Wisconsin Chapter of The Wildlife Society

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Position Statement:
Double-crested Cormorant Management in Wisconsin

By
the Wildlife Damage Management Issues Committee
Of
the Wisconsin Chapter of The Wildlife Society (WCTWS)

The growing Double-crested Cormorant population in Wisconsin has reached record numbers and has generated a number of biological and social concerns prompting the Wisconsin Chapter of the Wildlife Society (WCTWS) to adopt a position statement on cormorant management. This position statement was developed by The Wisconsin TWS Wildlife Damage Management Working Group. The group's objective is the improvement of wildlife damage management in Wisconsin, using the most current scientifically-based methods and information, and public education.

Background:
Double-crested Cormorants (*Phalacrocorax auritus*) (DCCO) are aquatic, fish-eating, colonial nesting birds belonging to the Order Pelicaniformes. There are 38 species of cormorants distributed throughout the world, but DCCO are the only species of cormorant that regularly inhabit Wisconsin. DCCO's are migratory birds that occupy Wisconsin from roughly April to November of each year and winter in the southeastern and south-central United States.

There are 6 distinct breeding populations of DCCO in North America. The Wisconsin population is contained within the interior region, and can be further refined in terms of geographic location as being part of the Great Lakes population (Weseloh et al. 1995). Regardless of region, all populations have experienced similar fluctuations in numbers since the European settlers arrived (Wires and Cuthbert 2006). Through the first quarter of the 20th Century, DCCO experienced population exploitation by humans and decreasing population numbers (Hatch 1995; Wires and Cuthbert 2006). Between the 1920's to 1940's, DCCO populations increased in numbers and expanded in several areas, but once again decreased in size from 1940 until the early 1970's, primarily due to use of DDT, legal and illegal killing, and habitat changes (Hatch 1995; Wires and Cuthbert 2006). Beginning, in 1972, a number of state and federal statutory protections, a ban on DDT, and changes in the prey base combined to result in drastic increases in population size and the return of DCCOs to many parts of their historic range (Hatch 1995; Wires and Cuthbert 2006).

Despite population increases during the last 3 decades, some contemporary DCCO populations are not as large as their historic numbers (Wires and Cuthbert 2006). The Great Lakes population, however, has exceeded historic estimates and currently is at record numbers (Wires and Cuthbert 2006). Between 1970 and 1991, the Great Lakes DCCO population increased nearly 29% annually (Weseloh et al. 1995), with an estimated 27,000 nesting pairs as of 1995 (Hatch 1995). DCCO breeding colonies on Lake Michigan account for 21% of colonies for the entire Great Lakes population. As for Wisconsin, about 80% of the state's DCCO breeding population is found in Green Bay and Door County (Matteson et al. 1997).

As the Great Lakes DCCO population has increased, so have conflicts. Nearly all of the attention has centered on DCCO effects on fish stocks. Detailed studies of cormorant diets indicate that cormorant populations can affect select fisheries, especially within a localized area surrounding cormorant colonies (Craven and Lev 1987, Johnson et al. 2002, Lantry et al. 2002, Stapanian et al. 2002). Public perception of cormorant depredation to fisheries and policy mandates have also driven the debate about cormorant management (Duffy 1995).

Less noted effects of DCCO include damage to vegetation and concerns about nest-site competition with other colonial nesting waterbirds. Wires et al. (2001) noted that excrement from DCCO nesting colonies can have a negative effect on vegetation at the local level. Bedard et al. (1995) observed irreversible damage to trees in < 3 years from repeated DCCO excrement, and Lemmon et al. (1994) noted trees dying 3 to 10 years after cormorants started nesting in them. Cuthbert et al. (2002) documented total or partial loss of forest cover on some islands in their study area as well as increased soil acidity from DCCO excrement. Weseloh et al. (2002) suggested that DCCO may affect co-nesting colonial waterbirds by 1) reducing space available for other nesting birds, especially on small islands; 2) taking over nests established by night-herons and egrets; and 3) nest abandonment, primarily by night-herons in tall trees nesting below DCCOs, due to a constant rain of excrement and nesting material.

As a result of the increased conflict from growing DCCO numbers, the US Fish and Wildlife Service (FWS)issued a depredation order in 1998, (USFWS 1998b; 50 CFR 21.47) authorizing commercial freshwater aquaculture producers in 13 States (not including Wisconsin) to take DCCOs without a Federal permit when found committing or about to commit depredations to aquaculture stocks. In addition, an Environmental Impact Statement (EIS) was developed by the FWS in cooperation with the US Department of Agriculture Animal and Plant Health Inspection Service (APHIS) Wildlife Services (WS) in 2003 to address concerns associated with the negative effects on natural resources. The EIS laid the foundation to create a new depredation order. The public resource depredation order (PRDO) authorizes State fish and wildlife agencies, Federally-recognized Tribes, and WS to take DCCO's found committing or about to commit, depredations on the public resources of fish (including hatchery stock at Federal, State, and Tribal facilities), wildlife, plants, and their habitats (50 CFR 21.48). This authority applies to all lands and freshwaters (with appropriate landowner permission) in 24 States, including Wisconsin.

Almost two years after the establishment of the PRDO, Wisconsin Act 287, Management of Double-Crested Cormorants, was passed by both Wisconsin Senate and Assembly and signed by the Governor on April 8, 2006. Section 1. 29.886 (2), specifically states, "The department shall,

in cooperation with federal agencies, administer a program in a manner that complies with the U.S. depredation order to control and manage double-crested cormorants in order to reduce wildlife damage caused by double-crested cormorants."

Nationwide, a range of wildlife damage management practices are employed to reduce or eliminate effects of DCCO, although not all management practices may be universally applied (Gorenzel et al. 1994). Management techniques like exclusion and harassment, that are suitable for reducing DCCO conflicts at aquaculture facilities where DCCO overwinter may not be appropriate at summer breeding areas due to cost, logistics, or disturbance to non-target colonial breeders (Mott et al. 1998).

Craven and Lev (1987) tested various abatement techniques in the Apostle Islands, Wisconsin during the breeding season and found that a variety of abatement techniques (i.e., scarecrow, scarecrow/boat combination, electrified wires, and metal cones on top of perch poles) were effective for varying amounts of time at reducing some fish loss.

At summer breeding grounds, killing of adults and egg oiling are the most common depredation management practices (Bedard et al. 1995, Milton et al. 1995). Bedard et al. (1995) noted that a dual approach of removing adults and oiling eggs was the only way to have a measurable effect on DCCO population growth in the St. Lawrence River Estuary. Arboreal-nesting DCCO were killed, and egg oiling was used for ground-nesting DCCO. Using this combined approach, the St. Lawrence River DCCO population was reduced from 17,854 nesting pairs in 1988 to 12,000 pairs by 1991. The percentage of Great Lakes – St.Lawrence River Basin DCCO adult population removed in 2006 was estimated to be 4.7.

Currently, removal of adults has not been conducted in Wisconsin for the protection of public resources. However, egg oiling has been utilized in Wisconsin during the 2006 and 2007 nesting seasons in an attempt to stabilize or slow the population growth of the DCCO Lake Michigan population. There were 4,710 nests oiled in two colonies in 2006 and 7,281 nests oiled in three colonies in 2007. (Both numbers were based on peak nest counts.) Nest counts in Wisconsin in 2005 totaled 14,462 (12,882 were in the Green Bay Islands area).

Research continues to be a key part of DCCO management. The Working Group developed a list of research needs and then identified what it assessed as the three most important areas to explore further in Wisconsin.

1) DCCO movements locally and within the Flyway.
   Specifically, research needs to be conducted to determine where the DCCO's that nest in Wisconsin originate. There is a need to determine whether or not adults from outside the local area are joining locally produced birds. Furthermore, information needs to be gathered on how DCCO's determine nesting locations, and if DCCO's abandon a nest, do they initiate another nest in the same breeding year, with the same colony, or elsewhere in the same or subsequent years.

2) Additional information on non breeders.
Research needs to be conducted to determine what percentage of annual Wisconsin population is composed of non-breeders, and what percentage of damage and conflicts is attributed to non-breeders.

3) How much management effort (cost) does it take to achieve a goal (benefit)?
Research needs to be conducted to determine the true costs of all aspects of damage as a result of the Wisconsin cormorant population, and assess the costs and benefits of the available and applied damage management practices.

Conclusion:
WCTWS supports scientifically based management of wildlife populations and recognizes that management can be directed at increasing or decreasing populations. In the case of cormorants, surveys suggest that populations are extremely high at many locations in North America. This has led to real and perceived conflicts with various human interests and population limitation programs are underway in a number of States and Canadian Provinces. In Wisconsin, the Wisconsin Department of Natural Resources and the FWS and WS, have been pursuing scientific investigations while concurrently developing the regulatory framework necessary to appropriately manage conflicts. The FWS has released a Public Resource Depredation Order which authorizes States, Tribes, and Wildlife Services to manage cormorant populations in the interest of reducing damage to other public resources. That Order provides the framework under which such programs must operate and specifies the conditions that must be met and the data that must be collected during control operations. WCTWS supports this response.

It is important to note that population management of this species likely will require a continuing commitment of Agency resources. It is essential that any management program be based on quantifiable goals so that cost-effectiveness can be assessed. Control seems straight forward, but if it is not effective in enhancing fish populations or preventing vegetation damage, it will be a misallocation of limited Agency resources. Resolving conflicts will require a thorough evaluation of the biological data available and a continuing commitment of Agency resources at both the State and Federal levels for a number of years.

It is essential to consider all points of view and use the best biological information available in setting population management goals. A population management plan for this species will have to include recognition that there are several divergent viewpoints about what a desirable future state of the cormorant population might be. In order to minimize conflict between the various stakeholder groups, it is suggested that they be included in the discussion from the very start. Clear, measurable objectives should be established so that the cost-effectiveness of a chosen population management program can be evaluated.

THEREFORE IT IS THE POSITION OF THE WISCONSIN CHAPTER OF THE WILDLIFE SOCIETY to support double–crested cormorant management providing:

a. Management is based on the best scientific information and that it continues to be adaptive.

b. Public education should be enhanced not only to build and maintain public support for the population management of the Double-crested Cormorant but also to counter perceptions that the species has no legitimate place in the ecosystem and that all local populations need to be reduced or eliminated.

c. Elected officials are encouraged to provide sufficient funds to support state or federal legislation or other mandates that direct natural resource agencies to manage double-crested cormorants.

d. Research continues to identify and evaluate best management practices and implications of management actions.

e. Research continues to survey and monitor cormorant populations and consequences to natural resources shared and utilized by cormorants.

f. Wisconsin management continues to be evaluated and managed in context of a much larger population, including not only the Great Lakes, but also the Mississippi Flyway.

The Wildlife Society is an international organization of wildlife biologists that has chapters in every state and many countries. It is the largest organization of professional wildlife biologists in the world and exists to promote excellence in wildlife stewardship through science and education.