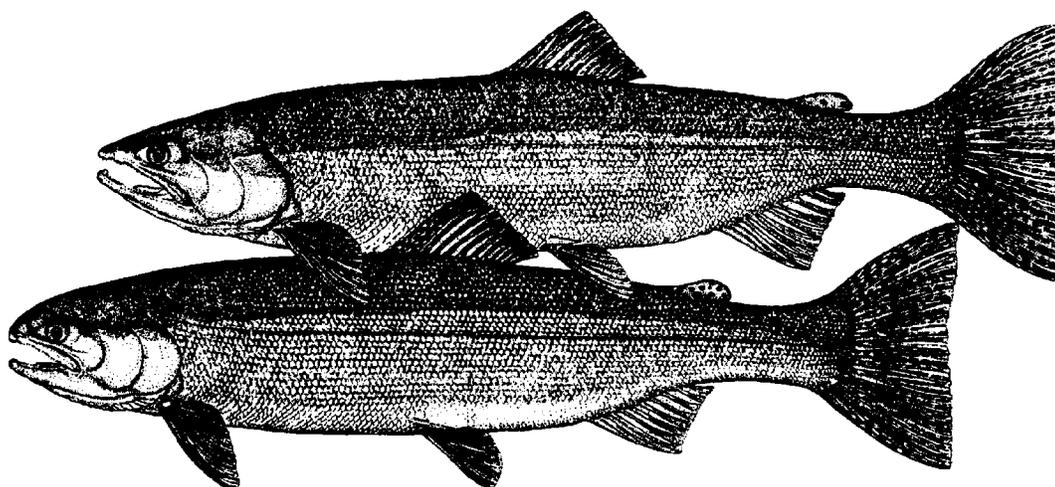


Steelhead Conservation Efforts

*A Supplement to the Notice of Determination for
West Coast Steelhead Under the Endangered Species Act*



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Introduction to the Endangered Species Act

The Endangered Species Act of 1973 (ESA)¹ provides a framework for identifying species that are in danger of (or threatened with) extinction. The ESA imposes obligations on Federal agencies to prohibit actions that might jeopardize a listed species and directs agencies to use their authorities to promote the conservation of listed species. Further, the ESA imposes restrictions on the activities of all persons that might result in the taking,² either directly or indirectly, of listed species.

The ESA³ divides responsibility for listing species between the Secretary of the Interior and the Secretary of Commerce. Essentially, the Secretary of the Interior is responsible for all terrestrial and freshwater species while the Secretary of Commerce is responsible for all marine species. In some cases, such as for sea turtles, the two departments share jurisdiction. The Secretary of the Interior has delegated his authority under the ESA to the United States Fish and Wildlife Service (FWS). The Secretary of Commerce has delegated his authority to the National Marine Fisheries Service (NMFS).

The NMFS' ESA implementing regulations define a "species" to include any species or subspecies of fish, wildlife, or plant, and any distinct population segment of any vertebrate species that interbreeds when mature.⁴ A "threatened" species is defined as any species in danger of becoming endangered in the foreseeable future;⁵ an "endangered" species is defined as a species in danger of extinction throughout all or a significant portion of its range.⁶

The ESA allows listing of "distinct population segments" of named species. According to NMFS policy, a salmon population or group of populations is considered "distinct" and hence a "species" under the ESA if it represents an ESU of the biological species (Waples 1991). To qualify as an ESU under NMFS policy, a salmon population or group of populations must satisfy the following two criteria: (1) it must be substantially reproductively isolated from other conspecific population units, and (2) it must contribute substantially to ecological/genetic diversity of the biological species as a whole (Waples 1991). The reproductive isolation need not be absolute but must be

¹ 16 U.S.C. §§ 1531-1544 (1994).

² "Take" is defined under the ESA as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct." 16 U.S.C. § 1532 (19).

³ 16 U.S.C. at § 1532 (15) (1994).

⁴ 50 CFR § 424.02 (k) 1995.

⁵ 50 CFR § 424.02 (m) 1995.

⁶ 50 CFR § 424.02 (e) 1995.

strong enough to permit evolutionarily important differences to accrue in different population units.

Summary of Events Leading to the Steelhead Status Review

The NMFS' decision to initiate a comprehensive steelhead *Oncorhynchus mykiss* status review was prompted by three petitions, culminating in the agency's proposal to list 10 steelhead ESUs as threatened or endangered. On May 6, 1992, NMFS received a petition from the Oregon Natural Resources Council and 10 co-petitioners to list Oregon's Illinois River winter steelhead under the ESA. The NMFS completed a status review, summarized in the May 20, 1993, *Federal Register* (58 FR 29390), and concluded that the Illinois River winter steelhead did not represent a "species" under the ESA. At the same time however, NMFS initiated a status review of coastal steelhead populations to identify the ESU that includes Illinois River winter steelhead. This status review resulted in the identification of a Klamath Mountains Province ESU that includes steelhead from the Illinois River; NMFS proposed listing this ESU on March 16, 1995 (59 FR 14253). The NMFS received a second petition on September 21, 1993, from Washington Trout which requested listing Washington's Deer Creek summer steelhead. As was the case with Illinois River winter steelhead, NMFS determined that Deer Creek summer steelhead did not themselves constitute an ESU (November 21, 1994, 59 FR 59981). The third and most recent steelhead petition was submitted by Oregon Natural Resources Council and 15 co-petitioners on February 16, 1994. In accepting this petition, which requested ESA listing for all steelhead in Washington, Oregon, California and Idaho, NMFS announced that the agency's ongoing steelhead status review would be further expanded to include steelhead populations in Idaho (May 27, 1994, 59 FR 27527).

On August 9, 1996, NMFS published in the *Federal Register* (61 FR 41541) its initial findings on a comprehensive status review of West Coast steelhead populations in Washington, Oregon, Idaho, and California. NMFS identified 15 ESUs within this range, and proposed to list 5 ESUs as endangered and 5 ESUs as threatened under the ESA. The endangered steelhead ESUs are located in California (Central California Coast, South/Central California Coast, Southern California, and Central Valley ESUs) and Washington (Upper Columbia River ESU). The threatened steelhead ESUs are dispersed throughout all four states and include the Snake River basin, Lower Columbia River, Oregon Coast, Klamath Mountains Province, and Northern California ESUs. Additionally, NMFS designated the Middle Columbia River ESU as a candidate species because while there was not sufficient information available to indicate that steelhead in this ESU warrant protection under the ESA, NMFS identified specific risk factors and concerns that need to be evaluated prior to concluding its assessment of the overall health of Middle Columbia River steelhead.

Purpose of Report

The ESA provides that NMFS make listing determinations "after taking into account those efforts, if any, being made by any State or foreign nation, or any political subdivision of a State or

foreign nation to protect such species"⁷. The purpose of this document is to summarize some of the major actions being taken to promote the conservation of native, naturally-reproducing steelhead in Washington, Oregon, California, and Idaho. As required by the ESA, this information will be used by NMFS in making its listing determinations for west coast steelhead.

To ensure that the best available information was used, NMFS solicited the assistance of state and tribal fisheries agencies in identifying existing steelhead conservation measures. This report is largely derived from the information provided by these steelhead co-managers. This document does not assess the efficacy of various conservation efforts: such an assessment is described in the *Federal Register*. Furthermore, NMFS recognizes that some of the protective measures described herein are relatively new initiatives which have not been fully implemented, or have not been in effect long enough to demonstrate measurable results. Additionally, while every attempt was made to capture the most up-to-date information on steelhead conservation efforts, NMFS recognizes that some efforts may have been overlooked. NMFS encourages anyone interested in providing comments on these reports, or information regarding other steelhead conservation efforts, to submit materials to NMFS at the addresses below.

The NMFS is authorized to list a species as endangered or threatened based upon any one or more of the five following factors: (A) the present or threatened destruction, modification, or curtailment of a species' habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting the species continued existence⁸. The NMFS has prepared a separate document entitled *Factors for Decline: A supplement to the notice of determination for west coast steelhead* which addresses the factors which have led to the decline of west coast steelhead. The Factors for Decline report, in conjunction with this report and NMFS' Status Review of West Coast Steelhead, serve as the basis for NMFS steelhead listing determinations. For copies of this or other related documents, write to Garth Griffin, NMFS, Protected Species Branch, 525 NE Oregon St. - Suite 500, Portland, Oregon, 97232; or Craig Wingert, NMFS, Protected Species Management Division, 501 W. Ocean Blvd. - Suite 4200, Long Beach, CA 90802.

Federal and Regional Efforts

1. *For the Sake of the Salmon*

This 1994 regional initiative by Federal, state, local, and tribal governments, and private and public organizations is intended to provide overall coordination and direction in protecting and restoring salmon throughout the Pacific Northwest. It is a proactive framework designed to identify solutions to salmon protection problems that are often beyond the scope of a single authority. It focuses on a four-part strategy which includes the following components: (1)

⁷ 50 C.F.R. § 424.11 (f) 1995.

⁸ 16 U.S.C. at § 1533 (a)(1) (1994).

Identify and seek to modify public and private policies that contribute to the decline of the salmon and determine the means by which essential activities can be made less harmful to ecosystems; (2) take immediate steps to protect remaining healthy habitat; (3) improve the efficiency and cost-effectiveness of government activities that protect and restore the health and productivity of salmon habitat; and, (4) encourage a conservation and stewardship ethic toward our natural environment in government, public, and private decision making. The NMFS and FWS strongly support this initiative.

2. *The Northwest Forest Plan*

The "Forest Plan" is a Federal interagency cooperative program that has recently been implemented to provide a coordinated management direction for the lands administered by the U.S. Forest Service (USFS) and Bureau of Land Management (BLM). The Plan's region-wide management direction will amend existing management plans, including land and resource management plans, regional guides, and timber sale plans for lands within the range of the northern spotted owl (which overlaps considerably with the freshwater range of coastal steelhead populations in Washington, Oregon, and California). A major part of the Plan, implementation of an Aquatic Conservation Strategy (ACS) on Federal land, is expected to reverse the trend of aquatic ecosystem degradation and contribute toward fish habitat recovery. Coordination among the Federal land management agencies, NMFS, the U.S. Environmental Protection Agency (EPA), and the FWS should ensure that the ACS objectives are achieved.

Prior to implementing the Record of Decision for the President's Forest Plan, little or no riparian protection was afforded for the fish and their habitat. One of the most important substantive protective measures implemented through the Plan are riparian reserves. These are buffered strips of land that, depending on stream class and type of watershed, range from 300 feet on perennial streams to 50 feet on ephemeral streams.

3. *PACFISH*

The USFS and the BLM are developing an ecosystem-based, aquatic habitat and riparian-area management strategy (commonly referred to as "PACFISH") that addresses Federally-managed, anadromous fish watersheds in eastern Oregon, Washington, Idaho, and portions of California (areas outside the Northwest Forest Plan). The strategy is being developed in response to significant declines in naturally-reproducing salmonid stocks, including steelhead, and widespread degradation of anadromous fish habitat east of the Cascade mountain range. Like the Northwest Forest Plan, PACFISH is an attempt to provide a consistent approach for maintaining and restoring aquatic and riparian habitat conditions which, in turn, are expected to promote the sustained natural production of anadromous fish. Presently, an interim strategy has been instituted to halt degradation to fish habitat and to ensure that future opportunities for habitat restoration are not foregone while comprehensive studies are completed for longer-term management strategies. Over the next year, the USFS and BLM will cooperatively prepare several geographically-specific environmental analyses to examine these management strategies. These analyses will build on the information developed by USFS and BLM technical and policy

teams and determine if amendments to forest plans, land use plans, or regional guides in California, Idaho, Oregon, and Washington are necessary.

4. *ESA - Snake River Salmon Recovery Plan and Section 7 Consultations*

The goal of the Proposed Recovery Plan is to restore the health of the Columbia and Snake River ecosystem and to recover listed Snake River salmon stocks. Many of the recommended actions will directly benefit other species, including steelhead. Implementation of the Proposed Recovery Plan should also conserve biodiversity, a factor that is essential to ecosystem integrity and stability. Many of the habitat-related actions in the Proposed Recovery Plan have been used to formulate reasonable and prudent measures in current ESA section 7 consultations; similar measures would be required if Snake River steelhead were to be listed under the ESA.

5. *ESA - Sacramento River Winter-run Chinook Salmon Recovery Plan and Section 7 Consultations*

The flow of the upper Sacramento River is regulated by Shasta/Keswick dams and flow augmentation is managed through a Trinity River diversion, all of which are owned and operated by the U.S. Bureau of Reclamation (BOR). The BOR generally operates the Shasta and Trinity divisions of the Central Valley Project (CVP) in accord with a CVP Operations Criteria and Plan (BOR 1992) and the winter-run chinook *O. tshawytscha* biological opinion for operation of CVP and State Water Project (SWP). Many requirements in this and other winter-run chinook biological opinions should directly benefit steelhead in the Sacramento River and Sacramento-San Joaquin Delta, by increasing flows, stabilizing ramping rates, and improving water temperatures, passage past dams and diversions, and water quality.

6. *Mitchell Act*

The NMFS administers the Mitchell Act which was passed by Congress in 1938 (and amended in 1946) for the purpose of providing for the conservation of the fisheries resources of the Columbia River. The Columbia River Fisheries Development Program (CRFDP) was established to coordinate activities authorized under the Mitchell Act. As such, the CRFDP is a cooperative effort between NMFS, the FWS, and the fisheries agencies of Oregon, Washington, and Idaho.

In addition to funding the operation and maintenance of artificial propagation facilities, the CRFDP funds activities relating to stream improvements, such as fishway development, irrigation diversion screening, and stream clearing. These stream improvement activities have direct impacts on some populations of steelhead in the Columbia River basin. Fishways on tributaries in eastern Oregon, in the upper Snake River and Clearwater River basins in Idaho, and on up-river tributaries in Washington facilitate the passage of adult salmon and steelhead over barriers that once were partial or complete impediments to migration. Dagger Falls Ladder on the Salmon River and Selway Fall Ladder in the Clearwater River basin provide passage in Idaho. Ladders on tributaries of the Umatilla and Grande Ronde rivers in Oregon and on the Wenatchee and Methow rivers in Washington also provide improved adult passage.

Irrigation diversions can be lethal to rearing and migrating juvenile salmonids. Under the CRFDP, over 850 screens have been constructed to prevent fish mortality at irrigation diversions. The

majority of these are in the Salmon River basin in Idaho and on eastern Oregon Columbia River tributaries. The CRFDP currently provides the majority of funding for multi-agency, cooperative, accelerated programs of screen construction, rehabilitation, and replacement. The program's goal is to have all irrigation diversions which impact anadromous salmonids in the Columbia River basin screened by 2002.

7. *Central Valley Project Improvement Act (CVPIA)*

The CVPIA was signed into law on October 30, 1992. The CVPIA amends the authorization of the Department of Interior's CVP to give fish and wildlife protection, restoration, and mitigation projects equal priority with irrigation and domestic water uses. The CVPIA also makes fish and wildlife enhancement equal in importance to power generation. The CVPIA identifies several specific measures to meet these new priorities and sets a broad goal of sustaining natural populations of anadromous fishes in Central Valley rivers and streams. Specific provisions of the CVPIA that potentially benefit steelhead (and which have already been initiated) include: dedication of 800,000 acre-feet of CVPIA yield for fish and wildlife; release of pulsed flows to increase survival of migrating anadromous fish, and installation of fish screens at water diversions. The CVPIA also places limitations on water contracting and establishes a restoration fund of 50 million dollars annually.

More specifically, the CVPIA requires the Secretary of the Interior to develop and implement "a program which makes all reasonable efforts to ensure that, by the year 2002, the natural production of anadromous fish in Central Valley rivers and streams will be sustainable, on a long-term basis, at levels not less than twice the average levels attained during the period of 1967-1991" (Section 3406[b][1]). This program is already in progress; it is known as the Anadromous Fish Restoration Program (AFRP). A coalition of fish experts from the Federal and state agencies, private industry and academia (AFRP Core Group) has developed a working plan for restoring salmon and steelhead in the Central Valley. The working plan provides a platform upon which the participating agencies and public will build a final plan. Actions are recommended for each watershed; they cover a broad spectrum of habitat restoration activities, such as improving instream flows, maintaining adequate water temperatures, correcting fish passage problems at dams and diversions, and restoring spawning gravel and riparian habitat. The population abundance goal for steelhead is 13,000 adults per year spawning upstream from the Red Bluff Diversion Dam in the Sacramento River. Because there is insufficient data on steelhead in other streams and rivers in the Central Valley, it has so far been impossible to set numeric restoration goals for these other streams. Further details on the recommended actions may be found in the *Working Paper on Restoration Needs: Habitat Restoration Actions to Double Natural Production of Anadromous Fish in the Central Valley of California*.

8. *Principles for Agreement on Bay-Delta Standards Between the State of California and the Federal Government*

On December 15, 1994, the Federal government, the State of California, water users, and environmental advocates signed a three-year agreement on new protections for the San Francisco Bay and Delta entitled *Principles for Agreement on Bay-Delta Standards Between the state of California and the Federal Government (Principles)*. Several measures under the *Principles*

should improve habitat conditions for steelhead, in particular for juveniles rearing and migrating through the Sacramento-San Joaquin Delta. Increased outflow in the Delta from February through June will likely improve steelhead rearing habitat in the Delta. Closures of the Delta Cross Channel gates on the Sacramento River should reduce the diversion of juvenile steelhead into the central Delta and direct them away from the SWP and CVP pumping plants towards more suitable rearing habitat on the north and west side of the Delta. Water export restrictions in the spring may also provide benefits for juvenile steelhead in the Delta.

In addition to the protections afforded by modification of CVP and SWP operations, the *Principles* established a program, known as Category III, to develop, fund, and implement non-flow related fish and wildlife protection measures in the Central Valley. The Category III program has initiated a number of actions which are likely to benefit Central Valley steelhead including the installation of fish screens on several previously unscreened water diversions

To address the long-term resource needs of the Central Valley, BOR, the California Department of Water Resources, and other Federal and state agencies have initiated the CalFed Program. This long-term planning effort is designed to develop a comprehensive water management and ecosystem restoration plan for the Central Valley. Phase 1 of the CalFed Program was completed in July 1996 and identified several core ecosystem restoration actions and three water management alternatives. Phase 2 will include selection of a preferred water management alternative and completion of a programmatic EIR/EIS by November 20, 1998.

9. *The Comprehensive Conservation and Management Plan*

The Comprehensive Conservation and Management Plan for the San Francisco Bay-Delta Estuary helps to restore and maintain the estuary's water quality and natural resources. This plan is jointly sponsored by the EPA and the State of California, and is considered to be a blueprint for restoring and maintaining the chemical, physical, and biological integrity of the Bay and Delta. Many of the recommended actions may improve rearing and migratory conditions for steelhead by improving water quality and flows and restoring riparian habitat, shallow water areas, and tidal slough habitats.

10. *The Klamath Act*

On October 27, 1986, Congress passed the Klamath Act (PL 99-552), authorizing a 20-year-long Federal-State cooperative Klamath River Basin Conservation Area Restoration Program for rebuilding of river's fish resources. The Act created a 14-member Klamath River Basin Fisheries Task Force and directed the U.S. Secretary of Interior to cooperate with the Task Force in creating and implementing the Klamath River Basin Conservation Area Fishery Restoration Program. In 1991 the Task Force developed a Long Range Plan for the Klamath River Basin Conservation Area Restoration Program. The Plan is intended to give initial guidance to the Task Force in its long-range direction in accomplishing the restoration of Klamath basin anadromous fisheries which include: restore, by the year 2006, the biological productivity of the Klamath River basin in order to provide for viable commercial and recreational ocean fisheries and in-river tribal trusts and recreational fisheries; support for the Klamath Fishery Management Council in development of harvest regulation recommendations that would provide for viable fisheries and

escapements; recommendations to Congress, state legislatures, and local governments the actions each must take to protect the fish and their habitats in the basin; inform the public about the value of anadromous fish to the Klamath River region and gain their support for the Restoration Program; and promote cooperative relationships between lawful users of the basin's land and water resources and those who are primarily concerned with the implementation of the Restoration Plan and Program. The Task Force members are appointed by (and represent) the Governors of California and Oregon; the U.S. Secretaries of Interior, Commerce, and Agriculture; the California counties of Del Norte, Humboldt, Siskiyou and Trinity; Hoopa Valley, Karuk and Yurok tribal fishers and anglers and commercial fishers. The Act also created an 11-member Klamath Fishery Management Council to "establish a comprehensive long-term plan and policy... for the management of the in-river and ocean harvesting that affects or may affect Klamath and Trinity River basin anadromous salmon populations." The Council is composed of essentially the same interests as the Task Force, except that the four county representatives hold seats only on the Task Force.

11. *Trinity River Basin Fish and Wildlife Restoration Act*

On October 1984, Congress passed this law (PL 98-541). The Act appropriated \$33 million over a 10-year period for designing and constructing of restoration projects and gave \$2.4 million annually for operation, maintenance, and monitoring. The Act embodied in law an 11-point plan for restoring and maintaining fish and wildlife resources in the Trinity River basin at levels which occurred prior to the constructing of the Trinity River Diversion of the CVP. The Trinity River Basin Fish and Wildlife Task Force was formed to investigate and develop an action plan for correcting fish and wildlife problems in the Trinity River basin. In 1982, The Task Force issued the Trinity River Basin Fish and Wildlife Management Program Report, which outlined five major goals for restoring fish and wildlife. The report identified 10 major actions and associated costs for restoring fish populations and rehabilitating habitat. The Task Force issued a three-year action plan in 1988 and a second three year plan was issued in 1992. This most recent plan identifies over 100 restoration, supplementation, and monitoring activities to be completed over the next three years. Presently, the FWS is analyzing final flow measurements to determine necessary flows and system capabilities for anadromous salmonids in the basin. Many of the identified restoration activities have only just began and the appropriations will expire at the end of FY 1995 unless this legislation is reauthorized.

12. *Action Plan for the Restoration of the South Fork Trinity River Watershed and its Fisheries*

This action plan was completed for the BOR and Trinity River Task Force in 1994. The plan describes the factors presently limiting anadromous fish restoration, reviews past research and monitoring activities, and lists actions necessary to restore the South Fork Trinity River basin and its anadromous fishes.

13. *EPA Wetlands Protection Grants*

The EPA wetlands program is coordinated by state Resources Agencies and is available to all interested state departments. This funding source may be available for riparian assessment, enhancement and restoration.

14. *EPA Near Coastal Waters Program (NCW)*

The NCW Program was established by the EPA in 1986, to integrate and address coastal water issues. Through the NCW Program, EPA is encouraging coastal managers to use existing resources and regulatory authority, and innovative management techniques, to bring about measurable environmental improvements. The selected California coastal watersheds and their associated offshore waters for FY 1993-94 were: San Diego Bay, Santa Monica Bay, Morro Bay, Elkhorn Slough, San Francisco Bay (up to the Carquinez Bridge), and a few north coast watersheds.

15. *Bring Back The Natives*

This is a national effort by the USFS, BLM, and the National Fish and Wildlife Foundation to improve the status of native aquatic species on public lands through riparian area rehabilitation, watershed restoration, and species reintroduction. Preserving the biodiversity and ecological integrity of unique areas is an essential component of the restoration strategy. The Fish and Wildlife Foundation contributes money to the program in the form of a challenge grant to USFS and BLM. In addition, both USFS and BLM can contribute money to the projects. In 1993, 34 Bring Back The Natives projects received funding: the Fish and Wildlife Foundation provided \$400,000 to projects, USFS and BLM contributed over \$800,000, and approximately \$400,000 was provided from non-Federal contributions.

16. *Northwest Power Planning Council - Strategy for Salmon*

The Northwest Power Planning Council was established by Congress to develop a plan to protect and enhance the Columbia basin's fish and wildlife and a regional power plan that provides a reliable, low-cost electricity supply. The goal of the plan is to double salmon production in the Columbia River basin and to accomplish this with no appreciable risk to the biological diversity of fish populations. The plan calls for improved passage and screening at Columbia and Snake River dams, predator reductions in the Columbia and Snake Rivers, downstream barging of juvenile salmonids past Columbia River dams, improvement of harvest and hatchery practices to protect wild salmonids, and protection and restoration of fish habitat within the Columbia River basin. The plan also calls for the evaluation of adverse economic effects of salmon recovery and identification of sources of funds to mitigate the adverse effects.

17. *Columbia River Fish Management Plan*

In keeping with existing court order, the states of Oregon and Washington must work with tribal and Federal authorities to rebuild weak runs and achieve fair sharing of the available salmon harvest between Native American and non-Native American fisheries. Major points of the plan include the commitment to rebuild upriver spring and summer chinook salmon runs to levels that would restore fisheries, management of harvests to insure that wild salmon runs continue to rebuild, and management of inriver and ocean fisheries to insure fair sharing between Native

American and non-Native American. The plan also provides for a flexible and dynamic management approach, as well as for creation of a basin-wide Production Advisory Committee to coordinate joint development of subbasin plans which will address habitat protection, fish propagation, and harvest.

18. *Other Efforts*

Other rules, policies, initiatives, and government processes currently exist which are too numerous to fully describe here. These include Federal efforts and laws known to have at least indirect effects on steelhead habitat include the National Environmental Policy Act, Clean Water Act, Safe Drinking Water Act, Wilderness Act, Wild and Scenic Rivers Act, and Coastal Zone Act. Many of these have specific programs (e.g., National Estuary Program, Coastal Zone Management Act) and provisions aimed at monitoring, protecting and enhancing habitats important to fish.

State, Local, and Tribal Government Efforts

1. *State of Washington*

(a) *Washington State Fishing Regulations*

The Washington Department of Fish and Wildlife (WDFW) cooperatively manages steelhead with Treaty Native American tribes and other parties and publishes yearly sport fishing regulations for steelhead. Wild steelhead can be harvested in Washington, but only if the wild run size is projected to have surplus escapement. Per existing court orders and through agreements between the State and Tribes, harvestable surpluses of steelhead (wild and hatchery fish) are allocated approximately equally between treaty and non-treaty fishers. The WDFW defines adult steelhead as sea-run rainbow trout over 20 inches in length and since 1985, has marked all hatchery fish with an adipose clip to facilitate the identification and conservation of wild steelhead while allowing the harvest of hatchery steelhead. Most non-treaty sport fisheries for winter steelhead are directed at hatchery fish early in the season and many seasons are closed prior to the time most wild fish enter the streams. In addition, freshwater recreational regulations (e.g., springtime stream closures and an 8 inch minimum size limit on all rivers statewide) are set to prevent anglers from targeting on steelhead smolts.

Wild steelhead release regulations (WSR), closed seasons, or area closures are implemented as appropriate to regulate the recreational fishery. As a general strategy in mixed hatchery-wild fisheries, WDFW will institute WSR if wild runs appear to be under-escaped (or their status is unknown), and may invoke area closures. For example, WSR regulations have been in effect for wild summer steelhead in the Columbia River basin since 1986 and statewide since 1992. All lower Columbia River tributaries are currently closed to the sport harvest of wild steelhead. In the lower Columbia River, all streams have been on wild release for winter and summer steelhead since 1990, except the South Fork Toutle River which went to WSR in 1994. In addition, WSR has been in effect since 1993 for summer and winter steelhead in all marine areas and has recently been instituted for winter steelhead in all Hood Canal streams. The WSR regulation typically remains in effect until the majority of hatchery fish have been harvested and then the steelhead fishery is closed to protect wild fish. For wild runs where run sizes, escapement goals, escapements, and status cannot be readily estimated, WDFW has generally opted for conservative

regulations (e.g., WSR, closures) that remain in effect until the Department determines that a harvestable surplus exists. For severely depressed wild runs, WDFW will consider terminating hatchery production to alleviate negative impacts.

WDFW has conducted steelhead creel census programs since the mid-1970's which provide accurate and timely estimates of the sport harvest of winter-run steelhead from selected streams in western Washington and summer-runs in the Columbia River. This information helps adjust harvest quotas during the season and/or to enact emergency conservation closures to help protect steelhead. Sport harvest on all other streams is calculated from returns of permit cards that all persons fishing for steelhead in Washington are required by law to have. In addition, WDFW requests that anglers also keep records of all released steelhead. Information from steelhead permit cards provide WDFW with data valuable for assessing trends in sport catch. For example, WDFW estimates that hatchery steelhead comprise over 80% of the steelhead sport harvest statewide.

Tribal steelhead harvest is gathered from several sources: state licensed game fish buyers return game fish receipt tickets to WDFW, on-reservation tribal enterprises report purchases of steelhead and steelhead taken for ceremonial/subsistence use, and reports of steelhead caught incidental to salmon fisheries and information gathered through enforcement programs. Tribal harvest of steelhead is predominantly hatchery fish in the U.S. vs. Washington Case Area of western Washington and comprises about 80% of the Columbia River tribal catch.

(b) Wild Stock Restoration Initiative

In 1991, the Washington treaty tribes, Washington Department of Fisheries, and Washington Department of Wildlife created this initiative to address wild stock status and recovery. The first step in this initiative was to develop an inventory of the status of all salmon and steelhead stocks which was completed in 1993 with publication of the "Salmon and Steelhead Stock Inventory (SASSI). A companion inventory of salmon and steelhead habitat is expected to be completed in 1995. Based on the SASSI report, the state and tribes have identified several salmon stocks in "critical" condition. The states and tribes have prioritized the development of recovery and management plans for these "critical" stocks which are expected to be completed by early 1995. The final stage of implementing the policy will be plans to monitor and evaluate the success of individual recovery efforts.

(c) Wild Salmonid Policy

The Washington State Legislature passed a bill in June of 1993, (ESHB 1309) which required the WDFW to develop wild salmonid policies that "ensure that department actions and programs are consistent with the goals of rebuilding wild stock populations to levels that permit commercial and recreational fishing opportunities." The policy will provide broad management principles and guidelines for habitat protection, escapement objectives, harvest management, genetic conservation, and other management issues related to both anadromous and resident salmonids. The policy will be used as the basis to review and modify current management goals, objectives, and strategies related to wild stocks. Once the policy is adopted, full reviews of hatchery and

harvest programs (including the Steelhead Management Plan described below) are planned to ensure consistency with the policy.

(d) WDFW Draft Steelhead Management Plan

The primary goal of the WDFW Steelhead Management Plan is to restore and maintain the diversity and long-term productivity of steelhead and steelhead habitat in Washington. The plan identifies WDFW's goals, objectives, policies and guidelines (including monitoring and evaluation programs) required to address steelhead management and forms the basis for WDFW's positions on habitat protection, escapement goals, regulation setting, hatchery production, and recreational opportunities for steelhead. The plan places the highest priority on protection and restoration of self-sustaining wild steelhead populations and emphasizes actions to protect critical habitat through regulation of existing laws and management approaches. Minimum acceptable escapement levels for wild runs are identified along with harvest restrictions needed to maintain healthy wild populations. The plan also provides strategies to conserve genetic diversity of wild stocks and guidelines aimed at limiting interbreeding between hatchery and wild steelhead. In addition, WDFW has identified tentative Genetic Conservation Management Units of steelhead to meet the genetic conservation goals of the steelhead management plan. These Genetic Conservation Management Units will help WDFW focus on management actions that reduce or eliminate adverse genetic influences on Washington's wild steelhead stocks.

(e) ESHB 2741 - Coordinated, Watershed-based Natural Resource Planning

Signed into law on April 1, 1994, ESHB 2741 created the watershed coordinating council comprised of various state natural resource agencies. The Council is required to prepare a coordinated report on all actions taken in the watersheds of the state, identify those watersheds where goals and measurable objectives for resource protection have already been established and provide recommendations to facilitate the development of goals and objectives for the state's remaining watersheds.

(f) ESHB 1309

In addition to requiring that the WDFW develop and adopt a Wild Salmonid Policy, House Bill 1309 increases protection for fish by improving screening requirements at water diversions, and requires standards to protect salmonids on state-owned lands used for rangeland, agricultural lands, and grazing woodlands. This legislation also required the Washington State Conservation Commission (WSCC) to develop ecosystem standards for fish and wildlife on state-owned agricultural and grazing lands. The Commission's draft report was issued in November, 1994. The 25 ecosystem standards proposed in the report will be adopted as policy guidelines by the WSCC and provided to the Washington State Department of Natural Resources and the WDFW for implementation as required by the law.

(g) Watershed Restoration Partnership and Jobs for the Environment Programs

The 1993 Washington Legislature appropriated \$6.5 million and established the Jobs for the Environment program for local environmental restoration projects. The program funds projects

that accomplish scientifically sound watershed restoration projects. The 1994 legislature appropriated \$8 million for grants to restore habitat within watersheds where "critical" and "depressed" salmonid stocks exist according to the WDFW/tribal SASSI report or are at risk of being listed under the Federal ESA.

(h) Salmonid Screening, Habitat Enhancement and Restoration Division

This program provides the infrastructure for implementation of such state initiatives as ESHB 2741 and ESHB 1309. The focus of the statewide program is the restoration of degraded habitat which includes providing access for salmonids to spawning and rearing habitats. Over the last few years, there has been an average of 20 annual projects that have included six major diversion screens, 100 pump diversion screens, inspection of 300 fishways, maintenance and operation of 60 fishways, and inspection of 130 gravity diversion fish screens.

(i) Washington Wildlife and Recreation Program

This program was established by the Washington State Legislature in 1990 in response to increasing public demand for outdoor recreational land and the growing concerns about the loss of wildlife. During its five year history, a total of \$179 million has been appropriated, resulting in thousands of acres of wildlife habitat being placed in protective public ownership.

(j) Washington Habitat Partnership Incentives Program

This October 1994 initiative proposes to fund 58 full-time-equivalents in the WDFW for \$4.8 and \$4.1 million in 1996 and 1997, respectively to engage in cooperative ecosystem planning, landowner technical assistance and technical assistance to local governments for the purpose of preventing the loss of and recovering aquatic ecosystems that produce salmonids.

(k) Chelan Agreement

In 1990, the state of Washington, Northwest treaty Native American tribes, city and county governments, water utilities, and representatives of fishing, environmental, industrial, and agricultural groups committed to a cooperative process to address state water policy issues, which resulted in the Chelan Agreement and Water Resources Forum. The common goal of the agreement is to protect, restore, and enhance to the full productive capacity of fish and wildlife habitats, including instream, riparian, and wetland ecosystems. The Water Resources Forum has developed instream flow and hydraulic continuity policies that will be going through the state of Washington's administrative rule-making process this spring. Some of these new policies will require increased instream flows to improve fish and wildlife habitat, new standards for irrigation diversions, limits on residential domestic water use, and restrictions on any new surface or ground water withdrawals for out of stream use.

(l) Timber/Fish/Wildlife (TFW) Agreement

In 1987, the state of Washington, Northwest treaty Native American tribes, and timber industry began implementing the TFW Agreement which established a cooperative forum to address forest practices on state and private lands in the state of Washington to provide protection for fish, wildlife, and water quality, while providing long-term stability for the timber industry. The initial products of the TFW Agreement included new administrative forest practices rules adopted by the

State of Washington that provided stream-side protection through riparian management regulations, on-site evaluation of forest practices by interdisciplinary teams, watershed basin planning, and wetland protection rules.

More recently, new wetland protection and watershed analysis rules have been implemented. These new wetland protection measures include buffer widths and management prescriptions necessary for protection of wetland functions. Currently the process participants are developing water quality and monitoring components to be integrated into the watershed analysis process.

(m) Salmon Culture Project Review Process and Interim Salmon Production Guidelines

In the interim period while the Wild Salmonid Policy is being implemented, the WDFW has issued interim guidelines designed to apply a consistent set of statewide standards for the review, approval and implementation of salmon culture or production projects. These guidelines will apply both for the operation of hatcheries and offstation cooperative supplementation and enhancement projects. The interim guidelines provide conservative standards for wild and hatchery stock management areas, guiding principles for the use of supplementation to rebuild wild stocks, guidelines for dealing with hatchery issues such as multiple brood stocks within a hatchery facility, stock transfers between hatcheries, captive broodstock programs, straying risks, and guidelines for net pen production facilities.

In addition, the state of Washington and Washington tribes, in 1991 developed a "Salmonid Disease Control Policy" which applies strict disease control standards to hatcheries, including the containment and/or destruction of diseased fish, and strict constraints on the movement and release of fish between basins and regions. As a result of this policy, since 1991, there have been fewer transfers of fish between watersheds and regions and more responses in terms of destruction of diseased fish and eggs at hatcheries to prevent the spread of disease to other hatchery and natural populations.

(n) Fish Management Review of Hatchery Production

With the merger of the fish and wildlife departments in 1994, considerable emphasis has been placed on fish management review of hatchery production activities. Presently, production approval of hatchery and enhancement programs is the responsibility of the resource managers of the three basic regions (Puget Sound, Coast, and Columbia River). With the primary management focus on wild stock protection and rebuilding, hatchery incompatibility is minimized.

(o) Wind River Restoration Team

In 1993, the Wind River Restoration Team was formed to help rebuild wild summer steelhead populations in the Wind River. The team is composed of members from WDFW, FWS, USFS, Yakima Indian Nation, National Biological Survey, and other agencies. The team has 1) collected genetic, juvenile freshwater production, and adult escapement data; 2) completed fish ladder and habitat improvements; and 3) is working on a recovery plan.

2. State of Oregon

(a) Oregon State Fishing Regulations

The Oregon Department of Fish and Wildlife (ODFW) publishes yearly sport fishing regulations for steelhead and will periodically impose special regulations if adverse conditions (e.g., exceptionally low adult returns) require immediate conservation action. The ODFW defines adult steelhead as sea-run rainbow trout over 20 inches in length except in the Rogue River and Applegate River (a Rogue River tributary) where 16 inches applies. All hatchery steelhead in Oregon have been fin-clipped since the late 1980s. Wild (nonfinclipped) steelhead must be released unharmed in all North Coast streams, most mid coast streams, and almost all Columbia River streams. Additional catch and release regulations are being proposed such that wild steelhead may be creel only in coastal streams south of the Coquille River beginning January 1, 1997. The upper reaches in all basin tributaries are closed to angling to provide sanctuary areas for spawning steelhead. Because resident rainbow trout fishers can harvest wild smolts, ODFW has delayed the opening day for trout fishing to reduce angling impacts and has reduced rainbow trout releases to decrease attraction of anglers to areas inhabited by migrating steelhead smolts.

Anglers are required to purchase a salmon-steelhead tag so that catch data can be recorded and returned to ODFW at year's end. In addition, ODFW requests that anglers also keep records of all released steelhead. The daily, weekly, and annual catch limits for steelhead in most rivers are two, six, and 40 fish, respectively. Information from angler salmon-steelhead tags provide ODFW with data valuable for assessing various catch/effort and abundance estimates. For example, ODFW estimates that 70% of Oregon's steelhead harvest is hatchery fish. The ODFW also has harvest regulations designed to prevent anglers from snagging (foul hooking) steelhead and salmon, and strongly encourages anglers to release wild steelhead.

(b) Oregon Steelhead Management Plan

The state of Oregon has developed a steelhead management plan whose goals include (1) sustaining healthy and abundant wild populations of steelhead; (2) providing recreational, economic, cultural, and aesthetic benefits from fishing and non-fishing uses of steelhead; and (3) involving the public in steelhead management and coordinate its activities with the Tribes and other agencies. The State has attempted to meet these goals through habitat improvement, monitoring, modification of hatchery programs, and increased public, agency, and Tribal participation in its management decisions. Principle components of the steelhead management plan include the State's Natural Production Policy, Wild Fish Management Policy (WFMP), Wild Fish Gene Resource Conservation Policy, and Hatchery Fish Gene Resource Policy whose main purposes are to guide the management and conservation of genetic resources of wild fish in Oregon. The first two objectives under the Plan's first goal (i.e., sustaining healthy and abundant wild populations of steelhead) concern protection and restoration of habitat for wild populations. An important action called for under these objectives is for ODFW to work with agencies, corporations, and individuals to develop and implement habitat restoration plans on the lands these entities manage.

The statewide Steelhead Plan calls for ODFW fish management plans for individual basins to identify and present specific strategies for protection and restoration of habitats important to adult

and juvenile steelhead. Basin plans describe objectives and strategies for managing fish populations and their habitats in specific river systems. Basin-specific policy direction (such as specific constraints on the use of hatchery fish in particular areas) is developed as needed to supplement statewide policies. Objectives are formulated to address both conservation (habitat condition, escapement, population sustainability) and utilization needs (fishery characteristics, fish available for harvest). Strategies for attaining objectives are arrayed under each, and are used to set work plans and priorities for their attainment. All objectives and strategies are required to be consistent with the Department's policies and other procedural direction. Basin plans are regarded as the principal vehicle for implementation of conservation and utilization policies, presenting direction developed with the aid of public advisors and adopted in public hearings by the Oregon Fish and Wildlife Commission. Plan policies and objectives are adopted as Oregon Administrative Rules (enforceable legal direction) when accepted by the Commission.

Habitat protection and restoration objectives and activities, including cooperative enforcement of Oregon laws and regulations, are being described in the habitat sections of ODFW's fish management plans for individual basins. ODFW basin plans have been adopted for the Coos and Yaquina basins on the coast and for the Willamette and all of its sub-basins. Basin plans are nearing completion for the South Coast (south of the Coquille River, excluding the Rogue basin), the Siuslaw basin through Salmon basin area of the mid-coast, and the Deschutes basin on the Columbia River. ODFW has started writing basin plans for the Rogue, Umpqua, Coquille and Nehalem basins on the coast, and the Hood and Sandy basins on the Columbia River. ODFW expects to start basin plans for the Tillamook-Nestucca area in 1996.

(c) ODFW Wild Fish Management Policy (WFMP)

The WFMP is ODFW's primary vehicle for protection of genetic resources of wild fish in Oregon. The WFMP directs the ODFW to develop strategies for all wild fish populations in Oregon such that they meet certain basic standards aimed at: 1) protecting natural genetic differences between populations, 2) limiting the adverse impact of hatchery fish on wild populations, and 3) ensuring that natural variation and local adaptation within individual populations are not lost. The WFMP contains several minimum genetic standards that all populations of wild fish in Oregon are intended to meet. The most significant of these standards with respect to recent changes in steelhead management, relates to minimum population size and the proportion of the naturally spawning population that are hatchery fish.

In general, to meet the minimum population size standard, the fish population must consist of at least 300 natural spawners. With respect to the hatchery fish, their representation on the spawning grounds is limited depending on how genetically different the particular hatchery stock is from the wild population. For hatchery stocks developed from out-of-basin locations this limit is 10%. For hatchery stocks developed from within basin locations this limit is from 30% to 50%. Other factors, such as degree of domestication, are also used to establish the limits for a particular hatchery stock in a specific location.

ODFW has identified 117 winter steelhead and 20 summer steelhead populations in Oregon. In the 1992 WFMP report, 57 of these populations were known to be out of compliance with

WFMP standards, primarily relating to proportion of hatchery fish on the spawning grounds. With the implementation of the WFMP strategies to correct these problems (e.g., substantial reductions in hatchery steelhead releases and efforts to reduce straying of hatchery fish), it is anticipated that most of these populations will soon be in compliance with WFMP standards.

(d) Oregon Forest Practices Act

The Oregon Board of Forestry (Board) conducted a review of existing state forest practices rules in 1990 and submitted recommendations to the Oregon Department of Forestry in 1994. The Board's report details new rules that provide more protection for water quality and aquatic habitat. Before Board recommendations could be implemented, the 1991 legislature passed Section 9, Senate Bill 1125 outlining several requirements of the board. Requirements underscored the Senate's desire to improve protection for fish and wildlife habitat, especially riparian vegetation conditions. Senate Bill 1125 established a new and clear target for water quality standard achievement that needed to be considered in the review of existing practices and in the development of new best management practices. The purpose of the rules is to achieve and maintain a desired future condition that will provide a streamside stand (particularly one composed of large conifers) that will function similarly to mature forest conditions along fish-bearing streams. In addition to setting in place requirements for recovery of riparian areas, the Oregon Forest Practices Act provides incentives to forest landowners to undertake stream restoration work to speed the attainment of conditions beneficial to steelhead, other fishes, and aquatic species generally. These include incentives for large wood emplacement, boulder emplacement, alcove construction, and riparian fencing. ODFW worked with the Oregon Department of Forestry to develop standard protocols for large wood emplacement and ODFW is consulted on all other habitat improvement projects. In addition, the Department of Forestry is monitoring the effectiveness of the newly adopted rules; ODFW provided technical input and helped the Department of Forestry establish monitoring strategies and protocols for this program.

(e) Salmon Trout Enhancement Program

ODFW's Salmon and Trout Enhancement Program (STEP) initiated enlistment of volunteers starting in the mid-1980s to inventory fish and habitat and to conduct habitat restoration efforts including (but not limited to) instream structures, fish passage improvement at artificial barriers, riparian revegetation, and fencing. The STEP program also helps inform the public about steelhead habitat restoration needs and techniques. Efforts include more than volunteer labor, as equipment and materials have been donated to many projects by interested parties, businesses, and local governmental agencies.

(f) Restoration and Enhancement Program

The Restoration and Enhancement (R&E) Program was adopted by the Oregon legislature in 1989 and provides needed funding for habitat restoration and other fish management projects through a surcharge on fishing licenses and commercial salmon poundage fees. Many STEP projects have been assisted with funds from the R&E Program, but funds have supported many projects not affiliated with STEP. Projects have included habitat and fish inventories, fish passage improvement, instream habitat restoration, and riparian fencing that all benefit natural production of steelhead.

A cooperative habitat restoration effort between ODFW and the non-profit Oregon Wildlife Heritage Foundation, and funded partly by the Restoration and Enhancement Program, is leading to guide books that identify the highest priority sites for salmonid habitat restoration on non-federal land in Oregon coastal streams and lower Columbia River streams. Steelhead are one of the high priority species being addressed. Guide books written by ODFW biologists with the cooperative funding have been completed for Columbia River tributaries below the Willamette River and for all coastal basins except the Umpqua, Coos, Coquille, and upper Rogue basins. A significant share of the funding to complete guide books for these remaining coastal basins has been secured, and analysis and writing is expected to be complete in mid-1996. The first guide book was for the northern Oregon coast from the Necanicum River to Neskowin Creek, and 21 restoration projects were completed in this area during the first season (1995). These projects were made possible by using funding and in-kind contributions of equipment and materials from six industrial timberland owners, Oregon Department of Forestry, and ODFW to match with a National Fish and Wildlife Foundation grant secured by the Oregon Heritage Wildlife Foundation. A monitoring program has been included to assess the effectiveness of the habitat restoration projects.

(g) Watershed Health Program

The Watershed Health Program, created by the Oregon Legislature in 1993, provided multi-agency support to local watershed councils in the Rogue, Coquille, and Coos basins of southwest Oregon and the Grande Ronde basin of northeast Oregon. Staff members from state natural resource agencies formed teams to provide technical assistance to local watershed councils in designing restoration measures, obtaining funds, and implementing projects, some of which will benefit steelhead.

(h) Umpqua Basin Fisheries Restoration Initiative

The Umpqua Basin Fisheries Restoration Initiative is a public/private cooperative effort to restore fish habitat the Umpqua River basin with benefits expected for steelhead and other anadromous salmonids. Some habitat restoration work tied to monitoring efforts of fish and habitat is being done on private and federal timberland to test and guide future habitat restoration in the basin and neighboring coastal basins.

(i) Fill and Removal Rules

The Oregon Division of State Lands (DSL) adopted Oregon Administrative Rules effective on January 1, 1996 to provide increased protection to spawning and rearing habitat of indigenous anadromous salmonids that are either designated as sensitive, or listed as threatened or endangered. While Oregon steelhead are not yet designated as sensitive, the species' significant overlap with species already designated as sensitive (specifically coho *O. kisutch*, chum *O. keta*, and some stocks of chinook salmon) will provide some habitat protection to steelhead under these new rules. The ODFW is preparing maps of anadromous salmonid spawning and rearing habitat. These maps are being incorporated into other agency's programs including those of DSL and the Oregon Department of Forestry's Water Protection Rule maps.

(j) Screening, Fish Passage, and Instream Water Rights

Water diversion screening and fish passage improvements on non-federal lands have been expanded by ODFW in recent years, offering benefits to steelhead and other aquatic species. Under the Oregon screening program, landowners are provided monetary incentives in the form of tax credits and cost-sharing to voluntarily participate in the screening program. Screening efforts prioritize gravity fed diversions of under 30 cubic feet per second, and emphasize screens in areas where threatened, endangered or sensitive species will benefit.

Establishment of instream water rights to benefit steelhead and other fish continues to be a high priority of ODFW. A staff position was assigned to coordinate the effort and approximately 500 applications have been submitted to the Oregon Water Resources Department by ODFW after the legislature created the possibility for this type of water right; many have been approved which should benefit steelhead.

(k) Enforcement

Enforcement of Oregon habitat protection laws and regulations is being stepped up as ODFW and Oregon State Police (OSP) personnel in each management region of the state meet annually to set priorities for enforcement activities and then communicate and cooperate through each year to maximize effectiveness. In recent years, the OSP Fish and Wildlife Division has applied their observation and investigation skills (and confrontation skills, if needed) to assign ODFW and other Oregon natural resource agencies in identifying violation of habitat protection laws and regulations and obtaining the cooperation of violators.

(l) Other Habitat Protection Measures

ODFW and its predecessor agencies (Oregon Game Commission, Oregon Fish Commission, and Oregon Wildlife Commission) have been involved in a variety of tasks related to protection of salmon and steelhead habitat and fish passage at dams since the early 1900s. While ODFW has no direct authority over habitat management other than fish passage and instream habitat improvement projects, the agency must be consulted by other state, federal, and local agencies and governmental entities (such as the Water Resources Department the Department of Forestry, the Department of Environmental Quality, and the Division of State Lands) before decisions are made on many proposed actions that affect aquatic habitat, stream flow, and water quality. ODFW personnel spend a large part of their time working with the public and private sector on habitat issues and permits to alter lands and waters affecting salmon. For example, ODFW's Research and Development Section has been conducting research on the habitat requirements of steelhead, the amount and quality of salmonid habitat available in Oregon, and the benefits of various habitat restoration techniques for about 10 years. In addition, effects on steelhead juveniles and adults from flow and temperature alterations caused by dams in the Columbia, Willamette, and Rogue Rivers have been studied over the last 20-30 years. All of these studies have improved decisions on how to protect and restore steelhead populations through habitat protection and restoration.

Habitat protection and restoration on private agricultural lands has been emphasized through cooperative efforts between ODFW, landowners, and Soil and Water Conservation Districts

(SWCD) with funding and technical assistance from the Natural Resources Conservation Service (NRCS). One of the largest efforts has been in Buck Hollow Creek in the Deschutes basin, and steelhead are the anadromous salmonid likely to benefit the most. With funding and technical assistance from NRCS, local SWCDs are helping landowners on several coastal streams construct fences to protect riparian habitat on anadromous salmonid streams. Commercial fishermen are being hired for some of this work with federal disaster relief funds, and although primary benefits will be to salmon, steelhead are also likely to benefit.

The Stream Enhancement Initiative, a cooperative program established between ODFW, Oregon Department of Forestry, and private timberland owners, has led to several habitat restoration projects in coastal streams. These projects were designed or approved by ODFW and constructed by timberland owners at their expense. To help monitor habitat changes on non-federal lands, ODFW will use funds from the Oregon Forest Industries Council to create an inventory of habitat restoration projects. The ODFW has also been creating its own geographic information system data base over the past several years to help analyze changes and correlate larger scale habitat characteristics with salmon and steelhead production.

Management plans for Oregon State Forests in coastal mountains are being developed by the Oregon Department of Forestry with particular attention to sensitive species and their habitat, and with coordination with ODFW. The Elliot State Forest Plan was just completed on the south-central coast and should provide increased protection for steelhead habitat in a few tributaries of the Umpqua River and Coos Bay.

And finally, the Oregon Land Conservation and Development Commission administers a land use conservation program in Oregon. Among its many features, it imposes urban growth boundaries on all towns and cities. This is beneficial in preventing uncontrolled development and further destruction of steelhead habitat.

3. *State of Idaho*

(a) Idaho State Fishing Regulations

The Idaho Department of Fish and Game (IDFG) publishes yearly sport fishing regulations for steelhead and will impose special regulations if adverse conditions (e.g., exceptionally low adult returns) require immediate conservation action. The IDFG defines adult steelhead as rainbow trout over 20 inches in length and has adipose-clipped all hatchery steelhead since the mid-1980s, when a "no-kill" policy on wild steelhead was instituted. Currently, only fin-clipped steelhead may be kept in Idaho and anglers are required to use barbless hooks in many areas to facilitate the quick release of wild fish. The IDFG has instituted catch and release regulations for more than 1,000 miles of major steelhead production habitat in the Lochsa, Selway, South Fork Salmon, and Middle Fork Salmon River drainages. The IDFG has refrained from releasing hatchery fish into these areas to reduce the potential for interbreeding between hatchery and wild steelhead. Additional steelhead areas are classified as "Wild Trout" waters with a reduced trout bag limit (which also affords protection to steelhead) in tributaries to the Selway, Lochsa, South Fork Clearwater, and Middle Fork Salmon Rivers. In addition, all tributaries to the Salmon River

canyon and mainstem Salmon River drainage from Hell Roaring Creek to the headwaters are classified as "Wild Trout" areas.

Anglers are required to purchase a salmon-steelhead tag so that catch data can be recorded and returned to IDFG at year's end. The IDFG requests that anglers also keep records of all released steelhead. In addition, IDFG conducts telephone interviews with steelhead anglers at the end of each season to estimate total statewide harvest and a number of other fishery statistics.

Information from angler salmon-steelhead tags provide IDFG with data valuable for assessing various catch/effort and abundance estimates. The daily, possession, and annual catch limits for steelhead throughout the State are two, four, and 20 fish, respectively. The Idaho Fish and Game Commission has the capability to enact temporary rule changes to address conservation issues. A recent example is that the Commission recently implemented a no-harvest season on the Clearwater River to ensure adequate hatchery B-run steelhead escapement to Dworshak National Fish Hatchery. The IDFG also has harvest regulations designed to prevent anglers from snagging (foul hooking) steelhead and salmon, and requires the release of all wild steelhead.

(b) Idaho Anadromous Fish Management Plan

The state of Idaho has developed an anadromous fish management plan whose intent is to preserve and protect wild anadromous fish while maintaining optimum sport fishery benefits. Policies contained in the plan emphasize the following: conservation and restoration of habitat; protection of wild stocks by minimizing adverse impacts from hatchery introductions; introduction of non-native species in areas not believed to impact wild stocks; and protection and improvement of downstream migration corridors for anadromous salmonids.

(c) Habitat Protection and Improvement Program

The State of Idaho manages only a small percentage of steelhead habitat; nearly all watersheds inhabited by wild steelhead are managed by the Federal government, primarily as USFS lands and Wilderness Areas. See the section titled "FEDERAL AND REGIONAL EFFORTS" for a description of major Federal habitat-related conservation efforts. The IDFG works with these and other Federal and non-Federal landholders to insure that habitat objectives supporting the Department's fish production objectives are met.

(d) Idaho Forest Practices Act

The Idaho Forest Practices Act regulations prescribe mandatory best management practices for all logging activities. The best management practices include specific prescriptions for stream protection zones, maintenance of large organic debris and shade, avoidance of high hazard areas, and road construction. Under the Clean Water Act's consistency provisions, all Federal logging activities within the State of Idaho must implement best management practices at least as stringent as those in the Idaho Forest Practices Act.

(e) Idaho Surface Mining Act and Dredge and Placer Act

These acts and implementing regulations require miners to submit mine reclamation plans and proposed best management practices to the Idaho Department of Lands. The Idaho Department of Lands approves permits under the acts only after determining that the best management

practices are sufficient to achieve Idaho Water Quality Standards and that the miner has secured a reclamation bond. The State has concurrent jurisdiction over mining activities occurring on Federal lands.

(f) Rules for Ore Processing by Cyanidation

These rules require a permit from the Division of Environmental Quality for mines processing ore with cyanide, a compound which is highly toxic to fish. The rules contain detailed technical requirements to ensure protection of beneficial uses. The state has concurrent jurisdiction over mining activities occurring on Federal lands.

(g) Idaho Water Quality Standards

Idaho Water Quality Standards contain criteria for full protection of beneficial uses including salmonid spawning and cold water biota (salmonid rearing). The Idaho Water Quality Standards include an antidegradation policy for the protection of high quality waters. The Clean Water Act requires that all Federal actions be consistent with state water quality standards that have received EPA approval.

4. State of California

(a) California State Fishing Regulations

The California Department of Fish and Game (CDFG) defines adult steelhead as any rainbow trout larger than 16 inches found in any of California's anadromous waters. It has been reported that summer trout fishing for juvenile steelhead maybe limiting adult escapement for some rivers in California. As an example, in response to excessive harvest of hatchery juvenile steelhead in the upper Sacramento River, size restrictions have been placed on steelhead angling during the fall and winter period. Also, the decline in wild steelhead and spring-run chinook salmon in Mill, Deer, and Antelope creeks has triggered a change in angling regulations for these creeks. The lower reaches of these streams are closed to angling to protect migrating adults, which are particularly vulnerable during low flow conditions. The middle and upper reaches of these creeks are restricted to catch and release of juvenile steelhead, and terminal gear is restricted to artificial lures and barbless hooks. Similar restrictions have been implemented for Big Chico and Butte creeks. In the American River, angling closures have also been extended for longer durations to protect steelhead.

(b) Salmon, Steelhead Trout, and Anadromous Fisheries Program Act (Senate Bill 2261)

In 1988, the State legislature passed the Salmon, Steelhead Trout, and Anadromous Fisheries Restoration Act (Chapter 1545/88/Senate Bill 2261), which established the long-term goal of doubling anadromous fish populations from their 1988 abundance levels by the end of the century.

This Act precipitated several plans for restoring Central Valley anadromous fisheries populations and their habitat: the Central Valley Salmon and Steelhead Restoration and Enhancement Plan, and Restoring Central Valley Streams. In general, these planning documents have outlined efforts to restore chinook salmon populations, and have assumed that steelhead populations would secondarily benefit from the restoration measures.

Restoration activities currently being implemented as a result of these plans and California Senate Bill 1086 (described below) include: a pilot pumping project to improve fish passage at Red Bluff Diversion Dam, installing water temperature control devices at Shasta dam and Whiskeytown reservoir, correcting fish passage problems on several Sacramento River tributaries, and acquiring riparian woodland areas along Butte Creek and the Sacramento River.

As part of the Salmon, Steelhead Trout, and Anadromous Fisheries Program, the Steelhead Management and Restoration Project was also established in 1991. The CDFG has produced a draft plan which outlines management activities for the restoration and maintenance of California's steelhead populations. In the Central Valley, the CDFG's focus for steelhead restoration is on recovering wild populations, and restoring hatchery-maintained runs. As an example, the draft plan outlines measures for the Sacramento River include correcting fish passage and screening problems, agricultural drainage and heavy metal pollution from the Iron Mountain Mine Superfund Site. Within the Sacramento river system, Mill, Deer and Antelope creeks have the greatest potential for restoration of wild steelhead populations, and the plan recommends improved flows in the lower reaches by exchanging groundwater for surface flows. A monitoring program has also recently been established to assess adult steelhead numbers in Mill and Deer creeks. In addition, the CDFG plan recommends temperature and flow regimes for the Yuba River; adequate minimum flows, flow fluctuation standards, and water temperatures in the American River as well as storage levels in Folsom Reservoir.

The CDFG has developed several other fishery management plans for Central Valley streams including: the Lower Yuba River fishery management plan, the Lower Mokelumne River Fisheries Management Plan, and the Steelhead Restoration Plan for the American River. Implementation of actions identified in these plans will also assist in restoring Central Valley steelhead in the rivers below the dams as mandated under Senate Bill 2261.

(c) The Keene-Nielsen Fisheries Restoration Act of 1985

This Act states that California intends to “make reasonable efforts to prevent further declines in fish and wildlife, intends to restore fish and wildlife to historic levels where possible, and intends to enhance fish and wildlife resources where possible. Just over 15 million dollars were initially authorized in approved legislation, however, only 11.25 million dollars were actually appropriated between 1985 and 1987. The Act was reworded through 1990 legislation to closely tie expenditures from this account to projects called for under the Salmon, Steelhead Trout, and Anadromous Fisheries Program Act of 1988. However, the legislation provided no funding to the Keene-Nelson account, nor have the budgets of subsequent governors.

(d) The Bosco-Keene Renewable Resources Investment Fund

Pursuant to Public Resources Code Section 34000 these funds may be used for salmon and steelhead hatchery expansion and fish habitat improvements, however, funding varies year to year.

(e) Steelhead Trout Catch Report-Restoration Card

In 1991, the State passed legislation (Assembly Bill 2187) which requires anglers to purchase and fill out a \$3.15 report card when fishing for steelhead (rainbow trout greater than 16 inches in

length) in any river or stream accessible to anadromous fish, this became effective on January 1, 1993. The Steelhead Trout Catch Report-Restoration Card Project uses these report cards to obtain and analyze harvest data and angler-use information, and to make recommendations for restoring and enhancing California steelhead trout populations. Revenue from report cards are also used to fund restoration projects, gather new information on specific native steelhead stocks, and identify existing and potential problems.

(f) California Fish and Game Commission's Steelhead Rainbow Trout Policy

This policy of the California Fish and Game Commission (CFGC) was recently updated and amended. The policy recognizes the need to protect genetic integrity and habitat of all stocks and places management emphasis on natural stocks. The policy declares: Management of steelhead will be directed towards protection and maintenance of populations and genetic integrity of all identifiable stocks, rescued juvenile steelhead must be returned to their natal stream and rescue will only be allowed when fish can be held until habitat conditions improve, restoration and acquisition plans will be developed and implemented to safeguard critical habitats such as estuaries, lagoons, and spawning and rearing areas, and securing necessary instream flows, existing steelhead habitat shall not be diminished further without offsetting mitigation of equal or greater long-term habitat benefits, sport fishing for adult and juvenile steelhead will only be permitted where CDFG has determined that harvest will not harm existing wild populations, and resident fish will not be planted in drainages of steelhead waters if CDFG has determined that it will interfere with steelhead populations.

(g) Trout and Steelhead Conservation and Management Planning Act of 1979

This Act declares that it is a policy of the State to establish and maintain wild trout and steelhead stocks in suitable waters of the state and establish angling regulations designed to maintain wild trout and steelhead through natural production.

(h) Senate Bill 1086

The State of California passed Senate Bill 1086 in 1986, calling for a management plan to protect, restore, and enhance the fish and riparian habitat and associated wildlife of the upper Sacramento River. In response to this legislation, the Resources Agency of California prepared the Upper Sacramento River Fishery and Riparian Habitat Management Plan. This plan recommends a variety of habitat restoration measures, including improving spawning gravel, water quality, and passage at dams and diversions. Senate Bill 1086 appropriated \$250,000 to prepare this management plan and to develop an inventory of riparian lands.

(i) Cal Trans Environmental Enhancement and Mitigation Program

This program was established by the enactment of the Transportation Blueprint Legislation of 1989. This legislation provided for the annual allocation of \$10 million that will be distributed through the California Resources Agency to FY 2000-2001. The program provides grants to local, state and Federal agencies and nonprofit entities to mitigate the environmental impact of modified or new public transportation facilities. Eligible projects for funding include the

acquisition, restoration or enhancement of resource lands to mitigate the loss of, or the detriment to, resource lands lying within or near the right-of-way acquired for proposed transportation improvements. Resource lands include natural areas, wetlands, forests, woodlands, meadows, streams, or other areas containing fish or wildlife habitat.

(j) Spring-run Chinook Salmon Restoration Efforts

The decline of spring-run chinook salmon in Mill, Deer and Antelope creeks has instigated habitat restoration efforts for these creeks. The *Spring-run Chinook Salmon Workgroup* has been established with the purpose of exploring measures to recover these populations in order to avert a listing of the spring-run population under the ESA. Restoration efforts for spring-run chinook are likely to benefit steelhead.

(k) California Wild and Scenic Rivers Act

This Act declares that water is generally not available for appropriation by diversion from, storage in, a designated Wild and Scenic River, unless approved by an initiative of the voters or a to-thirds vote of the California Legislature. Recently, Mill and Deer creeks (Sacramento River tributaries) have been proposed for inclusion in the State and National Wild and Scenic River Acts. Recent legislation required the California Resources Agency to evaluate these two streams for their suitability as Wild, Scenic, or Recreational status. Resulting studies have concluded that portions of both streams are suitable for inclusion in the State Act. Designation of these streams as Wild or Scenic could provide greater protection for steelhead populations and their aquatic habitat.

(l) Fish and Game Commission Water Policy

It is the policy of the CFGC that the quantity and quality of the waters of the state should be apportioned and maintained to produce and sustain the maximum numbers of fish and wildlife. It Requires that CDFG review and comment on proposed water development projects and applications for use, and recommends and seeks adoption of proposals necessary or appropriate for the protection and enhancement of fish and wildlife and their habitats.

(m) Environmental Defense Fund vs. East Bay Municipal Utility District

A court decision from the Environmental Defense Fund vs. East Bay Municipal Utility District has resulted in increased minimum flows for the American River: The court decision also mandated a multi-year cooperative study to obtain physical and biological information needs for managing the American River. Improved flows and the development of fishery information may benefit steelhead in the American River.

(n) Agreement between the Department of Water Resources and the Department of Fish and Game to offset direct fish losses in relation to the Harvey O. Banks Delta Pumping Plants (DWR Four Pumps Agreement)

The CDFG and the California Department of Water Resources (DWR) entered into an agreement in 1986 to offset the direct losses of striped bass, chinook salmon and steelhead losses by the diversion of water by the Harvey O. Banks Delta Pumping Plant. Projects funded under this agreement which may benefit steelhead include spawning gravel restoration projects on the

Sacramento, Merced and Tuolumne rivers and Mill Creek, and installation of fish screens in Suisun Marsh sloughs.

(o) Cooperatively Operated Rearing Programs for Salmon and Steelhead Policies

The CFGC policy on Cooperatively Operated Rearing Programs states that the bulk of the State's salmon and steelhead resources shall be produced naturally and that the State's goals of maintaining and increasing natural production take precedence over the goals of cooperatively operated rearing programs. Section 1200 et. seq. of the Fish and Game Code authorizes CDFG to enter into agreements with counties, nonprofit groups, and private persons for the management and operation of rearing facilities for salmon and steelhead. All such agreements shall be in accordance with the policies of the CFGC and the criteria of CDFG which govern the operation under such agreements.

(p) Salmon and Steelhead Stock Management Policy

It is the policy of CDFG to maintain the genetic integrity of all identifiable stocks of salmon and steelhead in California. Each salmon and steelhead stream shall be evaluated by CDFG and the stocks classified according to their probable genetic source and degree of integrity.

(q) Wetlands Resources Policy

This policy of the CFGC seeks to provide for the protection, preservation, restoration, enhancement and expansion of wetland habitat in California and to strongly discourage development or conversion of wetlands. The CFGC opposes any development or conversion which would result in a reduction of wetland acreage or wetland habitat values. The CFGC also will oppose development proposals unless project mitigation assures there will be "no net loss" of either wetland habitat values or acreage.

(r) San Joaquin River Management Program Advisory Council

This Council is charged by the legislature to develop the San Joaquin River Management Program, to identify actions which can be taken to benefit legitimate uses of the San Joaquin River system. The program objectives are to develop compatible solutions to water supply, water quality, flood protection, fisheries, wildlife habitat and recreation needs. The study area covers the river from Friant Dam downstream through the South Delta Water Agency. Actions resulting from implementation of this management program have the potential to benefit steelhead.

(s) California Fish and Game Code 1385 et. seq.

Also known as the California Riparian Habitat Conservation Act, established this program to protect, preserve, and restore riparian habitat throughout California through acquisition of interests and rights in land and waters.

(t) California Fish and Game Code 2786(e)

Under the California Wildlife Protection Act of 1990 (CWPA), CDFG code 2786(e) stipulates that funds allocated under CWPA may be used for acquisition, restoration, or enhancement of aquatic habitat for spawning and rearing of anadromous salmonids and trout resources.

(u) California Fish and Game Code 5937

This State code mandates that sufficient water be released below any dam to maintain those fisheries existing below the dam in a good condition. However, many rivers which previously supported healthy steelhead populations, have undergone severe environmental degradation due to insufficient releases from upstream reservoirs and diversions. Some of the largest rivers affected include the Sacramento River below Shasta Dam and the Red Bluff, Anderson-Cottonwood and Glenn-Colusa Irrigation Diversions, Feather River below Oroville Dam, Yuba River below Bullards Bar Dam, American River below Folsom Dam, Tuolumne River below Don Pedro Dam, Stanislaus River below New Melones, San Joaquin River below Friant Dam, Merced River below Exchequer, the Klamath River below Copco Dam, Trinity River below Lewiston Dam, Eel River below Scott Dam, the Russian River below Coyote, Healdsburg, and Warm Springs Dams, San Lorenzo River below the Felton Water Diversion, Carmel River below Los Padres and San Clemente Dams, Santa Ynez River below Gibraltar and Bradbury Dams, Ventura River below the Robles Diversion, and the Santa Clara River below the Vern Freeman Diversion and numerous other smaller dams and diversion located throughout central and southern California.

(v) California Fish and Game Code 1601 and 1603

This states that persons, public agencies, utilities, etc. must notify CDFG of plans to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of rivers, streams, and lakes. The CDFG is required to submit proposals to reduce or mitigate impacts from the proposed projects.

(w) California Fish and Game Code 6900 et. seq.

It is the policy of the State to significantly increase the natural production of salmon and steelhead and existing natural salmon and steelhead habitat is not diminished further without offsetting impacts of lost habitat.

(x) California Water Code 1243

Declares that the use of water for preservation and enhancement of fish and wildlife resources is a beneficial use. Requires the State Water Resources Control Board (SWRCB) to notify CDFG of any application for permit to appropriate water.

(y) California Water Code 1707

This law passed by the California Legislature and signed by the Governor in 1991, authorizes a water right owner to petition the SWRCB for a change for purposes of preserving or enhancing wetlands, habitat, fish, and wildlife. It authorizes the SWRCB to approve the petition, regardless of whether the proposed use involves a diversion of water. Generally, the law allows for an existing water right to be left in the stream to benefit fish and wildlife, instead of being diverted for consumptive, or out-of-stream uses.

(z) Association of California Water Agencies

The Association of California Water Agencies have prepared and submitted to NMFS a list of participants (individual agencies) ongoing restoration efforts for anadromous salmonids in

watersheds located throughout the state. These are a host of voluntary and mandatory efforts to restore salmonids and their habitat. As an example, the Carmel River Captive Steelhead Broodstock Project is the only cooperative spawning and rearing facility in California operated solely for genetic conservation of a native steelhead stock. This program was necessary to guarantee the survival of the Carmel River steelhead population and to speed its recovery. Another captive breeding facility has been proposed for Fillmore Hatchery on the Santa Clara river. Other activities include: fish rescues, gravel replacement, population monitoring, correcting fish passage problems, changes in water drafting and conveyance schedules, and public education outreach.

(aa) The Mattole River Estuary Enhancement Plan

This report identifies ways to enhance the biological diversity and productivity of the estuary, includes recommendations to identify for treatment sources of upslope erosion and riparian reforestation projects. The report assesses restoration work done over the past decade and draws conclusions from all outcomes.

(bb) The Garcia River Watershed Plan

This watershed enhancement plan identified problems limiting anadromous salmonid production associated with this watershed and identifies several long-term goals to reverse these declines.

(cc) Santa Clara River Watershed Management and Enhancement Plan

The California State Coastal Conservancy, FWS, and the Los Angeles and Ventura counties are currently developing this plan. The purpose of this plan is to document existing resources and values, describe and analyze hydrologic, geomorphic and water quality conditions and associated effects from human activity, and to identify and formulate alternatives to address the problems. A draft of the plan was just completed and is now available for review.