



Minnesota Cormorant Damage Management

Questions & Answers

(May 2005)



Regulations Related to Double-Crested Cormorant Management

Q. Are double-crested cormorants protected in the United States?

A. Yes, 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 United States 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 in 1972 through an amendment to the Mexican treaty. Double-crested cormorants are also protected under many state and tribal conservation codes, but not under Minnesota state law.

Q. Does the U.S. Fish and Wildlife Service (FWS) control double-crested cormorants when they cause damage?

A. The primary role of the FWS in double-crested cormorant management is to assure the long-term viability of cormorant populations and, when needed, to oversee, coordinate, and authorize control activities conducted by individuals and agencies. FWS authorizes the take of cormorants either through the issuance of depredation permits or under the authority of depredation orders. Permits allow individuals, hatcheries, tribes, and state agencies to take cormorants, their eggs, and nests in order to alleviate specific damages to private property or threats to human health and safety. Such permits are issued only after the individual or agency has demonstrated that damage has occurred and determined that non-lethal management activities would not be effective (although non-lethal methods are not required prior to lethal methods). Before issuing a depredation permit, the FWS determines that any authorized take has a reasonable chance of resolving the damage, and that the take will not have a significant negative impact on the migratory bird resource. In 2003, the FWS established the double-crested cormorant Public Resource Depredation Order (PRDO), which authorizes the U.S. Department of Agriculture's Wildlife Services (WS), state fish and wildlife agencies, and federally-recognized tribes (acting on tribal lands) to control cormorants, without a federal permit, in 24 states (including Minnesota) to reduce the actual occurrence, and/or minimize the risk, of adverse impacts of cormorants to public resources. Public resources are natural resources managed by public agencies and include fish (both free-swimming fish and stock at federal, state, and tribal hatcheries that are intended for release in public waters), wildlife, plants, and their habitats. The PRDO is applicable on private lands, but landowner permission is required.

Q. Does the FWS allow the control of double-crested cormorants at aquaculture facilities?

A. Yes. Since 1998, under an Aquaculture Depredation order (AQDO) (50 CFR 21.47), the FWS has permitted the lethal take, without a federal permit, of double-crested cormorants at commercial freshwater aquaculture facilities and state-owned hatcheries in 12 southeastern states

and Minnesota when non-lethal methods are determined to be ineffective at preventing depredation.

Q. If the FWS doesn't control cormorants, then who does?

A. USDA's Wildlife Services program is responsible for providing federal leadership in managing problems caused by wildlife and provides assistance to agencies, organizations, and individuals in resolving wildlife damage problems on public, tribal, and private lands. Depredation permits can be issued to private landowners or public agencies (such as state and tribal fish and wildlife agencies). Permits are issued by the FWS only after WS has assessed the permit applicant's problem and recommended possible solutions that include lethal control. While individuals and agencies may implement control themselves, according to the stipulations of their permit, these entities may also choose to request the assistance of experts from WS. WS provides recommendations for a variety of non-lethal management options, including harassment and habitat alteration. If these activities are determined to be ineffective, WS may recommend lethal take of migratory birds.

Q. How are the state and tribal fish and wildlife agencies involved?

A. State and tribal resource management agencies generally oversee on-the-ground management of fish and wildlife in their respective jurisdictions. Under the Migratory Bird Treaty Act, cormorants are a trust responsibility of the FWS. Thus, in order for the states or tribes to take cormorants, they must be issued a depredation permit or have authority to do so under a depredation order from FWS.

Q. How will the FWS keep track of double-crested cormorant populations to ensure that they remain at sustainable levels?

A. Population monitoring provides critical information about population change and tells managers the present population status of species. Cormorant population monitoring is conducted by the FWS, WS, the Canadian Wildlife Service, states, tribes, and various universities. The U.S. Geological Survey and various non-governmental organizations participate in recording and analyzing population data, such as the Great Lakes Colonial Waterbird Survey, Atlantic Coast Colonial Waterbird Survey, winter roost surveys, Christmas Bird Counts, and Breeding Bird Surveys. Additionally, under the PRDO, agencies that conduct local population control are required to evaluate the effects of their actions on double-crested cormorant populations and annually report their findings to the FWS.

Q. What are the reporting requirements associated with the PRDO?

A. Each year, agencies acting under authority of the PRDO must provide the FWS with a report detailing activities conducted under the authority of this order. Agencies must, before they initiate control activities in a given year, provide written notice to the FWS. If any agency plans control action(s) that would take more than 10 percent of a cormorant breeding colony, it must first provide written notification with information about the proposed activity (at this level of control, the FWS may prevent the activity from taking place). For actions conducted with the intent of reducing or eliminating local double-crested cormorant populations, agencies must carefully plan activities to avoid disturbance of non-target species; evaluate effects of their management activities on cormorants at the control site, on the public resources being protected, and on non-target species; and include this information in their annual report. The FWS will

prepare annual reports summarizing regional and national double-crested cormorant management efforts.

2005 Minnesota Environmental Assessment (EA)

Q. What action will be undertaken to control double-crested cormorants in Minnesota?

A. WS in Minnesota, the FWS through its Midwest Region office, the Minnesota Department of Natural Resources (DNR), and Leech Lake Reservation Division of Resources Management (DRM) propose to implement a double-crested cormorant damage management program in Minnesota where there is documented evidence of a resource damage problem, including the implementation of the PRDO. In 2005, the primary action planned will be conducted by the Leech Lake DRM, in coordination with the cooperating agencies, on the cormorant colony located on Little Pelican Island in Leech Lake. The Leech Lake DRM seeks to reduce the Little Pelican Island colony by 80 percent.

Q. How will control be undertaken?

A. An Integrated Wildlife Damage Management (IWDM) approach will be used to reduce cormorant damage and conflicts to aquaculture, property, natural resources, and human health and safety. Damage management will be conducted on public and private property in Minnesota when the property owner or manager requests assistance or gives authorization. An IWDM strategy encompasses the use of practical and effective methods of preventing or reducing damage while minimizing harmful effects of damage management measures on humans, target and non-target species, and the environment. When appropriate, nest destruction, physical exclusion, habitat modification or harassment will be used to reduce damage. In other situations, birds may also be humanely removed through shooting, or egg oiling/addling/destruction.

Q. What management alternatives were considered in Minnesota's cormorant EA?

A. The EA analyzed five alternatives. Three additional alternatives were considered but not analyzed in detail. The alternatives analyzed in detail were as follows:

1. Integrated Cormorant Damage Management (CDM) Program, including implementation of the PRDO (Selected Action). WS, FWS, DNR, and affected Indian tribes (on Leech Lake, this is the Leech Lake Band of Ojibwe) would implement a double-crested cormorant damage management program in Minnesota, including implementation of the PRDO. An IWDM approach would be implemented to reduce cormorant damage and conflicts to aquaculture, property, natural resources, and human health and safety. WS could provide technical assistance and direct operational damage management, including non-lethal and lethal management methods. All management activities would comply with appropriate federal, state, tribal, and local laws, including applicable laws and regulations authorizing take of double-crested cormorants and their nests and eggs.

2. Only non-lethal CDM. The agencies would be restricted to implementing or recommending only non-lethal methods in providing assistance with cormorant

damage problems. Entities requesting CDM assistance for damage concerns would only be provided information on non-lethal methods such as harassment, nest destruction, exclusionary devices or habitat alteration. The FWS would not issue permits for lethal CDM. Only aquaculture facilities that had obtained prior certification to use lethal techniques under the AQDO could use lethal CDM methods. Information on lethal CDM methods would not be available from the agencies but could still be available through sources such as USDA Agricultural Extension Service offices, universities, or pest control organizations.

3. Technical Assistance Only. This alternative would not allow for operational CDM by the lead and cooperating agencies in Minnesota. The agencies would only provide technical assistance and make recommendations when requested. Producers, property owners, or others could conduct CDM using any non-lethal or lethal method that is legally available to them. Under the PRDO, cormorant damage management to protect public resources can only be conducted by authorized state, federal and tribal agencies. Under this alternative, these agencies would not implement the PRDO.

4. No CDM by Lead and Cooperating Agencies. This alternative would eliminate WS involvement in CDM in Minnesota. Wildlife Services would not provide direct operational or technical assistance. The FWS would not issue migratory bird permits for cormorant damage management. Only aquaculture facilities that had obtained prior certification to use lethal techniques under the AQDO could use lethal CDM methods. Under the PRDO, cormorant damage management to protect public resources can only be conducted by authorized state, federal and tribal agencies. Under this alternative, these agencies would not implement the PRDO. Information on CDM methods would still be available through other sources such as USDA Agricultural Extension Service offices, universities or pest control organizations.

5. Integrated CDM Program, excluding implementation of the PRDO (No Action, see note below.). This alternative would be identical to Alternative 1, with the exception that WS, MNDNR, and tribe(s) would not conduct CDM under the PRDO. All CDM would be conducted under the AQDO or migratory bird permits. As currently implemented by the action agencies, migratory bird permits could be requested and issued for the reduction of DCCO impacts on sensitive species or their habitats (e.g., vegetation), but, with the exception of research projects, would generally not be requested or issued for birds taking free-swimming fish from public waters. Cormorant damage management efforts to protect public resources at Leech Lake, would be restricted to those efforts necessary to reduce impacts on the common tern population on Little Pelican Island and would not involve the protection of fishery resources. (Note: consideration of a “No Action” alternative is required by the National Environmental Policy Act (NEPA). No action in this context means doing nothing more than what is currently being done.)

Q. Why was Alternative 1 chosen?

A. The analyses in the EA demonstrate that Alternative 1:

- best addresses the issues identified in the EA,
- provides the agencies the best opportunity to reduce damage while providing low impacts on non-target species,
- mitigates the negative economic impacts to aquaculture resources and property, and
- allows WS to meet its obligations to government agencies or other entities.

Q. Why didn't the action agencies do an Environmental Impact Statement for the proposed action?

A. The action agencies determined that the analysis in the EA showed no significant impact on the quality of the human environment. The EA examined the need for action, the issues, alternatives and environmental consequences, and resulted in a Finding of No Significant Impact by each agency acting to manage cormorant damage on Leech Lake. WS, FWS, and DRM (the action agencies) carefully considered public comments on the EA and followed NEPA regulations.

Q. What evidence do we have that DCCOs are impacting walleye and yellow perch populations in Leech Lake?

A. The numbers of small walleye and mid-sized yellow perch have declined dramatically in the main basin of Leech Lake, where the bulk of cormorant foraging occurs. At the same time, numbers of walleye and perch have remained within normal levels in the western bays of the lake, where cormorants are rarely seen. Because Leech Lake is part of the Minnesota DNR's large lake monitoring program, fisheries biologists have good long-term data on Leech and other Minnesota lakes of similar size and structure. While biologists sampled a strong 2001 walleye year class in Leech and other large lakes, that year class has disappeared from the main basin of Leech Lake during a period of rapid increase in the Little Pelican Island cormorant colony. The 2001 year class is still prominent in other large lakes in Minnesota and in the western bays of Leech Lake, where foraging by cormorants is minimal.

Q. How many comments were received during the EA comment period?

A. 31-day public comment period on the draft EA resulted in 112 comment letters from individuals, organizations, and agencies. These letters contained nearly 600 individual comments, which were categorized and addressed in the final EA. Responses to public comments can be found in the final EA (pp. 74-96), which is available at <http://www.fws.gov/midwest/NEPA>, or upon request from the Minnesota Wildlife Services Office, 34912 US Highway 2, Grand Rapids or the U.S. Fish and Wildlife Service, Division of Migratory Birds, 1 Federal Drive, Fort Snelling, MN 55111.

Q. How will action agencies evaluate whether the control actions worked?

A. Action agencies will monitor the impacts of their activities on cormorants and non-target species that could be affected by CDM activities. FWS will annually assess the impacts of the PRDO—as well as the AQDO, depredation and scientific collecting permits—to ensure that they do not impact the long-term sustainability of regional cormorant populations and that they are having minimal impacts on non-target wildlife species. This will be done primarily by review of annual reports submitted by agencies and individuals authorized to take cormorants under the

PRDO, AQDO, and migratory bird permits. In addition, the EA will be reviewed each year to ensure that it is sufficient. The Minnesota DNR conducts annual fish population monitoring on Leech Lake. Improvements in the number of young walleye and yellow perch will be detectable in annual assessment sampling.

Q. When would action agencies use lethal control actions for cormorant damage?

A. In determining the appropriate damage management strategy, non-lethal methods will be considered. However, non-lethal methods may not always be applied as a first response to each damage problem. The most appropriate response could often be a combination of non-lethal and lethal methods, or there could be instances where the application of lethal methods alone would be the most appropriate strategy.

Q. What precautions will action agencies take to minimize impact of cormorant control activities on non-target species--including threatened and endangered wildlife and other migratory bird species--in the area?

A. Impacts on non-target species are predicted to be minimal and should not affect the overall populations of any non-target species. Action agency personnel are trained and experienced in selecting the most appropriate method for taking target animals and excluding non-targets. Non-target migratory bird species and other non-target wildlife species are usually not affected by CDM methods, except for the occasional scaring from harassment devices and when action agencies conduct breeding double-crested cormorants management in mixed-species waterbird colonies. The agencies have determined that CDM activities in Minnesota will not adversely impact any federally, tribally or state-listed threatened or endangered species. Standard operating procedures to reduce impacts on non-target species include the following (additional procedures can be found in chapters three and six of the Minnesota EA):

- Management actions taken in mixed-species waterbird colonies would be conducted in such a manner to avoid or minimize impacts to non-target species;
- Egg oiling will only be used for ground- and shrub-nesting cormorants to minimize disturbances when other tree-nesting colonial waterbird species are present;
- When possible, egg oiling activities will take place during night hours to minimize potential impacts to co-nesting colonial waterbird species. However, WS will not conduct such activities during night hours if it is determined unsafe to do so;
- When shooting cormorants in breeding colonies, WS will use the smallest caliber firearm that is effective, and will use noise-suppressed firearms (silencers) if they become legal, as deemed appropriate to minimize repeated disturbances to co-nesting colonial waterbird species;
- Action agencies will abide by provisions at 50 CFR 21.47 and 50 CFR 21.48 to protect federally threatened and endangered species;
- Prior to any control action, the action agencies will consult with the affected Indian tribes and the Minnesota DNR to ensure that no actions taken under this plan will adversely affect any state or tribally listed species; and
- Non-toxic shot will be used when using shotguns to harass, collect, or kill cormorants.

Q. What impacts will these control actions have on wildlife watching opportunities?

A. Action agencies do not anticipate that this control action will have a significant impact on wildlife watching. Management actions would generally be restricted to local sites and to small, unsubstantial percentages of the overall population. Even though some local populations of cormorants may decline in the short term, these birds would remain common and abundant in Minnesota, and available for viewing by persons with that interest. By adhering to mitigation measures, cormorant damage management actions will not have a significant impact on wildlife populations in Minnesota.

Cormorant Life History and Population Status

Q. What is a double-crested cormorant?

A. The double-crested cormorant (*Phalacrocorax auritus*) is a long-lived, colonial-nesting waterbird native to North America. One of 38 species of cormorants worldwide, and one of six species in North America, double-crested cormorants are usually found in flocks and are sometimes confused with geese or loons when on the water. The double-crested cormorant is the only commonly seen cormorant species in Minnesota.

Q. What do double-crested cormorants look like?

A. From a distance cormorants look like an all-black bird, but up close adults are brownish-back with the edges of their feathers scalloped in black. They have a yellowish throat patch and bright green eyes. While breeding, the inside of a cormorant's mouth is blue, and it may display two crests on the top of its head (which is how the species gets its name). Cormorants are about three feet long and have a wing span of 4.5 feet, a hooked bill that is used to hold prey, and powerful webbed feet that are used for swimming underwater. An adult weighs about five pounds.

Q. Where do they live?

A. Double-crested cormorants can be found in many locations throughout North America, including along the coast and inland on lakes, rivers, and other water bodies. The largest concentrations of double-crested cormorants are found on the Great Lakes and the lakes of the Canadian prairie provinces.

Q. How large is the cormorant population in North America?

A. The double-crested cormorant is the most abundant of six species of cormorants occurring in North America. The FWS estimates that the current continental population of double-crested cormorants could be close to 2 million birds, with nearly 70 percent of this number in the interior population, centered around the Great Lakes and the prairie region of central Canada. While the total North American population increased rapidly from the 1970s into the 1990s, more recent estimates have indicated that the overall rate of growth in the United States and Canada slowed during the early 1990s. According to Breeding Bird Survey trends, the U.S. breeding population of double-crested cormorants increased at a rate of approximately 7.9 percent per year from 1975 to 2000.

Q. Weren't cormorants recently very rare?

A. Cormorant numbers were greatly reduced due to human persecution and the chemical DDT. It was not that many years ago that they were listed as threatened in some states. With protection under the Migratory Bird Treaty Act and the ban on DDT cormorant numbers have recovered to what they are believed to have been prior to colonization of this country by Europeans.

Q. What about their population in Minnesota?

A. Cormorants are widespread throughout the Great Lakes, where about 115,000 pairs currently nest. There are 38 double-crested cormorant breeding sites in Minnesota, and a census conducted by University of Minnesota and DNR researchers in 2004 found just over 16,000 breeding pairs in the state.

Q. Will the population continue to increase?

A. The national population will be anticipated to increase in the short term, although at a slower rate than in past years. In the long term, the population will likely stabilize due to disease (an outbreak of Newcastle's Disease controlled the population in the late 1990s), or limitations on nesting habitat and food resources. Because cormorants are not typically preyed upon by other species, their populations are regulated primarily by these factors rather than by predation.

Q. How do cormorants nest?

A. Cormorants breed in colonies ranging from several to a few thousand pairs. They build their nests of twigs and branches beginning in April, usually in trees or on the ground, on islands that are also favored by other colonial nesting birds, like great blue herons, great egrets, black-crowned night-herons, cattle egrets, gulls, and terns. Typically, the birds mature and return to breed at three years of age. 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 five to six weeks and will accompany adults to feed at seven weeks. They are independent of the adult birds at 10 weeks.

Q. What do double-crested cormorants eat?

A. Cormorants eat mainly fish. Adults eat an average of one pound of fish per day, usually comprising small (less than six inches) bottom-dwelling or schooling "forage" fish. Cormorants are opportunistic and generalist feeders, preying on many species of fish, but concentrating on those that are abundant and easiest to catch. Because the ease with which a fish can be caught depends on a number of factors (distribution, relative abundance, behavior, etc.), the composition of a cormorant's diet can vary considerably from site to site and throughout the year. Cormorants forage by diving down into the water and capturing prey. They typically feed in waters of 5-25 feet and usually stay underwater less than 30 seconds, but can stay down for a little over one minute.

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

A. Cormorants are one of many factors--including water quality, aquatic habitat, predation, and angler catch--that can affect fish populations. Recently, FWS biologists conducted an extensive review of published studies, most of which indicated that fish species valued by sport and commercial anglers make up a small proportion of the cormorant's diet. However, in some cases cormorants are capable of taking numbers of sport fish significant enough to have a negative

impact on catch rates. For example, recent research studies conducted in New York at Oneida Lake and eastern Lake Ontario have revealed that summer resident and migrating cormorants can diminish the number of fish of catchable size available to anglers.

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

A. Cormorants do kill trees, shrubs, and other vegetation, where they nest or roost 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 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 by cormorants, evidence of locally significant impacts has been observed by many biologists, particularly in the Great Lakes states and Canadian provinces.

Q. Are there Web sites about cormorants and what is being done to manage them?

A. Yes, online information is available at several Web sites:

U.S. Fish and Wildlife Service Division of Migratory Bird Management:

<http://migratorybirds.fws.gov/issues/cormorant/cormorant.html>

U.S. Department of Agriculture APHIS Wildlife Services:

<http://www.aphis.usda.gov/ws/nwrc/is/cormorants/index.html>

Canadian Wildlife Service:

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

McMaster University:

<http://www.science.mcmaster.ca/Biology/Harbour/SPECIES/CORMRNT/CORMRNT.HTM>

New York State Department of Environmental Conservation:

<http://www.dec.state.ny.us/website/dfwmr/cormorant/index.html>

U.S. Geological Survey Patuxent Wildlife Research Center:

<http://www.mbr-pwrc.usgs.gov/id/mlist/h1200.html>

Leech Lake Cormorant Control Program

Q. What was the final outcome of the Minnesota EA for cormorant damage management?

A. In the near term, the Leech Lake DRM has made the decision to reduce the number of cormorants that nest on Little Pelican Island in Leech Lake to protect the common tern colony that also nests there and to reduce predation on walleye and yellow perch populations in Leech Lake. In the future, proposals to initiate cormorant damage management will be reviewed and considered by the Minnesota Cormorant Coordination Group to determine if sufficient evidence exists to initiate management activities where local human-wildlife conflict exists.

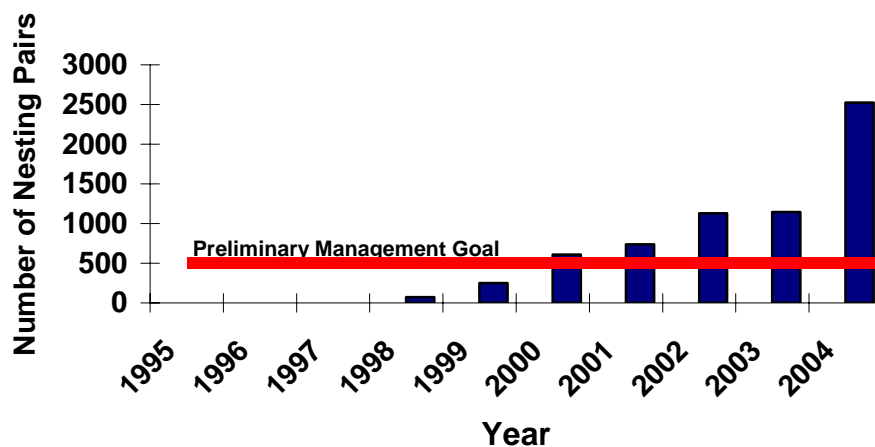
Q. Why did the DNR and the Leech Lake DRM have to wait to initiate cormorant reduction on Leech Lake?

A. Although double crested cormorants are not protected under state law, they are protected under federal and tribal law. Without the completion of the EA for cormorant damage management in Minnesota, the Leech Lake Band of Ojibwe could not implement cormorant control on Little Pelican Island, which is owned and managed by the Leech Lake Band.

Q. How did the Leech Lake DRM, in cooperation with the Minnesota Cormorant Coordination Group, determine the number of birds to remove from the Little Pelican colony?

A. The cormorant population objective for the Little Pelican Island colony is based on the number of nesting pairs that can exist without negatively impacting game fish, primarily walleye and yellow perch, in Leech Lake. The Minnesota Cormorant Coordination Group, which is comprised of the FWS, DNR, WS, and affected Indian tribes (represented by the Leech Lake Band of Ojibwe for the Little Pelican Island colony), conducted background research as part of the EA for cormorant damage management in Minnesota. The group determined that an initial population of 500 breeding pair should relieve competition problems with common terns and address fish predation concerns. At this level there should be little or no competition with common terns, and the foraging intensity of cormorants would be below 3.4 pounds of fish per acre, a level that evidence suggests game fish populations are affected (evidence primarily from research on Oneida Lake in New York). The preliminary population goal will be adjusted based on the findings of further research, which will include a cormorant diet and predation effects study, long-term fish population assessments, and tern colony population monitoring.

**Nesting Pairs of Cormorants on Leech Lake
with Preliminary Target Population**



Q. Who is the Minnesota Cormorant Coordination Group?

A. The Minnesota Cormorant Coordination Group is comprised of Minnesota representatives of the FWS, WS, DNR and Indian tribes (for the cormorant colony on Leech Lake that is addressed in this EA, the Leech Lake DRM represented the Leech Lake Reservation). This is an informal

group that will be modified to include other interests as future cormorant management needs are assessed.

Q. Who will be carrying out the control efforts on Leech Lake?

A. The Leech Lake DRM has contracted with WS to conduct the damage management effort. Much of the effort this year will be funded by the DNR; however, the Leech Lake DRM is seeking federal funding for cormorant damage management in future years. Staff from the other cooperating agencies, such as FWS and the DNR, are providing logistical and financial support to the control effort.

Q. How will the number of cormorants on Leech Lake be reduced to the target level?

A. Adult cormorants will initially be dispatched using quiet, high-powered, pre-charged air rifles. Agencies are seeking approval for the use of silencer-equipped .22 caliber rifles from the Minnesota Legislature. Silencer-equipped .22 caliber rifles are more effective and have a longer range. Egg oiling may be used for nests above the target level of 500 nesting pairs. Implementing agencies believe these efforts may take one to three years to reach target levels because 1) culling efforts likely will be slowed because of the use of air rifles and 2) management must be suspended once common terns begin to nest on the island in late May.

Q. What measures are being taken to insure public safety during control activity?

A. Public safety is the primary concern of all cooperating agencies. Action agencies want to remind the public to keep a safe distance from the Pelican Island complex while management activities are underway. A quarter-mile radius around the complex will be marked with buoys that identify the area as restricted to the general public. The Cass County Sheriff's Department Boat and Water Division and conservation officers from the Leech Lake Band and the Minnesota DNR will enforce the restricted area. Action agencies want to remind the public that all islands in the island complex are tribal property (and thus, considered private property). Culling will occur from elevated blinds and will not be removed from rocky areas, which will reduce the possibility of ricochet. In an effort to minimize safety concerns and not disrupt angling activity, culling operations will not take place during the 2005 walleye fishing opener, May 14-15. The restricted area around the island complex will still be in effect, however, and anglers should avoid fishing near Pelican and Little Pelican Islands while culling operations are underway.

Q. How will disposal of the birds be addressed?

A. The bird carcasses will be removed after each culling operation to reduce the potential of spreading disease. Disposal of cormorants will be by incineration in a DNR incinerator located at the Mille Lacs Wildlife Management Area.

Q. How will the success of the cormorant control program be evaluated?

A. Cormorants appear to have significantly decreased the abundance of young walleye and larger yellow perch in the main body of Leech Lake. Control efforts will be evaluated by continuing to monitor Leech Lake fish populations through the DNR's annual large lake sampling program. The control program will be deemed successful if young walleye and large (greater than nine inches) yellow perch abundance return to more normal levels in the main lake. Diet studies will also help determine what the impacts of cormorants are on Leech Lake fish populations, both prior to control and at reduced cormorant levels. Further, the cormorant control program will be

deemed a success when the competition between the common terns and other colonial waterbirds on Little Pelican Island has been reduced or eliminated.

Q. Will there be control measures initiated on other colonies in the state?

A. There could be, if circumstances warrant control. The EA analyzes the impacts of current and future actions. The Minnesota Cormorant Coordination Group will review needs for CDM to protect public resources on a case-by-case basis. Section 1.8.4 of the EA indicates that the EA will be supplemented for any action that proposes taking greater than 740 birds under the PRDO or if there is new information or changes in the proposed activities that require new analysis pursuant to NEPA. Further, Section 2.1.2 of the EA emphasizes that factors such as the number of species in each colony and the colony's longevity and stability will be considered in assessing its overall contribution to waterbird conservation in Minnesota and the Great Lakes and, thus, its suitability (or not) for double-crested cormorants control. In other words, the 740-bird trigger for a supplemental EA will not be the only thing that causes the group to consider the impacts of any future double-crested cormorants control activities. Control efforts that take less than 740 cormorants and/or do not trigger other concerns regarding the colony's overall significance, can proceed without supplementing the EA, pending discussion and review by the Minnesota Cormorant Coordination Group.