Department of Energy

Bonneville Power Administration
P.O. Box 3621
Portland, Oregon 97208-3621

ENVIRONMENT, FISH AND WILDLIFE

April 8, 2003

In reply refer to: KEC-4

To: People Interested in the Project to Conduct Research on Avian Predation on Juvenile Salmonids in the Lower Columbia River

Background: Bonneville Power Administration (BPA) prepared an Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) on this project in April of 2001. The project involves multi-year research begun in 1996 on Caspian terns, double-crested cormorants, and glaucous-winged gulls. The activities examined in the EA focused on measuring the salmonid smolt consumption rate of tern, cormorant, and gull populations in the lower Columbia River. Additionally, this project measured the impacts of this research on brown pelicans roosting in the area.

Action: In 2002, BPA prepared modifications to the original proposal in a Supplement Analysis (SA). BPA is now proposing additional changes to the program for 2003 and has prepared a second SA. Thus the purpose of this SA is to determine if a supplemental EA is needed to analyze the environmental impacts of the changes proposed in 2003 as compared to the program analyzed in the Final EA and FONSI completed in 2001.

Findings: As documented in the SA, the potential impacts from the proposed changes to the Avian Predation on Juvenile Salmonids in the Lower Columbia River Research Project are of the kind described in the 2001 EA and FONSI. The proposed changes would not raise the level of the environmental impacts to a significant level. There are no new circumstances or analysis. Therefore, a supplemental EA is not needed.

Copies: If you would like copies of the SA and/or the original EA/FONSI, please call our toll-free document request line: 1-800-622-4520. Leave a request naming this project, the documents you wish, and giving your complete mailing address.

On the Web: These documents are also available on our website at www.efw.bpa.gov. Click on *environmental planning/analysis*, then *Completed Projects*, then *Avian Predation on Juvenile Salmonids in the Lower Columbia River Research Project (DOE/EA-1374).*

For More Information: If you need more information or have any questions, please call me toll free at 1-800-282-3713, call me at my direct line at 503-230-5756, or e-mail me at caspiering@bpa.gov. Thank you for your interest in our work.

/s/ Colleen A. Spiering

Colleen A. Spiering
Environmental Project Manager

DOE F 1325.8e Electronic Form Approved by CILR – 10/08/2002
(08-89)

United States Government **Department of Energy**

Bonneville Power Administration

memorandum

DATE: April 7, 2003

REPLY TO ATTN OF: KEC-4

SUBJECT: Avian Predation on Juvenile Salmonids in the Lower Columbia River Research Project Supplement Analysis (DOE/EA-1374-SA-02)

TO: Bill Maslen
Project Manager - KEWR-4

Proposed Action: Avian Predation On Juvenile Salmonids in the Lower Columbia River Research Project—Modifications to original proposal.

Project No.: 199702400

Location: Columbia and Snake Rivers.

Proposed by: Bonneville Power Administration (BPA), and USGS-Oregon Cooperative Fish and Wildlife Research Unit, Oregon State University.

Introduction: The Bonneville Power Administration prepared a multi-year Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) on this project in April of 2001 and a Supplement Analysis (SA) to that EA in 2002. The project involves multi-year research on Caspian terns, double-crested cormorants, and glaucous-winged gulls begun in 1997. The activities examined in the EA focused on measuring the salmonid smolt consumption rate of tern, cormorant, and gull populations in the lower Columbia River. Additionally, this project measured the impacts of this research on brown pelicans roosting in the area. Additional changes are being proposed to the project in 2003, thus a second SA has been prepared to determine if a supplemental EA is needed to analyze the environmental impacts of the proposed changes to the program since the Final EA and FONSI were completed.

Description of Action and Analysis: The proposed changes for 2003 to the program and an analysis of their environmental impacts are described in the attached SA.

Findings: As documented in the SA, the potential impacts from the proposed changes to the Avian Predation on Juvenile Salmonids in the Lower Columbia River Research Project are of the kind described in the 2001 EA and FONSI. The proposed changes would not raise the level of the environmental impacts to a significant level. There are no new circumstances or

analysis. Therefore, a supplement to the Avian Predation on Juvenile Salmonids in the Lower Columbia River Research Project EA and FONSI is not needed.

/s/Colleen A. Spiering
Colleen A. Spiering
Environmental Project Lead – KEC

CONCUR: */s/Thomas C. McKinney* DATE: April 7, 2003
Thomas C. McKinney
NEPA Compliance Officer

Attachment:
Avian Predation on Juvenile Salmonids in the Lower Columbia River Research Project Supplement Analysis

Avian Predation On Juvenile Salmonids in the Lower Columbia River Research Project

Supplement Analysis

DOE/EA-1374-SA-02

Prepared by the Bonneville Power Administration

April 2003

Avian Predation On Juvenile Salmonids in the Lower Columbia River Research Project

Supplement Analysis

April 7, 2003

1. Introduction

The Bonneville Power Administration (BPA) is funding ongoing research on Caspian terns, double-crested cormorants, and several species of gulls (glaucous-winged, western, California, and ring-billed) begun in 1996. BPA analyzed environmental impacts of the research in an Environmental Assessment (EA) completed in 2001 (DOE/EA-1374). The purpose of this Supplement Analysis (SA) is to determine if a supplemental EA is needed to analyze additional research activities proposed as part of that project.

2. NEPA Analysis to Date

The Avian Predation on Juvenile Salmonids in the Lower Columbia River Research Project EA (DOE/EA-1374) analyzed impacts of undertaking research on the effects of piscivorous birds on survival of juvenile salmonids in the lower Columbia River to aid in potential future Federal Columbia River Power System (FCRPS) predator management. To determine their impact, the project involved the following activities: (1) survey the managed Caspian tern colonies in the Columbia River estuary and along the nearby Washington coast, (2) study the food habits, energy requirements, and smolt consumption rates of managed adult and pre-fledgling Caspian terns nesting in colonies in the Columbia River estuary, (3) determine foraging distribution, foraging range, and habitat use of managed Caspian terns in the Columbia River estuary and along the Washington coast, (4) survey unmanaged double-crested cormorants and glaucous-winged/western gull nesting colonies in the Columbia River estuary and unmanaged Caspian terns nesting on the lower Columbia River above John Day Dam, and (5) study the food habits, energy requirements, and smolt consumption rates of unmanaged double-crested cormorants.

Based on the analysis in the EA, BPA determined that the proposed action is not a major Federal action significantly affecting the quality of the human environment, within the meaning of the National Environmental Policy Act (NEPA) of 1969. Therefore, the preparation of an Environmental Impact Statement (EIS) was not required, and BPA issued a Finding of No Significant Impact (FONSI) on April 5, 2001. An SA was also prepared for activities in 2002.

3. Description of the Proposed Action

Ten specific actions were analyzed in the 2001 EA. They are listed below and described in more detail in sections 2.2.1 through 2.2.10 of the EA.

1. Survey managed Caspian tern colonies in the Columbia River estuary and along the nearby Washington coast.
2. Study the food habits, energy requirements, and smolt consumption rates of managed adult and pre-fledging Caspian terns nesting in colonies in the Columbia River estuary.
3. Determine foraging distribution, foraging range, and habitat use of managed Caspian terns in the Columbia River estuary and along the nearby Washington coast.
4. Survey unmanaged double-crested cormorant and glaucous-winged/western gull nesting colonies in the Columbia River estuary and unmanaged Caspian tern nesting colonies on the lower Columbia River above John Day Dam.
5. Study the food habits, energy requirements, and smolt consumption rates of unmanaged double-crested cormorants nesting in the Columbia River estuary and unmanaged Caspian terns nesting on the lower Columbia River above John Day Dam.
6. Determine foraging distribution, foraging range, and habitat use of unmanaged double-crested cormorants nesting in the Columbia River estuary and unmanaged Caspian terns nesting on the lower Columbia River above John Day Dam.
7. Study the food habits of double-crested cormorants nesting in Grays Harbor.
8. Monitor effects of this research on endangered California brown pelicans roosting on East Sand Island.
9. Under the direction of the Working Group, ensure tern colony restoration by removing predatory birds from East Sand Island Caspian tern colony.
10. Provide technical assistance to the Interagency Caspian Tern Working Group.

4. New Activities and Circumstances Since the Earlier NEPA Document

Techniques for collecting the required data in 2003 would not differ from those described in the 2001 EA. Breeding colonies surveyed, number of birds collected, and locations of bird collections would, however, differ slightly from 2001.

Changes in 2003 activities from 2001 would include:

Section 2.2.4 Unmanaged bird colonies surveyed would be expanded to include (1) a nesting colony of double-crested cormorants on Foundation Island in the up-river portion of the lower Columbia River study area, (2) a new up-river colony of Caspian terns on Miller Rocks, (3) an up-river colony of American white pelicans on Badger Island, and (4) six up-river colonies of California and ring-billed gulls

(Little Memaloose Island, Miller Rocks, Three Mile Canyon Island, Crescent Island, Island 18, and Richland Island) in order to monitor colony size and nesting success. Aerial photos would be taken of these colonies to estimate breeding population size and determine population trends at each of these colonies by comparing colony censuses with earlier counts from aerial photo censuses conducted in the late 1990s.

Section 2.2.5 Studies of the food habits, energy requirements, and smolt consumption rates of unmanaged colonies of piscivorous waterbirds would not only include double-crested cormorant colonies in the Columbia River estuary and Caspian tern colonies on the lower Columbia River above John Day Dam, but would be expanded in 2003 to include any unmanaged Caspian tern or double-crested cormorant nesting colonies on the lower Columbia River above Bonneville Dam. In 2001 and 2002, hundreds of pairs of double-crested cormorants nested on Foundation Island above McNary Dam and in 2001 a small colony of Caspian terns was found on Miller Rocks above The Dalles Dam.

Collection of adult double-crested cormorants at East Sand Island for food habits analysis would be expanded from 120 to 160 birds (10 each week for 16 weeks). As in 2001, adult cormorants would be collected as they transport fish in their stomach and esophagus back to the colony on East Sand Island. This activity would be accomplished throughout the 16-week nesting period from April through July. The larger sample of adult cormorants that would be collected in 2003 is designed to compensate for the lack of collections of nestling regurgitations during the chick-rearing period. In 2001, all cormorant diet data from East Sand Island during the chick-rearing period (mid-June to late July) were obtained by collecting nestling regurgitations on the colony at night. This procedure involved some disturbance to endangered California brown pelicans that roost on East Sand Island at night during the cormorant nestling-rearing period. In order to avoid this disturbance of a listed species in 2003, no collection of cormorant nestling regurgitations on East Sand Island would occur in 2003; instead collection of adult cormorants for diet studies would continue through the nestling-rearing period.

Collection of cormorant regurgitations for food habits analysis would instead include up to 100 regurgitations collected at the up-river cormorant colony on Foundation Island, just below the confluence of the Snake and Columbia Rivers. These cormorant regurgitations would be collected by walking beneath trees where active nests are located and picking food samples up off the ground that are spontaneously regurgitated by adults and nestlings overhead. Diet sample collections would be evenly distributed across the 10-week chick-rearing period (ca. 10 regurgitations collected each week).

In 2003 up to 20 Caspian tern eggs would be collected from each of the colonies on East Sand Island and Crescent Island. These eggs would be analyzed for mercury, organochlorines, and other potential contaminants for comparison with

contaminant burdens in Caspian tern eggs at other colony sites (e.g., Commencement Bay, WA, and San Francisco Bay, CA).

Finally, up to 15 adult double-crested cormorants that are nesting in the Columbia River estuary (not on East Sand Island) and have been injected with doubly labeled water would be collected using firearms. This activity was planned for East Sand Island in 2001, but was curtailed because endangered California brown pelicans were roosting close to the portion of the cormorant colony where the activity was planned and would have been disturbed. Consequently, this research activity would be completed with cormorants nesting on pilings or channel markers elsewhere in the estuary, or on Rice Island or Miller Sands Spit; locations where no brown pelicans roost.

5. Effects of Project Activities Not Previously Evaluated

Section 3.2.2 The EA for research in 2001 proposed collecting up to 160 adult Caspian terns for food habits studies, but only 112 adult terns were collected (0.6% of the breeding population). In 2003, the proposed research would collect up to 180 adult Caspian terns on East Sand Island (0.9% of the 2002 breeding population). Caspian tern nesting success on East Sand Island in 2001 and 2002 was high; approximately 22,000 young terns were successfully raised and fledged from the island in those two years. Even if post-fledging survival was poor, this level of nesting success would be expected to result in the recruitment of at least 10,000 terns into the breeding adult population in the next 4 years. Consequently, the proposed additional level of take of adult terns in 2003 would have no detectable effect on the population trajectory over the next few years.

Section 3.2.4 As in 2001, ground-based, boat, and fixed-wing aircraft surveys, radio telemetry, and re-sightings of banded adults are not expected to disturb any birds in the area (see sections 3.2.1 and 3.2.3 of the 2001 EA). Fixed-wing aircraft fly at about 700 feet, high enough to not disturb birds in the area. Locations of nesting bald eagles would be plotted prior to radio telemetry aerial surveys so that pilots and field technicians know where they are and can avoid them.

Section 3.2.5 The project proposes to collect up to 160 adult cormorants at East Sand Island for diet studies in 2003. Based on the colony size of 8,670 breeding pairs in 2002, if all 160 adult cormorants were collected it would represent <1.0% of the breeding population at East Sand Island. Nesting success of double-crested cormorants on East Sand Island in 2002 was good, and about 10,000 young cormorants were successfully fledged. Thus, the collection of up to 160 adult cormorants from this population would not have a detectable effect on colony size. Collecting up to 40 more adult cormorants in 2003 compared to 2001 will allow the proposed research objectives to be accomplished without entering the

cormorant colony at night and potentially disturbing endangered California brown pelicans, which use the East Sand Island cormorant colony as a communal night roost.

Up to 100 double-crested cormorant regurgitations would be collected for diet analysis at the breeding colony on Foundation Island. This colony uses arboreal nest sites; nesting success has been good, and the colony size has increased over the last decade. Colony size was estimated at 250-300 nesting pairs in 2002, so collection of up to 100 regurgitations would not place significant stress on this breeding colony. Regurgitations would be collected from the ground, so no handling of birds would be necessary.

Up to 20 Caspian tern eggs would be collected at both the East Sand Island colony and the Crescent Island colony for contaminant analysis. In 2002, about 20,000 Caspian tern eggs were laid on the East Sand Island colony. Thus the maximum take of tern eggs from this colony would represent about 0.1% of last year's production of eggs. In 2002, about 1,150 Caspian tern eggs were laid at the Crescent Island colony. Thus the maximum take of tern eggs from this colony would represent about 1.7% of last year's production of eggs. The proposed collection of eggs from these colonies would have no detectable effect on the nesting success of either colony.

A maximum of 15 adult double-crested cormorants would be collected from nesting areas in the estuary other than the East Sand Island colony as part of proposed research on cormorant energy expenditure rates using the doubly labeled water technique. Resightings of marked adult cormorants in the Columbia River estuary indicate that breeding adults move among several nesting colony sites in the estuary, including East Sand Island, Rice Island, and the Miller Sands channel markers, and none of these nesting areas represents a distinct breeding population. Conducting the proposed research at nesting areas away from East Sand Island would avoid disturbing endangered California brown pelicans, which use the East Sand Island cormorant colony as a communal night roost.

6. Findings

As documented in this SA, impacts of proposed activities would not be significant to the long-term survival of the bird populations to be sampled. Potential impacts from the 2003 collecting, surveying, studying, or monitoring activities are similar to those described in the Avian Predation on Juvenile Salmonids in the Lower Columbia River EA (DOE/EA-1374). No additional impacts would occur in connection with these activities and, therefore, a supplement to the Avian Predation EA is not needed.