**Depredation permit issued to U.S. Army Corps of Engineers (Corps) for double-crested cormorant Management Plan to reduce predation of juvenile salmonids in the Columbia River Estuary**
**03/22/2016**

The U.S. Fish and Wildlife Service (Service) has decided to issue a depredation permit for the take of double-crested cormorants and nest as part of implementation of the U.S. Army Corps of Engineers' (Corps) *Double-crested Cormorant Management Plan to Reduce Predation of Juvenile Salmonids in the Columbia River Estuary*.

**Why did the Service decide to renew a depredation permit to the Corps for the take of double-crested cormorants on East Sand Island?**

In 2015, the Corps prepared a final EIS and management plan to reduce predation on juvenile salmon and steelhead by double-crested cormorants in the Columbia River Estuary. This renewal request is associated with Year 2 of implementation of that plan. The Corps' management plan includes flexibility to allow the number of cormorants culled every year to vary based on a two-step process that evaluates the numbers of double-crested cormorants estimated to the number predicted on East Sand Island and in the Western Population. In comparing both populations during 2015 to the predictions made in the Corps' Management plan, no adjustments are called for in 2016. The Service evaluated the Corps' renewal request and determined that it fulfilled all regulatory requirements.

**Are the Service and Corps monitoring the colony and population?**

Yes. Since issuing the depredation permit for the take of double-crested cormorants in 2015, the Service, the Corps, and partners have been conducting ongoing monitoring and evaluation of both the East Sand Island colony and the Western Population, see Double-crested Cormorant Western Population Status Evaluation. For 2015, the colony abundance of double-crested cormorants on East Sand Island was 24,300 breeding individuals and the Western Population of double-crested cormorants estimate was 77,432 breeding individuals.

**Q: Why is the Service issuing a depredation permit?**

Reducing avian predation is a requirement from the Corps' consultation under the Endangered Species Act with the National Marine Fisheries Service of the National Oceanic and Atmospheric Administration (NOAA Fisheries) for the operation of the hydropower dams that make up the Federal Columbia River Power System. The Corps published a final EIS to evaluate management alternatives that will reduce double-crested cormorant predation on juvenile salmonids while minimizing impacts to double-crested cormorants and other migratory birds. The Service provided migratory bird management and conservation expertise as a cooperator in plan development. The Corps applied for a Migratory Bird Treaty Act permit to implement actions described in the final EIS. The Service has conducted a regulatory and biological review of the permit application and determined issuance based on the best available science. The

application met all regulatory requirements, including a valid justification and will not threaten the western double-crested cormorant population.

**Q: What allows the Service to consider the take of double-crested cormorants?**

Cormorants, terns, and more than 1,000 other migratory birds are protected by the Migratory Bird Treaty Act. Current Service regulations allow authorization of lethal take through Depredation Permits to alleviate damage or conflicts.

Documentation of damage or conflict, use of non-lethal methods (such as harassment and habitat management) and development of a management strategy to address the conflict are necessary for permit issuance. Non-lethal methods must be used in conjunction with lethal methods, unless proven to be ineffective.

The Service conducts a biological review when considering permit applications and determines issuance based on effects to the population. Take is only authorized if it is consistent with the conservation of the species.

**Q: Were non-lethal measures tested and evaluated before considering the lethal measures?**

Yes, many non-lethal measures were tested during Corps funded research from 2007-2013 and are described in the FEIS, Appendix G. The measures that were successful are incorporated into the Corp's FEIS alternatives. A partial list of methods tested to date include: social attraction techniques (decoys and broadcasting audio playback of bird calls to encourage nesting in other locations), human disturbance, removal of nest structures prior to egg-laying, pond liners placed over nesting substrate, hazing using lasers, and reflective tape placed in nesting trees. During 2011–2013, studies were initiated to test the use of privacy fences and targeted human disturbance prior to egg-laying to reduce the amount of available nesting habitat for double-crested cormorants.

**Q: How are double-crested cormorants impacting salmon?**

Juvenile salmonid smolts migrate through of the Columbia River Estuary, past East Sand Island, the location of a large double-crested cormorant colony. Their outmigration overlaps with the double-crested cormorant peak breeding season (April-July). This critical overlap creates a conflict when salmonids are consumed as a prey source.

During 2003–2013, estimates of total annual smolt consumption by the East Sand Island double-crested cormorants colony have varied between 2.4 and 20.5 million smolts, putting the average annual consumption at 11 million smolts over the last decade. This consumption by double-crested cormorants is similar to or exceeds the smolt mortality experienced at individual hydro-system facilities on the Columbia River for some specific Evolutionary Significant Unit or Distinct Population Segment salmonid groups.

The variation in annual consumption cannot be attributed solely to double-crested cormorant colony size variations. Environmental factors such as other available food resources like marine fish and amount of river flow likely affect consumption rates.

**Q: What will the Service do if the western population of double-crested cormorant drops below expected levels?**

A: The Service has issued a depredation permit to the Corps through January 31, 2016. The permit is renewable. If the western population of double-crested cormorants drops below predicted levels, that information would be used in our biological review of the permit application and decision-making for future permit requests. Please refer to the adaptive management framework described in Section 2.1.3 of the FEIS.

**Q: What assurances are in place to be able to prevent a major decline?**

The Corps has proposed to supplement the Pacific Flyway Council's regional monitoring strategy for the western population to ensure that annual monitoring data is available during the four year project period. The Pacific Flyway Council's regional monitoring strategy (Pacific Flyway Council 2013) called for surveys to be conducted every three years. This monitoring strategy was developed through the Pacific Flyway Council as a joint effort between federal and Pacific Flyway state agencies to assess double-crested cormorants population status, distribution, and trends (Pacific Flyway Council 2013). The Corps would follow the prescribed monitoring protocols, coordinate efforts, and share monitoring data with the Pacific Flyway Council partners.

**Q: Why would the Service issue the Corps a depredation permit, allowing 11,000 double-crested cormorants to be taken and over 15,000 nests oiled (Alternative C-1)?**

Depredation permits are issued to alleviate some form of damage, not to achieve population control. As a result, depredation permits are issued only if the requested lethal take of birds is consistent with the conservation of the species (e.g., the species remains at a healthy and sustainable level). Based on the comparison of regulatory requirements and issuance criteria the Service considers the alternative C-1 as the most environmentally preferable alternative. All requirements and issuance criteria have been met, including justification and that the action described does not have potential to threaten the population.

**Q: Why would the Service allow the take of Brant's cormorants and pelagic cormorants?**

The depredation permit issued to the Corps includes their requested limited authorization to take pelagic and Brandt's cormorants. While double-crested cormorants are the focus of the proposed depredation take activities, based on prior research activities, take of pelagic and Brandt's cormorants is anticipated due to misidentification 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."

**Q: What is the current status of double-crested cormorants on East Sand Island?**

The nesting colony of double-crested cormorants on East Sand Island has increased nearly 100-fold since the colony was first recorded in 1989. The colony at East Sand Island has remained relatively stable since 2004, averaging approximately 12,900 breeding pairs. The largest breeding colony of double-crested cormorants in western North America, and likely all of North America, resides on East Sand Island.

**Q: What is the population status of double-crested cormorants in the western United States?**

Based on the western population abundance estimates from 1990 (41,660 breeding individuals) and 2009 (62,400 breeding individuals), the entire western population of double-crested cormorants has increased approximately 2 percent per year. The Service recently used the 2014 compiled data from the Pacific Flyway Monitoring Strategy to derive the current estimate of 76,000 breeding individuals.

This growth has been primarily associated with the growth of the East Sand Island colony. The estimated annual sums of breeding individuals across other western colonies, not including East Sand Island, are similar or higher when comparing population data from around 1990 to current, even when accounting for losses in portions of the range. Thus, a re-distribution has taken place; some locations have declined while others have increased. The number of active colonies has also increased. In about 1990, there were 110 active colonies in British Columbia, Washington, Oregon, and California. That number increased to 160 active colonies (2008-2012) for the same states and province (Pacific Flyway Council 2013).