

**WRITTEN TESTIMONY OF
RODNEY R. McINNIS
SOUTHWEST REGIONAL ADMINISTRATOR
NATIONAL MARINE FISHERIES SERVICE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE**

**BEFORE THE
COMMITTEE ON NATURAL RESOURCES
SUBCOMMITTEE ON FISHERIES, WILDLIFE AND OCEANS**

MAY 15, 2008

Good morning Madam Chairwoman and members of the Subcommittee. My name is Rodney McInnis, and I am the Regional Administrator for the Southwest Region of the National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration. Thank you for the opportunity to testify on the West Coast salmon fishery disaster and the actions being taken by NMFS to identify and address the causes of that disaster, as well as our actions to improve salmon survival in their freshwater environment. Your invitation to testify identified three major areas of particular interest: (1) the reasons for the collapse of the West Coast salmon fishery; (2) the state of science behind the court-determined inadequate biological opinions on the Sacramento, Klamath, and Columbia/Snake Rivers; and (3) linkages between river and fisheries management under the auspices of both the Endangered Species Act (ESA) and the Magnuson-Stevens Act. I will address each of these areas in turn.

REASONS FOR THE COLLAPSE OF THE WEST COAST SALMON FISHERY

The West Coast ocean salmon fishery is regulated according to the provisions of a fishery management plan (plan) developed by the Pacific Fishery Management Council and approved by the Secretary of Commerce. The plan calls for fishing seasons and quotas for the ocean salmon fisheries to be set annually based on the availability of salmon for harvest. To determine the number of salmon available for harvest each year, abundance forecasts made in February are compared to the number of spawning salmon deemed necessary under the plan to provide for the next generation. Abundance forecasts for 2008 were generally very low along the entire West Coast.

The most problematic forecast for the ocean fisheries was for California Central Valley fall-run Chinook salmon return in 2008. Absent any fishing in the ocean or in the rivers, the number of spawners expected to return to the Central Valley is one-third to one-half the number required to meet the spawning goal. The abundance of spawners is forecast to be fewer than 60,000 fish compared with the goal range of 122,000 to 180,000 fish. As recently as 2002, nearly 800,000 fall Chinook returned to the Central Valley. Commercial and recreational salmon fisheries in the ocean off Oregon and California

depend very heavily on the fall run of Central Valley Chinook, as this run accounts for as much as 80 to 90 percent of the catch off these two states. Because of the low abundance of fall Chinook and the great dependence of the ocean fisheries on this run, the Council recommended a complete closure of the ocean commercial salmon fisheries from near the Columbia River south to the Mexican border to protect spawners for future reproduction. The only recreational fishery recommended to be open for this area is a small fishery off Oregon targeted on hatchery-produced coho salmon. On May 1, NMFS approved and implemented these recommendations. At the same time, the Secretary of Commerce determined that there is a resource disaster and a commercial fishery failure under the Magnuson-Stevens and the Interjurisdictional Fisheries Acts due to the extremely low abundance of fall Chinook which, even if fishing were allowed, would result in severe economic impacts.

NMFS scientists conducted a preliminary inquiry into the potential causes for the sudden low population levels of Central Valley fall Chinook. They found that ocean conditions from 2003 through 2005 were the most likely immediate cause of the rapid decline in abundance. This finding was based on an examination of the factors indicating the presence of food for salmon at the time the fish emerged from the rivers into the ocean. At this critical time for salmon survival, the availability of prey is normally high along the West Coast due to upwelling, when nutrient-rich deep waters rise to the surface. The salmon that would have supported this year's fisheries emerged into an ocean without abundant prey and likely had a low survival rate as a result. Survival of salmon from other watersheds was poor during this period as well, with the negative effects being strongest in the south and lessening to the north.

This preliminary evaluation does not exclude other contributing causes. Many natural and human-caused factors in the freshwater environment influence the survival of salmon. The ESA listings of winter-run and spring-run Chinook and steelhead in the Central Valley identified many freshwater habitat threats that contributed to the declines of those populations. NOAA scientists are undertaking a more focused investigation of the Central Valley fall Chinook ecology, and this new study will be completed within the next few months.

Some parties have hypothesized that increased pumping of water from the Sacramento/San Joaquin Delta and ensuing entrainment mortality at the pumps is partially to blame for the decline of salmon. However, loss of all juvenile Chinook salmon at the Delta pumps was below average in 2004–2005, and below the incidental take limits for listed populations. Although NMFS cannot verify the degree Delta pumping rates played a part in the decline of salmon in the Central Valley, NMFS scientists noted that salmon in other river systems along the coast suffered similar declines. Therefore, the cause of the decline is likely a survival factor common to salmon runs from different rivers and consistent with the poor ocean conditions hypothesis being the major causative factor.

THE STATE OF SCIENCE BEHIND THE COURT-DETERMINED INADEQUATE BIOLOGICAL OPINIONS ON THE SACRAMENTO, KLAMATH, AND COLUMBIA/SNAKE RIVERS

NMFS has taken strong steps to improve its biological opinions in the recent past and to clarify review procedures. First, NMFS has more strictly defined the internal review and clearance procedures for biological opinions. Second, NMFS has adopted a practice of using independent scientific reviews as a part of the development of some complex and controversial biological opinions, such as those in the Klamath, Central Valley, and Columbia/Snake Rivers.

Section 7 of the ESA provides NMFS tools and a responsibility for protecting threatened and endangered species. All federal agencies that authorize, fund, or permit activities that “may affect” ESA-listed species are required to consult with the agency responsible for that species. In the case of salmon, NMFS is the responsible agency. The end product of the consultation is a biological opinion that provides an analysis as to whether the federal action is likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of designated critical habitat. Should the impact of a project reach the level of jeopardizing the continued existence of a listed species or result in adverse modification to the critical habitat for that species, the project may be able to proceed with modifications by adopting a reasonable and prudent alternative to the project as initially proposed. Proposed projects and the ESA consultations related to them range from simple and local to very complex and far-reaching.

The biological opinions for the Sacramento, Klamath, and Columbia/Snake Rivers are among the most complex and far-reaching that NMFS has addressed. In each case, NMFS staff has used the best scientific information available at the time of the consultation to determine the impact of those ongoing activities on the listed salmon populations and their designated critical habitats. The quality and extent of available information has varied among projects and has improved over time. However, in each case, a Federal Court found that the biological opinion or the incidental take statement did not fully meet the requirements of the law and implementing regulations. NMFS has committed to expanding the body of science related to salmon. To aid in this improvement, NMFS has more broadly used independent scientists at various stages in the consultation and in development of the biological opinion. These independent reviews have been helpful, and many of the recommendations from the reviews have been adopted immediately. For example, NMFS Science Centers and teams convened for the purposes of providing recommendations for the conservation of listed salmon have developed information NMFS now uses to assess the impacts of all proposed federal actions. This analytical framework, built around the concepts of long-term, self-sustaining salmon populations—also known as viable salmonid populations—provides a solid scientific foundation for NMFS’ analysis. In addition, this framework allows NMFS to consider the role of climate change in the species’ conservation, as the long-term self-sustaining salmon population is also resilient to environmental variation. Some

independent review recommendations require more time to develop and will be incorporated in future consultations.

In the case of the Sacramento River (Central Valley Project) water management, the most recent consultation was completed in 2004. The biological opinion on this controversial project proposal became controversial itself. In April 2008, a Federal Court found that the opinion did not use the best science available, did not apply a clear analytical framework, and reached conclusions that were not supported by the analysis contained in the opinion. NMFS is involved in a new consultation with the federal action agency on this project (Bureau of Reclamation) and their co-operator, the California State Department of Water Resources. NMFS expects to complete this new consultation in March 2009. The consultation will incorporate a clear analytical framework, more detailed data on flow and temperature management, updated modeling, impacts of climate change on future water flow levels, and additional current science related to the impact of climate change on salmon populations. These are among the many recommendations NMFS received from independent scientific reviews of the 2004 biological opinion before the Court decision.

The new consultation for the Central Valley Project operations will have independent reviews during its preparation. The first review has been commissioned by the Bureau of Reclamation for the preparation of its biological assessment of the impact of its ongoing operations on listed salmon, green sturgeon, and designated critical habitat. Once the Bureau of Reclamation completes its assessment including the independent review, NMFS will begin its consultation and its own assessment of the impact of water management on salmon, sturgeon, and their critical habitat. NMFS has scheduled into its consultation process an independent scientific review of its draft biological opinion before rendering a final biological opinion on the project.

For the Klamath River, a new consultation is nearing completion and a preliminary draft biological opinion is currently undergoing an independent scientific review. Previous critical reviews of NMFS biological opinions on the Klamath Project of the Bureau of Reclamation have provided recommendations for improving the science and the use of science that are incorporated into this current consultation. Two recent reports have enhanced our understanding of the instream flow needs of coho salmon in the Klamath River Basin: (1) the Phase II Instream Flow Report and (2) the subsequent review of the Report by the National Research Council. These reports highlight the need for a basin-wide science plan to support policy and decision-making for the basin's hydrological and ecological resources.

On May 5, 2008, three major biological opinions were issued for the Columbia River and its tributaries. They cover the operations of the 14 major federal hydropower projects on the Columbia and Snake River systems, which provide nearly half of the electric power for the Northwest, the Bureau of Reclamation dams that provide much of the water for irrigated agriculture in Idaho, and the state and tribal salmon harvest in the Columbia River and its tributaries.

All three opinions rely on the same comprehensive scientific analysis—the product of more than 25 years of ongoing research on the specific factors limiting Columbia River salmon. Much of this research has been published in peer-reviewed journals or has been the subject of independent scientific review. The analysis examines in great detail all of the effects of the proposed actions, both the adverse impacts and the proposed improvements. The opinions look at all major factors, including the effects of the hydropower system, harvest, hatchery operation, and habitat condition, and include significant improvements in each of these areas.

In developing these opinions, NMFS and the federal agencies operating the dams were urged by a federal judge to take a collaborative approach. The judge had rejected the agency's earlier biological opinions for both hydropower operations and the irrigation projects. In response, the federal agencies have worked closely with states and tribes to develop these opinions, holding over 200 meetings and work group sessions over the past two years. The new opinions are supported by three of the four northwestern states, and by four of the seven Indian tribes involved in the previous litigation.

The shifting direction provided by the federal court system involving regulatory and statutory interpretations of the ESA and its implementing regulations has been a significant issue regarding the use of science. For example, two significant questions are how to accurately characterize environmental baseline conditions and define critical habitat. In these instances, even the most well intended biologist has difficulty navigating the maze of Circuit Court cases, regulatory direction, and agency policy, especially on projects as complicated as the Columbia/Snake River, Klamath, and Central Valley. How to address the role of millions of ESA-listed hatchery fish in the jeopardy analysis is another area with complicated and conflicting judicial rulings that make an ESA analysis challenging.

LINKAGE BETWEEN RIVER AND FISHERIES MANAGEMENT UNDER THE AUSPICES OF BOTH THE ENDANGERED SPECIES ACT AND THE MAGNUSON-STEVENSONS ACT

Salmon live in both the marine and freshwater environment, and therefore depend on the resources and space within both environments to persist in the face of changing climatic conditions. The health of salmon populations depends on the overall functioning of their ecosystem, not simply the resources or conditions provided in one place or by one variable. NMFS recognizes this need and considers the health and function of these environments when managing both ESA-listed and commercially harvested salmon species. At the same time, human use of freshwater and marine resources adds an additional level of complexity to the task of managing these environments and species. NMFS views the authorities related to salmon protection and fisheries management under the ESA and the Magnuson-Stevens Act as complementary. The non-listed target salmon fishery is allowed an incidental catch of listed salmon that commingle in the ocean with the non-listed target populations. NMFS is required to examine the probable impact of

ocean salmon fisheries on the ESA-listed salmon to ensure that the fishing will not jeopardize their continued existence.

Throughout the salmon range on the West Coast, including the rivers, NMFS has authority under ESA to require that federally conducted, funded, or permitted activities are carried out in a manner that does not jeopardize the continued existence of or adversely modify the critical habitat of ESA-listed fish. Should NMFS find that a project is likely to cause such harm to a species or critical habitat, NMFS provides reasonable and prudent alternatives for achieving the objectives of the project while protecting salmon. For projects not likely to jeopardize the continued existence of listed salmon or result in the destruction or adverse modification of critical habitat, NMFS also has authority to require additional protective measures for listed salmon as terms and conditions of the incidental take permit issued for the project.

Using this authority under ESA, NMFS has required many protective actions for listed salmon. NMFS has improved the future outlook for salmon by restoring or improving passage for salmon beyond dams, mandating minimum river flows below dams, requiring screening of diversions, improving water quality, reducing the negative impact of land-based activities on the streams, and rebuilding suitable spawning and rearing habitat for ESA-listed salmon. In the Central Valley, the timing and temperature of water releases from Shasta Dam, the opening of the Red Bluff Diversion Dam, improved screening on major diversions, and removal of multiple migration barriers on tributaries have substantially improved the conditions for winter- and spring-run Chinook since their listings. The populations of these salmon improved from the 1990s until 2006. Habitat improvement and favorable ocean conditions contributed to the reversal of the declines that motivated the ESA listings. Unfortunately, the 2007 estimate of winter Chinook was far below the estimates of recent years, which hopefully will return to increasing trends with improved ocean conditions.

For salmon populations not listed under ESA, NMFS has authority under the Magnuson-Stevens Act to define the essential habitat for those fish. NMFS reviews federal projects for their likely impacts on the essential habitat of salmon and recommends measures that would provide needed protection of the populations of salmon not listed under ESA. This review is concurrent with the ESA review if both listed and non-listed salmon are present in the area of the project. The Magnuson-Stevens Act recommendations to protect essential fish habitat are not binding on the federal agencies, but other federal agencies are required to respond within 30 days as to whether they accept NMFS' conservation recommendations.

Differences in the level of protection among salmon populations in the same watershed can pose a challenge. In most situations, both the ESA-listed and non-listed salmon populations benefit from the measures required by NMFS for protection under ESA. Screening diversions, reopening historic habitat lost because of impassible dams, and measures that reduce the harm to the streams from activities upslope from the river benefit all salmon and other aquatic species in the watershed. In circumstances such as those in the Central Valley, the more urgent priority for the protection of ESA-listed

species takes precedence over the protection of the fall Chinook run when the question at hand involves the timing of delivery of limited cold water to spawning and rearing habitat or the timing of diversions of water from the river for other uses. NMFS has examined those circumstances carefully and sought to provide for the needs of all salmon. But the project modifications NMFS believes are necessary are only recommendations with respect to protection of non-listed fish, while they are binding requirements for the ESA-listed fish and actions necessary to conserve critical habitat.

NMFS also can improve salmon populations under the authority of the Federal Power Act to prescribe mandatory fish passage at dams licensed by the Federal Energy Regulatory Commission (FERC). NMFS recently used this authority to require the hydroelectric power dams on the Klamath River to be retrofitted to provide passage for anadromous fish into the upper basin. When completed, this action will restore salmon to over 300 miles of spawning and rearing habitat from which they have been excluded for a century. In the Klamath and other basins, the FERC dam relicensing process has provided opportunities to negotiate broad agreements that will provide benefits to salmon. These benefits derived under the Federal Power Act apply to all fish and not just the ESA-listed populations.

CONCLUSION

The West Coast salmon fishery disaster was likely driven primarily by poor ocean conditions for salmon survival, although scientists acknowledge that conditions in the freshwater habitat for salmon have had an impact on the population's resilience to natural cycles in the ocean conditions. NMFS will conduct a study during the next few months that will focus on the contributing causes to the Sacramento fall Chinook collapse.

NMFS has made substantial improvements in the internal and external review processes for biological opinions. Independent scientific review will be a part of the consultation process for complex and controversial projects. The science available for consideration in the new biological opinions for the Columbia, Klamath and Sacramento Rivers is expanded from that available a few years ago. This improved scientific base relating river flow to salmon habitat availability is being employed in the nearly complete Klamath River biological opinion. The biological opinion on the Sacramento River water management will include new temperature modeling with finer time increments and will consider impacts of global climate change on future salmon populations.

NMFS is using its authority under the ESA and the Magnuson-Stevens Act to protect salmon and the habitats on which they depend. While most often the ESA-listed and non-listed salmon enjoy the benefits of habitat improvements in a river, occasionally the listed salmon receive priority attention in water management decisions to the potential detriment of the non-listed salmon. The authority to protect essential fish habitat under the Magnuson-Stevens Act is limited to recommendations, while protections under ESA are binding.

Finally, salmon depend on the health of a broad ecosystem including the ocean, rivers, and the watersheds that feed the rivers. While NMFS uses the authorities provided in the ESA and the Magnuson-Stevens Act to ensure that salmon are protected on a project-by-project basis, more comprehensive approaches are needed to reach the most effective and enduring solutions to the often competing needs of people and fish. Striking a balance between competing demands for water in overallocated western river basins is nearly impossible, even under the best of conditions. Although NMFS is doing its best to improve the scientific rigor underpinning its analyses, and has taken meaningful steps to add clarity to its internal review procedures, there are many variables outside of our control. Finding long-term solutions to these vexing problems will require a shared vision among parties with differing views (e.g., Klamath Restoration Agreement), continued investments in habitat restoration, long-term conservation planning (e.g., Bay-Delta Habitat Conservation Plan), and other conservation programs.

Thank you again for this opportunity to present NMFS' views on these matters. I would be pleased to answer any questions.