**Avian Island PIT Detection**

1. **PROJECT INFORMATION**

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| **P2 Identifier** | 395290 |
| **Project Manager (PM)** | Robert L Winters (NWP, 503-808-4738) |
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1. **PURPOSE**

The purpose of this project is to comply with NOAA Fisheries 2008 (2010, 2014) Federal Columbia River Power System (FCRPS) Biological Opinion. Specifically, Reasonable and Prudent Alternative (RPA) actions 66 and 67 requires that the Action Agencies monitor and evaluate the Caspian tern (CATE) and double-crested cormorant (DCCO) populations in the lower Columbia River, and evaluate their respective impacts on out-migrating juvenile salmonids, as well as evaluate the effectiveness of the CATE and DCCO management plans on reducing the predation of juvenile salmonids. The Corps uses the detection and recovery of PIT tags from the DCCO & CATE colonies on East Sand Island (ESI) to estimate and compare intra- and interannual predation rates to meet the objectives of RPA actions 66 and 67.

1. **BACKGROUND**

Increases in the number of avian predators nesting in the lower Columbia River and estuary in the 1990s and early 2000s led to significant concerns over their potential impact on the recovery of Columbia River salmonids listed as threatened and endangered under the Endangered Species Act (ESA). In response to successive consultations with NOAA Fisheries, the Corps has worked cooperatively with other regional agencies to develop and implement management plans for the CATE and DCCO populations nesting in the lower Columbia River and estuary.

The *Caspian Tern Management to Reduce Predation of Juvenile Salmonids in the Columbia River Estuary: Final Environmental Impact Statement* (CATE Management Plan) was finalized in 2006, and a Record of Decision was signed by the Corps, the U.S. Fish and Wildlife Service (USFWS) and NOAA Fisheries in November 2006. Implementation of the management plan was initiated in 2007.

The *Double-crested Cormorant Management Plan to Reduce Predation of Juvenile Salmonids in the Columbia River Estuary, Final Environmental Impact Statement* (DCCO Management Plan) was finalized in 2015 and a Record of Decision was signed by the Corps, USFWS and the U.S. Department of Agriculture Animal and Plant Health Inspection Services in March 2015. Implementation of the management plan was initiated during the 2015 breeding season, including the collection and detection of PIT tags on the DCCO nesting colony at ESI to evaluate impacts to juvenile salmonids in response to management actions.

1. **STATUS & ISSUES**
* The DCCO management plan requires PIT tag recoveries on the East Sand Island DCCO colony to assess predation throughout phase 1 and during phase 2 “as necessary”. The 2017 breeding season is year 3 of 4 under phase 1. Phase 2 is scheduled to occur immediately following the 2018 breeding season.
* PIT tag detection data from the ESI DCCO colony for the 2016 breeding season may not be useful or comparable to previous years due to a colony-wide dispersal event between mid-May and late June during the 2016 breeding season. While approximately 23,000 DCCO returning to ESI in late June and 4,000 nests were observed with juveniles after birds returned to the island, the PIT tag dataset is incomplete relative to previous years when birds were on the colony throughout the breeding season and foraging in the immediate vicinity of the colony site.
* Similar to the 2016 breeding season, PIT tag detection data from the 2017 breeding season may not be useful or comparable to previous years because the DCCO breeding colony did not establish a successful colony on ESI and the PIT tag dataset is incomplete. Adult DCCO were present on the colony during the month of April and early May, but dispersed from the ESI colony site in mid-May. Upwards of 3,000 adult DCCO were observed foraging upriver of Tenasillahe Island in May where predation impacts on juvenile salmonids is more intense (relative to the area adjacent to the ESI). While upwards of 7,000-9,000 DCCO were observed on ESI in June and July, no activity has occurred on the breeding colony; DCCO continue to forage throughout the estuary and lower river upstream of the Astoria-Meglar Bridge. PIT tag detection and recovery is not feasible at DCCO colonies other than ESI, reducing the Corps’ ability to estimate predation impacts during the 2017 breeding season.
1. **SCHEDULE & COST**

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| **YEAR** | **COST** | **MAJOR ACTIVITIES** |
| **FY17Actual Obligation** | $237,288 | Recover PIT tags from ESI DCCO and CATE colonies;Estimate PIT tag detection efficiency;Estimate overall, stock-specific, and per capita predation rates. |
| **FY18****PBUD** | $200,000 | Recover PIT tags from ESI DCCO and CATE colonies;Estimate PIT tag detection efficiency;Estimate overall, stock-specific, and per capita predation rates. |

1. **PHOTOS & DRAWINGS**