

## Cormorant Update Questions

- 1. Why is the population goal 500 pairs? Is this number too high?**
- 2. What about Oneida Lake's (NY) target of 150 pairs?**

The Leech Lake Reservation's Division of Resources Management (DRM) looked at a number of factors before settling on the target cormorant population goal of 500 reproducing pairs. The first was the need to reduce the nest site competition between cormorants and ring-billed gulls that was having a negative affect on common tern reproduction. This issue could have been addressed by retaining cormorant pairs at a higher level than was ultimately decided upon. A cormorant level at 1000 to 1500 reproducing pairs would have probably been adequate to address this issue.

The second issue was circumstantial evidence that cormorants might have reduced the survival of small walleyes, mainly the 2001 year class. In this case there were few comparable studies to base our control level target on and most other studies concluded that cormorants were not having a negative affect on game fish populations. The most comparable study was Lake Oneida in New York State.

Although Oneida is currently a walleye/perch lake, like Leech, it also has some significant differences. Historically it was an American eel, Atlantic salmon, whitefish, northern pike, chain pickerel, and black bass fishery, but these species, with the exception of bass, have all undergone major declines or have been extirpated from the lake due to water level changes and habitat degradation around the lake. Yellow perch are an important forage species, and walleye numbers have increased due to the absence of other predator fish. The lake has also been invaded by zebra mussels that have altered the water quality, and the lake's food chain is now influenced by a fluctuating population of gizzard shad that have also become established. The lake has heavy fishing pressure and has been stocked with walleye for an extended period. Cormorant consumption of walleye in Oneida also runs several times the levels we have found on Leech. With all these issues it is reasonable to assume that Oneida would have seen more dramatic effects due to the recolonization of cormorants compared to Leech Lake that is far more intact.

On Lake Oneida they found that when cormorant predation exceeded 3.46 pounds per acre managers projected a lowering in the abundance of walleye over the long term. In our case at a population of 500 reproducing pairs we would be at about this level. Large numbers of birds returning each spring has necessitated heavy culling each year. These additional birds have kept us above the 3.46 pounds per acre, none the less; the lake has recovered at a faster rate and with better growth rates than expected. This also brings into question the comparability of Oneida to Leech Lake. Although our goal is based on nesting numbers we continue to develop methods that will reduce the number of breeding birds that are primarily recruited from spring migrants that have to be removed each spring. Once we are able to do this we should be closer to the 3.46 pounds per acre goal.

It appears that Oneida's cormorant population goals had little basis in science and a lot to do with politics. This is a risky approach to management as the Environmental Impact

Statement (EIS) for the Depredation Order will be up for review in a few years and if decisions are being made based on politics, as opposed to science, upon which the EIS needs to be based; the whole program may be jeopardized.

It appears that the cormorant diet study and preliminary fish population models will not be able to tell us what the appropriate number of cormorants the DRM should manage for while maintaining fish population desired by some members of the public, due to a lack of data on some species about the complex food web in the lake. In the absence of this information the DRM will rely on adaptive management. In this case we will base our decision on the number of cormorants we have utilizing the lake and the walleye population response to this level of predation. Thus far it appears that the walleye population has rebounded at a faster rate than expected with good growth rates and is doing quite well. Currently the lake is experiencing some of the best walleye fishing ever recorded. Perch, despite sustaining the heaviest predation rates, also appear to be doing well, and size structure looks to be getting larger. It is quite possible that the cormorant predation on small perch has actually enabled more walleyes to survive in higher numbers, and grow faster. Should better information develop from the modeling efforts the DRM will evaluate refining our cormorant population goals.

### **3. Can Steve Lewis, USFWS, provide national and regional perspectives on cormorant management and populations?**

Cormorants are a federally protected species under the Migratory Bird Treaty Act, so protection and management is the responsibility of the US Fish and Wildlife Service. Cormorants are a species that has long been persecuted by humans and also underwent declines due to the pesticide DDT, which was used from the late 1940s to 1970s. Due to protection and the decline in the use of DDT the species is making a dramatic recovery, but probably has not yet reached historic levels.

Cormorants can cause losses in aquaculture facilities and in some cases to island vegetation when present in high numbers. Studies of cormorant predation on game fish populations in natural lakes have only rarely been able to document significant damage. In an attempt to deal with documented losses at aquaculture facilities, the USFWS developed an Aquaculture Depredation Order in 1998 that allows the removal of problem cormorants from these facilities in 12 southern states and Minnesota.

Subsequent to this order concerns also arose over cormorant damage to vegetation on private and public lands as well as potential impacts on game fish populations. A 2003 EIS established the Public Resource Depredation Order (PRDO), which allows State DNR's, USDA Wildlife Services, and Tribal Natural Resources Management Agencies to control cormorants (with landowner permission) to protect public resources where there is evidence that they are causing significant damage. Public resources include fish, vegetation, and other bird species in the public domain. Up to ten percent of a local breeding colony of cormorants can be controlled without USFWS review, but anything over this requires justification and USFWS review, and in all cases stringent reporting

and compliance with the PRDO is required. Currently the control effort being conducted by the Leech Lake DRM is the single largest control effort in this region.

**4. What is the methodology for counting cormorants?**

See separate sheet

**5. What are the results of the cormorant diet study?**

Diet study results are outlined in the reports on the Band Web Site and more detail will be provided in our Power Point presentation.

**6. How are common terns managed?**

Common terns are managed primarily by providing them a safe place to nest. The management issues surrounding the species include loss of habitat due to human encroachment and disturbance, as well as degradation of nest sites due to erosion and vegetation changes. They also can have a difficult time securing and holding high quality nest sites in the face of competition with other colonial waterbirds, notably ring-billed gulls, as they are smaller than most other colonial waterbirds that they usually co-nest with, and they return to nest about a month later than other species. The species also has difficulties with predation from mammalian predators, especially mink, and occasionally avian predators like great-horned owls. With all of these issues common terns are having a difficult time maintain reproductively viable populations in Minnesota and there are only four colonies remaining. On Leech Lake the common tern population has experienced almost all of the problems listed above. Without active management it is likely all of the common tern colonies in Minnesota would be extirpated.