



DEPARTMENT OF THE ARMY  
CORPS OF ENGINEERS, NORTHWEST DIVISION  
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## RECORD OF DECISION

### DOUBLE-CRESTED CORMORANT MANAGEMENT PLAN TO REDUCE PREDATION OF JUVENILE SALMONIDS IN THE COLUMBIA RIVER ESTUARY ENVIRONMENTAL IMPACT STATEMENT

#### DECISION

This Record of Decision (ROD) documents my decision and rationale for adopting the Double-Crested Cormorant Management Plan as described in Chapter 5 of the *Double-Crested Cormorant Management Plan to Reduce Predation of Juvenile Salmonids in the Columbia River Estuary Final Environmental Impact Statement* (FEIS). The selected management plan is consistent with the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries) 2014 Supplemental Biological Opinion and Reasonable and Prudent Alternative (RPA) for the Federal Columbia River Power System (FCRPS) issued on January 17, 2014.<sup>1</sup> The Biological Opinion's RPA included Action 46 calling for a double-crested cormorant (DCCO) management plan to address DCCO predation on Endangered Species Act (ESA) listed juvenile salmonids. Based on the analyses in the FEIS, reviews by other federal and state agencies, tribes, input of the public, and review by my staff, I find the management plan described in Alternative C-1 to be technically feasible, environmentally justified, in accordance with applicable environmental statutes, and in the public interest.

MANAGEMENT PLAN PURPOSE AND NEED: RPA Action 46 calls for a reduction in DCCO predation of juvenile salmonids over 172 river miles of the Columbia River Estuary by reducing the East Sand Island colony, which accounts for 98 percent of the DCCO breeding population in the Columbia River Estuary. A specific management objective of no more than 5,380–5,939 breeding pairs on East Sand Island was identified in the 2014 Supplemental FCRPS Biological Opinion. In the FEIS, the Corps adopted this objective and the analysis provided by NOAA Fisheries to support the purpose and need for the action.

DEVELOPMENT OF THE MANAGEMENT PLAN: In response to the 2008 FCRPS Biological Opinion which required development of a DCCO management plan, the Corps formed a DCCO interagency working group. The working group developed conceptual alternatives based on various percent reductions of the colony size and prepared a status assessment for the western population of DCCO. The Corps invited the agencies and tribes represented in the interagency workgroup to cooperate on the development of the EIS. The U.S. Fish and Wildlife Service (USFWS), U.S. Department of Agriculture's Animal and Plant Health Inspection Service – Wildlife Services (USDA-WS), Oregon Department of Fish and Wildlife (ODFW), and

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<sup>1</sup> The 2008 FCRPS Biological Opinion was supplemented in 2010 and 2014.

Washington Department of Fish and Wildlife (WDFW) accepted and served as cooperating agencies in preparing the FEIS.

The final plan developed by the Corps and the cooperating agencies, in coordination with other experts, such as NOAA Fisheries, utilizes lethal and non-lethal methods and a two-phased approach to reduce predation related losses of juvenile salmonids. During Phase I of the plan, the DCCO colony on East Sand Island will be reduced to approximately 5,600 breeding pairs over a period of 4 years by primarily lethal methods (i.e., culling and egg oiling). In Phase II, primarily non-lethal methods, including terrain modification, or similar habitat modification and hazing, will be used to ensure the colony size management objective is not exceeded. A monitoring and adaptive management framework will be employed to minimize impacts to the western population of DCCOs and other wildlife species and resources potentially affected by the action.

#### PUBLIC INVOLVEMENT:

All comments received on the Draft Environmental Impact Statement (DEIS) were assessed and considered, both individually and collectively, for revisions to the FEIS. In response to substantive comments, revisions to the model used in the NOAA Fisheries analysis supporting RPA Action 46 and the DCCO population model were made. To explain how the range of alternatives was developed, additional rationale was provided. To address comments about the scope and scale of past management feasibility studies, complete information on Corps-funded DCCO research and results to date was provided in an appendix. In response to comments regarding impacts to the entire western population of DCCO, and with input from the cooperating agencies, the FEIS included a modification to the primary strategy in Alternative C presented in Alternative C-1. Alternative C-1 reduces the total number of culled individuals and, in conjunction with culling, utilizes egg oiling, as a means of decreasing future productivity and population growth.

ALTERNATIVES CONSIDERED IN REACHING THE DECISION: Several alternatives were suggested during scoping and in public comments received on the DEIS. All comments were considered and some comments prompted further refinement of the alternatives. After further consideration, those alternatives that would not meet the purpose and need to address RPA Action 46 were eliminated from detailed study.

#### *Alternatives Considered but Eliminated:*

Many of the comments received during scoping and the public comment period suggested the Corps consider alternatives to DCCO management such as changes to dam operations, habitat restoration, harvest reduction, and hatchery reform. These suggestions were eliminated from detailed study because they did not meet the purpose and need to address RPA Action 46, which specifically identified DCCO management objectives for reducing predation of juvenile salmonids by DCCO. The Corps also considered social attraction as a method to redistribute the East Sand Island DCCO colony but dismissed this from detailed study because small-scale DCCO social attraction studies funded by the Corps provided no evidence to suggest that this method would be successful at the scale proposed for management in accordance with RPA

Action 46. Barging juvenile salmonids, delaying or staggering the release of hatchery fish, changing flow management by increasing river flows to inundate the island, or decreasing river flows to allow more marine forage fish to be available as prey for DCCOs, were all considered but dismissed because they would not meet the purpose and need.

Implementing a DCCO hunting season and introducing native predators were eliminated from detailed study due to concerns related to complying with the Migratory Bird Treaty Act (MBTA), and a preference for implementing alternative methods with less risk of impacting other species that utilize East Sand Island. Variations on the alternatives to reduce the DCCO colony were considered such as egg oiling only, non-lethal management only, lethal management only, and a greater or lesser degree of lethal take. These suggestions were all eliminated from detailed study because these variations would either conflict with the MBTA or would not be feasible or effective at the scale proposed for management.

*Alternatives Carried Forward for Detailed Study:*

In addition to the No Action Alternative (Alternative A), the Corps evaluated four action alternatives in the FEIS. All of the action alternatives would require a depredation permit under the Migratory Bird Treaty Act. A detailed description and discussion of the feasibility of the alternatives to meet the purpose and need is presented in Chapter 2 of the FEIS. The following is a summary of the alternatives:

**Alternative A**

Under this alternative, no action would be taken to reduce predation-related losses of juvenile salmonids by managing the DCCO colony on East Sand Island. Implementation of RPA Action 46 and fulfillment of the purpose and need of the FEIS would not be met and would require re-initiation of consultation with NOAA Fisheries. Additionally, DCCO monitoring and management feasibility studies conducted by the Corps on East Sand Island would cease.

**Alternative B**

This alternative would implement a primarily non-lethal management strategy (i.e., temporary habitat modification and hazing) with limited egg take (500 eggs) to disperse approximately 7,300 breeding pairs from East Sand Island. Boat- and land-based hazing supported with limited egg take on Corps' dredge material islands (250 eggs) would be used to discourage dispersed DCCOs from nesting and foraging throughout the Columbia River Estuary. Aerial and boat-based surveys in the Columbia River Estuary and Plateau and coastal Oregon and Washington would occur in order to monitor DCCO dispersal. Large-scale terrain modification or similar habitat modification on the west end of East Sand Island supplemented with the non-lethal methods would be used to ensure the colony does not exceed 5,939 breeding pairs in Phase II. Hazing efforts throughout the Columbia River Estuary would continue as needed in Phase II. Management would be considered successful once the DCCO management objective for colony size is achieved. The Corps would continue to monitor the DCCO colony and haze as necessary to maintain the management objective. To ensure hazing can continue after nesting has begun up to 750 eggs per year (i.e., 500 on East Sand Island and 250 elsewhere in the

Columbia River Estuary) would be requested in an annual MBTA depredation permit application submitted to the USFWS.

### **Alternative C**

This alternative would implement a primarily lethal management strategy (i.e., culling on-island and over-water within the typical foraging range of DCCOs on East Sand Island (approximately 25 km)) during Phase I. The Corps would implement Phase I under an adaptive approach to achieve the management objective for colony size in 4 years and minimize dispersal. Under Alternative C, 24 percent of the DCCO colony would be culled each year, resulting in a total take of 18,185 DCCOs (6,202, 4,887, 3,881, and 3,214 DCCOs in years 1 to 4, respectively). The Corps would submit an annual depredation permit application to the USFWS for the proposed individual take levels and associated nest loss from take of those individuals. Each year in Phase I, the Corps would monitor all specified locations of the Pacific Flyway Council Monitoring Strategy, in locations and at times when there are not already established monitoring efforts and secure funding sources in place, supplement data processing of aerial photography, and assist in preparing an annual summary report of the Pacific Flyway Council and other collected monitoring data. Through adaptive management, threshold take levels could change based upon observed abundance as compared to the predicted abundance for the East Sand Island colony and the western population. DCCO response to lethal take and knowledge gained during implementation would also inform adaptive management. Any adjustment to take levels would be coordinated with the Adaptive Management Team (AMT) composed of the cooperating agencies, NOAA Fisheries, and tribal entities. The same methods described in Phase I of Alternative B would be used to prevent expansion of the DCCOs to other areas on East Sand Island and to deter DCCO nesting on Corps' dredge material islands in the Columbia River Estuary. Phase II would be the same as Alternative B on East Sand Island. Because the abundance of DCCOs would be reduced, hazing and non-lethal management efforts are predicted to be less than those described in Alternative B.

### **Alternative C-1**

Similar to Alternative C, this alternative would implement a primarily lethal management strategy to reduce the colony, but a lower percentage (i.e., 13.5 percent) of the colony would be culled each year and egg oiling would be used as a targeted means of nest destruction. This alternative would result in a total take of 10,912 individual DCCOs (3,489, 3,114, 2,408, and 1,902 DCCOs in years 1 to 4, respectively). In addition to culling individuals, approximately 46 percent of the available nests in years 1–3 would be oiled (15,184 nests oiled in total; 5,879, 5,247, and 4,058 in years 1–3). In addition to direct oiling of eggs, there is a potential for nests to be lost when individual DCCOs are culled. In accounting for this, there is a potential for loss of 72.5 percent of nests in years 1–3 and 13.5 percent in year 4 (26,096 nests lost in total from egg oiling and associated nest loss from culling). The Corps would submit an annual depredation permit application to the USFWS and follow the same process as Alternative C for adaptive management and monitoring the western population. The same non-lethal methods supported with direct egg take described in Phase I of Alternative B would be used to prevent expansion of DCCOs to other areas on East Sand Island. Similar hazing and egg collection

efforts would be implemented to deter nesting on Corps' dredge material islands in the Columbia River Estuary. Phase II would be the same as Alternative B.

#### **Alternative D**

This alternative would implement the same strategy as Alternative C-1 in Phase I. In Phase II the remaining (approximately 5,600 breeding pairs) DCCOs would be hazed off East Sand Island (with limited egg take) to exclude all nesting by DCCOs from nesting on East Sand Island in addition to the terrain/habitat modification. Since a large number of DCCOs would be dispersed from East Sand Island in Phase II, monitoring efforts and hazing efforts in the Columbia River Estuary would be similar to those described in Phase I of Alternative B.

FACTORS CONSIDERED IN SELECTING ALTERNATIVE C-1: Three primary factors were considered in the evaluation of alternatives and the decision to select Alternative C-1. First, the plan had to be feasible in achieving the purpose and need given the large geographic scope of the Columbia River Estuary (i.e., 172 km) and timelines identified in the FCRPS Biological Opinion RPA (i.e., colony size reduction to be achieved by 2018). Second, the plan had to minimize, where possible, adverse impacts to the western population of DCCOs and other nesting waterbirds on East Sand Island. Third, the plan had to consider how other species and resources, as well as states, local agencies, and the public, might be affected by dispersal of a large number of DCCOs.

In considering feasibility and the potential effects of dispersal, information from other DCCO management programs and Corps' funded management feasibility studies conducted during 2008–2013, provided relevant information about DCCO commitment to East Sand Island and the Columbia River Estuary, likely dispersal locations, and the feasibility of various techniques when applied at the scale proposed for management. In considering impacts to the western population of DCCOs, a population model was developed to evaluate the effects of lethal removal and predict future population levels and trends. For the purposes of the FEIS, the USFWS defined a sustainable population as one that is able to maintain a long-term trend with numbers above a level that would not result in a major decline or cause a species to be threatened or endangered. Based on input from the USFWS, information presented in the FEIS, past population trend data and the current number of active colonies, the western population was considered to be sustainable around 41,660 breeding individuals.

ENVIRONMENTALLY PREFERABLE ALTERNATIVE: Based on the comparison of environmental effects evaluated in the FEIS, Alternative C-1 is considered environmentally preferable because it best balances the competing needs of the biological resources considered in the FEIS and represents the widest range of benefits to ESA-listed juvenile salmonids while reducing risk to the sustainability of the western population of DCCOs in the long-term. While Alternative C-1 reduces the abundance of DCCO through culling and egg-oiling, implementation will occur within a well-monitored and adaptive management framework with proposed take levels being reviewed annually by USFWS and contingent on a MBTA permit. In Phase II, East Sand Island would maintain the historic, cultural and natural aspects of the island to support the biodiversity of wildlife on the island. Leaving the underlying foundation of the island in place by

modifying the terrain would fulfill the Corps' need to maintain the Columbia River Federal Navigation Channel because East Sand Island and nearby pile dikes and jetties function as a system to ensure the channel's stability.

MEASURES TO AVOID AND MINIMIZE ENVIRONMENTAL HARM: All practical means to avoid or minimize adverse environmental effects have been incorporated into the selected management plan and are described in the FEIS. Dispersal will be minimized by monitoring the response of DCCOs on and off East Sand Island. Management actions could cease temporarily if DCCO dispersal is greater than 70 percent of predicted abundance following a culling or egg oiling event. Direct adverse impacts (i.e., "take" as defined by the MBTA) to other bird species during culling will be minimized by establishing a shooting protocol, training personnel, increasing the number of individuals in the field adequately trained in species identification, removing personnel unable to adequately perform duties, ceasing a particular lethal technique, or avoiding mixed species areas. Disturbance to species by personnel on the island will be minimized by building a network of privacy fences that partition the western portion of East Sand Island into different sub-areas, traveling in established routes and avoiding high concentrations of species when possible. To minimize impacts to human safety, East Sand Island will be closed to the public during implementation, and personnel will adhere to all safety standards of firearm operation and training as described in the USDA-WS Policy Manual and Directive 2.615.

To minimize impacts to DCCOs nesting on East Sand Island during implementation, actions will be timed to minimize loss of eggs in active nests (outside of what is planned) by: 1) implementing actions frequently enough so nest destruction and hazing occur before egg laying; 2) reducing or ceasing hazing and habitat modification techniques within a sufficient distance of an active nest (i.e., once an egg is laid); 3) removing nesting materials or destroying nests only if the nest does not have egg(s) in it; and 4) reducing or ceasing hazing if higher than normal levels of subsequent predation might be expected. Nests with chicks will be avoided to the extent possible and actions would occur outside the breeding season to the extent possible to reduce effects to nesting birds and chicks. The Corps, USFWS and USDA-WS will convene to evaluate the feasibility of continuing certain actions during the breeding season once chicks are observed and to determine the best timing for future actions.

*Monitoring and Adaptive Management:*

To minimize impacts to the western population of DCCO, the Corps will follow the protocol outlined in the Pacific Flyway Council Monitoring Strategy. Each year under Phase I, the Corps will monitor all specified locations of the monitoring strategy, where and when there are not already established monitoring efforts and secure funding sources, supplement data processing of aerial photography, and assist in preparing an annual summary report to the Pacific Flyway Council and other collected monitoring data. The objective of this monitoring strategy is to detect a 5 percent annual change in the number of breeding pairs in the western population of DCCOs. Monitoring will be used to evaluate and adjust future management activities that will allow time for annual evaluation, adaptive management changes, and increase the ability for the western population to respond from a potential catastrophic event.

Adjusting the amount of take will be determined based on observed abundance of DCCOs on East Sand Island and the western population, as well as behavioral responses of, and effects to, DCCOs and other wildlife species from management. For adjusting take levels, the observed abundance on East Sand Island will be determined by the peak number of DCCO breeding pairs counted on the island after culling has taken place in a given year. If culling occurs after peak abundance surveys, the number culled will be accounted for in estimating the peak colony count. The observed abundance of the western population will be the estimate of the breeding population determined by the results of implementing the Pacific Flyway Council Monitoring Strategy.

Adjustments to take levels will be based upon the thresholds and descriptions in the FEIS and include a two-step evaluation process with regard to whether observed abundance is less than, greater than, or within one standard deviation of what was predicted in the population models for both the western population of DCCOs and the colony on East Sand Island. Take could increase if, for both the East Sand Island colony and the western population, the observed abundance is greater than one standard deviation of the predicted abundance. Increased take could also be considered in years 3–4 above what is proposed if authorized take the previous year was not fulfilled and if the observed abundance East Sand Island is within one standard deviation above predicted abundance while the observed abundance for the western population is within one standard deviation above predicted abundance for that year. Conversely, take could decrease or cease if observed abundance of the western population is lower than one standard deviation below predicted abundance.

The Corps will convene the AMT to meet to review information acquired during implementation, assess the effectiveness of techniques and guide future management actions. Adjustments in techniques will be coordinated through the AMT and specified in depredation permit applications. The Corps will be the decision making body for the AMT but will consider input and recommendations from the team.

COMMENTS RECEIVED ON THE FEIS: A Notice of Availability was published in the Federal Register on February 13, 2015. The notice was amended February 20, 2015 to correctly identify the EIS as a Final EIS. The comment period for the FEIS ended March 16, 2015. There were many comments received on the FEIS, a majority of which were duplications of comments received on the DEIS that were considered and incorporated in the FEIS or were otherwise responded to in Appendix J of the FEIS. The Corps considered all comments received on the FEIS in making this decision, and responded to those comments that raised substantive issues and warranted additional discussion. Responses to these comments are provided in the enclosed Comment Response Document (Appendix A). The comments addressed a variety of issues related to impacts on other bird species that occupy East Sand Island or its environs (brown pelicans, pelagic and Brandt's cormorants, and Caspian terns) and on non-target DCCOs through dispersal of East Sand Island DCCOs; impacts on the stability and sustainability of the larger western population of DCCOs; cumulative effects of the combined Caspian Tern and DCCO management activities; and the thoroughness of monitoring conducted in previous years and during management. The Corps also received comments on the validity of the range of alternatives analyzed in the FEIS and the eligibility of the action for an MBTA depredation permit because of concerns regarding the take of non-target bird species

and the potential to threaten the sustainability of the western population of DCCOs. As further discussed in the Comment Response Document, the analysis discussed in the FEIS previously addressed many of these issues. In sum, after reviewing each comment received on the FEIS, the Corps maintains its decision to implement the management plan as described in Alternative C-1 in the FEIS.

UPDATED INFORMATION ON THE EAST SAND ISLAND DCCO COLONY AND WESTERN POPULATION ESTIMATE: The Corps funds annual monitoring of the East Sand Island DCCO colony. After the FEIS was released, 2014 abundance estimates for the East Sand Island DCCO colony and the western population of DCCOs were finalized. The 2014 estimate for the East Sand Island DCCO colony was 13,626 (95 percent confidence intervals = 13,334–13,918) breeding pairs. This is an approximate 8 percent decrease from the colony size in 2013. The Corps, in DCCO population model of Appendix E-2 in the FEIS, described that the annual percent change in colony size averaged approximately 11 percent during 2004-2013, with a maximum percent change of 21 percent between 2012 and 2013. The 2014 estimate is well within the natural, annual fluctuation in colony size described in the FEIS. The 10-year average including the 2014 estimate would be approximately 115 breeding pairs greater than the 10-year average reported in the DCCO population model (2004–2013 average = 12,917 breeding pairs). This slight difference in breeding pairs would have no discernible effect on modeling results or FEIS effects analysis and conclusions for impacts to DCCOs under Alternative C-1.

The Pacific Flyway Monitoring Strategy for the western population of DCCOs was implemented for the first time in 2014 and results were provided to the Pacific Flyway Council on March 10, 2015. Preliminary results at the time of the FEIS release were described in Appendix F-2 and, in Appendix E-2 page 9, it was described that, “western population data collected in 2014 (before management begins) by the Corps, USFWS and States within the Pacific Flyway, may be considered as part of the adaptive management approach by the Corps and USFWS prior to initiating actions at East Sand Island in 2015.” The 2014 estimate for the western population of DCCOs was 38,018 (95 percent confidence intervals = 37,398–38,637) breeding pairs. This population estimate is slightly higher than the estimate of the western population analyzed in the FEIS (i.e., ca. 2009 estimate of 31,200 breeding pairs). Thus, the effects to the western population from selecting Alternative C-1 in the context of a slightly higher western population estimate were previously described in the FEIS and effects could be potentially less than described if the 2014 western population estimate represents a true increase in abundance.

COMPLIANCE WITH APPLICABLE ENVIRONMENTAL LAWS: Per CEQ regulations at 40 C.F.R. § 1502.25, to the fullest extent possible, the Corps prepared the FEIS with analyses and surveys pursuant to other environmental laws and executive orders. On July 19, 2012, the Corps published a Notice of Intent in the Federal Register to prepare an EIS for DCCO management. This notice identified the conceptual alternatives developed by the working group and stated that non-lethal and lethal methods were being considered. On October 25, 2012, the Corps issued a public notice announcing the scoping comment period and three public meetings. Three public meetings were held in Olympia, Washington, Portland, Oregon, and Astoria, Oregon during November, 2012. The Corps and cooperating agencies reviewed the scoping comments and developed alternatives and analysis for the DEIS. A Notice of

Availability for the DEIS was published in the Federal Register on June 20, 2014. Two public meetings and four webinars were held during summer of 2014. The comment period closed August 20, 2014.

The FEIS listed all permits and approvals to be obtained in implementing the proposal. Due to the differences in timing and environmental effects between the actions proposed in Phase I and II, each phase was evaluated for compliance. The terrain modification of Phase II will likely involve excavation of sand and placement of fill material into waters of the U.S. and/or State, however, the final quantities of removal and fill have not yet been determined and final disposal locations have not been selected to complete compliance with all applicable environmental laws. For this Phase II action, the Corps has initiated the studies and analysis for reviews under these laws to the fullest extent possible and will complete these reviews when impacts can be sufficiently quantified. For the FEIS, quantities were estimated and likely disposal locations were identified and the potential effects to the affected environment were described.

*Migratory Bird Treaty Act:* The USFWS was a cooperating agency to the FEIS. Development of the management plan and measures to minimize impacts to migratory birds to the extent practicable was coordinated with USFWS. The Corps will coordinate with the USFWS on information needs and apply for MBTA permits to implement the action.

*Bald and Golden Eagle Protection Act:* Bald eagles do not nest on East Sand Island but have been observed foraging on eggs, chicks, and adult birds on the island. Repeated human disturbance on the island could cause bald eagles to flush and potentially limit some foraging opportunity, but bald eagles are opportunistic and generalist predators and actions associated with the management plan would not appreciably limit or change overall prey availability. Therefore, these impacts would not substantially interfere with normal feeding behavior and would not result in "take" as defined by the Bald and Golden Eagle Protection Act.

*Endangered Species Act:* Consultation with NOAA Fisheries for ESA-listed species under its jurisdiction for Phase I was completed in the 2014 FCRPS Supplemental Biological Opinion. The Corps has coordinated with NOAA Fisheries on the terrain modification and a Biological Assessment (BA) will be prepared and Section 7 consultation completed prior to implementing Phase II actions. Informal consultation with the USFWS for ESA-listed species under its jurisdiction for both phases of the action was initiated February 12, 2015. The Corps has determined the proposed action *may affect, but would not likely adversely affect* streaked horned larks, bull trout, Columbian white-tailed deer or their designated critical habitat. The USFWS concurred with this finding in a letter to the Corps dated March 5, 2015.

*Magnuson-Stevens Fishery Conservation and Management Act:* Consultation with NOAA Fisheries on the effects to essential fish habitat for Phase I actions was included in the consultation with NOAA Fisheries in the 2014 FCRPS Supplemental Biological Opinion. Phase II consultation on the effects to essential fish habitat will be conducted concurrently with ESA Section 7 consultation.

*Clean Water Act:* The Corps followed all applicable substantive legal requirements per 33 C.F.R. § 336.1(a). This included issuance of a public notice dated June 12, 2014, which notified the public of an opportunity to request a public hearing (a hearing was requested, but denied because the public meetings associated with the NEPA process provided opportunity for comment), and consideration of the Section 404(b) (1) guidelines in an evaluation of the proposed fill from the terrain modification in Phase II. As the engineering plans are completed and disposal locations are selected, the Section 404(b) (1) evaluation may be supplemented. This would be completed prior to project construction per Corps' Engineering Regulation 1105-2-100 C.6 (e). A permit from the Oregon Department of State Lands may be required for the terrain modification proposed for Phase II, for wetlands or waters of the State that could be filled when disposing of excavated sand. No permit would be required if these areas are avoided.

*National Historic Preservation Act:* The Corps determined that implementation of the proposed DCCO management plan is an undertaking with the potential to cause effects on historic properties. A cultural resources report was prepared which identified the area of potential effect and historic properties on East Sand Island that are potentially eligible to the National Register. The Corps initiated consultation with the Oregon State Historic Preservation Office (SHPO) in a letter dated February 6, 2015. The Corps has determined the proposed undertaking in Phase I (which has minor ground disturbance) will have *no effect* to historic properties and is seeking concurrence from SHPO. Due to extensive ground disturbance associated with terrain modification in Phase II, several historic properties could be affected. The Corps will be submitting engineering plans when they are finalized and complete consultation for Phase II prior to implementing any work that could affect historic properties.

*Coastal Zone Management Act:* East Sand Island is federal land and is excluded from the state coastal zone under Section 304(a) of the Act. In Phase I, there will be no effects off East Sand Island that would affect any coastal use or resource. However, there may be certain activities such as the placement of excavated material below high tide line associated with the terrain modification that will likely occur in state waters that are within the coastal zone. A consistency determination will be submitted to Oregon Department of Land Conservation and Development for Phase II when off federal land effects are known, such as quantities of fill and locations for disposal sites.

*Executive Order 13175 Tribal Consultation:* The Corps submitted letters requesting participation in government to government consultation to eighteen federally recognized tribes. The Colville Confederated Tribes and the Confederated Tribes of the Umatilla Indian Reservation entered into government to government consultation with the Corps and collaborated with the Corps and cooperating agencies during the NEPA process and reviews of the FEIS.

#### *Tribal Treaty and Trust Responsibilities*

Treaties between the U.S. and some Columbia Basin Tribes document agreements reached between the U.S. government and these Tribes. The U.S. government has a trust responsibility to protect certain tribal rights under these treaties, and in carrying out its fiduciary duty, it is the

Corps' responsibility to ensure that the treaty rights are given full effect. Presidential executive orders reserved lands for other Columbia River Basin Tribes, and the U.S. government has extended rights to hunt and fish to these Executive Order Tribes as well. In formulating and implementing activities that have tribal implications, the Corps will continue to consult with Columbia Basin Treaty and Executive Order tribes.

*Executive Order 13112 Invasive Species:* A mix of native and non-native plant species is found on East Sand Island. Several tidal and non-tidal wetlands and forested areas are present. A revegetation and invasive species plan will be developed prior to implementation of Phase II terrain modification and best practices will be employed during Phase I to minimize the potential to spread non-indigenous plant species on the island from field personnel and equipment used.

*Executive Order 13186 Responsibilities of Federal Agencies to Protect Migratory Birds:* The Department of Defense (DoD) signed a Memorandum of Understanding (MOU) with the USFWS, July 31, 2006, to comply with the Executive Order 13186. The MOU states the DoD shall, among other things, "encourage incorporation of comprehensive migratory bird management objectives in the preparation of DoD planning documents (...including NEPA analyses)." During the NEPA process for the management plan, the Corps coordinated with the USFWS and incorporated measures to minimize impacts to migratory birds into the management plan to the extent practicable.

*Executive Order 12898 Environmental Justice:* No subsistence, low-income or minority communities would be disproportionately affected by implementation of the plan as none currently access or utilize East Sand Island.

#### *Northwest Electric Power Planning and Conservation Act*

Under the Pacific Northwest Electric Power Planning and Conservation Act (Northwest Power Act), the Corps is to exercise its responsibilities for operating the FCRPS in a manner that provides equitable treatment for fish and wildlife with other purposes for which the Corps facilities are operated and managed, and to take into consideration in its decision making the Northwest Power and Conservation Council's (Council) Fish and Wildlife Program to the fullest extent practicable.

The Corps considered the Council's 2014 Columbia River Basin Fish and Wildlife Program in the preparation of the FEIS and plans to move forward with implementation of RPA Action 46 as addressed in the 2014 FCRPS Supplemental Biological Opinion and in the Corps 2014 Supplemental Record of Consultation and Statement of Decision (ROCASOD).

#### SUMMARY

In the FEIS, the Corps has considered the purpose and need for a management plan, developed the proposed plan to meet the purpose and need, analyzed a reasonable range of alternatives that adequately address the purpose and need, identified the extent to which the impacts of the action could be practicably mitigated, and incorporated all practicable measures

into the management plan to minimize environmental harm. The Corps has also considered public and agency comments received during the FEIS review period. In balancing the predicted effects of the various alternatives presented in the FEIS and the public interest, the management plan described in Alternative C-1 is the selected plan. Alternative C-1 reflects implementation of all reasonable, practicable means to avoid, minimize, or compensate for environmental harm from the action. All applicable laws, regulations, and the objectives of salmon and steelhead recovery plans, waterbird conservation plans and the Pacific Flyway Council management documents and policies were considered in evaluating these alternatives.

In summary, I find that the selected plan represents the course of action that, on the balance, best serves the public interest. This Record of Decision is the Corps' final action under the NEPA process.

Issued on March 19<sup>th</sup>, 2015.



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JOHN S. KEM  
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## Appendix A: Comment Response Document

Commenter	Issue	Comment	Response
<b>COMMENTS ON EIS ANALYSIS</b>			
Pacific Eco-Logic	Effects to California brown pelicans—insufficient	The FEIS recognizes that the preferred alternative will result in disturbance to California brown pelicans, but it does not consider factors such as, 1) impacts of chronic disturbance and stress on pelican body condition, 2) the pelican’s ability to efficiently exploit the preferred foraging areas if disturbance limits access to the central roost, and 3) potential population level effects of roost site disruption given the current status of the subspecies, including cumulative impacts and environmental conditions throughout the range.	The FEIS describes the use of East Sand Island and response of California brown pelicans to past Double-crested Cormorant (DCCO) dissuasion and collection activities, which have been times of considerable human disturbance (see FEIS Section 4.2.3). Despite these active management actions, involving considerable human presence, California brown pelicans persisted and grew in number as the season progressed. California brown pelicans adjusted their spatial distribution and largely restricted their roosting to the east end of the island rather than abandoning the island altogether. While the California brown pelican roost may be periodically disturbed, no evidence to date would suggest that DCCO management activities would cause such stress as to alter body condition, alter the pelican's abilities to use the estuary for foraging or cause them to abandon East Sand Island. Furthermore, the actions on East Sand Island will be intermittent and therefore will not likely affect California brown pelicans more than described in the FEIS, even if management would continue into or past pelican peak abundance.
Pacific Eco-Logic	Effects to California brown pelicans—timing of activities	The FEIS suggests that California brown pelicans will be buffered from impacts of the cormorant culling since those actions will take place largely before peak pelican numbers are expected to arrive. However, the timing of the proposed cormorant shooting will occur during a more sensitive time, when pelicans are a) potentially most stressed from early migration, b) have less access to alternate roost habitat in Grays Harbor and Willapa Bay due to Bald Eagle activities (Jaques and O’Casey 2006), and c) may be attempting to breed as they did in 2013 and 2014.	As discussed in the FEIS, the actions on East Sand Island are not expected to unduly stress California brown pelicans that roost there (see prior response). The few nesting attempts in the past have occurred despite human activity and disturbance on the island. The California brown pelican nesting area used in June 2014 (on the east side of the island) will be available during the management period. Culling will occur on the western portion of the island; no nesting attempts have occurred in that area to date. Disturbance due to management on the west side of the island may flush birds and they will likely relocate and roost on undisturbed portions of the island. The expected frequency and locations of management activities are not expected to have greater effects to California brown pelicans than analyzed in the FEIS.

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Pacific Eco-Logic	Effects to California brown pelicans—new information on productivity	Following several years of very poor breeding success in the Southern California Bight post-delisting (Harvey 2013), there was nearly complete breeding failure in the Gulf of California Mexico in 2014, where the majority of the subspecies nests (Anderson and Gress 2015). This ‘bust’ was unprecedented in over 40 years of monitoring. The population has apparently declined since 2009 (Anderson et al. in prep.). Age ratio data collected in the migratory range during 2014–2015 reflects the lack of recruitment in recent years (Jaques and Anderson, unpubl.).	As stated in the FEIS (see Section 4.2.3), effects to California brown pelicans from the DCCO management actions on East Sand Island are expected to be minimal particularly with regard to productivity, as East Sand Island is a roosting site and few pelicans have been recorded nesting (6 to 11 pairs built nests in 2014, no eggs were observed, all were abandoned). Any actions on East Sand Island would have little connectivity to the lack of productivity in the traditional breeding range in other geographical locations of the California brown pelicans over the past few years.
Pacific Eco-Logic	Effects to California brown pelicans—population information and predictions	El Nino Southern Oscillation (ENSO) conditions are predicted to impact the California Current System (CCS) through spring 2015, which indicates that another year of breeding failures may occur to the south due to lack of prey availability. Unusually high numbers of California brown pelicans at East Sand Island in spring correspond to breeding failures in the south (Jaques et al, unpubl.), so early season reliance on East Sand Island by large numbers of pelicans during the proposed cormorant cull is forecast for 2015. Increased constriction of the Caspian Tern colony and associated hazing activities by the Corps will further impact the area that California brown pelicans can use to rest and maintain plumage.	The FEIS described the area used by California brown pelicans during dissuasion research (see Chapter 4, page 42; Figure 4-17). Results from monitoring in 2014 indicate that California brown pelicans continue to use the southeastern area near the Caspian tern colony to rest, maintain plumage and potentially nest, and this area will continue to be available. Increased constriction of the Caspian tern colony will not impact the area used by California brown pelicans, increased hazing activities and placement of dissuasion materials associated with Caspian tern management are not planned beyond what was implemented in 2014. Therefore effects greater than those observed in 2014 and described in the FEIS are not likely.
Audubon Society of	Stability of the DCCO western	The data in the FEIS does not support the Corps’ assertion that the number of DCCO colonies have	In the FEIS, all known DCCO breeding colonies within the affected environment were described and listed in Appendix F-1 and additional

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Portland, National Audubon Society	population outside East Sand Island	increased since 1990. The Corps cites Carter et al. (1995) as the baseline to assert that there were 99 active colonies in 1995 in BC, Washington, Oregon, and California. It then cites Pacific Flyway Council (PFC) (2013) to assert that there were 160 active cormorant colonies between 2008 and 2012. Based on these studies, the Corps suggests that there are approximately 60 more DCCO colonies currently than there were in the early 1990s. The different methodologies and geographic scope of Carter et al. and PFC makes a side by side comparison meaningless and is fatal to one of the Corps' most critical assumptions: that the number of cormorant colonies has increased over time.	<p>colony information was provided in Chapter 3.2.2. In Chapter 3, page 19 and in Appendix F-1 of the FEIS, it was described that colony data came from two primary sources (Pacific Flyway Council (2013) and Adkins and Roby (2010)) and those sources were not directly comparable due to the issues described in the comment. The analyses and inference in the FEIS were predominantly based upon these data sources, which were subsequent to the Carter et al. (1995) assessment.</p> <p>The particular sentence highlighted from the FEIS in reference to Carter et al. (1995) does contain an error in that only coastal colonies were included in the FEIS estimate for the Carter et al. (1995) estimate, whereas the PFC (2013) estimate includes both coastal and interior colonies. However, this does not change the general conclusion of the statement. For B.C., WA, OR, and CA, Carter et al. (1995) documented 99 active coastal colonies (Table 1 and Appendix 1) and 20 interior colonies (i.e., those designated EA (established active) and NA (newly active)). Thus, Carter et al. (1995) documented 119 active colonies. However, Carter et al. (1995) defined active colonies two ways based on status: (1) "established-active"—known before 1980–1985 with nesting on the last year census, and (2) "newly-active"—known only since 1980–1985 with nesting on the last year census. Carter et al. (1995) defined a colony "active" if it contained at least 1 breeding individual. PFC (2013) defined an active colony as those with <math>\geq 5</math> nests (i.e., <math>\geq 10</math> breeding individuals). Summarizing Appendix 1 and Appendix 2 of Carter et al. (1995) using the colonies and counts listed, there were 8 active coastal and 1 active interior colony that had <math>&lt; 10</math> breeding individuals (i.e., 9 in total). Thus, Carter et al. (1995) reported 110 (i.e., 119 - 9) active colonies, not 99 as stated in the FEIS, that were directly comparable to the 160 active colonies reported in PFC (2013). This suggests there are approximately 50 more colonies, not 60, as stated in the FEIS, but does not</p>

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			<p>change the general conclusion made. Carter et al. (1995) reported both coastal and interior colonies in their assessment and included the same geographic areas as the later assessments. As Carter et al. (1995) is the best available data for that time period, it does allow for a meaningful comparison with current estimates. Additionally, neither PFC (2013) nor Adkins and Roby (2010) collected DCCO colony data in standardized, statistically valid sampling design. Those assessments were a compilation of data from a variety of sources and individuals, as was the same methodology used by Carter et al. (1995).</p>
Audubon Society of Portland	Stability of the DCCO western population outside East Sand Island	<p>The FEIS predicates its preferred alternative on the assertion that DCCO populations outside of the Columbia River Estuary are “relatively static over the past two decades.” The assertion that populations are relatively static over the past two decades is not supported by the analysis provided. In summary, of the eight major regions described outside of the Columbia River Estuary, only one region, Coastal Oregon, is potentially seeing very modest increases and that area is proposed by the state fish and wildlife agency for significant lethal control activity at some of the most active estuaries. Two regions, Coastal British Columbia and Northern Coastal California are experiencing significant declines. Four regions, Interior Oregon, Washington, California, and Coastal Washington lack adequate data to establish a trend. One region, Interior British Columbia, has only a single colony. There is simply no basis on which to conclude that western populations of DCCO within</p>	<p>Statements and conclusions in the FEIS were made using best available data for the applicable time period. Regarding the number of active colonies, see prior comment. Additionally, Figure 4-8 of the FEIS highlights the fact that, based upon best available count data between the two time periods in question, DCCO abundance outside of the Columbia River Estuary has remained relatively similar. These pieces of information, when considering the western population as a whole, support the conclusion in the FEIS that DCCO abundance outside of the Columbia River Estuary is relatively similar to ca. 1990 population levels. Furthermore, all trend data (i.e., BBS and colony count data), when considering the western population as a whole, show significant, positive increase over the past decades.</p>

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		the defined affected, but outside the Columbia River Estuary, are static.	
Audubon Society of Portland	Effects to non-target DCCO from Alternative C-1	This strategy is particularly irresponsible because if this action triggers a mass flushing response, the Corps will have no mechanism to address the situation—in other words, by the time the Corps is aware that it has triggered a mass flushing response, it may have already caused take far in excess of what is allowed under its permits. None of the mechanisms described in the FEIS fully account for this possibility. Proposed lethal control could result in substantial non-target take of DCCO due to flushing of birds from the colony above and beyond the numbers being targeted.	Detailed Adaptive Management thresholds, best management practices and impact avoidance measures, and extensive monitoring, and formation and evaluation of future management actions through an Adaptive Management Team (AMT) are described extensively throughout the FEIS (see Chapter 2, Chapter 4, and Chapter 5) to reduce the potential for the scenario and effect described. The FEIS and population model accounts for the potential of take as described in the comments by assuming that for each individual taken, their associated nest would be lost. A full range of effects from flushing and disturbance are discussed in the FEIS including emigration and colony abandonment (see Chapter 4, page 12). Management activities could result in indirect "take" (i.e., loss of eggs or chicks) and this is described in the FEIS, Chapter 2, page 3. The FEIS discusses all of the measures that will be used to minimize this potential for take.
Audubon Society of Portland	Effects to the sustainability of the western population	By its own definition, the Corps is intentionally creating unstable DCCO populations in the Western United States. An unstable population is one which is vulnerable to a major decline. By the time the Corps detects a 5% change in the number of breeding pairs, it may be too late to reverse the instability that the Corps has already created. In other words, the Corps appears to be proposing to intentionally create instability by reducing populations below what it has defined as stable and then reassure stakeholders by proposing to monitor for instability in the population	<p>The FEIS Executive Summary states on page 10:</p> <p style="padding-left: 40px;">A sustainable population was defined for this Final Environmental Impact Statement as a population that is able to maintain a long-term trend with numbers above a level that would not result in a major decline or cause a species to be threatened or endangered. Based on the past population trend and the current number of active colonies, it appears the western population is sustainable around 41,660 breeding individuals (ca. 1990 abundance).</p> <p>Long term population trend post-management is the determining factor for sustainability and whether a population will potentially become threatened. The population post-management is predicted to increase and potential adaptive management adjustments are described for what would occur if</p>

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			<p>the western population is not responding as expected (see Chapter 5 page 14, Tables 5-3 and 5-4). The western population will be evaluated from an annual survey and by comparing predicted population levels to the derived population estimate from the survey. The ca. 1990 population level is a known data point in time. This population has increased from numbers much lower than described for ca. 1990. Much lower population levels may be sustainable. As stated in the FEIS (Chapter 4, page 24), the western population would likely rebound to some extent if abundance levels were to temporarily drop below the ca. 1990 level given that: 1) mortality factors known to limit DCCO populations prior to the 1970s have been reduced or eliminated, 2) since the ca. 1990 time period the western population has exhibited growth on the whole, and 3) the sum of the breeding colony counts of the western population (excluding East Sand Island) ca. 2009 is similar to that observed in ca. 1990. Risk to the long-term sustainability of the western population is further reduced given that take on East Sand Island would occur within a well monitored and adaptive management framework (see Chapter 2, Section 2.1 and Appendix E-2), monitoring of the western population will occur annually and this information will be used to evaluate and adjust future management activities, and an annual depredation permit application would need to be prepared, reviewed, and issued prior to take. The Pacific Flyway Councils' Monitoring Strategy identifies the precision of the survey as being able to detect a 5% annual change. No "instability" or "stability" threshold was established. The ability to detect a trend from the monitoring strategy is different than the adaptive management strategy in the FEIS that compares the western population DCCO model population predictions to the annual population estimate derived from the annual monitoring of the western population, with triggers for management adjustment if the western population is responding one standard deviation from what is predicted. Management actions will be</p>

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			adjusted if the population is not responding as predicted.
Audubon Society of Portland	Effects to DCCO	The FEIS states, “These effects (flushing, predation, nest abandonment, nest failure) would be greater the longer management actions extend beyond the initiation of nesting” (FEIS at 4-29). If the preferred alternative is adopted, we believe that it would be contrary to the terms of the FEIS for the Corps to attempt to implement the FEIS in the spring of 2015.	See comment above about measures described in the FEIS to minimize potential effects before, during, and throughout the breeding season. Additionally, in Chapter 2, pages 17 and 34, and Chapter 5, page 10 of the FEIS, it was described that the Corps, along with the federal cooperating agencies, would evaluate the feasibility of continuing certain actions during the nesting season once chicks are observed. Implementation of actions in 2015 would be consistent with the measures described in the FEIS for conducting management actions before, during, or throughout the breeding season depending upon when actions occur.

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Audubon Society of Portland	Cumulative effects from combined Caspian tern (or CATE) and DCCO management	<p>The FEIS fails to consider the cumulative impacts that could result from significant management activities involving both DCCO and Caspian terns on East Sand Island and the surrounding area during the spring/summer of 2015. If the preferred alternative is adopted this will result in significant additional human activity and habitat management on East Sand Island during the spring of 2015 above that which is anticipated in the DCCO FEIS. It also could result in significant additional hazing activity on East Sand Island or other Columbia River Estuary Islands if Caspian terns relocate to any of these locations. The FEIS fails to adequately address the cumulative impacts that may result from implementing both the EA and the EIS during the same exact time period. These actions could have direct additional impacts on Caspian terns and DCCO as well as other non-target species that are not anticipated in either NEPA document.</p>	<p>The Corps described the Caspian Tern Management Plan and potential reduction of Caspian tern habitat from 1.5 to 1 acre as a reasonably foreseeable future action in Chapter 4, Section 4.4.2 in the FEIS. After the release of the FEIS, the Corps posted a public notice announcing the proposed action to reduce Caspian tern habitat planned for spring 2015 in an Environmental Assessment (EA). Under baseline conditions (i.e., the "no action" in the Caspian Tern EA) Caspian terns are dissuaded from nesting on East Sand Island outside the designated colony area (currently 1.5 acres). It is likely that dissuasion material (i.e., ropes, flagging and stakes in a grid pattern) would again be placed on the DCCO colony similar to what occurred in 2014 under the scenario or either alternative being implemented. As noted in the comment, there is a potential for increased human hazing and presence on East Sand Island from implementing both the Caspian tern and DCCO management programs, scheduled for spring 2015. This increase in human activity and disturbance on the island has the potential to cause a range of effects to wildlife species on East Sand Island from flushing, loss of eggs, nest or colony abandonment. These effects were described in the FEIS (see Chapter 4).</p>
Audubon Society of Portland	Monitoring	<p>First, we question why the Corps has not been monitoring at this level over the past several years in order to get a credible current baseline of DCCO populations levels and trends. Second, with culling set to begin during the 2015 nesting season which is now about to begin, we question whether the Corps could get funding, resources and contracts in place in time to do these surveys during the first year of implementation.</p>	<p>The Corps funded the 2009 DCCO status assessment (Adkins et al.) and has monitored the East Sand Island colony to determine peak colony size and productivity since 1998. This monitoring contributed to the first survey of DCCOs under the Pacific Flyway Council (PFC) Monitoring Strategy in 2014. Additionally, the Corps, as described in the FEIS, is committing additional funding resources for future DCCO monitoring efforts of the western population of DCCOs. The Corps, unrelated to its decision regarding the DCCO management plan, has secured funding to assist the USFWS in implementing the PFC monitoring strategy in 2015 in support of RPA action 67 that requires the DCCO population in the Columbia River Estuary and the</p>

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			<p>population’s impact on out-migrating juvenile salmonids be monitored. With the first complete survey of the PFC monitoring strategy finished in 2014, data compiled and analyzed, and the USFWS leading many of these coordination efforts in collaboration with the states and PFC, the necessary lead time for monitoring in 2015 would be less than the prior year, as the Corps will be funding efforts through the USFWS so that monitoring efforts and process continue as seamlessly as possible.</p>
<p>Oregon Department of Fish and Wildlife (ODFW)</p>	<p>Effects of dispersal</p>	<p>ODFW's Avian Predation Program will terminate after 6/30/15. ODFW believes the Corps management will likely be a major driver for DCCO distributional changes in the near future and that any dispersal due to our action will result in increased impacts to juvenile salmonids in Oregon, and Alternative C-1 results in markedly greater dispersal than C.</p>	<p>The Corps considered ODFW's Avian Predation Program and financial support of volunteer led boat-based hazing efforts in coastal estuaries as a reasonably foreseeable future action. Should these volunteer led efforts cease in light of the 6/30/2015 termination of this program, there could be increased foraging opportunities in coastal estuaries (e.g., Tillamook Bay) for DCCOs. However, these volunteer led efforts obtain additional private funding (Adrean 2013). It is likely that some boat-based hazing would continue to deter localized foraging by DCCOs, although an analysis of hazing effectiveness has not yet been conducted (Adrean 2013). The Corps also considered data from ODFW's take of DCCOs for scientific collection for diet studies—the Corps considered this scientific collection as a reasonably foreseeable future action that would likely continue. The Corps included ODFW’s take for scientific collection in the overall take analysis for the western population (see Chapter 4, page 22). If these actions discontinue, individual DCCOs would not be taken under scientific collection. However, the number taken each year was less than 50 individuals (Adrean 2013) and would have no measureable effect on the analysis in the FEIS regarding effects to DCCO. As described in the FEIS (Chapter 3 pages 1-5) data presented in the FEIS regarding potential dispersal locations indicate DCCOs are less likely to disperse to Oregon and more likely to disperse to the Columbia River Estuary and Washington. Adaptive management measures to minimize dispersal on East Sand Island would further minimize the potential</p>

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			for dispersal to Oregon (see Chapter 5 pages 7–8), thus based on the above; the loss of ODFW's Avian Predation Program would not change the conclusions regarding Alternative C-1 presented in the FEIS.
Audubon Society of Portland, National Audubon Society	Mitigation	The Corps rejects the idea of mitigation for the loss of cormorants at East Sand Island in part because it assumes that cormorants in the western North America population are not limited by habitat (Appendix J – page 48), yet it is assumed that only 50% of the displaced cormorants will find sufficient habitat elsewhere (from population model). To the degree that DCCO abandon East Sand Island, there is a significant risk that they will not be able to find nesting habitat where they will be allowed to persist. This could result in population declines far in excess of what is anticipated in the FEIS as long-term productivity declines.	<p>The Corps' basis for not developing mitigation (i.e., the creation or restoration of DCCO nesting habitat to replace loss of East Sand Island nesting habitat) was primarily focused on the lack of feasibility that creation or restoration would be successful. As described in the FEIS, social attraction methods for DCCOs lack feasibility as a management strategy (FEIS Chapter 2, page 44) and there is little to no social acceptability of DCCOs in coastal Washington and Oregon states where this mitigation would be most effective. The state wildlife departments of Washington and Oregon (both cooperating agencies to the FEIS) stated their concerns about potential conflicts and/or depredation of fish of conservation concern to those states (see Chapter 3 page 56).</p> <p>The assumption that 50% of the displaced DCCOs would find sufficient nesting habitat was made in selecting values for the DCCO population model and were specific to current and future habitat losses and the need to address those effects: the known loss of suitable habitat at the Mullet Island, Salton Sea, and the planned reduction of habitat on East Sand Island in Phase II.</p>
Audubon Society of Portland	NEPA	The Corps' position on range of alternatives may have validity if the agency had complied with its NEPA obligations in considering and choosing a strategy for FCRPS operations. However, the Corps did not comply with its clear obligation to assess its 2014 and future FCRPS operations under NEPA. The Corps has produced no NEPA analysis of FCRPS operations that	This comment raises a legal matter currently in litigation in the U.S. District for the District of Oregon, Civ. No. 3:01-CV-00640-SI, which is the appropriate forum to address this matter.

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		<p>evaluates alternative hydrosystem operations in light of the enormous changes in both regulations and scientific knowledge over the last 20 years. These tremendous legal and scientific changes clearly render obsolete past Corps NEPA documents relevant to FCRPS operations.</p>	
<p>Audubon Society of Portland</p>	<p>MBTA—sustainable population levels in context of "threaten"</p>	<p>Because the requested authorization “potentially threatens” a wildlife population where the population would become unsustainable and its rebound uncertain, the Corps is not eligible for a depredation permit for the take of cormorants. Neither the MBTA nor its implementing regulations define the term “threaten.” See 50 C.F.R. § 10.12. Instead of determining whether the authorization would threaten the cormorant population, the Corps responds that, because the purpose and need for the action is not to reduce the regional cormorant population, “[t]he environmental analysis for this proposed action is estimating potential conflicts to the regional DCCO population.” The response makes no mention of the potential to threaten the regional cormorant population. However, the FEIS does predict that the western population of cormorants would fall below a level that is sustainable for four years after the implementation of Phase I of the Management Plan. FEIS 4-31. The Corps’ proposed action, by the agency’s own analysis, threatens the stability of the western population of cormorants.</p>	<p>See comment above regarding effects to the sustainability of the western population. We do not see a potential for threatening the western population. Sustainability has been defined in the FEIS and relates to long-term population trajectories after management actions. After Phase I of Alternative C-1 the western population is expected to increase based on modeled predictions. Potential threats to the species would be indicated by a continued decline post management actions. This is not expected. To further reduce risk, the Corps, in conjunction with partners in the Pacific Flyway Council, will annually monitor the western population and adaptively manage its approach if the western population falls 1 standard deviation below predicted modeled levels (see Chapter 5 page 14)</p>

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Audubon Society of Portland	MBTA—take of non-target species	Because non-target bird mortality is not quantified and non-target birds are not responsible for damage or safety concerns, the Corps’ proposal to somehow include non-target bird species in the agency’s application for a depredation permit is inconsistent with the USFWS depredation permit application process.	See FEIS Appendix J, page 25, G-24. A depredation permit is required before a person may take migratory birds for “depredation control purposes.” 50 C.F.R. § 21.41. While DCCOs are the focus of the proposed depredation take activities, based on prior research activities, take of pelagic and Brandt’s cormorants is anticipated and quantified as part of the proposed program for “depredation control purposes”. The take of Brandt's and pelagic cormorants associated with the take of the overall management plan is consistent with the "depredation control purpose."
Audubon Society of Portland	MBTA—take of non-target species	Considering the language of the MBTA’s implementing regulations, the USFWS’s depredation permit application, a statement by USFWS officials, and an understanding between the USFWS and a governmental agency, the Corps’ proposed take of non-target migratory birds does not fall within the purview of a depredation permit. Contrary to the Corps’ plan of action, a permit will not cover take of pelagic and Brandt’s cormorants prior to commencement of the proposed action. To avoid violation of the MBTA, the Corps must either ensure that zero pelagic and Brandt’s cormorants are taken without a permit from FWS, or it must wait until USFWS completes development of an incidental take mechanism.	See related response above. A depredation permit would authorize take of pelagic and Brandt's cormorants if (1) the quantity of take is known and the specific birds being taken are responsible for the interests being injured (i.e., DCCOs), (2) the take is part of an overall management plan. The depredation permit application will be used to identify pelagic and Brandt's cormorants as subject to take as part of the overall management plan for the DCCOs responsible for interests being injured, but will identify that alone they are not the primary cause of the injury.