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Subject:	2023 Avian Management and Monitoring Implementation Plan
Date:	Tuesday, January 31, 2023 1:03:39 PM

Dear Michael and Ritchie:

The National Marine Fisheries Service's (NMFS) 2020 Columbia River System (CRS) Biological Opinion (BiOp) includes Terms and Conditions (Section 2.17.4(5)(Implementation Plans)(A)(vi)) that require the Action Agencies to annually submit to NMFS an "Avian Predation Management and Monitoring Plan." Specifically, NMFS requested that the Action Agencies "provide lists of actions including rationale and monitoring plans by bird species and location annually, no later than January 31." This email is intended to fulfill this reporting requirement.

In addition to anticipated 2023 activities summarized below, the Action Agencies will continue to develop a coordinated strategy for avian management and monitoring consistent with our implementation authorities and mitigation obligations. The Action Agencies will continue participating in the Fish Passage Operation and Maintenance (FPOM) Regional Forum workgroup to coordinate avian predation management and monitoring activities consistent with their authorities; the U.S. Army Corps of Engineers (Corps) will continue to coordinate avian predation research activities through the Studies Review Work Group (SRWG) (e.g., predation rate analysis). The Action Agencies have also been meeting regularly following release of the Avian Predation Synthesis Report on March 31, 2021. The Synthesis Report included several recommendations that the Action Agencies will continue to consider for both ongoing, and potential future, avian predation management and monitoring actions; any future actions will be coordinated with NMFS and U.S. Fish and Wildlife Service (USFWS) prior to implementation.

A summary of the Action Agencies' planned 2023 avian predation management actions and monitoring activities are provided below. These actions are primarily intended to reduce avian predation on juvenile ESA-listed salmon and steelhead in the lower Snake and lower Columbia Rivers, but may also provide benefits for bull trout and Pacific lamprey. The Action Agencies have been involved in efforts to reduce avian predation impacts on ESA-listed salmon and steelhead for decades and are continuing those efforts where feasible, practicable, and within agency authorities. The Action Agencies are also actively engaged in multiple regional forums where avian predation issues and concerns are discussed and considered; we will continue to participate in these forums as a means of gathering information and gauge interest in management and monitoring activities.

1. **Avian Predation Management and Monitoring at Dams:** The Corps will continue avian predation deterrence and monitoring activities at all eight lower Columbia and lower Snake River dams. At each dam, piscivorous bird numbers will continue to be monitored, birds foraging in dam tailraces

will be hazed (to include, in some circumstances, lethal reinforcement) and passive predation deterrents, such as irrigation sprinklers and avian wire arrays, will be deployed. Hazing typically involves launching long-range pyrotechnics at concentrations of feeding birds and occurs primarily near the spillway, powerhouse discharge, and juvenile bypass outfall areas. In 2020, the Corps' Portland District began considering the possibility of adding lethal reinforcement techniques to hazing efforts at Bonneville, The Dalles and John Day dams. The review of lethal reinforcement efforts, including compliance with relevant environmental laws and regulations, will continue in 2023. In 2022, the Corps experimented with falconry as a supplemental avian predation deterrent at The Dalles Dam and this effort will continue in 2023. Specific avian predation management activities at these dams will be documented in Appendix L of the 2023 Fish Passage Plan (in development, http://pweb.crohms.org/tmt/documents/fpp/). Additionally, the Corps will continue to develop and refine research goals and objectives for potential dam-based avian predation deterrence evaluations in 2023. These potential FY2024 studies will be developed and coordinated through the SRWG.

2. **Inland Avian Predation Management Plan (IAPMP):** At Crescent Island, the Corps will monitor presence / absence and magnitude of Caspian terns (1-2 site visits or aerial flights during the breeding season) and will report findings to the (FPOM) workgroup. The Corps will work with USFWS McNary National Wildlife Refuge to implement non-ground disturbing activities to dissuade terns from nesting on Crescent and Badger islands. Key updates will be recorded in meeting minutes and supporting documents will be communicated via FPOM and recorded in meeting minutes and supporting documents located at http://pweb.crohms.org/tmt/documents/FPOM/2010/.

Reclamation will continue to monitor colony size and passively and actively dissuade Caspian terns within the North Potholes Reservoir. At Goose Island, Reclamation will continue to implement management actions, including non-lethal hazing and lethal take of up to 200 tern eggs and monitoring of colony size. Reclamation will increase hours of active hazing for the 2023 season as necessary to hold the colony size below the thresholds set in the IAPMP guidelines. Reclamation will continue to investigate two potential long-term solutions to making Goose Island unsuitable nesting habitat for Caspian terns: establishing more vegetation on the island and installing large woody debris.

3. **Blalock Islands Operation and Monitoring:** From April 10 - June 1 (or as feasible based on river flows), the John Day reservoir elevation will be held between 264.5 feet and 266.5 feet to inundate sandy portions of the Blalock Islands Complex to delay Caspian terns from nesting until after the majority of the Upper Columbia and Snake River steelhead have passed downstream of this area. The Action Agencies intend to begin increasing the forebay elevation prior to initiation of nesting by Caspian terns; operations may begin earlier than April 10 (when the reservoir is typically operated between 262.0 to 266.5 feet). The operation may be adaptively managed due to changing run timing; however, the intent of the operation is to begin returning to reservoir elevations of 262.5-264.5 feet on June 1, but no later than June 15, which generally captures 95% of the annual juvenile steelhead migration. During the operation, safety-related restrictions would continue, including but not limited to maintaining ramp rates for minimizing project erosion and maintaining power grid reliability. Following this operation, the John Day reservoir elevation would return to 262.5 – 264.5 feet operating range through August 31. In 2023, the Corps will coordinate with Bonneville Power Administration (Bonneville) to review data collected as part of their basin-wide monitoring effort to

evaluate Caspian tern use of the Blalock Islands Complex during the breeding season. The number of Caspian terns nesting at the Blalock Islands Complex will be quantified and communicated to NMFS, USFWS and regional partners.

4. **Caspian Tern Management Plan:** On East Sand Island, the Corps will continue to implement management actions, including preparation of 1.0 acre of suitable tern nesting habitat and non-lethal hazing outside the 1.0-acre tern nesting area. The Corps will monitor peak colony size (nesting pairs) and will collect and upload data to the PIT Tag Information System (PTAGIS) to enable predation rate analysis on ESA listed juvenile salmon based on recovery of PIT tags. As in 2022, pre-season control tags will be sown by Corps personnel prior to the 2023 nesting season. The need for post-season PIT tag recovery using Corps personnel and a service contract for predation rate estimates will be coordinated throughout the 2023 nesting season. Monthly updates will be provided at FPOM (http://pweb.crohms.org/tmt/documents/FPOM/2010/) and reports will be distributed to FPOM members.

5. **Double-crested Cormorant (DCCO) Management Plan:** On East Sand Island, Phase 1 and Phase 2 of the Management Plan have been completed. In 2023, the Action Agencies may monitor peak colony size and may collect data to enable predation rate analysis on juvenile salmon listed under the Endangered Species Act based on recovery of PIT tags if prioritized by SRWG and funding is available. As in 2022, pre-season control tags will be sown by Corps personnel prior to the 2023 nesting season. The need for post-season PIT tag recovery using Corps personnel and a service contract for predation rate estimates will be coordinated throughout the 2023 nesting season. In the Columbia River Estuary, the Corps may also monitor dispersal, disposition (e.g., roosting, nesting, etc.) and colony size as needed per the 2020 Biological Assessment Clarification Letter sent to the Services on April 1, 2020. As in previous years, the Corps will apply for permits to lethally take up to 500 DCCO eggs (to be used only if more than 6,000 pairs of DCCO are present, which is unlikely in 2023). Monthly updates will be provided at FPOM (http://pweb.crohms.org/tmt/documents/FPOM/2010/) and reports will be distributed to FPOM members.

6. **Avian Predation Management on Estuary Dredge Material Placement Islands:** Per commitments under a separate 2012 NMFS Biological Opinion regarding operation and maintenance of the lower Columbia River Federal Navigation Channel, the Corps will conduct various avian predation management and monitoring actions in the Columbia River estuary. On Rice, Miller, and Pillar islands (and other locations as warranted), the Corps will conduct non-lethal hazing of piscivorous waterbirds, apply for permits to lethally take up to 250 DCCO and CATE eggs and monitor piscivorous waterbird presence / absence. The Monthly updates will be provided at FPOM (http://pweb.crohms.org/tmt/documents/FPOM/2010/) and reports will be distributed to FPOM members.

7. **Monitoring of Other Piscivorous Waterbird Colonies:** For 2023, Bonneville will continue to assess the distribution and size of unmanaged, piscivorous waterbird colonies in the Columbia River basin through the lower- to the Mid-Columbia region, including estimating the colony-specific and cumulative, system-wide impacts of colonial waterbirds on salmonid smolt survival in the Columbia River basin. This effort includes assessing colony size and estimating per capita predation rates by Double-crested Cormorants nesting on the Astoria-Megler Bridge, the largest unmanaged colony in

the Columbia River estuary. Overall, this effort is similar to monitoring activities conducted in 2022 and is part of the Columbia Basin Fish and Wildlife Program's continued commitments to monitor avian predation in the near term, as described in the Action Agencies' 2020 CRS Biological Assessment.

Please let me know if you have any questions or would like to discuss any of the matters raised above.

Sincerely,

Tim Dykstra
US Army Corps of Engineers - Northwestern Division
Fish Policy Team Lead
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