrofishing, NMFS has serious concerns with this technique because it has even greater potential for seriously injuring listed salmonids. For example, the technique can employ electrical output that is an order of magnitude greater than backpack electrofishing units, and environmental conditions can seriously limit a researcher's ability to minimize impacts on listed fish (e.g., adult salmonids in large and turbid stream reaches). NMFS has not developed suitable guidelines for this sampling technique and will continue to request that researchers desiring to employ electrofisher boats apply to NMFS via the ESA section 10 permit process.

Comment 113: Some commenters requested that NMFS clarify which entities would be covered under the limit for rescue and salvage actions and better define what constitutes an "emergency" under this limit. One commenter requested that NMFS specifically allow electrofishing under the rescue/salvage limit.

Response: The regulations pertaining to this limit state that rescue/salvage can be conducted by "any employee or designee of NMFS, FWS, any Federal land management agency, IDFG, WDFW, ODFW, CDFG, or any Tribe." A designee of the listed entities is any individual that the Federal or state fishery agency, or other co-manager has authorized in writing to perform the rescue/salvage.

While it is not possible to characterize all scenarios constituting an "emergency" for listed salmonids, fish

strandings resulting from natural or human-induced events are probably the most common type encountered. For example, an emergency condition may exist as a result of dewatering (e.g., for irrigation), damming, drought conditions, or when listed fish become stranded in channels or ponds following a flood event, landslide, or debris torrent. Chemical spills associated with industrial effluents or vehicular accidents (e.g., train or automobile accidents) have also been known to create an emergency for salmon and steelhead. These are just a few examples of scenarios that the employees or designees might face. Obviously professional judgement will need to be applied at the scene of an emergency to determine if and how listed fish should be rescued.

NMFS concurs that electrofishing is permissible when there is no better technique for safely removing stranded fish under the rescue/salvage limit. However, the electrofishing should be conducted in accordance with NMFS' backpack electrofishing guidelines.

Fishery, Hatchery, and Genetic Management Activities

Comment 114: Some commenters stated that the proposed ESA 4(d) rules potentially grant broad exemptions for taking listed species in hatchery programs and fisheries and that these limitations should be omitted or tightened to better control hatchery and harvest practices.

Response: The final rules establish explicit criteria and standards that hatcheries and harvest activities must adhere to in order for them to be eligible for limitations on section 9 take prohibitions. The criteria include detailed plans, risk assessments, and monitoring and evaluation and are similar to what has been required for section 10 permits in the past. The Fishery Management Evaluation Plans (FMEPs) and Hatchery Genetic Management Plans (HGMPs) will be evaluated using the same standards used to examine section 10 permit applications. The limits for hatcheries and harvest will not decrease the level of protection for listed species.

Comment 115: There was general support for the concepts detailed in the technical document "Viable Salmonid Populations." However, there was much concern over how to apply these concepts in actuality. A number of commenters stated that in most cases there would not be enough information to determine population structure and abundance thresholds. Many commenters thought VSP should be

implemented through NMFS' recovery planning efforts.

Response: NMFS realizes that a substantial amount of information needs to be generated in order for FMEPs and HGMPs to be consistent with the "Viable Salmon Populations" technical document. Ideally, that information would arise out of the technical phase of the recovery planning process. However, even if all the data are not yet available, the concepts contained in VSP are valid and will still be used to help develop and evaluate FMEPs and HGMPs. Determining "critical" and "viable" thresholds in the management plans allows actions to be tied to the status of listed fish in a particular population or management unit. If a population or management unit is at critical levels, actions must be strictly controlled and not impede recovery. At viable levels, the population or management unit is healthy and more flexibility exists for fisheries and hatchery management. NMFS will work with the co-managers to apply VSP to the greatest extent possible for any given management unit. As additional monitoring and evaluation are completed in the future and as recovery plans are developed, the FMEPs and HGMPs will be revised.

Comment 116: Some commenters suggested that no progeny of listed fish that were spawned in a hatchery should be considered listed under the ESA.

Response: Listed fish may be taken into a hatchery for spawning as a last resort to conserve the species. Before this can occur, an approved HGMP or ESA section 10 permit must be obtained. The HGMP or section 10 permit specifies the number of listed fish that can be taken into the hatchery. The status of the (artificially propagated) progeny of these fish is determined at the time the species is listed (i.e., stated in the final listing determination). If the hatchery program is part of an ESU where the progeny of listed fish spawned in a hatchery are considered to be listed, NMFS may proceed through rulemaking to delist hatchery progeny once an HGMP or section 10 permit is in place.

Comment 117: Some commenters questioned the strategy of restricting steelhead fisheries to areas where only hatchery-marked steelhead are expected to occur and prohibiting the retention of listed steelhead. It was asserted that this policy could be a disincentive for local recovery efforts because healthy, naturally reproducing populations of fish could not be utilized if the population recovers.

Response: NMFS agrees that recreational fisheries should not be

limited to streams where only hatchery fish are present. NMFS intends to manage fisheries based upon a listed ESU's status and a given fisheries' impacts on that status. The ultimate goal is to recover and maintain natural, self-sustaining ESUs so that ESA protections are no longer necessary. Under the VSP concept, if a steelhead population has recovered to viable abundance levels, more harvest impacts could be allowed than would be advisable for an adjacent population whose status is poor.

Comment 118: Several commenters requested clarification on the meaning and purpose of sanctuary areas, and some questioned the rationale for not requiring the designation of sanctuary areas in FMEPs under the salmon ESA 4(d) rule, but requiring them in FMEPs under the steelhead 4(d) rule. (Note: the proposed 4(d) rule for salmon (65 FR 170, January 3, 2000) was published separately from the proposed rule for steelhead (64 FR 73479, December 30, 1999). The two proposed rules have been combined in this final rule.)

Response: NMFS defines sanctuary areas in the FMEPs as areas that are closed to fishing. NMFS' intent is to provide areas where juvenile and adult fish are not exposed to any fishing-related pressure or mortality (including catch and release fisheries, which can have an associated incidental mortality). Tributary streams or stream reaches that are the primary, core areas where listed fish spawn and rear in a given watershed would be good areas to designate as sanctuaries.

Establishing sanctuary areas is especially important for species (like steelhead) that can spend several years rearing in fresh water and may be exposed to multiple fishing seasons. Juvenile salmon are generally less vulnerable to fishing because they typically emigrate to the ocean by the time they are one year old. However, some juvenile salmon (e.g., sockeye) can also exhibit extended freshwater residence. NMFS agrees that sanctuaries should also be included in the FMEPs developed for the listed salmon ESUs. The extent of the existing (and future) sanctuary areas for juvenile and adult fish will be evaluated on an ESU-by-ESU basis when the FMEPs are reviewed.

Comment 119: One commenter contended that sanctuaries may be difficult to establish in many California river systems (e.g., Central Valley streams) and asked how many sanctuaries would be needed to get NMFS' approval of an FMEP.

Response: NMFS agrees that it may be difficult to designate sanctuaries in the Central Valley system given that the

majority of historical habitat is now inaccessible to fish. However, there are other accessible river systems inhabited by the three steelhead ESUs covered by this ESA 4(d) rule that currently do not offer sanctuary protection in critical spawning and rearing habitats. The FMEP process will allow NMFS to work with co-managers in establishing angling sanctuaries in these areas to further protect and conserve steelhead while still allowing appropriate angling opportunities to proceed. The appropriate numbers of sanctuaries will arise out of the FMEP development process.

Comment 120: Some commenters questioned whether the FMEP process is necessary for sport angling and contended that developing elaborate FMEPs is not the best use of limited technical and restoration resources.

Response: The FMEP process will make it easier to work with the co-managers in making sure that sport fishing activities comply with the intent of this limit. While the amount of information that NMFS requires for FMEP approval will be similar to information required for an ESA section 10 incidental take permit, the FMEP route provides a longer-term framework for fisheries management and is thus more efficient over time in addressing recreational fishing impacts on listed species.

Comment 121: Some commenters requested that recreational fisheries in California receive a limit on the take prohibitions because they are likely to have only minor impacts on listed species.

Response: NMFS recognizes that CDFG has instituted conservative fishing regulations in many of the steelhead-bearing streams found in California. These regulations allow for continued angling opportunities, where appropriate, while providing some level of protection for listed steelhead through gear, season, and area restrictions. Although take associated with modern recreational fisheries has not been identified as a major reason for the depressed status of many California steelhead ESUs (NMFS, 1996), there is still a general lack of monitoring from which to derive reliable quantitative estimates of impacts in selected steelhead streams (e.g., Antelope, Deer, and Mill Creeks in the Central Valley steelhead ESU). In addition, take provisions and angling regulations may need to be more restrictive in areas where habitat conditions are not properly functioning and angling pressure would exacerbate the risks faced by a listed population. An approved FMEP would provide the

means to identify these monitoring gaps and open the way for agreements with co-managers on instituting appropriate measures and securing funding sources.

Comment 122: NMFS should not require FMEP monitoring that is physically or fiscally impractical.

Response: NMFS agrees with this comment and will make every effort to work cooperatively with co-managers to identify resource monitoring and assessment requirements on an ESU-by-ESU basis. The required level of monitoring will be tied to a population's status and the degree to which a specific fishery poses risks to that population. There is sufficient flexibility in the ESA 4(d) rule to accommodate the immediate staffing and funding shortfalls. One of the integral parts of the FMEP process, however, will be to identify the level of monitoring and assessment needed to adequately address the impacts of recreational angling on listed species in a given ESU. Strategies for prioritizing monitoring needs based on funding and staffing capabilities will be stipulated in letter of concurrence NMFS crafts in response to an approved FMEP.

Comment 123: Several comments addressed the use of barbed hooks in recreational fisheries for trout and steelhead. One commenter questioned the scientific basis for disallowing barbed hooks in adult steelhead fisheries. Other commenters believed that catch and release mortality could be significantly reduced by requiring the use of barbless hooks.

Response: The available scientific data have not shown that using barbless hooks consistently or significantly reduces catch and release mortality in trout and steelhead fisheries, and the ESA 4(d) rule does not require barbless hooks in recreational fisheries. However, NMFS believes certain fishery situations could warrant the use of barbless hooks to minimize potential impacts on listed fish.

Comment 124: Several commenters were concerned with language in the ESA 4(d) rules relating to restrictions on resident species fisheries. Some contended that restrictions should be placed on any fishery (resident or anadromous species) that substantially affects listed fish. Others believed the restrictions to be excessive and stated that NMFS should more fully assess the impacts of resident species fisheries on listed salmon and steelhead.

Response: All fisheries that potentially affect listed salmon and steelhead must be evaluated in the appropriate FMEP. NMFS' intent is to point out the fact that some resident species fisheries can affect listed fish. In these circumstances, the FMEP must

include angling regulations for resident species fisheries that minimize any take of listed species. An FMEP may also include restrictions on anadromous fisheries to ensure that listed species are conserved.

Comment 125: One commenter stated the need to clarify certain definitions used in relation to the hatchery programs. It was asserted that several hatchery programs still have definitions of "natural" fish that seriously obscure the differences between wild and hatchery-produced fish. The commenter stated that the HGMPs should address this problem.

Response: NMFS agrees with this comment. Therefore, to clarify, NMFS generally uses the terms "natural" and "hatchery" to describe the origin of anadromous fish following the definitions found in Bjornn and Steward (1990): hatchery fish are those that, regardless of parent stock, have been spawned, incubated, hatched or reared in a hatchery or other artificial production facility. Naturally produced fish are those that result from natural spawning in streams. As Waples (1991) stated, the terms wild and natural are used synonymously to refer to naturally produced fish without regard to the origin of the parent stock.

Comment 126: The HGMP and FMEP templates should be referenced in the 4(d) rules.

Response: This suggestion has merit and language in this final rule has been duly altered. The templates are available on NMFS' Northwest Region website (www.nwr.noaa.gov).

Comments related to the criteria established for FMEPs and HGMPs

Comment 127: Some commenters questioned the assertion in the harvest limit that at critical threshold levels, harvest actions must not appreciably increase the genetic and demographic risks facing the population. They stated that this policy does not ensure the conservation of listed species and that any populations that are at critical threshold levels should not be put at risk. They asserted that harvest should be very restricted or totally eliminated when a population reaches critical levels.

Response: When a population within a listed ESU is at critical levels, impacts from fisheries must be strictly controlled. No fishery will be allowed under the ESA which jeopardizes the continued existence of an ESU. In some cases it may be necessary to close or curtail fisheries to protect listed fish. The intent of this language was to realize that incidental harvest may occur even under a tightly regulated fishery regime. Anadromous salmonids

have a vast migratory distribution and may be incidentally intercepted in fisheries occurring in other regions. NMFS will evaluate FMEPs to ensure that the harvest regime will protect individual populations and allow the ESU to recover before being approved.

Population-level assessments under the ESA are meant to provide information on abundance, productivity, structure and diversity specific to each population, and are essential to determining an ESU's overall health. However, under some circumstances the ESU as a whole may be viable even though some individual populations have not fully recovered. NMFS and the TRT's appointed to help develop de-listing criteria will determine which, where, and to what degree populations within an ESU must have "viable salmonid population" status to render adequate ESA protection at the ESU level.

Comment 128: One commenter stated that no transgenic or genetically engineered fish should be allowed in waters where listed fish reside.

Response: No action that jeopardizes the continued existence of listed species is permitted under the proposed 4(d) rules or any other section of the ESA. If NMFS assumes that "transgenic or genetically engineered fish" are not native species and determines that their introduction into waters where listed fish reside would not help recover listed species, these fish would likely be prohibited.

Comment 129: Some commenters believed that the final rules should contain citations that demonstrate the validity (including associated risks) of supplementation as a tool for recovery. Some organizations are doubtful that supplementation is effective.

Response: There is considerable scientific uncertainty regarding the extent to which benefit can be derived from supplementing naturally spawning populations with hatchery-produced fish. There are well-publicized examples of domesticated, hatchery-produced salmon and steelhead having negative effects on natural production (Kalama River-Skamania summer steelhead). There are also examples where artificial propagation of the local, indigenous, stock appears to have increased or sustained the number of naturally spawning fish (Imnaha and South Fork Salmon River summer chinook, Upper Columbia steelhead, Rogue River coho). The proposed HGMPs require programs to be designed using the best current scientific knowledge in order to identify and manage risks and provide benefits to the listed species. The HGMPs are required

to identify goals, adopt performance standards, and conduct comprehensive monitoring and evaluation in order to help evaluate supplementation success and resolve any uncertainties about the practice.

Comment 130: Some commenters stated that artificial propagation has failed to maintain wild fish populations and all hatchery programs should be discontinued.

Response: Few of the original artificial propagation programs were designed to maintain wild populations. By developing and implementing HGMPs under the ESA, these programs will address wild population conservation and recovery. The risks and negative effects associated with artificial propagation programs are being identified and managed. It is true that artificial propagation has not been able to maintain wild anadromous fish when dam building, habitat loss, and fishing has continued at the established pace. Reforming hatchery practices is advisable, but discontinuing all artificial propagation is not necessary to restore natural fish under all circumstances. In many cases, hatchery programs are managed to minimize risks to wild populations while providing other benefits, such as supplying harvestable numbers of fish to meet treaty trust responsibilities.

Comment 131: One commenter stated that NMFS should not use HGMPs to police compliance with court orders.

Response: NMFS cannot approve an HGMP that does not comply with legal mandates established by statute or court order. This criterion is intended to remind the applicants that an HGMP must be legally as well as biologically complete.

Comment 132: Several comments addressed the experimental nature of supplementation programs and the need for hatchery program goals to protect genetic diversity and individual wild fish stocks. Furthermore, specific concerns were raised about the need to ensure that monitoring and evaluation activities adequately protect listed fish.

Response: NMFS agrees with the general thrust of these comments. Supplementation programs are viewed as being experimental; they can vary from program to program depending on the purpose of the program, the species targeted, stock status, and location. Because of supplementation's experimental nature, HGMPs assume an adaptive management approach for such programs by requiring extensive monitoring and evaluation. These activities must be able to identify deleterious effects on listed fish so the program can be modified. Furthermore,

HGMPs are designed to protect genetic diversity in wild populations (both listed and non-listed) by improving hatchery management, monitoring, and evaluation.

Comment 133: Some commenters questioned how mining wild fish populations for broodstock contributes to recovery when a population is at or below the critical threshold.

Response: When populations reach critical levels and the best available scientific information indicates that the demographic risks are greater than the genetic risks, using artificial propagation to prevent imminent extinction may be the least risky alternative. When populations are at or below the critical level, the only hatchery programs NMFS is likely to approve would be for the sole objective of enhancing the listed species' propagation and survival. If the cause of the decline is short-term, then the hatchery program could be reduced once the population exceeds the critical threshold. If the cause for the decline cannot be remedied in the short-term, the hatchery can act as a genetic broodstock bank and maintain the population until the causes for decline can be addressed.

Comment 134: Some commenters had concerns about NMFS' decision making process in determining whether an HGMP adequately avoids or minimizes any deleterious effects. They desired to know how the standards for this determination would be set and sought an exact description of the monitoring program.

Response: NMFS has developed a detailed HGMP template in collaboration with scientists from the other state and Federal agencies and treaty Indian tribes. The template is available on the NMFS Northwest Region's website at www.nwr.nmfs.gov. The template references many documents that provide guidance on artificial propagation in terms of setting performance objectives, identifying, evaluating, and managing risks, and monitoring results. NMFS' fishery scientists will review the HGMPs for completeness and adequacy. The HGMPs are also being used in sub-basin planning and in the Northwest Power Planning Council (NPPC) funding process where they may be subject to review by fishery scientists employed by Council staff as well as one or more layers of independent scientific review. The HGMPs will be available for public comment and peer review before they are approved. NMFS believes this process will help ensure deleterious effects are being adequately managed. However, all hatchery programs pose

some degree of unavoidable risk to natural populations.

Comment 135: One commenter suggested that hatcheries should produce as many fish as possible and held that there is no scientific basis for favoring natural fish over hatchery fish.

Response: NMFS strongly disagrees. Hatchery fish have been identified as one of the factors causing population declines in a number of ESUs. There is a substantial body of scientific evidence to show that hatchery fish can harm natural fish by preying on them, competing with them for food, shelter and mates, displacing them from their native habitats, and creating other effects.

Comment 136: One commenter stated that NMFS failed to address the issue of hatchery structures that can block fish passage.

Response: Each HGMP will include a section describing the hatchery facilities. It will identify passage issues and water withdrawals and screening facilities. If passage is an issue, it can be addressed through HGMP implementation. Passage is also evaluated in ESA section 10 permits for hatcheries.

Comment 137: One commenter recommended that hatchery fish be protected in the 4(d) rules, not just wild fish.

Response: The ESA emphasizes the restoration of listed species in their natural habitats. However, section 3(3) of the ESA specifically recognizes the potential for artificial propagation to help achieve rebuilding objectives. Specific protections for hatchery and natural fish reared in a hatchery are detailed in the HGMPs, especially if the hatchery program is used to supplement natural populations. In certain cases, NMFS has determined hatchery fish stocks to be essential to recovering the ESU and has listed them under the ESA.

Comment 138: One commenter questioned how NMFS will determine whether a catch and release fishery is allowable.

Response: Any selective fishery proposal, including those requiring that listed fish be released after being caught, will be evaluated based on its impacts on listed ESUs. The sum total of all fishery-related impacts on a listed ESU will be considered in terms of its effects on population viability and, when applicable, within the structure of any existing HCP or recovery plan. No fishery that jeopardizes an ESU's continued existence or poses risk to key populations in that ESU will be allowed.

Specific Comments Related to FMEPs

Comment 139: Several commenters desired to know how fishery mortality would be allocated and asked what the mechanism would be for treating ocean, mainstem river, and tributary harvest consistently. They asserted that all fishery related mortality should be accounted for.

Response: Once take prohibitions are in effect, any fishery with the potential to impact listed fish is subject to NMFS' ESA review and approval process. All agencies proposing fisheries that have a potential to affect listed stocks are required to quantify these impacts. These agencies are required to comply with ESA review requirements and obtain take authorization through a 4(d) rule limit, a section 7 consultation, or section 10 permit application. Compliance is determined by tallying all fishery related incidental take from all agencies. Rigorous monitoring and evaluation programs ensure that impacts remain within acceptable limits.

The FMEPs will specify adult escapement targets and harvest rates for each ESU. The purpose of the ESA 4(d) rules is to accommodate the listed species' biological needs, not to allocate harvestable surplus. That is a co-manager responsibility and is undertaken in a number of different venues.

Comment 140: Numerous comments related to specific information and requirements included in actual FMEPs. The comments mainly addressed specific gear and season restrictions and the need to regularly review the FMEPs to ensure that they protect listed species.

Response: The FMEPs will be evaluated under the same standard used for ESA section 10 permits: the proposed action(s) must not jeopardize the continued existence of the listed ESU. The FMEPs will specify the maximum exploitation rates—depending on listed fish abundance—or will specify escapement levels. Each FMEP will include the time frames for regularly reviewing it. Depending on the fishery's location and circumstance, specific angling regulations may be detailed in the FMEP (e.g., minimum length and bag limits for trout fisheries). In other cases (e.g., some salmon fisheries), the specific regulations may be adopted once the exploitation rate or catch quota is determined by examining pre-season run forecasts.

Comment 141: Some commenters stated that maximum escapement objectives and reasonable exploitation rates should be specified in the FMEPs.

Response: NMFS strongly agrees that escapement objectives must be determined for each fish stock and those objectives must be the fundamental drivers of fishery harvest management. Parties to *U.S. v. Washington* and *U.S. v. Oregon* should develop—through regional management plans and based on biological requirements and fishery needs—escapement objectives and exploitation rate targets for each stock or management unit.

Comment 142: Several commenters suggested that all hatchery chinook should be marked and that selective fisheries should be required.

Response: From an ESA perspective, several obvious and significant benefits derive from applying a visual mark to hatchery chinook—most notably the ability to easily monitor hatchery stray rates and differentiate hatchery fish from natural fish for stock assessment purposes. In addition, marking all hatchery fish can help managers evaluate productivity among hatchery and wild fish—an important piece of data for recovery planning. Because it now can be accomplished with machines on a massive scale and with relatively little impact on survival, the adipose fin clip achieves these benefits in a very cost-effective and efficient manner.

By enabling selectivity, mass marking may also provide the means for sustainable fisheries—clearly a very important objective. However, because a number of critical issues related to ongoing coded wire tag (CWT) programs remain unresolved, NMFS shares the view of its co-managers that decisions made now to mass mark hatchery chinook are separate from decisions to be made later regarding selective fisheries. Even in cases where NMFS has required that a hatchery production run be mass-marked because of ESA concerns, this does not imply that a selective fishery will subsequently be endorsed. It is not NMFS' policy to require that all hatchery production be mass marked. Rather, our policy is that mass marking must be decided on a case-by-case basis after taking into account, among other things, the specific objectives of the hatchery production, the intended purposes of the mark, and the effect the hatchery production would have on fish listed under the ESA.

Comment 143: One commenter asserted that any rulemaking must ensure that treaties will be respected and that harvestable numbers of fish result.

Response: NMFS agrees. As several court cases have found, conserving and recovering listed stocks under the ESA

to the point where they no longer need the protections of the ESA is entirely consistent with the long-term objective of having healthy harvestable populations and the exercise of treaty rights to fish and hunt. From a larger perspective, the greatest improvements in tribal fishing opportunity will not accrue over the short term but through the long-term recovery of the populations. Federal trust responsibility is best fulfilled at this time by engaging in conservative fisheries management. At the same time, hatchery production can be used to provide harvestable fish if such programs can be shown to be consistent with recovering wild fish.

Comments Related to the Time Frame for Developing and Commenting on FMEPs and HGMPs

Comment 144: Numerous agencies, organizations, and individuals commented that enough time must be allowed to develop and review the FMEPs and HGMPs. Several commenters suggested providing a grace period from several months to several years after the final rules are published for developing and approving FMEPs and HGMPs.

Response: NMFS realizes the significant amount of work and time required to develop and process FMEPs and HGMPs. Therefore, NMFS is providing 6 months until take prohibitions go into effect for the listed steelhead ESUs to allow additional time to develop and approve FMEPs and HGMPs.

In addition, NMFS has also provided a transition period of 6 months for recreational fisheries that affect listed steelhead. NMFS has assessed the angling regulations currently in effect for juvenile and adult steelhead in California, Oregon, Washington, and Idaho and has concluded that listed steelhead will be sufficiently protected during this 6-month period. This will allow additional time to develop and approve FMEPs for the steelhead ESUs. Some fisheries and hatchery programs will not need ESA coverage immediately after take prohibitions go into effect because the actions do not affect listed species. NMFS will work with the co-managers to prioritize fisheries and hatchery programs on the basis of how urgently each needs ESA coverage.

Comments Related to the Process of Reviewing/approving/implementing FMEPs and HGMPs

Comment 145: Some commenters suggested that NMFS include a provision for independent scientific review of the FMEPs and memorandum

of agreement (MOAs) between NMFS and the action agency.

Response: As stated in the rules, the public will have the opportunity to review and comment on FMEPs and HGMPs for at least 30 days before NMFS acts on them. During this comment period, independent scientific entities are invited to review and comment on FMEPs and HGMPs. NMFS intends to address the public comments with the appropriate co-manager before approving any plan.

Comment 146: Some commenters wanted NMFS to define the "regular basis" on which limits will be evaluated. They also wanted to know what the time frames for reporting would be.

Response: NMFS and the individual co-manager will decide on a case-by-case basis the review and evaluation requirements for an approved FMEP or HGMP. The FMEPs and HGMPs will specify the time frames for regularly reviewing the plans and that information will be included in NMFS' letter of concurrence on the management plans. Depending on the circumstances, management plans may be evaluated every year or after analyses are complete. This will reasonably accommodate the time needed to prepare post-season catch and effort reports as well as any analyses the co-managers need for adjusting fishing regulations. However, whenever practical, the evaluation and review process should embrace an annual time frame so that appropriate adjustments may be made before the next fishing season.

Comment 147: Some commenters were concerned that a final HGMP was not available at the time of the proposed rules and that the final criteria for HGMPs may be substantially different from those cited in the proposed ESA 4(d) rules.

Response: The final draft of the HGMP template has been available to co-managers and posted on NMFS' web site since January of 2000. This template includes the information that must be included in the HGMPs for approval. Based on the public comments received, the criteria and the template for HGMPs have not changed substantially in the final rule.

Comment 148: A few commenters stated that the process for approving a hatchery broodstock program should be clearly described.

Response: NMFS believes the process is clearly described in the proposed and final rules. A state or Federal co-manager who wishes to utilize the ESA 4(d) process rather than the section 10 process must develop a detailed HGMP.

The HGMP must address the criteria in the 4(d) rule and follow the template NMFS has provided. The draft HGMP will be made available for public comment for at least 30 days. If NMFS determines the HGMP adequately addresses the established criteria, we will issue a written concurrence or, in the case of a Federal action, we will conduct a section 7 consultation. NMFS believes this process allows the public an adequate amount of time to review and evaluate a hatchery broodstock program before it is approved.

Comment 149: One commenter pointed out that the assumption that average hooking mortality is less than 5 percent is based on only one study (Hooton, 1987). Based on the scientific literature, they felt this rate to be low and recommended that NMFS further evaluate hook and release mortality rates in the literature.

Response: NMFS agrees that hooking mortality deserves further investigation and we are committed to doing so. However, for now the 5 percent rate reported in Hooton (1987) seems to constitute a reasonable average. Other studies do show higher mortality rates for salmonids when stream temperatures are elevated (Klein, 1965; Dotson, 1982; Titus and Vanicek, Taylor and Barnhart, 1997), but for most conditions, Hooton's estimates are reasonably accurate.

Habitat Restoration Activities

Comment 150: One commenter stated that NMFS itself should develop the WCP guidelines.

Response: NMFS believes that the states are in the best position to perform the lead role in developing these guidelines. The geographic scope of this rule covers four states, an area over which biological and geological factors vary considerably. Even more importantly, each state's agencies, regulations, and conservation programs are unique and the WCP guidelines, to be effective, should be designed to fit within that unique context. The states' natural resource agencies have relatively large and expert staffs that are better prepared to interact with the entities that will use these guidelines. For these reasons, this limit remains founded upon the development of state WCP guidelines.

Comment 151: Numerous commenters stated that the interim provisions of § 223.203(b)(8)(ii) (in the proposed rule, 65 FR 170, January 3, 2000) should be extended beyond 2 years, or were too permissive, or too restrictive. Many of these commenters proposed inclusion of specific activities that were not

included in the six proposed interim provisions.

Response: NMFS observes that the interim provisions of § 223.203(b)(8)(ii) have been misunderstood to such an extent that NMFS has dropped these provisions from the final rule. The intent of these proposed interim provisions was to acknowledge that getting WCP guidelines and plans in place will require time, and the potential benefit to listed salmonids of allowing certain relatively low risk habitat restoration projects to proceed in the near term might outweigh the risk entailed by those activities not being part of a WCP.

However, the interim provisions had been widely misperceived as detailed regulation of habitat restoration activities. NMFS did not intend to provide for the direct regulation of habitat restoration activities under the terms of this rule and regrets that the earlier proposal created this false impression. Accordingly, NMFS now deems it advisable to simply drop the interim provisions from this final rule. Many low risk activities (e.g., riparian enclosure fencing or native vegetation planting), simply do not carry an appreciable risk of taking. Activities involving instream construction or modification of the streambed or banks require CWA section 404 permits which carry ESA section 7 coverage. All habitat restoration activities will entail less risk and more benefit if they are part of an approved WCP, and NMFS encourages the timely development of WCP guidelines and plans. Habitat restoration projects are less likely to be successful if undertaken without supporting analyses that disclose habitat impairments and absent resource management adjustments within the watershed to redress the underlying causes of those impairments.

NMFS strongly encourages jurisdictions, entities, and citizens to use the habitat restoration guidelines and technical manuals referenced in "A Citizen's Guide to the 4(d) Rule" (NMFS, 2000) as readily available techniques to reduce the risks of harm or injury to the listed stocks. In the event that an allegation arose about a potential ESA section 9 violation, NMFS would furthermore take into account the efforts of the watershed group or entity to adhere to the relevant guidelines. Where injury or harm was resulting in such a circumstance, NMFS believes that the proper and most effective remedy would be an orderly adjustment in the relevant guidelines and not the prosecution of a section 9 violation against an individual project.

Comment 152: Several commenters had questions regarding what entities are responsible for developing and implementing WCPs and what state agency is responsible for certifying the plans.

Response: This final rule intentionally leaves these questions unanswered. There are potentially many different entities that may be responsible for developing WCPs in different circumstances—watershed councils, soil and water conservation districts, city or county governments, regional authorities, and so forth. NMFS finds it unnecessary to limit by rule what types of entities may produce and carry out WCPs. Likewise, NMFS leaves it to the individual states to determine the appropriate agencies for developing guidelines and certifying plans.

Comment 153: Many commenters had concerns about the clarity and intent of the approval criteria for the WCP guidelines.

Response: The criteria have been modified in this final rule to make them clearer and more effective.

Comment 154: Some commenters suggested that Federal activities—particularly habitat restoration activities—should receive a limit on the take prohibitions. CDFG suggested that restoration activities conducted under the Department's Fishery Habitat Restoration Program are already covered by their incidental take permit associated with their Corps of Engineer (COE) 404 permit consultation.

Response: Federal agencies that engage in, permit, or fund activities that may affect listed species are required under section 7 of the ESA to consult with NMFS. The ESA contains no provision to exempt Federal actions that involve habitat restoration activities from their section 7 obligations. Habitat restoration activities would only need to seek approval under this limit if they have more than a negligible likelihood of taking listed salmonids, and are not covered by any section 10 permit or section 7 incidental take statement.

Comment 155: Several commenters were concerned that neither the states nor NMFS will have the necessary resources to handle such a large number of written approvals; also, some stated that it was inappropriate for a state or NMFS to review individual projects after having approved an overall plan.

Response: NMFS agrees that the workload associated with approving all individual restoration projects and activities could overwhelm state and NMFS staff resources. In addition, activity-level review could defeat much of the process efficiency gained in the WCP approach. This final rule has been

changed to require only state certification of WCPs, and NMFS' approval of the state guidelines (with a periodic review of the state certification process to ensure that WCPs are adequately analyzed). Provisions for clearly identifying whether particular activities are part of an approved plan must be part of the plans themselves and need not necessarily involve state or NMFS staff directly.

Comment 156: One commenter asserted that it is unclear which criteria NMFS will use in concurring with a state certification of a WCP.

Response: NMFS has amended the final version of this rule to drop the requirement of NMFS concurrence with the certification of individual WCPs. NMFS expects the criteria for the relevant state certifications will be contained in the state restoration guidelines anticipated by this final rule, and will periodically review the states' certification process for appropriate rigor.

Comment 157: One commenter proposed a stepwise approach toward making the transition from the specified activities of § 223.203(b)(8)(ii) interim period to allow development of state guidelines and WCP to the WCP context of § 223.203(b)(8)(i).

Response: NMFS agrees with the commenter, and in response the interim provisions proposed as 223.203(b)(8)(ii) have been deleted from the rule.

Comment 158: One commenter suggested integrating FMEPs and WCPs. Another stated that WCPs should be a part of the recovery planning process and not be evaluated piecemeal.

Response: In essence, the first commenter is suggesting recovery plans, which NMFS agrees are necessary for the conservation of the species and intends to develop for listed salmon. However, NMFS does not believe that completed recovery plans are a necessary prerequisite for all habitat restoration activities. While the existence of an overarching recovery plan could make constituent watershed conservation planning both easier and more effective, it does not follow that adequate watershed conservation planning cannot be done prior to the existence of a recovery plan.

Comment 159: Numerous commenters suggested that local governments should be recognized and allowed to develop guidelines and WCPs without state or Federal approval or the 2-year time line. A few commenters further questioned the scope and scale of the plans or pointed out the burden the process would place on local governments.

Response: The 2-year interim period has been deleted from this final rule, so

the time line for developing guidelines and WCPs is now entirely up to the states and the entities desiring to perform habitat restoration activities. NMFS recognizes and appreciates the efforts local authorities are putting forth in watershed planning and habitat restoration projects. Nevertheless, NMFS is not prepared to individually review and approve WCPs, and has dropped that requirement from the final rule. State technical guidance can certainly assist localities in watershed conservation planning, and local governments having the wherewithal to independently develop and implement WCPs should not have undue difficulty navigating the revised approval process.

Comment 160: Several commenters suggested that NMFS should give more recognition to local watershed restoration efforts.

Response: NMFS recognizes the importance of local efforts, and will, by accepting approved watershed assessments, WCPs, and restoration projects developed through cooperative local efforts, acknowledge the contributions made by local watershed conservation groups. These efforts, in conjunction with regional and ESU-specific recovery efforts, will be crucial components of species recovery.

Comment 161: Several commenters pointed out that the assured funding criterion § 223.203(b)(8)(i)(A)(10) could present difficulties for some local governments and watershed councils.

Response: NMFS recognizes that securing funding to reliably implement the WCPs will be a challenging undertaking for many entities. Therefore, NMFS remains open to trying different means to flexibly deal with any difficulties that may arise—particularly with regard to funding.

Comment 162: One commenter objected to a requirement that WCPs be monitored to determine whether they increase listed salmonid productivity. The commenter was concerned that the cost and difficulty of monitoring fish populations would discourage local efforts at habitat restoration.

Response: NMFS realizes it is difficult and expensive to monitor population response and that acceptable methods have generally not been developed. While increased fish productivity is the ultimate goal (from NMFS' perspective) of a WCP, NMFS recognizes that monitoring programs will focus on habitat functions and processes as indicators of watershed health.

Comment 163: One commenter suggested that the **Federal Register** document and comment period prior to NMFS' approval of watershed conservation plan guidelines was

unrealistic and contrary to the goal of salmon recovery.

Response: NMFS considers it necessary to provide for appropriate public review of the guidelines that NMFS expects to be addressed in programs submitted for its review. Ensuring complete and open public scrutiny will improve the guidelines through broad input and enhance their value through dissemination to all parties interested in the role of the guidelines in salmon recovery.

Comment 164: A number of commenters suggested there was a need for greater clarification in the scope and purpose of WCPs and watershed analyses, and that more specific direction was required in order to identify the information needs of the plans and analyses.

Response: Analyses and plans must ensure that habitat restoration activities will help place the overall habitat on a trajectory towards a self sustaining condition that provides high quality ecosystem function. NMFS believes that projects planned and carried out based on a watershed-scale analysis and conservation plan are likely to be the most beneficial. Watershed analyses identify problems that are impairing watershed processes and functions and supply base information needed to develop watershed plans and restoration activities. Without the context provided by watershed analyses, habitat restoration efforts are likely to focus on symptoms rather than on the underlying impaired ecosystem processes. NMFS identified 10 standards in the ESA 4(d) rule that characterize the WCPs' scope and intent.

Comment 165: Two commenters indicated that the restoration programs receiving limits on the ESA section 9 prohibitions should be expanded, and further, that the guidance should be made ESU-specific.

Response: NMFS works with state and local jurisdictions and other resource managers to identify programs for which it is not necessary and advisable to impose take prohibitions because they contribute to conserving the ESU or are governed by a program that adequately limits impacts on listed salmonids. This ESA 4(d) rule may be amended to add new limits on the take prohibitions or to alter or delete limits as circumstances warrant. NMFS wishes to continue to work collaboratively with state and local jurisdictions and other resource managers to recognize existing and potential management programs that conserve listed salmonids and meet their biological requirements. As more programs that meet these objectives are developed or identified, greater

geographic and ESU specificity may be possible.

Comment 166: One commenter suggested that WCPs should be required to protect existing high quality habitat.

Response: NMFS agrees that the best available science supports the concept of protecting existing high quality habitat as a cornerstone of a WCP (provided there is high quality habitat within the scope of the WCP). But the criteria provided at § 223.203(b)(8)(iii) will be used only to evaluate state WCP guidelines, which will include much more technical detail. Those guidelines will then be used to evaluate WCPs.

Comment 167: One commenter stated that conservation plans should not be limited to salmonid recovery but must be broad enough to encompass other watershed functions and goals.

Response: In freshwater ecosystems, NMFS' legal authorities are limited to the conservation and recovery of listed anadromous salmonids and their habitats. To help conserve listed salmonids, restoration actions should put the aquatic habitat on a trajectory towards such a naturally self sustaining system (i.e., properly functioning habitat). Properly functioning habitat condition consists of the sustained presence of the natural processes that provide high quality ecosystem function. This complex system is composed of the stream, the riparian area, and upslope areas. All three components of this system are interconnected. The WCPs that guide restoration activities intended to conserve salmonids will also benefit other aquatic, riparian dependent, and upland species and their habitats.

Comment 168: Two commenters suggested that WCPs should also serve as CWA section 303 Total Maximum Daily Loads (TMDLs) for waters listed as impaired. Another suggested that NMFS work with the Oregon Department of Agriculture to coordinate the SB 1010 water quality management process with the watershed conservation planning process.

Response: NMFS believes these are excellent ideas and recommends the approach. However, NMFS does not deem it necessary for the conservation of the species to require such a consolidation of mandates in this final rule. Incorporating water quality management plans, such as SB 1010 plans or TMDL Water Quality Management plans, into the watershed conservation planning effort is a logical and pragmatic approach towards watershed-scale recovery.

Comment 169: Numerous commenters stated that the habitat restoration portion of the rule was too permissive

and unclear in its objectives, definition, criteria, and implementation. One commenter believed it would create new programs that would divert attention from the loss of viable habitat which is the root cause of salmonid decline. Others cautioned against allowing state programs a limit on the take prohibitions because existing state programs have proven to be poorly designed and implemented. Several commenters noted general loopholes in the limits section.

Response: The six specific interim provisions of the proposed rule were intended to strike a balance between the possible benefit to listed salmonids of allowing incidental take associated with some habitat restoration activities (while WCPs were being developed) against the risk that those activities might have deleterious consequences that a WCP context would have prevented. To accomplish this, NMFS selected six categories of common and relatively low risk restoration activities, and provided specific guidance and a list of references to further reduce the risk. In light of the numerous comments asserting that the interim provisions were both too permissive and too restrictive, NMFS now concedes that attempting to strike this balance was overly ambitious, and so has deleted the interim provisions from the limit for habitat restoration. Instead, NMFS offers three approaches for individuals who are contemplating habitat restoration actions but are concerned about their take liability: (1) Many of the most effective long-term restoration activities (e.g., riparian livestock enclosure fencing, native vegetation planting, cessation of ground or vegetation disturbing activities, cessation of water diversion) have extremely low probabilities of take, and the actors should not be concerned about take liabilities; (2) most higher-risk activities (e.g., instream construction activities, modification of stream bed or banks) require a CWA 404 permit from COE which provides incidental take permission through section 7 of the ESA; and (3) NMFS recommends the habitat restoration limit on take prohibition included in this rule as the best solution for encouraging effective restoration activities consistent with science based guidelines.

Comment 170: A commenter suggested that the rule holds habitat restoration to a much higher standard (in some cases so high as to render such activities impossible) in terms of avoiding impacts than it requires for development activities.

Response: NMFS disagrees. As stated in the rule, all 13 of the limits

contribute to the conservation of listed salmon or are governed by programs that adequately limit their impacts. Moreover the same standard applies to both habitat restoration and development activities; they must achieve PFC of the habitat.

Comment 171: Several commenters believe that NMFS' approach with this limit is to treat habitat restoration activities as a significant threat to the very species they are trying to protect. They believe that NMFS is overreaching its authority and this approach is bureaucratic, unrealistic, unnecessary, and will, as a result, be counterproductive to species recovery. Many stated that NMFS should give a limit to any activity carried out in accordance with state and Federal Laws. Another general sentiment was that NMFS should take a "hands-off" approach to restoration activities and simply provide landowners with technical expertise.

Response: We agree that bureaucracy should be kept to a minimum wherever possible and we will consistently seek ways to streamline all the processes this final rule entails. Nonetheless, the final rule includes a limit for habitat restoration activities because, absent the limit, some of these activities could result in prohibited taking. NMFS does indeed want to avoid the tragic irony of having a protective regulation impede habitat restoration that might otherwise contribute to recovery. However, good intentions alone will not adequately protect listed salmonids from the unintended negative consequences of poorly designed habitat restoration projects. Such projects often entail physical modification of currently used habitat of listed salmonids, and have significant potential to further damage impaired habitats and populations. The probability and consequences of project failure can be particular severe when projects attempt to redress the symptoms of habitat impairments before the underlying causes have been reversed. NMFS does not believe that it can disengage from its ESA responsibilities and simply rely on other state and Federal laws for approval to carry out restoration activities.

Comment 172: A few commenters stated that emergency exemptions and a specific scope of rules should be included for bank stabilization and flood repair operations.

Response: NMFS believes altering and hardening stream banks, removing riparian vegetation, constricting channels and flood plains, and regulating flows are primary causes of anadromous fish declines. Section 404 of the CWA—implemented through COE

regulatory authority—provides conditions for permitting stream channel and bank activities. Section 7 of the ESA provides emergency consultation procedures which allow Federal action agencies to incorporate endangered species concerns into their actions during the response to an emergency (50 CFR 402.05). For these reasons, NMFS asserts that existing regulations are sufficiently flexible to enable emergency work without limiting take prohibitions for flood control or repair activities.

Comment 173: One commenter suggested that “artificial bank stabilization” should be defined.

Response: We agree that the usage in the proposed rule may have been confusing. The term is meant to be read in context with “primary purpose” of the habitat restoration activity definition. The primary purpose of the vast majority of bank stabilization projects is not to restore natural aquatic or riparian habitat processes or conditions, but to protect economic development and then try to “fix” habitat remnants in an artificial manner. Such use of artificial materials and means in a piecemeal approach to control a river (or enhance an already controlled river) clearly fits the definition of artificial bank stabilization.

Comment 174: Numerous commenters stated that marine and estuarine habitats should be included in the habitat protections and that connectivity issues and restoration activities should receive similar attention.

Response: NMFS agrees estuarine habitats should be protected, but believes the rule adequately prohibits take and destruction of habitat in marine and estuarine areas. This final rule text provides sufficient examples (i.e., destruction of freshwater and estuarine habitat, altering stream or tidal channels, altering habitat) as take guidance. Lists of how prohibited take may occur are not designed to be exhaustive. Regarding limits for habitat restoration activities in marine/estuarine areas, NMFS believes such projects are of large enough scale and complexity to require project by project technical review at least until watershed planning is complete. NMFS not only agrees with the commenters stating that near shore marine and estuarine habitats should be included in watershed planning but expects that these areas will be included in applicable state guidelines and WCPs.

Comment 175: A number of commenters requested that NMFS define the spatial scales appropriate for watershed analyses and conservation plans.

Response: NMFS recognizes that the four states covered by the ESA 4(d) rule delineate watershed boundaries using different hydrologic and administrative criteria. Consequently, the size of individual watersheds varies among the states and often across programs within a state, though there are a number of basic similarities in terms of watershed function and boundary. Each state’s regulations and conservation programs are unique and the WCPs will most effectively conserve anadromous fish and their habitats if watershed boundaries are delineated within each administrative context.

Comment 176: A number of commenters indicated that the state guidance documents developed to help steer restoration activities were not complete or were not ESA compliant.

Response: NMFS recognizes that some of the identified state guidance documents are not finalized, and that some of the included activities may have an appreciable risk of taking. However, NMFS notes that these documents do provide guidance that will reduce risk and increase benefits of habitat restoration activities. Therefore, NMFS still recommends use of the guidance documents: Oregon Aquatic Habitat Restoration and Enhancement Guide (1999); A Guide to Placing Large Wood in Streams, Oregon Department of Forestry and Department of Fish and Wildlife (May, 1995); WDFW’s Fish Passage Design at Road Culverts (March 3, 1999); and Oregon Road/Stream Crossing Restoration Guide (Spring 1999). Further, NMFS encourages the states to compile and expand these valuable guidance documents into WCP guidelines which NMFS may find qualifying under § 223.203(b)(8)(iii) of this rule.

Comment 177: Some comments reflected a concern that a report cited by NMFS in the proposed rule, “Steelhead Restoration and Management Plan for California” was not a peer-reviewed document and should not be included as guidance.

Response: The report cited in these comments has been adopted as an integral part of the Cal-Fed ecosystem plan, and was subject to extensive peer review before being adopted.

Comment 178: Several commenters questioned how the rule affected Indian Tribes’ habitat restoration efforts. Most comments were directed at tribal participation in watershed planning, the potential for conflict between state guidelines and tribal restoration plans, and the lack of specific limits for tribal habitat restoration projects.

Response: As co-managers, the Tribes may participate in any forum for

developing conservation guidelines and specific WCPs. Tribes may also submit their own watershed conservation guidelines and plans under the Tribal plan limit. This final rule text describes a process wherein four western states are tasked because NMFS believes the states are responsible for conserving natural resources and native species within their geographic boundaries, and that sufficient infrastructure is in place to expeditiously develop guidelines. No further or specific limits for tribal restoration projects were included in the rule because limits for tribal trust resource management actions that take threatened salmonids are promulgated in a separate rulemaking (65 FR 108, January 3, 2000).

Comment 179: One commenter requested that the removal of sinker logs (which can sometimes constitute a navigational hazard) should receive a limit on the take prohibitions.

Response: Removal of navigational hazards is under the authority of COE and it is their responsibility to consult with NMFS when they propose to engage in an activity that may affect listed salmonids. Federal projects that are approved through ESA section 7 consultation need not also qualify under a 4(d) rule limit.

Comment 180: One commenter suggested that physical fish habitat is not being fully utilized now, and questions the need to create more.

Response: NMFS respectfully disagrees and believes the commenter may have oversimplified the multifaceted problem of habitat productivity as being only a matter of finite capacity. This is a less-than-accurate portrayal of the habitat factors for decline which include both pervasive loss of habitat quality and loss of access to historic habitat because of barriers. It is NMFS’ position that habitat degradation and loss have contributed substantially to the decline of anadromous salmonids, and opportunities to regain both habitat function and extent should be sought.

Comment 181: Some commenters felt NMFS should recognize that it may not be advisable or possible to protect or restore historic stream channels/processes, especially in urban settings.

Response: NMFS recognizes that, especially in the urban setting, stream channel habitats are often impaired and are not functioning properly. NMFS would further acknowledge that not all stream segments may be recoverable. However, NMFS maintains that all tools for salmon recovery must be retained in the toolbox. Urban development, open space, or green space designations provide opportunity to protect

important riparian settings. Likewise, urban redevelopment may provide future opportunities for communities to protect or restore historically important stream channel settings.

Properly Screened Water Diversions

Comment 182: One commenter wanted to know who determines whether fish screens are adequate.

Response: The proposed rule states that NMFS' engineering staff will agree in writing that a diversion facility is screened, maintained, and operated in compliance with NMFS-approved Juvenile Fish Screen Criteria. The proposed limit has been revised based on public comments and by the fact that the projected workload associated with approving potentially thousands of water diversion facilities in four states has the potential to overwhelm NMFS staff resources. Consequently, this final rule has been changed to allow NMFS-authorized state agency engineers and screen inspectors to review and recommend screen design certifications and to allow NMFS-authorized screen inspectors to check screens for operational and maintenance compliance. This approval process will augment NMFS staff review. NMFS' Northwest Region (NWR) Juvenile Fish Screen Criteria have been adopted by the Columbia Basin Fish and Wildlife Authority (with participants from the states of Oregon, Washington, and Idaho) for use in waters with anadromous salmonids. NMFS' Southwest Region (SWR) Juvenile Fish Screen Criteria was developed in close coordination with CDFG criteria and the two sets of criteria are compatible. As a result, in all four states affected by this final rule, NMFS' Juvenile Fish Screen Criteria will form the basis for a design review and inspection program. It is proposed that a design specification check-off form and an operational screen inspection report form be developed and used consistently in the four states. NMFS will establish and maintain a data base to record who reviewed a particular screen design, when it was inspected, any problems associated with poorly designed screens being approved, and other relevant information. A key component of this process will be important training to certify inspectors and design reviewers. New language has been added to the regulation to reflect this change.

Comment 183: Some commenters stated that the final rule should acknowledge other screen technologies, especially non-conforming technologies, that have been demonstrated to meet or exceed levels of protection provided by

technologies that do meet NMFS screen criteria.

Response: NMFS' engineering staff is frequently asked to assess other screen technologies that are not compliant with NMFS' screen criteria. As a result, NMFS staff has developed a standard protocol for evaluating non-conforming technologies, and has published an agency position paper titled "Experimental Fish Guidance Devices," November 1994, that can be found on the NMFS web page at www.nwr.noaa.gov/1hydrop/exp_tech1.htm. This position paper describes the process NMFS requires for a proponent of experimental technology to demonstrate that a particular non-conforming technology meets or exceeds the level of protection offered by a facility designed using NMFS' Juvenile Fish Screen Criteria. We are not aware of any non-conforming technology that demonstrably protects fish as well as or better than NMFS' criteria for the variety of operating conditions present at any typical water diversion site. If evidence is provided that a non-conforming technology exceeds the level of protection provided by NMFS criteria (as described in the position paper referenced above), NMFS would welcome and approve this technology.

Comment 184: One commenter stated that water withdrawal and diversion activities that take listed salmon should not be granted limits.

Response: The intent of the limit for a water diversion equipped with a screen constructed to NMFS' standard is to minimize take associated with diversion activities once water is diverted from the stream. NMFS intends to enforce the take prohibition for other forms of take that may be associated with water diversions (e.g., dewatering streams, building gravel push-up dams, or creating other passage impediments).

Comment 185: A few commenters stated that requiring screens on all diversions in the Sacramento Delta regardless of whether or not the particular diversion affects steelhead is unjustified.

Response: The intent of providing juvenile fish screen facilities is to minimize the prospect of take once the water has been diverted. It is extremely unlikely that it can be conclusively demonstrated that any particular diversion in a river basin containing listed steelhead will never entrain a listed steelhead. It may sometimes be true that listed fish are not present at a diversion site. It is more likely that—due to a variety of circumstances—the listed fish simply escape observation at a given site. This should not be construed as a total absence of listed

fish at a site. It should also be remembered that fish are at critically low levels now and that their presence at diversions and other sites is likely to increase as we proceed with their recovery.

Comment 186: Some commenters asserted that agencies and individuals making good faith efforts to install screens should receive a grace period during which take prohibitions would not be enforced.

Response: NMFS acknowledges that certain complex screen facilities can take several years to finance, design, and construct. NMFS will, therefore, change the proposed rule to include a provision for addressing selected facilities on a case-by-case basis. In these instances, a facility will be eligible for approval under the limit if it has an approved design construction plan and schedule that includes interim operation measures to minimize take. In the event that this schedule is not met, or if a schedule modification is made that is not approved by NMFS engineering staff, or if the screen installation deviates from the approved design, the water diversion will be subject to take prohibitions. In all other cases, as stated in the proposed rule, NMFS will apply the prohibition against take and the limit is available to those who have their diversion facility approved and inspected as stated in this final rule.

Comment 187: One commenter stated that diversion activities that substantially benefit the public should be included in the limit.

Response: It can be argued that any diversion activity confers public benefit to one degree or another. However, water diversions are screened to protect fish and allow them safe egress from the diverted flow—an activity which has little to do with how much the diversion itself benefits the public. Therefore, it is not possible to grant a blanket approval for water diversions—regardless of the amount of benefit that may putatively accrue from an individual facility.

Comment 188: Several commenters asserted that NMFS' screening criteria are not well defined, have not received enough scientific review, and are not flexible enough.

Response: On the contrary, NMFS' juvenile fish screen criteria are extensively detailed and do include sufficient flexibility to deal with site-specific constraints and other concerns. There is no set of juvenile fish screen criteria in the world that is as well defined, or has undergone a higher degree of scientific scrutiny. In addition, NMFS' juvenile fish screen criteria are based on decades of operational

experience that have yielded the best screen designs for salmonid protection in existence. Several state agencies have adopted NMFS' screen criteria and use them in water bodies containing anadromous fish. Lastly, extensive biological screen evaluations have revealed little or no injury to fish when testing screen facilities constructed to NMFS' criteria. This is a primary indicator that NMFS' juvenile fish screen criteria are the best option for protecting listed fish entrained by a water diversion.

Comment 189: One commenter suggested that screened diversions approved under the limit should be reviewed annually as to their physical condition.

Response: This is a good suggestion. NMFS agrees with this comment, and will seek to incorporate this issue into the check-off form and inspection process for a screen design and inspection program that NMFS be developed with the states.

Comment 190: One commenter stated that there should be no violation of the rule for inadequately screened diversions if no take can be proven.

Response: There are no liabilities under ESA if take does not occur.

Comment 191: One commenter thought that "enforcement official" should be replaced with "authorized officer."

Response: NMFS agrees with this recommendation and has made this language change.

Comment 192: One commenter stated that unscreened agricultural diversions in the Sacramento River delta are not the problem, and that NMFS should concentrate its efforts on the export pumps that dry up the river.

Response: Water diversions in critical habitat have the potential to take listed salmonids and, are therefore, subject to take prohibitions. Even properly screened diversions may take fish by drying up the river. NMFS intends to enforce take prohibitions against diversions that dewater river beds.

Comment 193: One commenter wanted to know if the limit applies to all diversions or just irrigation diversions.

Response: As stated previously, diversion of water in critical habitat has the potential to take listed salmonids and is therefore subject to take prohibitions. Thus the limit applies to all diversions that may affect the listed species.

Comment 194: One commenter identified the need for detailed operation and maintenance guidance if maintenance is to be a requirement in this limit.

Response: NMFS' engineering staff will provide this guidance in general for all juvenile fish screens and will develop site-specific operations and maintenance plans for sites with particular concerns. Our intent is to develop this guidance in conjunction with regional forums on screen activities (e.g., the Fish Screen Oversight Committee of the Columbia Basin Fish and Wildlife Authority). Both the general and the site-specific guidance will be included in the proposed training program for state-authorized officers.

Comment 195: One commenter wanted to know if the ESA 4(d) rule applies to temporary diversions during construction.

Response: NMFS will need to review each situation on a case-by-case basis and the answer will depend on the nature of the diversion. Some construction activities provide a temporary diversion around a construction site, and safely return fish and flow to the stream downstream of the site. Other activities may be required to provide a screen and bypass for a temporary diversion if biological review determines that the activity will place the fish at risk. These decisions will be made when developing a Biological Opinion on a particular in-stream activity.

Comment 196: One commenter urged NMFS not to apply the ESA 4(d) rule take prohibitions in areas upstream of fish barriers.

Response: The ESA 4(d) rule take prohibition applies to the land and ocean area within the 14 designated ESUs. All operators of water diversions within these ESUs need to review their activities and modify any activity that may take a threatened species.

Comment 197: One commenter noted that NMFS does not credit compliance with existing fish protection requirements, but appears to require continual updating to new fish screen standards and individual sign-off from NMFS staff that the screen complies. The commenter also stated that individual screen certification creates certain practical obstacles and NMFS should use this as an incentive and limit the take prohibitions on water use in general, not just on the physical diversion structure.

Response: The intent of the ESA 4(d) water diversion screening limit is to allow a water diversion to be made as safe as possible for listed fish species. Therefore, as new biological information becomes available, it may drive a modification in the screen criteria. Nonetheless, NMFS recognizes that it is unnecessary to retro-fit all existing

screen facilities with new features every time new information comes to light because the criteria that are currently in place do an excellent job protecting all salmonid life stages. NMFS has updated their juvenile fish screen criteria only once in the last 11 years. The change came about as a result of new biological evidence that certain previously untested aspects of the old criteria did not adequately protect certain life stages of fish. While this set a standard for new installations, NMFS did not expect retro-fits of recently constructed facilities. NMFS intends to certify screen designs that meet the criteria in place at the time of construction—providing there is no evidence to show that the device is actively taking listed species. In addition, NMFS intends that when screen components need to be replaced due to wear, materials will be used consistent with current criteria. However, if a screen is installed that is out of compliance with NMFS criteria, no limit from the take prohibition will be allowed.

Comment 198: One commenter argued that the practical effect of the ESA 4(d) rules with respect to water diversions is to eliminate incentives for water users to screen their diversions.

Response: The intent of this limit is to offer diverters protection from take enforcement when fish are protected by a properly installed, well-designed, and well-maintained screen. There are clearly other issues (e.g., stream dewatering) that can not be solved by screen installation, and these activities will continue to diminish critical habitat and take listed fish and thus be subject to take prohibition.

Comment 199: One commenter urged NMFS to apply this limit to water pumping devices as well as diversions.

Response: Water pumping devices are included in this limit.

Comment 200: One commenter wanted to know the details of NMFS' enforcement strategy for non-compliant screens and diversions.

Response: NMFS' enforcement strategy is specified in the section of this final rule entitled "Take Guidance." Unscreened water diversions that cause take of a threatened species are subject to NMFS take enforcement action.

Road Maintenance Activities

Comments Relating to the Oregon Department of Transportation (ODOT) Limit

Comment 201: Several commenters wanted the limit provided to the ODOT for the Routine Road Maintenance Water Quality and Habitat Guide Best Management Practices July 1999 (Guide)

to apply to other cities and counties as well so they would not have to develop their own. Many of these commenters also requested that the limit be expanded to other jurisdictions and departments of transportation—with appropriate revisions to the best management practices (BMPs).

Response: There are two issues reflected in this and other road maintenance comments and NMFS has organized its responses accordingly. The first is that some local jurisdictions would like to adopt the ODOT manual without modification with the understanding that it will provide proper functioning habitat conditions. NMFS agrees that local jurisdictions can adopt the BMPs in the manual; however, the local maintenance programs will need to be examined further to assess any differences between them and ODOT's program and determine how those differences would affect the success in contributing to Properly Functioning Condition (PFC). Also, NMFS and ODOT have spent several years evaluating this program so that NMFS has a clear understanding of ODOT's ability to fulfill training, tracking, and reporting requirements. Other jurisdictions wishing to be covered under this limit would have to demonstrate their ability to make similar commitments and would also need to define the circumstances under which an individual BMP would not be followed.

The second issue pertains to the potential application of the limit to similar activities of other jurisdictions besides ODOT and Oregon cities and counties. NMFS agrees that under the conditions that meet or exceed those described above, the limit for routine road maintenance could be applied to other jurisdictions such as ports, other state transportation agencies, and cities and counties in other states which also, like ODOT, have programs that are determined to meet PFC. This final rule describes the procedure for public comment and determination of inclusion within the limitation on the take prohibition.

Comment 202: One commenter focused on how NMFS would respond if the ODOT program had compliance problems or if new information demonstrated that the program no longer provided sufficient protection. They stated that allowing ODOT to correct the matter "within a mutually determined period of time" was too vague a standard.

Response: NMFS agrees, and the wording of the rule has been changed to reflect this comment.

Comment 203: Some reviewers stated that the ODOT guide is completely inadequate to the task of protecting fish in that it allows far too many potentially harmful activities and contains far too much ambiguous language. Similarly a number of commenters asked that ODOT remove the "hedge" words ("where feasible," etc.) from the road maintenance limit.

Response: NMFS believes that the ODOT program, as designed, will adequately protect the listed species and their habitat. NMFS also intends this final rule to be somewhat flexible in terms of allowing combinations of measures that avoid or sufficiently minimize take. Further, this final rule has been designed to take into account a range of circumstances wherein hard constraints relating to physical, safety, weather, equipment, or other project aspects make it impossible to follow the BMP to the letter. In addition, ODOT has stated that the discretionary language will not be used for convenience or for ease of operation. Therefore, based on NMFS' working relationship with ODOT, we expect that the standard BMPs will be used in most circumstances and situations. To help ensure that this occurs, the ODOT crews will be extensively trained and NMFS will regularly review the program.

Comment 204: One commenter stated that the ODFW, not the ODOT regional environmentalist, should review ODOT activities and decide if they need a biological assessment. The commenter was concerned by the fact that the proposed rule seemed to mandate consultation with the regional environmental coordinator for any in-water work and that the regional environmental coordinator would not have the specialized knowledge to make good decisions during in-water work.

Response: The ODOT coordinates with the ODFW on all in-water work for ODOT bridge repairs, and usually the regional environmental coordinator is involved in the discussions as well. The "and/or" language is not intended to exclude the ODFW, but rather to exclude the regional environmental coordinator in instances where that office's participation is deemed unnecessary. Two ODFW biologists are assigned to coordinate exclusively with ODOT on transportation issues and work closely with ODOT regional environmental coordinators. In addition, district biologists assist ODOT on a variety of construction and road maintenance issues and projects.

Comment 205: One commenter stated that the final rule should allow NMFS to approve minor variations from ODOT procedures.

Response: NMFS will exercise reasonable judgement as to whether any minor adjustment in the ODOT road maintenance guidance requires formal approval from NMFS and, therefore, also warrants **Federal Register** publication and public comment. However to stay consistent with the spirit of the limit, any change that would affect the substantive protections the program provides for the environment will require a written approval. NMFS has clarified this point by adjusting the language in the rule.

Comment 206: One commenter provided multiple, detailed, suggestions and critiques of the ODOT program. Each suggestion (in quotations) is covered in the following discussion unless it is discussed in another response.

(1) "To the maximum extent possible, the manual should contain enforceable standards." *Response:* Based on NMFS' extensive review of the ODOT manual, we believe the standards described are enforceable. For example, the first BMP for surface work requires (a) eliminating diesel as a releasing or cleaning agent and using only environmentally sensitive agents, (b) using heat sources to clean tack nozzles, (c) carrying adequate erosion control supplies to keep materials out of water bodies, and (d) disposing of excess material at appropriate sites. All these are enforceable. The same is true for the great majority of the BMPs for other activities.

(2) "Protective and mitigation measures for work conducted outside of the BMPs should be required, and they should be described." *Response:* We agree with portions of this statement. NMFS is continuing to work with ODOT on its maintenance BMPs. In most cases, the changes would have only minor (short-term) or no effects on habitat or fish. In situations where not following the BMPs would adversely affect fish or their habitat, NMFS will work with ODOT to ensure appropriate alternative protective measures and mitigation are applied.

(3) "The manual should describe an effective, proactive, monitoring program for maintenance projects." *Response:* Page 3 of the guide describes ODOT's monitoring program and it is also described in the draft rule. Research is being conducted on several high-risk activities such as culvert cleaning, culvert replacements, and winter maintenance in order to gain more information about maintenance project impacts and develop better BMPs.

(4) "The manual should contain specific timetables for project reviews and manual updates." *Response:* The

manual can be revised by ODOT in consultation with NMFS at any time. The draft rule states that ODOT has committed to review the guide and revise as necessary, at least every 5 years. In addition, ODOT will annually make any necessary BMP modifications.

(5) "Terms not in common usage should be clearly defined." *Response:* Uncommon terms are defined at the beginning of the guide (pages ii through iv).

(6) "Effective erosion controls and a list of specific techniques should be defined, including a description of methods to be used during emergencies." *Response:* Erosion control measures are described as BMPs under each activity. Erosion control measures for emergencies are being developed under a programmatic biological assessment.

(7) "Mandatory work windows should be defined to protect vulnerable life stages of salmonids." *Response:* As stated in the guide (e.g., pages 8, 12, and 13), ODOT must use in-water work windows for all in-water work, unless the ODFW specifically agrees otherwise. The ODFW's in-water work guidelines are part of the guide, in Appendix C.

(8) "Criteria for the use of bioengineering methods should be described." *Response:* The guide states that bioengineering will be used where possible. The ODOT currently has multiple research projects focusing on the use of bioengineering to stabilize slopes; as the results of the research become known, NMFS and ODOT will develop criteria.

(9) "Riparian management zones should be defined by water type or the criteria used to determine riparian buffer widths [should be] identified." *Response:* Standard buffer widths are defined on page iv of the guide. NMFS determined that these widths provide sufficient protection from road maintenance activities. The standard buffers also are implementable by maintenance staff without requiring detailed knowledge of fish presence/absence. Also, ODOT is developing detailed maps that identify sensitive resource areas based on criteria described in the draft rule; they will include information on overstory values, salmonid presence, spawning habitat, off-channel areas, etc. The maps will thus delineate areas where only certain activities may be allowed and the ODOT maintenance staff will modify their activities accordingly.

Comment 207: One commenter asked whether ODOT standards apply to all streams, just water quality limited streams, or just fish-bearing streams.

Response: The ODOT standards apply to all streams. The guide is a statewide document for all maintenance areas, even where no listed fish are present.

Comment 208: Several commenters stated that any routine road maintenance program should have been included in this limit. In particular, routine road maintenance under the Oregon Department of Forestry's Forest Practices Act was suggested.

Response: In the final rule, the limit for road maintenance is broadened beyond the ODOT and Oregon cities and counties to include other jurisdictions within and outside of Oregon based upon the ODOT's manual or which otherwise contribute to achieving or maintaining PFC. However, road maintenance for forestry roads will not be included because the road use and required BMPs are very different for this type of road.

Comment 209: One commenter stated that ODOT should provide criteria and steps to avoid, minimize, and mitigate all impacts when their guidance cannot be followed.

Response: The ODOT's manual is intended to avoid, minimize, and mitigate all impacts. NMFS chose to preserve ODOT's flexibility in choosing the most practicable methods for avoiding, minimizing, and mitigating for impacts because of ODOT's demonstrated commitment to protecting aquatic resources.

Comment 210: Several commenters requested the elimination of the requirement to prohibit any sediment input into the stream resulting from routine road maintenance activities.

Response: The ODOT routine road maintenance program does not prohibit sediment input into streams, although it presents measures to minimize and avoid the input.

Comment 211: One commenter stated that ODOT needs to allow for road repair during winter/wet seasons if emergency conditions dictate.

Response: The ODOT will implement BMPs when practicable, and is responsible for coordinating repair and mitigation measures with appropriate resource agencies in the event fishery or water resources are damaged during a response to an emergency.

Comment 212: One commenter requested that ODOT's program be removed as a limit because the tribes had not been given an opportunity to review it. They stated that the guide was not available for review through the notice.

Response: There were a total of 52 days to review the ODOT guide. It was available through the ODOT web site and the NMFS Northwest Region's

website. This was cited in the **Federal Register** document within the section titled Electronic Access. Moreover, it is NMFS' intent to work closely with the tribes of the region to develop improved information exchange and consultation opportunities.

Comments on the Potential Application of the Limit to Other Jurisdictions

Comment 213: One commenter stated that the limit's requirements for developing an Memorandum of Agreement (MOA) under which road maintenance programs for other jurisdictions would be approved are not specific and should be revised to provide clear direction.

Response: NMFS intentionally did not provide a detailed description of what the MOA should include or how it should be prepared. The MOA was intended to provide the mechanism for negotiating with various jurisdictions about how to make sure that their program is equivalent to the effectiveness of ODOT program in contributing to achieving or maintaining PFC, including the tasks of training, tracking, and reporting, and how to best apply comparable measures identified in the ODOT guide. Based on this and other comments, NMFS has revised the regulatory language to require "a written agreement" rather than a formal MOA. That written agreement is intended to be flexible enough so there is no need to recreate a new maintenance program or amend the rule.

Comment 214: One commenter suggested that each jurisdiction seeking coverage under the limit for routine road maintenance should be able to develop its own BMPs.

Response: NMFS does not object to the use of BMPs that may be different from those presented in the ODOT guide. NMFS is satisfied that road maintenance activities in compliance with the ODOT guide and program contribute to achieving or maintaining PFC. NMFS expects that each jurisdiction seeking to apply the routine road maintenance limit to its program will clearly demonstrate how that program either applies equivalent measures to those specified in the ODOT guide or how it otherwise contributes to PFC. NMFS does not necessarily expect each jurisdiction to adopt the ODOT guide.

Comment 215: One commenter indicated that compliance and effectiveness monitoring and adaptive management are essential to ensure adequate protection of listed species. This commenter expressed concern that the monitoring may not be adequate and that without specific monitoring criteria

and protocols, the ability to evaluate and modify conservation measures would be limited.

Response: NMFS agrees that monitoring is essential for assuring that the routine road maintenance programs are being properly implemented and that the outcomes are as expected (i.e., contributing to PFC). The monitoring and feedback approach contained in the ODOT program, while being somewhat non-specific, is practicable and can provide enough information to assess compliance and effectiveness.

Comment 216: NMFS received one comment requesting that the limit set standards for road restoration and maintenance, as well as goals for maximum road densities.

Response: This comment is referring to forested watersheds and watershed conservation plans. NMFS is addressing those areas primarily through ESA mechanisms other than the road maintenance limits of the rule (i.e., application of ESA sections 7 and 10 for Federal and non-Federal land management practices, respectively).

Comment 217: One comment stated that there should be no specific limits for roads—just the normal section 9 prohibitions. The commenter was concerned that erosion caused by steep slopes and incorrectly built roads could potentially harm listed salmon populations.

Response: NMFS agrees that soil erosion from road projects can have adverse effects on salmon populations and their habitats. However, the limit only applies to routine road maintenance activities; that is, road repairs that increase the material profile are not covered under the rule. Any activity for which a COE permit is required is not covered by the routine maintenance program and would, in any event, require a section 7 consultation. The ODOT's manual recognizes the problems associated with erosion and addresses erosion repair (MMS 122). To minimize impacts, ODOT requires that erosion repair work consider bioengineering solutions. The maintenance program requires that ODOT maintenance staff take precautionary measures on identified erodible areas—provided the measures can be safely applied. Taken together with other measures ODOT is carrying out (e.g., mapping landslide-prone areas throughout the Oregon coast), the routine road maintenance program protects threatened salmon and steelhead adequately to warrant a limit.

Integrated Pest Management (IPM) Activities in Portland, Oregon

Comment 218: Several commenters indicated that NMFS led them to believe that pesticides would not be considered in this rulemaking and that it was, therefore, unfair to proceed with a limit that accounts solely for the Portland Parks and Recreation (PP&R) program. It was generally expressed that various states, local entities, and agencies should be allowed their own limit on take prohibitions as they relate to pesticide use. Other commenters stated that the PP&R IPM program was inadequate because it was too ambiguous, did not list the actual amounts of pesticide being used, allowed broadcast spraying in riparian buffers, and did not adequately address all potential pathways of contamination.

Response: The PP&R IPM program received a limit at this time because it is a fully-formed, conservative program. NMFS' decision process was based on careful scientific review, investigation of potential pathways of contamination (specific to PP&R-planned activities), and analysis. NMFS concluded that PP&R's plan addresses potential impacts and protects listed salmonids to an adequate degree. A subsequent review process will be conducted one year after PP&R's plan is adopted, additional reviews will occur every two years, and appropriate adjustments will be made throughout the process. As NMFS noted in the preamble to the proposed rule rates of application in buffer strips under the PP&R IPM program range from 8 percent to 100 percent of the individual chemical label restrictions. Moreover, these chemicals are not applied annually, rather only as needed and only as the last resort for controlling unwanted vegetation. Use of the term "broadcast spraying" may be misleading. The listed chemicals must be applied at low pressure (which results in large droplets to reduce airborne mists), by hand wand, and only in the area where a dense broadleaf outbreak is occurring—not the entire buffer area.

NMFS believes that with restrictions such as the ones cited here, and looking at the program as a whole, it sufficiently protects the listed salmonids.

Comment 219: One commenter asked if the PP&R IPM was intended to apply to maintenance activities adjacent to all streams, just water quality limited streams, or just fish-bearing streams.

Response: The PP&R IPM applies to all waters—regardless of their designation (moving, water quality compromised, fish/non-fish-bearing)—associated with PP&R managed lands.

The use of pesticides near flowing waters is more restricted than near still water (isolated ponds).

Comment 220: One commenter stated that the PP&R IPM should require public notice 48 hours before spraying.

Response: Currently PP&R does notify the public of tree spraying by posting signs in the affected area 24 hours in advance. Also, on any day other types of pesticides are being applied, signs are placed in the park and remain there until the application is complete and any product has dried. It should be noted, however, that this is essentially a public health issue and is, therefore, outside the scope of a rule making for threatened salmon and steelhead.

Comment 221: Several commenters stated that data generated by Oregon's pesticide tracking law should be integrated with the limit.

Response: We agree that it would be useful information. The PP&R's IPM requires an annual report to NMFS. When NMFS reviews PP&R's annual report it will take into account new scientific data on pesticides and their effects on listed fish (and the habitats that support them) when making its decision whether to continue with the program as written or require changes. Over the next year, NMFS will examine the question of whether incorporating the information collected through Oregon's pesticide tracking law (ORS 192.502, ORS 634.306, and ORS 634.372) into the review process would improve that annual analysis.

Comment 222: One commenter requested that NMFS clarify that the PP&R IPM applies only to city parks managed by PP&R.

Response: The commenter is correct. The PP&R IPM program limit applies only to activities conducted by PP&R in Portland city parks.

Comment 223: One commenter expressed concern that the list of chemicals does not appear to take into account chemicals already present in surface waters. It was also stated that NMFS needs to do more research on the impacts pesticides have on anadromous fish.

Response: NMFS agrees with the need for more research in this area. The NMFS Northwest Fisheries Science Center (NWFSC) has recently begun a research program to evaluate in greater detail the effects of pesticides in the environment and their effects on anadromous fish. This program will expand on earlier investigations by the NWFSC and will look at the sublethal effects, synergistic effects, cumulative effects, and effects of inert ingredients in pesticides in the aquatic environment. NMFS will work closely

with EPA and state authorities which have primary responsibility for ensuring the proper use of these products under relevant Federal and state regulatory regimes. Should information come forward to suggest that the otherwise-lawful use of a pesticide harms listed salmonids and is in violation of section 9 or this rule, NMFS anticipates addressing the concern through amendment of this rule, a section 7 consultation with EPA, or corresponding discussions with responsible state authorities. NMFS will employ this approach rather than favor enforcement actions against an individual applicator for the otherwise lawful use of the pesticide. Similarly, if NMFS finds that a limitation on the prohibition against take for the use of selected pesticides is necessary and advisable for the conservation of listed salmonids, it may amend this rule accordingly. Through such a programmatic approach NMFS believes that it will be able to achieve an orderly and comprehensive analysis of the use of pesticides and their effects on listed salmonids.

Comment 224: One commenter suggested that the best approach to evaluating pesticide use under the ESA was a toxicological risk assessment protocol based principally on the dose-response theory. Under this approach, the commenter concludes that "there is no evidence that take of salmon or steelhead has actually occurred as a result of pesticide use." The commenter further asserts that under a program managed by the California EPA's Department of Pesticide Regulation (DPR), "there should be zero take of any listed fish, including salmonids under NMFS' jurisdiction" if the protocols developed by the DPR are followed.

Response: NMFS disagrees. The NWFS has been actively investigating the sublethal effects of pesticides on listed salmonids for more than two years. This research is specifically tailored to examine pesticide effects on the life histories of anadromous fish in California and the Pacific Northwest, and is designed to reduce the considerable scientific uncertainty associated with pesticides. NMFS will use the data arising out of this process to guide future decision making under the ESA.

Comment 225: Several commenters felt the rules may unduly restrict the critical function of noxious weed control. It was suggested that NMFS may be discouraging lawful and environmentally beneficial use of pesticides and herbicides.

Response: NMFS recognizes the importance of noxious weed control.

The final rule encourages development of local programs that conserve fish while placing priority on preventing pests (weeds, insects, disease) through non-chemical means. Noxious weeds may be controlled in a number of ways—both with and without the use of herbicides.

Comment 226: Some commenters asserted that a regional invasive species prevention program is needed—one that includes a protocol for addressing expedited responses to invasive species.

Response: NMFS agrees that a regional invasive species prevention program that includes response protocols would be beneficial. Such a program should be developed in cooperation with state and local government agencies, FWS, and EPA.

Comment 227: Several commenters stated that if a pesticide is used according to the directions on the label, or in compliance with various other state or Federal regulations, the applicator should receive a limit on the take prohibitions.

Response: Please see earlier responses on the same general subject. Currently, EPA has not consulted with NMFS on the use of pesticides and their impact on listed anadromous fish and their habitat. Therefore, applying pesticides in accordance with current label directives, EPA guidelines, or interim state measures for pesticide use, is not, de facto, exempt from the possibility of "take." EPA's Office of Pesticides Program will initiate consultation on a limited number of EPA-registered pesticides with NMFS SWR later this year and, depending on the outcome of that process, NMFS will continue to seek such consultations on registered pesticides. NMFS also hopes to begin consultations on those pesticides being considered for registration. In any case, NMFS recognizes that the above restrictions (labels, state guidance, etc.) constitute the only protective guidelines currently available to applicators. Therefore, NMFS will work with the responsible agencies to determine the extent to which restrictions on pesticide use need to be adapted to meet listed salmonid needs and, as that process goes forward, individual applicators may look to those agencies and NMFS to provide appropriate guidance in the future.

Comment 228: Two commenters suggested that NMFS should not rely on local solutions for pesticides, since three of the four states have laws preempting local pesticide regulation.

Response: The PP&R IPM program does not regulate pesticides. It directs the limited application of pesticides by a local government agency. NMFS is

confident that PP&R has the authority to direct its application program.

Comment 229: One commenter asked that NMFS clarify its definition of a pesticide to include any substance that is considered an herbicide.

Response: The commenter is correct about the definition of a pesticide. According to EPA, the term "pesticide" includes all herbicides, insecticides, fungicides, rodenticides, repellents, disinfectants, and other compounds that kill, control, or otherwise affect pests. The final 4(d) rule will incorporate this definition for the term "pesticide."

Municipal, Residential, Commercial, and Industrial Development Limit

a. Clarification of Where and How This Limit Applies

Comment 230: Many commenters requested that the final rule clarify where and how "this limit" applies. One commenter asserted that the rule was so unclear as to require that the limit be removed entirely.

Response: NMFS has attempted to remove vague and confusing language from this final rule and to clarify where the limit applies. This particular limit is intended to apply to a broad range of planning efforts, ordinances, regulations, and programs (promulgated by city, county, and regional governments) that conserve listed salmon and steelhead by regulating or otherwise limiting activities associated with MRCI development. Some examples are wetland protection ordinances, shoreline management and development programs, and urban growth management plans. Such activities are not necessarily limited to "urban" areas, because city, county, and regional governmental jurisdictions extend to suburban and rural areas as well. NMFS has, therefore, clarified the intended scope of this limit by replacing the term "new urban density development" with "municipal, residential, commercial and industrial (MRCI) development" to signify activities undertaken by cities, counties, and regional governmental entities in urban, suburban, and rural areas.

Comment 231: One commenter requested that the ESA 4(d) limit for urban development be more streamlined than the process for developing and approving an HCP.

Response: Once local ordinances or plans are approved, the process of implementing MRCI development activities will be very streamlined. The responsibility for subsequent project review, approval compliance, monitoring, and enforcement will rest with the local jurisdiction. NMFS will

review each project's monitoring plans; however, we will not have a role in individual project reviews. In addition, any subsequent ESA section 7 consultations for individual projects for which there is a Federal nexus should be greatly simplified because the consultation will be able to tier off the local jurisdiction's initial analysis. The initial ordinance approval process, while subject to the same review standard as a section 7 consultation or section 10 permit application (i.e., individual ordinances must allow for properly functioning habitat conditions) should be considerably more streamlined than the HCP process because the procedural requirements are less complex (e.g., implementing agreements and NEPA analysis are not required for programs under the take limit).

Comment 232: Several commenters questioned whether the limit applies to the redevelopment of areas that no longer support salmon, and recommended that development along piped segments of low gradient streams should receive a limit on the take prohibitions. Others contended that the rule should address current and ongoing impacts from urban developments.

Response: If a stream segment or aquatic feature does not currently and has not historically supported salmonids, the limit only applies to the extent that downstream areas which do support salmonids rely on appropriate input of ecological element (litter fall, gravel recruitment, cold water, large wood, etc.) from above to achieve PFC. As a local project goes through the permit process, the existing condition of a stream segment within a watershed and its contribution to the ecological conditions essential to listed fish must be taken into account when determining whether and how a redevelopment project meets the local ordinances. It is the local jurisdiction's responsibility to determine how ordinances are implemented during the redevelopment of degraded areas. At a minimum, the ordinances must delineate the process for considering the redevelopment of degraded areas.

Comment 233: Several commenters observed that recovering PFC in large urban core areas is unrealistic.

Response: PFC requires the maintenance of habitat functions essential to the survival and recovery of listed salmonids, wherever those requirements may be found. NMFS agrees that many of the rivers and streams that flow through heavily industrialized or otherwise developed city centers cannot practically be expected in the near-term to resemble a

rural river reach in PFC. The concept of PFC recognizes and accommodates the fact that essential ecological functions may be different in spawning and rearing habitats often found in forested environments, for instance, than in migratory corridors, often found in urban settings. Nevertheless, the highly modified habitat in urban settings still must maintain certain ecological functions that remain crucial to the listed species' survival and recovery. In the long run, most parcels in existing urban areas will eventually be redeveloped and restoration opportunities pursued. Urban rivers and streams will thus gradually recover more and more habitat functions over the upcoming decades.

Comment 234: Many commenters contended that the rules should include any (not just new) development (or redevelopment) inside or outside of the Urban Growth Boundary (UGB) or Urban Reserve Area (URA) in any of the affected states. In addition, many others stated that the proposed rule does not adequately distinguish between what is expected of the various kinds of development and redevelopment.

Response: NMFS agrees with the commenters that it is the activity, not necessarily the jurisdiction, that must contribute to achieving or maintaining PFC and has renamed and modified this limit to apply to MRCI development.

Comment 235: Some commenters questioned the need to treat development limits for urban and rural landscapes differently. They argued for the need to accommodate mature urban areas to protect the rural areas.

Response: NMFS agrees that properly functioning habitat, as described in section § 223.203(b)(12)(ii) of the regulatory language of this final rule, must be found in both urban and rural landscapes and is the foundation of this limit. NMFS also understands, however, that development in rural landscapes often requires different considerations than it does in urban landscapes. It is true that some rural developments, such as destination resorts or high-density residential development along rural shorelines, are quasi-urban in nature and have similar effects on salmonids and their habitats. The reverse can also be true. Conserving and restoring functional habitats depends largely on allowing natural processes to increase their ecological function, while at the same time removing adverse impacts from current practices. Those functional requirements apply regardless of where or how development takes place.

Comment 236: Some commenters requested that NMFS make clear that simply because the rule references the

Metro Functional Plan, it does not mean that local jurisdictions must follow that proprietary program.

Response: Metro's Urban Growth Management Functional Plan applies only to the Metro region, that is Clackamas, Multnomah, and Washington Counties and the 24 cities in the Portland, Oregon metropolitan area. In order to accomplish the Plan's goals, local jurisdictions will have to take a number of actions—primarily by changing local government comprehensive plans and implementing ordinances. Other jurisdictions wishing to apply for an ESA 4(d) limit must craft their own plans in the context of local circumstances. NMFS notes that Metro has not yet submitted its Urban Growth Management Functional Plan to NMFS for consideration as a limit to the take prohibition, nor has NMFS approved it for that purpose. If Metro applies for a limit under this final rule, it will be evaluated at that time using the review process described in this rule.

Comment 237: Some commenters stated that NMFS should not allow this limit for the Tri-County planning effort in Washington State because Tri-County's proposal is "business as usual," and because the Tri-County implementation process would take too long to provide for salmonid recovery. Others felt linkages should be created between the Urban Development limit and the watershed plans in the proposed Tri-County framework.

Response: NMFS strongly disagrees with the general tenor of this comment and continues to actively support and encourage the Tri-County process. Certainly the negotiations are addressing difficult and complex issues. NMFS remains hopeful that these negotiations will yield agreements consistent with the requirements of the ESA and the listed fish. If Tri-County applies for a limit under this final rule, it will be evaluated at that time using the review process published in this final rule.

Comment 238: One commenter urged NMFS to include a limit for the CALFED-Bay Delta Program and other California programs.

Response: Applying for a limit under the ESA 4(d) rule is a voluntary process. Any jurisdiction or organization may negotiate with NMFS to create a plan and submit that plan for consideration under the MRCI limit. Such entities are also encouraged to bring to the table other types of limits that could be covered in a subsequent 4(d) rule and develop other plans to conserve the listed species.

b. Local Government Cost and Staffing Resources

Comment 239: One commenter expressed concern that the cost of mandatory setbacks would discourage redevelopment of brownfield areas.

Response: Different jurisdictions have the flexibility to tailor riparian management areas in urban brownfield areas to match local needs and conditions, provided they result in properly functioning habitat conditions.

Comment 240: Many commenters expressed concern that smaller jurisdictions do not have the staff and resources needed to comply with the urban development limits. One commenter asked for an explanation of "adequate funding."

Response: Ordinances or plans under which activities will be evaluated must be shown to meet PFC as illustrated by the applicable 12 considerations listed in this final rule, including the fact that the jurisdiction in question must demonstrate that it has the ability to enforce, monitor, and fund its obligations under the ordinance.

c. Implementation of the 12 Considerations

Comment 241: Many commenters asked NMFS to clarify how the 12 considerations are to be implemented or applied. Some thought the rule was too cumbersome and onerous, and, therefore, should be delayed or phased in. Others requested that NMFS not allow a phase-in approach.

Response: As the rule describes, NMFS evaluates activities that produce or result in conditions on the landscape that contribute to properly functioning (habitat) condition. Under this limit, NMFS will analyze MRCI ordinances and plans and determine if they will affect a condition on the landscape that is important to essential habitat functions. NMFS will then determine if that effect actually results in conditions that are likely to provide essential habitat functions; if it does, then the ordinance or plan may qualify for a limitation of the take prohibition.

The 12 considerations described in the MRCI development limit describe specific considerations that NMFS will evaluate when looking at MRCI development ordinances and plans. They are based on current scientific understanding of salmonid biological requirements (e.g., Spence *et al.*, 1996; NMFS, 1996). By assessing these 12 considerations, NMFS expects to evaluate the ordinances' efficacy in attaining (or maintaining) essential habitat functions or properly functioning conditions in various physical settings.

Comment 242: Several commenters questioned whether the proposed rule requires compliance with all 12 considerations. Some stated that NMFS should not require that all 12 considerations in the urban limit be satisfied at once.

Response: NMFS acknowledges that in addition to the comprehensive Functional Plan being developed by the Metro regional government in Oregon, other local planning entities are making significant progress in developing innovative MRCI ordinances and programs (e.g., the efforts by the Tri Counties and Kitsap County in Washington State). Not all local or regional governments have the resources to assemble all of their relevant ordinances and planning provisions into a comprehensive MRCI growth management program. NMFS is willing to assist such entities by reviewing individual ordinances or regulations that local governments may choose to submit for consideration under this MRCI limit. NMFS will still apply the 12 considerations in evaluating the likelihood that any given ordinance or regulation will achieve properly functioning conditions for salmonid habitat, but will recognize that some criteria may be less relevant than others—depending on the scope of the particular ordinance.

Because NMFS has a relatively limited number of staff members to review a potentially significant number of individual MRCI planning ordinances, plans, and regulations, NMFS strongly encourages local and regional governments to assemble comprehensive planning packages such as Metro's Functional Plan. Not only is this a more expeditious and efficient approach, it results in a greater likelihood that the MRCI growth management program will protect the full suite of essential habitat functions. In any case, because staff resources are limited NMFS will generally give comprehensive plans rather than individual ordinances priority in the review process.

Comment 243: One commenter requested that NMFS state whether the Metro plan meets the 12 considerations.

Response: Metro has not yet submitted its Urban Growth Management Functional Plan to NMFS for consideration as a limit to the take prohibition, nor has NMFS approved it for that purpose. If Metro applies for a limit under this final rule, it will be evaluated at that time using the review process described in this final rule.

d. NMFS' Approval

Comment 244: Many commenters wanted to know how NMFS would approve applications for inclusion in the take limit. Some commenters suggested that NMFS needs to establish a rule with a minimum set of clear and objective performance standards. Other comments suggested that NMFS should work with state agencies to develop state programs that meet some or all of the limit in order to help small, financially challenged jurisdictions.

Response: The 12 considerations represent evaluation considerations that, if addressed, will help conserve listed salmonids. When a local jurisdiction has an MRCI ordinance or plan it believes will attain or maintain properly functioning conditions, it is encouraged to pursue approval. NMFS will work directly with that entity to develop a product that meets the listed species' needs. However, as noted earlier, local jurisdictions are strongly encouraged to assemble, to the greatest extent practicable, all relevant MRCI development ordinances, regulations, or plans into comprehensive packages that NMFS can review in total. Such an approach is not only more efficient, it has a much greater likelihood of ensuring adequate conservation of salmonid habitat conservation than do individual ordinances. Before approving any application, NMFS will publish a notice in the **Federal Register** announcing the availability of the application for public review and comment. The comment period will be not less than 30 days.

Comment 245: Some commenters desired to know what NMFS meant when it said it would evaluate the limit on a regular basis.

Response: NMFS anticipates that each limit will be monitored during the life of the plan to ensure that management actions are meeting their intended purposes. Specific management actions arising under the plan will be compared with the conservation objectives to ensure consistency with the intent of the plan. Annual monitoring reports will be required and formal plan evaluations will take place at broader intervals—though not greater than 5 years. These evaluations will assess the progress of the plan toward meeting PFC, determine if the management actions are making satisfactory progress toward achieving the stated objectives, ensure that the actions are consistent with current policy, check the original assumptions to see if they were correctly applied, assess whether the impacts were correctly predicted, ensure that the mitigation measures are

satisfactory, and determine whether new data are available that would require altering the plan.

e. Level of Protection Provided

Comment 246: Many commenters asked NMFS to clarify what parts of the limit are binding and what are not.

Response: The final rule does not establish any binding requirements or regulations on any prospective applicants with respect to measures that must be followed to qualify for the take limit. Instead, the final rule defines both the considerations and the process NMFS will use when reviewing any particular ordinance or plan. Once NMFS has reviewed and approved a proposal for inclusion in the limit, the applicant is bound by the substantive requirements established in the subject ordinance or plan; these will be documented in the relevant monitoring, reporting, and enforcement provisions. The final rule clearly describes NMFS' authority to withdraw the limit in instances where the applicant does not diligently implement the approved measures.

Comment 247: Many stated that the Metro Functional Plan was far too restrictive; many others thought it not restrictive enough.

Response: The limit does not hold out the Metro Functional Plan as a standard. Metro has not yet submitted its Urban Growth Management Functional Plan to NMFS for consideration as a limit to the take prohibition, nor has NMFS approved it for that purpose. In fact, NMFS understands that the plan is not yet complete. If Metro applies for a limit under this rule, it will be evaluated at that time using the review process described in this final rule.

Comment 248: One commenter asked NMFS to identify and give take prohibition limits to land development activities that will not harm listed salmonids.

Response: Development actions that do not harm salmonids or their habitats are not affected by the take prohibition. It is not within the scope of this final rule to identify the vast number of activities (including many development activities) that do not harm listed species. However, unmanaged development activities could frequently frustrate attempts to meet the 12 evaluation considerations within this rule and commonly are among those that have historically destroyed or adversely modified critical habitats. On the other hand, activities that are carried out according to limits provided by this final rule are expected to adequately protect listed salmonids and contribute to their conservation.

Comment 249: One commenter expressed concern that giving local jurisdictions a ESA 4(d) limit would not, by itself, help enforce local actions necessary to conserve listed salmonids.

Response: Local jurisdictions are charged with developing and carrying out land use programs within the range of listed salmonids. Although those plans can be revised to be consistent with scientific information used to develop this limit, those same plans are still defined and administered through laws and regulations. Ensuring compliance with these laws and regulations is a key factor in making the plans successful. Eligibility for this limit, therefore, requires those plans to include effective enforcement programs and measures to educate local citizens, encourage voluntary compliance, and detect and address violations.

Comment 250: One commenter asserted that limits for urban development should be analyzed within the cumulative impact context.

Response: NMFS agrees that cumulative effects should be an important consideration in MRCI effects analyses. NMFS is aware that comprehensive MRCI development plans frequently will rely upon watershed scale efforts to achieve PFC by managing rural and agricultural activities in coordination with the cumulative effects of more-urban development. To the extent that NMFS must prioritize the evaluation process, comprehensive MRCI plans with relatively broader scopes of activities, authorities, effects, and geography (and therefore greater flexibility in dealing with cumulative effects) will generally be evaluated before plans with relatively smaller scopes. Applicants with smaller-scale plans should take particular care that their effects analyses take cumulative impacts into account.

f. Habitat Restoration

Comment 251: One commenter felt the new urban density development limit should require local governments to address habitat restoration and rehabilitation.

Response: This limit applies to jurisdictions that carry out development in a way that adequately limits impacts on listed salmonids or contributes to their conservation. Habitat restoration would be applicable when it is necessary to rehabilitate former poorly designed or implemented practices to achieve properly functioning conditions for listed salmonids within that jurisdiction. A specific limit for habitat restoration activities is provided in this final rule.

g. Scientific Justification

Comment 252: Some commenters assert that NMFS has not provided adequate scientific justification for this limit. For example, one comment requested that NMFS justify why the little remaining habitat is important to listed fish, and specifically, what evidence exists to support the need for vegetative cover for the entire length of a stream.

Response: Neither **Federal Register** documents nor U.S. Code is written in scientific style, with its thorough support of factual assertions through citations. Nevertheless, NMFS is confident that its conservation approach in the MRCI limit (and elsewhere in this final rule) is scientifically credible. As starting points for investigators, NMFS recommends Simenstad *et al*, 1982, NRCC, 1996, Palmisano *et al*, 1993, Gregory and Bisson, 1997, Spence *et al*, 1996. Essential features of salmonid habitats include adequate substrate, water quality, water quantity, water temperature, water velocity, cover/shelter, food, riparian vegetation, space and safe passage conditions. In designating critical habitats, NMFS considers the following requirements of the species: (1) Space for individual and population growth, and for normal behavior; (2) food, water, air, light, mineral, or other nutritional or physiological requirements; (3) cover or shelter; (4) sites for breeding, reproduction, or rearing of offspring; and, generally, (5) habitats that are protected from disturbance or are representative of the historical geographical and ecological distributions of the species (65 FR 7764, February 16, 2000).

Vegetative cover is good for a number of essential habitat features such as water quality, water temperature, bank stability, stream complexity, cover/shelter, and food. In MRCI environments, the loss of riparian vegetation, coupled with reduced base flows, causes streams to heat up more during summer. In addition, the lack of large wood recruitment combined with increased peak flows heightens the severity of streambed scouring and downstream wood transport. This causes stream channel simplification and greater instability. In order to reverse the downward population trend for listed salmonids and steelhead, the structure and function of their aquatic habitats must be restored to whatever degree possible.

h. Specific Comments on the 12 Considerations

12.i.A. Siting Development

Comment 253: One commenter requested a definition of "area of high habitat value."

Response: This phrase refers to an area in a PFC, one that is better functioning than neighboring sites, or one with the potential to be fully restored. To achieve properly functioning condition and high habitat values within an MRCI area, new and existing riparian management areas need to be connected across land ownerships and political jurisdictions whenever land is developed or redeveloped, or brought into an urban growth boundary.

Development activities should be sited in appropriate areas. They should avoid unstable slopes, wetlands, areas already in a PFC, areas that are more functional than neighboring sites, and areas with the potential to be fully restored. A description of particularly sensitive areas is included in the Fish and Forest Report cited elsewhere in this final rule. Such sites include, but are not limited to, soils perennially saturated from a headwall or a sideslope seep or spring, permanent initiation points of perennial (stream) flow, alluvial fans, the intersections of two perennial streams. Development activities in any particular jurisdiction need to be open to coordination with adjacent jurisdictions to ensure landscape-scale conditions are providing essential habitat function.

12.i.B. Stormwater Management

Comment 254: Many commenters asserted that the stormwater consideration was poorly defined and urged that NMFS establish stronger and more specific stormwater standards. Others felt that NMFS should allow flexibility in regional performance standards and in areas where avoiding stormwater impacts is not feasible. One comment suggested replacing stormwater discharge language with specific methods for reducing development effects.

Response: NMFS believes that applying the same standards and considerations to all jurisdictions will not provide the most effective stormwater management because different methods will be more effective in different jurisdictions—depending on factors such as the existing land use in the subbasin or watershed, soil types, rainfall patterns, the degree to which the natural stream hydrograph has been altered, etc. NMFS will consider these factors, methodologies, and standards

when reviewing city, county, and regional government ordinances for approval.

Comment 255: Some commenters stated that in an urban setting, it may not be advisable or feasible to protect or restore historic stream hydrographs and meandering processes. They asserted that the phrase "where feasible" should be added to stormwater and meander provisions.

Response: It is NMFS' intention to use the best available technologies to determine the most economic means to contribute to the achievement and maintenance of properly functioning conditions. NMFS believes this provision is justified by the need to significantly improve habitat conditions in a given MRCI area and thereby reduce the risks to listed species and ensure that they have an adequate potential for recovery. This can be accomplished by guiding land use practices on the watershed scale in order to reduce impervious surfaces, maintain forest cover, and natural soils. These conditions will, in turn, maintain essential habitat processes such as natural water infiltration rates, transpiration rates, stormwater run-off rates, sediment filtering, and provide hydrographic conditions that maintain and sustain listed salmonids. Where stream hydrographs cannot be restored, compensatory mitigation should be provided to offset the loss of habitat function. Mitigation may include stream corridor restoration by reestablishing pre-development hydrological regimes, controlling pollution sources, stabilizing channel morphologies, engaging in sediment remediation, restoring instream structure, and reestablishing riparian cover. Many of these activities may be guided by watershed scale planning and analysis which includes management of rural and agricultural activities.

Comment 256: Some commenters requested further clarification on peak flows and desired that NMFS place emphasis on biologically significant flows (i.e., water velocities suitable for juvenile fish) instead of peak flows.

Response: Changes in hydrological processes associated with the effects of MRCI development typically result in a flow regime that is more episodic and generates higher peak flows, faster runoff, and reduced base flows during periods without precipitation. Peak flows and base flows are both ecologically significant. Peak flows are primary agents of instream and riparian habitat change during storm events. Base flows sustain aquatic life during dry portions of the year. Other hydrological characteristics are also

significant in the design of stormwater systems, for example, the need for water velocities suitable for juvenile salmonids.

Stormwater management programs associated with MRCI development activities should avoid impairing water quality and quantity. Such programs should preserve or move stream flow patterns (hydrograph) closer to historic hydrologic conditions (e.g., peak flows, base flows, durations, volumes, and velocities) that maintain properly functioning habitat conditions. This can be accomplished by guiding land-use practices at the watershed scale in order to reduce impervious surfaces, maintain forest cover, and retain natural soils. These conditions will, in turn, maintain essential habitat processes such as natural water infiltration rates, transpiration rates, stormwater run-off rates, sediment filtering, and provide hydrographic conditions that sustain aquatic life. NMFS will evaluate the effects that city and county ordinances (submitted for approval under this limit) have on relevant hydrologic processes.

12.i.C. Riparian Management Areas

Comment 257: Many commenters were concerned that the riparian management requirements were vague and uncertain. Some viewed this as creating opportunities to evade the intent of the riparian provision, while others wanted NMFS to make clear the fact that the intent was to be flexible and non prescriptive.

Response: The goal of MRCI riparian management is to protect and restore properly functioning riparian condition. To achieve this goal, programs must protect and restore soil quality—including controlling erosion and conserving soil productivity—and ensure that a diverse plant community with a vigorous age class distribution is well-distributed across a riparian management area. This contributes to the natural succession of riparian vegetation, produces habitat features essential to fish health, and protects water quality and flow conditions needed to meet fish habitat needs downstream. In MRCI areas, where riparian areas are usually subject to frequent and pervasive disturbance, the overland movement of nutrients, pesticides, and sediment can be pervasive. Thus, properly functioning MRCI riparian areas must also intercept and immobilize large pollutant loads, reduce runoff energy, and decrease the amount of nutrients being delivered to the streams. NMFS is not able to define the specific management strategies needed to achieve PFC in every conceivable situation involving a

riparian area, particularly where a restoration component is necessary. The basic goal of riparian management is to establish management that allows the riparian area to proceed on a growth and succession pathway toward a mature riparian condition. As noted earlier, mitigation should be developed for functions that cannot be maintained or restored at the site level and may likely require watershed-scale planning. As several commenters requested, this allows different jurisdictions the flexibility to tailor riparian and wetland management to match local needs and conditions.

Comment 258: A large number of commenters addressed the appropriate width of urban riparian management areas. Many comments focused on management area width without regard for location, riparian composition, or management strategy. One comment noted that the width of the urban riparian management area was greater than for lands affected by the Washington forest practice limit.

Response: There are differences in ecological function among riparian areas in the MRCI and forest management settings. These include the relative importance of pollutant and runoff control, the distribution of nutrient cycling and energy flow, and the efficiency of natural recovery mechanisms. However, the need to define properly functioning condition based on the salmon's biological requirements does not vary by land use type.

NMFS' evaluations of MRCI development are significantly influenced by a body of science indicating that essential habitat functions are affected to varying (but significant) degrees by streamside activities conducted within a distance equal to the height of the tallest tree that can grow on that site (known as the site potential tree height). This was the basis for the example in the preamble to the proposed rule that used 200 feet (60.9 meters) as the approximate span of a site potential tree height. The distance is measured not from the stream itself, but from the edge of the area within which a stream naturally migrates back and forth over time (the channel migration zone).

NMFS believes that the most effective way to ensure PFC is to manage MRCI development activities in riparian areas so that their impacts on habitat functions are minimal at the streamside, but may gradually increase with distance from the stream. For example, the riparian area is often managed with two zones, an inner zone that has the highest level of protection and is

managed primarily to provide stream function by avoiding disturbance, and an outer zone managed for both stream function and as a transition to more heavily used upland areas. The width of each zone should be commensurate with the functions they are intended to provide and, in MRCI settings, reflect the need to buffer an upland disturbance regime that may be more severe than in forest lands; e.g., more frequent entry by humans and domestic animals or exposure to large amounts of nutrients, pesticides, and sediment.

Comment 259: Several commenters supported a preference for using native riparian vegetation.

Response: NMFS agrees that to meet the final rule's intent, existing native trees and other native vegetation in riparian areas should be protected and native vegetation should be used for restoration plantings wherever appropriate native stock are available to meet the project needs. Non-native stock or seed should only be used after a good faith attempt has been made to locate native materials. If native materials are unavailable, ecologically functional equivalents that are known not to be aggressive colonizers may be substituted. When the scope of an MRCI redevelopment activity may include modifying a riparian site with existing, non-native vegetation, it may be important to restore native vegetation on the site in order to generate the essential habitat functions discussed above.

12.i.D. Stream Crossings

Comment 260: Several commenters requested clearer criteria for culvert installation and bridge crossings. Some wanted the referenced guidance document to be included in the final rule.

Response: Activities such as road and stormwater system design and construction or placement of utility corridors should avoid stream crossings wherever possible in order to prevent soil disturbance and sediment and flow problems in the stream. Where a crossing is unavoidable, the condition of the crossing should minimize its affect by preferring bridges over culverts; sizing bridges to a minimum width; designing bridges and culverts to pass at least the flow level and debris associated with a 100-year flood event; and meet ODFW or WDFW criteria (ODFW's Oregon Road/Stream Crossing Restoration Guide, Spring, 1999 and WDFW's Fish Passage Design at Road Culverts, March 3, 1999). These two documents will be included in a guidance document to be published by NMFS at the same time as this final rule.

Comment 261: Many commenters stated that new and existing linear facilities—such as utility corridors—that cross rivers and streams should be included in this section. Other commenters wanted the language “wherever possible” used in the sentence “avoid stream crossings by roads wherever possible” to be strengthened or deleted because it creates a loophole. In general, they desired that NMFS establish criteria to determine if a crossing is necessary.

Response: Linear facilities will be included in the stream crossing section of this final rule. As to the necessity of individual crossings, NMFS believes the city or county jurisdictions should perform the lead role in developing these criteria. The applicable state fish and wildlife agency can provide considerable guidance in developing these criteria—both through their existing codes and regulations and in their guidance documents (listed previously in this rule).

12.i.E. Channel Migration Zones

Comment 262: One commenter requested an explanation of the term “channel migration zone” (CMZ) and asked that it be linked to landscape features that developers and planners can understand.

Response: A CMZ is defined by the lateral extent of active channel movement along a stream reach over the past 100 years. Evidence of active movement over the 100-year time frame can be inferred from aerial photos or from specific channel and valley bottom characteristics and it was chosen for that reason. Also, this time span typically represents the time it takes to grow mature trees that can provide functional large woody debris to streams. A CMZ is not typically present if the valley width is generally less than two bankfull widths, is confined by terraces, no current or historical aerial photographic evidence exists of significant channel movement, and there is no field evidence of secondary channels with recent scour from stream flow or progressive bank erosion at meander bends.

Comment 263: One commenter requested that no bank hardening be allowed within the CMZ.

Response: Gradual bank erosion and meander migration within the CMZ are important ecological processes that provide geomorphic diversity and enable habitat development. Constructing rigid bank protection structures within the CMZ can prevent properly functioning conditions from being attained because it disrupts natural channel processes and initiates

a cycle of altered erosion patterns flanked by new bank protection measures. The end result can be an entire reach being lined with rigid bank protection.

Where erosion within a CMZ is an issue, bank erosion should be controlled through vegetation, carefully bioengineered solutions, or other innovative "soft" bank protection techniques that allow eventual deformation by channel forming processes. Rip-rap blankets or similar hardening techniques should be avoided unless bioengineered solutions are not possible because of particular site constraints. NMFS finds that WDFW's publication, *Integrated Streambank Protection Guidelines*" (June, 1998) can provide sound guidance with respect to controlling bank erosion, particularly in the area of mitigation for gravel recruitment.

Comment 264: One commenter supported the concept of protecting the CMZ in streams and floodplains, and requested that the same protection be extended to prevent bank hardening in lake, estuarine, and marine shorelines.

Response: NMFS agrees that natural geomorphic diversity and habitat development are important in all fish-bearing waters, including estuarine and marine systems where the habitat formation processes of many wetlands, shorelines, and waterways have been impaired by the construction of dikes, levees, breakwaters, sea walls, shore protection systems, ports, moorages, and other hardened structures. While the CMZ concept itself is only applicable to systems with a definable channel, it is NMFS' intent to address, avoid, and minimize these habitat threats whenever such structures are constructed or maintained.

12.i.F. Wetlands

Comment 265: One commenter recommended that some wetlands be excluded from the take prohibitions and suggested that not every disturbance in a wetland management area should be prohibited.

Response: Take is prohibited. In general, MRCI development activities should protect wetlands and the vegetation surrounding them and thereby conserve natural wetland succession and function. The reason for this is that wetlands and their associated ecotypes support salmonid food chains, protect shorelines, purify water, store water during flood events, recharge groundwater, and provide specialized habitat for rearing and migrating salmonids.

Drained hydric soils that are now incapable of supporting hydrophytic

vegetation because of a change in a water regime are not considered wetlands. The basic goal is to establish management that allows wetlands to maintain ecological functions, not to exclude all disturbances. Activities conducted in a wetland management area are generally subject to the COEs' permitting process under section 404 of the CWA and are necessarily subject to ESA section 7 consultation.

12.i.G. Hydrologic Capacity

Comment 266: Some commenters requested that NMFS clarify its intent in protecting hydrologic capacity.

Response: MRCI development activities should preserve intermittent and perennial streams' hydrologic capacity to pass peak flows. Decreasing the hydrologic capacity of stream systems by filling in the stream channel for road crossings or other development can increase water velocities, flood potential, and channel erosion, degrade water quality, disturb soils and groundwater flows, and alter vegetation adjacent to the stream. Preserving hydrologic capacity provides conditions needed to maintain essential habitat processes such as water quantity and quality, streambank and channel stability, groundwater flows, and riparian vegetation succession. Filling and dredging in stream channels should be avoided unless they occur in conjunction with an unavoidable stream crossing.

Comment 267: One commenter referred to the need to strengthen the Metro Title 3 flood management standards and ensure that riverine and floodplain systems are reconnected and historic floodplain functions are restored.

Response: Metro is currently seeking to improve Title 3 as part of a broader effort to comply with Oregon's statewide Planning Goal 5—the state's land use goal for natural resource and open space protection, and Oregon Administrative Rule 660, Division 23 (the "Goal 5 rule"). This effort is focused specifically on strengthening Title 3 by adding a program to protect, restore, and enhance fish and wildlife habitat functions in urban riparian corridors. NMFS is participating in a technical advisory role. Metro has not yet submitted its Urban Growth Management Functional Plan to NMFS for consideration as a limit to the take prohibition, nor has NMFS approved it for that purpose. If Metro applies for a limit under this final rule, it will be evaluated at that time using the review process described in this final rule.

12.i.H. Landscaping

Comment 268: Two commenters suggested more stringent standards for landscaping. One commenter proposed that watering, as well as fertilizers, pesticides, and herbicides, be eliminated in urban landscapes; the second proposed regulations requiring the use of native vegetation to reduce water use.

Response: Residential and commercial landscaping can be designed, installed, and maintained to reduce the need for water, herbicides, pesticides and fertilizer. Doing so will help maintain essential habitat processes by conserving water, reducing flow demands that compete with fish needs, and decreasing the amount of chemicals that contribute to water pollution in streams and other water bodies that support salmonids. NMFS relies on local ordinances to address planting and water use.

12.i.I. Erosion/Sedimentation

Comment 269: One commenter asked that NMFS clarify its expectations for erosion control measures.

Response: MRCI development activities should prevent erosion and sediment run-off during and after construction and thus prevent sediment and pollutant discharges. At a minimum, these activities should include detaining flows, stabilizing soils, protecting slopes, stabilizing channels and outlets, protecting drain inlets, maintaining BMPs, and controlling pollutants. This can be accomplished by applying seasonal work limits, phasing land clearing, maintaining undisturbed native top soil and vegetation, etc.

12.i.J. Water Supply/Screening

Comment 270: Several comments called for caution and flexibility concerning water supply development and water diversion screening; others wanted specific restrictions not identified in the proposed rule or mandatory conservation measures for existing developments.

Response: Water supply development can profoundly affect surface and groundwater hydrological processes. Water supply demands should be met without impacting flows needed for threatened salmonids—either through direct withdrawals from the streams or through groundwater withdrawals. Water diversions should be positioned and screened to prevent salmonid injury or death. When existing regulations do not protect the stream flows that salmon need, appropriate additional measures will need to be identified before NMFS

approves an MRCI development ordinance.

12.i.K. Enforcement, Funding, Reporting, etc.

Comment 271: Several commenters supported the monitoring provisions and requested that specific monitoring and implementation programs be described. In contrast, others concluded that by including all necessary enforcement, reporting, and implementation mechanisms NMFS has the potential to be arbitrary in its review of programs. It was suggested that NMFS make the reporting requirement biennial instead of annual.

Response: During the ordinance or plan development and approval process, NMFS will work closely with the local jurisdiction to identify and develop those monitoring mechanisms applicable to the listed species, their habitat, and the local jurisdiction. The existing condition of the salmonid habitat in the watersheds, the rate of projected growth, and other factors will be used as a baseline for the monitoring.

12.i.L. Comply with Other State and Federal Laws

Comment 272: Some commenters wanted to exclude this provision because they believed it exceeded NMFS' authority and because other programs exist to assure compliance.

Response: This subsection notifies applicants of the continuing obligation to ensure that their developments comply with existing state and Federal rules and regulations, as well as with this final rule in order to be eligible for the limit to the take prohibition. Further, an applicant should automatically assume that compliance with the this final rule necessarily meets existing regulatory requirements of local and state agencies.

Forest Management Activities in Washington

Comment 273: Many commenters wanted to know how the April 29, 1999, Forest and Fish Report (FFR) process under section 4(d) of the ESA compares with the process for issuing an incidental take permit issued under section 10. Some of these commenters misunderstood the intent of the FFR and others mistakenly believed that the proposed limit could result in issuing an incidental permit, or could be in effect for 50 years.

Response: While an ESA section 10 HCP may be developed by a non-Federal entity using many of the elements of the FFR, that process has not yet progressed to the point that NMFS has become involved. In other words, it would be

many months before anyone applies for an HCP based on the FFR. At this time, NMFS is simply describing the circumstances in which an entity or actor can be certain it is not at risk of violating the take prohibition or of consequent enforcement actions, because the take prohibition would not apply to programs within those limits. And, unlike an HCP with "No Surprises" assurances, under the 4(d) limit NMFS may require FFR to be adjusted in the future. For habitat-related limits on the take prohibitions, changes may be required if the program is not achieving desired habitat functions, or where even with the habitat characteristics and functions originally targeted, habitat is not supporting population productivity levels needed to conserve the ESU.

Comment 274: Some commenters wanted to know what role NMFS played in developing the FFR. Some commenters believed that NMFS had already approved the Washington State Forest Practice Emergency Rules without following the National Environmental Policy Act (NEPA), and other commenters wanted to know how NMFS interacted with other resource agencies.

Response: Along with other natural resource agencies at the state, tribal, and Federal levels, NMFS participated in multi-party negotiations with representatives of the commercial forest managers in Washington State from about April of 1997 through April of 1999. NMFS staff provided technical assistance to several of the work groups tasked with providing the scientific underpinnings for various elements of the FFR. Also, NMFS staff helped explain ESA procedures and implications to the entire negotiating group.

While NMFS considers the product of those negotiations—the FFR—to form the core of the ESA 4(d) limit for forestry on non-Federal lands in Washington State, the report will continue to be worked on for at least another year as various sections are refined and completed. Since the FFR was initially published in April of 1999, NMFS staff have made technical and policy contributions to many sections of the report. These include, but are not limited to, FFR "Schedules" (essentially, technical appendices) for Channel Migration Zones, Road Management, Placement of Large Woody Debris, Conversion of Hardwood Riparian Zones, Adaptive Management, and Resource Objectives. Some of these products are formalized as Washington Forest Practice Board (WFPB) Manuals associated with the Emergency Forest

Practice Rules (that became effective March 20, 2000) and have been evaluated by the Department of Natural Resources (DNR) in their State Environmental Policy Act Draft Environmental Impact Statement (SEPA DEIS). This document may be found on the web at www.wa.gov/dnr/htdocs/fp/fpb/pdffiles/.

Comment 275: Many commenters stated that the FFR was severely flawed. As evidence, they pointed to a critique organized by the Society for Ecological Restoration.

Response: Four individual scientists participated in a review of the FFR that the Society for Ecological Restoration (SER) organized. The American Fisheries Society (AFS) was solicited to review SER's material, but contrary to purported statements on behalf of SER, AFS did not review or endorse any of the reviewers' work products. The AFS repeatedly asked the SER to retract and correct this inappropriate attribution. NMFS believes that, while there are useful parts of the report, the Society's critique of the FFR was flawed by: (1) a limited understanding of the policies, regulations and intent of the ESA (2) an incomplete understanding of all the elements of FFR, which led to (3) overstatements of the perceived weaknesses in the FFR.

Specifically, the report claimed the FFR could result in: too-warm waters flowing from some non-fish bearing streams into fish-bearing waters; a failure to identify some small fish-bearing streams; inadequate assessment of some potentially unstable slopes; potential increases in peak-flows that could generally harm incubating fish eggs; a potential reduction in future recruitment of woody material from some non-fish-bearing streams into fish-bearing streams; excessive disturbance and potential delivery of sediments from some non-fish-bearing streams into fish-bearing streams; and, inadequate identification of impaired watershed conditions that may need extra protection. NMFS has assessed all these concerns in light of the best available scientific and commercial information and generally agrees with the environmental analysis summarized in the SEPA DEIS. The moderate environmental risks and levels of uncertainty associated with the FFR are directly addressed by the adaptive management program and the adjustable nature of the ESA 4(d) limit.

Comment 276: Several commenters wanted pesticide application covered in the FFR 4(d) limitation while another commenter did not.

Response: The FFR proposes certain guidelines for pesticide applications

which can be found at: www.wa.gov/dnr/htdocs/fp/fpb/forests&fish.html#APPE. Due to the lack of information on specific pesticides proposed for use under the FFR and their potential for lethal and sub-lethal effects on fish or, as one commenter put it, an uncertainty that needs to be addressed, the limitation associated with the FFR does not include pesticide application.

Comment 277: Many commenters questioned how NMFS could ensure that the riparian conditions essential to listed fish survival and recovery would continue to function properly. Other commenters asked for a clear description of Desired Future Condition for riparian forests. Some commenters asked that NMFS prepare forest management standards for watersheds.

Response: The riparian conservation elements in the FFR are expected to play a major role in conserving salmonids and creating properly functioning conditions on non-Federal forest lands in Washington State. The FFR offers detailed, protective management strategies for three different forest land ecotypes in Washington as well as for fish- and non-fish-bearing streams throughout the state. NMFS has carefully examined these protections and management strategies and has determined that they sufficiently conserve the listed salmonids and will promote properly functioning habitat condition wherever they are applied. The best place to examine these management measures is in the FFR itself.

Comment 278: Many commenters expressed the need to improve forest road management and desired to know how the question was addressed in the FFR.

Response: Forest roads have the potential to affect aquatic ecosystems primarily by: generating and delivering fine sediments from road surfaces and ditches; delivering catastrophic sediment inputs as a result of road-related slope failures; blocking fish passage; disrupting the downstream routing of sediments and organic materials; reducing floodplain function; and modifying hydrologic patterns (e.g., the timing and intensity of peak flows). The FFR addresses all of these effects through a revised set of BMPs that govern road construction and maintenance. The BMPs require road maintenance and abandonment plans, set a functional resource objective for hydrology that virtually disconnects road drainage from stream systems, and describe a functional resource objective for road-related fine sediment that limits the length of ditch line that can deliver

sediment to streams. Moreover, the FFR addresses existing road problems by requiring every forest landowner to produce a Washington State DNR-approved Road Maintenance and Abandonment Plan by 2005.

Comment 279: Many commenters did not believe that FFR or the Emergency Rules offered enough protection with regard to unstable slopes to meet the intent of the proposed limit.

Response: The goal for managing unstable slopes is to avoid increasing or accelerating the naturally occurring landslide rate (and volume) in forested watersheds, while still recognizing that mass-wasting is an essential watershed process element that helps route large woody debris through the stream system. The FFR provides general guidance about slope hazard by identifying four primary groups of land forms generally understood to be at risk for failure and potential sediment delivery: (1) Inner gorges, convergent headwalls, and bedrock hollows steeper than 70 percent; (2) toes of deep-seated landslides with slopes steeper than 65 percent; (3) groundwater recharge areas for deep-seated landslides in glacially formed terrain; and (4) the outer bends of meandering channels. The FFR lays out a detailed process for scrutinizing any proposed forest management activities in such areas and commits to support a team of geologists that will map any other potentially unstable areas in the state. NMFS has carefully considered these and the other basic protections set forth in the FFR and believes that the overall approach fits with the limit. Moreover, the risk from unstable slopes is expected to decrease as the adaptive management process moves forward and more and better tools are brought to bear on the problem of avoiding sediment inputs.

Comment 280: Some commenters stated that the FFR used a faulty system of stream-typing. They were concerned that an out dated system would continue to be used and, as a result, some fish-bearing streams might not be identified for protection.

Response: The FFR classifies streams and dictates levels of riparian and other protections based on the potential for a given channel to support fishes of any species at any time of the year. Seasonal fish-bearing streams are protected as if they were perennial. This habitat-based stream typing will replace the current emergency rule as GIS-based stream habitat models are developed (they are expected to be complete by June of 2001). For now, the older stream typing system—based on fish presence—will continue to be used; though it will also be upgraded through the WFPB

Emergency Rule (March 20, 2000). Both of these stream-typing systems are based on judgements of the geographic threshold of perennial flow. These are considered to be: a sub-watershed of 13 acres in western coastal Washington, 52 acres in all other regions of Western Washington, and 300 acres in eastern Washington.

Comment 281: How does the FFR address potential changes in watershed hydrology resulting from forest practices? Some commenters thought NMFS should add provisions that would help maintain natural hydrology by limiting clear cut areas. Others urged NMFS to set standards for tree regrowth to aid watershed recovery after logging.

Response: The FFR proposed that forested watersheds be managed to meet a functional Resource Objective (Schedule L-1, in the FFR) that limits increases in peak flows and other consequences of altered hydrology. This Hydrology Resource Objective is still undergoing development. When complete, it will provide both a quantitative approach (based on changes in peak flow intensity or duration) and an objective based on the actual streambed effects arising from altered hydrology to choose from—depending on which is appropriate to the area in question. In both cases the emphasis will be on those watershed portions susceptible to rain-on-snow events, which are widely considered to have the greatest potential to alter peak stream flows and cause scour.

The BMPs for roads are also closely related to this issue (see earlier discussion for road-related hydraulic and sediment effects). In addition, the parties to the FFR committed to revising the Hydrology Module in the Washington Forest Practice Board's (FPB's) Watershed Analysis Methodology in order to more accurately assess hydrologic effects. Finally, the DNR also maintains authority to place conditions on any proposed Forest Practice if there is cause to believe that altered hydrologic conditions are of concern. Therefore, NMFS does not believe it necessary at this time to proposed additional conservation measures relating to watershed hydrology.

Comment 282: Many commenters wanted to know how NMFS would monitor activities under the FFR and use that data to determine whether rule adjustments were necessary.

Response: The FFR proposes an elaborate process for designing and implementing a monitoring and research program that will be used to adapt forestry activities through changes in the Washington Forest Practice Rules.

The adaptive management process is presented in Appendix L of the FFR. Essentially, the protocols and procedures for conducting adaptive management research and monitoring must be approved by Washington's FPB. An administrator employed by Washington DNR will oversee the program and assist the FPB in its task.

Comment 283: Many commenters stated that the FFR was too cumbersome for the Washington DNR to be able to implement.

Response: The Washington Forest Practices Board described their version of FFR, as Alternative 2, in the space of about 18 pages in the SEPA DEIS. The agency responsible for ensuring compliance with state Forest Practices—the Washington DNR—was a full participant in the negotiating process that led to FFR development. Part of their role was to codify and implement the proposed conservation measures. The first step of that codification was completed in February, 2000, when the FFR was substantially instituted as "emergency rules" for state forest practices. All necessary Washington DNR staff have undergone extensive training to implement the Emergency Rules.

Comment 284: Several commenters were concerned about the level of protection provided to wetlands, specifically forested wetlands. Other wetland concerns revolved around potential impacts on hydrology and water temperature as a result of effects on groundwater in up-slope areas. Also, some commenters indicated that the CMZ definition was too narrow and would not provide adequate protection.

Response: NMFS agrees there is uncertainty associated with forest management activities near wetlands in terms of how those activities might impact fish habitat. NMFS generally agrees with the analysis provided in the Washington State SEPA DEIS, section 3.5.2. That document can provide commenters with further information about the effects certain activities may have on wetland areas. In addition, the rule outlines the process for adjusting itself—a process that may be necessary as new information on the effects of specific forest practices comes to light.

The March 2000, Board Manual for Emergency Rules, section 2, explains the standard method for measuring CMZs and offers revised Standard Methods guidance. In it, several different ways of determining the CMZ are described, e.g., using historic aerial photographs, intensive field exercises, and field review by a channel expert.

Comment 285: Several commenters wanted the limit to include alternative

plans that would give landowners managing areas less than 20 acres in size more operational flexibility. One commenter asked for clarification and requested that the limit include alternative plans that would help avoid any take liability.

Response: Within the construct of the FFR, alternate plans for forest management are allowed provided that the effect of these actions, as judged by the Washington DNR, conserves physical and biological processes at least as well as the base prescriptions. The purpose of this allowance was to address unique sites and operational configurations that required some departure from standard approaches. The alternative plan management strategy must protect public resources at least as effectively as the basic rules. If approved, the prescriptions set forth in an alternative plan would be substituted for the prescriptions in the corresponding basic rules. NMFS includes in this limit only those alternative plans in the FFR that have been demonstrated to adequately protect listed salmon, and that provide NMFS—or any resource agency or tribe NMFS designates—review opportunity at every stage of development and implementation. Such review may cause a plan to be excluded from this limit.

Comment 286: Many commenters asserted that NMFS had no scientific basis to expect that the limit would contribute to salmon recovery.

Response: As the proposed rule states, "this proposed rule restricts application of the take prohibitions when land and water management activities are conducted in a way that will help attain or protect properly functioning habitat. Properly functioning habitat conditions create and sustain the physical and biological features that are essential to conservation of the species. Properly functioning habitat conditions are conditions that sustain a watershed's natural habitat-affecting processes (bedload transport, riparian community succession, precipitation runoff patterns, channel migration, etc.) over the full range of environmental variation, and that support salmonid productivity at a viable population level." After carefully evaluating the various components of the FFR—as described in the proposed rule and discussed in previous responses, NMFS has concluded that applying the FFR will help maintain and attain properly functioning habitat conditions and will, therefore, contribute to recovery.

Comment 287: A number of commenters suggested that NMFS should include the state forest practice

rules from Oregon, California, and Idaho in the limit.

Response: At the time the limit was proposed for the FFR in Washington state, NMFS had not been presented with any other forest practices regulatory framework that was designed to conserve listed anadromous fish. For several years, NMFS has been discussing with state agencies in Oregon and California ways to strengthen the fish conservation aspect of forest practice rules in those states. NMFS wishes to continue working with all affected governmental entities in strengthening, identifying, and creating management programs that fulfill the listed salmonids' biological requirements. For programs that meet those needs, NMFS can provide ESA coverage through 4(d) rules, section 10 research and enhancement permits or incidental take permits, or through section 7 consultations with Federal agencies. A 4(d) rule may be amended to add new limits on the take prohibitions, or to amend or delete limits as circumstances warrant.

General

Comment 288: A broad array of interests asserted that their activities were, at most, only minimally harmful to salmonids and that natural environmental fluctuations and activities being conducted by others were responsible for the recent drastic declines in salmonid numbers throughout the Northwest and California. Among the activities and causes listed as most harmful were logging, grazing and other agricultural practices, pesticide use, various habitat-altering actions, urban development, sport fishing, commercial fishing, drift net fishing, tribal fishing, recreational fishing, ocean and estuarine conditions, hydropower development, marine mammals, avian predators, other predators, and so forth.

Response: Comments of this nature have been made in response to essentially every listing and critical habitat proposal NMFS has put forth over the last decade. As a result there is a great deal of information on these factors available in any one of a number of **Federal Register** documents and it need not be repeated in detail here. Nonetheless, it should be pointed out that the very number of commenters and the range of the causes cited are themselves indicative of the breadth and depth of the problems facing Pacific salmonids. Therefore, NMFS acknowledges that all of these factors have played a role in the species' recent declines; as evidence, most of the factors that commenters identified were

specifically cited as risk agents in the West Coast Chinook Salmon Status Review (Myers *et al.*, 1998).

The two primary themes that repeatedly arise in these comments revolve around whether the massive declines in salmonid abundance are brought on by natural conditions or human alteration of the environment. NMFS recognizes that natural environmental fluctuations and increasing numbers of natural predators have recently had negative impacts on the species. However, NMFS believes human-induced impacts (e.g., harvest and widespread habitat modification) have played at least an equally significant role in the salmonid declines up and down the West Coast. And because the very nature of this rule-making—the codification of take prohibitions and the limits placed on them—cannot apply to natural processes (by definition, the ocean cannot not “take” species), the rules necessarily address human activities.

Comment 289: Many commenters stated that the language of the rules needed to be more clear in a number of respects, particularly with regard to the terms found in the take guidance sections. Others felt there was too much detail in the rules and that NMFS should simply stick to principles and not offer too much in the way of specific guidance.

Response: In publishing the proposed rules, NMFS tried to strike a balance between these opposing views. The point was to avoid making the rules overly prescriptive—and thus allow local initiative to play a strong role—yet still give valuable guidance on how to proceed with numerous human activities in the areas inhabited by threatened salmonids. To continue in this spirit, NMFS has gone to some lengths to clarify the guidance language and it may be found in this final rule.

Comment 290: Several commenters requested clarification on NMFS’ use of the term “stock,” the definition of population segments, and the implications of these concepts for species conservation.

Response: The use of the term “stock,” following Ricker’s definition, is critical because it defines the appropriate management units for conserving the species. According to Ricker, stocks are made up of numerous populations which become uniquely adapted to specific environmental conditions, leading to local variations in morphology, behavior, and life history traits. As amended in 1978, the ESA allows the listing of “distinct population segments” where groups of populations are assembled for

conservation management purposes. NMFS’ policy states that a salmon population is considered “distinct” for purposes of the ESA if it represents an ESU of the biological species, where an ESU represents an important component of the evolutionary legacy of the species. Thus the health of an ESU depends upon the health of its component parts. This argues for developing protective regulations across an ESU’s entire range, even though some local populations may be thriving. The ESA 4(d) protective approach offers the flexibility to develop local protection programs which are cognizant of the species condition in the area.

Comment 291: A large number of commenters voiced general and specific support for and opposition to various rules.

Response: The proposed ESA 4(d) rules generated an amount of substantive public comment unprecedented since NMFS first began rule-making activities for salmonids on the West Coast 10 years ago. Many thousands of individual comments contained within the letters from well over one thousand respondents reflected the broadest possible spectrum of feeling—from full support to total opposition to the proposed rules. Though the very nature of the questions surrounding salmonid management in the Northwest and California precludes any possibility of pleasing everyone, NMFS has striven to use this public comment period—as well as every other input avenue at our disposal—to adapt the rules in a manner that more fully reflects the basic objectives to encourage state and local conservation efforts and to clear up the substantial confusions associated with certain elements of the earlier proposed rule.

Comment 292: Several commenters stated that NMFS should consult with tribal governments regarding actions by non-tribal entities, particularly those actions and limits contained in the salmon and steelhead ESA 4(d) rules.

Response: Throughout the development of the tribal and salmon/steelhead 4(d) rules NMFS has made a concerted effort to notify and confer with tribal representatives and technical staff throughout the Pacific Northwest and California. Contact regarding these rules goes back to before December of 1998, when draft rules were submitted for review by the affected tribes well in advance of the proposed rules. During that review, NMFS coordinated and attended a number of meetings and working sessions with tribal governments and representatives (including staff from inter-tribal fisheries commissions) to discuss

particular aspects of the ESA 4(d) rules. These meetings allowed NMFS to develop proposed ESA 4(d) rules that the agency believes address a wide range of issues highlighted by the tribes. Similar efforts were made to discuss the proposed 4(d) rules with key staff and tribal council members after the rules were published.

Clearly, NMFS recognizes the need to work closely with the tribes of the region to develop and improve upon information exchange and consultation opportunities relating to salmon and steelhead conservation. Since beginning work on these 4(d) rules NMFS has added a tribal liaison position to its staff to focus on improving communications with the tribes and developing consultation procedures that will meet both NMFS and tribal needs. It is the agency’s intent to continue working with tribal governments to develop regularly scheduled meetings between NMFS and tribal technical staff and policy makers to both provide more timely notice regarding NMFS activities and discuss how consultation might occur for future fisheries issues and ESA rulemaking. There remains the opportunity for the tribes and the agency to hold future discussions on applying the ESA 4(d) rules. Such future discussions can include identifying cultural and economic issues requiring the agency’s attention and ideas about how such analyses should be conducted. In response to tribal requests, NMFS will correspond with each commenting tribal government, clarify how its comments were addressed, and identify the need for additional meetings to discuss potential rule amendments and modifications.

Comment 293: Many people stated that any activities conducted in accordance with the Oregon Plan for Salmon and Watersheds should receive a specific limitation on the take prohibitions.

Response: NMFS has carefully reviewed the various versions of the Oregon Plan since its genesis over 4 years ago and remains a strong supporter of it as a hugely ambitious and comprehensive effort. While many portions of the Plan may sufficiently protect the salmon resource as they now stand, other components need further work and refinements, as is widely understood and altogether understandable. Therefore, because certain parts of the Plan do not offer the salmon enough protection, NMFS cannot adopt it wholesale as a limitation on the take prohibitions.

Comment 294: Several commenters requested that NMFS clarify how it will

add new limits and adjust programs that are already within a limit.

Response: NMFS will continue to work with local jurisdictions and other entities to develop and adopt new ESA 4(d) rule limits. In general, local entities will develop a proposed limit based on the guidance set forth in the rule and will bring it to NMFS for technical assistance and to undergo a negotiation and approval process. The approach is a flexible one and there are different time frames and administrative procedures for each limit—depending on the type being proposed (see the regulatory text of this final rule). Existing limits will be reviewed and evaluated according to the schedule established at the time the limit is finalized.

Comment 295: One commenter requested that NMFS identify in the final rules the “replicable” elements of any of the agency-specific programs.

Response: There are two types of limits available through the ESA 4(d) rule: (1) Stand alone programs, and (2) a set of criteria that will form the basis for future programs that NMFS will evaluate for further limits on the take prohibition. The first category of limits is made up of programs that can be adopted or adapted as “replicable” elements for other jurisdictions or entities. The criteria in the latter type of limit also serve as replicable elements that other programs can adapt to meet.

Comment 296: A number of respondents expressed a general concern that the ESA 4(d) rules were too coercive. They stated that the rules would engender third-party lawsuits or simply fragment and undermine local efforts rather than bolster them. A recurring theme was that NMFS should be more flexible in its approach than the rules would seem to indicate.

Response: One of the primary reasons NMFS has taken this ground-breaking approach in publishing ESA 4(d) rules is to allow for a maximum of local input and Federal flexibility. Rather than simply impose blanket take prohibitions of the sort normally promulgated under a final rule listing a species, NMFS has attempted to create a regulatory environment within which local initiatives and programs have sufficient leeway to remain focused on their own goals while simultaneously working toward the ultimate end of preserving salmonid stocks—both now and in the future. No agency can alter the simple fact that certain activities that harm listed salmonids must be regulated. Nonetheless, as the rules themselves demonstrate, NMFS is committed to an approach that focuses more on aiding

local efforts that conserve listed salmon and steelhead.

Comment 297: Some commenters stated that local entities should have little or no authority to carry out the measures because local initiatives have a very poor track record with respect to protecting salmonids.

Response: The task of protecting salmonids in the Pacific Northwest and California is perhaps the most complicated and far-reaching attempt to restore a species ever undertaken. In practical terms, the Federal government alone, using only Federal authorities and dollars, cannot hope to accomplish this ambitious task of salmon recovery without the additional active efforts of state and local authorities and the private sector. A wide mosaic of activities affect salmon habitat. Those activities fall under the responsibility of a range of Federal, state and local authorities. The practical ability to make changes in those activities will depend in part upon the willingness and ability of those separate authorities to encourage change. Therefore, NMFS is attempting, to the greatest extent practicable, to build opportunities for state and local initiatives in the implementation of the ESA program. This strategy has already proven successful in a few areas where watershed councils and other local bodies have made great strides in salmon conservation through habitat rehabilitation, community awareness seminars, and other projects. NMFS anticipates and welcomes further expansions of these efforts over time.

Comment 298: Many commenters stated that individual landowners should receive assurances in the rules that if they cooperated and followed the measures outlined, they would be free from any further restrictions under the ESA.

Response: As a matter of law, listed species may not be taken without legal authorization. Therefore, it is incumbent upon every individual and organization to be vigilant in terms of minimizing the impacts their activities have on listed salmonids. The 4(d) rules establish take prohibitions; that is their purpose. Secondly they are an attempt to allow landowners and every other interested party a path by which they can have some assurance that their activities are in concert with the letter and intent of the ESA. It should be noted that no one will be forced to seek a 4(d) limitation, and no one need necessarily follow the limitations laid out in the rule. They are optional, flexible methods for ensuring that individual entities adhere to the mandated take prohibitions. The other routes for complying with the ESA are

still open; for example, landowners may still seek ESA section 10 incidental take permits through the process of developing habitat conservation plans—a process that offers them a good deal of assurance that their activities will continue to be in compliance with the ESA. Any program or activity that adheres to the criteria found in the limits described in these rules will receive a similar sort of assurance. Further, it is very likely that other programs will come forth in the future that similarly protect the salmon and, as a consequence, will receive their own limitations on the take prohibitions. Nonetheless, it must be stressed that the primary purpose of these rules is to fulfill the mandate of the ESA in issuing regulations deemed necessary and advisable to provide for the conservation of threatened species.

Comment 299: A number of commenters asserted that the original listings were in error—most the reasons given fell into two categories: either (a) the science was inaccurate, or (b) the concept of listing ESUs is faulty.

Response: Section 4(b)(1)(A) of the ESA requires that NMFS make its listing determinations solely on the basis of the best available scientific and commercial data after reviewing the status of the species and taking into account any efforts being made to protect such species. NMFS believes that information contained in the agency's status review (Myers *et al.*, 1998), together with information cited in the final rule (NMFS, 1998a), represent the best scientific information presently available for the ESUs addressed in this final rule. NMFS made every effort to conduct an exhaustive review of all available information and solicited information and opinion from all interested parties in making the listing decisions. If in the future new data become available to change these conclusions, NMFS will act accordingly.

As to the validity of listing ESUs in the first place, general issues relating to ESUs and the ESA have been discussed extensively in past **Federal Register** documents—most recently in the final rule listing 4 ESUs of chinook salmon (64 FR 14308, September 9, 1999) and they need not be reiterated at length here. Nonetheless, the utility of the ESU concept is laid out in a 1991 document in which NMFS describes how it will apply the ESA definition of “species” to Pacific salmon (56 FR 58612, November 20, 1991). Guidance on applying this policy is contained in a NOAA Technical Memorandum entitled “Definition of ‘Species’ Under the Endangered Species Act: Application to Pacific Salmon” (Waples, 1991) and in

a recent scientific paper by Waples (1995). It should also be pointed out that the National Research Council generally endorses the concept (NRC, 1995).

Comment 300: Several commenters were concerned about the scientific standards used to justify the inclusion of the 13 limits and to judge future limits, and suggested the generation of uniform standards.

Response: NMFS evaluated the current limits based on best available science and the concepts of VSP and PFC, and will evaluate any future limit using the same and other, more site specific guidelines. Recognizing the variable nature of the geologic, hydrologic and aquatic ecosystems across all ESUs, and the consequent variability in strategies for salmon recovery, NMFS proposes an approach that allows local innovation through the development of local and regional programs that are protective of salmon and steelhead. These programs are monitored and evaluated for their effectiveness in meeting the conservation goal of the survival and recovery of the species. While NMFS offers general guidelines, the 13 limitations and new programs offer additional specificity and strategies for meeting the conservation goal.

Comment 301: Some commenters expressed the opinion that the rules are too costly and will involve too much red tape.

Response: Saving a species is neither an easy task nor a cheap one. Nonetheless, NMFS is committed to finding the most efficient and cost-effective way of preserving salmon and steelhead on the West Coast. To assist us in this, we have prepared initial regulatory flexibility analyses of the effects the rules are likely to have on small businesses, non-profit organizations, local governments, and other small entities. The purpose of these analyses is to help the agency consider all reasonable regulatory alternatives that would minimize the rules' economic impacts on affected small entities. It is thus our intent to make full use of these analyses and keep economic impacts to a minimum.

In addition, because this is a new approach to promulgating 4(d) rules under the ESA, we are aware that the process may impose some unforeseen burdens in terms of time investment and paperwork for all involved parties—including NMFS. To counter this, we will use the principles of adaptive management to streamline the process wherever and whenever possible.

Comment 302: A number of people stated that more time was needed for

completing and commenting on the rules.

Response: NMFS has been working with individual programs, tribes, and local governments all over the Northwest for well over 2 years to complete the 4(d) rule proposals. Twenty-five public meetings were held in order to get input. The statutory time line for commenting on the rules was doubled so that every interested person in the region would have a reasonable amount of time in which to formulate and submit their comments.

It is important to note, however, that one of the main premises of promulgating these rules is to build a maximally adaptive process for managing salmon on the West Coast. Therefore, it is expected that these rules will continue to change in response to incoming monitoring data, further public input, other proposed limitations on the take prohibitions, and the developing recovery plans for the listed species.

Comment 303: One commenter requested that the reference to a public comment period of 30 days for various plans and programs be included in every section of the rule in order to provide consistency in process between limits.

Response: All programs that are accepted as ESA 4(d) limits will be published in the **Federal Register** and the usual comment period is 30 days. NMFS makes clear in the regulatory text of this final rule where and when the 30-day comment period applies.

Comment 304: Many commenters agreed with various portions of the rules, but stated that it is imperative that they be enforced and that monitoring and oversight need to be accounted for in every limit. Further, monitoring must be built into the system in a way that allows the limits to be altered when evolving science shows it necessary.

Response: Change in response to new data is the very heart of the adaptive management process. NMFS is committed to continually bringing the best and latest information to bear on the question of how to best preserve declining salmon stocks—monitoring is a critical path for developing that information. Most of the programs given limitations in the 4(d) rules feature monitoring as an integral part. The language in the final rules has been changed slightly to further stress the importance of monitoring and to make clear that it will be used to alter the programs where necessary.

Comment 305: Some commenters suggested that the results from monitoring data for programs implemented under different limits

should be available for public comment. Another commenter urged that the process for reviewing the effectiveness of the fish protection measures include tribal managers, independent scientists, and the public.

Response: The results of monitoring data from programs within ESA 4(d) limits will be available for public review at the appropriate NMFS office. At this time, however, NMFS does not have a mechanism to seek formal public comment on the data. NMFS will continue to seek monitoring data, input, and other relevant information from co-managers and others as the programs are reviewed, evaluated, and adjusted.

Comment 306: Some commenters wanted to know why NMFS believes it is necessary to have such a detailed review and reporting process for the limits when FWS does not require anything like it for wildlife.

Response: As stated previously, this is a ground-breaking approach to managing threatened species. Its intent is to allow a maximum of local input while simultaneously offering the largest possible degree of protection for the species. It has never been tried before and, as a result, it is imperative that we keep a very close eye on its progress. Aside from the need for monitoring to allow the process to adapt, these rules will eventually become part of the larger recovery planning process. By closely examining the success of the proposed measures, we can get a much better idea of what it will take to fulfill the ultimate portion of our mandate: to recover the species.

Comment 307: One commenter recommended that NMFS work with FWS to make sure that Federal activities receive take prohibition limits under our ESA 4(d) rules similar to the ones being proposed for Bull trout. In addition, another commenter urged close coordination with FWS to prevent different interpretations of take and different limits being offered.

Response: NMFS always seeks to cooperate with FWS, and procedures have been established for joint consultation on ESA rulemaking and for reviewing Federal programs through section 7 of the ESA. NMFS anticipates that this cooperation will be strengthened as the 4(d) rule is implemented. NMFS will further work with FWS to ensure that the existing bull trout take prohibitions might be modified to reflect appropriate state or local efforts in parallel to this final rule.

Comment 308: Some tribal commenters were concerned that the 4(d) rules could serve as a "back door" to unfairly allocate the conservation burden on tribal governments. The

concern is that if the program is not scientifically rigorous enough, the Agency would be forced to turn to the tribes for additional conservation burden (i.e., limit fishing or development activities).

Response: NMFS intends to review all new proposed limitations rigorously for their contribution to the conservation of the species using existing criteria and additional site-specific tools. In addition, before any program is accepted, it will be published in the **Federal Register** for public review and comment. NMFS expects this process to be rigorous and open enough to permit the development of effective protective regulations and programs.

Comment 309: Some commenters stated that NMFS should delineate specific population parameters for several named populations (e.g., the Yuba River) so it can be determined if they may be exempted from having any take prohibitions placed on them. Some commenters wanted the rules to be eased when a viable population size is reached in order to give landowners an incentive to continue using protective measures.

Response: The limits on take prohibitions are given for specific activities, not for populations. If an activity helps conserve salmonids or if it adequately limits impacts on salmonids, it may receive a limitation on the take prohibitions. In the spirit of adaptive management, there may well come a point in the future where a population (and its ESU) has rebounded to the point where it is healthy enough, viable enough, that alternative management actions would be allowable. Of necessity, this would first take place in a highly controlled experimental environment that would allow researchers to determine the impacts of any new management scheme. Until that time, however, it is necessary to protect the salmonids while we get a better measure of population viability and place it firmly in the context of managing West Coast salmon. NMFS scientists are working diligently to accomplish that goal and will continue to use their results to adapt the agency's ongoing salmon management programs.

Comment 310: Some commenters stated that the overall regulatory scheme was too fragmented. They stated the need for a clear pathway for local and state governments to synthesize their programs with the ESA 4(d) approach. They also stated there should be a better recognition of the limitations local governments face in terms of staffing, funding, and ability to monitor.

Response: One of this final rule's purposes is to develop a process that is flexible, adaptable, and receptive to greater participation from local entities. In order to accomplish this, the regulatory scheme must remain somewhat open as well. Nonetheless, though NMFS desires to remain open to new approaches, we have also included a good deal of guidance as to what we believe any program should contain in terms of protective measures for salmon. Also, we will continue to do what we can to assist local entities, watershed councils, and others with instruction, technical assistance, and, whenever possible, funding.

Comment 311: Some commenters asserted that NMFS cannot anticipate how many states or local governments will be affected by the rule or how many entities or jurisdictions will apply for coverage under the new ESA 4(d) limits. Others commented that NMFS will be inundated and overwhelmed with requests for programs to come under a 4(d) limit and suggested simplified procedures streamlining the review and approval of future potential take limitations.

Response: NMFS is anticipating strong interest from state and local governments in the ESA 4(d) limits. We are encouraging jurisdictions to work together in developing plans that cover wide geographic scales and multiple activities—thus reducing the number of individual programs that need to be reviewed. Also, we anticipated that promulgating these rules would increase workloads and, as a result, we are evaluating our resource needs and are fully committed to meeting future program demands.

Comment 312: Several commenters suggested that NMFS provides no scientific basis to categorically apply the take prohibition to an entire category of activities such as agriculture, and that the agency provides no technical guidance on take avoidance.

Response: The take prohibitions do not apply to categories of activities, but to any activities that take listed species. The section on "Take Guidance" provides further information on those activities that have a high risk of take. NMFS stands ready to work with interested parties to provide further guidance, including guidance that could ultimately be included as a 4(d) limitation.

Comment 313: Several commenters were confused by multiple **Federal Register** documents and didn't realize that there were several separate ESA 4(d) rules.

Response: For the final rules, we have combined the chinook and the steelhead

rules to help reduce some of the confusion. We hope this, along with several changes in the rule's language will make things a bit more clear.

Changes to the Proposed ESA 4(d) Rules

The proposed rules included a lengthy preamble where NMFS provided technical guidance, description of the scientific principles upon which the limits on the take prohibition were based, and a description of the background and content of the 13 limits. The proposed regulatory language was included in sections 223.203 and 223.208.

Modifications to the proposed preamble sections based on written comments will be reflected in "A Citizen's Guide to the 4(d) Rule" (NMFS, 2000), while the actual changes to the regulatory language are described as follows.

An important change to highlight is that the final 4(d) rules for the different ESUs have different effective dates. In the final steelhead and salmon 4(d) rule the effective date for the steelhead ESUs (§ 223.102(a)(5) through (a)(9) and (a)(14) and (a)(15)) is September 8, 2000. The effective date for the salmon ESUs (§ 223.102(a)(10), (a)(12), (a)(13) and (a)(16) through (a)(19)) is January 8, 2001. NMFS recognizes that the final 4(d) rules are complex and that even the proposed rules created a certain amount of confusion among those who commented on them. The court-ordered settlement date requires NMFS to adopt protective regulations for the steelhead ESUs by June 19, 2000. NMFS, however, is not under a similar court-mandated time line for the salmon ESUs. Therefore, because of the rule's length and complexity, the diverse range of human activities that will potentially be affected, and the continued need to educate all sectors of the public, the effective date for the salmon ESUs will be six months after publication of this **Federal Register** document. This 6-month period will allow NMFS to educate and work with all jurisdictions, entities, and individuals affected by the rule. It will also provide additional time for them to review their activities and programs and adjust them (if needed) to avoid taking threatened species.

The general format of the proposed regulations included the prohibitions of section 9(a)(1) of the ESA (16 U.S.C. 1538) relating to endangered species being applied to the 14 listed threatened salmonid ESUs, except as provided in the 13 limits on application of the section 9(a)(1)(B) and 9(a)(1)(C) take prohibitions that are included in the regulation. The proposed rules listed the following 13 limit categories: (1)

Activities conducted in accord with

ESA incidental take authorization; (2) ongoing scientific research activities, for a period of 6 months from the publication of the final rule; (3) emergency actions related to injured, stranded, or dead salmonids; (4) fishery management activities; (5) hatchery and genetic management programs; (6) activities in compliance with joint tribal/state plans developed within *U.S. v. Washington* or *U.S. v. Oregon*; (7) scientific research activities permitted or conducted by the states; (8) state, local, and private habitat restoration activities; (9) properly screened water diversion devices; (10) routine road maintenance activities in Oregon; (11) certain park maintenance activities in the City of Portland, Oregon; (12) certain municipal, residential, commercial and industrial (MRCI) development and redevelopment activities; and (13) forest management activities within the state of Washington.

NMFS is modifying the final ESA 4(d) protective regulations for these 14 ESUs based on comments and new information received on the proposed rules. The following section summarizes how the regulatory language for each limit and technical issues did or did not change. The actual regulatory descriptions of each limit and technical information can be found in the regulatory text at the end of this **Federal Register** document.

Viable Salmonid Populations Paper

The proposed rules solicited public comments on the draft NMFS VSP paper. The VSP paper is not a separate limit, but provides a technical framework for the fishery management and hatchery management limits. Based on public comments regarding the draft VSP paper, changes were made in the regulatory language for the fishery and hatchery management limits to clarify how the VSP data requirements will be addressed. Additional compliance guidance is available in "A Citizen's Guide to the 4(d) Rule" (NMFS, 2000).

Properly Functioning Conditions

For the reasons identified in the Comment and Responses section, language was added to the limits addressing habitat issues, i.e., habitat restoration, pest management and routine road maintenance, in order to define properly functioning condition and how NMFS will evaluate the limits with regard to meeting this biological standard.

Legal and Affirmative Defense

For the reasons identified in the Comment and Responses section, regulation language was modified to: (1) add new language to make explicit that

it would be the defendant's obligation to plead and prove application of and compliance with a limit as an affirmative defense; (2) clarify the question about whether the rule should be non-severable, by making it explicit that NMFS intends the provisions of this rule to be severable.

Limit for Activities Conducted in Accord with ESA Incidental Take Authorization

No changes were made to the regulations pertaining to this limit. Additional compliance guidance is available from NMFS in "A Citizen's Guide to the 4(d) Rule" (NMFS, 2000).

Limit for Ongoing Scientific Research Activities

No changes were made to the regulations pertaining to this limit. Additional compliance guidance is available from NMFS in "A Citizen's Guide to the 4(d) Rule" (NMFS, 2000).

Limit for Rescue and Salvage Actions

No changes were made to the regulations pertaining to this limit. Additional compliance guidance is available from NMFS in "A Citizen's Guide to the 4(d) Rule" (NMFS, 2000).

Limit for Fishery Management Activities

For the reasons identified in the comment and response section, this limit was modified to: (1) change the use of a MOA between states and NMFS to a letter of concurrence from NMFS; (2) clarify the use of viable and critical salmonid population thresholds consistent with the VSP paper; (3) clarify the timing of reports describing take of listed salmonids; and (4) explain that the prohibitions on take of threatened steelhead in recreational fisheries managed solely by the states of Oregon, Washington, Idaho and California will go into effect January 8, 2001.

Limit for HGMPs

For the reasons identified in the comment and response section, this limit was modified to change the use of a MOA between states and NMFS to a letter of concurrence from NMFS.

Limit for Joint Tribal and State Plans

No changes were made to the regulations pertaining to this limit. Additional compliance guidance is available from NMFS in "A Citizen's Guide to the 4(d) Rule" (NMFS, 2000).

Limit for Scientific Research Activities Permitted or Conducted by the States

NMFS has revised the limit to reflect commenter concerns about the feasibility of adequate oversight by state

fishery agencies. Additional compliance guidance is available from NMFS in "A Citizen's Guide to the 4(d) Rule" (NMFS, 2000).

Limit for Habitat Restoration

For the reasons identified in the Comment and Responses section, this limit was modified to: (1) clarify that take prohibitions do not apply to habitat restoration activities provided the activity is part of a WCP that meets criteria listed in the regulation; (2) change the time frame to complete a watershed conservation plan from 2 years to an undetermined time, so that the limit is available whenever the criteria described in the regulation are met; (3) delete the list of six categories of habitat restoration activities that would not have the ESA section 9 take prohibitions applied to them for 2 years; (4) clarify and revise the criteria NMFS will use to evaluate a state's watershed conservation plan guidelines; and (5) clarify that NMFS will not approve individual WCPs; instead, NMFS will approve the WCP guidelines with each state and periodically review the state watershed planning programs for consistency with the guidelines. Additional compliance guidance is available from NMFS in "A Citizen's Guide to the 4(d) Rule" (NMFS, 2000).

Limit for Water Diversion Screening

For the reasons identified in the comment and response section, this limit was modified to: (1) allow NMFS-authorized state agency engineers ("authorized officers") to review and recommend certification of screen designs to NMFS rather than NMFS' engineers solely having this responsibility; and (2) allow NMFS, on a case by case basis, to grant this limit to water diversion projects where NMFS has approved a design construction plan and schedule, including interim operation measures to reduce the likelihood of take. NMFS may also require a commitment of compensatory mitigation if implementation of a plan and schedule is terminated prior to completion.

Limit for Routine Road Maintenance Activities

For the reasons identified in the comment and response section, this limit was modified to: (1) allow this limit to be available to any state, county, city, or port once they have demonstrated in writing that their routine road maintenance activities are equivalent to those in the ODOT Guide which adequately protect threatened salmonid species; or by employees or

agents of a state, county, city or port that complies with a routine road maintenance program that meets proper functioning habitat conditions; (2) add language referring to state, city, county, and ports; (3) change the time frame for ODOT or another jurisdiction to respond to new information in the shortest amount of time feasible, but not longer than one year; (4) clarify that prior to approving any state, city, county, or port program as within this limit, or approving any substantive change in a program within this limit, NMFS will publish notification in the **Federal Register**; (5) clarify that any jurisdiction should first commit in writing to apply the management practices in the ODOT Guide, rather than the proposed language, which first required the jurisdiction to enter into a memorandum of agreement with NMFS; and (6) add new language regarding properly functioning condition. Additional compliance guidance is available from NMFS in "A Citizen's Guide to the 4(d) Rule" (NMFS, 2000).

Limit for Certain Integrated Pesticide Management Activities

For the reasons identified in the Comment and Responses section, this limit was modified to: (1) add new language regarding properly functioning conditions; and (2) clarify language regarding how NMFS will address future program changes and provide public notice that the limit is withdrawn. Additional compliance guidance is available from NMFS in "A Citizen's Guide to the 4(d) Rule" (NMFS, 2000).

Limit for Municipal, Residential, Commercial and Industrial (MRCI) Development and Redevelopment Activities

For the reasons identified in the Comment and Responses section, this limit was modified to: (1) clarify that this limit applies to MRCI development and redevelopment undertaken by cities, counties, and regional governmental entities; (2) expand and clarify the content of the 12 evaluation considerations NMFS will use to review MRCI development ordinances and plans; (3) add new language to emphasize the properly functioning habitat conditions NMFS considers adequate to conserve listed salmonids; (4) clarify that NMFS notes that not all 12 considerations described in the regulation will necessarily be relevant to all ordinances and plans submitted for review and approval; and (5) include language which clarifies the process NMFS will use to provide notice of availability of ordinances and plans for

public review, and NMFS' process to amend or withdraw limits.

Limit for Forest Management Activities in the State of Washington

For the reasons identified in the Comment and Responses section, this limit was modified to add new language stating that actions taken under alternative plans are included in this limit provided that they meet the requirements stated in the regulation and are submitted and approved by the authorized Washington state agency.

Take Guidance

These threatened species are in danger of becoming extinct in the foreseeable future. They have been depleted by over-fishing, past and ongoing freshwater and estuarine habitat destruction, hydropower development, hatchery practices, and other causes. It is, therefore, necessary and advisable to put into place ESA section 9(a)(1) prohibitions to aid in their conservation. Section 9(a)(1) prohibitions make it illegal for any person subject to the United States' jurisdiction to "take" these species without written authorization ("take" is defined to occur when a person engages in activities that harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect a species or attempt to do any of these). Impacts on a protected species' habitat may harm members of that species and, therefore, constitute a "take" under the ESA. Such an act may include significant habitat modification or degradation that actually kills or injures listed fish by significantly impairing essential behavioral patterns including breeding, spawning, rearing, migrating, feeding, or sheltering.

On July 1, 1994 (59 FR 34272), NMFS and FWS published a policy committing both agencies to identify, to the extent possible, those activities that would or would not violate section 9 of the ESA. The intent of this policy is to increase public awareness about ESA compliance and focus public attention on those actions needed to protect species.

Based on available information, NMFS believes the categories of activities listed here are those activities which as a general rule may be most likely to result in injury or harm to listed salmonids. NMFS wishes to emphasize at the outset that whether injury or harm is resulting from a particular activity is entirely dependent upon the facts and circumstances of each case. The mere fact that an activity may fall within one of these categories does not at all mean that that specific activity is causing harm or injury. These types of activities are, however, those

that may be most likely to cause harm and thus violate this rule. NMFS' ESA enforcement will therefore focus on these categories of activities.

Activities listed in A thru J below are as cited in NMFS' harm rule 64 FR 215 (November 8, 1999).

A. Constructing or maintaining barriers that eliminate or impede a listed species' access to habitat or ability to migrate.

B. Discharging pollutants, such as oil, toxic chemicals, radioactivity, carcinogens, mutagens, teratogens or organic nutrient-laden water including sewage water into a listed species' habitat.

C. Removing, poisoning, or contaminating plants, fish, wildlife, or other biota required by the listed species for feeding, sheltering, or other essential behavioral patterns.

D. Removing or altering rocks, soil, gravel, vegetation or other physical structures that are essential to the integrity and function of a listed species' habitat.

E. Removing water or otherwise altering streamflow when it significantly impairs spawning, migration, feeding or other essential behavioral patterns.

F. Releasing non-indigenous or artificially propagated species into a listed species' habitat or where they may access the habitat of listed species.

G. Constructing or operating dams or water diversion structures with inadequate fish screens or fish passage facilities in a listed species' habitat.

H. Constructing, maintaining, or using inadequate bridges, roads, or trails on stream banks or unstable hill slopes adjacent to or above a listed species' habitat.

I. Conducting timber harvest, grazing, mining, earth-moving, or other operations which result in substantially increased sediment input into streams.

J. Conducting land-use activities in riparian areas and areas susceptible to mass wasting and surface erosion, which may disturb soil and increase sediment delivered to streams, such as logging, grazing, farming, and road construction.

K. Illegal fishing. Harvest in violation of fishing regulations will be a top enforcement concern.

L. Various streambed disturbances may trample eggs or trap adult fish preparing to spawn. The disturbance could be mechanical disruption caused by constructing push-up dams, removing gravel, mining, or other work in a stream channel. It may also take the form of egg trampling or smothering by livestock in the streambed or by vehicles or equipment being driven

across or down the streambed (as well as any similar physical disruptions).

M. Interstate and foreign commerce dealing in listed salmonids and importing or exporting listed salmonids may harm the fish unless it can be shown—through an ESA permit—that they were harvested in a manner that complies with ESA requirements.

N. Altering lands or waters in a manner that promotes unusual concentrations of predators.

O. Shoreline and riparian disturbances (whether in the riverine, estuarine, marine, or floodplain environment) may retard or prevent the development of certain habitat characteristics upon which the fish depend (e.g., removing riparian trees reduces vital shade and cover, floodplain gravel mining, development, and armoring shorelines reduces the input of critical spawning substrates, and bulkhead construction can eliminate shallow water rearing areas).

P. Filling or isolating side channels, ponds, and intermittent waters (e.g., installing tide gates and impassable culverts) can destroy habitats that the fish depend upon for refuge areas during high flows.

The list provides examples of the types of activities that could have a high risk of resulting in take but it is by no means exhaustive. It is intended to help people avoid violating the ESA and to encourage efforts to save the species. Determination of whether take has actually occurred depends on the circumstances of a particular case.

Many activities that may kill or injure salmonids are regulated by state and/or Federal processes, such as fill and removal authorities, NPDES or other water quality permitting, pesticide use, and the like. For those types of activities, NMFS would not intend to concentrate enforcement efforts on those who operate in conformity with current permits. Rather, if the regulatory program does not provide adequate salmonid protection, NMFS intends to work with the responsible agency to make necessary changes in the program.

For instance, concentrations of pesticides may affect salmonid behavior and reproductive success. Current EPA label requirements were developed in the absence of information about some of these subtle but real impacts on aquatic species such as salmonids. Where new information indicates that label requirements are not adequately protective of salmonids, NMFS will work with EPA through the section 7 consultation process to develop more protective use restrictions, and thereby provide the best possible guidance to all users. Similarly, where water quality

standards or state authorizations lead to pollution loads that may cause take, NMFS intends to work with the state water quality agencies and EPA to bring those standards or permitting programs to a point that does protect salmonids.

Persons or entities who conclude that their activity is likely to injure or kill protected fish are encouraged to immediately adjust that activity to avoid take (or adequately limit any impacts on the species) and seek NMFS' authorization for incidental take under (a) an ESA section 10 incidental take permit; (b) an ESA section 7 consultation; or (c) a limit on the take prohibitions provided in this rule. The public is encouraged to contact NMFS (see **FOR FURTHER INFORMATION CONTACT**) for assistance in determining whether circumstances at a particular location (involving these activities or any others) constitute a violation of this rule.

State and local efforts like the Oregon Plan for Salmon and Watersheds, the State of Washington's Extinction is Not an Option Plan, Metro's Functional Plan, the Puget Sound Tri-County Initiative and Lower Columbia Fish Recovery Board in Washington state, the Eugene, Oregon-area Metro ESA Coordinating Team, and the Willamette Restoration Initiative (WRI) have stepped forward and assumed leadership roles in saving these species. NMFS reiterates its support for these efforts and encourages them to resolve critical uncertainties and further develop their programs so they can take the place of blanket ESA take prohibitions.

Impacts on listed salmonids resulting from actions in compliance with a permit issued by NMFS pursuant to section 10 of the ESA are not violations of this rule. Section 10 permits may be issued for research activities, enhancement of a species' survival, or to authorize incidental take occurring in the course of an otherwise lawful activity. NMFS consults on a broad range of activities conducted, funded, or authorized by Federal agencies. These include fisheries harvest, hatchery operations, silviculture activities, grazing, mining, road construction, dam construction and operation, discharge of fill material, and stream channelization and diversion. Federally-funded or approved activities that affect listed salmonids and for which ESA section 7 consultations have been completed and any take authorized, will not constitute violations of this rule—provided the activities are conducted in accord with all reasonable and prudent measures, terms, and conditions stated in the consultation and incidental take permit.

References

A list of references cited in this final rule is available upon request (see **ADDRESSES**).

Classification

Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) (5 U.S.C. 601–612) was designed to ensure that agencies carefully assess whether aspects of a proposed regulatory scheme (record keeping, safety requirements, etc.) can be tailored to be less burdensome for small businesses while still achieving the agency's statutory responsibilities. NMFS prepared an initial regulatory flexibility analysis (IRFA) which was made available through the proposed rule. Several public comments were received related to the IRFA or to economic impacts generally. Those comments and NMFS responses to them are summarized in the Response to Comments section. NMFS has prepared a Regulatory Impact Review (RIR) and a Final Regulatory Flexibility Analysis (FRFA), taking into consideration the public comments received. A summary of the final FRFA follows. The FRFA is available upon request (see **ADDRESSES**), or may be accessed on NMFS web site at www.nwr.noaa.gov.

This ESA 4(d) rule has no specific requirements for regulatory compliance; it essentially sets an enforceable performance standard (do not take listed fish) that applies to all entities and individuals within the ESU unless that activity is within a carefully circumscribed set of activities on which NMFS will not impose the take prohibitions. Hence, the universe of entities reasonably expected to be directly or indirectly impacted by the prohibition is broad.

The geographic range of these regulations crosses four states and the number of entities potentially affected by imposition of take prohibitions is substantial. Activities potentially affecting salmonids are those associated with agriculture, forestry, fishing, mining, heavy construction, highway and street construction, logging, wood and paper mills, electric services, water transportation, tourism, real estate, and other industries. As many of these activities involve local, state, and Federal oversight, including permitting, governmental activities from the smallest towns or planning units to the largest cities will also be impacted. The activities of some nonprofit organizations will also be affected by these regulations.

NMFS examined in as much detail as practical the potential impact of the

regulation on a sector by sector basis. Unavailable or inadequate data leaves a high degree of uncertainty surrounding both the numbers of entities likely to be affected, and the characteristics of any impacts on particular entities. The problem is complicated by differences among entities even in the same sector as to the nature and size of their current operations, proximity to waterways, the degree to which the operation is already protective of salmonids, and individual strategies for dealing with the take prohibitions.

There are no recordkeeping or reporting requirements associated with the take prohibition and, therefore, it is not possible to simplify or tailor recordkeeping or reporting to be less burdensome for small entities. Some limits, for which NMFS has found it not necessary to prohibit take, involve recordkeeping and/or reporting to support that continuing determination. NMFS has attempted to minimize any burden associated with programs for which the take prohibitions are not enacted. The final rule does not duplicate, overlap, or conflict with any other relevant Federal rules.

In formulating this rule, NMFS considered several alternative approaches, described in more detail in the FRFA. These included:

(1) Enacting a "global" protective regulation for threatened species, through which section 9 take prohibitions are applied automatically to all threatened species at the time of listing; (2) ESA 4(d) protective regulations with no limits, or only a few limits, on the application of the take prohibition for relatively uncontroversial activities such as fish rescue/salvage; (3) take prohibitions in combination with detailed prescriptive requirements applicable to one or more sectors of activity; (4) ESA 4(d) protective regulations similar to the existing interim 4(d) protective regulations for Southern Oregon/Northern California coast coho, which includes four limits on the take prohibition for harvest plans, hatchery plans, scientific research, and habitat restoration projects, when in conformance with specified criteria; (5) a protective regulation similar to the interim rule, but with recognition of more programs and circumstances in which application of take prohibitions is not necessary and advisable; (6) an option earlier advocated by the State of Oregon and others, in which ESA section 9 take prohibitions would not be applied to any activity addressed by the Oregon Plan for Salmon and Watersheds, fundamentally deferring protections to the state; and (7) enacting

no protective regulations for threatened steelhead. The first four alternatives would place greater burdens on small entities. Alternative 6 would not provide sufficient protections (see response to comments), while alternative 7 would leave the ESUs without any protection other than provided by ESA section 7 consultations for actions with some Federal nexus. NMFS could not support that approach as being consistent with the obligation to enact such protective regulations as are "necessary and advisable to provide for the conservation of" the listed steelhead. Alternative 5 is the approach taken in this rule.

As a result of comments received related to the proposed rules and IRFAs, NMFS has modified the regulations to broaden the applicability of some limits, and to make them more flexible. For instance, the road maintenance limit is now generally available. The limit for development has been broadened to cover a greater range of types of plans or ordinances, and has been modified to allow for circumstances where a jurisdiction's ordinances may not address all of the evaluation criteria, but nonetheless are adequate for a limit for those aspects addressed. These types of adjustments provide additional options for jurisdictions that may wish to seek ESA compliance assurances.

NMFS concludes that at the present time there are no legally viable alternatives to the final rule, as modified from the proposals, that would have less impact on small entities and still fulfill the agency's obligations to protect listed salmonids. The first four alternatives may result in unnecessary impacts on economic activity of small entities, given NMFS' judgment that more limited protections would suffice to conserve the species.

Executive Order 12866

Under E.O. 12866 (58 FR 51735, October 4, 1993), NMFS has prepared a Regulatory Impact Review (RIR) which considers costs and benefits of available regulatory alternatives, including the alternative of not regulating. Costs and benefits include both quantifiable measures (to the fullest extent that these can be usefully estimated) and qualitative measures of costs and benefits where estimates cannot be meaningfully made for impacts that are essential to consider. We cannot quantify the economic effect of this rule, given the geographic scope and the size and economic dimensions of the potentially affected economic sectors that operate within the ESUs, but have considered costs and benefits qualitatively in structuring the rule.

Although only a share of the benefits from the recovery of threatened salmonids to a sustainable level would be attributable to this rule, it is clear that the potential costs associated with imposing take prohibitions to protect those salmonids are associated with substantial potential tangible and intangible returns.

The ESA limits NMFS to alternatives that lead to recovery, but in choosing among alternatives, we are obligated to consider taking the least cost path. NMFS has concluded that among the alternative regulatory approaches, the approach in this final rule (with changes made in response to public comment) will maximize net benefits (including potential economic, environmental, public health and safety, and other advantages, distributive impacts; and equity) and minimize costs, within the constraints of the ESA. Because this alternative exempts activities that fall within adequate state or local programs, NMFS' involvement will be more collaborative and less often require enforcement actions. This alternative has the greatest probability that compliance burdens will be equally shared, that economic incentives will be employed in appropriate cases, and that practical standards adapted to the particular characteristics of a state or region will aid citizens in reducing the risks of take in an efficient way. For these reasons, it is likely that this alternative will minimize the financial burden on the public of avoiding take over the long term.

Executive Order 13084 Consultation and Coordination with Indian Tribal Governments

E.O. 13084 requires that if NMFS issues a regulation that significantly or uniquely affects the communities of Indian tribal governments and imposes substantial direct compliance costs on those communities, NMFS must consult with those governments or the Federal government must provide the funds necessary to pay the direct compliance costs incurred by the tribal governments. This rule does not impose substantial direct compliance costs on the communities of Indian tribal governments. Accordingly, the requirements of section 3(b) of E.O. 13084 do not apply to this final rule.

Nonetheless, NMFS took several steps to inform tribal governments and solicit their input during development of the proposed rule, and made numerous adjustments to the proposal as a result of those contacts. A number of Indian tribal governments, as well as both the Columbia River Intertribal and Northwest Indian Fisheries

Commissions, commented formally on the proposed rules. In addition, NMFS has continued both informal exchanges with tribal representatives and meetings with tribal officials. These exchanges have resulted in some refinements of the rule, as well as greater appreciation by NMFS of the challenges ahead as it implements the rule. NMFS has proposed an ongoing, regular meeting schedule to assure continued exchange of information with the numerous tribal governments on matters of interest, including matters associated with this rule.

Executive Order 13132—Federalism

E.O. 13132 requires agencies to take into account any federalism impacts of regulations under development. It includes specific consultation directives for situations where a regulation will preempt state law, or impose substantial direct compliance costs on state and local governments (unless required by statute). Neither of those circumstances is applicable to this rule. In fact, this rule provides a route by which NMFS may defer to state and local government programs, where they provide necessary protections for threatened salmonids.

Although not required by E.O. 13132, in keeping with the intent of the Administration and Congress to provide continuing and meaningful dialogue on issues of mutual state and Federal interest, NMFS conferred with numerous state, local and other governmental entities while preparing the proposed rules, and has had continued informal and formal contacts with all affected states. We have held workshops explaining the rule to interested local or regional entities and exploring possible implementation strategies as well as options for future limits with those attending.

In addition to these efforts, NMFS staff have given numerous presentations to interagency forums, community groups, and others, and served on a number of interagency advisory groups or task forces considering conservation measures. Many cities, counties and other local governments have sought guidance and consideration of their planning efforts from NMFS, and NMFS staff have met with them as rapidly as our resources permit. Finally, NMFS' Sustainable Fisheries Division staff have continued close coordination with state fisheries agencies toward development of artificial propagation and harvest plans and programs that will be protective of listed salmonids and ultimately may be recognized within this rule. NMFS expects to continue to work with all of these entities in implementing this rule.

Paperwork Reduction Act

Notwithstanding any other provision of the law, no person is required to respond to, nor shall any person be subject to a penalty for failure to comply with, a collection of information subject to the requirements of the PRA, unless that collection of information displays a currently valid OMB Control Number.

This rule contains collection-of-information requirements subject to the Paperwork Reduction Act (PRA) and which have been approved by OMB under control number 0648-0399. Public reporting burden per response for this collection of information is estimated to average 5 hours for a submission on diversion screenings or for a report on salmonids assisted, disposed of, or salvaged; 20 hours to prepare a road maintenance agreement; 30 hours for an urban ordinance development package; and 10 hours for an urban development annual report. These estimates include the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding these burden estimates, or any other aspect of this data collection, including suggestions for reducing the burden, to NMFS (see ADDRESSES) and to OMB at the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC. 20503 (Attention: NOAA Desk Officer).

National Environmental Policy Act

NMFS prepared an Environmental Assessment (EA), as defined under the authority of the National Environmental Policy Act (NEPA) of 1969, in connection with this regulation. Based on review and evaluation of the information contained in the EA, we determined that the proposed action to promulgate protective regulations for 14 threatened salmonid ESUs, and to create limits on the applicability of the prohibition on taking any of those salmonids would not be a major Federal action that would significantly affect the quality of the human environment within the meaning of section 102(2)(c) of NEPA of 1969. NMFS received a number of comments related to NEPA compliance, which are summarized together with responses elsewhere in this notice. NMFS believes the EA examined appropriate alternatives, and that preparation of an EIS is not required. Accordingly, we adhere to our prior Finding of No Significant Impact (FONSI) for this action. The EA and FONSI are available (see ADDRESSES).

List of Subjects in 50 CFR Part 223

Endangered and threatened species, Exports, Imports, Marine mammals, Transportation,

Dated: June 19, 2000.

Andrew A. Rosenberg,

Deputy Assistant Administrator for Fisheries, National Marine Fisheries Service.

For reasons set out in the preamble, 50 CFR part 223 is amended as follows:

PART 223—THREATENED MARINE AND ANADROMOUS SPECIES

1. The authority citation for part 223 is revised to read as follows:

Authority: 16 U.S.C. 1531-1543; subpart B, § 223.12 also issued under 16 U.S.C. 1361 *et seq.*

2. Section 223.203 is revised to read as follows:

§ 223.203 Anadromous fish.

(a) *Prohibitions.* The prohibitions of section 9(a)(1) of the ESA (16 U.S.C. 1538(a)(1)) relating to endangered species apply to the threatened species of salmonids listed in § 223.102(a)(1) through (a)(10), and (a)(12) through (a)(19), except as provided in paragraph (b) of this section and § 223.209(a).

(b) *Limits on the prohibitions.* (1) The exceptions of section 10 of the ESA (16 U.S.C. 1539) and other exceptions under the Act relating to endangered species, including regulations in part 222 of this chapter II implementing such exceptions, also apply to the threatened species of salmonids listed in § 223.102(a)(1) through (a)(10), and (a)(12) through (a)(19).

(2) The prohibitions of paragraph (a) of this section relating to threatened species of salmonids listed in § 223.102(a)(5) through (a)(10), and (a)(12) through (a)(19) do not apply to activities specified in an application for a permit for scientific purposes or to enhance the conservation or survival of the species, provided that the application has been received by the Assistant Administrator for Fisheries, NOAA (AA), no later than October 10, 2000. The prohibitions of paragraph (a) of this section apply to these activities upon the AA's rejection of the application as insufficient, upon issuance or denial of a permit, or March 7, 2001, whichever occurs earliest.

(3) The prohibitions of paragraph (a) of this section relating to threatened species of salmonids listed in § 223.102(a)(4) through (a)(10), and (a)(12) through (a)(19) do not apply to any employee or designee of NMFS, the United States Fish and Wildlife Service, any Federal land management agency, the Idaho Department of Fish and Game (IDFG), Washington Department of Fish

and Wildlife (WDFW), the Oregon Department of Fish and Wildlife (ODFW), California Department of Fish and Game (CDFG), or of any other governmental entity that has co-management authority for the listed salmonids, when the employee or designee, acting in the course of his or her official duties, takes a threatened salmonid without a permit if such action is necessary to:

- (i) Aid a sick, injured, or stranded salmonid,
- (ii) Dispose of a dead salmonid, or
- (iii) Salvage a dead salmonid which may be useful for scientific study.
- (iv) Each agency acting under this limit on the take prohibitions of paragraph (a) of this section is to report to NMFS the numbers of fish handled and their status, on an annual basis. A designee of the listed entities is any individual the Federal or state fishery agency or other co-manager has authorized in writing to perform the listed functions.

(4) The prohibitions of paragraph (a) of this section relating to threatened species of salmonids listed in § 223.102 (a)(5) through (a)(10), and (a)(12) through (a)(19) do not apply to fishery harvest activities provided that:

(i) Fisheries are managed in accordance with a NMFS-approved Fishery Management and Evaluation Plan (FMEP) and implemented in accordance with a letter of concurrence from NMFS. NMFS will approve an FMEP only if it clearly defines its intended scope and area of impact and sets forth the management objectives and performance indicators for the plan. The plan must adequately address the following criteria:

(A) Define populations within affected listed ESUs, taking into account spatial and temporal distribution, genetic and phenotypic diversity, and other appropriate identifiable unique biological and life history traits. Populations may be aggregated for management purposes when dictated by information scarcity, if consistent with survival and recovery of the listed ESU. In identifying management units, the plan shall describe the reasons for using such units in lieu of population units, describe how the management units are defined, given biological and life history traits, so as to maximize consideration of the important biological diversity contained within the listed ESU, respond to the scale and complexity of the ESU, and help ensure consistent treatment of listed salmonids across a diverse geographic and jurisdictional range.

(B) Utilize the concepts of "viable" and "critical" salmonid population

thresholds, consistent with the concepts contained in the technical document entitled "Viable Salmonid Populations (NMFS, 2000b)." The VSP paper provides a framework for identifying the biological requirements of listed salmonids, assessing the effects of management and conservation actions, and ensuring that such actions provide for the survival and recovery of listed species. Proposed management actions must recognize the significant differences in risk associated with viable and critical population threshold states and respond accordingly to minimize the long-term risks to population persistence. Harvest actions impacting populations that are functioning at or above the viable threshold must be designed to maintain the population or management unit at or above that level. For populations shown with a high degree of confidence to be above critical levels but not yet at viable levels, harvest management must not appreciably slow the population's achievement of viable function. Harvest actions impacting populations that are functioning at or below critical threshold must not be allowed to appreciably increase genetic and demographic risks facing the population and must be designed to permit the population's achievement of viable function, unless the plan demonstrates that the likelihood of survival and recovery of the entire ESU in the wild would not be appreciably reduced by greater risks to that individual population.

(C) Set escapement objectives or maximum exploitation rates for each management unit or population based on its status and on a harvest program that assures that those rates or objectives are not exceeded. Maximum exploitation rates must not appreciably reduce the likelihood of survival and recovery of the ESU. Management of fisheries where artificially propagated fish predominate must not compromise the management objectives for commingled naturally spawned populations.

(D) Display a biologically based rationale demonstrating that the harvest management strategy will not appreciably reduce the likelihood of survival and recovery of the ESU in the wild, over the entire period of time the proposed harvest management strategy affects the population, including effects reasonably certain to occur after the proposed actions cease.

(E) Include effective monitoring and evaluation programs to assess compliance, effectiveness, and parameter validation. At a minimum, harvest monitoring programs must

collect catch and effort data, information on escapements, and information on biological characteristics, such as age, fecundity, size and sex data, and migration timing.

(F) Provide for evaluating monitoring data and making any revisions of assumptions, management strategies, or objectives that data show are needed.

(G) Provide for effective enforcement and education. Coordination among involved jurisdictions is an important element in ensuring regulatory effectiveness and coverage.

(H) Include restrictions on resident and anadromous species fisheries that minimize any take of listed species, including time, size, gear, and area restrictions.

(I) Be consistent with plans and conditions established within any Federal court proceeding with continuing jurisdiction over tribal harvest allocations.

(ii) The state monitors the amount of take of listed salmonids occurring in its fisheries and provides to NMFS on a regular basis, as defined in NMFS' letter of concurrence for the FMEP, a report summarizing this information, as well as the implementation and effectiveness of the FMEP. The state shall provide NMFS with access to all data and reports prepared concerning the implementation and effectiveness of the FMEP.

(iii) The state confers with NMFS on its fishing regulation changes affecting listed ESUs to ensure consistency with the approved FMEP. Prior to approving a new or amended FMEP, NMFS will publish notification in the **Federal Register** announcing its availability for public review and comment. Such an announcement will provide for a comment period on the draft FMEP of not less than 30 days.

(iv) NMFS provides written concurrence of the FMEP which specifies the implementation and reporting requirements. NMFS' approval of a plan shall be a written approval by NMFS Southwest or Northwest Regional Administrator, as appropriate. On a regular basis, NMFS will evaluate the effectiveness of the program in protecting and achieving a level of salmonid productivity commensurate with conservation of the listed salmonids. If it is not, NMFS will identify ways in which the program needs to be altered or strengthened. If the responsible agency does not make changes to respond adequately to the new information, NMFS will publish notification in the **Federal Register** announcing its intention to withdraw the limit for activities associated with that FMEP. Such an announcement will

provide for a comment period of not less than 30 days, after which NMFS will make a final determination whether to withdraw the limit so that the prohibitions would then apply to those fishery harvest activities. A template for developing FMEPs is available from NMFS Northwest Region's website (www.nwr.noaa.gov).

(v) The prohibitions of paragraph (a) of this section relating to threatened species of steelhead listed in § 223.102 (a)(5) through (a)(9), (a)(14), and (a)(15) do not apply to fisheries managed solely by the states of Oregon, Washington, Idaho, and California until January 8, 2001.

(5) The prohibitions of paragraph (a) of this section relating to threatened species of salmonids listed in § 223.102 (a)(5) through (a)(10), and (a)(12) through (a)(19) do not apply to activity associated with artificial propagation programs provided that:

(i) A state or Federal Hatchery and Genetics Management Plan (HGMP) has been approved by NMFS as meeting the following criteria:

(A) The HGMP has clearly stated goals, performance objectives, and performance indicators that indicate the purpose of the program, its intended results, and measurements of its performance in meeting those results. Goals shall address whether the program is intended to meet conservation objectives, contribute to the ultimate sustainability of natural spawning populations, and/or intended to augment tribal, recreational, or commercial fisheries. Objectives should enumerate the results desired from the program that will be used to measure the program's success or failure.

(B) The HGMP utilizes the concepts of viable and critical salmonid population threshold, consistent with the concepts contained in the technical document entitled "Viable Salmonid Populations" (NMFS, 2000b). Listed salmonids may be purposefully taken for broodstock purposes only if the donor population is currently at or above the viable threshold and the collection will not impair its function; if the donor population is not currently viable but the sole objective of the current collection program is to enhance the propagation or survival of the listed ESU; or if the donor population is shown with a high degree of confidence to be above critical threshold although not yet functioning at viable levels, and the collection will not appreciably slow the attainment of viable status for that population.

(C) Taking into account health, abundances, and trends in the donor population, broodstock collection

programs reflect appropriate priorities. The primary purpose of broodstock collection programs of listed species is to reestablish indigenous salmonid populations for conservation purposes. Such programs include restoration of similar, at-risk populations within the same ESU, and reintroduction of at-risk populations to underseeded habitat. After the species' conservation needs are met and when consistent with survival and recovery of the ESU, broodstock collection programs may be authorized by NMFS for secondary purposes, as to sustain tribal, recreational, and commercial fisheries.

(D) The HGMP includes protocols to address fish health, broodstock collection, broodstock spawning, rearing and release of juveniles, deposition of hatchery adults, and catastrophic risk management.

(E) The HGMP evaluates, minimizes, and accounts for the propagation program's genetic and ecological effects on natural populations, including disease transfer, competition, predation, and genetic introgression caused by the straying of hatchery fish.

(F) The HGMP describes interrelationships and interdependencies with fisheries management. The combination of artificial propagation programs and harvest management must be designed to provide as many benefits and as few biological risks as possible for the listed species. For programs whose purpose is to sustain fisheries, HGMPs must not compromise the ability of FMEPs or other management plans to conserve listed salmonids.

(G) Adequate artificial propagation facilities exist to properly rear progeny of naturally spawned broodstock, to maintain population health and diversity, and to avoid hatchery-influenced selection or domestication.

(H) Adequate monitoring and evaluation exist to detect and evaluate the success of the hatchery program and any risks potentially impairing the recovery of the listed ESU.

(I) The HGMP provides for evaluating monitoring data and making any revisions of assumptions, management strategies, or objectives that data show are needed;

(J) NMFS provides written concurrence of the HGMP which specifies the implementation and reporting requirements. For Federally operated or funded hatcheries, the ESA section 7 consultation will achieve this purpose.

(K) The HGMP is consistent with plans and conditions set within any Federal court proceeding with

continuing jurisdiction over tribal harvest allocations.

(ii) The state monitors the amount of take of listed salmonids occurring in its hatchery program and provides to NMFS on a regular basis a report summarizing this information, and the implementation and effectiveness of the HGMP as defined in NMFS' letter of concurrence. The state shall provide NMFS with access to all data and reports prepared concerning the implementation and effectiveness of the HGMP.

(iii) The state confers with NMFS on a regular basis regarding intended collections of listed broodstock to ensure congruity with the approved HGMP.

(iv) Prior to final approval of an HGMP, NMFS will publish notification in the **Federal Register** announcing its availability for public review and comment for a period of at least 30 days.

(v) NMFS' approval of a plan shall be a written approval by NMFS Southwest or Northwest Regional Administrator, as appropriate.

(vi) On a regular basis, NMFS will evaluate the effectiveness of the HGMP in protecting and achieving a level of salmonid productivity commensurate with the conservation of the listed salmonids. If the HGMP is not effective, the NMFS will identify to the jurisdiction ways in which the program needs to be altered or strengthened. If the responsible agency does not make changes to respond adequately to the new information, NMFS will publish notification in the **Federal Register** announcing its intention to withdraw the limit on activities associated with that program. Such an announcement will provide for a comment period of no less than 30 days, after which NMFS will make a final determination whether to withdraw the limit so that take prohibitions, like all other activity not within a limit, would then apply to that program. A template for developing HGMPs is available from NMFS Northwest Region's website (www.nwr.noaa.gov).

(6) The prohibitions of paragraph (a) of this section relating to threatened species of salmonids listed in § 223.102 (a)(7), (a)(8), (a)(10), and (a)(12) through (a)(19) do not apply to actions undertaken in compliance with a resource management plan developed jointly by the States of Washington, Oregon and/or Idaho and the Tribes (joint plan) within the continuing jurisdiction of *United States v. Washington or United States v. Oregon*, the on-going Federal court proceedings to enforce and implement reserved treaty fishing rights, provided that:

(i) The Secretary has determined pursuant to 50 CFR 223.209 and the government-to-government processes therein that implementing and enforcing the joint tribal/state plan will not appreciably reduce the likelihood of survival and recovery of affected threatened ESUs.

(ii) The joint plan will be implemented and enforced within the parameters set forth in *United States v. Washington* or *United States v. Oregon*.

(iii) In making that determination for a joint plan, the Secretary has taken comment on how any fishery management plan addresses the criteria in § 223.203(b)(4), or on how any hatchery and genetic management plan addresses the criteria in § 223.203(b)(5).

(iv) The Secretary shall publish notice in the **Federal Register** of any determination whether or not a joint plan, will appreciably reduce the likelihood of survival and recovery of affected threatened ESUs, together with a discussion of the biological analysis underlying that determination.

(v) On a regular basis, NMFS will evaluate the effectiveness of the joint plan in protecting and achieving a level of salmonid productivity commensurate with conservation of the listed salmonids. If the plan is not effective, then NMFS will identify to the jurisdiction ways in which the joint plan needs to be altered or strengthened. If the responsible agency does not make changes to respond adequately to the new information, NMFS will publish notification in the **Federal Register** announcing its intention to withdraw the limit on activities associated with that joint plan. Such an announcement will provide for a comment period of no less than 30 days, after which NMFS will make a final determination whether to withdraw the limit so that take prohibitions would then apply to that joint plan as to all other activity not within a limit.

(7) The prohibitions of paragraph (a) of this section relating to threatened species of salmonids listed in § 223.102(a)(5) through (a)(10), and (a)(12) through (a)(19) do not apply to scientific research activities provided that:

(i) Scientific research activities involving purposeful take is conducted by employees or contractors of the ODFW, WDFW (Agencies), IDFG, or CDFG (Agencies), or as a part of a monitoring and research program overseen by or coordinated with that Agency.

(ii) The Agencies provide for NMFS' review and approval a list of all scientific research activities involving direct take planned for the coming year,

including an estimate of the total direct take that is anticipated, a description of the study design, including a justification for taking the species and a description of the techniques to be used, and a point of contact.

(iii) The Agencies annually provide to NMFS the results of scientific research activities directed at threatened salmonids, including a report of the direct take resulting from the studies and a summary of the results of such studies.

(iv) Scientific research activities that may incidentally take threatened salmonids are either conducted by agency personnel, or are in accord with a permit issued by the Agency.

(v) The Agencies provide NMFS annually, for its review and approval, a report listing all scientific research activities it conducts or permits that may incidentally take threatened salmonids during the coming year. Such reports shall also contain the amount of incidental take of threatened salmonids occurring in the previous year's scientific research activities and a summary of the results of such research.

(vi) Electrofishing in any body of water known or suspected to contain threatened salmonids is conducted in accordance with NMFS "Guidelines for Electrofishing Waters Containing Salmonids Listed Under the Endangered Species Act" (NMFS, 2000a).

(vii) NMFS' approval of a research program shall be a written approval by NMFS Northwest or Southwest Regional Administrator.

(8) The prohibitions of paragraph (a) of this section relating to threatened species of salmonids listed in § 223.102(a)(5) through (a)(10), and (a)(12), through (a)(19) do not apply to habitat restoration activities, as defined in paragraph (b)(8)(iv) of this section, provided that the activity is part of a watershed conservation plan, and:

(i) The watershed conservation plan has been certified by the State of Washington, Oregon, Idaho, or California (State) to be consistent with the state's watershed conservation plan guidelines.

(ii) The State's watershed conservation plan guidelines have been found by NMFS to provide for plans that:

(A) Take into account the potential severity of direct, indirect, and cumulative impacts of proposed activities in light of the status of affected species and populations.

(B) Will not reduce the likelihood of either survival or recovery of listed species in the wild.

(C) Ensure that any taking will be incidental.

(D) Minimize and mitigate any adverse impacts.

(E) Provide for effective monitoring and adaptive management.

(F) Use the best available science and technology, including watershed analysis.

(G) Provide for public and scientific review and input.

(H) Include any measures that NMFS determines are necessary or appropriate.

(I) Include provisions that clearly identify those activities that are part of plan implementation.

(J) Control risk to listed species by ensuring funding and implementation of the above plan components.

(iii) NMFS will periodically review state certifications of Watershed Conservation Plans to ensure adherence to approved watershed conservation plan guidelines.

(iv) "Habitat restoration activity" is defined as an activity whose primary purpose is to restore natural aquatic or riparian habitat conditions or processes. "Primary purpose" means the activity would not be undertaken but for its restoration purpose.

(v) Prior to approving watershed conservation plan guidelines under paragraph (b)(8)(ii) of this section, NMFS will publish notification in the **Federal Register** announcing the availability of the proposed guidelines for public review and comment. Such an announcement will provide for a comment period on the draft guidelines of no less than 30 days.

(9) The prohibitions of paragraph (a) of this section relating to threatened species of salmonids listed in § 223.102(a)(5) through (a)(10), and (a)(12) through (a)(19) do not apply to the physical diversion of water from a stream or lake, provided that:

(i) NMFS' engineering staff or any resource agency or tribe NMFS designates (authorized officer) has agreed in writing that the diversion facility is screened, maintained, and operated in compliance with Juvenile Fish Screen Criteria, National Marine Fisheries Service, Northwest Region, Revised February 16, 1995, with Addendum of May 9, 1996, or in California with NMFS' Southwest Region "Fish Screening Criteria for Anadromous Salmonids, January 1997" or with any subsequent revision.

(ii) The owner or manager of the diversion allows any NMFS engineer or authorized officer access to the diversion facility for purposes of inspection and determination of continued compliance with the criteria.

(iii) On a case by case basis, NMFS or an Authorized Officer will review and approve a juvenile fish screen design

and construction plan and schedule that the water diverter proposes for screen installation. The plan and schedule will describe interim operation measures to avoid take of threatened salmonids. NMFS may require a commitment of compensatory mitigation if implementation of the plan and schedule is terminated prior to completion. If the plan and schedule are not met, or if a schedule modification is made that is not approved by NMFS or Authorized Officer, or if the screen installation deviates from the approved design, the water diversion will be subject to take prohibitions and mitigation.

(iv) This limit on the prohibitions of paragraph (a) of this section does not encompass any impacts of reduced flows resulting from the diversion or impacts caused during installation of the diversion device. These impacts are subject to the prohibition on take of listed salmonids.

(10) The prohibitions of paragraph (a) of this section relating to threatened species of salmonids listed in § 223.102 (a)(5) through (a)(10), and (a)(12) through (a)(19) do not apply to routine road maintenance activities provided that:

(i) The activity results from routine road maintenance activity conducted by ODOT employees or agents that complies with ODOT's Transportation Maintenance Management System Water Quality and Habitat Guide (July, 1999); or by employees or agents of a state, county, city or port that complies with a program substantially similar to that contained in the ODOT Guide that is determined to meet or exceed the protections provided by the ODOT Guide; or by employees or agents of a state, county, city or port that complies with a routine road maintenance program that meets proper functioning habitat conditions as described further in subparagraph (ii) following. NMFS' approval of state, county, or port programs that are equivalent to the ODOT program, or of any amendments, shall be a written approval by NMFS Northwest or Southwest Regional Administrator, whichever is appropriate. Any jurisdiction desiring its routine road maintenance activities to be within this limit must first commit in writing to apply management practices that result in protections equivalent to or better than those provided by the ODOT Guide, detailing how it will assure adequate training, tracking, and reporting, and describing in detail any dust abatement practices it requests to be covered.

(ii) NMFS finds the routine road maintenance activities of any state, city,

county, or port to be consistent with the conservation of listed salmonids' habitat when it contributes, as does the ODOT Guide, to the attainment and maintenance of properly functioning condition (PFC). NMFS defines PFC as the sustained presence of natural habitat-forming processes that are necessary for the long-term survival of salmonids through the full range of environmental variation. Actions that affect salmonid habitat must not impair properly functioning habitat, appreciably reduce the functioning of already impaired habitat, or retard the long-term progress of impaired habitat toward PFC. Periodically, NMFS will evaluate an approved program for its effectiveness in maintaining and achieving habitat function that provides for conservation of the listed salmonids. Whenever warranted, NMFS will identify to the jurisdiction ways in which the program needs to be altered or strengthened. Changes may be identified if the program is not protecting desired habitat functions, or where even with the habitat characteristics and functions originally targeted, habitat is not supporting population productivity levels needed to conserve the ESU. If any jurisdiction within the limit does not make changes to respond adequately to the new information in the shortest amount of time feasible, but not longer than one year, NMFS will publish notification in the **Federal Register** announcing its intention to withdraw the limit so that take prohibitions would then apply to the program as to all other activity not within a limit. Such an announcement will provide for a comment period of no less than 30 days, after which NMFS will make a final determination whether to subject the activities to the ESA section 9(a)(1) prohibitions.

(iii) Prior to implementing any changes to a program within this limit the jurisdiction provides NMFS a copy of the proposed change for review and approval as within this limit.

(iv) Prior to approving any state, city, county, or port program as within this limit, or approving any substantive change in a program within this limit, NMFS will publish notification in the **Federal Register** announcing the availability of the program or the draft changes for public review and comment. Such an announcement will provide for a comment period of not less than 30 days.

(v) Pesticide and herbicide spraying is not included within this limit, even if in accord with the ODOT guidance.

(11) The prohibitions of paragraph (a) of this section relating to threatened species of salmonids listed in § 223.102

(a)(5) through (a)(10), and (a)(12) through (a)(19) do not apply to activities within the City of Portland, Oregon Parks and Recreation Department's (PP&R) Pest Management Program (March 1997), including its Waterways Pest Management Policy updated December 1, 1999, provided that:

(i) Use of only the following chemicals is included within this limit on the take prohibitions: Round Up, Rodeo, Garlon 3A, Surfactant LI-700, Napropamide, Cutrine Plus, and Aquashade.

(ii) Any chemical use is initiated in accord with the priorities and decision processes of the Department's Pest Management Policy, including the Waterways Pest Management Policy, updated December 1, 1999.

(iii) Any chemical use within a 25 ft. (7.5 m) buffer complies with the buffer application constraints contained in PP&R's Waterways Pest Management Policy (update December 1, 1999).

(iv) Prior to implementing any changes to this limit, the PP&R provides NMFS with a copy of the proposed change for review and approval as within this limit.

(v) Prior to approving any substantive change in a program within this limit, NMFS will publish notification in the **Federal Register** announcing the availability of the program or the draft changes for public review and comment. Such an announcement will provide for a comment period of no less than 30 days.

(vi) NMFS' approval of amendments shall be a written approval by NMFS Northwest Regional Administrator.

(vii) NMFS finds the PP&R Pest Management Program activities to be consistent with the conservation of listed salmonids' habitat by contributing to the attainment and maintenance of properly functioning condition (PFC). NMFS defines PFC as the sustained presence of a watershed's natural habitat-forming processes that are necessary for the long-term survival of salmonids through the full range of environmental variation. Actions that affect salmonid habitat must not impair properly functioning habitat, appreciably reduce the functioning of already impaired habitat, or retard the long-term progress of impaired habitat toward PFC. Periodically, NMFS will evaluate the effectiveness of an approved program in maintaining and achieving habitat function that provides for conservation of the listed salmonids. Whenever warranted, NMFS will identify to the jurisdiction ways in which the program needs to be altered or strengthened. Changes may be identified if the program is not

protecting desired habitat functions, or where even with the habitat characteristics and functions originally targeted, habitat is not supporting population productivity levels needed to conserve the ESU. If any jurisdiction within the limit does not make changes to respond adequately to the new information in the shortest amount of time feasible, but not longer than 1 year, NMFS will publish notification in the **Federal Register** announcing its intention to withdraw the limit so that take prohibitions would then apply to the program as to all other activity not within a limit. Such an announcement will provide for a comment period of no less than 30 days, after which NMFS will make a final determination whether to subject the activities to the ESA section 9(a)(1) prohibitions.

(12) The prohibitions of paragraph (a) of this section relating to threatened species of salmonids listed in § 223.102 (a)(5) through (a)(10), and (a)(12) through (a)(19) do not apply to municipal, residential, commercial, and industrial (MRCI) development (including redevelopment) activities provided that:

(i) Such development occurs pursuant to city, county, or regional government ordinances or plans that NMFS has determined are adequately protective of listed species; or within the jurisdiction of the Metro regional government in Oregon and pursuant to ordinances that Metro has found comply with its Urban Growth Management Functional Plan (Functional Plan) following a determination by NMFS that the Functional Plan is adequately protective. NMFS approval or determinations about any MRCI development ordinances or plans, including the Functional Plan, shall be a written approval by NMFS Northwest or Southwest Regional Administrator, whichever is appropriate. NMFS will apply the following 12 evaluation considerations when reviewing MRCI development ordinances or plans to assess whether they adequately conserve listed salmonids by maintaining and restoring properly functioning habitat conditions:

(A) MRCI development ordinance or plan ensures that development will avoid inappropriate areas such as unstable slopes, wetlands, areas of high habitat value, and similarly constrained sites.

(B) MRCI development ordinance or plan adequately avoids stormwater discharge impacts to water quality and quantity or to the hydrograph of the watershed, including peak and base flows of perennial streams.

(C) MRCI development ordinance or plan provides adequately protective riparian area management requirements to attain or maintain PFC around all rivers, estuaries, streams, lakes, deepwater habitats, and intermittent streams. Compensatory mitigation is provided, where necessary, to offset unavoidable damage to PFC due to MRCI development impacts to riparian management areas.

(D) MRCI development ordinance or plan avoids stream crossings by roads, utilities, and other linear development wherever possible, and, where crossings must be provided, minimize impacts through choice of mode, sizing, and placement.

(E) MRCI development ordinance or plan adequately protects historical stream meander patterns and channel migration zones and avoids hardening of stream banks and shorelines.

(F) MRCI development ordinance or plan adequately protects wetlands and wetland functions, including isolated wetlands.

(G) MRCI development ordinance or plan adequately preserves the hydrologic capacity of permanent and intermittent streams to pass peak flows.

(H) MRCI development ordinance or plan includes adequate provisions for landscaping with native vegetation to reduce need for watering and application of herbicides, pesticides, and fertilizer.

(I) MRCI development ordinance or plan includes adequate provisions to prevent erosion and sediment run-off during construction.

(J) MRCI development ordinance or plan ensures that water supply demands can be met without impacting flows needed for threatened salmonids either directly or through groundwater withdrawals and that any new water diversions are positioned and screened in a way that prevents injury or death of salmonids.

(K) MRCI development ordinance or plan provides necessary enforcement, funding, reporting, and implementation mechanisms and formal plan evaluations at intervals that do not exceed 5 years.

(L) MRCI development ordinance and plan complies with all other state and Federal environmental and natural resource laws and permits.

(ii) The city, county or regional government provides NMFS with annual reports regarding implementation and effectiveness of the ordinances, including: any water quality monitoring information the jurisdiction has available; aerial photography (or some other graphic display) of each MRCI development or MRCI expansion

area at sufficient detail to demonstrate the width and vegetation condition of riparian set-backs; information to demonstrate the success of stormwater management and other conservation measures; and a summary of any flood damage, maintenance problems, or other issues.

(iii) NMFS finds the MRCI development activity to be consistent with the conservation of listed salmonids' habitat when it contributes to the attainment and maintenance of PFC. NMFS defines PFC as the sustained presence of a watershed's habitat-forming processes that are necessary for the long-term survival of salmonids through the full range of environmental variation. Actions that affect salmonid habitat must not impair properly functioning habitat, appreciably reduce the functioning of already impaired habitat, or retard the long-term progress of impaired habitat toward PFC. Periodically, NMFS will evaluate an approved program for its effectiveness in maintaining and achieving habitat function that provides for conservation of the listed salmonids. Whenever warranted, NMFS will identify to the jurisdiction ways in which the program needs to be altered or strengthened. Changes may be identified if the program is not protecting desired habitat functions, or where even with the habitat characteristics and functions originally targeted, habitat is not supporting population productivity levels needed to conserve the ESU. If any jurisdiction within the limit does not make changes to respond adequately to the new information in the shortest amount of time feasible, but not longer than 1 year, NMFS will publish notification in the **Federal Register** announcing its intention to withdraw the limit so that take prohibitions would then apply to the program as to all other activity not within a limit. Such an announcement will provide for a comment period of no less than 30 days, after which NMFS will make a final determination whether to subject the activities to the ESA section 9(a)(1) prohibitions.

(iv) Prior to approving any city, county, or regional government ordinances or plans as within this limit, or approving any substantive change in an ordinance or plan within this limit, NMFS will publish notification in the **Federal Register** announcing the availability of the ordinance or plan or the draft changes for public review and comment. Such an announcement will provide for a comment period of no less than 30 days.

(13) The prohibitions of paragraph (a) of this section relating to threatened

species of salmonids listed in § 223.102 (a)(12), (a)(13), (a)(16), (a)(17), and (a)(19) do not apply to non-Federal forest management activities conducted in the State of Washington provided that:

(i) The action is in compliance with forest practice regulations adopted and implemented by the Washington Forest Practices Board that NMFS has found are at least as protective of habitat functions as are the regulatory elements of the Forests and Fish Report dated April 29, 1999, and submitted to the Forest Practices Board by a consortium of landowners, tribes, and state and Federal agencies.

(ii) All non-regulatory elements of the Forests and Fish Report are being implemented.

(iii) Actions involving use of herbicides, pesticides, or fungicides are not included within this limit.

(iv) Actions taken under alternative plans are included in this limit provided that the Washington Department of Natural Resources (WDNR) finds that the alternate plans protect physical and biological processes at least as well as the state forest practices rules and provided that NMFS, or any resource agency or tribe NMFS designates, has the opportunity to review the plan at every stage of the development and implementation. A plan may be excluded from this limit if, after such review, WDNR determines that the plan is not likely to adequately protect listed salmon.

(v) Prior to determining that regulations adopted by the Forest Practice Board are at least as protective as the elements of the Forests and Fish Report, NMFS will publish notification in the **Federal Register** announcing the availability of the Report and regulations for public review and comment.

(vi) NMFS finds the activities to be consistent with the conservation of listed salmonids' habitat by contributing to the attainment and maintenance of PFC. NMFS defines PFC as the sustained presence of a watershed's natural habitat-forming processes that are necessary for the long-term survival of salmonids through the full range of environmental variation. Actions that affect salmonid habitat must not impair properly functioning habitat, appreciably reduce the functioning of already impaired habitat, or retard the long-term progress of impaired habitat toward PFC. Programs must meet this biological standard in order for NMFS to find they qualify for a habitat-related limit. NMFS uses the best available science to make these determinations. NMFS may review and revise previous findings as new scientific information

becomes available. NMFS will evaluate the effectiveness of the program in maintaining and achieving habitat function that provides for conservation of the listed salmonids. If the program is not adequate, NMFS will identify to the jurisdiction ways in which the program needs to be altered or strengthened. Changes may be identified if the program is not protecting desired habitat functions or where even with the habitat characteristics and functions originally targeted, habitat is not supporting population productivity levels needed to conserve the ESU. If Washington does not make changes to respond adequately to the new information, NMFS will publish notification in the **Federal Register** announcing its intention to withdraw the limit on activities associated with the program. Such an announcement will provide for a comment period of no less than 30 days, after which NMFS will make a final determination whether to subject the activities to the ESA section 9(a)(1) take prohibitions.

(vii) NMFS approval of regulations shall be a written approval by NMFS Northwest Regional Administrator.

(c) *Affirmative defense.* In connection with any action alleging a violation of the prohibitions of paragraph (a) of this section with respect to the threatened species of salmonids listed in § 223.102 (a)(5) through (a)(10), and (a)(12) through (a)(19), any person claiming the benefit of any limit listed in paragraph (b) of this section or § 223.209(a) shall have a defense where the person can demonstrate that the limit is applicable and was in force, and that the person fully complied with the limit at the time of the alleged violation. This defense is an affirmative defense that must be raised, pleaded, and proven by the proponent. If proven, this defense will be an absolute defense to liability under section (a)(1)(G) of the ESA with respect to the alleged violation.

(d) *Severability.* The provisions of this section and the various applications thereof are distinct and severable from one another. If any provision or the application thereof to any person or circumstances is stayed or determined to be invalid, such stay or invalidity shall not affect other provisions, or the application of such provisions to other persons or circumstances, which can be given effect without the stayed or invalid provision or application.

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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 223

[Docket No. 991207318-0159-02; I.D. No 092799G]

RIN 0648-AG15

Limitation on Section 9 Protections Applicable to Salmon and Steelhead Listed as Threatened under the Endangered Species Act (ESA), for Actions Under Tribal Resource Management Plans

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Final rule.

SUMMARY: The National Marine Fisheries Service (NMFS) is issuing a final rule to modify the ESA section 9 take prohibitions applied to threatened salmon and steelhead. The modification will create a section 4(d) limitation on those prohibitions for tribal resource management plans (Tribal Plans), where the Secretary of Commerce (Secretary) has determined that implementing that Tribal Plan will not appreciably reduce the likelihood of survival and recovery for the listed species. This rule intends to harmonize statutory conservation requirements with tribal rights and the Federal trust responsibility to tribes.

DATES: Effective September 8, 2000.

ADDRESSES: Branch Chief, NMFS, Northwest Region, Protected Resources Division, 525 NE Oregon St., Suite 500, Portland, OR 97232-2737; Assistant Regional Administrator, Protected Resources Division, NMFS, Southwest Region, 501 West Ocean Blvd., Suite 4200, Long Beach, CA 90802-4213; Salmon Coordinator, Office of Protected Resources, NMFS, 1315 East-West Highway, Silver Spring, MD 20910.

FOR FURTHER INFORMATION CONTACT: Garth Griffin at 503-231-2005; Craig Wingert at 562-980-4021.

Electronic Access

Reference materials regarding this final rule can also be obtained from the internet at www.nwr.noaa.gov.

SUPPLEMENTARY INFORMATION:

Definitions

Indian Tribe—Any Indian tribe, band, nation, pueblo, community or other organized group within the United States which the Secretary of the Interior has identified on the most current list of tribes maintained by the

A Citizen's Guide to the 4(d) Rule

For

Threatened Salmon and Steelhead on the West Coast



National Marine Fisheries Service
Northwest and Southwest Regions
June 20, 2000

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Introduction

In June 2000, the National Marine Fisheries Service (NMFS) adopted a rule prohibiting the "take" of 14 groups of salmon and steelhead listed as threatened under the Endangered Species Act (ESA). NMFS adopted the take rule under section 4(d) of the ESA. This rule prohibits anyone from taking a listed salmon or steelhead, *except* in cases where the take is associated with an approved program. The 4(d) rule approves some specific existing state and local programs, and create a means for NMFS to approve additional programs if they meet certain standards set out in the rule.

State and local governments, tribes and others throughout the Northwest have stepped forward and assumed leadership roles in saving these species. Efforts include the Oregon Plan for Salmon and Watersheds, the State of Washington's Extinction is Not an Option Plan, Metro's Functional Plan, the Puget Sound Tri-County Initiative, the Lower Columbia Fish Recovery Board, the Eugene, Oregon-area Metro ESA Coordinating Team, and the Willamette Restoration Initiative. NMFS believes it is these local efforts that will ultimately save the salmon. A central goal of this 4(d) rule is to encourage such state and local efforts by providing the means for NMFS to approve local efforts and limit liability under the ESA.

Background

Purpose of this Guide

This *Citizen's Guide to the 4(d) Rule* introduces and explains the rule. It complements

the final rule published in the *Federal Register* in June of 2000 by providing a more user-friendly description of why the rule is needed, what it contains, how it will affect citizens, and how to get more information. This Guide is not binding Federal language or regulation. Individuals should refer to the Federal register notice for the regulatory language governing activities under the rule.

Salmon in Decline

In 1994, in response to growing concerns about salmon health on the West Coast, NMFS began the most thorough scientific review of Pacific salmon ever undertaken. The review looked at salmon and steelhead from desert-like areas in California to coastal rain forests, and from the high mountains of central Idaho to lowland basins within sight of the Pacific Ocean. The review identified 52 distinct populations, known as Evolutionarily Significant Units (or ESUs) of Pacific salmon in Oregon, Washington, Idaho, and California. Of these populations, 26 have been listed as threatened or endangered under the ESA and most others are in decline or at very low levels.

These populations of salmon and steelhead are likely to become endangered species within the foreseeable future and their current threatened status cannot be explained by ocean cycles or other natural events. NMFS has concluded that these species are at risk of extinction primarily due to human activities. Salmon and steelhead populations have been depleted by over-fishing, past and ongoing habitat destruction, hydropower development, hatchery practices, degraded water quality and other causes.

Chum Salmon: Populations are down throughout Oregon and Washington. Summer-run chum have disappeared from many Hood Canal streams, and numbers in the Columbia Basin have declined to less than one percent of their former abundance.

Chinook Salmon: Only two of 13 different stocks in Puget Sound are considered healthy. Only slightly more than 1,000 fish return annually to the entire Willamette Basin. Recent returns of spring-run Chinook to the Upper Columbia have averaged only 5,000 naturally-produced fish and are the lowest on record.

Steelhead: Willamette River fish are in steep decline and returns during 1995 were the lowest in 30 years of record keeping. Returns have dropped to as low as 500 fish in the middle Columbia rivers like the Yakima and Umatilla, and steelhead are extinct in the Crooked and Metolius rivers in Oregon.

A species is considered *endangered* when it is "in danger of extinction throughout all or a significant portion of its range" and *threatened* when it is "likely to become endangered within the foreseeable future throughout all or a significant portion of its range." Copies of these studies are available to the public and can be obtained by calling any of the NMFS offices listed at the end of this Guide, or one of our websites at www.nwr.noaa.gov or swr.ucsd.edu.

Saving the Salmon

The ESA provides a variety of tools for saving species threatened with extinction. Under section 7 of the ESA, no Federal agency may fund, permit or carry out any activity that will jeopardize their continued existence. In many cases, this restriction on Federal activity is not enough by itself to recover threatened

species. When the activities of state and local governments and private citizens harm listed species, section 4(d) of the ESA requires that harm be controlled so it does not lead to extinction.

Section 4(d) requires NMFS to issue regulations deemed "necessary and advisable to provide for the conservation of the species." NMFS must establish protective rules for all species now listed as threatened under the ESA. These protective rules for threatened species may apply any or all of the ESA section 9 protections that automatically prohibit take of species listed as endangered. The rules need not prohibit all take. There may be an "exception" from the prohibitions on take so long as the take occurs as the result of a program that adequately protects the listed species and its habitat. In other words, the 4(d) rule can "limit" the situations to which the take prohibitions apply.

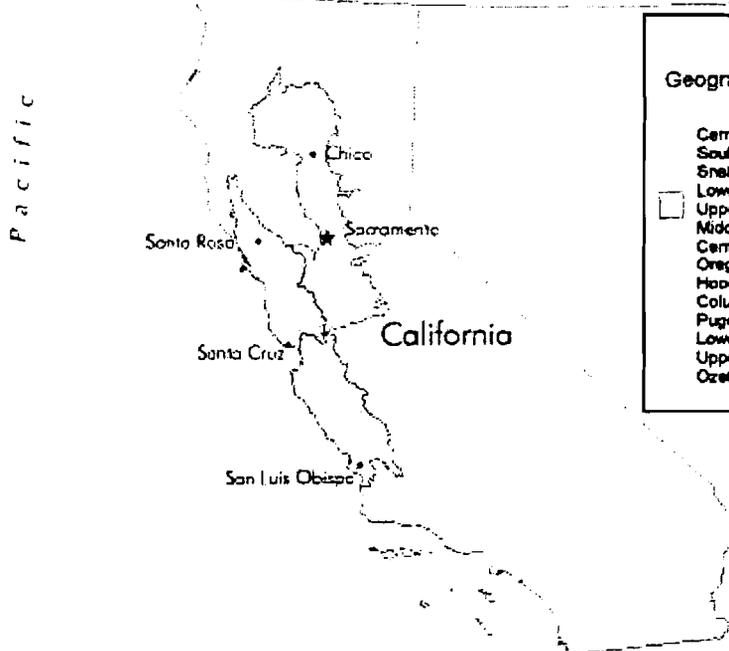
Incorporating such "limits" into a 4(d) rule can be good for NMFS, state agencies, government entities, private citizens, and the fish. Activities carried out in accordance with 4(d) rule limits can help protect threatened species and their habitats while relieving state agencies, government entities, tribes and others from liability for take that results from those activities. By providing limitation from take liability, NMFS encourages governments and private citizens to adjust their programs and activities to be "salmon safe." NMFS anticipates that programs and activities included as a 4(d) rule limit will ultimately be incorporated into ESA Recovery Plans for listed salmon and steelhead.

What does the 4(d) Rule do?

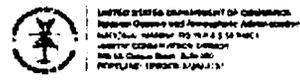
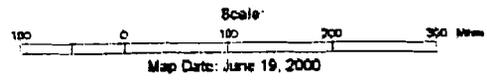
This rule protects 14 ESUs of salmon and steelhead in Idaho, Washington, Oregon, and California (depicted in the map on the following page). The rule follows the standard practice of prohibiting the killing or injuring of a threatened species (i.e. "take") without specific written authorization; that is its principal function.



Final 4(d) Rule for 14 Salmon and Steelhead ESUs



- Legend**
Geographic Range of 14 Threatened Salmonid ESUs
- Central California Coast steelhead
 - South-Central California Coast steelhead
 - Snake River Basin steelhead
 - Lower Columbia River steelhead
 - Upper Willamette River steelhead
 - Middle Columbia River steelhead
 - Central Valley California steelhead
 - Oregon Coast coho
 - Hood Canal summer-run chum
 - Columbia River chum
 - Puget Sound chinook
 - Lower Columbia River chinook
 - Upper Willamette River chinook
 - Ozette Lake sockeye



* An Evolutionarily Significant unit or "ESU" is a distinctive group of Pacific salmon or steelhead

The rule applies to ocean and inland areas, and to any authority, agency, or private individual subject to U. S. jurisdiction. Activities or development not likely to kill or harm protected species will not be affected by the rule. The rule does not prohibit actions or programs—it prohibits illegal take. Activities that do not kill or injure protected salmon and steelhead do not require any special authorization. Limits can be thought of as "exceptions" to the take prohibitions. These limits represent programs or activities, or criteria for future programs or activities, for which NMFS will not apply the take prohibitions. This is because NMFS has determined that these programs or activities minimize impacts on threatened salmon and steelhead enough so that additional Federal protections are not needed to conserve the ESU. NMFS will monitor the activities that have been granted a limit to make certain there is no unexpected take or harm.

What is Take?

The ESA makes it illegal for any person subject to the jurisdiction of the United States to take any species of fish or wildlife that is listed as endangered (ESA section 9[a][1]) without specific authorization. The final 4(d) rule puts in place the same take prohibitions for threatened salmon and steelhead, except for certain limits that apply to the activities specified in the rule. This prohibitions applies within the United States and its territorial waters as well as on the high seas.

"Take" is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct" (ESA section 3[19]). It is also illegal under ESA section 9 to possess, sell, deliver, carry, transport, or ship any species that has been taken illegally (ESA section 9[a][1]). Violating the take prohibitions may result in civil or criminal penalties.

"Harass" is defined as an intentional or negligent act that creates the likelihood of injuring wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns such as breeding, feeding, or sheltering (50 CFR 17.3).

"Harm" is defined as an act that actually kills or injures a protected species (50 CFR 222.102 (64FR 60727)). Harm can arise from significant habitat modification or degradation where it actually kills or injures protected species by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering.

Take Guidance

The likelihood that an action will take a listed species must be evaluated on a case-by-case basis. NMFS has described the kinds of activities (e.g., blocking fish from reaching spawning and rearing areas, illegal fishing etc.), that are likely to injure or kill threatened salmon and steelhead in a "Take Guidance" section in the Federal Register Notice. ***This guidance is not regulatory.*** Rather it provides guidance on what actions are very likely to take threatened species and identifies where NMFS will focus its enforcement actions. This is not a list of prohibited activities.

Based on available information, NMFS believes the categories of activities listed below are those activities that, as a general rule, are most likely to harm listed fish. NMFS wishes to

emphasize at the outset that the potential for these activities to harm listed salmon and steelhead depends entirely upon the facts and circumstances of each case. The mere fact that an activity may fall within one of these categories does not automatically mean that it causes harm. These types of activities are, however, those most likely to cause harm and thereby violate this rule. NMFS' ESA enforcement will focus on these categories of activities.

A. Constructing or maintaining structures like culverts, berms, or dams that eliminate or impede a listed species' ability to migrate or gain access to habitat.

B. Discharging pollutants, such as oil, toxic chemicals, radioactivity, carcinogens, mutagens, teratogens, or organic nutrient-laden water (including sewage water) into a listed species' habitat.

C. Removing, poisoning, or contaminating plants, fish, wildlife, or other biota that the listed species requires for feeding, sheltering, or other essential behavioral patterns.

D. Removing or altering rocks, soil, gravel, vegetation or other physical structures that are essential to the integrity and function of a listed species' habitat.

E. Removing water or otherwise altering streamflow in a manner that significantly impairs spawning, migration, feeding, or other essential behavioral patterns.

F. Releasing non-indigenous or artificially propagated species into a listed species' habitat or into areas where they may gain access to that habitat.

G. Constructing or operating dams or water diversion structures with inadequate fish screens or passage facilities.

H. Constructing, maintaining, or using inadequate bridges, roads, or trails on stream banks or unstable hill slopes adjacent to or above a listed species' habitat.

I. Conducting timber harvest, grazing, mining, earth-moving, or other operations that substantially increase the amount of sediment going into streams.

J. Conducting land-use activities that may disturb soil and increase sediment delivery to streams—such as logging, grazing, farming, and road construction—in riparian areas and areas susceptible to mass wasting and surface erosion.

K. Illegal fishing. Harvest that violates fishing regulations will be a top enforcement concern.

L. Various streambed disturbances may trample eggs or trap adult fish preparing to spawn. The disturbance could be mechanical disruption caused by constructing push-up dams, removing gravel, mining, or other work in a stream channel. It may also take the form of egg trampling or smothering by livestock in the streambed or by vehicles or equipment being driven across or down the streambed (as well as any similar physical disruptions).

M. Illegal interstate and foreign commerce dealing in, imports, or exports listed salmon or steelhead.

N. Altering lands or waters in a manner that promotes unusual concentrations of predators.

O. Shoreline and riparian disturbances (whether in the river, estuary, marine, or floodplain environment) may retard or prevent the development of certain habitat characteristics upon which the fish depend (e.g., removing riparian trees reduces vital shade and cover, floodplain gravel mining, development, and armoring shorelines reduces the input of critical spawning substrates, and bulkhead construction can eliminate shallow water rearing areas).

P. Filling or isolating side channels, ponds, and intermittent waters (e.g., installing tide gates and impassable culverts) can destroy habitats that the fish depend upon for refuge during high flows.

This list is not exhaustive. It is simply intended to help people avoid violating the ESA and to encourage efforts to save the species. Determining whether take has actually occurred depends on the circumstances of a particular case. Many activities that may kill or injure salmon are regulated by state or Federal rules such as fill and removal authorities, National Pollutant Discharge Elimination System or other water quality permitting, pesticide use, and the like. For those types of activities, NMFS would not tend to focus enforcement efforts on those who operate in conformity with current permits. Rather, if the regulatory program does not provide adequate protection, NMFS will work with the responsible agency to make necessary changes in the program.

For example, concentrations of pesticides may affect salmon behavior and reproduction. Current EPA label requirements were developed without information about some of these subtle but real impacts on aquatic species such as salmon. And they were not developed with the intent of protecting or recovering threatened salmon. Where new information indicates that label requirements do not adequately protect salmon, NMFS will work with EPA through the section 7 consultation process to develop more protective use restrictions, and thereby provide the best possible guidance to all users. Similarly, where water quality standards or state authorizations lead to pollution levels that may cause take, NMFS intends to work with the state water quality agencies and EPA to bring those standards (or permitting programs) to a point that does protect salmon.

Those who believe their activities are likely to injure or kill salmon are encouraged to immediately change that activity to avoid take (or adequately limit any impacts on the species) and seek NMFS' authorization for incidental take under either (a) an ESA section 10 incidental take permit; (b) an ESA section 7 consultation; or (c) a limit on the take prohibitions provided in this rule. The public is encouraged to contact NMFS (see contact list) for help in determining whether circumstances at a particular location (involving these activities or any others) constitute a take in violation of the 4(d) rule.

Take of listed fish resulting from actions in compliance with a permit issued by NMFS under section 10 of the ESA do not violate this rule. Section 10 permits may be issued for research activities, activities that enhance a species' survival, or to authorize incidental take occurring in the course of an otherwise lawful activity. In addition, NMFS consults—under section 7 of the ESA—on a broad range of activities conducted, funded, or authorized by Federal agencies. These include fish harvest, hatchery operations, silviculture activities, grazing, mining, road construction, dam construction and operation, fill material discharge, and stream channelization and diversion. Federally funded or approved activities for which ESA section 7 consultations have been completed will not constitute violations of this rule—provided the activities are conducted in accord with all reasonable and prudent measures and the terms and conditions stated in the incidental take statement.

Evaluating Potential ESA Take Liability

The June, 2000 4(d) rule's prohibitions on take applies to the activities of everyone—every state, city, and county government, every business, and every citizen. The Take Guidance provides information about what types of activities may be most likely to cause harm and thus violate the 4(d) rule. However, each activity and circumstance must be evaluated on a case by case basis to determine if it is likely to cause a take. After reviewing the take guidance, many governmental entities, businesses, and individuals may question how the 4(d) rule and its take guidance affects them. Any governmental entity, business or individual can use the following risk assessment evaluation steps:

- (1) Identify the program or activity (for state and local governments, this may include activities it funds, authorizes, or carries out);
- (2) Evaluate whether the program or activity is likely to take or harm listed fish;
- (3) If the program or activity is not likely to take or harm listed fish, then there is no need to modify the activity, or to contact NMFS;
- (4) If, however, after reviewing the program or activity, it seems likely it will take or harm listed fish, or there is uncertainty about whether take or harm may occur, the acting agency, entity, or individual should contact NMFS to seek more information on evaluating the activity's impacts and determining ways to avoid harming the fish and violating the ESA.

There are many sources of information on improved best management practices to avoid take or harm and to reduce ESA liabilities. In addition, professional associations, state and Federal resource management agencies that provide technical information to landowners and others, watershed councils and non-governmental organization can be important sources of information about how to modify activities to avoid or reduce impacts on threatened salmon and steelhead.

Effective Dates

State, tribal, and local governments, stakeholder groups, and citizens across four states need to familiarize themselves with the guidance provided in the rule, assess the consequences of their individual authorities and activities, and make any necessary adjustments to protect the fish. After sufficient time to review the new rule, NMFS will hold a number of public forums in rural and metropolitan communities to engage interested parties in constructive discussion about salmon recovery. For these reasons, the 4(d) rule for chinook, coho, chum, and sockeye salmon will take effect

180 days after it is published in the *Federal Register*. Those in the range of threatened steelhead have had more notice that efforts to save the fish are needed, so the 4(d) rule for steelhead will take effect 60 days after publication.

A 1997 interim 4(d) rule (published in 1997) remains in place for the Southern Oregon/Northern California Coast (SONCC) coho ESU. The SONCC 4(d) rule included several limitations based on adequately protective state programs in Oregon and provided a model for developing the three 4(d) rules proposed in January of 2000. The final 4(d) rule for 14 additional threatened ESUs does not affect this earlier rule.

Useful Concepts for Understanding the Limits

The final rule incorporates two scientific concepts NMFS will use when determining whether particular programs may receive limits on the take protections. The first applies primarily to harvest and hatchery activities, and is described in a scientific paper entitled "*Viable Salmonid Populations and the Recovery of Evolutionarily Significant Units*" (NMFS 2000). The Viable Salmonid Population (VSP) paper describes the importance of identifying individual populations within an ESU, and the importance of identifying abundance levels and other characteristics that may be considered "critical" (where abundance is so low the population requires special protections) or "viable" (where abundance is high enough the population may be considered healthy). Generally, programs and activities will receive a 4(d) limit only if they do not increase the risks to critical populations, and if they do not preclude populations from attaining or maintaining viability.

The second concept applies to programs and activities that affect salmon habitat. For habitat, NMFS uses the concept of Proper Functioning Condition (PFC). Properly functioning habitat is habitat that provides for the biological requirements of the fish. PFC is defined in terms of the natural processes and functions that lead to habitat conditions that will

meet the biological requirements of the fish. NMFS offers 4(d) limits only for those programs or activities that will not impair properly functioning habitat, appreciably reduce the functioning of already impaired habitat, or will not retard the long-term progress of impaired habitat toward PFC.

The concepts of VSP and PFC are described in more detail at the end of this guide.

The 13 Limits

When the final 4(d) rule becomes effective, the take prohibitions will apply to actions carried out by state, tribal, and local governments and private parties that take listed salmon and steelhead, except take that is associated with those activities that come under one of the 4(d) limits and those already permitted under other sections of the ESA. The take prohibitions would be limited for the programs and activities identified in the 4(d) rule because NMFS has determined that they impacts on threatened fish sufficiently that additional Federal protections are not needed.

The final rule describes two types of limits on the take prohibitions. One type includes specific programs NMFS has already reviewed and determined will minimize harm to threatened fish or contribute to their conservation. The other type includes general categories of programs that NMFS may evaluate in the future. For this second type of limit, the 4(d) rule sets out the standards NMFS will use when it reviews activities and programs for inclusion in the rule, how the public will be given notice in the *Federal Register* of the opportunity to review the program being submitted and, if the limit is determined to sufficiently conserve the listed species, how it will be approved by the Northwest or Southwest Regional Administrator, whichever is appropriate. NMFS has also established a process for periodically evaluating the limits, making recommendations for adjusting the programs, and alerting the public in cases when the limit would be withdrawn and take prohibitions re-applied.

Some of the broad categories of activities covered by limits in the final rule are:

- Scientific research conducted or supervised by, or coordinated with, state fishery agencies
- Fish harvest activities
- Artificial propagation programs
- Habitat restoration based on watershed plans
- Properly screened water diversions
- Routine road maintenance
- Municipal, residential, commercial, and industrial development and redevelopment
- Forest management practices in the State of Washington

NMFS is not requiring states, local governments or private parties to change their practices to conform to any of the take limits described in the final rule. The limits provide one way to be sure an activity or program does not risk violating the take prohibitions. Simply because a program is not within a limit *does not* mean that it automatically violates the ESA or the 4(d) rule. However, it *does* mean that any program or jurisdiction would risk ESA penalties if the activity in question takes a listed fish. By receiving a limit, governments and individuals receive assurance that their activities do not violate the take prohibitions and will not be subject to enforcement.

Description of the Limits

Limit No. 1 – ESA Permits

This limit recognizes that those holding permits under section 10 of the ESA (or receiving other exemptions under the ESA) are free of the take prohibitions so long as they act in accordance with the permit or applicable law. Land management activities associated with a habitat conservation plan and scientific research are examples of activities for which a section 10 permit may be issued.

Limit No. 2 – Ongoing Scientific Research

This final rule does not restrict ongoing scientific research that affects threatened ESUs for up to eight months (i.e., through February 2001) provided an application for a research or enhancement permit reaches the Assistant Administrator for Fisheries, NOAA, within 90 days after the rule is published. The take prohibitions will extend to these activities if the Assistant Administrator rejects an application as insufficient, if a permit is denied, or if six months have elapsed since the effective date of the final rule, whichever occurs earliest. It is in the interest of conservation to not disrupt ongoing research and conservation projects, some of which are of long duration. This limit on the take prohibitions ensures there will be no unnecessary disruption of those activities yet provides NMFS with the ability to halt the activity if it will have unacceptable impacts on a listed ESU.

Limit No. 3 – Rescue and Salvage Actions

This limit relieves certain agency and official personnel (or their designees) from the take prohibitions when they are acting to aid an injured or stranded fish or salvage a dead fish for scientific study. Each agency acting under this limit is to report the numbers of fish handled and their status on an annual basis. This limit on the take prohibitions will conserve the listed species by preserving life or furthering our understanding of the species' biology.

Limit No. 4 – Fishery Management

NMFS believes recreational, commercial, and tribal fisheries can be managed to protect salmon and steelhead listed under the ESA and allow them to recover. The 4(d) rule provides a way to permit the "take" of listed fish in fisheries. A fishery management agency can develop a Fisheries Management and Evaluation Plan (FMEP) and seek NMFS' approval for it. Some of the benefits of the FMEP approach are long-term management planning, more public involvement, less government paperwork, and

more certainty that there will be fishing opportunities in the future.

NMFS will use the same standard to evaluate FMEPs as those used for section 10 permits: the fisheries must not jeopardize listed salmon and steelhead, nor lessen the protection they receive. In the FMEPs, fisheries will be managed according to the listed fishes' status. This will be determined by using the concept of "Viable Salmonid Populations." Fisheries will be scaled to the degree of risk the listed fish face. When a listed population is at a "critically" low level, harvest impacts will be strictly controlled. Once a population achieves a "viable" level, fisheries could be less restrictive.

An FMEP must address the specific criteria outlined in the 4(d) rule. An FMEP must (1) define its objectives and management area, (2) define the populations within the affected ESUs, (3) establish the populations' "critical" and "viable" threshold levels, (4) set escapement objectives or maximum harvest rates, (5) demonstrate that the fisheries will not jeopardize listed fish, (6) establish the monitoring and evaluation process to assess how the FMEP is working and set conditions for revising management, and (7) be consistent with tribal trust obligations. All of these criteria were developed to answer the following questions: Where and how should the fisheries occur? What are their impacts on listed fish? How can it be demonstrated that an FMEP conserves listed fish and allows their recovery?

FMEPs are developed and approved in the following manner: A fish management agency, such as a state department of fish and wildlife, develops an FMEP that meets the 4(d) rule criteria. They send it to NMFS who then requests public review and comment. The public input is used to revise the FMEP, if necessary. Once the FMEP is deemed sufficient, NMFS writes a letter of approval to the agency that developed the FMEP. The FMEP is then implemented and the fisheries addressed in the FMEP will be covered under the ESA. NMFS then monitors and evaluates the FMEP to ensure that the listed fish are recovering.

Limit No. 5 – Artificial Propagation

NMFS believes hatcheries can be managed in a manner that conserves and recovers salmon and steelhead listed under the ESA. Therefore, the 4(d) rule provides a way to permit the "take" of listed fish for a variety of hatchery purposes. A state or Federal hatchery management agency can develop a Hatchery and Genetics Management Plan (HGMP) and seek NMFS' approval. Some of the benefits of the HGMP approach are long-term management planning, more public involvement, and less government paperwork.

NMFS will use the same standard to evaluate HGMPs as those used for section 10 permits: the hatchery program must not jeopardize listed salmon and steelhead, nor lessen the protection they receive. In the HGMPs, hatcheries will be managed according to the listed fishes' status. This will be determined using the concept of "Viable Salmonid Populations." Hatchery activities will be scaled to the degree of risk the listed fish face. When a listed population is at a "critical" level, broodstock collection will be strictly controlled. Once a population achieves a "viable" level, broodstock collection could be less restrictive.

An HGMP must address the specific criteria outlined in the 4(d) rule. An HGMP must (1) specify the goals and objectives for the hatchery program, (2) the donor population's "critical" and "viable" threshold levels, (3) prioritize broodstock collection programs in a manner that benefits listed fish, (4) specify the protocols that will be used for spawning and raising the fish in the hatchery, (5) determine the genetic and ecological effects arising from the hatchery program, (6) describe how the hatchery operation relates to fisheries management, (7) ensure that the hatchery facilities can adequately accommodate listed fish if they are collected for the program, (8) monitor and evaluate the HGMP to ensure that it accomplishes its objectives, and (9) be consistent with tribal trust obligations.

HGMPs are developed and approved in the following manner: A fish management agency, such as a state department of fish and wildlife, develops an HGMP that meets the 4(d)

rule criteria. They send it to NMFS who then requests public review and comment. The public input is used to revise the HGMP, if necessary. Once the HGMP is deemed sufficient, NMFS writes a letter of approval to the agency that developed the HGMP. The HGMP is then implemented and the hatchery program addressed in the FMEP will be covered under the ESA. NMFS then monitors and evaluates the HGMP to ensure that the listed fish are recovering.

Limit No. 6 – Joint Tribal/State Plans Developed under the *United States v. Washington* or *United States v. Oregon* Settlement Processes

Non-tribal salmonid management in the Puget Sound and Columbia River areas is profoundly influenced by the fishing rights of numerous Indian tribes and must be responsive to the court proceedings that interpret and define those tribal rights. Various orders of the *United States v. Washington* court, such as the Puget Sound Salmon Management Plan (originally approved by the court in 1977; recently amended in *United States v. Washington*, 626 F. Supp. 1405, 1527 (1985, W.D. Wash.)), mandate that many aspects of fishery management, including but not limited to harvest and artificial production actions, be jointly coordinated by the State of Washington and the Western Washington Treaty tribes. The State of Washington, affected tribes, other interests, and Federal agencies are all working toward an integrated set of management strategies and strictures that respond to the biological, legal, and practical realities of salmon management in Puget Sound. Similar principles apply in the Columbia River basin where the States of Oregon, Washington, and Idaho and five treaty tribes work within the framework and jurisdiction of *United States v. Oregon*.

NMFS includes this limit on the take prohibitions to accommodate any resource management plan developed jointly by the States and the Tribes (joint plan) under the jurisdiction of *United States v. Washington* or *United States v. Oregon*. Such a plan would be developed and reviewed under the government-

to-government processes outlined in the final 4(d) rule for Tribal Resource Management Plans. Before any joint plan receives a limit on the take prohibitions, the Secretary must, after taking into account any public comment on the plan, determine that it will not appreciably reduce the likelihood of the listed species' survival and recovery. The Secretary shall publish in the Federal Register notice of any determination regarding a joint plan; the notice will include a discussion of the biological analysis underlying the determination.

NMFS will evaluate joint plans on a regular basis to determine if they sufficiently protect and conserve the listed fish.

Limit No. 7 – Scientific Research

In carrying out their responsibilities, state fishery management agencies in Washington, Oregon, Idaho, and California conduct or permit a wide range of scientific research activities on various fisheries. These include monitoring programs and other studies of the 14 ESUs affected by the final rule. In general, NMFS finds that such activities will help conserve the listed species by furthering our understanding of the species' status, risks, life history, and biological requirements, and that state biologists and cooperating agencies carefully consider the benefits and risks entailed in proposed research before approving or undertaking such projects. NMFS concludes it is not necessary and advisable to impose additional protections on such research by imposing of Federal take prohibitions, and NMFS will not apply take prohibitions to scientific research activities that have received written approval from NMFS' Northwest or Southwest Regional Administrator.

Limit No. 8 – Habitat Restoration Limits on the Take Prohibitions

Habitat restoration activities are likely to help conserve listed fish without incurring significant risks, and NMFS concludes it is not necessary and advisable to impose take prohibitions on those activities provided the

activity is part of a watershed conservation plan. NMFS considers a "habitat restoration activity" to be an activity whose primary purpose is to restore natural aquatic or riparian habitat processes or conditions; it is an activity that would not be undertaken but for its restoration purpose. Projects planned and carried out based on at least a watershed-scale analysis and conservation plan and, where practicable, a sub-basin or basin-scale analysis and plan, are likely to be the most beneficial. NMFS strongly encourages those involved in watershed restoration to conduct assessments that identify the factors impairing watershed function, and to plan watershed restoration and conservation activities based on those assessments. Without the overview a watershed-level approach provides, habitat efforts are likely to focus on "fixes" that may prove short-lived (or even detrimental) because the underlying processes causing a particular problem may not be addressed.

The final rule provides that take prohibitions will not apply to habitat restoration activities found to be part of, and conducted pursuant to, a watershed conservation plan that the state of Washington, Oregon, Idaho, or California has certified to be consistent with the state's watershed conservation plan guidelines. The state in which the activity occurs must certify in writing whether a watershed plan has been formulated in accordance with NMFS-approved state watershed conservation plan guidelines. NMFS will periodically review state Watershed Conservation Plan certifications to ensure that the Plans adhere to approved watershed conservation plan guidelines.

For this limit to apply, NMFS must find that the state's watershed conservation plan guidelines generate plans that: (1) Take into account the proposed activities' potential direct, indirect, and cumulative impacts in terms of their effect on listed species and populations; (2) will not reduce the likelihood of either survival or recovery of listed species in the wild; (3) ensure that any taking will be incidental; (4) minimize and mitigate any adverse impacts; (5) put in place effective monitoring and adaptive management programs; (6) use the best available science and technology, including watershed analysis; (7) provide for public and scientific

review and input; (8) include any measures that NMFS determines are necessary or appropriate; (9) include provisions that clearly identify those activities that are part of plan implementation; and (10) control risk to listed species by ensuring that the plan components are funded and implemented.

Before approving watershed conservation plan guidelines, NMFS will publish notification in the Federal Register announcing the availability of the proposed guidelines for public review and comment. Such an announcement will provide for a comment period of no less than 30 days.

The proposed 4(d) rules identified interim provisions for habitat restoration activity categories to which the take prohibitions would not be applied for two years while watershed conservation plans were being developed. Based on the misunderstandings generated by that proposal, the interim provisions were dropped from the final rule.

NMFS strongly encourages jurisdictions, entities, and citizens to use the habitat restoration guidelines and technical manuals listed below as readily available techniques to reduce the risks of harming or injuring the listed stocks.

Applicable state guidance includes:

- *Oregon Road/Stream Crossing Restoration Guide*, Spring 1999, selected portions of *the Oregon Aquatic Habitat Restoration and Enhancement Guide* (1999);
- Oregon Department of Forestry and Department of Fish and Wildlife's *A Guide to Placing Large Wood in Streams*, May 1995;
- Washington Department of Fish and Wildlife, (WDFW) Habitat and Lands Environmental Engineering Division's *Fish Passage Design at Road Culverts*, March 3, 1999;
- Washington Administrative Code rules for Hydraulic Project Approval; and Washington's *Integrated Streambank Protection Guidelines*, June, 1998;
- California's *Stream Corridor Restoration, Principles, Processes and*

Practices by the Federal Interagency Stream Restoration Working Group, October, 1998; and,

- *California Salmonid Stream Habitat Restoration Manual*, January, 1998.

These documents are available through the NMFS web page or directly from the relevant agencies.

Limit No. 9 – Water Diversion Screening

Operating water diversions without adequate screening is a widely recognized cause of mortality among salmon and steelhead. Juveniles may be sucked or attracted into diversion ditches where they later die from a variety of causes, including stranding. Adult and juvenile migration may be blocked by diversion structures such as push-up dams. Juveniles are often injured and killed when caught in pumping facilities or forced against screens.

State laws and Federal programs have long recognized these problems in varying ways, and encouraged or required adequate screening of diversion ditches and structures. Nonetheless, large numbers of diversions are not adequately screened and remain a threat, particularly to juvenile fish. Eliminating that source of injury or death is vital to conserving listed stocks.

The final rule encourages all diverters to move quickly to provide adequate screening or other protections for their diversions. The rule does not apply take prohibitions provided that NMFS' engineering staff—or any resource agency or tribal representative NMFS designates as an authorized officer—has agreed in writing that the diversion facility is screened, maintained, and operated in compliance with NMFS' Juvenile Fish Screening Criteria (NMFS 1996) or, in California, in compliance with NMFS Southwest Region's Fish Screening Criteria for Anadromous Salmonids (NMFS 1997) or any subsequent revision. If a diversion is screened, operated, and maintained in a manner consistent with those criteria, adequate safeguards will be in place and no additional Federal protection is necessary or advisable for conserving listed fish.

The final rule also provides that NMFS or its authorized officer may review and approve for a take limit a proposed juvenile fish screen design and construction plan. The plan must describe interim operation measures that will avoid taking threatened fish.

Limit No. 10 – Routine Road Maintenance

NMFS does not find it necessary or advisable to apply take prohibitions to routine road maintenance activities provided that: (1) The activity constitutes routine road maintenance conducted by Oregon Department of Transportation (ODOT) employees or agents that complies with ODOT's *Transportation Maintenance Management System Water Quality and Habitat Guide* (July, 1999); or (2) it is conducted by employees or agents of a state, county, city, or port under a program that complies substantially with that contained in the ODOT Guide and has been determined to meet or exceed the protections provided by the ODOT Guide; or (3) by employees or agents of a state, county, city, or port that complies with a routine road maintenance program that maintains or attains proper functioning condition (PFC).

The ODOT's maintenance and environmental staff have worked with NMFS in developing a routine road maintenance program that works well within the mandates of the ESA and the Clean Water Act, while carrying out the agency's fundamental mission to provide a safe and effective transportation system. That work has resulted in a program that greatly improves protections for listed fish that might be affected by a range of routine maintenance activities by minimizing the activities' impacts on streams.

For a state, city, county or port program that is equivalent to the ODOT program (or any of its amendments) to receive a limit it must get written approval from the NMFS Northwest or Southwest Regional Administrator, whichever is appropriate. Any jurisdiction desiring its routine road maintenance activities to be within this limit must first commit in writing to apply management practices that provide protection equivalent to or better than those provided by the ODOT Guide.

Limit No. 11 – Portland Parks Integrated Pest Management

The City of Portland, Oregon, Parks and Recreation Department (PP&R) operates a diverse system of city parks representing a full spectrum of urban habitat from intensively managed recreation, sport, golf, and garden sites to largely natural, unmanaged parks, including the several thousand acre, wooded, Forest Park. The PP&R has been operating and refining an integrated pest management program for 10 years, with a goal of reducing its use of pesticides. The program's "decision tree" places first priority on preventing pests (weeds, insects, disease) through policy, planning, and avoidance measures (design and plant selection). Cultural and mechanical practices, trapping, and biological controls form the second priority. The use of biological products and, finally, chemical products, is to be considered last. The overall program affects only a small proportion of the land base and waterways in Portland, and serves to minimize any impacts on listed fish from chemical applications associated with that specific, limited land base. NMFS believes it would help conserve listed fish if jurisdictions would broadly adopt a similar approach to eliminating and limiting chemical use in their parks and in other areas.

After carefully analyzing PP&R's integrated program for pest management, NMFS concludes that it addresses potential impacts and provides adequate protection for listed fish with respect to the limited use the program may make of the listed chemicals. NMFS does not find it necessary or advisable to apply additional Federal protections in the form of take prohibitions to PP&R activities conducted under the Pest Management Program. Take prohibitions would not meaningfully increase the level of protection the listed fish receive.

Confining the limit on take prohibitions to a specified list of chemicals does not mean NMFS has determined that other chemicals PP&R employs will necessarily harm salmon and steelhead. NMFS intends to continue working with PP&R on the use of any other herbicide or pesticide.

The PP&R program includes a variety of monitoring commitments and a yearly

assessment schedule. If, at any time, monitoring information, new scientific studies, or new techniques cause PP&R to amend its program or if PP&R and NMFS wish to change the list of chemicals receiving limits on take prohibitions, PP&R must provide NMFS with a copy of the proposed change(s) for review. NMFS will publish notification in the *Federal Register* requesting public comment on the proposed changes. The comment period will be no less than 30 days; at its conclusion, NMFS will make a final determination on whether the changes will conserve listed salmon and steelhead.

Limit No. 12 – Municipal, Residential, Commercial and Industrial Development and Redevelopment (MRCI)

As a general matter, MRCI development (and redevelopment) have a significant potential to degrade habitat and injure or kill salmon and steelhead in a variety of ways. With appropriate safeguards, MRCI development can be specifically tailored to minimize impacts on listed fish to the extent that additional Federal protections would not be needed to conserve the listed ESU. Through the final rule, NMFS identifies a mechanism whereby cities, counties, and regional governments can ensure that MRCI development and redevelopment authorized within those areas are consistent with ESA requirements. Developers and their authorizing jurisdictions alike would benefit from the assurance that their actions conserve listed salmon and steelhead.

One example of an authorizing entity working toward the sort of plan envisioned in this limit is found in the fact that urban development in the Portland, Oregon metropolitan area may not occur outside of an adopted urban growth boundary (UGB). Metro, the regional governing body, is in the process of bringing some large areas currently designated as urban reserve areas into the UGB. Before development may commence in these newly included areas, the jurisdiction within which the area lies must prepare and adopt comprehensive plan amendments for urban reserve areas consistent with all provisions of the Metro Urban Growth Management Functional Plan.

The amendments must show what development will be allowed and the conditions to be placed upon development.

NMFS will not apply take prohibitions to (1) MRCI development or redevelopment governed by and conducted in accordance with city, county, or regional government ordinances or plans that NMFS has found to adequately protect listed species; or (2) once NMFS has determined that Metro's Functional Plan is adequately protective, activities conducted under Metro's jurisdiction that are pursuant to ordinances that Metro has found comply with its Urban Growth Management Functional Plan. NMFS must agree in writing that the MRCI development ordinances and plans, including the Functional Plan, ensure that the plans and the development activities complying with them will conserve listed salmon and steelhead. NMFS will individually apply the following 12 evaluation considerations when determining whether MRCI development ordinances or plans adequately conserve listed fish:

(1) An MRCI development ordinance or plan ensures that development will avoid inappropriate areas such as unstable slopes, wetlands, areas of high habitat value, and similarly constrained sites. Activities such as development, timber harvest, or other soil disturbance should be sited in appropriate areas—avoiding unstable slopes, wetlands, areas already in a proper functioning condition, areas that are more functional than neighboring sites, and areas with the potential to be fully restored. A description of particularly sensitive areas is included in the Fish and Forest Report cited elsewhere in this guidance. Those sites include but are not limited to soils perennially saturated from a headwall or a sideslope seep or spring, the permanent initiation point of perennial flow of a stream, an alluvial fan, and the intersection of two perennial streams.

(2) An MRCI development ordinance or plan adequately prevents stormwater discharge impacts on water quality and quantity and stream flow patterns in the watershed—including peak and base flows in perennial streams. Stormwater management programs

must require development activities to avoid impairing water quality and quantity. These activities must preserve or enhance stream flow patterns so they are as close as possible to the historic peak flows, base flows, durations, volumes, and velocities. This can be accomplished by reducing impervious surfaces and maintaining forest cover and natural soils. These conditions will, in turn, maintain essential habitat processes such as natural water infiltration rates, transpiration rates, stormwater run-off rates, sediment filtering, and provide hydrographic conditions that maintain and sustain aquatic life.

(3) An MRCI development ordinance or plan protects riparian areas well enough to attain or maintain PFC around all rivers, estuaries, streams, lakes, deepwater habitats, and intermittent streams. Compensatory mitigation is provided, where necessary, to offset unavoidable damage to PFC in riparian management areas. Activities should be quite limited in areas adjacent to all perennial and intermittent streams and waters supporting listed salmon and steelhead in order to avoid soil disturbance and maintain vegetated riparian corridors. The existence of native vegetation along stream corridors is a condition that can support essential habitat processes such as temperature control, bank stability, stream complexity over time, the filtering of pollutants, or contributions of large logs and other woody debris to a stream.

Limiting activities in riparian areas helps protect or restore the condition and quality of soil and ensure that a diversity of plants and trees of all ages is well-distributed across a riparian area. Such conditions on the landscape contribute to the natural succession of riparian forest trees and protect the water quality and flow conditions necessary to meet salmonid habitat needs downstream. In urban areas, the riparian areas often face the added challenge of intercepting large amounts of nutrients, pesticides and sediment so that they do not directly enter a stream.

NMFS' determinations are significantly influenced by science indicating that essential habitat functions are affected to varying (but significant) degrees by streamside activities

conducted within a distance equal to the height of the tallest tree that can grow on that site (known as the site potential tree height). The distance is measured not from the stream itself, but from the edge of the area within which a stream naturally migrates back and forth over time (the channel migration zone).

When the scope of an activity includes modifying a riparian site that has existing, non-native vegetation, it may be important to restore native vegetation on the site in order to recover the essential habitat functions discussed above.

(4) An MRCI development ordinance or plan avoids stream crossings—whether by roads, utilities, or other linear development—wherever possible and, where crossings must be provided, minimize impacts. One method of minimizing stream crossings and their associated disturbances is to optimize transit opportunities to and within newly developing urban areas. A plan should consider whether potential stream crossings can be avoided by redesigning the access. Where a crossing is unavoidable, the plan or ordinance should minimize its affect by preferring bridges over culverts; sizing bridges to a minimum width; designing bridges and culverts to pass at least the 100-year flood (and associated debris), and meet Oregon Department of Fish and Wildlife or Washington Department of Fish and Wildlife criteria (*ODFW's Oregon Road/Stream Crossing Restoration Guide, Spring, 1999* and *WDFW's Fish Passage Design at Road Culverts, March 3, 1999*). In addition, all crossings must be regularly monitored and maintained and intermittent and perennial streams should not be closed over.

(5) An MRCI development ordinance or plan adequately protects historic stream meander patterns and channel migration zones and avoids hardening stream banks and shorelines. Any MRCI development should be designed to allow streams to meander in historic patterns of channel migration. Activities on the landscape must protect conditions that allow gradual bank erosion, flooding, and channel meandering in the zone within which it would naturally occur. This natural channel migration promotes gravel recruitment, geomorphic diversity, and habitat development. If an adequate number of riparian

management areas are linked to the channel migration zone, there should be no need for bank erosion control in all but the most unusual situations. In most circumstances, activities that call for hardening stream banks are not consistent with PFC.

If unusual circumstances require bank erosion to be controlled, it should be accomplished through vegetation or carefully bioengineered solutions. Rip-rap blankets or similar hardening techniques would not be allowed, unless particular site constraints made bioengineered solutions impossible. NMFS finds that the Washington Department of Fish and Wildlife's publication, "*Integrated Streambank Protection Guidelines*" (June, 1998) can provide sound guidance, particularly regarding mitigation for gravel recruitment.

The Fish and Forest Report, cited elsewhere in this guidance, includes a detailed description of the types of channel migration zones found in most geomorphic settings. Further, the Washington State Forest Practices Board has published its *Standard Method for Measuring Physical Parameters of Streams and Channel Migration Zones* (March, 2000). Though it is designed for the forested environment, NMFS finds the document a useful aid in determining channel migration zones in any setting.

(6) An MRCI development ordinance or plan adequately protects wetlands, wetland buffers, and wetland function—including isolated wetlands. Activities on the landscape must protect wetlands and the vegetation surrounding them to avoid disturbing soils, vegetation, and local hydrology. Such conditions on the landscape contribute to the natural succession of wetlands, and protect wetland functions necessary to meet salmonid habitat needs such as food chain support, shoreline protection, water purification, storm and flood storage, and groundwater recharge. These conditions are also necessary to protect the freshwater, marine, and estuarine wetland systems that provide specialized habitat for rearing and migrating salmon and steelhead.

(7) An MRCI development ordinance or plan adequately preserves permanent and

intermittent streams' ability to pass peak flows. Activities that decrease a stream's hydrologic capacity by filling in its channel for road crossings or other development will increase water velocities, flood potential, and channel erosion, as well as degrade water quality, disturb soils, and groundwater flows, and harm vegetation adjacent to the stream. Preserving hydrologic capacity will provide conditions on the landscape necessary for maintaining essential habitat processes such as water quantity and quality, streambank and channel stability, groundwater flows, and succession of riparian vegetation. In combination with the riparian management areas or set-back provisions described above, this means that dredge and fill should be avoided unless they are conducted in conjunction with a necessary stream crossing whose impacts are mitigated to the greatest extent possible.

(8) An MRCI development ordinance or plan stresses landscaping with native vegetation to reduce the need to water and apply herbicides, pesticides, and fertilizer. Plans must describe the techniques local governments will use to encourage planting with native vegetation, reducing lawn area, and lowering water use. These provisions will maintain essential habitat processes by helping conserve water and reduce flow demands that compete with fish needs. They will also reduce applications of chemicals that contribute to water pollution in streams and other water bodies supporting salmon and steelhead.

(9) An MRCI development ordinance or plan contains provisions to prevent erosion and sediment run-off during (and after) construction and thus prevent sediment and pollutant discharge to streams, wetlands and other water bodies that support listed fish. These provisions, at a minimum, should include detaining flows, stabilizing soils, protecting slopes, stabilizing channels and outlets, protecting drain inlets, maintaining best management practices (BMPs), and controlling pollutants. These goals can be accomplished by applying seasonal work limits, phasing land clearing activities, maintaining undisturbed native top soil and vegetation, etc.

These stipulations will help maintain natural runoff rates and protect water quality.

(10) An MRCI development ordinance or plan ensures that demands on the water supply can be met without affecting—either directly or through groundwater withdrawals—the flows salmon need. A plan must ensure that any new water diversions are positioned and screened in a way that does not injure or kill fish.

(11) An MRCI development ordinance or plan provides mechanisms for monitoring, enforcing, funding, reporting, and implementing its program. Moreover, formal plan evaluations should take place at least once every five years. The plan should make a commitment to (and assign responsibility for) regular monitoring and maintenance activities for any detention basins, erosion and sediment control measures, and other management tools over the long term. Practices should be adopted as needed based on monitoring results. In addition, to ensure that development activities comply with the ordinance or plan and that PFC is attained or maintained, commitments must be made for regular funding, enforcement, reporting, implementation, and plan evaluations. These commitments are necessary to lead to conditions that will maintain the whole suite of essential habitat processes for salmon and steelhead.

(12) An MRCI development ordinance or plan complies with all other state and Federal environmental and natural resource laws and permits.

NMFS concludes that development governed by ordinances or plans that fulfill the listed considerations will address the potential negative impacts on salmon and steelhead associated with development and redevelopment. In such circumstances adequate safeguards will be in place that NMFS does not find it necessary or advisable to impose additional Federal protections through the take prohibitions.

Limit No. 13 – Forest Management in Washington

In the State of Washington, NMFS has worked with timber industry representatives, tribes, state and Federal agencies, and various interest groups for many months. The purpose of these discussions was to develop a set of forest practices that could be included in Washington Governor Locke's salmon recovery plan. The product of those discussions is the April 29, 1999, Forests and Fish Report (FFR) to Governor Locke. It provides important improvements in forest practice regulation which, if approved by the Washington Forest Practices Board in a form at least as protective as it is laid out in the FFR, will substantially protect and conserve listed fish in that state. The FFR also mandates that all existing forest roads be inventoried for their potential to affect salmon and steelhead and that all needed improvements be completed within 15 years. The impacts that inadequately sited, constructed, or maintained forest roads have on salmonid habitat are well-documented. This feature alone will help a great deal in conserving listed ESUs in Washington.

After carefully considering the above features—as well as others described in greater detail below—NMFS has determined it is not necessary to apply take prohibitions to non-Federal forest management activities conducted in the State of Washington. These activities may go forward provided that: (1) The action complies with forest practice regulations the Washington Forest Practices Board has adopted and implemented and that NMFS has found to protect habitat functions at least as well as the regulatory elements of the FFR; and (2) the activity also implements all non-regulatory elements of the FFR. It should also be noted that actions taken under alternative plans may be included under this limit provided the Washington Department of Natural Resources (WDNR) finds the alternate plans protect physical and biological processes at least as well as the state forest practices rules and that NMFS, or any resource agency or tribe NMFS designates, has the opportunity to review each alternate plan at every stage of its development and implementation. Given these conditions,

NMFS concludes that the FFR package conserves salmon and their habitat well enough that it is neither necessary nor advisable to impose take prohibitions.

NMFS believes that to conserve listed fish, it is important to rapidly adopt and implement improved forest practice regulations such as those found in the FFR. NMFS will provide an opportunity for the public to review and comment on all regulations developed to implement the FFR before making any determinations about how well they conserve listed fish.

Although NMFS will continue working with Washington (and other states) on broadening this limit, at this time NMFS lacks information to determine that pesticide provisions in the FFR package, sufficiently protect and conserve listed fish. Therefore, this limit does not extend to the use of herbicides, pesticides, or fungicides.

Elements of the FFR that protect and conserve listed salmon and steelhead are summarized below:

(1) It accurately classifies water bodies and makes stream typing information broadly available. It is tailored to protect and reinforce the functions and roles of different stream classes in the continuum of the aquatic ecosystem. These include fish-bearing streams—which may have either perennial or seasonal flow; perennial, non-fish-bearing streams—which include spatially intermittent streams; and seasonal, non-fish-bearing streams—which have a defined channel that contains flow at some time during the year.

(2) It lays out a plan for properly designing, maintaining, and upgrading existing and new forest roads. As stated previously, this is an important means of maintaining and improving water quality and instream habitats. The FFR provisions address: Road construction and reconstruction in riparian areas and on potentially unstable slopes; the potential for new and reconstructed roads to affect hydrologic connections between stream channels, ground water, and wetlands, and to add sediment to aquatic systems; the ability for road structures (e.g., culverts and bridges) to pass fish, 100-year

flows, and instream debris; a plan to assess (within 5 years) the condition of all forest roads and to determine the need to repair, reconstruct, maintain, control access, abandon or obliterate them with work to be completed within 15 years; and BMPs for all other aspects of forest road operation.

(3) It protects unstable slopes from increased failure rates and volume.

(4) It allows properly functioning condition to be achieved in riparian areas along fish-bearing waters. Proper function refers to the suite of riparian and instream functions that affect both instream habitat conditions and the vigor and succession of riparian forest ecosystems. The functions include stream bank stability, shade, litterfall and nutrient input, large woody debris recruitment, and microclimate factors such as air and soil temperature, windspeed, and relative humidity. The FFR ensures properly functioning condition by establishing variable-width management zones within which silvicultural treatments are allowed. These treatments are prescribed through forestry guidelines that NMFS has determined will set a riparian forest stand on a growth and succession pathway toward a desired future condition (DFC) of a mature riparian forest. Once the stand is on the proper trajectory toward DFC, it must remain there without further harvest or silvicultural treatment. Riparian management includes the following provisions:

- Continuous riparian management zones along all fish-bearing streams.
- A core zone at least 50 ft (15 m) wide west of the Cascades and 30 ft (9 m) on the east side, within which no harvest or salvage occurs. This width is measured horizontally from edge of the bankfull channel, or where channel migration occurs, from the outer edge of the channel migration zone.
- An inner zone that varies in width depending on the timber harvest strategy.
- An outer zone extending to a site tree height (100 year base) that provides a

minimum of 20 conifer trees per acre that are greater than 12 inches (0.30m) in diameter at breast height.

- Overstory canopy disturbance along a stream is limited to 20% for roads and yarding corridors and ground disturbance is limited to 10%.
- A mature riparian forest is the DFC. Generally, mature riparian forest conditions are achieved after 80 to 200 years. Once this DFC trajectory has been achieved the riparian stand will be allowed to grow without further harvest or treatment.
- A method for applying riparian prescriptions in the field so that DFC will be achieved.
- Riparian conservation zone widths that provide bank stability, litterfall and nutrients, shade, large woody debris, sediment filtering, and microclimate functions in the near and long-term.
- Mitigation for the effects permanent road systems near stream channels have on riparian function, water quality, and fluvial (floodplain) processes.
- Treatment guidelines—by tree species, stand age and condition, and region—that address stocking levels, tree selection, spacing, and other common forest metrics needed to achieve DFC.
- Guidelines for converting certain hardwood-dominated riparian areas to forest stands that can achieve the pathway toward DFC.
- A strategy for conserving fluvial processes and fish habitats in the channel migration zone.
- Guidelines for salvaging dead or downed timber in the inner and outer riparian zones.
- Provisions for managing riparian areas along perennial and seasonal non-fish-bearing streams to achieve a large measure of riparian function.

(5) It sets up a process for evaluating the effects of multiple forest practices on the watershed scale.

(6) It ensures that any alternative plan would provide a functionally equivalent level of conservation.

(7) It includes a monitoring and adaptive management process that managers will use to determine how well the practices are being implemented, how well they comply with regulation, and how effective the regulations themselves are to assess implementation compliance with, and effectiveness of, current regulations, measured against a baseline data set. Over time, some forest practices will likely need to be replaced or adjusted as new information comes in. Whenever new information leads the state forest practice agency to amend a program under this limit, NMFS will publish a notification in the *Federal Register* announcing the availability of those changes for review and comment. Such a notice will provide for a comment period of not less than 30 days, after which NMFS will make a final determination on how well the changes conserve listed fish and thus whether they may be included under this limit on the take prohibitions.

Regular Evaluation of Limits on Take Prohibitions

In determining that it is neither necessary nor advisable to impose take prohibitions on certain programs or activities described in the final rule, NMFS is mindful that new information may require that conclusion to be reevaluated at some future point. NMFS will evaluate all of the limits on the take prohibitions described in the final rule on a regular basis to determine the program's effectiveness in protecting and conserving the listed fish. If the program is not sufficiently protective, NMFS will identify ways in which it needs to be altered or strengthened. Changes may be identified if the program does not protect desired habitat functions or, even if the program supports the originally targeted habitat characteristics and functions, the habitat does not uphold population productivity levels needed to conserve the ESU.

If any jurisdiction conducting activities that fall under a given limit does not make changes to respond adequately to the new

information in the shortest amount of time feasible—and in no case taking more than one year—NMFS will publish notification in the Federal Register announcing its intention to withdraw the limit and apply the take prohibitions to the program. Such an announcement would provide a comment period of at least 30 days, after which NMFS would make a final determination whether to subject the activities to the ESA section 9(a)(1) take prohibitions.

Other ESA Mechanisms

Section 10 of the ESA provides another mechanism for NMFS to permit take when it is the incidental result of carrying out an otherwise lawful activity. Applicants for an Incidental Take Permit must submit a Conservation Plan (CP) that identifies (a) the impacts expected from any take associated with activities covered by the plan, and (b) the steps that will be taken to monitor, minimize, and mitigate those impacts. For more information on CPs, see the publication entitled "*A Habitat Conservation Plans and the Incidental Take Permitting Process*," available on the U.S. Fish and Wildlife Service web site, at <http://www.fws.gov/r9endspp/hcp/hcpplan.html>, or speak with one of the NMFS contact people listed below.

Section 7 of the ESA requires that Federal agencies consult with NMFS on activities they authorize, fund, or carry out to ensure they are not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of their critical habitat. This includes Federally funded projects such as road construction, stormwater management, rural and urban development, and many other activities conducted, permitted, or funded by Federal agencies.

How NMFS Decides What May Be Included In a 4(d) Rule Limit

Whether take prohibitions or other protective regulations are necessary and

advisable depends largely upon the biological status of the species and the potential impacts of various activities on it. If programs contribute to conserving the species or adequately limit the impacts on the species, NMFS may find it is not necessary or advisable to impose the Federal take prohibitions. NMFS expects to continue to work with various entities after the final rule is published, and we will continue to incorporate other conservation efforts in future amendments or through other ESA mechanisms.

In assessing the impacts of a proposed action or program on a species= freshwater or estuarine habitat, NMFS considers the following factors:

- Will the action or program degrade existing habitat processes or functions?
- Will the action or program help restore degraded habitat processes or functions?

The limits in the current rule provide examples of how activities that may harm salmon and steelhead can be adequately controlled to minimize impacts and contribute to the conservation of salmon and steelhead.

All development activities need adequate funding and legal mechanisms for implementing, monitoring, maintenance, enforcement, and reporting in order to ensure that they comply with approved policies, ordinances, and permitting procedures. NMFS expects that programs proposed for a limit will be sufficiently described, guided, or governed by an applicable authority (other than just the ESA itself). These authorities could include state laws, county regulations, metropolitan master plans, local ordinances, official operating manuals, or other regulating mechanisms. In order to qualify for a limit, these mechanisms and the entities implementing them must provide a high degree of assurance that covered activities are being conducted in compliance with the specifications NMFS has analyzed and approved.

To be approved for a limit from ESA take prohibitions, a program must conserve salmon and meet their biological requirements. This criterion is the same for any program. These species span the entire West Coast, from coastal rainforests to arid inland areas to high

mountain regions nearly a thousand miles from the ocean. Specific requirements will differ from place to place. Some jurisdictions have asked for NMFS' help in learning how to avoid or limit adverse impacts on these species. In response, we have created this Guide and amended the final rule to make clear what must be done to protect and conserve listed fish.

Submitting a Program for 4(d) Limit

Any activity or program seeking a limit under a 4(d) rule should contain the following features.

- Descriptions of the activity or program being proposed, the geographic area within which the proposed action/program will apply or be carried out, and the jurisdiction or entity responsible for overseeing the action/program.
- A description of the listed species and habitat that will be affected by the action. This information should include fish distribution and abundance in the affected area and a description of the type, quantity, and quality of habitat in the affected area.
- A description of the environmental baseline. This information should describe existing habitat conditions in terms of water quality, access, riparian areas, stream channels, flow, and watershed health indicators such as total impervious area and any existing high quality habitat areas.
- A description of the anticipated short-term and long-term impacts the action is expected to have on the species (including all life-cycle stages) and its habitat. This description should include both positive and negative impacts and describe how any adverse impacts will be avoided, mitigated, or minimized.
- A discussion of the likelihood that the program or action will be implemented as described. Some questions that would need to be answered are: What commitment has been made to carry out the action or program? Are the legal authorities needed to carry out the program in place? Is implementation funding available and adequate? Is staffing available and

adequate? What is the schedule for implementation? If the program is currently being implemented, what is its record of implementation and effectiveness to date?

- A program for monitoring both the action's implementation and effectiveness; it should include a schedule for conducting monitoring and submitting reports.
- A method for using monitoring information to change actions when needed—adaptive management.

Contact Information

The table below identifies the appropriate division and individual staff member at NMFS to contact regarding inquiries about initiating the process to receive a 4(d) limit or to identify other ESA permitting options:

TOPIC/TYPE OF ACTIVITY	NMFS DIVISION	FOR MORE INFORMATION
Ongoing Scientific Research Permit	Protected Resources	Leslie Schaeffer (503/230-5433)
Fishery Management	Sustainable Fisheries	http://www.nwr.noaa.gov/1fmep/index.html or Stephen Smith (503/230-5427) or Peter Dygert (206/526-6734)
Hatchery and Genetic Management Programs	Sustainable Fisheries	http://www.nwr.noaa.gov/1hgmp/hgmptmpl.htm or Stephen Smith (503/230-5427)
Scientific Research Conducted by States	Protected Resources	Leslie Schaeffer (503/230-5433)
Screened Water Diversions	Hydropower Program	http://www.nwr.noaa.gov/1hydroweb/ferc.htm or Bryan Nordlund (503/231-6816)
<ul style="list-style-type: none"> • Joint Tribal/State Plans • Routine Road Maintenance Activities • City of Portland Integrated Pest Management • Municipal, Residential, Commercial and Industrial Development (and Redevelopment) • Section 10 Incidental Take Permit • Section 7 Consultation 	Habitat Conservation	<p>State of Washington – Steve Landino (360/753-6054)</p> <p>State of Oregon, but not including Snake River Basin – Michael Tehan (503/231-2224)</p> <p>State of Idaho, and the Snake River Watershed in Oregon – Ted Meyers (208/378-5698)</p> <p>State of California – Craig Wingert (562/980-4021)</p>

Additional Information on the Final 4(d) Rule

Please visit the NMFS Northwest Region Web Site at <http://www.nwr.noaa.gov> or the Southwest Region Web Site <http://swr.ucsd.edu> for additional information on the final 4(d) rule for salmon and steelhead. The sites contain the *Federal Register* notice, fact sheets, maps of threatened salmon and steelhead ESUs, press releases, copies of question and answer fact sheets, and documents referenced in the rule. The sites also contain a great deal of information on listed species in general: *Federal Register* notices, species maps, status reviews, fact sheets, and more. In addition, the following NMFS staff members can provide information on the final rule:

TOPIC/GEOGRAPHIC AREA	CONTACT
Final 4(d) Rule	Rosemary Furfey (503/231-2149) Rosemary.Furfey@noaa.gov
Puget Sound	Elizabeth Babcock (206/526-4505) Elizabeth.Babcock@noaa.gov
Upper Columbia Basin	Mike Grady (206/526-4645) Michael.Grady@noaa.gov
Mid-Columbia Basin	Kate Vandemoer (503/230-5422) Kate.Vandemoer@noaa.gov
Lower Columbia Basin	Rob Jones (503/230-5429) Rob.Jones@noaa.gov
Willamette Basin or Oregon Coast	Patty Dornbusch (503/230-5430) Patty.Dornbusch@noaa.gov
California Coast	Greg Bryant (707/825-5162) Greg.Bryant@noaa.gov

Effective Dates of Final 4(d) Rule

Species	Effective Date of 4(d) Rule
Threatened Steelhead ESUs	60 days after the final 4(d) rule is published
Threatened Salmon ESUs	180 days after the final 4(d) rule is published

Finding Your Way Around the 4(d) Rule

The proposed 4(d) rule included a preamble in which NMFS provided technical guidance, descriptions of the scientific principles upon which the limits were based, and descriptions of the limits' background and content. The proposed regulatory language was in a separate Code of Federal Regulation (CFR) section.

The final 4(d) rule for salmon and steelhead is divided into two sections—the preamble and the CFR language. The preamble includes the following sections:

- A summary of the final rule and its effective dates
- Supplementary Information—including the rule's background and a description of its content
- A list of the threatened ESUs affected by the final rule
- Notice of availability of documents referenced in the final rule
- A summary of the comments received in response to the proposed rules
- A section identifying the changes to the proposed 4(d) rule made in response to public comment
- Take Guidance
- A section detailing how the rule complies with the Regulatory Flexibility Act and various Executive Orders

The last section of the final rule includes the regulatory language that applies the section 9 take prohibitions to the 14 threatened ESUs listed below and creates 13 limits on those prohibitions. The regulations section describes each limit.

Technical Issues: Aids for Understanding the 13 Limits in the 4(d) Rule

Viable Salmonid Populations

NMFS uses the Viable Salmonid Population (VSP) concept primarily in

The following is a list of the 14 threatened ESUs covered in the final 4(d) rule:

Threatened Steelhead ESUs

- Central California Coast
- South-Central California Coast
- Snake River Basin
- Lower Columbia River
- Central Valley, California
- Upper Willamette River
- Middle Columbia River

Threatened Chum ESUs

- Hood Canal summer-run
- Columbia River

Threatened Chinook ESUs

- Puget Sound
- Lower Columbia River
- Upper Willamette River

Threatened Coho ESUs

- Oregon Coast

Threatened Sockeye ESUs

- Ozette Lake

evaluating hatchery and harvest activities. NMFS defines populations following Ricker's (1972) definition of a "stock." Thus, a population is a group of fish of the same species spawning in a particular lake or stream (or portion thereof) at a particular season which to a substantial degree does not interbreed with fish from any other group spawning in a different place or in the same place at a different season. This definition is widely accepted and applied in the field of fishery management.

An independent population is an aggregation of one or more local breeding units that are closely linked by exchange of individuals among themselves, but are sufficiently isolated from other independent populations that exchanges of individuals among populations do not appreciably affect the population dynamics or extinction risk of the populations over a 100-year time frame. Such

populations are generally smaller than their entire ESU, and they generally inhabit geographic ranges on the scale of whole river basins or major sub-basins that are relatively free of outside migration. For several reasons, NMFS believes it important to identify population units within established ESUs and individually evaluate their extinction risk. First, many of the biological processes that can drive a species to extinction operate at the population level, so it is appropriate to manage at that scale. In addition, by identifying and assessing impacts at the population level, managers can gain a better understanding of the important biological diversity contained within each ESU—a factor considered in NMFS' ESU policy (Waples 1991). Further, given an ESU's scale and complexity, it is typically a more practical undertaking to assess impacts at the population level. Finally, assessing impacts at the population level helps ensure that listed salmon and steelhead are treated consistently across a diverse geographic and jurisdictional range.

NMFS will use four primary biological parameters to evaluate population status: (1) Abundance, (2) population growth rate, (3) population spatial structure, and (4) diversity. The relevance of these parameters to salmonid population status is discussed in a variety of scientific documents (e.g., Nehlsen et al. 1991; Burgman et al. 1993; Huntington et al. 1996; Caughley and Gunn 1996; Myers et al., 1998). Population abundance is important to evaluate because smaller populations experience relatively greater genetic, environmental, and demographic risks. Genetic risks associated with low population size include inbreeding depression, harmful mutation accumulation, and loss of genetic diversity. Demographic risks associated with low population size include random effects associated with environmental events.

Population productivity may be thought of as the population's ability to increase or maintain its abundance. It is important to assess productivity because negative trends in productivity over sustained periods may lead to the genetic and demographic impacts associated with small population sizes. Population spatial structure reflects the number, size, and distribution of habitat patches and the condition

of the migration corridors that provide linkages among these patches. Population structure affects demographic processes and extinction risk in ways that may not be readily apparent from studies of abundance and population growth rate. In addition, spatial structure affects evolutionary processes and may affect a population's ability to respond to environmental changes or stochastic events.

Population diversity is important because it helps buffer a species against short-term environmental change and stochastic events. Population diversity may be assessed by examining life history traits such as age, and run and spawn timing distributions. Also, DNA analysis may provide an indication of diversity.

In applying the concepts discussed here to harvest and hatchery actions, NMFS relies on two functional thresholds of population status: (1) Critical population threshold, and (2) viable population threshold. The critical population threshold refers to a minimal functional level below which a population's risk of extinction increases exponentially in response to any additional genetic or demographic risks. The viable population threshold refers to a condition where the population is self-sustaining and not at risk of becoming endangered in the foreseeable future. This threshold reflects the desired condition for individual populations and encompasses their contribution to recovering the ESU as a whole. Proposed actions must not preclude populations from attaining this condition.

Properly Functioning Condition

The final rule limits the take prohibitions for certain land and water management activities that NMFS has determined will conserve listed salmonids' habitat even though they may incidentally take individual listed fish. To make these determinations, NMFS evaluated whether the activities would allow properly functioning habitat condition to be attained and persist. The NMFS defines properly functioning condition (PFC) as the sustained presence of natural habitat-forming processes (e.g., hydraulic runoff, bedload transport, channel migration,

riparian vegetation succession) that are necessary for the long-term survival and recovery of the species (*The Habitat Approach*, NMFS, 1999). Thus, PFC constitutes a species' habitat-based biological requirements—the essential physical features that support spawning, incubation, rearing, feeding, sheltering, migration, and other behaviors. Such features include adequate instream flow, appropriate water temperature, loose gravel for spawning, unimpeded fish passage, deep pools, and abundant large tree trunks and root wads.

There is more than one scientifically credible analytical framework for determining an activity's effects. However, NMFS has developed a default analytical method (*Making Endangered Species Act Determinations of Effect for Individual or Grouped Actions at the Watershed Scale*, NMFS, 1996). It is often referred to as the "Matrix of Pathways and Indicators," or MPI. In the MPI framework, the pathways for determining the effect of an action are represented as six conceptual groupings (e.g., water quality, channel condition) of 18 habitat condition indicators (e.g., temperature, width/depth ratio). Indicator criteria (mostly numeric, though some are narrative) are provided for three levels of environmental baseline condition: properly functioning, at risk, and not properly functioning. The effect of the action upon each indicator is classified by whether it will restore, maintain, or degrade the indicator.

Although the indicators used to assess habitat condition may entail instantaneous measurements, they are chosen, using the best available science, to detect the health of underlying processes, not static characteristics. "Best available science" advances through time, thus allowing PFC indicators to be refined, new threats to be assessed, and species status and trends to be better understood. Aquatic habitats are inherently dynamic, and the PFC concept recognizes that natural patterns of habitat disturbance will continue to occur. Floods, landslides, windstorms, and fires result in spatial and temporal variability in habitat characteristics, as do human activities. Indicators of PFC vary between different landscapes based on unique physiographic and geologic features. For example, aquatic habitats

on timberlands in glacial mountain valleys are controlled by natural processes operating at different scales and rates than are habitats on low-elevation coastal rivers. The MPI provides a consistent but geographically adaptable framework for making effect determinations. The pathways and indicators, as well as the ranges of their associated criteria, are amenable to alteration through the process of watershed analysis.

Regardless of the analytical method used, if a proposed action is likely to impair properly functioning habitat, appreciably reduce the functioning of already impaired habitat, or retard the long-term progress of impaired habitat toward PFC, it cannot be found to be consistent with the conservation of the species. If a program preserves existing habitat function levels and allows natural progression towards PFC where habitat is impaired, NMFS may determine that it qualifies for a limit on the take prohibitions. The NMFS has added language to the limits for road maintenance, pesticide management, municipal, residential, commercial and industrial (MRCI) development, and forestry that defines PFC and identifies how NMFS will evaluate programs with regard to meeting this biological standard. Specific criteria for applying this conservation standard are listed in each habitat-related limit.

The scope of any given activity is important to NMFS' effects analysis. The scope of the activity may be such that only a portion of the habitat forming processes in a watershed are affected by it. For NMFS to find that an activity is consistent with conserving listed fish, only the effects on habitat functions that are within the scope of that activity will be evaluated. For example, an integrated pest management program may affect habitat forming processes related to clean water, but have no effect on physical barriers that prevent fish from gaining access to a stream.

Jeffrey B. Litwak
Counsel
Columbia River Gorge Commission
288 E. Jewett Blvd.
P.O. Box 730
White Salmon, WA 98672
(509) 493-3323

NOTE: This short essay briefly introduces the issues that I will raise for discussion by the ESA panel.

**CONSISTENCY, A NEW APPROACH FOR NMFS
(LOTS OF QUESTIONS, FEW ANSWERS)**

I. INTRODUCTION

On June 20, 2000, the National Marine Fisheries Service announced the final rules (4(d) rules) for protection of 14 ESUs (evolutionary significant units) of salmon and steelhead in Oregon, Washington, Idaho, and California. The rules, codified at 50 C.F.R. § 223.203, were published on July 10, 2000. 65 Fed. Reg. 42422 (July 10, 2000). The rules implement the ESA's prohibition on taking threatened or endangered species without a permit. 16 U.S.C. § 1538(1)(b).

The ESA defines "take" as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct." 16 U.S.C. § 1532(19). "Harm" includes "significant habitat modification or degradation where it actually kills or injures protected species by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering." 50 C.F.R. § 17.3.

The 4(d) rules for protection of salmon and steelhead represent a new approach to regulating habitat modification. In these rules, NMFS permits state,

regional, and local governments to submit their plans, ordinances, and programs for review by NMFS. If NMFS deems the submittal adequate (i.e., consistent with specific provisions of the rules), then activities that are fully covered by the limits are thus presumed to not harm the protected species and are thus exempt from the ESA's take permit requirement. There are 13 types of limits identified in the rules. Most land use regulations, development projects, and planning in general will fall into the "Municipal, Residential, Commercial, and Industrial Development and Redevelopment (MRCI)" limit.

II. CONSISTENCY—ITS ABOUT TIME

Local land use consistency with state land use requirements is a long-recognized concept in Oregon—and throughout the United States. Finally, NMFS has embraced consistency in its new 4(d) rules. Consistency has some obvious benefits for both regulators and project proponents.

A. Benefits for Project Proponents

The obvious benefit is the streamlining of permitting processes. Proponents will not need to seek section 9 take permits, nor be concerned that their activities will "take" or "harm" listed species.

B. Benefits for Regulators

Consistency also gives regulators a shield on liability—through the presumption of compliance with the ESA. Two cases that have been around a while held government regulators liable under the ESA: *Strahan v. Coxe*, 127 F.3d 155 (1st Cir. 1997) (Massachusetts liable under the ESA for licensing commercial fishing operations to use gillnets and lobster pots in specifically the

manner that is likely to result in a violation of federal law.); *Loggerhead Turtle v. County Council of Volusia County*, 896 F. Supp. 1170, 1180-81 (M.D. Fla. 1995) (holding that county's authorization of vehicular beach access during turtle mating season exacted a taking of the turtles in violation of the ESA).

C. Issues with consistency programs

1. Oversight and Enforcement

Perhaps the most significant issue that arises with "consistency" is oversight and enforcement. We in Oregon are no strangers to this issue; we have DLCD. But this issue is not so ingrained elsewhere. My experience in the Columbia River Gorge National Scenic Area has shown that Oregon counties have generally accepted the Gorge Commission's oversight authority, but the Washington counties have been less accepting. The Salmon and Steelhead listings cover areas in Oregon, Washington, Idaho, and California. Can NMFS expect a high level of acceptance throughout the four-state region?

How will NMFS oversee and enforce the approved limits? Each of the limits has a specified process for NMFS to evaluate whether the programs approved under that limit are effective. For example, for the MCRI limits, the 4(d) rules specify that NMFS (1) will require annual monitoring reports from all programs that are deemed, (2) will review programs and as necessary suggest changes, and (3) if a program does not make the suggested changes, then NMFS will decide whether to withdraw the limit so that take prohibitions would apply to the program. 50 C.F.R. § 223.203(b)(12)(iii). Is this the full extent of

NMFS' authority to ensure consistency? Can NMFS use the general ESA civil and criminal penalties? 16 U.S.C. § 1540.

2. Should the take prohibitions apply even if there is a limit in place?

Another issue is whether there are situations when the take prohibitions ought to apply even though the program has an approved limit. For example: Should the take prohibitions apply if the approved program results in a take not anticipated in its approved limit? Should the take prohibitions apply when a program acts beyond the scope of its approved limit?

III. NMFS' PROCESS FOR APPROVING LIMITS

NMFS does not have a specified process for how to submit a program, or for how it will review a program for approval of a 4(d) limit. However, the *Citizen's Guide to the 4(d) Rule for Threatened Salmon and Steelhead on the West Coast* (June 20, 2000) discusses the requirements for submitting a program. Those requirements include, inter alia:

A description of the listed species and habitat that will be affected by the action. This information should include fish distribution and abundance in the affected area and a description of the type, quantity, and quality of habitat in the affected area.

A description of the environmental baseline. This information should describe existing habitat conditions in terms of water quality, access, riparian areas, stream channels, flow, and watershed health indicators such as total impervious area and any existing high quality habitat areas.

Few governments have the resources to conduct such studies. More governments are better equipped to describe conditions on the land and monitor how activities approved under a program affect those conditions. Will NMFS be flexible with these requirements?

IV. CONCLUDING THOUGHT

Just how will this "Limit" concept work? It will no doubt be confusing for long time to come. There will be a patchwork of approved plans and programs—some plans will be adequate, others will not. Specific activities in adequate plans may not be exempt from the take prohibitions. No doubt, this changes the equation for due diligence in getting development approvals. It also changes the equation for whether regulators will give approvals.

**Advising Clients in a 4(d)imensional World:
Understanding the Parameters of Citizen Suits
Under the Endangered Species Act**

**Richard H. Allan
Ball Janik LLP**

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Summary: The National Marine Fisheries Service (NMFS) has promulgated rules under Section 4(d) of the Endangered Species Act for “evolutionarily significant units” of salmon and steelhead listed as “threatened” under the Act.¹ The 4(d) rule for steelhead will take effect 60 days after publication in the *Federal Register*; the 4(d) rule for salmon will take effect 180 days after publication. When the rules take effect, they will prohibit “take” of threatened species, except under certain circumstances. In the final rules, NMFS indicates that it will consider approving “take” limitations for municipal, residential, commercial and industrial (MRCI) development and redevelopment conducted under ordinances or plans approved by NMFS as adequate to conserve listed salmon and steelhead. However, no such ordinances or plans will have been approved by NMFS before the steelhead 4(d) rule takes effect, and it is questionable whether any ordinances or plans will have been approved by NMFS before the salmon 4(d) rule takes effect.

The Section 4(d) rules provide a basis for federal enforcement actions and citizen suits against anyone believed to be violating the “take” prohibition. Therefore, where local zoning and development ordinances have not been approved as limitations under the 4(d) rules, Oregon real estate and land use attorneys must be prepared to advise their clients regarding the potential for enforcement actions and citizen suits under the Endangered Species Act.

I. THE SECTION 4(D) RULES: PROHIBITION ON “TAKE”

The 4(d) rules apply the same “take” prohibition to threatened salmon and steelhead runs as would otherwise apply to an endangered species under Section 9 of the ESA.

¹ The final rules had not been published in the *Federal Register* at the time this outline was prepared. The discussion of the final rules contained herein was based on “A Citizen’s Guide to the 4(d) Rule for Threatened Salmon and Steelhead on the West Coast,” National Marine Fisheries Service, June 20, 2000. The Citizen’s Guide is available on the NMFS Northwest Region website: www.nwr.noaa.gov.

C. Notice Requirement

A citizen suit cannot be brought “prior to sixty days after written notice of the violation has been given to the Secretary, and to any alleged violator of any such provision or regulation.” 16 U.S.C. § 1540(g)(2)(a)(i). The requirement is jurisdictional; the district court has no authority to excuse a failure to strictly comply with the notice requirement. Hallstrom v. Tillamook County, 493 U.S. 20, 26-28, 110 S. Ct. 304 (1989) (applying similar notice requirement under RCRA); Southwest Center for Biological Diversity v. U.S. Bureau of Reclamation, 143 F.3d 515, 520-21 (9th Cir. 1998). Even when it is clear that giving notice is a futile act (for example, because the alleged violator has stated that it will not alter its actions), a suit cannot be commenced until the end of the 60-day period. Lone Rock Timber Co. v. U.S. Dep’t of Interior, 842 F. Supp. 433, 440 (D. Or. 1994).

D. When Must Suit Be Brought: Laches

As discussed above, a plaintiff cannot commence a citizen suit before the end of the 60-day notice period. However, there is no statute of limitations for an ESA citizen suit, i.e., no express “last day” that a citizen suit may be filed. Rather, the few courts to address the issue have applied the doctrine of laches. National Wildlife Fed’n v. Coleman, 400 F. Supp. 705 (S.D. Miss. 1975), *rev’d on other grounds*, 529 F.2d 359 (5th Cir. 1976), *cert. denied*, 97 S. Ct. 489. Under the doctrine of laches, a court may exercise its equitable discretion to deny injunctive relief to a plaintiff who has unreasonably delayed bringing an action, to the prejudice of the defendant. This is inherently a case-by-case, fact-based determination.

For real estate and land use practitioners, the clear import is that there is no bright line test to use when advising a client whether a citizen suit against a project is time barred.

E. Standards for Obtaining Injunctive Relief

1. Preliminary Injunction

The test in the Ninth Circuit for granting a preliminary injunction

“is whether a party has demonstrated: (1) a likelihood of success on the merits and the possibility of irreparable injury; or (2) sufficiently serious questions going to the merits to make them a fair ground for litigation, and the balance of hardships tips sharply in favor of the party seeking relief.” Marbled Murrelet v. Babbitt, 83 F.3d 1068, 1073 (9th Cir. 1996).

However, “Congress has determined that the balance of hardships always tips sharply in favor of endangered or threatened species.” Marbled Murrelet, 83 F.3d at 1073. The courts cannot use their ordinary equitable discretion to strike a different balance. Sierra Club v. Marsh, 816 F.2d 1376 (9th Cir. 1987). As a practical matter, therefore, plaintiffs will be able to obtain a preliminary injunction in an ESA citizen suit if they can show “sufficiently serious questions going to the merits to make them a fair ground for litigation.”

2. Permanent Injunction

The Ninth Circuit “has repeatedly held that an imminent threat of future harm is sufficient for the issuance of an injunction under the ESA.” Marbled Murrelet v. Babbitt, 83 F.3d 1060, 1064 (9th Cir. 1996). The Ninth Circuit has rejected the argument that an injunction may not issue absent proof that the death or injury of a protected species has actually occurred. Marbled Murrelet, 83 F.3d at 1065.

In the context of the 4(d) rules for salmon and steelhead, this means that a citizen could obtain an injunction against development or redevelopment projects without having to show “dead fish,” only an “imminent threat of future harm.”

IV. ATTORNEY FEES

The ESA authorizes a court to award costs of litigation, including reasonable attorney and expert witness fees, in a citizen suit “whenever the court determines such award is appropriate.” 16 U.S.C. § 1540(g)(4). More than “some degree” of success on the merits is required before a plaintiff may recover fees:

“An award is appropriate when a plaintiff has (1) prevailed on the merits and (2) contributed substantially to the goals of the Act in doing so.” Oregon Natural Resource Council v. Turner, 863 F. Supp. 1277, 1285 (D. Or. 1994).

A plaintiff need not prevail on every claim asserted in order to be considered a prevailing party, and a plaintiff may be considered the prevailing party based on a settlement, stipulation, or consent judgment, if the suit clearly was a catalyst prompting the opposing party to take action. Sablan v. Department of Finance, 856 F.2d 1317 (9th Cir. 1988); ONRC, 863 F. Supp. at 1281.

V. ACTIONS AGAINST STATE AND LOCAL GOVERNMENTS

It is possible that citizen suits will be brought against local governments that approve projects without having obtained approval from NMFS of a take limitation. Federal courts have held that a state or local government, pursuant to whose authority a private actor directly engages in a taking of endangered species, may be deemed to have violated the ESA:

- Strahan v. Coxe, 127 F.3d 155 (1st Cir. 1997), cert. denied, 119 S. Ct. 81, 119 S. Ct. 437 (1998) (upholding district court order in a citizen suit enjoining State of Massachusetts to apply for an incidental take permit and to “develop and prepare a proposal... to restrict, modify or eliminate the use of fixed-fishing gear in coastal waters of Massachusetts listed as critical habitat for Northern Right whales in order to minimize the likelihood additional whales will actually be harmed by such gear”).
- Loggerhead Turtle v. Council of Volusia County, 148 F.3d 1231 (11th Cir. 1998) (holding that district court may fashion injunctive relief requiring County to address “take” of sea turtles caused by artificial beachfront lighting authorized by County ordinance).

- United States v. Town of Plymouth, 6 F. Supp. 2d 81 (D. Mass. 1998) (holding that U.S. Fish and Wildlife Service was entitled to preliminary injunction requiring town to prohibit off-road vehicles from certain beach areas to protect “threatened” piping plovers).

VI. SOME IMPLICATION OF THE 4(D) RULES AND ESA CITIZEN SUITS

- Limited “shields” against suits: In the near term, there are relatively few ways of shielding development projects against the potential for citizen suits. Local governments will not have ordinances approved by NMFS as “take” limitations before the steelhead 4(d) rule takes effect, and few if any are likely to have NMFS-approved limitation before the salmon 4(d) rules take effect. Thus, projects that do not have Section 10 incidental take permits or that have not undergone Section 7 consultation (for federally funded or permitted projects) are at least potentially targets for citizen suits. Thus ...
- Uncertainty is the rule: If you are representing clients in real estate development and redevelopment, a client may ask you whether a project is “safe” from attack by a citizen suit, particularly once all local approvals have been obtained. Your client (or a lender) may ask you for a legal opinion. Be careful: there are virtually no “bright line” tests for opining whether a project is “salmon safe” or whether it is too late for an opponent to file a citizen suit. Even if there were such tests, they would not necessarily prevent an opponent from filing a suit; they simply go to the merits of the suit.
- Distance is not a defense: Although much of the debate over the proposed 4(d) rules focused on measures to protect riparian areas (e.g., the “200-foot setback”), proximity of a project to fish-bearing rivers or streams is not a prerequisite for a citizen suit. For example, projects distant from streams, but that alter the quality, quantity, or timing of stormwater runoff, may “take” threatened species.
- Credible expert testimony: The fundamental issue in any ESA citizen suit against a development or redevelopment project is a scientific one: what is the project’s potential to “take” threatened salmon or steelhead? The developers who will be best prepared to defend against citizen suits are those who develop their projects from the start based on sound science. Talk to reputable experts early in project design and document the measures taken to avoid impacts to threatened species.
- A 60-day notice is not the end of the world: If a client receives a 60-day notice of intent to file a citizen suit, do not simply use the time to prepare for litigation. Examine whether the alleged violations have any possible merit, and whether anything can be done to remedy potential violations before the 60-day period is over.

Citizen Suits vs. LUBA Appeals and Writs of Review: A Comparison⁴

	LUBA Appeal ORS 197.805 to 197.845	Writ of Review ORS 34.010 to 34.102	ESA Citizen Suit 16 U.S.C. § 1540(g)
Forum (exclusive jurisdiction)	Land Use Board of Appeals	State Circuit Court	U.S. District Court
Action Challenged	Final land use decision or limited land use decision	Decision or determination of "inferior court, officer, or tribunal," other than land use decision, limited land use decision, or expedited land division	Alleged violation of the statute or rules
Deadline for filing	Generally, 21 days after date decision sought to be reviewed becomes final	60 days from the date of the decision or determination sought to be reviewed	Cannot file within 60 days after written notice. Doctrine of laches can bar injunctive relief.
Standing: who may file	Anyone who appeared in the local proceeding orally or in writing	Any "party" to the local process or proceeding	"Any person"
Defendant or Respondent	Local government. Other persons may intervene.	Court, officer or tribunal whose decision is sought to be reviewed	Alleged violator. United States may intervene as a matter of right
Nature of Proceeding	Appellate hearing on the record.	Review of record or proceedings	Trial proceeding
Interim Relief	LUBA may grant stay under standards of ORS 197.845(1)	Circuit court may stay proceedings by defendant under ORS 34.070	Preliminary injunction
Relief Available	LUBA may affirm, remand or reverse local government decision.	Circuit court may affirm, modify, reverse or annul decision reviewed, and may award plaintiff restitution, if necessary	Permanent injunction
Attorney Fees	Yes, if party presents position "without probable cause." ORS 197.830(15)(b)	No provision	Yes, when court determines award of fees is appropriate

⁴ This table does not include the procedures for review of an expedited land division. See ORS 197.360 to 197.380. It also does not address the procedures and timing for further appellate review of decisions rendered in each forum.