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**Inland Avian Predation**

**Management Plan**

**13 July-2017**

**1. Project Information**

* **Purpose/Objective.** The purpose of the Inland Avian Predation Management Plan is to address effects Caspian terns nesting have on ESA-listed Columbia River salmon and steelhead within the FCRPS upstream of Bonneville Dam.
* **Description.** The development of an Inland Avian Predation Management Plan (IAPMP) is a requirement of the 2008 Federal Columbia River Power System (FCRPS) Biological Opinion (BiOp) and addresses Reasonable and Prudent Alternative Action 47. The IAPMP was developed as a joint effort between the FCRPS Action Agencies (Action Agencies): The US Army Corps of Engineers, Bureau of Reclamation (Reclamation), and Bonneville Power Administration.

Research conducted by the Oregon State University-USGS Cooperative Unit (OSU) led the team to focus the plan on two Caspian Tern (CATE) nesting colonies that have the highest per capita impact on ESA-listed salmonids. Of these, two specific colonies of Caspian Terns (CATE) at Crescent Island above McNary Dam and Goose Island in Potholes Reservoir were identified warranting immediate action. These two colonies are approximately 0.09 acres and 0.13 acres in size, respectively prior to initiation of management. In-river predation rates, prior to management, by nesting colony are available for these colonies in the IAPMP. Annual predation rates on ESA-listed stocks following implementation of the IAPMP are available in subsequent annual reports.

* **Project Status.** The IAPMP and Finding of No Significant (FONSI) were completed in January 2014 with implementation to occur in two phases. Phase I involved dissuasion of the colony at Goose Island in Potholes reservoir which began in February 2014 along with continued monitoring at Crescent Island and other sites with potential for CATE colony establishment. Phase II involves construction of CATE habitat enhancement sites at Don Edwards San Francisco Bay National Wildlife Refuge (DENWR) in South San Francisco Bay, CA and subsequent dissuasion of tern nesting activities at Crescent Island. Construction efforts at DENWR were completed in January 2015. Subsequently, temporary dissuasion measures were implemented at Crescent Island in February 2015, with more permanent measures (i.e., willow planting) established in 2016. Implementation of Phase II dissuasion and monitoring activities will continue through the 2018 nesting season. Following the 2018 nesting season, final reporting and project close-out efforts will be completed by mid-FY19.

Table 1. Implementation timeline for the IAPMP by nesting season

| Action | 2014 | 2015 | 2016 | 2017 | 2018 |
| --- | --- | --- | --- | --- | --- |
| Phase 1 |  |  |  |  |  |
| Goose Island: Use of rope and flagging as passive dissuasion | X | X | X | X | X |
| Crescent Island: Experimental willow plantings to assess survival | X |  |  |  |  |
| Don Edwards: CATE habitat enhancement site research and supplemental/tiered NEPA analysis | X |  |  |  |  |
| Phase 2 |  |  |  |  |  |
| Don Edwards: Habitat enhancement sites prepared to attract CATE nesting. |  | X |  |  |  |
| Don Edwards: Implement attraction measures and monitoring to ensure site utilization |  | X | X | X |  |
| Don Edwards: Assist with predator management measures to ensure site utilization |  |  | X | X | X |
| Goose Island: Consider substrate modification as a lower maintenance dissuasion method. |  |  |  |  | (X) |
| Crescent Island: Use of temporary dissuasion methods (rope and flagging, silt fencing). |  | X | X | X | (X) |
| Crescent Island: Planting of willows and placement of woody debris to dissuade nesting |  |  | X | (X) | (X) |
| At-risk islands: Passive dissuasion for nesting CATEs as needed / in coordination with landowners. |  |  | (X) | (X) | (X) |

Note: Parentheses indicate that action is implemented only if warranted. US Bureau of Reclamation is responsible for implementing actions at Potholes Reservoir and Goose Island.

**FY17 Final Obligations = $1,343,461\***

**FY18 Budget = $200,000**

\*2018 IAPMP implementation efforts were awarded in conjunction with the 2017 implementation contract. FY18 costs are anticipated consist primarily of Corps oversight and reporting efforts.