




UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
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F/NWR5

May 10, 2002

MEMORANDUM FOR: D. Robert Lohn
Regional Administrator

FROM: Brian Brown 
Assistant Regional Administrator, Hydro Program

SUBJECT: NMFS 2001 Progress in Implementing the Basinwide Recovery Strategy

This report describes 2001 activities of the National Marine Fisheries Service (NMFS) in support of the December 2000 Final Basinwide Salmon Recovery Strategy (Basinwide Recovery Strategy) and the December 21, 2000 Federal Columbia River Power System (FCRPS) biological opinion (NMFS 2000 FCRPS Opinion). The reporting elements in sections 2-5 of this report generally follow the list of tasks in the Habitat (Table 5), Harvest (Table 6), Hatcheries (Table 7), and Hydro (Table 8) sections of Chapter 3 of the Basinwide Recovery Strategy. An initial section of this report addresses NMFS' general implementation activities and a final section addresses comprehensive monitoring programs and development of a recovery plan.

1. General Implementation

1.1 NMFS provided funding to states and Tribes for recovery activities

NMFS distributed \$90M of Pacific Coastal Salmon Recovery Funds (PCSRF) to the states and Tribes in FY01. Some of the funds have yet to be allocated to specific projects by the states and Tribes. All of the PCSRF Columbia River tribal funds will be used in the Columbia basin. It is likely that some portion of the Oregon and Washington funds will be used in the basin, especially in the Willamette basin in Oregon.

The PCSRF funds will allow the states and Tribes to continue support for habitat restoration and protection, research and enhancement, monitoring and evaluation, and salmon recovery planning and implementation efforts. Funding will be used to enhance Pacific coastal salmon recovery and for the purpose of helping share the costs of state, tribal and local conservation initiatives. Programs funded within this account will assist in the conservation of Pacific salmon runs, some of which are at risk of extinction in the states of California, Oregon, Washington, and Alaska. Funds provided to these states will have at least a 25% matching requirement. Funds provided to Pacific coastal and Columbia River Tribes do not



require matching dollars. This initiative responds to current and proposed listings of coastal salmon and steelhead runs under the Endangered Species Act (ESA) by forming lasting partnerships with states, local and tribal governments, and the public for saving Pacific salmon and their important habitats.

1.2 NMFS established an inter-divisional Biop Implementation Coordinating Team (BICT) to provide NMFS technical input into implementation of the reasonable and prudent alternative (RPA) of the NMFS 2000 FCRPS Opinion and additional actions in the Basinwide Recovery Strategy. Team members represent the Habitat Conservation Division, Sustainable Fisheries Division, Hydro Program, Protected Resources Division, and the Northwest Fisheries Science Center (NWFSC). Team members coordinate and draw upon expertise of NMFS field staff in making implementation recommendations.

1.2.1 BICT 2001 activities related to implementing the offsite mitigation program included:

- Established and distributed guidelines for soliciting project proposals to implement offsite mitigation RPA Actions.
- Proactively worked with project proponents to develop proposals that would have a high likelihood of implementing offsite mitigation (e.g., Duncan Creek, Hatchery and Genetic Management Plans (HGMP) proposals, selective fishery proposals).
- Established guidelines for determining if proposals implement, in whole or in part, Actions required by the RPA (i.e., "crediting" guidelines).
- Internally reviewed and rated all proposals submitted through the High Priority, Power System Emergency Action Plan, Columbia Plateau, Blue Mountain, and Mountain Snake solicitations.
- Participated in various phases of project review and prioritization through the Columbia Basin Fish and Wildlife Authority (CBFWA).
- Submitted written evaluations of above projects and determinations of consistency with RPA Actions to the Bonneville Power Administration (BPA) and the Northwest Power Planning Council (Council), except Blue Mountain and Mountain Snake, which BICT started in 2001 but completed in 2002.
- Prepared an analysis for BPA and the Council of "gaps" in the range of proposals submitted and funded for offsite mitigation.

1.2.2 BICT 2001 activities to help Action Agencies develop the FY02-06 Five-Year Implementation Plan

- Prepared comments on various drafts of the document in an attempt to ensure adequacy of the draft released to the public in August 2001. This included participation in meetings to determine scope and content, and for some sections, submission of text for incorporation.
- 1.2.3 BICT 2001 activities to help Action Agencies develop the FY02 Annual Implementation Plan
- Prepared comments on various drafts of the document in an attempt to ensure adequacy of the draft released to the public in November 2001. This included participation in meetings to determine scope and content, and for some sections, submission of text for incorporation.
- 1.2.4 BICT began work on Findings Letter to determine adequacy of the FY02 Annual Implementation Plan
- Advised Action Agencies on criteria that would be considered in the Findings Letter and shared a detailed outline of the Findings Report in August 2001 to help the Action Agencies determine the types of information that needed to be included in the FY02 Annual Implementation Plan.
 - Participated in numerous meetings with Action Agencies to determine the status of each RPA Action and to attempt to ensure that the FY02 Annual Implementation Plan clearly identified measures to be taken in FY02 to keep those Actions with 2003 deadlines on track.
- 1.2.5 BICT members participated in work groups with Action Agency and other Federal agency staff to develop strategies and measures for implementing RPA Actions and requirements of the Basinwide Recovery Strategy. These groups included the Federal Habitat Team (FHT), the Hydro Work Group, and a Research, Monitoring, and Evaluation (RM&E) Work Group.
- 1.3 NMFS chaired and participated in meetings of the Federal Caucus, a forum for Federal agencies to coordinate implementation of the Basinwide Recovery Strategy. Accomplishments in 2001 included development of a cross-cut budget and other budget coordination activities and policy oversight of work groups described in 1.2.5.
2. **Habitat**
- 2.1 Restore Tributary Habitat
- 2.1.1 Fix flow, screening and passage problems in priority subbasins.

- In 2001, NMFS began working with the U.S. Bureau of Reclamation (USBR) to address water-related issues in the Methow, North Fork and Upper John Day, and Lemhi subbasins. NMFS is collaborating with USBR in the Lemhi and John Day subbasins in the development of programmatic National Environmental Policy Act (NEPA) documents, which will subsequently tier to programmatic Section 7 consultations. NMFS has provided USBR with screening criteria and is currently working to complete similar criteria and methodologies for upstream and downstream passage and flow assessment and restoration.

2.1.2 Provide technical assistance to state instream flow work

- NMFS worked with state and other Federal agencies, irrigators, and citizens to craft an agreement that provided water for fish and farmers in the Lemhi River system. The agreement provided a minimum of 20 cfs in the Lemhi and 8 cfs in Hayden Creek, an important tributary to the Lemhi, throughout the irrigation season. The agreement included a commitment to complete a long-term habitat conservation plan. The river dried up at times because of irrigation withdrawals. This lack of water threatened ESA-listed salmon and steelhead in the system. The agreement reached for the 2001 irrigation season provided water for salmon, steelhead, and bull trout in the Lemhi River, and compensated participating irrigators. Without this agreement, especially during a significant drought year, retaining water needed for fish in the Lemhi would not have happened. The agreement was the first of its kind in Idaho and perhaps the western United States.

2.1.3 Restore tributary flows through a water brokerage

- During FY2001, NMFS has worked closely with BPA and other agencies to produce a framework for implementing this action. BPA solicited qualified entities to implement the framework through a Request for Qualifications in December, 2001. BPA has identified two national and nine regional entities to implement the proposed framework. NMFS is participating in a steering committee, which provides policy-level guidance, with BPA and Council staff, as well as other agency professionals to prepare criteria, set priorities, and further define the goals for this experimental water program.
- NMFS developed a draft instream flow methodology to estimate the flow needs of anadromous salmonids in FY2001. This document was reviewed by researchers from the U.S. Forest Service (USFS), U.S. Fish and Wildlife Service (USFWS), U.S. Geological Survey, Washington Department of Ecology, and NMFS. The document is being revised in consideration of those review comments. NMFS has been working with BPA to identify funding needs to complete this part of the action.

2.1.4 Fund land acquisitions and conservation easements

- The Basinwide Recovery Strategy calls for BPA to fund efforts to protect currently productive non-Federal habitat in subbasins with listed salmon and steelhead. RPA Action 150 states that BPA shall fund protection of currently productive non-Federal habitat, especially if at risk of being degraded, in accordance with criteria and priorities developed by BPA and NMFS by June 1, 2001. Although criteria for this action have not yet been completed, NMFS has been working with BPA to develop criteria to guide habitat acquisitions.

2.1.5 Improve tributary screening and passage

- NMFS conducted a training session for fish screen designers and vendors to assist in screen certification under the ESA Section 4(d) screen limit.
- NMFS developed protocols and procedures to implement Limit #9 for the ESA 4(d) rule pertaining to providing adequate screens at water diversions for the protection of juvenile fish listed under the ESA. Procedurally, this includes providing written guidance and training to staff that will have responsibilities for implementing the screen limit program for certifying juvenile fish screens for water diversions. From a process standpoint, NMFS completed the development of a data acquisition form, approved written instructions for processing limit applications, and provided training sessions in Washington and Oregon for state and other Federal agency personnel to assess juvenile fish screens in order to recommend installations for certification by NMFS. In addition, NMFS made significant progress in developing a database program for documenting and storing the administrative record for juvenile screens being considered for the screen 4(d) limit.

2.1.6 Support subbasin and watershed assessment and planning

- In FY2001, NMFS worked closely with the Council to develop subbasin and watershed assessments and plans and to ensure that these plans are coordinated and integrated across non-Federal and Federal ownerships and programs.
- NMFS worked closely with the Council in FY2001 to develop technical guidance for subbasin planning. In FY2001, NMFS began working with Federal, state, tribal, and local government forums that will be engaged in subbasin planning in a concerted effort to integrate subbasin planning with ESA recovery planning.

2.1.7 Develop Recovery Plans

This is discussed in the Research, Monitoring, and Evaluation Section (6.3). An important component of recovery planning is the link to subbasin and watershed assessment and planning (2.1.6).

2.1.8 Develop Tributary Performance Standards

- NMFS has been involved in discussions of performance measures and standards in the Federal Habitat Team and the RM&E work group. NMFS has worked to integrate and identify common monitoring endpoints arising from subbasin and watershed assessments and plans, Technical Recovery Team (TRT) products, and the developing a three-tiered RM&E program. NMFS recognizes that developing performance measures for tributary habitat actions is a challenge because it is so difficult to measure specific increases in salmon productivity resulting from specific habitat improvements.

2.2 Improve Mainstem Habitat

2.2.1 Assess opportunities for mainstem habitat improvements

- No progress is reported for FY2001. NMFS understands that the NMFS 2000 FCRPS Opinion Action Agencies have proposed a workshop in FY02 to identify a research program to focus on this action.

2.2.2 Evaluate opportunities to improve spawning habitat in the Ives Island area

- NMFS began discussions with BPA on developing a program to study of the feasibility, biological benefits, and ecological risks of habitat modification to improve spawning conditions for chum and chinook salmon in the Ives Island area.
- In FY01, NMFS worked closely with BPA to secure funding and implement non-index area surveys of Washington and Oregon tributaries to the lower Columbia known or thought to contain historical populations.
- In FY01, NMFS also worked with BPA to guide, prioritize, and secure funds for a Washington Department of Fish and Wildlife (WDFW) proposal for habitat restoration at Duncan Creek. NMFS further facilitated this study by referencing WDFW's plan to salvage spawners from the Ives Island area last fall into the Technical Management Team's (TMT) Water Management Plan - these fish were taken to one of the restored channels at Duncan Creek to spawn - because NMFS was concerned that the extremely low-water year increased uncertainty that there

would be enough water in the river or out of upper-basin storage to keep redds at Ives Island covered through emergence.

2.3 Restore Estuary Habitat

- NMFS contributed to implementation of this task by sitting on the board of a funding foundation established in accordance with Action 13 of the Coastal Conservation Management Plan (CCMP), Lower Columbia River Estuary Program (LCREP). The organization recently declared its non-profit status as a 501(3)(c) organization, and reorganized the Implementation Committee into a Board of Directors. NMFS sits on the Board as a non-voting member. Actions 1 through 6 of the Basinwide Recovery Strategy are based largely on the CCMP's recommendations.

2.3.1 Assess and Inventory Estuary Habitat

- NMFS served as chair of the LCREP Science workgroup and provided expertise through the NWFSC to help guide and complete this assessment. BPA and the Corps are providing funding to the NMFS NWFSC to fund the assessment.
- NMFS collaborated with the U.S. Army Corps of Engineers (Corps), LCREP, American Rivers, and the Columbia River Estuary Science Team (CREST) to develop a set of habitat restoration criteria for the lower Columbia River and estuary. These criteria were included in the Council's solicitation for projects for the estuary province.

2.3.2 Adapt current plan to the specific ecological needs of salmon

- NMFS developed the outline of a strategic plan that BPA is currently funding to address a portion of this Basinwide Strategy action item. LCREP and BPA are now collaborating with NMFS to prepare the plan. The plan will establish clear goals for salmon conservation in the estuary to support the full range of salmon life history types, and identify habitats whose characteristics and diversity support salmon productivity.
- The NMFS' NWFSC is conducting research to identify flow requirements necessary to support estuarine habitat requirements for salmon. This research is funded by BPA and the Corps.

2.3.3 Habitat acquisition and restoration

- NMFS worked with the Corps and LCREP to identify habitats with appropriate criteria and potential to be included as part of the 10,000 acres required by RPA Action 160.
- Through the LCREP Science workgroup, NMFS is working with LCREP to prepare the materials (technical support) to facilitate state interest in this program. NMFS is also coordinating with Governor Kitzhaber's Natural Resource Office to provide technical and policy support for this effort.

2.3.4 Floodplain restoration

- NMFS participated in development of the habitat restoration criteria for the lower Columbia River and estuary that is being used to choose the places to conduct this work. Through its ESA Section 7 regulatory work, NMFS conducted consultations in the lower river related to this item.

2.3.5 Predator control

- NMFS, in cooperation with the Corps and other agencies, reduced impacts of birds on ESA-listed salmon. Birds nesting on man-made islands in the Columbia River kill and eat large numbers of migrating juvenile salmon. Initial efforts using a variety of hazing methods prevented birds from nesting on the main colony site. Terns were prevented from nesting on Rice Island this year, and all nesting (about 10,000 pairs) was on East Sand Island to reduce predation on ESA-listed salmon. Diet analyses in 2001 indicated that 33% of identifiable fish delivered to chicks by terns foraging in the estuary were juvenile salmon, compared to 47% for the same period in 2000. NMFS participated with the USFWS and the Corps in working with the states of Idaho, Oregon and Washington to continue support of their efforts to relocate terns to historical and potential new colony sites.
- NMFS began work on development of a white paper evaluating the risk to salmonid populations resulting from tern predation and what would constitute an acceptable level of tern predation in the estuary.

2.3.6 Information management and public education

- There has been no reported progress in FY 01 on this action by any of the lead agencies.

2.3.7 Science

2.3.7.1 Implement a major monitoring and research program for the estuary to evaluate the efficacy of management actions to rebuild the productivity of the system over the long term.

- NMFS, as Chair of the Science Work Group, is developing a monitoring and evaluation program for the estuary, based on LCREP's monitoring proposal. In that capacity, NMFS spearheaded a proposal for LCREP to collaborate with the Oregon Graduate Institute (OGI) on the development of the Columbia River Ecosystem Restoration Information Center (ERIC). NMFS' NWFSC has also been intensively involved in these discussions, and is engaging the National Oceanic and Atmospheric Administration (NOAA) in Boulder Colorado to support this work. NMFS initiated discussions with LCREP, OGI, BPA, and the Council to determine how the ERIC concept fits in and can complement the RM&E work of the NMFS 2000 FCRPS Opinion.

2.3.7.2 Develop a conceptual model focusing on critical linkages between estuarine conditions and salmon population structure and resilience to assess estuarine influence on salmon populations in the Columbia River.

- The NMFS' NWFSC was funded by BPA and the Corps to begin developing a conceptual model focusing on critical linkages between estuarine conditions and salmon population structure and resilience to assess estuarine influence on salmon populations in the Columbia River.

2.3.8 Performance measures and monitoring and evaluation

- NMFS worked within the Federal Habitat Team to integrate estuary monitoring with the RM&E program being developed for tributary systems.

2.4 Participate in the Habitat Team

- The NMFS was an active participant in the Federal Habitat Team. NMFS served not only on the Plenary FHT but also on each of the FHT's established subgroups: Funding, Data and Information Management, Research Monitoring and Evaluation, and a Process/Pilot Workgroup. Each of these groups is charged with identifying and proposing solutions to overcoming institutional and technical impediments to implementing the Basinwide Recovery Strategy. NMFS worked within the FHT and externally with the Council to develop subbasin and watershed assessments and plans that provide sufficient context to maximize the benefit of Basinwide Recovery Strategy programs and actions in conserving

Columbia River Basin salmon. The FHT facilitated development of the RM&E pilot in the John Day basin. The FHT provided guidance to the Council during development of the Council's subbasin assessment and planning documents. In FY2001, the FHT began coordinating conservation efforts across Federal agencies.

2.5 Other actions which contribute to salmonid conservation

2.5.1 NMFS completed ESA Section 7 consultation on fire projects

- NMFS hired a team of biologists to work with the USFS and Bureau of Land Management as those agencies implement the National Fire Plan. This plan responds to the extensive wildfires that ravaged the west during the summer of 2000. Much of forest plan work has the potential to affect salmon habitat, so NMFS hired, trained, and deployed 40 new biologist positions to participate in project planning and expedited ESA consultations. To place these biologists close to where the work will occur, the NMFS Northwest Region opened four new field offices in Salmon and Grangeville, Idaho; Ellensburg, Washington; and La Grande, Oregon.

2.5.2 ESA consultations on impacts of proposed actions on Federal lands.

- NMFS consults on Federal land management at several different geographic and programmatic scales. At the broadest scale, consultation is required on the programmatic direction contained in individual or groups of land and resource management plans (LRMPs). These plan-level consultations establish broad scale conservation objectives and standards and thereby reduce NMFS' effort on subsequent project specific activities. To gain efficiency and make consultations more effective, NMFS often groups actions by either project type, program, or geographic area, most commonly at the watershed scale. To enhance effectiveness and maximize efficiency, NMFS continues to refine its effects determination analysis process at the LRMP consultation level, as well as to address potential adverse modification of critical habitat. NMFS continued to work with land management agencies to develop project design criteria that will allow non-impacting projects to proceed with informal consultation. This helps land management agencies meet ESA requirements regarding projects under the National Fire Plan, as well as projects of silvicultural treatment to meet watershed health goals.

2.6 Comprehensive Monitoring and Evaluation

This is discussed in the Research, Monitoring, and Evaluation Section (6.1).

3. Harvest

3.1 Fully implement the 1999 Agreement under the Pacific Salmon Treaty

- Through its representation on the Pacific Salmon Commission (PSC) and its panels and technical committees, NMFS worked to ensure that Alaskan, Canadian, and southern (Washington, Oregon) marine fisheries impacting listed Columbia Basin chinook salmon comport with the 1999 Agreement.
- The U.S. Federal PSC Commissioner and Alternate Commissioner (an employee of NMFS) participated in an intensive year-long bilateral negotiation to develop the southern coho management plan. The plan affects Washington, Oregon, and southern British Columbia coho salmon, and was called for by the 1999 Agreement. The Federal Alternate Commissioner (who is now the Federal Commissioner) led the U.S. negotiating team, which ultimately reached a successful conclusion. (The 2002-2008 Southern Coho Management Plan was adopted by the PSC in February, 2002.)

3.2 Constrain harvest rates on listed fish to no more than recently-established current levels

- As a participant in the U.S. v Oregon forum, NMFS advocated harvest management reforms to limit the impact of fisheries on ESA-listed fish consistent with the Basinwide Recovery Strategy.
- In the spring of 2001, the U.S. v Oregon parties reached agreement on a five-year, abundance-based harvest plan that controls harvest rates on listed salmon during the spring and summer season tribal and non-tribal fisheries. Relative to the previous plan, the new agreement allows somewhat higher harvest rates in years of high abundance in consideration of harvest rate reductions in years of lower abundance. It also incorporates specific provisions linked to the abundance of listed natural fish rather than basing harvest management solely on the aggregate abundance, which is dominated by hatchery fish. It encourages increased testing and deployment of selective fisheries gear and methods to target surplus salmon returning to hatcheries on the Columbia and Snake rivers.
- The fall season in-river fishery was managed consistent with the existing harvest rate constraints on listed Snake River fall chinook and steelhead as established in previous NMFS biological opinions.
- Participating on the Pacific Fishery Management Council, NMFS advocated harvest plans for 2001 that were consistent with applicable provisions of the 1999 Agreement under the Pacific Salmon Treaty, the Sustainable Fisheries Act of 1996, and U.S. v Oregon and U.S. v Washington, as applicable, for commercial

and recreational ocean and freshwater salmon fisheries. In all cases, the adopted fishery plans were driven by the abundance and status of affected natural stocks and complied with applicable biological opinions issued by NMFS.

3.3 Help states and Tribes develop selective fishing techniques and develop institutional mechanisms and analytical techniques to support selective fisheries management

- NMFS co-sponsored a workshop to gather information and develop support among Northwest regional agencies and Tribes for a program on selective fishing techniques in the Columbia River basin. Selective fishery experiences in other regions, such as British Columbia and Willapa Bay, were explored and various policy and technical issues were discussed. The goal is to encourage and support the development of gear and methods to allow the selective harvest of abundant hatchery fish while protecting ESA-listed wild fish. A successful program could make an important contribution to fulfilling NMFS' trust responsibilities to the Columbia River Indian Tribes. Support of selective fishery development is a requirement of the FCRPS biological opinion.
- NMFS assisted the states of Oregon and Washington in the development of their selective fishery experiments in the lower Columbia River. The experiments test the catch efficacy of various gear types, particularly tooth tangle nets, and associated incidental mortality of released fish as a function of soak time, mesh size, resuscitation tank usage, and other parameters.
- NMFS approved an innovative Fisheries Management and Evaluation Plan for Willamette Basin spring chinook fisheries. These plans are described in the final 4(d) rule, and are a mechanism for addressing "take" of certain listed species in fisheries. The primary goal of such plans is to devise biologically-based fishery management strategies that ensure conservation and recovery of listed fish populations. This Fisheries Management and Evaluation Plan, developed by the Oregon Department of Fish and Wildlife (ODFW), helps recover Willamette Basin spring chinook, while allowing fishers to catch a higher number of hatchery-produced chinook than in the past.
- Through its participation in the PSC's Selective Fishery Evaluation Committee, NMFS continued working with regional state, tribal, Federal, and Canadian managers to address the impacts of mass marking and selective mark fisheries on the coastwide coded wire tag (CWT) program. Maintenance of a viable CWT program is required by the Pacific Salmon Treaty, and is vital to monitoring the status of many natural stocks.

3.4 Seek opportunities to increase harvest in ways that do not harm listed ESUs

- Through its participation in various harvest management forums, NMFS supported tribal and state fisheries designed to harvest abundant hatchery and healthy natural runs, provided such fisheries comport with applicable ESA limits. For example, the recreational and commercial spring season chinook fisheries in the lower Columbia River targeting abundant Columbia River and Willamette spring chinook were supported, provided they not exceed a 2% impact limit on Upper Columbia spring chinook. Similarly, Indian and non-Indian terminal fisheries designed to harvest abundant hatchery fish were supported, such as the Select Area fisheries in the lower Columbia and various tributary fisheries to harvest abundant hatchery fish returning to many upriver hatcheries were also supported. Implementation of these fisheries was especially important in 2001 due to the exceptionally large, in some cases record, returns of several hatchery runs.

4. Hatcheries

4.1 Reform production facilities

- Working with USFWS, state, and tribal co-managers, NMFS has defined an inclusive, step-wise process and schedule that would lead to NMFS-approved HGMPs for all artificial production facilities in the Columbia basin by September, 2003. The process will be supported in large part by funding provided by BPA, per the FCRPS biological opinion. Once NMFS-approved HGMPs are completed, the next step will be to actually implement the specific artificial production reforms identified in the plans.
- NMFS has coordinated with the Council to identify and act upon an opportunity to integrate NMFS' HGMP planning process with the Council's Artificial Production Review and Evaluation process. The two processes share substantially similar initial steps, providing the opportunity for savings in both time and cost, and achieving better integration between the Council's Fish and Wildlife Program and the Basinwide Recovery Strategy with regards to artificial production.
- Using its authorities under Sections 7 and 10 of the ESA, as well as the provisions of the new "4(d)" rule, NMFS has advocated improvements in current hatchery operations to provide increased protection of listed ESUs. For example:
 - Through its involvement in a facilitated process with USFWS and the applicable states and Tribes, NMFS advocated specific artificial production measures as necessary to deal with the extraordinarily high returns of hatchery spring chinook in 2001. The process resulted in an

agreement designed to accelerate the phase-out of Carson-lineage spring chinook from hatcheries in the Methow River.

- Draft biological opinions or Section 10 permits covering existing artificial production programs affecting listed and non-listed fish are in process or have been completed for most artificial production programs in the basin. Further development of artificial production plans will occur through the basinwide HGMP process described above, in coordination with TRT and subbasin planning processes.

4.2 Protect weak stocks

- Working with BPA and USFWS, NMFS established a Safety Net Artificial Production Program (SNAPP) in early 2001. The purpose of the program is to determine whether specific, rapidly declining populations would be aided by new interventions with artificial production techniques, taking into account both the benefits and risks of such intervention. With BPA funding, a SNAPP Coordinator was retained to facilitate the process, and a Federal/tribal/state SNAPP Core Group was established to oversee the effort. The original approach and schedule as defined in the NMFS 2000 FCRPS Opinion were later modified by agreement to improve the program's efficacy and efficiency.
- NMFS, through its NWFSC, continues to maintain and/or support a number of pre-existing "safety-net" type projects that utilize captive brood stock technologies. These include the Redfish Lake sockeye project and several spring chinook captive brood programs.
- Working with state and tribal co-managers, NMFS created an ad-hoc committee to oversee the development of a basinwide fish marking strategy, an action called for in the NMFS 2000 FCRPS Opinion. The purpose of the strategy is to ensure a coordinated and effective approach to fish marking throughout the basin, one that ensures that population-specific status can be monitored, while also respecting other basin objectives, such as the use of supplementation under controlled circumstances to support recovery, and mark-selective fisheries. Using funding provided by BPA, consultants have been retained, and a Federal/tribal/state oversight committee has been established. The effort got underway in late 2001, and is expected to produce a strategy before the end of 2002.

4.3 Implement aggressive monitoring and evaluation programs to reduce uncertainties, such as wild and hatchery fish interactions

- Since the NMFS 2000 FCRPS Opinion was issued, and until modified by the basinwide marking strategy plan described above, spring chinook artificial

production programs that previously did not mark their fish began marking their fish in some way so that hatchery fish can be distinguished from natural fish on the spawning grounds. Some fall chinook hatchery programs known to produce significant straying rates (e.g., Klickitat and Umatilla fall chinook) have been marked to enable better enumeration and/or control of straying fish.

4.4 Implement transfers of facilities to Tribes

- Discussions continue between the Yakama Tribe and Washington State regarding possible transfer of the Klickitat Hatchery, a Mitchell Act facility, from the state to the Tribe. However, NMFS has not been directly involved in those or any other similar discussions in the last year.

5. Hydro

5.1 Improve survival at non-Federal hydropower projects

5.1.1 Complete Habitat Conservation Plan (HCP) for mid-Columbia dams

- NMFS released a draft environmental impact statement, took public comment, and initiated a process to resolve outstanding issues. This HCP is for three hydropower projects covering more than 100 river-miles on the mainstem of the mid-Columbia River. They are Douglas County Public Utility District's (PUD) Wells Hydroelectric Project and Chelan County PUD's Rocky Reach and Rock Island dams. The Draft Environmental Impact Statement was released in December 2000 and the comment period closed in March 2001. Negotiations between the parties broke off for several months over significant operational issues and others issues identified in the NEPA process. In August 2001, the PUDs, NMFS, and the other parties formerly involved in the negotiation resumed discussion, which is ongoing, of the unresolved issues identified in the NEPA process related to the HCPs.

5.1.2 Use relicensing and ESA to improve flows and passage on the Deschutes, Cowlitz, Lewis, and other rivers

- NMFS worked to develop and obtain an operating agreement to protect unlisted Hanford Reach fall chinook. The reach is the most productive segment of the Columbia River for fall chinook salmon, annually producing tens of thousands of redds (salmon nests), each with several thousand eggs. There is a protection program for the spawning and incubation portions of this population's life cycle, but river flow fluctuations from hydroelectric loads pose a risk to juvenile fish as they are growing. The FCRPS Action Agencies provided some limited flow releases for Hanford Reach operations during spring 2001. The mid-Columbia

hydroelectric power operators, state of Washington, and NMFS reached agreement on operations to protect the juvenile-rearing phase of these fish in 2001.

- NMFS and other parties concluded a settlement agreement for Cowlitz River Hydroelectric Project license. The Cowlitz River Settlement Agreement contains the terms and conditions that will be used to eventually draft an ESA Section 7 biological opinion. The Agreement signed with the City of Tacoma was forwarded to the Federal Energy Regulatory Commission (FERC), which prepared a final Environmental Impact Statement in November 2001.
- NMFS participated in the development of a comprehensive management plan for the Lake Chelan Hydroelectric Project. In August 2001, the Chelan PUD produced the Chelan River (Bypassed Reach) Comprehensive Management Plan that includes a plan for instream flow, channel, and tailrace habitat improvements. The plan addresses NMFS' primary concern, which is restoring listed steelhead and spring chinook to the Chelan River. The lower section of the Chelan River could potentially be used as spawning and rearing habitat for listed steelhead and unlisted fall chinook.
- NMFS coordinated stream discharges with non-Federal hydro operators who agreed to help protect ESA-listed salmon in response to 2001 drought. This coordination and cooperation from several regional utilities provided reasonable salmon protection overall under conditions of unusually low water supply. NMFS concurred with incremental flow reductions for Pacificorp on the Lewis River that provided full protection for chinook through emergence, but less than optimum juvenile rearing and migration flows. Tacoma Power provided full protection for chinook through emergence on the Cowlitz River and less than normal juvenile outmigration flows.
- NMFS and other parties reached an agreement to protect migrating Willamette River salmon. The 2001 drought conditions seriously reduced fall flow in the Willamette, a major tributary of the Columbia. Blue Heron Paper's mill and a neighboring Willamette Falls hydro project adopted operational changes to allow safer passage and spill for migrating salmon. Blue Heron Paper agreed to shut down its supplemental power plant at the mill for two months. The shutdown allowed migrating juvenile salmon to avoid this route. As part of the agreement, Portland General Electric, which owns the hydro project next to the mill, split the power generation loss.
- NMFS, USFWS and Eugene Water and Electric Board reached a settlement agreement for the utility's Leaburg and Walterville hydro projects on the McKenzie River in Oregon. The settlement included a 2002-2004 schedule for

constructing a 2600 cfs fish screen in the WALTERVILLE canal, a new Leaburg Dam fish ladder, tailrace barriers for both powerhouses, an improved fish-friendly diversion structure at the WALTERVILLE intake, and improvements to the existing ladder and fish screens at Leaburg Dam. The settlement also 1) set aside issues destined for litigation by the three parties, 2) resulted in revised license articles which FERC accepted into the license, and 3) concluded ESA consultation, which resulted in a non-jeopardy biological opinion for the two projects. The new FERC license also includes a two- to four-fold increase in minimum instream flows, habitat improvements, and land purchases for habitat protection.

5.1.3 Apply anadromous fish priorities to relicensing

- During 2001, NMFS staff was actively involved in relicensing the following major projects, in addition to those mentioned above: 1) Willamette Falls, 2) Pelton-Round Butte, 3) Marmot-Bull Run (removal), 4) North Umpqua, 5) Clackamas, 6) Upper and Lower Baker, 7) Lewis River, 8) Cowlitz River, 9) Cushman, 10) Powerdale, 11) Chelan Falls, and 12) White River. NMFS was also involved with license amendments and actions at smaller projects.

5.1.4 Settlement of Snake River adjudication

- Settlement negotiations continued in 2001. Details of those negotiations are privileged.

5.1.5 Improve habitat and fully evaluate passage opportunities through relicensing and ESA for Idaho Power Company dams

- There was no progress to report on this task for 2001.

5.2 NMFS contributions to FCRPS improvements

- NMFS developed principles with the other Federal agencies for the emergency 2001 operations of the FCRPS. Activities under emergency operations included expanding the collaborative decision-making process, maximizing collection and transportation of juvenile fish, strategically providing spill during the power emergency to meet the most urgent needs, reducing the BPA's load commitment, and funding projects to help fish affected by the power emergency operations.
- NMFS agreed to operations to protect listed chum salmon, which spawned on the mainstem Columbia River below Bonneville Dam. The challenge was to balance emergency power demands, spawning conditions for chum, and the acute need to conserve water for other fish and power needs throughout 2001 and possibly longer. While not all chum were protected, the majority of incubating chum eggs

were protected by the Action Agencies operating Bonneville Dam with precision to compensate for tidal effects in the spawning area.

- NMFS completed consultation on operations of 10 USBR projects in the Snake River basin upstream of Brownlee Dam through March 31, 2002. The action was consistent with expectations for water quality and quantity from the upper Snake, as described in the NMFS 2000 FCRPS Opinion.
- NMFS chaired the Implementation Team to coordinate 2001 hydro policy decisions on operation and configuration of the FCRPS with state and tribal co-managers, Federal agencies, and other interested parties.
- NMFS participated on the Technical Management Team, to coordinate weekly operational decisions with state and tribal co-managers, Federal agencies, and other interested parties.
- NMFS chaired the System Configuration Team, to coordinate annual and multi-year Corps capital expenditure and FCRPS system configuration decisions with state and tribal co-managers, Federal agencies, and other interested parties.
- NMFS participated on the Corps' Fish Passage Operations and Maintenance Committee, Anadromous Fish Evaluation Program review committee, and Fish Facilities Design and Review Work Group and contributed to operational, research, and innovative construction decisions regarding mainstem FCRPS dams.

6. Research, Monitoring, and Evaluation

6.1 The NMFS NWFSC will work in conjunction with the USFS, the U.S. Environmental Protection Agency, OCRI, and other regional agencies to refine the monitoring scheme proposed here, to evaluate formally the necessary temporal and spatial replication, to identify specific localities at which the monitoring program will take place, and to develop data collection protocols.

- A collaborative group consisting of technical staff from NMFS and the FCRPS Action Agencies was formed in 2001 and began developing the plan for designing and executing the RM&E program called for in the NMFS 2000 FCRPS Biological Opinion. As part of the development of this monitoring program, the RM&E work group began developing "pilot studies" that will implement, on a limited scale, test versions of the entire Columbia River basin program. The first major pilot study was defined by the work group and will be undertaken beginning in FY03 in the John Day River basin. Funded through the CBFWA/Council/BPA process, the ODFW, Oregon Department of Environmental Quality, USBR, and a multi-agency oversight group including

NMFS will implement a statistical sampling frame-based status monitoring program with an integrated effectiveness monitoring program. The RM&E work group also began planning to expand the pilot project program, with similar "John Day River basin" scale monitoring programs in the Snake River basin in Idaho, an Upper Columbia River basin tributary, and potentially an additional basin in northeast Oregon.

6.2 Randomly and irregularly, NMFS will check on the log books (required of each agency or party conducting a small management action) and validate their entries.

- There are no activities to report for this task in 2001.

6.3 Conduct recovery planning [*Listed under Habitat tasks in the Basinwide Recovery Strategy, but encompassing all "H's"*]

- In FY2001, NMFS worked with BPA and the Council, to ensure that subbasin and watershed plans will also be integrated with ESU-scale recovery plans, which will include biological recovery goals for ESUs and specific actions to meet these goals.
- NMFS established a structure for, and began, the recovery planning process. It includes a science review panel to oversee the work of several TRTs. Those teams, each responsible for all listed ESUs in a specific geographic area, will set biological goals for salmon recovery. TRTs are asked to identify population and habitat criteria for recovery; factors for decline and limiting factors for each ESU; early actions needed for recovery; and research, evaluation, and monitoring needs. Teams serve as science advisors during the entire recovery-planning phase, a process expected to last several years:
- Willamette Basin/Lower Columbia River. This TRT completed the first product associated with de-listing goals, identification and delineation of the populations that comprise the ESUs in its area. In addition to the Federal agencies involved in Columbia basin processes and ESA Section 7 consultations, there are a number of subregional planning efforts underway in the domain that will play significant roles in a final recovery plan. This team will continue working with these and other entities to craft a planning process suited to the unique issues in the domain.
- Interior Columbia Basin. NMFS solicited nominations for the Interior Columbia TRT and named its 10 members in September 2001. This TRT has a huge geographic area, involving three states. NMFS is setting up technical coordination with each of the states to meet both recovery team and subbasin planning needs.

cc: Federal Caucus