

activities will occur and has provided NMFS with the opportunity to evaluate their potential effects on ESA-listed salmonids and proposed and designated critical habitat for those species.

The ecosystem restoration features will provide benefits to the habitat types identified in the conceptual ecosystem model (*see* Chapter 5 of the 2001 BA). When implemented in coordination with NMFS and other entities conducting habitat conservation/restoration features, these features should complement those activities currently occurring in the Lower Columbia River and estuary. For these reasons, NMFS believes that the proposed ecosystem restoration features will benefit ESA-listed salmonids and their habitats. As with the monitoring plan, the adaptive management process, and the ecosystem research actions, the ecosystem restoration features also provide the Corps the opportunity to integrate elements of the Project into a broader suite of research objectives and restoration features in the Columbia River Basin (*i.e.*, estuary action items in the Basinwide Salmon Recovery Strategy or ‘All-H’ paper, the 2004 FCRPS Hydropower Biological Opinion, and NMFS’ current recovery planning actions).

9.6 Jeopardy Conclusion

After reviewing the current status and factors for decline of of ESA-listed salmonids included in this consultation, the environmental baseline in the action area, the effects of the proposed action, and cumulative effects, NMFS concludes that the proposed action is not likely to jeopardize the continued existence of Snake River sockeye salmon, Snake River fall Chinook salmon, Snake River spring/summer Chinook salmon, Snake River Basin steelhead, Upper Columbia River steelhead, Lower Columbia River steelhead, Upper Willamette River steelhead, Middle Columbia River steelhead, Columbia River chum salmon, Lower Columbia River Chinook salmon, Upper Willamette River Chinook salmon, Upper Columbia River spring run Chinook salmon, and Lower Columbia River coho salmon (proposed for listing).

9.7 Critical Habitat Conclusion

After reviewing the current condition and trends of PCEs within the action area, the environmental baseline, effects of the proposed action, and cumulative effects, NMFS concludes that the proposed action will not result in the destruction or adverse modification of proposed and designated critical habitat for Snake River sockeye salmon, Snake River fall Chinook salmon, Snake River spring/summer Chinook salmon, Snake River Basin steelhead, Upper Columbia River steelhead, Lower Columbia River steelhead, Upper Willamette River steelhead, Middle Columbia River steelhead, Columbia River chum salmon, Lower Columbia River Chinook salmon, Upper Willamette River Chinook salmon, Upper Columbia River spring run Chinook salmon, and Lower Columbia River coho salmon (proposed for listing).

10. CONSERVATION RECOMMENDATIONS

10.1 Introduction

Section 7 (a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Conservation recommendations are discretionary measures suggested to

minimize or avoid adverse effects of a proposed action on ESA-listed salmonids, to minimize or avoid adverse modification of proposed and designated critical habitat, to help implement recovery plans, or to develop additional information.

10.2 Conservation Recommendations

NMFS believes the following conservation recommendations are consistent with these obligations, and therefore should be implemented by the Corps.

10.2.1 Pile Dike Study

Coordinate with NMFS, FWS, and OSHU/OGI to develop and implement a study that addresses the functioning of and continued need for pile dike fields in the Lower Columbia River, estuary and river mouth in relationship to on-going and future habitat conservation/restoration features. The study results should be used to assess how pile dike fields might be modified and/or removed from the Lower Columbia River, estuary and river mouth to enhance habitat conservation/restoration features in a manner that does not compromise the integrity of the navigation channel. The results of this study should be incorporated into future consultations for maintenance of the navigation channel and any future reinitiation of consultation activities stemming from the September 15, 1995, ESA Section 7 consultation on operation and maintenance dredging from John Day Dam to the Mouth of the Columbia.

10.2.2 Ecosystem Conservation/Restoration

There are a number of ongoing habitat conservation/restoration features in the Lower Columbia River and estuary that are being conducted by the LCREP, the Salmon Recovery Funding Board, the Lower Columbia Fish Recovery Board, Oregon Watershed Enhancement Board, and a number of non-profit organizations. Based on the need to support this continuing work and NMFS and FWS future fish and wildlife recovery efforts, the Corps should continue to implement habitat conservation/restoration features, as identified through this consultation, the November, 2004, updated proposed action for the 2004 FCRPS Hrdropower Biological Opinion and the 2004 FCRPS Opinion itself, Sections 1135, 206, and 536 of the Water Resources Development Act (WRDA), and the Corps General Investigation Report - Section 905(b)(WRDA 86) Analysis, Lower Columbia River Ecosystem Restoration, Oregon and Washington (May, 2001).

The Corps should explore how to employ regulatory flexibility as they implement their authorities when working with potential partners on conservation/restoration features.

The Corps should continue to work on the implementation of LCREP's CCMP via providing policy and technical assistance. The Corps should also work with the LCREP partners to use their annual planning and Congressional appropriation process to establish and provide the appropriate level of funding to implement the CCMP (in particular, Actions 1 - 12, and 28).

10.2.3 Sediment Budget for the Lower Columbia River and Estuary

The Corps should conduct a sediment budget study that includes an analysis of historic sediment volumes in the Lower Columbia River, how sediment volumes have changed with development of the FCRPS, and how the deepening of the channel from 0-43 feet further modified sediment inputs into the system.

10.2.4 Near-shore and Plume Study

The Corps should develop and implement a study(ies) examining the potential for impact to near-shore and plume environments produced by ocean disposal of sediments produced by the Project. The areas included in this study(ies) should include all existing and proposed disposal sites at the Mouth of the Columbia River. The study should examine salmonid use of in these areas, (abundance, distribution, food resources, habitat). This study should build upon the current research being conducted by NMFS' Northwest Fisheries Science Center.

- a. The study design and plan for ocean disposal of sediments should be submitted to NMFS and the FWS for final approval.
- b. The results of the study and the plan for ocean disposal of sediments should be presented to the adaptive management team for consideration during the adaptive management process. The results of this study should be incorporated into future consultations for the navigation channel and the any future reinitiation of consultation activities stemming from the Mouth of the Columbia River maintenance project.

10.2.5 Public Involvement in the Adaptive Management Process

For the adaptive management process to be successful, the process should be a transparent one. The annual adaptive management meetings should be open to the public. During each meeting, there should be an opportunity for questions, comments, and technical input from the public, with response from the adaptive management team. Copies of public comments, data, and information discussed during the meetings should be placed on the Corps' website.

10.2.6 OHSU/OGI ELCIRC Modeling

The OHSU/OGI ELCIRC model analyzed Columbia River estuary habitat opportunity changes between current and future Project conditions. It would be very useful to extend this analysis to riverine portions of the Project area. The Corps should fund the expansion of the ELCIRC model to incorporate the riverine portions of the Project area, and provide those modeling outputs to the adaptive management team for review and consideration.

10.2.7 Pipeline Dredge Disposal

While ESA-listed salmonids mainly use the upper 20 feet of the Columbia River and estuary's water column, these fish may also use deeper portions of the water column for movement and migration. Pipeline dredges, when disposing of materials in or beside the navigation channel, release dredged materials below 20 feet in depth. Fish using water deeper than 20 feet may temporarily encounter a turbidity plume associated with these disposal activities. Where feasible

and safe, NMFS recommends that the Corps release pipeline-dredged materials into as deep a depth as possible.

10.2.8 Control of Non-Indigenous Species

NMFS recommends that the Corps continue its efforts to minimize and/or avoid future, non-indigenous species introductions from deep draft vessel traffic associated with the deepened navigation channel by assisting the Coast Guard, and States of Oregon and Washington, in implementing rules to minimize ballast discharge and associated invasive species introductions.

10.2.9 Involvement of the Columbia River Tribes in Project Implementation

The Columbia River Tribes, represented by the Columbia River Intertribal Fish Commission (CRITFC), have specific technical expertise that should be included into the Project implementation. The Corps should encourage CRITFC participation in the following Project activities: Adaptive management process, monitoring program, ecosystem research program, and the annual contaminants review team activities (*see* Table 3.5). The Corps should also encourage CRITFC participation with the Regional Sediment Evaluation Team that is updating the DMEF manual. The Corps should provide funding for CRITFC involvement in these Project and Project-related activities.

11. REINITIATION OF CONSULTATION

Consultation must be reinitiated as follows:

This concludes formal consultation on these actions in accordance with 50 C.F.R. 402.14(b)(1). Reinitiation of consultation is required: (1) If the amount or extent of incidental take is exceeded; (2) if the action is modified in a way that causes an effect on ESA-listed salmonids that was not previously considered in the BA and this Opinion; (3) if through the monitoring and adaptive management process, or by any other means, new information or project monitoring reveals effects on the action that may affect the ESA-listed salmonids in a way not previously considered or in a way not predicted by the 2001 BA or this Opinion; or (4) a new species is listed or critical habitat is re-designated in a manner that may be affected by the action (50 C.F.R. 402.16)

12. INCIDENTAL TAKE STATEMENT

12.1 Introduction

Sections 4(d) and 9 of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. Harm in the definition of “take” in the ESA means an act which actually kills or injures fish or wildlife. Such an act may include significant habitat modification or degradation which actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including, breeding, spawning, rearing, migrating, feeding or sheltering (50 C.F.R. 222.102, 2001). Harass is defined as actions that create the likelihood of injuring listed species to such an extent as to significantly alter normal behavior patterns which include, but are