DOUBLE-CRESTED CORMORANT MANAGEMENT: Questions and Answers

This document answers some common questions about the management of double-crested cormorants following implementation of depredation orders by the U.S. Fish and Wildlife Service (Service) in late 2003.

What is a double-crested cormorant and where do they live?

Double-crested cormorants (*Phalacrocorax auritus)* are long-lived, colonial-nesting waterbirds native to North America. One of 38 species of cormorants worldwide, and one of six species in North America, they are usually found in flocks, and are sometimes confused with geese or loons when on the water. Double-crested cormorants nest in many coastal and lake locations throughout North America in five breeding areas: Alaska, Pacific Coast, Canadian and U.S. Interior, Northeast Atlantic Coast, and Southern U.S. The Canadian and U.S. Interior breeding population is the largest, extending from the Canadian Prairie Provinces eastward to the Great Lakes and surrounding smaller lakes. Cormorants winter primarily along the Atlantic, Pacific and Gulf coasts and on large interior lakes.

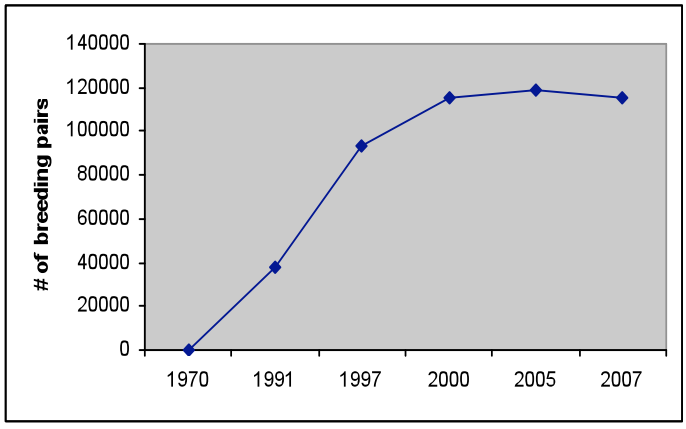
How do double-crested cormorants nest?

Double-crested cormorants breed in colonies ranging from several pairs to a few thousand. They build their nests of twigs and branches beginning in April, usually in trees or on the ground, on islands favored also by other colonial nesting birds, like great blue herons, great egrets, black-crowned night-herons, cattle egrets, gulls, and terns. Typically, at age three or four, adults are ready to breed. Eggs are laid in mid-to-late April, and hatching occurs approximately 25 days later. A typical nest has two or three chicks. These chicks can fly at 5–6 weeks and will accompany adults to feed at 7 weeks. They are independent of the adult birds at 10 weeks.

What is the status of their population?

The double-crested cormorant is the most abundant cormorant in North America. In the 2003 Final Environmental Impact Statement (FEIS), the Service estimated the total double-crested cormorant population to be 2 million, with nearly 70 percent of this number in the Interior population (much of which nests in Canada). While the total North American population increased rapidly from the 1970s into the 1990s (7.9 percent average annual growth), the overall rate of growth in the U.S. and Canada slowed during the 1990s. A coordinated survey of the Great Lakes in 2007 recorded 115,006 cormorant nests (see figure below; note different time intervals along the x-axis), yielding an estimated Great Lakes population (including nonbreeders) of 345,000–460,000 individuals.

Number of double-crested cormorant nests in the Great Lakes, 1970–2007



What do double-crested cormorants eat?

They eat mainly fish. Adults eat an average of one pound of fish per day, which is typically comprised of small (less than 6 inch) size classes. They are opportunistic and generalist feeders, preying on many species of fish, but concentrating on those that are easiest to catch. The composition of a double-crested cormorant's diet can vary considerably from site to site and throughout the year.

Do double-crested cormorants negatively impact fish populations in open waters?

Cormorants do eat sport fish, though how much and what effect that consumption has on a fishery must be determined by diet studies and analysis of the fish population. Cormorant predation is one of many factors, such as water quality, predation by other fish, and angler catch, that can affect fish populations. In a few cases, fisheries managers have concluded that double-crested cormorants consumed enough sport fish to negatively impact catch rates of species such as yellow perch, walleye, and smallmouth bass. For example, recent research studies in New York at Oneida Lake and eastern Lake Ontario and in Michigan at northern Lake Huron provide evidence that predation by summer resident and migrating cormorants has impacted sport fish populations. Future research in this area is needed to improve our understanding of the relationship between double-crested cormorants and their prey populations and how other factors might influence this relationship.

Do double-crested cormorants significantly affect vegetation and other birds?

Cormorants do kill trees, shrubs, and other vegetation, due to accumulation of their guano, which is highly acidic, and removal of foliage for nesting material. If the species of vegetation being damaged is common, the ecological significance of such damage will be limited, although aesthetic concerns may exist. However, cormorant damage can be ecologically significant, as is the case on some Great Lakes islands where double-crested cormorants are causing severe damage to Carolinian vegetation, the rarest type of vegetation in the Great Lakes. In regard to impacts on other colonial waterbirds, such as herons and egrets, evidence of locally-significant impacts has been observed by many biologists, particularly in Great Lakes States and Canadian Provinces.

Are double-crested cormorants protected in the U.S.?

Double-crested cormorants are one of approximately 800 species protected under the Migratory Bird Treaty Act of 1918, and subsequent amendments. This act was first passed to implement the terms of a treaty between the U.S. and Canada for the protection of migratory birds. Excessive market hunting of migratory birds prompted this treaty, which was later followed by treaties with Mexico, Japan, and Russia. Double-crested cormorants were first protected by U.S. law in 1972 through an amendment to the Mexican treaty. Double-crested cormorants may not be injured or killed, and nests with eggs/chicks may not be taken according to Federal and most State laws, unless specifically authorized.

What is the recent history of double-crested cormorant management?

In the 1990s, public concern about the impacts of double-crested cormorants on sport fish and commercial aquaculture grew steadily. In 1998, the Service created an Aquaculture Depredation Order that applied to 13 states (Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Minnesota, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, and Texas). In 2003, the Service completed an Environmental Impact Statement on double-crested cormorant management and issued a Public Resource Depredation Order (PRDO). The new regulations allow the control of double-crested cormorants without a permit by certain government entities, where the birds cause negative impacts to trust natural resources in States where Interior and Southern cormorant populations are increasing and damages are occurring: Alabama, Arkansas, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Michigan, Minnesota, Mississippi, Missouri, New York, North Carolina, Ohio, Oklahoma, South Carolina, Tennessee, Texas, Vermont, West Virginia, and Wisconsin.

What does the Public Resources Depredation Order (PRDO) authorize?

The PRDO (50 CFR §21.48) authorizes State fish and wildlife agencies, federally recognized Tribes, and USDA-Wildlife Services to kill cormorants and destroy nests with eggs/chicks when they are causing damage to public resources such as fish (including hatchery fish), wildlife, plants, and their habitats. States, Tribes, and USDA-WS may act without a permit, but must notify the Service each year that they intend to act under the PRDO. Each agency acting under the PRDO must avoid disturbance or take of nontarget species and must annually report information about

cormorant management activities to the Service. In the case of management involving localized population reduction, agencies must also evaluate the effects of management activities on cormorants at the control site and evaluate the effects of management activities on the public resources being protected and on nontarget species.

What does the Aquaculture Depredation Order authorize?

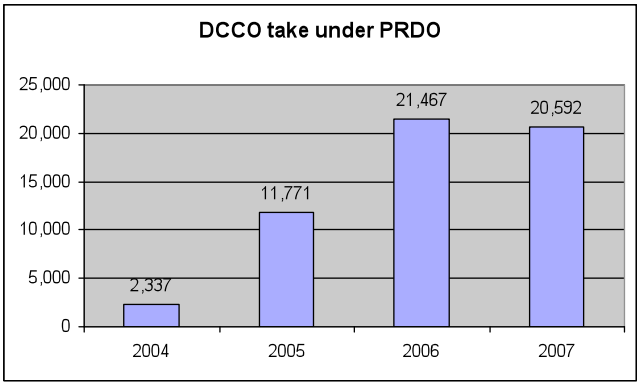
In 1998, the Service implemented an Aquaculture Depredation Order (50 CFR §21.47) which authorizes the lethal take, without a Federal permit, of double-crested cormorants at commercial freshwater aquaculture facilities and Federal or State-owned hatcheries in 12 southeastern States and Minnesota. A change to the regulations in 2003 expanded the Aquaculture Depredation Order to allow USDA-WS to conduct winter roost control to reduce cormorant depredation at fish farms from October to April.

How is the Service monitoring double-crested cormorant populations to ensure that they remain at sustainable levels?

Coordinated waterbird population monitoring has been conducted intermittently over the past 30 years by the Service, the Canadian Wildlife Service, USDA-WS, the States, and various universities. The various types of surveys include the Great Lakes Colonial Waterbird Survey, Atlantic Coast Colonial Waterbird Survey, winter roost surveys, Christmas Bird Counts, and Breeding Bird Surveys. Additionally, agencies that conduct local population control under the PRDO are required to evaluate the effects of their actions on double-crested cormorant populations and annually report their findings to the Service. Since 2005, cormorant populations have been censused every other year in the U.S. and Canadian Great Lakes.

How many cormorants have been taken under the PRDO?

The number of cormorants killed under the PRDO each year is as follows: 2,337 in 2004; 11,771 in 2005; 21,467 in 2006; and 20,594 in 2007 (see figure at right). Also under the PRDO, approximately 37,000 cormorant nests have been managed by egg oiling or nest removal since 2004.



What happens next?

The Service will continue to oversee and coordinate cormorant management activities throughout the U.S. and support monitoring and research efforts. The Aquaculture and Public Resource Depredation Orders will expire on April 30, 2009 but the Service has developed a draft Environmental Assessment and proposed rule to extend the regulations by 5 more years. Any recommendations for a different approach involving lethal take, such as regional population management, would need to be considered by the Service in a Supplemental Environmental Impact Statement. A draft document would be announced in the *Federal Register* and would be open for public comment, followed by a final document with a preferred alternative, and draft and final rules.

For more information about double-crested cormorants, please visit the following websites:

U.S. Fish and Wildlife Service, Division of Migratory Bird Management:
http://migratorybirds.fws.gov/issues/cormorant/cormorant.html

Canadian Wildlife Service:
http://www.on.ec.gc.ca/wildlife/factsheets/fs_cormorants-e.html

U.S. Geological Survey Patuxent Wildlife Research Center:
http://www.mbr-pwrc.usgs.gov/id/mlist/h1200.html