

CHAPTER 2: ALTERNATIVES

2.1 Introduction

This chapter, considered the “heart of the environmental impact statement” (40 CFR 1502.14), describes the six alternatives being evaluated for the purpose of managing DCCOs in the contiguous United States. It also states the proposed action (Alternative D: Public Resource Damage Depredation Order).

2.2 Rationale for Alternative Design

All alternatives considered were evaluated in relation to their ability to reduce resource conflicts associated with DCCOs, increase management flexibility, and conserve healthy populations of DCCOs. NEPA regulations require the analysis of a No Action alternative. Additional alternatives were developed after evaluating comments received during the public scoping period, holding interagency meetings and internal discussions, and reviewing the best available scientific information. Each alternative described below is analyzed in more detail in Chapter 4, ENVIRONMENTAL CONSEQUENCES.

2.3 Description of Alternatives

2.3.1 Alternative A: No Action (Continue existing DCCO damage management policies)

Under this alternative, existing wildlife management policies and practices would continue. This includes non-lethal management techniques (as described under Alternative B), the issuance of depredation permits, and the Aquaculture Depredation Order. No additional regulatory methods or strategies would be authorized. Control techniques include the take of adults and young (by shooting), eggs (by means of oiling or destruction), and active nests (by removal or destruction). At National Fish Hatcheries, Director’s Order No. 27, “Issuance of Permits to Kill Depredating Migratory Birds at Fish Cultural Facilities,” allows that “Kill permits [for migratory, fish-eating birds] will be issued for use at public facilities only when it has been demonstrated that an emergency or near emergency exists...” The Aquaculture Depredation Order allows DCCOs to be killed at commercial freshwater aquaculture facilities and State-owned fish hatcheries in 13 States. Those conflicts not eligible for inclusion under the Aquaculture Depredation Order would continue to be dealt with on a case-by-case basis, requiring a Federal permit for every locality and occurrence where DCCO control actions are desired. All depredation permits would continue to be issued by Regional Offices of the Service. See Table 3 below for current Service practice for the issuance of depredation permits for DCCOs. Population surveys on breeding grounds would continue to be conducted at regular (~10-year) intervals.

Table 3. Current Service Practice for Issuance of Depredation Permits for DCCOs

<i>Aquaculture</i>
Private and State facilities in 13 States do not require a permit because they fall under the Aquaculture Depredation Order (AL, AR, FL, GA, KY, LA, MN, MS, NC, OK, SC, TN, and TX).
In non-Depredation Order States, APHIS/WS makes recommendations and USFWS issues permits to take birds, eggs, and/or active nests.

Director's Order No. 27 prohibits lethal control of fish-eating birds at National Fish Hatcheries except when an "emergency" exists.

Natural Resource Issues on Public Lands/Waters

Permits issued by USFWS when action is considered necessary to ensure survival and/or recovery of Federal- or State-listed threatened and endangered species.

Permits may be issued by USFWS if there exists convincing evidence that a regionally significant bird population or rare and declining plant communities are being adversely affected by DCCOs.

Permits may be issued by USFWS to alleviate depredation at the site of fish stocking but requests for permits are not issued for birds taking free-swimming fish in public waters.

Other Natural Resource and Economic Issues

Permits typically issued by USFWS if there is significant economic damage to privately-stocked fish on a privately-owned water body that maximizes fishing opportunities for patrons, whether done for a fee or for recreation.

Permits typically issued by USFWS for significant property damage (for example, to physical structures or vegetation) on public or private lands and waters.

Human Health and Safety

Permits issued by USFWS when evidence exists of significant human health and safety risks (for example, at airports or when water quality is compromised).

2.3.2 Alternative B: Non-lethal Management (Do not allow lethal management actions)

Under this alternative, permits allowing the lethal take of DCCOs, their eggs, or their nests would not be authorized. The Aquaculture Depredation Order would be rescinded. To reduce impacts associated with DCCOs, this option would allow only non-lethal management techniques such as harassment, habitat modification (including destruction of inactive nests), exclusion devices at production facilities, and changes in fish stocking practices. Essentially, only those management techniques not currently requiring a Federal depredation permit would be continued under this alternative. Breeding population surveys would be conducted at regular (~10-year) intervals.

2.3.3 Alternative C: Increased Local Damage Control (Expand current wildlife damage management policy)

The intent of this alternative would be to expand the current DCCO depredation policy to address a broader range of resource conflicts than under the No Action (see Table 4 below). The permit renewal period for DCCO depredation permits would change from annual to biennial in order to help alleviate the increased permit review requirements (this means that permittees would only need to reapply for a permit every two years instead of each year). The Aquaculture Depredation Order would continue to allow DCCOs to be killed at commercial freshwater aquaculture facilities and State-owned fish hatcheries in 13 States and would be expanded to include winter roost control at aquacultural facilities in those States. Director’s Order No. 27 prohibiting lethal control of DCCOs (in most cases) at National Fish Hatcheries would be revoked. Non-lethal techniques would remain part of the management program. Population surveys on breeding grounds would be conducted at regular (~10-year) intervals.

Table 4. Revised Service Policy for Issuance of Depredation Permits for DCCOs (Alternative C)

<i>Aquaculture</i>
Private and State facilities in 13 States do not require a permit because they fall under the Aquaculture Depredation Order (AL, AR, FL, GA, KY, LA, MN, MS, NC, OK, SC, TN, and TX). (Same as No Action)
In non-Depredation Order States, APHIS/WS makes recommendations for permit issuance and USFWS may issue permit to take birds, eggs, and/or active nests. (Same as No Action)
Aquaculture Depredation Order expanded to include lethal control at winter roost sites in those 13 States. (Different than No Action)
Director’s Order No. 27 prohibiting lethal take at National Fish Hatcheries, except in emergencies, revoked. (Different than No Action)

Natural Resource Issues on Public Lands/Waters

Permits issued by USFWS when action is considered necessary to ensure survival and/or recovery of Federal- or State-listed threatened and endangered species. (Same as No Action)

Permits issued by USFWS for conflicts with fish, wildlife, plants, and other wild species when there is scientific documentation of significant impacts or when best professional judgment has determined that there is a high likelihood that DCCOs are a significant detriment to the resource in question. In the latter case, a permit will be issued when the control efforts will not threaten the viability of DCCO or other wildlife populations and the agency requesting the permit prepares a site-specific plan containing the following: (1) a definition of the conflict(s) with DCCOs, including a statement of the management objectives for the area in question; (2) a description of the evidence supporting the hypothesis that DCCOs are contributing to these resource conflicts; (3) a discussion of other limiting factors affecting the resource (e.g., biological, environmental, and socioeconomic); and (4) a discussion of how control efforts are expected to alleviate resource conflicts. (Different than No Action)

Other Natural Resource and Economic Issues

Permits issued by USFWS if there is significant economic damage to privately-stocked fish on a privately-owned water body that maximizes fishing opportunities for patrons, whether done for a fee or for recreation. (Same as No Action)

Permits issued by USFWS for significant property damage (for example, to physical structures or vegetation) on public or private lands and waters. (Same as No Action)

Human Health and Safety

Permits issued by USFWS when evidence exists of significant human health and safety risks (for example, at airports or when water quality is compromised). (Same as No Action)

2.3.4 Alternative D: Public Resource Depredation Order (Establish a new Depredation Order to address public resource conflicts - PROPOSED ACTION)

This alternative would establish a new Depredation Order (Public Resource Depredation Order) authorizing State, Tribal, and Federal land management agencies to implement a DCCO management program, while maintaining Federal oversight of DCCO populations via reporting and monitoring requirements (see Table 6 below for associated restrictions). “Public resources” include fish, wildlife, plants, and other wild species occurring on public lands and waters. Control activities carried out under this new depredation order would take place on public lands and waters and private lands and waters (with appropriate landowner permission) where DCCOs are injurious to public resources. The Aquaculture Depredation Order would continue to allow DCCOs to be killed at commercial freshwater aquaculture facilities and State-owned fish hatcheries in 13 States and would be expanded to include winter roost control (by APHIS/WS) in those States. Director’s Order No. 27 prohibiting lethal control of DCCOs (in most cases) at National Fish Hatcheries would be revoked. Depredation permits would continue to be used to address conflicts outside the authority of the depredation orders. Population surveys on breeding grounds would be conducted at regular (~5-year) intervals. DCCO management strategies would be revised and supplemented, as necessary, based upon monitoring and adaptive management procedures as discussed in section 4.5.12 (with supplemental NEPA analysis, as appropriate).

Table 5. Service Depredation Policy under Public Resource Damage Depredation Order

<i>Aquaculture</i>
Private and State facilities in 13 States do not require a permit because they fall under the Depredation Order (AL, AR, FL, GA, KY, LA, MN, MS, NC, OK, SC, TN, and TX). (Same as No Action)
In non-Depredation Order States, APHIS/WS makes recommendations for permit issuance and USFWS may issue permit to take birds, eggs, and/or active nests. (Same as No Action)
Aquaculture Depredation Order expanded to include lethal control at winter roost sites in 13 States. (Different than No Action)
Director’s Order No. 27 prohibiting lethal take at National Fish Hatcheries, except in emergencies, revoked. (Different than No Action)
<i>Natural Resource Issues on Public Lands/Waters</i>

State, Tribal, and Federal land management agencies may take DCCOs to protect biological resources (fish, wildlife, plants, and other wild species) on public lands and waters. (Different than No Action)
<i>Other Natural Resource and Economic Issues</i>
Permits issued by USFWS if there is significant economic damage to privately-stocked fish on a privately-owned water body that maximizes fishing opportunities for patrons, whether done for a fee or for recreation. (Same as No Action)
Permits issued by USFWS for significant property damage (for example, to physical structures or vegetation) on public or private lands and waters. (Same as No Action)
<i>Human Health and Safety</i>
Permits issued by USFWS when evidence exists of significant human health and safety risks (for example, at airports or when water quality is compromised). (Same as No Action)

Table 6. Restrictions Associated with the Public Resource Depredation Order

1. State, Tribal, and Federal land management agencies (Agencies) may take injurious DCCOs on public and private lands and waters as a management tool to protect public resources (fish, wildlife, plants, and other wild species), but should also utilize non-lethal management tools to the extent they consider appropriate.
2. Control activities must not adversely affect other migratory birds or any species designated under the Endangered Species Act as threatened or endangered.

3. Agencies must properly dispose of or utilize DCCOs killed in control programs. Agencies may donate DCCOs killed under these permits to public museums or public scientific and educational institutions for exhibition, scientific, or education purposes. Agencies may also bury or incinerate DCCOs. Agencies may not allow DCCOs taken under these permits, nor their plumage, to be sold, offered for sale, bartered, or shipped for purpose of sale or barter.

4. Methods of take are limited to shooting, egg oiling or destruction, and nest destruction. When shotguns are utilized, the use of non-toxic shot is required.

5. Agencies may designate agents (such as APHIS/WS) who must operate under the conditions of the Public Resource Depredation Order.

6. Agencies must keep records of all activities, including those of designated agents, carried out under the Public Resource Depredation Order. Before control actions begin, responsible agencies must notify, in writing, the Chief of the Division of Migratory Bird Management of their intention to carry out control activities. The Service will require an annual report detailing activities conducted under the Public Resource Depredation Order. Additionally, where control is being carried out at breeding colonies the responsible agency must conduct a baseline (i.e., before control) colonial waterbird population survey, followed by annual population surveys of the affected area for each year in which control is conducted. Results must be reported to the Service annually, within two months of the cessation of control activities at the affected area.

7. The Service will annually review Agencies' reports and will periodically assess the overall impact of this program to ensure compatibility with the long-term conservation of DCCO and other waterbird populations.

8. The Service reserves the authority to immediately suspend or revoke any Agency's authority under this Public Resource Depredation Order if we find that the Agency has not adhered to the terms and conditions specified in the Depredation Order, if we determine that DCCOs no longer pose a threat to the public resource, or if the viability of DCCO populations are threatened by an Agency's actions.

2.3.5 Alternative E: Regional Population Reduction (Develop and implement actions to attain population objectives aimed at reducing overall DCCO populations)

This alternative would entail the development of regional DCCO population objectives designed to reduce damages associated with DCCOs. Population objectives would be developed on an interdisciplinary, interagency basis and would be based on the best available scientific data, including new information as research made it available. Control would be carried out at nesting, roosting,

wintering and all other sites in order to achieve those objectives as rapidly as possible without adversely affecting other migratory bird or threatened and endangered species. A special statewide cormorant permit would be issued by USFWS to each State choosing to engage in DCCO population reduction efforts. States could then designate other agents to carry out control. The Aquaculture Depredation Order would continue to allow DCCOs to be killed at commercial freshwater aquaculture facilities and State-owned fish hatcheries in 13 States and would be expanded to include winter roost control in those States. For all conflicts not addressed under the Aquaculture Depredation Order or the special statewide cormorant permit, depredation permits would be issued according to the policy outlined in Alternative C above. Non-lethal techniques would remain part of the management program, but only voluntarily. Population monitoring on breeding grounds would be conducted cooperatively at more frequent (~3-year) intervals.

2.3.6 Alternative F: Regulated Hunting (Establish frameworks for a hunting season on DCCOs)

Under this alternative, frameworks to develop seasons and bag limits for hunting DCCOs would be established jointly by Federal and State wildlife agencies. Additionally, the depredation policy outlined in Alternative C, above, would address DCCO conflicts (issuance of depredation permits and the Aquaculture Depredation Order). Population monitoring on breeding grounds would be conducted cooperatively at more frequent (~3-year) intervals.

2.4 Alternatives Considered but Eliminated from Detailed Study

2.4.1 No Management Alternative

This alternative would not allow for any Federal management or control of DCCOs (no depredation permit issuance, no Depredation Order, no harassment or habitat modification, etc.). To implement this alternative would be to ignore conflicts associated with cormorants that must be addressed if we are to fulfill our duties to manage America's migratory birds responsibly and realistically. Since there is real biological and socioeconomic evidence (as described in Chapter 3, AFFECTED ENVIRONMENT) justifying the need for DCCO management, we find this alternative to be unacceptable.

2.4.2 Rescindment of Migratory Bird Treaty Act Protection Alternative

This alternative would entail amending the Migratory Bird Treaty Act (MBTA) to remove the DCCO from its protection, although DCCOs would still be protected under the laws of most States. This action would require amending both the Mexican and Russian treaties and could have the undesirable result of losing protection for all North American cormorant species. We feel that under the MBTA there is considerable authority and flexibility for dealing with conflicts between cormorants and other resources (e.g., depredation permits, Depredation Orders, etc.). Removing MBTA protection of DCCOs would abolish Federal oversight in the management of DCCOs and would present an unacceptable risk to their populations.

2.5 Proposed Action

The agency's proposed action is the alternative which the agency believes would fulfill its statutory mission and responsibilities, while giving consideration to economic, environmental, technical, and other factors. The proposed action, Alternative D (Public Resource Depredation Order), proposes to authorize State and Federal land management agencies to control DCCOs where necessary to protect public resources. Based on our analysis, it would be more effective than the current program, environmentally sound, cost effective, flexible enough to meet different management needs around the country, and the actions associated with it do not threaten viable DCCO populations or populations of any other trust resource.

2.6 Comparison of Alternatives

Each alternative described above would utilize non-lethal management techniques. All of the alternatives we analyzed, except Alternative B, would allow for limited lethal take (shooting, egg oiling or destruction, and/or nest destruction) through Depredation Orders or the issuance of depredation permits. Additionally, Alternative F would develop hunting frameworks for DCCOs. Differences among alternatives in the degree of lethal take are primarily related to the circumstances under which permits are issued (to control local damages or to reach population objectives) and which Depredation Order is in effect (Aquaculture, expanded Aquaculture, and/or Public Resource).

Alternatives Considered	USFWS Action Taken Under Alternative	APHIS/WS Action Taken Under Alternative	Funding Considerations	Other Aspects of this Alternative
<p>No Action - Current Program Alternative</p>	<p>Limited issuance of site-specific depredation permits for lethal control (birds, eggs, or active nests) to Federal, Tribal, and State agencies or private citizens.</p> <p>Aquaculture Depredation Order to kill cormorants at aquaculture facilities and State hatcheries.</p> <p>Direct management at National Fish Hatcheries and National Wildlife Refuges.</p> <p>Support for research and involvement in outreach activities.</p>	<p>Direct management using lethal and non-lethal methods on public and private property.</p> <p>Technical assistance with both lethal and non-lethal methods.</p> <p>Research to support both lethal and non-lethal methods.</p>	<p>Funded by USFWS appropriations.</p> <p>Funded by APHIS/WS appropriations and cooperative funding.</p> <p>Interested State and other agencies expend funds for permitted cormorant control.</p>	<p>USFWS decides whether or not to issue a permit and determines allowable take using an Integrated Pest Management (IPM) approach.</p> <p>Cormorant damages largely viewed as not adequately managed.</p> <p>Population monitoring at 10-year intervals.</p>

Alternatives Considered	USFWS Action Taken Under Alternative	APHIS Action Taken Under Alternative	Funding Considerations	Other Aspects of this Alternative
<p>Non-lethal Management Alternative</p>	<p>No issuance of site-specific depredation permits for lethal control (birds, eggs, or active nests).</p> <p>No issuance of statewide permits to APHIS/WS for lethal cormorant control.</p> <p>Rescindment of Depredation Order to kill cormorants at aquaculture facilities and State hatcheries.</p> <p>Direct non-lethal management at National Fish Hatcheries and National Wildlife Refuges</p> <p>Support for research and involvement in outreach activities.</p>	<p>Direct management using only non-lethal methods on public and private property.</p> <p>Technical assistance with non-lethal methods only.</p> <p>Research to support non-lethal methods only.</p>	<p>Funded by USFWS appropriations. Permitting costs would be reduced.</p> <p>Funded by APHIS/WS appropriations and cooperative funding.</p> <p>Interested State, Tribal, and Federal agencies would expend funds for non-lethal methods at specific sites of damage.</p>	<p>Cormorants could not be lethally controlled on public or private lands.</p> <p>Only harassment and limited habitat modification could be carried out.</p> <p>Local damages might be reduced, but birds would likely cause damage at other sites.</p> <p>Would be economically impractical.</p> <p>Population monitoring at 10-year intervals.</p>

Alternatives Considered	USFWS Action Taken Under Alternative	APHIS/WS Action Taken Under Alternative	Funding Considerations	Other Aspects of this Alternative
<p>Increased Local Damage Control Alternative</p>	<p>Increased issuance of site-specific depredation permits for lethal control (birds, eggs, or active nests) to Federal, Tribal, and State agencies or private citizens.</p> <p>Direct management at National Fish Hatcheries and National Wildlife Refuges.</p> <p>Aquaculture Depredation Order expanded to include winter roost site control.</p> <p>Support for research and involvement in outreach activities.</p>	<p>Work with States and other agencies and private citizens to carry out direct management associated with permits.</p> <p>Technical assistance with both lethal and non-lethal methods.</p> <p>Research to support both lethal and non-lethal methods.</p>	<p>Funded by APHIS/WS appropriations and cooperative funding (increased involvement in control activities would likely require additional funds).</p> <p>Funded by USFWS appropriations (increased permit review would require additional funds).</p> <p>Interested State and other agencies expend funds for permitted cormorant control.</p>	<p>Uses an Integrated Pest Management (IPM) approach to cormorant damage control.</p> <p>Cormorant damages might be managed more effectively than the No Action.</p> <p>Depredation permit renewal period changes to 2 years instead of each year.</p> <p>Population monitoring at 10-year intervals.</p>

Alternatives Considered	USFWS Action Taken Under Alternative	APHIS/WS Action Taken Under Alternative	Funding Considerations	Other Aspects of this Alternative
<p>Public Resource Depredation Order Alternative (PROPOSED ACTION)</p>	<p>Establishment of Public Resource Depredation Order</p> <p>Issuance of site-specific depredation permits for lethal control (birds, eggs, or active nests) to agencies or private citizens.</p> <p>Direct management at National Fish Hatcheries and National Wildlife Refuges.</p> <p>Aquaculture Depredation Order expanded to include winter roost site control.</p> <p>Support for research and involvement in outreach activities.</p>	<p>Work with States or other agencies and private citizens to carry out direct management associated with permits or Depredation Orders.</p> <p>Technical assistance with both lethal and non-lethal methods.</p> <p>Research to support both lethal and non-lethal methods.</p>	<p>Funded by USFWS appropriations (increased monitoring regime would require additional funds).</p> <p>Funded by APHIS/WS appropriations and cooperative funding (increased involvement in control activities would likely require additional funds).</p> <p>Interested State and other agencies expend funds to implement cormorant control.</p>	<p>State and Federal land management agencies determine when to control DCCOs based on damages to public resources on public lands and waters.</p> <p>Certain restrictions apply.</p> <p>Cormorant damages would be managed more effectively than the No Action.</p> <p>Population monitoring at 5-year intervals.</p>

Alternatives Considered	USFWS Action Taken Under Alternative	APHIS/WS Action Taken Under Alternative	Funding Considerations	Other Aspects of this Alternative
<p>Regional Population Reduction Alternative</p>	<p>Issuance of State permits to help achieve population objectives.</p> <p>Aquaculture Depredation Order expanded to include winter roost site control.</p> <p>Issuance of site-specific depredation permits for lethal control (birds, eggs, or active nests) to agencies or private citizens.</p> <p>Direct management at National Fish Hatcheries and National Wildlife Refuges.</p> <p>Support for research and involvement in outreach activities.</p>	<p>Increased direct management emphasizing lethal methods on public and private property.</p> <p>Increased technical assistance to State or other agencies and private citizens.</p>	<p>Funded by USFWS appropriations (increased monitoring regime would require additional funds).</p> <p>Funded by APHIS/WS appropriations and cooperative funding (increased involvement in control activities would likely require additional funds).</p> <p>Interested State agencies would assume greater responsibility, and would need additional funds.</p>	<p>Utilization of an interagency, interdisciplinary approach to establish biologically and socially acceptable population objectives.</p> <p>APHIS/WS and States coordinate program to achieve population objectives, with USFWS providing general oversight.</p> <p>Cormorant populations would be stabilized or reduced, and damages would likely decline.</p> <p>Population monitoring at 3-year intervals.</p>

Alternatives Considered	USFWS Action Taken Under Alternative	APHIS/WS Action Taken Under Alternative	Funding Considerations	Other Aspects of this Alternative
<p>Regulated Hunting Season Alternative</p>	<p>Establish Federal framework that would allow State agencies to select and implement hunting seasons.</p> <p>Continue to implement current program (see No Action Alternative).</p>	<p>Continue to implement current program (see No Action alternative).</p>	<p>Funded by USFWS appropriations (increased monitoring regime would require additional funds).</p> <p>Funded by APHIS/WS appropriations and cooperative funding.</p> <p>Interested State agencies would implement hunting seasons, and might need additional funds.</p> <p>Control costs to agencies would be stabilized or reduced since public would be carrying out control.</p>	<p>Would likely increase effectiveness of other control efforts, especially non-lethal techniques.</p> <p>Hunting of cormorants contradicts ethic of hunting for use and might not be widely accepted.</p> <p>Cormorant damages might be managed more effectively than the No Action.</p> <p>Population monitoring at 3-year intervals.</p>

Table 7. Actions by Alternative

Alternative	Actions
Alternative A – No Action	non-lethal management ¹ ; Aquaculture Depredation Order ² ; depredation permits ³
Alternative B – Non-lethal management	non-lethal management only
Alternative C – Increased Local Damage Control	non-lethal management; expanded Aquaculture Depredation Order; depredation permits
Alternative D – Public Resource Depredation Order	non-lethal management; expanded Aquaculture Depredation Order; Public Resource Depredation Order*, depredation permits
Alternative E – Regional Population Reduction	non-lethal management; expanded Aquaculture Depredation Order; depredation permits
Alternative F – Regulated Hunting	non-lethal management; Aquaculture Depredation Order; depredation permits, hunting seasons in participating States

¹ = includes all management techniques that do not require a migratory bird depredation permit (harassment, exclusion devices, habitat modification, etc.)

² = under the Aquaculture Depredation Order, DCCOs may be taken by shooting with firearms during daylight hours; those using shotguns are required to use nontoxic shot

³ = under depredation permits, shooting, egg oiling or destruction, and active nest destruction are the most common techniques utilized

* = under the Public Resource Depredation Order, DCCOs may be taken by shooting, egg oiling or destruction, and active nest destruction