Northwest Power and Conservation Council



August 1, 2007

# MEMORANDUM

**TO:** Council Members

**FROM:** Jim Ruff, Manager, Mainstem Passage and River Operations
Peter Paquet, Manager, Wildlife and Resident Fish
Mark Walker, Director, Public Affairs Division

**SUBJECT:** Follow-up actions from the Predator Control Panel discussion

## BACKGROUND

At its meeting in Portland last month, the Council heard from a panel of experts about the various ongoing predator control programs funded by both the Bonneville Power Administration (Bonneville) and the Corps of Engineers (Corps). The Council heard from Oregon Department of Fish and Wildlife (ODFW) about the Northern Pikeminnow Management Program and piscivorous predation in general. The Corps discussed its avian predation efforts in the Columbia River estuary. NOAA Fisheries presented information about Section 120 Pinniped Task Force process and schedule, and representatives from the Umatilla Tribe and Washington Department of Fish and Wildlife (WDFW) provided the Council with information on marine mammal predation rates and ongoing hazing efforts. There was also a brief discussion about next steps and what the Council could do to assist with these programs and efforts.

The purpose of this memo is to outline the various predator control follow-up actions that were mentioned or discussed briefly at the July Council meeting with the panelists and identify which of those actions the Council could undertake.

## DISCUSSION

### Piscivorous Predator Control Actions

The Northern Pikeminnow Management Program (NPMP) is the primary program being implemented to reduce piscivorous predation on juvenile salmon and steelhead. The program has been implemented over the past 16 years. Its objective is to increase the survival of outmigrating juvenile salmon and steelhead by reducing the number of larger, predatory pikeminnow in the mainstem Columbia and Snake rivers. Studies have shown a direct relationship between the numbers of pikeminnow removed and reduced predation losses, as well

851 S.W. Sixth Avenue, Suite 1100
Portland, Oregon 97204-1348
www.nwcouncil.org

Steve Crow
Executive Director

503-222-5161
800-452-5161
Fax: 503-820-2370

as a direct relationship among rewards, angler participation and resulting catch of pikeminnow. These studies have also shown that, since the late 1990s, the NPMP has been meeting its program objective of achieving between a 10 and 20 percent annual exploitation rate on northern pikeminnow. This has resulted in a potential 40 percent reduction in pikeminnow predation on salmonids.

The NPMP is funded by Bonneville under the Council's Fish and Wildlife Program. A sport reward fishery is the primary method used by the NPMP for catching these fish. Bonneville administers this program through a contract with the Pacific States Marine Fisheries Commission with subcontracts to ODFW and WDFW to implement various components of the program. The Council recommended continuing the NPMP during the recent FY07-09 project solicitation process. Bonneville has also committed to funding this program with the general increase in reward structure for the sport-reward fishery that has been implemented over the past several years.[1] Fishery managers are also continuing to study and monitor other potential piscivorous predators, especially smallmouth bass. No other specific follow-up actions were identified in this area.

**Avian Predator Control Actions**

***Caspian Terns*** – Increases in the number of Caspian terns nesting in the Columbia River estuary led to significant concerns over their potential impact on the recovery of threatened and endangered Columbia River salmonids. In 1999, NOAA Fisheries issued a biological opinion requiring the Corps to eliminate Caspian tern nesting from Rice Island (located in the upper estuary) in an attempt to decrease the number of juvenile salmonids eaten by terns. In the same year, the Corps initiated a pilot project to relocate the Rice Island tern colony to East Sand Island, near the mouth of the estuary, where non-salmon marine fish were abundantly available to foraging terns. In 2000, the Corps proposed to complete the relocation effort to prevent all Caspian tern nesting on Rice Island while attracting terns to nest on East Sand Island. The U.S. Fish and Wildlife Service (USFWS) issued a Migratory Bird Treaty Act (MBTA) permit authorizing the potential take of tern eggs as part of this proposal to aid in the prevention of tern nesting on Rice Island.

As a result of the proposed actions in 2000, Seattle Audubon, National Audubon, American Bird Conservancy, and Defenders of Wildlife filed a lawsuit against the Corps and Service. The four groups alleged in the suit that compliance with NEPA was not sufficient for the proposed action of relocating terns from Rice Island to East Sand Island. Furthermore, the groups objected to the Service's issuance of the MBTA permit authorizing the potential take of tern eggs on Rice Island. The plaintiffs prevailed in their lawsuit before the United States District Court, Western District, and an injunction was granted on August 7, 2001.

In 2002, all parties reached a Settlement Agreement. Terms of the agreement required the USFWS (as lead agency), Corps, and NOAA Fisheries prepare an EIS addressing long-term management of terns in the Columbia River estuary. Interim management measures were

[1] The 2007 Sport reward payment schedule is as follows: For the first 100 fish caught the reward is $4 per fish; for between 101-400 fish caught, the reward is $5 per fish; and for all fish over 400 caught, the award goes up to $8 per fish. In addition, specially-tagged pikeminnow rewards are $500 per tagged fish.

provided in the 2002 Settlement Agreement to allow habitat management and research activities in the Columbia River estuary to continue.

In November, 2006 the USFWS issued its record of decision on the EIS in which they identified the current course of action which calls for reducing the East Sand Island tern and redistributing the population at six locations in Oregon and California. At this time, the Corps is seeking authorization and funding to implement these re-location activities. It is possible that project implementation could begin this year. The implementation process will require the identification and securing of several offsite mitigation areas not identified in the EIS process. The Council could assist the Corps in the process of securing these sites.

***Double-crested Cormorants*** – Double-crested cormorants are a piscivorous species that have pioneered breeding colonies into the Columbia River estuary. Since 1989, when less than 100 pairs were present on East Sand Island, the breeding population of this species has increased there to 12,500 pairs in 2004, the largest colony in North America. Estimated juvenile salmonid consumption by this species in 2004 was 6.4 million fish (range 2.5 – 10.3 million), a 25 percent increase over the 2003 estimate of 5.2 million smolts. Their predation level, coupled with that for Caspian terns, generated an estimated loss of 10 million juvenile salmonids in the estuary for 2004. Steelhead, coho, sub-yearling and yearling Chinook comprised the salmonids in their diet in 2004; sub-yearling Chinook represented the largest proportion of salmonids.

Management efforts directed toward double-crested cormorants nesting in the Columbia River estuary could achieve additional gains, perhaps comparable or even greater than those associated with the proposed Caspian tern management plan. Further research efforts are necessary to lead to a required EIS, developed in conjunction with USFWS, that addresses potential population and habitat management actions for double-crested cormorants. Research into cormorant predation on juvenile salmonids, an evaluation of management needs, and an in-depth analysis of the regional double-crested cormorant population would support completion of the environmental review requirements for determination of future management actions, if warranted.

Currently, there are no regional management strategies or interagency agreements in place to implement double-crested cormorant management. These will need to be in place before baseline research and EIS can be started.

***Other Issues*** **-** The problem of avian predation on juvenile salmonids is not limited to the Lower Columbia River and estuary. There are a variety of avian species that are predatory on juvenile salmon and they occur throughout their range. The vast majority of these birds are native to the Columbia and Snake rivers and they are natural predators on salmonids. However, because of human activities, which have both altered existing reproductive habitat and created increased habitat for many of these species, they have greatly expanded both their geographic and population size. Although Caspian terns and double-crested cormorants have received the most attention to date, recent studies in the Mid-Columbia River indicate that both gulls and mergansers may be of significant concern, whereas terns and cormorants may have no significant impact on juvenile fish. Additionally, as discussed above, we are faced with increasing

populations of double-crested cormorants in the estuary, which are diminishing or offsetting the effectiveness of the tern relocation program.

The likely added emphasis on avian predator control in upcoming draft NOAA Fisheries Federal Columbia River Power System (FCRPS) Biological Opinion for the operation of the federal hydrosystem could have an effect on the budget for implementing the Council's Columbia River Fish and Wildlife Program. The loss of large numbers of juvenile salmonids in the estuary also has the potential to undermine mitigation and recovery efforts focused on these stocks. Again, this reduces the overall cost-effectiveness of the Fish and Wildlife Program.

The main focus of this presentation is to seek a Council decision on whether or not to take the lead in pursuing the development of a regional strategy for avian predator control. Ultimately, however, such a strategy will have to be developed and agreed to by the fish and wildlife managers. The Council's major concern is the economic and biological impact that increased avian predation will have on salmonid recovery efforts. Many fish and wildlife managers and environmental organizations are also concerned about the potential impacts to the bird populations due to increased efforts to reduce and relocate existing populations. There is also concern that these efforts, as currently envisioned, have the potential to increase the geographic range of some populations (terns in particular) into areas where they did not historically occur.

The focus to date has been primarily on Caspian terns in the lower river with some additional emphasis on double-crested cormorants. In the upper river there are ongoing studies and there have been some attempts to control tern populations. Additionally, studies in the mid-Columbia indicate that Common mergansers and Ring-billed and California gulls are likely the primary problem in that area. For both legal and biological reasons most of these species are protected under the Migratory Bird Treaty and other state and federal legislation. Many of these species appear to be undergoing a shift from their historical geographic range or the populations are increasing from a depressed condition. In many cases, problem populations are associated with historically unavailable human-constructed habitats such as islands, riprap, parks, etc. There are several alternative actions the Council might take. One option is for the Council to let the issue play out under the auspices of the federal action agencies charged with implementing the new FCRPS BiOp. Another option is to take a lead role in developing a regional strategy for dealing with this particular issue (avian predation) or alternatively, it could expand the process into developing a regional strategy for predator control in general. As another alternative, the Council could choose to sponsor a regional workshop to bring the region's fish and wildlife managers together to discuss the merits of the options outlined above. The workshop would likely result in a recommendation(s) to the Council on the best course of action(s) to pursue.

**Marine Mammal Predator Control Actions**

California sea lion numbers have greatly increased, from tens of thousands of sea lions to 244,000 animals in 2003, since passage of the Marine Mammal Protection Act in 1972 (MMPA; see http://www.nmfs.noaa.gov/pr/laws/MMPA/) became a federal law administered by NOAA Fisheries. Studies conducted by the Corps below Bonneville Dam from 2002-2007 estimate the amount of fish eaten by sea lions has been increasing every year, from 0.3 percent of the annual spring Chinook salmon run in 2002 to about 4 percent in 2007. Studies also indicate the sea lions are arriving earlier and staying longer at Bonneville Dam, with approximately 80 to 100 individuals being present in recent years. Moreover, the sea lions' efficiency in catching salmon and lamprey has been increasing and an increased level of boldness has been observed with

several pinnipeds entering adult fishways at Bonneville Dam and/or hauling out of the water on or near the dam.

In 2004, a marked sea lion made the first brief excursion into the entrances of the Washington shore fish ladder at Bonneville Dam. In 2005, it traveled extensively up into the adult fishways. Up to six different sea lions were observed in the lower sections of the fish ladders in a single day in 2005. Due to concerns that sea lions in the fishways could block or significantly delay passage of upstream migrating threatened or endangered salmonids and the reduced spring Chinook run, efforts began to keep pinnipeds out of the fish ladders at Bonneville Dam.

To accomplish this, in 2006 the Corps installed sea lion exclusion devices (SLEDs) and used acoustic deterrents from the dam structure next to the fish ladder entrances to give adult fish a potential refuge from sea lion presence near the entrances where fish tend to congregate and hold. The Corps is expected to continue the following actions during the spring salmon migration at and below Bonneville Dam:

- Provide and improve SLEDs to limit the sea lions' ability to enter adult fishways.
- Use acoustic deterrent devices to try to move sea lions away from the immediate adult ladder entrances, away from project facilities and out of the navigation lock.
- Support and participate in hazing efforts to keep sea lions away from the tailrace area below Bonneville Dam.
- Continue working with the states and tribes and provide support for harassment efforts downstream of Bonneville Dam.

Based on information contained in a preliminary Status Report on Pinniped Predation and Hazing at Bonneville Dam in 2007, the interagency hazing effort began on February 28 this year and appeared to be effective at reducing the number of Stellar sea lions and their take of sturgeon. Hazing also altered the behavior of the California sea lions by keeping them further away from the dam and from surfacing as much. However, the increased harassment effort this year did not appear to have an overall substantial impact on reducing predation in the tailrace below Bonneville Dam nor the number of sea lions.

***Section 120 Process***

At the June meeting, the Council heard that the states of Idaho, Oregon and Washington are pursuing federal authorization under Section 120 of the MMPA to lethally remove individual problem animals, if necessary to protect ESA-listed salmon. The states' Section 120 application is subject to a federal review process that could take up to several years. Under this process, a Pinniped Task Force (PTF) will be created. To date NOAA Fisheries has not identified individual PTF members, but has indicated that the task force will likely consist of representatives from the following:

- U.S. Department of Commerce
- NOAA Fisheries marine mammal scientist
- Three independent marine mammal scientists
- States of Oregon and Washington
- A member from each of the four lower Columbia River tribes
- Columbia River Inter-Tribal Fish Commission scientist
- 3-4 conservation organizations
- Commercial fishing organization

- Recreational fishing organization
- Corps of Engineers

***Schedule for the Section 120 Process***

NOAA Fisheries has indicated the individual PTF members will be selected by the first week in August, and is scheduled to hold its initial meeting on September 4, 2007. In addition, the agency is preparing a document called a "Section 120 Overview and Task Force Instructions," which will provide the PTF with background material and schedule, as well as their instructions and charges. That document will also be available in August when the PTF members are named.

By early November, the PTF will submit its recommendation to NOAA Fisheries as to whether to approve or deny the states' application under the Section 120 process, as well as alternative management actions to be incorporated into the NEPA process that will be required before any sea lion control plan is implemented. In the meantime, NOAA Fisheries will begin preparation of an Environmental Assessment (EA) while the PTF is meeting during the fall, with a draft EA and ESA authorization scheduled to be completed by early January 2008.

After a 30-day public comment period, NOAA Fisheries will complete all necessary NEPA and ESA documentation by the end of February. If authority is granted under Section 120, then state fish managers would be allowed to remove a limited number of California sea lions that have been identified as preying on salmon and steelhead in the area below Bonneville Dam. The actual number of sea lions that might be removed will depend on various factors, but it would be less than one percent of the number that could be lethally removed without affecting the overall health of the population. Renewed efforts to haze the pinnipeds away from the Bonneville Dam tailrace would precede any lethal removal, and an evaluation period would follow.

***Congressional Action***

Congressmen Brian Baird and Doc Hastings have introduced legislation (H.R. 1769) to amend the Marine Mammal Protection Act by expediting the process to address aggressive sea lion behavior on threatened and endangered salmon and steelhead in the Columbia River and its tributaries. The legislation would establish a process that could allow states and tribes to apply to the Secretary of Commerce for permits for the lethal taking of sea lions. If approved, a permit would be effective for no more than one year and would authorize no more than 10 takings. The legislation also would waive existing environmental analyses required under NEPA. Due to the NEPA provisions, in particular, prospects for the legislation are uncertain.

On August 2, the House Subcommittee on Fisheries, Wildlife, and Oceans will conduct a hearing on H.R. 1769. Witnesses include NOAA Fisheries, the Marine Mammal Commission, State of Washington, Columbia River Inter-Tribal Fish Commission, and the Humane Society. On July 23, the Council sent a letter (see attached) to the members of the Subcommittee in support of the legislation.

Attachment

**Attachment**



Northwest Power and Conservation Council



July 23, 2007

The Honorable Madeleine Z. Bordallo, Chair
Subcommittee on Fisheries, Wildlife and Oceans
Committee on Natural Resources
U.S. House of Representatives
Washington, DC 20515

Dear Chair Bordallo:

The Northwest Power and Conservation Council thanks you for scheduling the August 2 hearing on H.R. 1769, the bill sponsored by Congressmen Brian Baird and Doc Hastings to amend the Marine Mammal Protection Act by expediting the process to address aggressive sea lion behavior on threatened and endangered salmon and steelhead in the Columbia River and its tributaries. The Council shares the sponsors' concern that the annual spring taking of adult salmon and steelhead by California sea lions congregating below Bonneville Dam has risen to unacceptable levels.

The Council is an interstate compact established by the legislatures of the four Pacific Northwest states in accordance with the Northwest Power Act of 1980. The Act directs the Council to develop a Columbia River Basin Fish and Wildlife Program and to include in it measures to protect, mitigate and enhance fish and wildlife and related spawning grounds and habitat affected by the development, operation, and management of hydropower dams while also assuring the Pacific Northwest an adequate, efficient, economical, and reliable power supply.

We are concerned about the increasing numbers of sea lions at the base of Bonneville Dam and the ability of some of them to gain access to the adult fish ladder. Two years ago the Council urged NOAA Fisheries and the Corps of Engineers to use all available exceptions under the Marine Mammal Protection Act to permit exclusion of sea lions from immediately below the dam. Unfortunately, it is now evident that the exception process in the MMPA is too slow and cumbersome to prevent serious damage to the annual spring migration of returning adult salmon and steelhead listed under the Endangered Species Act.

For 2007, the Corps of Engineers' preliminary estimate of the total marine-mammal take of salmon and steelhead below Bonneville Dam is 3,557, including an estimated take of 361 adult sturgeon and 119 lamprey. The previous record for the most salmon and steelhead takings in a single year occurred in 2004 with 3,533. The fact that the total number of adult salmonids

expected to pass Bonneville Dam this spring was considerably less than in 2004 is one further indication that the predation rate is escalating. The Corps estimates that about 4 percent of the total spring Chinook salmon run this year was taken by marine mammals.

We also are concerned with the impact the predation is having on early-returning, biologically significant adult salmonids. Biologists value these fish for their unique genetic characteristics and life histories. Columbia River Inter-Tribal Fish Commission biologists estimated through visual sightings earlier this spring that approximately 30 percent of these fish were being injured or consumed by sea lions.

Taxpayers and electricity ratepayers invest significant sums in the protection, enhancement and recovery of salmon and steelhead in the Columbia River Basin. Safe passage for these fish at Bonneville Dam is essential to ensure the health of these species. The Council believes that a reliable and timely mechanism must be available to the fish and wildlife managers to enable them to remove predatory California sea lions when they represent a significant danger to the health and improvement of a listed species.

Thank you again for scheduling the hearing on H.R. 1769. We believe that an expedited takings process is essential for protecting and rebuilding the valuable and culturally significant anadromous fishery resources in the Columbia River Basin.

Sincerely,

Tom Karier
Chair