

DECISION

ENVIRONMENTAL ASSESSMENT: REDUCING BIRD DAMAGE IN THE STATE OF SOUTH CAROLINA

I. PURPOSE

The United States Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), Wildlife Services (WS) program has prepared an Environmental Assessment (EA) to analyze the potential environmental and social impacts to the quality of the human environment from resolving damage, including conflicts and threats, to agricultural resources, property, natural resources, and human safety associated with birds. The EA documents the need for bird damage management in the State and assesses potential impacts on the human environment of three alternatives to address that need. WS' proposed action in the EA would continue an integrated damage management program to address the need to manage damage and threats associated with birds in the State.

Damage and threats of damage associated with the following bird species were addressed in the EA: double-crested cormorants (*Phalacrocorax auritus*), great blue herons (*Ardea herodias*), great egrets (*Ardea alba*), little blue herons (*Egretta caerulea*), cattle egrets (*Bubulcus ibis*), green herons (*Butorides virescens*), black-crowned night-herons (*Nycticorax nycticorax*), white ibis (*Eudocimus albus*), black vultures (*Coragyps atratus*), turkey vultures (*Cathartes aura*), Atlantic brants (*Branta bernicla hrota*), mute swans (*Cygnus olor*), feral geese, feral ducks, wood ducks (*Aix sponsa*), American wigeons (*Anas americana*), American black ducks (*Anas rubripes*), mallards (domestic/wild) (*Anas platyrhynchos*), blue-winged teal (*Anas discors*), Northern shovelers (*Anas clypeata*), Northern pintails (*Anas acuta*), green-winged teal (*Anas crecca*), canvasbacks (*Aythya valisineria*), lesser scaup (*Aythya affinis*), greater scaup (*Aythya marila*), hooded mergansers (*Lophodytes cucullatus*), common mergansers (*Mergus merganser*), ruddy ducks (*Oxyura jamaicensis*), osprey (*Pandion haliaetus*), bald eagles (*Haliaeetus leucocephalus*), Northern harriers (*Circus cyaneus*), sharp-shinned hawks (*Accipiter striatus*), Cooper's hawks (*Accipiter cooperii*), red-shouldered hawks (*Buteo lineatus*), red-tailed hawks (*Buteo jamaicensis*), American kestrels (*Falco sparverius*), peregrine falcons (*Falco peregrinus*), wild turkeys (*Meleagris gallopavo*), American coots (*Fulica americana*), killdeer (*Charadrius vociferous*), black-bellied plovers (*Pluvialis squatarola*), semipalmated plovers (*Charadrius semipalmatus*), greater yellowlegs (*Tringa melanoleuca*), lesser yellowlegs (*Tringa flavipes*), spotted sandpipers (*Actitis macularia*), solitary sandpipers (*Tringa solitaria*), semipalmated sandpipers (*Calidris pusilla*), Western sandpipers (*Calidris mauri*), least sandpipers (*Calidris minutilla*), pectoral sandpipers (*Calidris melanotos*), buff-breasted sandpipers (*Tryngites suberficllis*), upland sandpipers (*Bartramia longicauda*), common snipe (*Gallinago gallinago*), laughing gulls (*Larus atricilla*), ring-billed gulls (*Larus delawarensis*), herring gulls (*Larus argentatus*), lesser black-backed gulls (*Larus fuscus*), great black-backed gulls (*Larus marinus*), royal terns (*Sterna maxima*), common terns (*Sterna hirundo*), mourning doves (*Zenaida macroura*), great horned owls (*Bubo virginianus*), barred owls (*Strix varia*), common nighthawks (*Chordeiles minor*), chimney swifts (*Chaetura pelagica*), belted kingfishers (*Megaceryle alcyon*), downy woodpeckers (*Picoides pubescens*), hairy woodpeckers (*Picoides villosus*), Northern flickers (*Colaptes auratus*), loggerhead shrikes (*Lanius ludovicianus*), blue jays (*Cyanocitta cristata*), American crows (*Corvus brachyrhynchos*), fish crows (*Corvus ossifragus*), horned larks (*Eremophila alpestris*), tree swallows (*Tachycineta bicolor*), Northern rough-winged swallows (*Stelgidopteryx serripennis*), bank swallows (*Riparia riparia*), cliff swallows (*Hirundo pyrrhonota*), barn swallows (*Hirundo rustica*), American robins (*Turdus migratorius*), gray catbirds (*Durnetella carolinensis*), Northern mockingbirds (*Mimus polyglottos*), Northern cardinals (*Cardinalis cardinalis*), red-winged blackbirds (*Agelaius phoeniceus*), Eastern meadowlarks (*Sturnella magna*), common grackles (*Quiscalus quiscula*), boat-tailed grackles (*Quiscalus major*), brown-headed cowbirds (*Molothrus ater*), purple finches (*Carpodacus purpureus*), and house finches (*Carpodacus mexicanus*).

The EA evaluated the issues and alternatives associated with WS' potential participation in managing damage and threats caused by birds in the State. The EA was prepared by WS to determine if the alternatives could have a significant impact on the quality of the human environment. Specifically, the EA was prepared to: 1) facilitate planning and interagency coordination, 2) streamline program management, 3) evaluate the potential environmental consequences of the alternatives related to the issues of managing damage caused by birds, and 4) clearly communicate to the public the analysis of individual and cumulative impacts.

II. NEED FOR ACTION

The need for action arises from requests for assistance received by WS to reduce and prevent damage associated with birds from occurring to four major categories: agricultural resources, natural resources, property, and threats to human safety. WS would only conduct bird damage management after receiving a request for assistance. Before initiating damage management activities in the State, a Memorandum of Understanding, cooperative service agreement, or other comparable document would be signed between WS and the cooperating entity, which lists all the methods the property owner or manager would allow to be used on property they own and/or manage.

Most requests for WS' assistance are associated with areas where birds congregate during migration periods and during nesting periods. Those requests for assistance are associated with fecal accumulations in public-use areas, damage to agricultural resources, hazards posed to aircraft from bird strikes, and damage occurring to property.

WS' activities would only be conducted when requested and only when damage or a threat is occurring to agricultural resources, natural resources, property, or posing a threat to human health and safety. WS may also be requested to participate in disease surveillance and monitoring in the event of a disease outbreak or potential outbreak in a bird population.

III. SCOPE OF ANALYSES IN THE EA

The EA evaluates bird damage management under three alternatives to reduce threats to human health and safety and to resolve damage to property, natural resources, and agricultural resources wherever such management is requested by a cooperator. The analyses in the EA are intended to apply to any action taken by WS to alleviate damage or threats of damage associated with birds that may occur in any locale and at any time within the State of South Carolina. The EA emphasizes major issues as they relate to specific areas; however, the issues addressed apply wherever bird damage and the resulting damage management activities could occur. The standard WS Decision Model (Slate et al. 1992, USDA 1997) would be the site-specific procedure for individual actions conducted by WS in South Carolina.

The United States Fish and Wildlife Service (USFWS) has jurisdiction over the management of migratory birds and has specialized expertise in identifying and quantifying potential adverse effects to the human environment from damage management activities. Native migratory bird species are afforded protection from take by the Migratory Bird Treaty Act (MBTA); however, the MBTA does allow for the lethal take of those bird species listed in 50 CFR 10.13 when depredation occurs through the issuance of depredation permits or the establishment of depredation/control orders. Under authorities in the MBTA, the USFWS is the federal agency responsible for the issuance of depredation permits or the establishment of depredation/control orders for the take of those protected bird species when damage or threats of damage are occurring.

The EA was made available to the public for review and comment by a legal notice published in *The State Newspaper* from May 1, 2012 through May 3, 2012. A notice of availability and the EA were also made available for public review and comment on the APHIS website at http://www.aphis.usda.gov/wildlife_damage/nepa.shtml beginning on April 19, 2012. A letter of availability was also mailed directly to agencies, organizations, and individuals with probable interest in bird damage management in the State. The public involvement process ended on June 1, 2012. WS received one comment letter during the public comment period. Responses to comments are provided in Appendix A of this Decision.

IV. RELATIONSHIP OF THE EA TO OTHER ENVIRONMENTAL DOCUMENTS

WS has developed a programmatic Final Environmental Impact Statement (FEIS) that addressed the need for wildlife damage management (USDA 1997). The FEIS contains a detailed discussion of the potential impacts to the human environment from methods and techniques employed by WS to alleviate damage and threats of damage, including methods used to manage damage associated with birds. Pertinent information in the FEIS has been incorporated into the EA and this decision document by reference.

The USFWS has also developed a FEIS to manage damage and increasing population of double-crested cormorants in the United States (USFWS 2003). The selected alternative in the FEIS established a Public Depredation Order (see 50 CFR 21.48) and modified the existing Aquaculture Depredation Order (see 50 CFR 21.47). To allow for an adaptive evaluation of activities conducted under the PRDO and the AQDO established by the FEIS, those Orders would have expired on April 30, 2009 (USFWS 2003). To evaluate activities authorized under the FEIS before the Orders were to expire, the USFWS developed an EA. The EA determined that a five-year extension of the expiration date of the PRDO and the AQDO would not threaten cormorant populations and activities conducted under those Orders would not have a significant impact on the human environment (74 FR 15394-15398; USFWS 2009).

The USFWS has also developed an EA that evaluated permitting the take of bald eagles and golden eagles pursuant to the Bald and Golden Eagle Protection Act (USFWS 2010). The selected alternative in the EA authorized the disturbance of eagles, authorized the removal of eagle nests where necessary to reduce human safety, and evaluated the issuance of permits for the limited lethal take of eagles (USFWS 2010).

In addition, the WS program in South Carolina has developed an EA to evaluate the need for and alternatives to address damage and threats of damage associated with Canada geese in the State (USDA 2006), along with rock pigeons, European starlings, and house sparrows (USDA 2004).

V. AUTHORITY AND COMPLIANCE

WS is authorized by law to reduce damage caused by wildlife through the Act of March 2, 1931 (46 Stat. 1468; 7 USC 426-426b), as amended and the Act of December 22, 1987 (101 Stat. 1329-331, 7 USC 426c). Management of native migratory birds is the responsibility of the USFWS under the MBTA. As the authority for the management of birds, the USFWS was consulted during the development of the EA and provided input to ensure an interdisciplinary approach according to the NEPA and agency mandates, policies, and regulations. The South Carolina Department of Natural Resources (SCDNR) is responsible for managing wildlife in the State of South Carolina, including birds. Information from the USFWS and the SCDNR has been provided to WS to assist in the analysis of potential impacts of WS' proposed activities on bird populations in the State.

The EA and this Decision ensures WS' actions comply with the NEPA, with the Council on Environmental Quality guidelines (40 CFR 1500), and with APHIS' NEPA implementing regulations (7

CFR 372). All bird damage management activities, including disposal requirements, would be conducted consistent with: 1) the Endangered Species Act of 1973, 2) the MBTA, 3) Bald and Golden Eagle Protection Act, 4) the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), 5) applicable Executive Orders, and 6) applicable Federal, State, and local laws, regulations and policies, including WS' Directives.

VI. DECISIONS TO BE MADE

Based on the scope of the EA, the decisions to be made are: 1) should WS conduct bird damage management to alleviate damage to agriculture, property, natural resources, and threats to human health and safety, 2) should WS conduct disease surveillance and monitoring in the bird population when requested, 3) should WS implement an integrated wildlife damage management strategy, including technical assistance and direct operational assistance, to meet the need for bird damage management in South Carolina, 5) if not, should WS attempt to implement one of the alternatives to an integrated damage management strategy as described in the EA, and 6) would the proposed action result in adverse impacts to the environment requiring the preparation of an Environmental Impact Statement (EIS).

VII. AFFECTED ENVIRONMENT

Upon receiving a request for assistance, activities to alleviate bird damage or threats could be conducted on federal, state, tribal, municipal, and private properties in South Carolina. The areas of the proposed action could include areas in and around commercial, industrial, public, and private buildings, facilities and properties and at other sites where birds may roost, loaf, feed, nest, or otherwise occur. Examples of areas where bird damage management activities could be conducted are, but are not necessarily limited to: agricultural fields, vineyards, orchards, farmyards, dairies, ranches, livestock operations, aquaculture facilities, fish hatcheries, grain mills, grain handling areas, railroad yards, waste handling facilities, industrial sites, natural areas, government properties and facilities, private properties, corporate properties, schools, hospitals, parks, woodlots, recreation areas, communally-owned homeowner/property owner association properties, wildlife refuges, wildlife management areas, military bases, and airports. WS could conduct bird damage management when requested by a landowner or manager and only on properties where a cooperative service agreement or other comparable document had been signed between WS and the cooperating entity.

VIII. ISSUES ADDRESSED IN THE ANALYSIS OF ALTERNATIVES

Issues related to wildlife damage management were initially identified and defined during the development of WS' programmatic FEIS (USDA 1997). Issues related to bird damage management in South Carolina were defined and preliminary alternatives were identified through consultation with the USFWS and with the SCDNR. The EA was also made available to the public for review and comment through notices published in local media and through direct notification of interested parties. Chapter 2 of the EA describes in detail the issues considered and evaluated in the EA. The following issues were identified as important to the scope of the analysis (40 CFR 1508.25) with each alternative evaluated in the EA relative to the impacts on the major issues:

- Issue 1 - Effects of Damage Management Activities on Target Bird Populations
- Issue 2 - Effects on Non-target Wildlife Species Populations, Including T&E Species
- Issue 3 - Effects of Damage Management Methods on Human Health and Safety
- Issue 4 - Effects on the Aesthetic Values of Birds
- Issue 5 - Humaneness and Animal Welfare Concerns of Methods
- Issue 6 - Effects of Bird Damage Management Activities on the Regulated Harvest of Birds

IX. ISSUES CONSIDERED BUT NOT ANALYZED IN DETAIL WITH RATIONALE

In addition to those issues analyzed in detail, several issues were identified during the development of the EA but were not considered in detail. The rationale for the decision not to analyze those issues in detail is discussed in the EA. Those issues not analyzed in detail were:

- Appropriateness of Preparing an EA For Such a Large Area
- WS' Impact on Biodiversity
- A Loss Threshold Should Be Established Before Allowing Lethal Methods
- Bird Damage Management Should Not Occur at Taxpayer Expense
- Cost Effectiveness of Management Methods
- Effectiveness of Bird Damage Management Methods
- Impacts of Avian Influenza on Bird Populations
- Bird Damage Should Be Managed By Private Nuisance Wildlife Control Agents
- Effects from the Use of Lead Ammunition in Firearms
- Impacts of Dispersing a Bird Roost on People in Urban/Suburban Areas
- A Site Specific Analysis Should be Made for Every Location Where Bird Damage Management Could Occur

X. DESCRIPTION OF THE ALTERNATIVES

The following three alternatives were developed to respond to the issues identified in Chapter 2 of the EA. A detailed discussion of the effects of the alternatives on the issues is described in the EA under Chapter 4; below is a summary of the alternatives.

Alternative 1 - Continuing the Current Integrated Approach to Managing Bird Damage (Proposed Action/No Action)

The proposed action would continue the current program of employing an integrated damage management approach using methods, as appropriate, to reduce damage associated with birds in the State. An integrated damage management strategy would be recommended and used, encompassing the use of practical and effective methods of preventing or reducing damage while minimizing harmful effects of damage management measures on people, other species, and the environment. Non-lethal methods would be given first consideration in the formulation of each damage management strategy, and would be recommended or implemented when practical and effective before recommending or implementing lethal methods. However, non-lethal methods would 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 application of lethal methods alone would be the most appropriate strategy.

All methods addressed in Appendix B of the EA could be employed by WS to resolve requests for assistance to manage damage associated with birds in the State. Using the WS Decision model discussed in the EA, WS would employ methods singularly or in combination in an integrated approach to alleviate damage caused by birds.

Alternative 2 - Bird Damage Management by WS through Technical Assistance Only

Under the technical assistance only alternative, WS would address every request for assistance with technical assistance only. Technical assistance would provide those persons seeking assistance with

information and recommendations on bird damage management that those cooperators could employ without WS' direct involvement in the action. Technical assistance could be employed through personal or telephone consultations and through site visits. Under this alternative, the immediate burden of resolving threats or damage associated with birds would occur to those persons experiencing damage. Those persons could employ those methods recommended by WS, could employ other methods, could seek assistance from other entities, or could take no further action.

Those entities experiencing damage or threats of damage associated with birds could still lethally take birds to alleviate damage under this alternative when those birds are committing or about to commit damage or posing a human health and safety threat in accordance with depredation permits issued by the USFWS or under the established depredation/control orders. In addition, American crows, fish crows, wild turkeys, mallards, blue-winged teal, green-winged teal, American coots, American black ducks, common mergansers, hooded mergansers, canvasbacks, Northern pintails, Northern shovelers, ruddy ducks, greater scaup, lesser scaup, American wigeons, wood ducks, common snipe, mourning doves, and Atlantic brant could continue to be taken during the regulated hunting seasons in the State. The MBTA does not protect feral waterfowl and mute swans from lethal take and those persons experiencing damage can lethally remove those birds using legally available methods at any time.

As was shown in the EA, entities besides WS have lethally taken birds in the State when permitted through the issuance of depredation permits by the USFWS. Under this alternative, the level of take is likely to remain at least similar to the levels of take that have occurred previously but could increase to levels addressed under the proposed action alternative even if WS only provides technical assistance. The lack of direct operational assistance provided by WS under this alternative is not likely to result in a decline in the number of birds lethally taken in the State since WS' take is likely not additive to the number of birds that would have been taken if WS had not participated in those activities. Similar to Alternative 1, those methods described in Appendix B would be available to those persons experiencing damage or threats associated with birds in the State except for alpha-chloralose, DRC-1339, and mesurol, which are only available to WS. All other methods described in Appendix B of the EA would be available to those persons experiencing damage.

Alternative 3 – No Bird Damage Management Conducted by WS

Under the no involvement alternative, WS would not be involved with any aspect of damage management activities associated with birds in South Carolina. All requests for assistance received by WS would be referred to the USFWS, the SCDNR, and/or other entities. The take of birds by other entities could continue to occur under this alternative when damage or threats were occurring in accordance with depredation permits issued by the USFWS as well as under the depredation/control orders and during the regulated hunting season in the State. Most of the methods described in Appendix B of the EA under this alternative to alleviate bird damage and threats would be available under any of the alternatives. The only methods that would not be available to manage damage caused by birds under this alternative would be the immobilizing drug alpha chloralose, the avicide DRC-1339, and the repellent mesurol which are only available for use by WS.

XI. ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DETAIL WITH RATIONALE

Additional alternatives were also evaluated but were not considered in detail in the EA with rationale provided in the EA. The alternatives analyzed but not in detail included:

- Non-lethal Methods Implemented Before Lethal Methods
- Use of Non-lethal Methods Only by WS
- Use of Lethal Methods Only by WS

- Trap and Translocate Birds Only
- Reducing Damage by Managing Bird Populations through the Use of Reproductive Inhibitors
- Compensation for Bird Damage

XII. STANDARD OPERATING PROCEDURES

The WS program uses many standard operating procedures that improve the safety, selectivity, and efficacy of activities to manage damage associated with birds. Standard operating procedures are discussed in detail in Chapter 5 of WS' programmatic FEIS (USDA 1997) and in Chapter 3 of the EA. Those standard operating procedures would be incorporated into activities conducted by WS when addressing bird damage and threats in South Carolina under the proposed action alternative (Alternative 1). Those applicable procedures would also be incorporated into activities under the technical assistance alternative (Alternative 2). If the no involvement by WS alternative (Alternative 3) were selected, the lack of assistance by WS would preclude the employment or recommendation of those standard operating procedures addressed in the EA by WS.

XIII. ENVIRONMENTAL CONSEQUENCES FOR ISSUES ANALYZED IN DETAIL

The EA analyzes the environmental consequences of each alternative as that alternative relates to the issues identified to provide information needed for making informed decisions in selecting the appropriate alternative to address the need for action. The following resource values in South Carolina are not expected to be significantly impacted by any of the alternatives analyzed in the EA: soils, geology, minerals, water quality/quantity, flood plains, wetlands, critical habitats (areas listed in threatened and endangered (T&E) species recovery plans), visual resources, air quality, prime and unique farmlands, aquatic resources, timber, and range. The activities proposed in the alternatives would have a negligible effect on atmospheric conditions including the global climate. Meaningful direct or indirect emissions of greenhouse gases would not occur from any of the alternatives. Those alternatives would meet the requirements of applicable laws, regulations, and Executive Orders, including the Clean Air Act and Executive Order 13514.

Chapter 4 of the EA analyzes the environmental consequences of each alternative in comparison to determine the extent of actual or potential impacts on those major issues identified in the EA. The proposed action/no action alternative serves as the baseline for the analysis and the comparison of expected impacts among the alternatives. The analysis also takes into consideration mandates, directives, and the procedures of WS, the USFWS, and the SCDNR. The analyses in Chapter 4 of the EA indicate the potential impacts to the quality of the human environment would be similar across the alternatives.

Issue 1 - Effects of Damage Management Activities on Target Bird Populations

Under the proposed action, WS could incorporate non-lethal and lethal methods described in Appendix B of the EA in an integrated approach in which all or a combination of methods could be employed to resolve a request for assistance. WS could recommend and operational employ both non-lethal and lethal methods, as governed by federal, state, and local laws and regulations under the proposed action.

Non-lethal methods can disperse or otherwise make an area unattractive to birds that are causing damage; thereby, reducing the presence of birds at the site and potentially the immediate area around the site where non-lethal methods are employed. Non-lethal methods would be given priority when addressing requests for assistance (WS Directive 2.101). However, non-lethal methods would not necessarily be employed to resolve every request for assistance if deemed inappropriate by WS' personnel using the WS Decision Model, especially in situations where the requesting entity has already attempted to resolve the damage or threats of damage using non-lethal methods. Non-lethal methods would be used to exclude, harass, and

disperse target wildlife from areas where damage or threats were occurring. When effective, non-lethal methods would disperse birds from the area resulting in a reduction in the presence of those birds at the site where those methods were employed. From FY 2005 through FY 2011, WS employed non-lethal methods to harass and disperse birds in South Carolina as part of an integrated approach to managing damage and threats. Non-lethal methods are generally regarded as having minimal impacts on overall populations of wildlife since those species are unharmed. The continued use of non-lethal methods often leads to the habituation of birds to those methods, which can decrease the effectiveness of those methods. Lethal methods are often employed to reinforce non-lethal methods and to remove birds that have been identified as causing damage or posing a threat to human safety. The use of lethal methods would result in local reductions of birds in the area where damage or threats were occurring. The number of birds removed from the population using lethal methods would be dependent on the number of requests for assistance received, the number of birds involved with the associated damage or threat, and the efficacy of methods employed.

Birds that could be taken by WS under the proposed action could be taken by those persons experiencing damage or threats in the absence of WS' direct involvement under the other alternatives since the take of birds could occur when a depredation permit has been issued by the USFWS pursuant to the MBTA. In addition, birds could be lethally taken to alleviate damage or reduce threats under depredations/control orders and/or during the regulated hunting seasons in the State. For those bird species afforded no protection under the MBTA, lethal take can occur without a need for a depredation permit. Since the lack of WS' direct involvement does not preclude the taking of birds by those persons experiencing damage or threats, WS' involvement in take of those birds under the proposed action would not be additive to the number of birds that could be taken by other entities in the absence of WS' involvement. As was shown in the EA, the take of bird species addressed in the assessment have been lethally taken by other entities in the State to alleviate damage or threats of damage. The number of birds taken annually would likely be similar across the alternatives, since the take of birds could occur even if WS was not directly involved with providing assistance under Alternative 2 and Alternative 3. Those activities proposed, including the proposed take of birds, under Alternative 1 would not be additive to the number of birds that could be taken by other entities under the other alternatives despite the lack of WS' involvement.

In addition, most non-lethal and lethal methods available for resolving damage or threats associated with birds would be available under any of the alternatives. The immobilizing drug alpha chloralose, the avicide DRC-1339, and the repellent mesurol would be the only methods that would not be available under all of the alternatives. The use of alpha chloralose, DRC-1339, and mesurol would only be available under the proposed action alternative since those products are only available for use by WS' personnel. Therefore, WS' use of those methods available under all of the alternatives would not be additive to the environmental status quo since those methods could be employed by any entity experiencing damage or threats caused by birds. Alpha chloralose is only available to live-capture waterfowl, coots, and pigeons. DRC-1339 is only available for use to manage damage associated with blackbird species and gulls. Mesurol is registered to discourage crows from feeding on eggs of threatened and endangered species. Based on the evaluation in the EA, the availability of alpha chloralose, DRC-1339, and mesurol to manage damage or threats of damage associated with birds under the proposed action would not pose significant environmental risks when used by trained WS' personnel and in accordance with use guidelines.

Based on those quantitative and qualitative parameters addressed in the EA, the proposed take levels of bird species addressed under the proposed action alternative (Alternative 1) would be considered of low magnitude when compared to population trend data, population estimates, and/or harvest data. The number of birds lethally taken annually under the alternatives is likely to be similar since the take of birds could occur despite no involvement by WS. As was shown in the EA, other entities have addressed bird species to alleviate damage. Therefore, any birds that could be lethally taken under the proposed action

alternative could be taken by other entities under the other alternatives. WS does not have the authority to regulate the number of birds taken annually by other entities. WS' take of birds would only occur at levels authorized and only when permitted by the USFWS for those species for which a depredation permit is required for take.

In addition, based on the levels of take that has occurred previously by WS and other entities and in anticipation of the USFWS permitting the take of birds at levels addressed in the EA, the cumulative take of levels addressed are also of low magnitude when compared to those quantitative and qualitative parameters addressed in the EA. The permitting of the take by the USFWS would ensure that cumulative take levels occur within allowable levels to maintain species' populations and meet population objectives for each species.

Issue 2 - Effects on Non-target Wildlife Species Populations, Including T&E Species

Another issue often raised is the potential impacts to populations of wildlife that could be taken as non-targets during damage management activities. While every effort is made to minimize the risks of lethally taking non-target wildlife, the potential does exist for the unintentional take of non-targets during damage management activities. Since FY 2005, no non-targets were known to have been killed by WS during previous bird damage management activities using an integrated approach. Methods available to address bird damage would be similar across all the alternatives. Therefore, risks to non-targets from the use of those methods would be similar across the alternatives analyzed in detail when those methods are used as intended. The only methods that would not be available under all the alternatives analyzed in detail would be the use of alpha chloralose, DRC-1339, and mesurol, which are restricted to use by personnel of WS only. Although some risks to non-targets do occur from the use of those methods, those risks are minimal when those methods are used by trained personnel in accordance with WS Directive 2.430 and use guidelines. Based on information in the EA, the use patterns of alpha chloralose, DRC-1339, and mesurol would not pose increased risks to non-targets.

Under the no involvement by WS alternative, WS would not be directly involved with any aspect of bird damage management; therefore, no direct impacts to non-targets would occur from WS. Under the technical assistance only alternative, WS could provide information on the proper use of methods and provide demonstration on the use of methods but would not be directly involved with using methods to alleviate bird damage or threats. Similar to the no WS involvement alternative, under the technical assistance alternative, if methods are applied as intended and with regard for non-target hazards, those methods would not result in the decline in non-target species' populations. If requestors are provided technical assistance but do not implement any of the recommended actions and takes no further action, the potential impacts to non-targets would be lower compared to the proposed action. If those persons requesting assistance implement recommended methods appropriately and as instructed or demonstrated, the potential impacts to non-targets would be similar to the proposed action. Methods not implemented as recommended would likely increase risks to non-targets. When employing direct operational assistance under the proposed action alternative, WS could employ methods and use techniques that would avoid non-target take as described in Chapter 3 of the EA under the Standard Operating Procedures and those measures and procedures discussed in WS' programmatic FEIS (USDA 1997).

The ability to reduce damage and threats caused by birds would be variable based upon the skills and abilities of the person implementing damage management actions under Alternative 2 and Alternative 3. If those methods available were applied as intended, risks to non-targets would be minimal to non-existent. If methods available are applied incorrectly or applied without knowledge of bird behavior, risks to non-target wildlife would be higher under any of the alternatives. If frustration from the lack of available assistance under Alternative 2 and Alternative 3 causes those persons experiencing bird damage to use methods that are not legally available for use, risks to non-targets would be higher under those

alternatives. People have resorted to the use of illegal methods to resolve wildlife damage that have resulted in the lethal take of non-target wildlife (USDA 1997, White et al. 1989, USFWS 2001, Food and Drug Administration 2003). Under the proposed action alternative, those persons could request direct operational assistance from WS to reduce damage and threats occurring which increases the likelihood that non-target species would be unaffected by damage management activities.

Based on a review of those T&E species listed in the State during the development of the EA (see Appendix C and Appendix D in the EA), WS determined that activities conducted pursuant to the proposed action would not likely adversely affect those species listed in the State by the USFWS and the National Marine Fisheries Services nor their critical habitats. Based on a review of the proposed action and the methods available under the proposed action, WS has determined that the proposed damage management program would not adversely affect any of the species listed by the SCDNR in the State.

Issue 3 - Effects of Damage Management Methods on Human Health and Safety

The threats to human safety of methods available would be similar across the alternatives since those methods would be available across the alternatives. However, the expertise of WS' employees in using those methods available likely would reduce threats to human safety since WS' employees are trained and knowledgeable in the use of those methods. If methods were used incorrectly or without regard for human safety, risks to human safety would increase under any of the alternatives that those methods could be employed. The EA determined that the availability of alpha chloralose, DRC-1339, and mesurol under the proposed action would not increase risks to human safety from the use of the method under the proposed action alternative. Although risks do occur from the use of alpha chloralose, DRC-1339, and mesurol, when those methods are used in consideration of human safety, the use of those methods does not pose additional risks to human safety beyond those associated with the use of other methods.

Issue 4 - Effects on the Aesthetic Values of Birds

Birds often provide aesthetic enjoyment to many people in the State through observations, photographing, and knowing they exist as part of the natural environment. Under all the alternatives, methods available that could be employed are intended to make resources unavailable or unattractive. Therefore, the use of methods often results in the removal of birds from the area where damage is occurring or the dispersal of birds from an area. Since methods available are similar across the alternatives, the use of those methods would have similar potential impacts on the aesthetics of birds. However, even under the proposed action alternative, the dispersal and/or take of birds under the alternatives would not reach a magnitude that would prevent the ability to view birds outside of the area where damage was occurring. The effects on the aesthetic values of birds would therefore be similar across the alternatives and would be minimal.

Issue 5 - Humaneness and Animal Welfare Concerns of Methods

The issue of humaneness was also analyzed in detail in relationship to the alternatives. Since many methods addressed in Appendix B of the EA are available under all the alternatives, the issue of method humaneness would be similar for those methods across all the alternatives. As stated previously, alpha chloralose, DRC-1339, and mesurol are the only methods that would not be available under all the alternatives. The ability of WS to provide direct operational assistance under the proposed action alternative would ensure methods are employed by WS as humanely as possible. Under the other alternatives, methods could be used inhumanely if used inappropriately or without consideration of bird behavior. However, when used as intended and attended to appropriately, most methods would be considered humane and would not increase the distress of birds.

Issue 6 - Effects of Bird Damage Management Activities on the Regulated Harvest of Birds

Hunting seasons in the State exist for the following bird species addressed in the EA: American crows, fish crows, wild turkeys, mallards, blue-winged teal, green-winged teal, American coots, American black ducks, common mergansers, hooded mergansers, canvasbacks, Northern pintails, Northern shovelers, ruddy ducks, greater scaup, lesser scaup, American wigeons, wood ducks, common snipe, mourning doves, and Atlantic brant. WS would have no impact on regulated hunting under Alternative 2 since WS would not lethally remove birds under the alternative. However, resource/property owners may remove birds under depredation permits and depredation/control orders issued by the USFWS resulting in impacts similar to the proposed action and Alternative 3. The recommendation of non-lethal methods could disperse or exclude birds from areas under Alternative 2, which could limit the ability of those persons interested to harvest birds in the damage management area. However, the bird populations would be unaffected by WS under the technical assistance alternative (Alternative 2).

Similarly, WS would have no impact on regulated hunting under Alternative 3. WS would not be involved with any aspect of bird damage management. The USFWS and the SCDNR could continue to regulate bird populations through adjustments in allowed take during the regulated harvest season and through depredation/control orders or permits to manage damage or threats of damage.

The magnitude of lethal bird take addressed in the proposed action would be low when compared to the mortality of those bird species from all known sources. When WS' proposed take of birds was included as part of the known mortality of birds and compared to the known populations of those species, the impact on the bird population was below the level of removal required to lower population levels. The USFWS and the SCDNR would determine the number of birds taken annually by WS through the issuance of depredation permits.

Activities to alleviate damage or threats of damage conducted by WS would occur after consultation and approval by the USFWS and the SCDNR. With oversight by the USFWS and the SCDNR, the number of birds that could be taken by WS would not limit the ability of those persons interested to harvest birds during the regulated season. All take by WS would be reported to the USFWS annually to ensure take by WS is incorporated into population management objectives established for bird populations. Based on the limited take proposed by WS and the oversight by the USFWS and the SCDNR, WS' take annually would have no effect on the ability of those persons interested to harvest birds during the regulated harvest season.

XIV. CUMULATIVE IMPACTS OF THE PROPOSED ACTION

No significant cumulative environmental impacts are expected from any of the three alternatives, including the proposed action. Under the proposed action, the lethal removal of birds by WS would not have significant impacts on statewide bird populations when known sources of mortality are considered. No risk to public safety is expected when activities are provided and expected by requesting individuals in Alternative 1 and Alternative 2 since only trained and experienced personnel would conduct and/or recommend damage management activities. There is a slight increased risk to public safety when persons who reject assistance and recommendations and conduct their own activities under Alternative 2, and when no assistance is provided under Alternative 3. However, under all of the alternatives, those risks would not be to the point that the impacts would be significant. The analysis in this EA indicates that an integrated approach to managing damage and threats caused by birds would not result in significant cumulative adverse impacts on the quality of the human environment.

XV. DECISION AND RATIONALE

Based on the analyses of the alternatives developed to address those issues in the EA, including individual and cumulative impacts of those alternatives, the following decision has been reached:

Decision

I have carefully reviewed the EA prepared to meet the need for action. I find the proposed action alternative (Alternative 1) to be environmentally acceptable, addressing the issues and needs while balancing the environmental concerns of management agencies, landowners, advocacy groups, and the public. The analyses in the EA adequately addresses the identified issues, which reasonably confirm that, no significant impact, individually or cumulatively, to wildlife populations or the quality of the human environment are likely to occur from the proposed action, nor does the proposed action constitute a major federal action. Therefore, the analysis in the EA does not warrant the completion of an EIS.

Based on the analyses in the EA, the issues identified are best addressed by selecting Alternative 1 (proposed action/no action) and applying the associated Standard Operating Procedures discussed in Chapter 3 of the EA. Alternative 1 successfully addresses (1) bird damage management using a combination of the most effective methods and does not adversely impact the environment, property, human health and safety, and/or non-target species, including T&E species; (2) it offers the greatest chance of maximizing effectiveness and benefits to resource owners and managers while minimizing cumulative impacts on the quality of the human environment that might result from the program's effect on target and non-target species populations; (3) it presents the greatest chance of maximizing net benefits while minimizing adverse impacts to public health and safety; and (4) it offers a balanced approach to the issues of humaneness and aesthetics when all facets of those issues are considered. Further analysis would be triggered if changes occur that broaden the scope of damage management activities in the State, that affect the natural or human environment, or from the issuance of new environmental regulations. Therefore, it is my decision to implement the proposed action/no action alternative (Alternative 1) as described in the EA.

Finding of No Significant Impact

Based on the analyses provided in the EA, there are no indications that the proposed action (Alternative 1) would have a significant impact, individually or cumulatively, on the quality of the human environment. I agree with this conclusion and therefore, find that an EIS should not be prepared. This determination is based on the following factors:

1. Bird damage management as conducted by WS in the State is not regional or national in scope.
2. The proposed action would pose minimal risk to public health and safety. Risks to the public from many of the methods described in the EA were determined to be low in a formal risk assessment (USDA 1997). Based on the analyses in the EA, the methods available would not adversely affect human safety based on their use patterns.
3. There are no unique characteristics such as parklands, prime farmlands, wetlands, wild and scenic areas, or ecologically critical areas that would be significantly affected. WS' standard operating procedures and adherence to applicable laws and regulations would further ensure that WS' activities do not harm the environment.

4. The effects on the quality of the human environment are not highly controversial. Although there is some opposition to bird damage management, this action is not highly controversial in terms of size, nature, or effect.
5. Based on the analysis documented in the EA and the accompanying administrative file, the effects of the proposed damage management program on the human environment would not be significant. The effects of the proposed activities are not highly uncertain and do not involve unique or unknown risks.
6. The proposed action would not establish a precedent for any future action with significant effects.
7. No significant cumulative effects were identified through the assessment. The EA analyzed cumulative effects on target and non-target species populations and concluded that such impacts were not significant for this or other anticipated actions to be implemented or planned within the State of South Carolina.
8. The proposed activities would not affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places, nor would they likely cause any loss or destruction of significant scientific, cultural, or historical resources.
9. WS has determined that the proposed program would not adversely affect any federally listed T&E species currently listed in the State and the USFWS has concurred with WS' determination. In addition, WS has determined that the proposed activities would not adversely affect State-listed species.
10. The proposed action would comply with all applicable Federal, State, and local laws.
11. No significant cumulative effects were identified by this assessment or other actions implemented or planned within the area.

Rationale

The rationale for this decision is based on several considerations. This decision takes into account public comments, social/political and economic concerns, public health and safety, and the best available science. The foremost considerations are that: 1) bird damage management would only be conducted by WS at the request of landowners/managers, 2) management actions are consistent with applicable laws, regulations, policies and orders, and 3) no adverse impacts to the environment were identified in the analysis. As a part of this Decision, the WS program in South Carolina would continue to provide effective and practical technical assistance and direct management techniques that reduce damage and threats of damage.



Charles S. Brown, Director-Eastern Region
USDA/APHIS/WS
Raleigh, North Carolina



Date

XVI. LITERATURE CITED

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APPENDIX A

RESPONSES TO COMMENTS ON THE ENVIRONMENTAL ASSESSMENT: REDUCING BIRD DAMAGE IN THE STATE OF SOUTH CAROLINA

During the public involvement process for the EA, WS received one comment letter. WS has reviewed those comments to identify additional issues, alternatives, and/or concerns that were not addressed in the EA. Those comments received during the public involvement process are addressed below along with WS' response to those comments.

Comment 1 – A Staggering Number of Birds are Listed in the EA

The EA identifies those bird species most likely to be responsible for causing damage in the State based on previous requests for assistance and based on assessments of bird strike hazards at airports in the State. Section 1.2 of the EA discusses the need for action associated with those bird species addressed in the EA. The need for action to manage damage and threats associated with birds in South Carolina arises from requests for assistance received by WS to reduce and prevent damage from occurring. Table 1.1 in the EA provides a list of those bird species associated with requests for technical assistance received by WS. The technical assistance projects conducted by WS are representative of the damage and threats that are caused by birds in South Carolina. Table 1.2 in the EA lists those bird species addressed in the EA and the resource types that those bird species can cause damage to in South Carolina. Many of the bird species addressed in the EA can cause damage to or pose threats to a variety of resources.

In South Carolina, most requests for assistance received by WS are related to threats associated with those bird species being struck by aircraft at or near airports in the State. Bird strikes can cause substantial damage to aircraft requiring costly repairs. In some cases, bird strikes can lead to the catastrophic failure of the aircraft, which can threaten passenger safety. The need for action is further described in Section 1.2 of the EA.

Comment 2 - Bird Damage Management Should Not Occur at Taxpayer Expense

An issue often identified is the concern that wildlife damage management should not be provided at the expense of the taxpayer or that activities should be fee-based (USDA 1997). This issue was addressed in WS' programmatic Final Environmental Impact Statement (USDA 1997) and was specifically addressed in Section 2.3 of the EA. Funding for damage management activities associated with birds is derived from federal appropriations and through cooperative funding. Activities conducted in the State for the management of damage and threats to human safety from birds would be funded through cooperative service agreements with individual property owners or managers. A minimal federal appropriation is allotted for the maintenance of a WS program in South Carolina. The remainder of the WS program is entirely fee-based. Technical assistance is provided to requesters as part of the federally funded activities, but all direct operational assistance in which WS' employees perform damage management activities would be funded through cooperative agreements between the requester and WS. Therefore, those entities requesting direct operational assistance from WS would provide the funding for damage management activities.

Comment 3 – The EA should identify specifically who requests WS' assistance

The commenter claims “[i]f we can't learn...the identify [sic] of those requesting WS's [sic] damage control, nor see the costs attached to such programs...” the commenter “...isn't convinced a “damage threshold” of tolerance should be acted upon by WS.” As was discussed in the need for action section of the EA (see Section 1.2), when the activities of birds result in the lost economic value of resources or

threaten human safety, people characterize this as damage. When damage exceeds or threatens to exceed an economic threshold and/or pose a threat to human safety, people often seek assistance. The threshold triggering a request for assistance is often unique to the individual person requesting assistance and can be based on many factors (e.g., economic, social, aesthetics). Therefore, how damage is defined is often unique to the individual person and damage occurring to one individual may not be considered damage by another individual. However, the use of the term “*damage*” is consistently used to describe situations where the individual person has determined the losses associated with wildlife is actual damage requiring assistance (i.e., has reached an individual threshold). The term “*damage*” is most often defined as economic losses to resources or threats to human safety but could also be defined as a loss in aesthetic value or other situations where the actions of wildlife are no longer tolerable to an individual person.

Some damage and economic loss can be tolerated by cooperators until the damage reaches a threshold where damage becomes an economic burden. The appropriate level of allowed tolerance or threshold before employing lethal methods would differ among cooperators and damage situations. In addition, establishing a threshold would be difficult or inappropriate to apply to human health and safety situations. Although some locations where bird damage could occur can be predicted, not all specific locations or times where such damage would occur in any given year can be predicted. The threshold triggering an entity to request assistance from WS to manage damage associated with birds is often unique to the individual; therefore, WS cannot predict where, when, and from whom such a request for assistance would occur. The EA emphasizes major issues as those issues relate to specific areas whenever possible; however, many issues apply wherever bird damage occurs. Providing the identity of entities who request assistance from WS in the EA would not add to the analyses, since the actions evaluated in the EA are the use of those methods available under the alternatives and the employment of those methods by WS to manage or prevent damage and threats associated with birds from occurring, when requested.

Comment 4 - Cost Effectiveness of Management Methods

The cost effectiveness of management methods was identified as an issue during the development of the EA, but was not analyzed in detail (see Section 2.3 of the EA). The CEQ does not require a formal, monetized cost benefit analysis to comply with the NEPA. Consideration of this issue is not essential to making a reasoned choice among the alternatives being considered. However, the methods determined to be most effective to reduce damage and threats to human safety caused by birds and that prove to be the most cost effective would receive the greatest application. As part of an integrated approach, evaluation of methods would continually occur to allow for those methods that are most effective at resolving damage or threats to be employed under similar circumstance where birds are causing damage or pose a threat. Additionally, management operations may be constrained by cooperator funding and/or objectives and needs.

Comment 5 - Lack of a description of how a damage management program is applied

In section 3.1 of the EA, WS describes the alternatives in detail, including the methods, procedures, and recommendations that would be available for use to manage damage caused by birds in South Carolina under those alternatives. The EA further describes the decision-making process used by WS when addressing requests for assistance to manage damage caused by birds. WS describes strategies employed through an integrated approach to addressing damage caused by birds, including technical assistance recommendations, direct operational assistance, educational efforts, and the research and development of effective damage management methods. WS further describes decision-making based on community input. WS responds to requests for assistance with a site visit or discussion of the damage occurring which defines the extent of the request. Using the decision model, a damage management plan is implemented to achieve the objective of reducing damage or threats of damage. Therefore, the analysis in the EA evaluates the use of methods as though those methods under an alternative would be employed for

every request for assistance to evaluate the potential impact parameters of those methods being employed together.

Under the proposed action, an evaluation of all available methods occurs which establishes the maximum potential impact parameters if every method available was employed to resolve every request for assistance. Any use combination of methods (either singularly or collectively) would therefore be below the analyzed maximum potential impact parameters analyzed in the EA.

WS' Decision Model is the implementing mechanism for a damage management program that is adapted to an individual damage situation that allows for the broadest range of methods to be used to address damage or the threat of damage in the most effective, most efficient, and mostly environmentally conscious way available. When a request for assistance is received to resolve or prevent damage caused by birds, WS conducts site visits to assess damage or threats, identifies the cause of the damage, and applies the decision model described by Slate et al. (1992) and in WS' programmatic FEIS (USDA 1997) to apply methods to resolve or prevent damage using those methods available. The WS' process for providing assistance is defined by WS' Decision Model under the proposed action in the EA.

Comment 6 – Requests should be handled through public education

Public education was addressed under the proposed action alternative in Section 3.1 of the EA. Public education would also occur under Alternative 2 (technical assistance only) through technical assistance. Technical assistance would provide those cooperators experiencing damage or threats associated with birds with information, demonstrations, and recommendations on available and appropriate methods available. Education is an important element of activities because wildlife damage management is about finding balance and coexistence between the needs of people and needs of wildlife. This can be extremely challenging as nature has no balance, but rather is in continual flux. In addition to the routine dissemination of recommendations and information to individuals or organizations sustaining damage, WS provides lectures, courses, and demonstrations to producers, homeowners, state and county agents, colleges and universities, and other interested groups. WS frequently cooperates with other entities in education and public information efforts. Additionally, technical papers are presented at professional meetings and conferences so that other wildlife professionals and the public are periodically updated on recent developments in damage management technology, programs, laws and regulations, and agency policies.

Comment 7 – WS should educate fish farmers instead of killing birds to satisfy complainers

The commenter made several statements that WS' best function when receiving requests for assistance from aquaculture producers would be to educate those producers on the proper use exclusion techniques to prevent predation instead of killing birds. The commenter stated WS should be educating aquaculture producers on the use of physical barriers, fencing, and wires to restrict access to aquaculture structures and ponds by birds. The commenter specifically made reference to total and partial exclusion techniques described by Curtis et al. (1996) for use at aquaculture facilities.

The need for action associated with bird predation at aquaculture facilities was addressed in Section 1.2 of the EA. The educational efforts that would be made by WS under the proposed action alternative and under Alternative 2 were discussed previously under the response to Comment 6. Through technical assistance, lectures, courses, and demonstrations, WS would provide those cooperators experiencing damage or threats associated with birds with information, demonstrations, and recommendations on available and appropriate methods, including those methods described by the commenter. Those specific methods identified by the commenter were addressed in the EA and described in Appendix B of the EA. The commenter referred to a bulletin by Curtis et al. (1996) which provides an overview of the techniques

and methods available to alleviate predation of birds at aquaculture facilities, including lethal and non-lethal methods. As was discussed in Section 4.1 of the EA, “...long-term solutions involve exclusionary devices, such as wire grids”. However, Curtis et al. (1996) states “...exclusion may be impractical for many facilities due to expense, size of operation, or interference with management cultures.” In addition, exclusion could be impractical when attempting to enclose large ponds due to the difficulties of keeping lines taut when spanning long distances (Curtis et al. 1996). Birds may also learn to avoid overhead line/wire systems or may become accidentally injured (Curtis et al. 1996).

As was described in the EA, in situations where non-lethal methods are ineffective or impractical, WS would advise the property owner or manager of appropriate lethal methods to supplement non-lethal methods. Curtis et al. (1996) stated that “[l]ethal techniques are be [sic] most beneficial when used in an integrated problem bird management program to enhance the effectiveness of non-lethal methods.”

Comment 8 – More discussion of exclusion fences is needed to protect blueberries and other plants

The commenter stated that more discussion should occur on page 15 of the EA under the *Damage to Agricultural Crops* heading regarding the use of exclusion methods to prevent birds from accessing blueberries and other plants. However, the discussion of damage to agricultural crops on page 15 of the EA occurs under the overall discussion addressing the need for action (see Section 1.2 in the EA). As stated in the EA, the need for action to manage damage and threats associated with birds in South Carolina arises from requests for assistance received by WS to reduce and prevent damage associated with birds from occurring to four major categories: agricultural resources, natural resources, property, and threats to human safety. Section 1.2 of the EA only discusses the need for action associated with bird damage in the State. The methods available to alleviate damage identified in the need for action section of the EA are further discussed in Chapter 3, Chapter 4, and Appendix B of the EA.

Chapter 3 of the EA contains a discussion of the alternatives and the methods available under those alternatives to meet the need for action. Chapter 4 provides information needed for making informed decisions in selecting the appropriate alternative to address the need for action described in Chapter 1 and the issues described in Chapter 2. Appendix B of the EA contains additional discussion on the methods that would be available under the alternatives. The availability and application of exclusion methods was specifically addressed in Chapter 3, Chapter 4, and Appendix B of the EA.

Comment 9 – Water pollution caused by more than just birds

The commenter referred to page 17 of the EA regarding the discussion of the fecal droppings of gulls as sources of public water contamination. The commenter further stated that other sources of contaminants could also trigger human health concerns at reservoirs. The commenter specifically discusses human sewage, pesticides, and fertilizer as additional sources of contaminants.

Although human sewage, pesticides, and fertilizer could contribute to water contamination, gulls and other birds have also been identified as the most plausible sources of water contamination. As discussed in the EA, gulls are known to carry various species of bacteria and research has suggested that gulls have been the source of contamination for cases of salmonellosis in people. Fecal droppings from large concentrations of gulls roosting and loafing on public water supplies can contribute to water contamination. Gull feces have also been implicated in the nutrient loading of aquatic systems. While transmission of diseases or parasites from birds to humans has not been well documented, the potential does exist.

Comment 10 – WS should educate airports on how to modify habitat to deter birds

The commenter states that “...*WS should work to educate officials how [sic] to modify the [airport] grounds to deter birds*” since “...*unchanged habitat attracts birds.*” The commenter continues by accusing WS of using the “*shotgun approach*” (*i.e.*, using lethal methods only) to kill birds instead of addressing the habitat characteristics at the airports that attract birds. In addition, the commenter stated “...*habitat management is necessary and we wish to see it as a focus of WS’s [sic] work.*”

However, habitat modification as a method to disperse birds from areas was discussed throughout the EA, including Appendix B. WS’ objective would be to respond to request for assistance with the most effective methods and to provide for the long-term solution to the problem using WS’ Decision Model to manage bird damage. As was stated in the EA, WS would consider habitat modification as a long-term solution to managing damage caused by birds. As was also discussed in the EA, WS would consider the use of non-lethal methods before the use of lethal methods. In many cases, the implementation of habitat modifications would be the responsibility of the airport, especially when addressing land-use issues. When addressing the number of species that could be present on airport property, habitat management alone would not deter all species in all situations. Modifying habitat to discourage use by one species may produce habitat characteristics that are more attractive to another species. In addition, some habitat modifications would not be compatible with airport use, such as allowing grass to grow taller to discourage use by certain bird species. Taller vegetation could impede the use of runway navigation markers. The standard WS Decision Model would be the site-specific procedure for individual actions conducted by WS (see Chapter 3 in the EA for a description of the Decision Model and its application). WS would continue to work with individual airports requesting assistance to identify attractants on airport property and to modify habitat characteristics appropriately to discourage use of airport property by birds.

Comment 11 – Preference for Alternative 2, with restriction of methods available

The commenter expressed a preference for Alternative 2 (technical assistance only by WS); however, only if the recommendations made by WS to alleviate damage or threats of damage were exclusionary devices, habitat/behavior modification, and/or visual deterrents. The commenter opposed the use nest/egg destruction, live-traps, alpha-chloralose, reproductive inhibitors, birth control, repellents, and all lethal methods.

Under the modified technical assistance only alternative suggested and preferred by the commenter, those methods opposed by the commenter would still be available for use by the public even if restrictions were placed on the methods that could be recommended by WS. The only method opposed by the commenter that would not be available to address bird damage would be alpha-chloralose, which is restricted to use by employees of WS. Those methods opposed by the commenter would continue to be available for use by those persons experiencing damage or threats of damage associated with birds. Under the technical assistance only alternative discussed in the EA, WS could implement only those methods preferred by the commenter; therefore, modifying the existing alternative in the EA would not add to the analyses.

Comment 12 – WS should address requests for assistance using non-lethal methods only

The use of only non-lethal methods to address requests for assistance was an alternative considered by WS during the development of the EA (see Section 3.2 of the EA). However, the alternative was not analyzed in detail for the reasons provided in the EA. Under a non-lethal only alternative, those methods discussed in Appendix B of the EA that are considered non-lethal would be employed by WS. The only methods addressed in the EA the commenter considers as acceptable to address damage and threats of damage associated with birds are exclusionary devices, habitat-behavior modification, and visual deterrents. The commenter opposed the use of nest/egg destruction, live traps, alpha-chloralose, reproductive inhibitors, and repellents, which were considered as non-lethal methods in the EA.

As described in the EA, a non-lethal only alternative was not considered in detail since property owners or managers could conduct management using any non-lethal or lethal method that is legal, once a permit has been issued for lethal take, when required. Property owners or managers might choose to implement WS' non-lethal recommendations, implement lethal methods, or request assistance from a private or public entity other than WS. Property owners/managers frustrated by lack of WS' assistance with the full range of bird damage management techniques may try methods not recommended by WS or use illegal methods (e.g., poisons). In some cases, property owners or managers may misuse some methods or use some methods in excess of what is necessary which could then become hazardous and pose threats to the safety of humans and non-target species.

Those methods that would be available under a non-lethal only alternative would also be available for use under the alternatives analyzed in detail, including the proposed action alternative. WS must consider non-lethal methods prior to the use or recommendation of lethal methods. Under a non-lethal only alternative, WS would apply non-lethal methods to address every request for assistance regardless of severity or intensity of the damage or threat until deemed inadequate to resolve the request. This alternative would not prevent the use of lethal methods by those persons experiencing bird damage. In those instances where non-lethal methods would effectively resolve damage caused by birds, WS would use or recommend those methods under the proposed action alternative. However, listing methods neither implies that all methods would be used by WS to resolve requests for assistance nor does the listing of methods imply that all methods would be used to resolve every request for assistance. Since non-lethal methods would be available for use under the alternatives analyzed in detail, evaluation of an alternative where only non-lethal methods would be available would not add to the analyses. Under the proposed action alternative, WS could use only those non-lethal methods described by the commenter, when warranted.

Comment 13 - Lethal control methods are ineffective

The effectiveness of methods was identified as an issue, but was not analyzed in detail for the reasons provided in the EA (see Section 2.3 of the EA). As was described in the EA, when WS receives a request for assistance, the objective is to alleviate damage or reduce threats of damage. Most often, the damage or threat of damage has reached a level where people seek assistance. Therefore, methods to resolve damage or the threat of damage must be employed in such a manner as to ensure timely resolution, in consideration of potential harmful effects on humans, target and non-target wildlife, and the environment. WS' personnel use a decision model to determine the appropriate methods when all those aspects are considered.

A common issue raised is that the use of lethal methods is ineffective because additional birds are likely to return to the area either after removal occurs or the following year when birds return to the area to set up breeding territories. This assumes birds only return to an area where damage was occurring if lethal methods are used. However, the use of non-lethal methods is also often temporary which could result in birds returning to an area where damage was occurring once those methods are no longer used or become ineffective due to habituation. The common factor when employing any method is that birds would return if suitable habitat continues to exist at the location where damage was occurring and bird densities are sufficient to occupy all available habitats. Therefore, any reduction or prevention of damage from the use of methods addressed in Appendix B of EA, either lethal or non-lethal would be temporary if habitat conditions continue to exist. Therefore, any method that disperses or removes birds from areas would only be temporary if habitat continues to exist the following year when birds return to nest.

Dispersing birds using pyrotechnics, repellents, or any other non-lethal method addressed in Appendix B of the EA often requires repeated application to discourage birds, which increases costs, moves birds to other areas where they could cause damage, and are temporary if habitat conditions remain unchanged.

Dispersing and the translocating of birds could be viewed as moving a problem from one area to another, which would require addressing damage caused by those birds at another location. WS' recommendation of or use of techniques to modify existing habitat or to make areas unattractive to birds was discussed in Appendix B of the EA. WS' objective is to respond to request for assistance with the most effective methods and to provide for the long-term solution to the problem using WS' Decision Model to adapt methods in an integrated approach to managing bird damage that is agreed upon by the cooperator.

Managing damage caused by birds can be divided into short-term redistribution approaches and long-term population and habitat management approaches. Short-term approaches focus on redistribution and dispersal of birds to limit use of an area where damage or threats were occurring. Short-term redistribution approaches may include prohibiting feeding, hazing with vehicles, dogs, and adverse noise, erecting access barriers such as wire grids or fences, and taste aversion chemicals. Population reduction by limiting survival or reproduction, removing birds, and habitat modification are considered long-term solutions to managing damage caused by birds.

Redistribution methods are often employed to provide immediate resolution to damage occurring until long-term approaches can be implemented or have had time to reach the desired result. Scaring birds and physical barriers are often short-term solutions that move birds to other areas where damages or threats could occur. Some short-term methods may become less effective in resolving damage as populations increase and become more acclimated to human activity. Long-term solutions to resolving damage would require management of the population.

Comment 14 – EA inaccurately characterizes lethal methods as non-lethal

The commenter stated that information in the EA is contradictory because methods are characterized as non-lethal methods but birds could be euthanized after capture. WS correctly addresses methods in the EA as lethal or non-lethal based on the initial fate of birds when those methods are used. WS' clearly states in the EA that non-lethal methods may be employed to live-capture birds and that those birds may be euthanized using methods described in Appendix B of the EA. WS clearly states in the EA that lethal methods employed may include live capture followed by euthanasia. WS' analysis of the effects on bird populations in Chapter 4 of the EA fully considers as part of WS' take those birds that are live-captured and then euthanized. All euthanasia methods available for use by WS are discussed in the EA, including Appendix B. WS clearly states in the EA that euthanasia may occur and describes those methods that would be used to euthanize birds. Therefore, WS does not attempt to mislead the public nor understates the impact on animal welfare since all euthanasia methods available for use are discussed and the take of birds using lethal methods was evaluated in the EA. The comment also incorrectly assumes all live-captured birds would be euthanized. Limited translocation could occur as described in the EA when the entity requesting translocation of birds obtains the appropriate permits and permissions to do so.

Comment 15 – Opposition to certain methods

The commenter opposed the use of nest/egg destruction, live-traps, alpha-chloralose, reproductive inhibitors, birth control, repellents, and all lethal methods. The commenter opposed the use of nest destruction as "*counter-productive and objectionable.*" The commenter also opposed "*...all uses of chemical repellents as harmful to birds, mammals and the environment.*" However, no other specific reasons for the objection to individual methods were provided by the commenter. In addition, no new issues associated with the use of those methods were identified in the comment letter.

Chapter 2 of the EA contains a discussion of the issues, including issues that received detailed environmental impact analysis in Chapter 4 (Environmental Consequences) of the EA, issues that were used during the development of standard operating procedures, and issues that were not be considered in

detail, with rationale. Issues are concerns of the public and/or professional community raised regarding potential adverse effects that might occur from a proposed action. The issues as those issues relate to the possible implementation of the alternatives, including the proposed action alternative, were discussed in Chapter 4 of the EA. The EA identified issues relating to the use of the methods available to address bird damage and threats of damage, including the effects of methods on non-target wildlife, the potential threat to human safety associated with methods, and the humaneness of methods.

Section 4.1 of the EA analyzes the environmental consequences of each alternative in comparison to determine the extent of actual or potential impacts on the issues, including the use of those methods opposed by the commenter. The potential cumulative impacts associated with the proposed action alternative are discussed in Section 4.2 of the EA.