DECISION AND
FINDING OF NO SIGNIFICANT IMPACT

Environmental Assessments: Managing Damage to Resources and Threats to Human Safety Caused by Birds in the State of New York

The U.S. Fish and Wildlife Service (USFWS) proposes to adopt the United States Department of Agriculture's (USDA) Environmental Assessments (EAs) for Reducing Ring-billed Gull, Herring Gull, Great Black-Backed Gull and Double-crested Cormorant Damage Through an Integrated Wildlife Management Program in the State of New York (USDA 2003a), USDA's EA for Canada Goose Damage Management in the State of New York (USDA 2004a), USDA's EA for Reducing Pigeon, Starling, House Sparrow, Blackbird, and Crow Damage through an Integrated Wildlife Damage Management Program in the State of New York (USDA 2005a) and issue migratory bird depredation permits to the USDA, Animal and Plant Health Inspection Service (APHIS), Wildlife Services (WS) program, and additional entities meeting the conditions of 50 C.F.R. § 21.41 for the take of migratory birds in New York.

WS, in cooperation with USFWS, developed EAs that addressed WS activities to manage damage associated with migratory birds in the state (USDA 2003a, USDA 2004a, USDA 2005a). Based on the analyses in those EAs, four Decision and Finding of No Significant Impact (FONSI) documents were signed by WS selecting the proposed action alternatives (USDA 2003b, USDA 2004b, USDA 2005b). WS subsequently issued a new Decision and summary report analyzing gull and cormorant damage management activities in the state since the 2003 FONSI to ensure WS' activities remained within the scope of analyses in the 2003 EA (USDA 2009). The proposed action alternatives implemented a damage management program using a variety of methods in an integrated approach (USDA 2003b, USDA 2004b, USDA 2005b). These EAs (USDA 2003a, USDA 2004a, USDA 2005a) and FONSIs (USDA 2003b, USDA 2004b, USDA 2005b, USDA 2009) identified the general need for managing damage associated with migratory birds, focused on the species responsible for the majority of damage, and assessed the potential environmental impacts of program alternatives.

LEGAL FRAMEWORK GOVERNING MIGRATORY BIRD DEPREDATION PERMITS

The Migratory Bird Treaty Act delegates authority to the United States Secretary of the Interior to adopt regulations permitting hunting, taking, capture, killing, possession, sale, purchase, shipment, transportation, carriage, or export of any such bird, or any part, nest, or egg thereof. 16 U.S.C. § 704. This authority has been sub-delegated by the Secretary to the USFWS. See 50 C.F.R. § 10.1. In regulating the take of migratory birds, the USFWS must give due regard to the zones of temperature and to the distribution, abundance, economic value, breeding habits, and times and lines of migratory flight of such birds, and must determine when, to what extent, if at all, and by what means, allowing otherwise prohibited activity is compatible with the terms of the conventions. 16 U.S.C. § 704.

Take of migratory birds to improve airport safety was historically authorized through special purpose permits through the 1990s. Since then, authorized take of migratory birds posing a

threat to public safety at airports has been authorized through depredation permits under 50 C.F.R. § 21.41.

Migratory birds that cause damage to commercial, public, or private property are often referred to as "depredating" birds. This term was first applied to migratory birds when large amounts of birds would prey upon fish farms or agricultural crops. But the concept extends to other types of property damage or when birds cause health or safety risks. Permits are not required simply to scare birds, with the exception of eagles and birds listed under the Endangered Species Act. However, take without a permit is unlawful. Id. at § 21.11. A permit would be necessary not just for lethal methods of take, but also for non-lethal methods including trapping, collecting and capturing, or any activity that involves possession or may cause injury.

The criteria for depredation permits are straightforward, focusing on the content of the application and mandatory permit conditions; USFWS may include additional conditions at its discretion. Applicants must comply with USFWS' general permitting requirements at 50 C.F.R. Part 13 and provide the following additional information as indicated at 50 C.F.R. § 21.41 (b):

1) A description of the area where depredations are occurring;
2) The nature of the crops or other interests being injured;
3) The extent of such injury; and
4) The particular species of migratory birds committing the injury;

Our regulation stipulates that in addition to the required permit conditions in Part 13, depredation permits shall require certain other enumerated conditions [50 C.F.R. § 21.41(c)]. Depredation permits may be issued for up to a year [50 C.F.R. § 21.41 (d)], but the permit may be renewed annually following the procedures in 50 C.F.R. § 13.22. This section allows a permittee to continue its activities under an expired permit, pending USFWS decision on a renewal application, so long as the permittee submitted the renewal application at least 30 days prior to permit expiration. Id. at 13.22(c).

The WS program completed EAs on alternatives for reducing bird damage to agricultural resources, natural resources, property, livestock, and public health and safety in New York (USDA 2003a, USDA 2004a, USDA 2005a). These EAs document the need for action and assesses potential impacts on the human environment of three alternatives to address that need.

The USFWS, who was a cooperating agency in each effort, has independently reviewed and hereby adopts and incorporates the WS EA: Reducing Ring-billed Gull, Herring Gull, Great Black-Backed Gull and Double-crested Cormorant Damage Through an Integrated Wildlife Management Program in the State of New York (USDA 2003a) in this decision regarding the issuance of depredation permits under 50 C.F.R. § 21.41. The WS EA is available for review at: https://www.aphis.usda.gov/regulations/pdfs/nepa/NYgullcorm.pdf.

The USFWS, who was a cooperating agency in that effort, has independently reviewed and hereby adopts and incorporates the WS EA: Canada Goose Damage Management in the State of New York (USDA 2004a) in this decision regarding the issuance of depredation permits under

50 C.F.R. § 21.41. The WS EA is available for review at: https://www.aphis.usda.gov/regulations/pdfs/nepa/NYgoose.pdf.

The USFWS, who was a cooperating agency in that effort, has independently reviewed and hereby adopts and incorporates the WS EA: Reducing Pigeon, Starling, House Sparrow, Blackbird, and Crow Damage through an Integrated Wildlife Damage Management Program in the State of New York (USDA 2005a) in this decision regarding the issuance of depredation permits under 50 C.F.R. § 21.41. The WS EA is available for review at: https://www.aphis.usda.gov/regulations/pdfs/nepa/NY%20PSSBC%20EA.pdf.

Normally, individual wildlife damage management permit actions by the USFWS may be categorically excluded from the requirements of the National Environmental Policy Act (NEPA), 42 U.S.C. § 4332, where the permitted action will cause no or negligible environmental disturbance. See 516 DM 8.5(C)(1). However, USFWS chose to cooperate with WS in development of the aforementioned EAs to facilitate planning, interagency coordination and the streamlining of program management, and to fully analyze and communicate to the public the individual and cumulative impacts from wildlife damage management related to migratory birds. The purpose of the EAs (USDA 2003a, USDA 2004a, USDA 2005a) was to evaluate cumulatively the impact of all individual projects conducted by WS and USFWS in New York to manage damage and threats to agricultural resources, property, natural resources, and human safety associated with the species of migratory birds that are responsible for the majority of damage.

PUBLIC COMMENTS

The EA: Reducing Ring-billed Gull, Herring Gull, Great Black-Backed Gull and Double-crested Cormorant Damage Through an Integrated Wildlife Management Program in the State of New York (USDA 2003a) was made available for review and comment for 30 days. The document was made available by legal notice published in *Newsday* (NYC/Long Island), *The Post-Standard* (Syracuse), *Buffalo News* (Buffalo), *The Albany Times Union* (Albany) and sent to interested parties through the APHIS Stakeholder Registry. Seven comments were received and addressed in the findings document. All correspondence on the EA is maintained at the WS State Office, 1930 Route 9, Castleton, NY 12033-9653.

The EA: Reducing Canada Goose Damage Management in the State of New York (USDA 2004a) was made available for review and comment for 45 days. The document was made available by legal notice published in *Newsday* (NYC/Long Island), *The Post-Standard* (Syracuse), *Buffalo News* (Buffalo), *The Albany Times Union* (Albany) and sent to interested parties through the APHIS Stakeholder Registry. Two comments were received and addressed in the findings document. All correspondence on the EA is maintained at the WS State Office, 1930 Route 9, Castleton, NY 12033-9653.

The EA: Reducing Pigeon, Starling, House Sparrow, Blackbird, and Crow Damage through an Integrated Wildlife Damage Management Program in the State of New York (USDA 2005a) was made available for review and comment for 40 days. The document was made available by legal notice published in *Newsday* (NYC/Long Island), *The Post Standard* (Syracuse), *Buffalo News*

(Buffalo), *Times Union* (Albany) and sent to interested parties through the APHIS Stakeholder Registry. Ninety comments were received and addressed in the findings document. All correspondence on the EA is maintained at the WS State Office, 1930 Route 9, Castleton, NY 12033-9653.

SUMMARY OF EACH ENVIRONMENTAL ASSESSMENTS AND ALTERNATIVES

Changes in the need for action and the affected environment prompted WS and the USFWS to initiate a new analysis to address migratory bird damage in the state. The EAs (USDA 2003a, USDA 2004a, USDA 2005a) were developed to assess the potential environmental impacts of program alternatives based primarily on a need to address damage and threats of damage associated with several species of migratory birds responsible for the majority of damage. The EAs also analyzed cumulative impacts from all permittees authorized to take the focused upon-migratory birds in the state under 50 C.F.R. § 21.41.

Wildlife Services EA: Reducing Ring-billed Gull, Herring Gull, Great Black-Backed Gull and Double-crested Cormorant Damage Through an Integrated Wildlife Management Program in the State of New York (USDA 2003a)

Chapter 1 of the EA: Reducing Ring-billed Gull, Herring Gull, Great Black-Backed Gull and Double-crested Cormorant Damage Through an Integrated Wildlife Management Program in the State of New York (USDA 2003a) describes why and the extent to which these species are involved in damage and/or human health and safety situations in the state of New York, and the technical services that have previously been provided by WS to address them. Such categories include: agricultural resources (aquaculture, livestock, crops); human health and safety (disease transmission, aircraft strikes); and damage to property. Chapter 2 describes the affected environment, and provides greater detail on the issues that received greater impact analysis. Chapter 3 presents alternatives that were developed to address the issues identified in the previous chapter. Finally, Chapter 4 provides information needed for making an informed decision in selecting the appropriate alternative, which is briefly summarized as:

Alternative 1 - Integrated Bird Damage Management Program (Proposed Action/No Action). The proposed action/no action alternative would continue the current implementation of an adaptive integrated approach utilizing non-lethal and lethal techniques, as deemed appropriate using the WS Decision Model, to reduce damage and threats caused by certain migratory bird species in New York. As described in Chapter 3 of the EA, this alternative involves continued issuance of depredation permits by USFWS to individuals and entities, including WS, meeting the conditions of 50 C.F.R. § 21.41.

Alternative 2 - Non-lethal Bird Damage Management Only by WS. Under this alternative, WS would be restricted to only using or recommending non-lethal methods to resolve damage caused by certain migratory birds in New York. Lethal methods could continue to be used under this alternative by those persons experiencing damage without involvement by WS. This alternative involves USFWS issuing depredation permits to individuals and entities meeting the conditions of 50 C.F.R. § 21.41, but not issuing a depredation permit to WS.

Alternative 3 - Technical Assistance Only. This alternative would only allow WS to provide technical assistance and recommendation for Bird Damage Management. All requests for assistance received by WS to resolve damage caused by birds would be referred to the USFWS, the New York Department of Environmental Conservation (NYDEC), and/or private entities. This alternative is different from Alternative 2 above, in that the USFWS would not cooperate with WS regarding bird damage management, obtain their professional expertise on non-lethal or lethal practices for resolving conflicts with migratory birds, or rely on their ability to conduct site-visits to determine the scope of the problem, species and number of birds involved, and whether non-lethal efforts to address the problem have been taken by the individual or agency prior to our issuance of a depredation permit.

Alternative 4 - No Federal WS Bird Damage Management. This alternative precludes any activities by WS to reduce threats to human health and safety, and alleviate damage to agricultural resources, property, and natural resources. WS would not be involved with any aspect of bird damage management. All requests for assistance received by WS to resolve damage caused by certain birds would be referred to the USFWS, the NYDEC, and/or private entities. This alternative is different from Alternative 2 above, in that the USFWS would not cooperate with WS regarding bird damage management, obtain their professional expertise on non-lethal or lethal practices for resolving conflicts with migratory birds, or rely on their ability to conduct site-visits to determine the scope of the problem, species and number of birds involved, and whether non-lethal efforts to address the problem have been taken by the individual or agency prior to our issuance of a depredation permit. This alternative would not deny other federal, state, and/or local agencies, including private entities from conducting damage management activities directed at alleviating damage and threats associated with migratory birds. This alternative is substantially related to the USFWS alternative of issuing depredation permits to individuals and entities meeting the conditions of 50 C.F.R. § 21.41, except for WS.

A Decision and summary report (USDA 2009) analyzing gull and cormorant damage management activities in New York since the 2003 EA and FONSI was developed to facilitate planning and interagency cooperation, streamline program management, and ensure WS activities remain within the scope of analyses contained in the EA (USDA 2003a). This resulted in a FONSI and Decision to continue the integrated bird damage management program (USDA 2009) alternative.

Wildlife Services EA: Canada Goose Damage Management in the State of New York (USDA 2004a)

Chapter 1 of the EA: Canada Goose Damage Management in the State of New York (USDA 2004a) describes why and the extent to which this species is typically involved in damage and/or human health and safety situations in the state of New York, and the technical services that have previously been provided by WS to address them. Such categories include: agricultural resources (aquaculture, livestock, crops); human health and safety (disease transmission, aircraft strikes); and damage to property. Chapter 2 describes the affected environment, and provides greater detail on the issues that received greater impact analysis. Chapter 3 presents alternatives that were developed to address the issues identified in the previous chapter. Finally, Chapter 4

provides information needed for making an informed decision in selecting the appropriate alternative, which is briefly summarized as:

Alternative 1 - Integrated Wildlife Damage Management Program (Proposed Action/No Action). The proposed action/no action alternative would continue the current implementation of an adaptive integrated approach utilizing non-lethal and lethal techniques, as deemed appropriate using the WS Decision Model, to reduce damage and threats caused by Canada geese in New York. As described in Chapter 3 of the EA, this alternative involves continued issuance of depredation permits by USFWS to individuals and entities, including WS, meeting the conditions of 50 C.F.R. § 21.41.

Alternative 2 - Technical Assistance Only. This alternative would only allow WS to provide technical assistance and recommendation for Bird Damage Management. All requests for assistance received by WS to resolve damage caused by Canada geese would be referred to the USFWS, the NYDEC, and/or private entities. This alternative is different from Alternative 2 above, in that the USFWS would not cooperate with WS regarding Canada geese damage management, obtain their professional expertise on non-lethal or lethal practices for resolving conflicts with migratory birds, or rely on their ability to conduct site-visits to determine the scope of the problem, species and number of birds involved, and whether non-lethal efforts to address the problem have been taken by the individual or agency prior to our issuance of a depredation permit.

Alternative 3 - Non-lethal Canada Goose Damage Management Only by WS. Under this alternative, WS would be restricted to only using or recommending non-lethal methods to resolve damage caused by Canada geese in New York. Lethal methods could continue to be used under this alternative by those persons experiencing damage without involvement by WS. This alternative involves USFWS issuing depredation permits to individuals and entities meeting the conditions of 50 C.F.R. § 21.41, but not issuing a depredation permit to WS.

Alternative 4 - No Federal WS Canada Goose Management. This alternative precludes any activities by WS to reduce threats to human health and safety, and alleviate damage to agricultural resources, property, and natural resources. WS would not be involved with any aspect of bird damage management. All requests for assistance received by WS to resolve damage caused by Canada geese would be referred to the USFWS, the NYDEC, and/or private entities. This alternative is different from Alternative 2 above, in that the USFWS would not cooperate with WS regarding Canada geese damage management, obtain their professional expertise on non-lethal or lethal practices for resolving conflicts with migratory birds, or rely on their ability to conduct site-visits to determine the scope of the problem, species and number of birds involved, and whether non-lethal efforts to address the problem have been taken by the individual or agency prior to our issuance of a depredation permit. This alternative would not deny other federal, state, and/or local agencies, including private entities from conducting damage management activities directed at alleviating damage and threats associated with migratory birds. This alternative is substantially related to the USFWS alternative of issuing depredation permits to individuals and entities meeting the conditions of 50 C.F.R. § 21.41, except for WS.

Following the completion of the EA (USDA 2004a), a FONSI and Decision was developed for continuing the integrated bird damage management program (USDA 2004b).

Wildlife Services EA: Reducing Pigeon, Starling, House Sparrow, Blackbird, and Crow Damage Through an Integrated Wildlife Management Program in the State of New York (USDA 2005a)

Chapter 1 of the EA: Reducing Pigeon, Starling, House Sparrow, Blackbird, and Crow Damage through an Integrated Wildlife Damage Management Program in the State of New York (USDA 2005a) describes why and the extent to which these species of migratory birds are typically involved in damage and/or human health and safety situations in the state of New York, and the technical services that have previously been provided by WS to address them. Such categories include: agricultural resources (aquaculture, livestock, crops); human health and safety (disease transmission, aircraft strikes); and damage to property. Chapter 2 describes the affected environment, and provides greater detail on the issues that received greater impact analysis. Chapter 3 presents alternatives that were developed to address the issues identified in the previous chapter. Finally, Chapter 4 provides information needed for making an informed decision in selecting the appropriate alternative, which is briefly summarized as:

Alternative 1 - Technical Assistance Only. This alternative would only allow WS to provide technical assistance and recommendation for Bird Damage Management. All requests for assistance received by WS to resolve damage caused by certain birds would be referred to the USFWS, the NYDEC, and/or private entities. This alternative is different from Alternative 2, in that the USFWS would not cooperate with WS regarding bird damage management, obtain their professional expertise on non-lethal or lethal practices for resolving conflicts with migratory birds, or rely on their ability to conduct site-visits to determine the scope of the problem, species and number of birds involved, and whether non-lethal efforts to address the problem have been taken by the individual or agency prior to our issuance of a depredation permit.

Alternative 2 - Integrated Bird Damage Management Program (Proposed Action/No Action). The proposed action/no action alternative would continue the current implementation of an adaptive integrated approach utilizing non-lethal and lethal techniques, as deemed appropriate using the WS Decision Model, to reduce damage and threats caused by migratory birds in New York. As described in Chapter 3 of the EA, this alternative involves continued issuance of depredation permits by USFWS to individuals and entities, including WS, meeting the conditions of 50 C.F.R. § 21.41.

Alternative 3 - Non-lethal Bird Damage Management Only by WS. Under this alternative, WS would be restricted to only using or recommending non-lethal methods to resolve damage caused by migratory birds in New York. Lethal methods could continue to be used under this alternative by those persons experiencing damage without involvement by WS. This alternative involves USFWS issuing depredation permits to individuals and entities meeting the conditions of 50 C.F.R. § 21.41, but not issuing a depredation permit to WS.

Alternative 4 - No Federal WS Bird Damage Management. This alternative precludes any activities by WS to reduce threats to human health and safety, and alleviate damage to

agricultural resources, property, and natural resources. WS would not be involved with any aspect of bird damage management. All requests for assistance received by WS to resolve damage caused by birds would be referred to the USFWS, the NYDEC, and/or private entities. This alternative is different from Alternative 2 above, in that the USFWS would not cooperate with WS regarding bird damage management, obtain their professional expertise on non-lethal or lethal practices for resolving conflicts with migratory birds, or rely on their ability to conduct site-visits to determine the scope of the problem, species and number of birds involved, and whether non-lethal efforts to address the problem have been taken by the individual or agency prior to our issuance of a depredation permit. This alternative would not deny other federal, state, and/or local agencies, including private entities from conducting damage management activities directed at alleviating damage and threats associated with migratory birds. This alternative is substantially related to the USFWS alternative of issuing depredation permits to individuals and entities meeting the conditions of 50 C.F.R. § 21.41, except for WS.

Following the completion of the EA (USDA 2005a), a FONSI and Decision was developed for continuing the integrated bird damage management program (USDA 2005b).

CONCLUSION OF SUMMARY OF ENVIRONMENTAL ASSESMENTS AND ALTERVATIVES

Not engaging with WS or declining to issue a depredation permit for migratory birds to reduce and prevent damage associated with agricultural resources, natural resources, property and threats to human health and safety is not a viable alternative for the USFWS, because it is not consistent with the responsibilities under E.O. 13186 and the resulting Memorandum of Understanding (MOU) between WS and USFWS. This MOU is available at: https://www.fws.gov/migratorybirds/pdf/management/mouaphis.pdf.

Following the completion of the EA (USDA 2005a), a FONSI and Decision was developed for continuing the integrated bird damage management program (USDA 2005b).

Because the goals of WS and USFWS are to conduct a coordinated program to reduce and prevent migratory bird damage associated with agricultural resources, natural resources, property and threats to human health and safety, the alternatives analyzed in the WS EAs were developed in consultation with the USFWS and closely align with the USFWS alternatives presented in this Decision/FONSI. Each of the Alternatives is discussed in greater detail within the Description of Alternatives section in this FONSI.

DOCUMENTS INCORPORATED INTO THIS FINDINGS DOCUMENT

Proposal to Permit Take as Provided under the Bald and Golden Eagle Protection Act – Final Environmental Assessment:

The USFWS Final Programmatic Environmental Impact Statement (PEIS) for the Eagle Rule Revision (USFWS 2016a) evaluated the potential direct, indirect, and cumulative environmental impacts associated with the development and implementation of eagle management involving permitted “take” of bald eagles and golden eagles as defined under the Bald and Golden Eagle

Protection Act. The preferred alternative in the PEIS assessed the impact of the following authorizations: disturbance of eagles amounting to take; removal of eagle nests where necessary to alleviate safety emergency, ensure public health and safety, restore operation of a pre-existing human engineered structure, and protect an interest in a particular locality; and lethal take of eagles in limited circumstances.

As a Programmatic NEPA analysis, the PEIS can be tiered off of for site-specific environmental assessments (USFWS 2016a). Generally, projects that "(a) will not take eagles above regional take limits (unless it is offset); (b) will not result in cumulative authorized take within the local area population exceeding 5%; and (c) will fulfill their compensatory mitigation requirements via methods that will offset the take… need to only summarize issues discussed in the PEIS and incorporate by reference discussion from the PEIS" (USFWS 2016a, pages 6-7). Exceptions may require separate NEPA analysis.

Resident Canada Goose Management - Final Environmental Impact Statement:

The USFWS has issued a Final Environmental Impact Statement (FEIS) on the management of resident Canada geese (USFWS 2005). Pertinent and current information available in the FEIS has been incorporated by reference into this Decision/FONSI, specifically the discussion in section II.B.6 of the Preferred Alternative in the FEIS, which includes the continued issuance of depredation permits under 50 CFR §21.41 (see page II-15 of the FEIS). The FEIS may be obtained by contacting the Division of Migratory Bird Management, U.S. Fish and Wildlife Service, 5275 Leesburg Pike, MS: MB, Falls Church, VA, 22041-3803.

USFWS Light Goose Management - Final Environmental Impact Statement:

The USFWS has issued an FEIS, which analyzes the potential environmental impacts of management alternatives for addressing problems associated with overabundant light goose populations (USFWS 2007). The "light" geese referred to in the FEIS include the lesser snow goose (*Chen caerulescens caerulescens*), greater snow goose (*C. c. atlantica*), and the Ross's goose (*C. rossii*) that nest in Arctic and sub-Arctic regions of Canada and migrate and winter throughout the United States. A Record of Decision (ROD) and Final Rule were published by the USFWS and the final rule went into effect on December 5, 2008. Information from the USFWS FEIS on light goose management (USFWS 2007) has been incorporated by reference into this Decision/FONSI. The FEIS may be obtained by contacting the Division of Migratory Bird Management, U.S. Fish and Wildlife Service, 5275 Leesburg Pike, MS: MB, Falls Church, VA, 22041-3803 or by downloading it from the USFWS website at: https://www.fws.gov/migratorybirds/pdf/management/snow-geese/light-gooseEIS.pdf.

Waterbird Conservation Plan: 2006-2010, Mid-Atlantic/New England/Maritimes Region:

The Mid-Atlantic/New England/Maritime (MANEM) Working Group developed a regional waterbird conservation plan for the MANEM region of the United States and Canada (MANEM Waterbird Conservation Plan 2006). The MANEM region consists of Bird Conservation Region (BCR) 14 (Atlantic Northern Forest) and BCR 30 (New England/Mid-Atlantic Coast) along with the Pelagic Bird Conservation Region 78 (Northeast United States Continental Shelf) and Pelagic

Bird Conservation Region 79 (Scotian Shelf). The plan consists of technical appendices that address: (1) waterbird populations including occurrence, status, and conservation needs, (2) waterbird habitats and locations within the region that are critical to waterbird sustainability, (3) MANEM partners and regional expertise for waterbird conservation, and (4) conservation project descriptions that present current and proposed research, management, habitat acquisition, and education activities (MANEM Waterbird Conservation Plan 2006).

Executive Order 13186: Responsibilities of Federal Agencies to Protect Migratory Birds:

Migratory birds are of great ecological and economic value to this country and to other countries. They contribute to biological diversity and bring tremendous enjoyment to millions of Americans who study, watch, feed, or hunt these birds throughout the United States and other countries. The United States has recognized the critical importance of this shared resource by ratifying international, bilateral conventions for the conservation of migratory birds. Such conventions include the Convention for the Protection of Migratory Birds with Great Britain on behalf of Canada in 1916; the Convention for the Protection of Migratory Birds and Game Mammals with Mexico in 1936, the Convention for the Protection of Birds and Their Environment with Japan in 1972 and the Convention for the Conservation of Migratory Birds and Their Environment with the Union of Soviet Socialist Republics in 1978.

These migratory bird conventions impose substantive obligations on the United States for the conservation of migratory birds and their habitats, and through the MBTA, the United States has implemented these migratory bird conventions with respect to the United States. Executive Order 13186 directed executive departments and federal agencies taking actions that have, or are likely to have, a measurable negative effect on migratory bird populations to develop and implement, within 2 years, a MOU with the USFWS that shall promote the conservation of migratory bird populations. 66 Federal Register. 3853 (2001). This MOU is available at: https://www.fws.gov/migratorybirds/pdf/management/mouaphis.pdf.

WS' Environmental Assessments:

WS has previously developed EAs (USDA 1994, USDA 1997) that analyzed the need for action to manage damage associated with several bird species in the state of New York. Information from the previous EAs was considered and updated in the EAs (USDA 2003a, USDA 2004a, USDA 2005a). These EAs assessed the potential environmental impacts of program alternatives based on a new need for action, primarily to address damage and threats of damage associated with several species of migratory birds, as well as incorporating Canada goose damage and threats.

Bird Hazard Reduction Program: John F. Kennedy International Airport: Supplement to the Environmental Impact Statement Gull Hazard Reduction Program: John F. Kennedy International Airport:

WS previously developed a supplement to a 1994 FEIS addressing bird strikes at John. F. Kennedy International airport (JFK) (USDA 1994). The supplement (USDA 2012) analyzed the potential environmental impacts of management alternatives for addressing problems associated

with managing to reduce bird strikes at JKF. Specifically, six alternative actions were analyzed. The alternative action of increasing integrated bird hazard management in and within a seven mile radius of the airport was selected as the proposed action (USDA 2012). It was determined that this alternative would decrease some local bird populations, but would not have a significant adverse cumulative impact on state or regional bird populations. We incorporate the 1994 EIS and 2012 SEIS by reference (USDA 1994, USDA 2012). We also incorporate the Service's independent NEPA documentation for JFK depredation permits issued in 2014-2016, which corroborate the findings of the SEIS regarding the negligible impacts on bird populations for species that were newly added to the permits, and those taken under their emergency take provisions (USFWS 2014-2016).

OTHER ENVIRONMENTAL DOCUMENTS INCORPORATED IN OUR DECISION AND FINDINGS

Atlantic Flyway Resident Population Canada Goose Management Plan

In response to increasing populations of resident Canada geese within the Atlantic Flyway, the Atlantic Flyway Council developed and adopted a management plan in 2011 to reduce the Atlantic Flyway Resident Population (AFRP) of Canada Geese (Atlantic Flyway Council 2011). The objectives of this plan are to: 1) Reduce AFRP Canada geese to 700,000 birds (spring estimate) by 2020, distributed in accordance with levels prescribed by individual states and provinces; 2) Permit a wide variety of effective and efficient options for relief of damage and conflicts associated with AFRP Canada geese; 3) Provide maximum opportunities for use and appreciation of AFRP Canada geese, consistent with population objectives; 4) Ensure compatibility of AFRP goose management with management of migrant goose populations in the Atlantic Flyway; and 5) Annually monitor populations, harvest, and damage/conflict levels to evaluate effectiveness of management actions.

Birds of Conservation Concern

The 1988 amendment to the Fish and Wildlife Conservation Act mandates the USFWS to "identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act (ESA) of 1973." Birds of Conservation Concern (BCC) 2008 is the most recent effort to carry out this mandate (USFWS 2008). Migratory bird species on the BCC list for the Northeast Region can be found in Table 44 (page 62) of the report, available at: https://www.fws.gov/migratorybirds/pdf/management/BCC2008.pdf.

One BBC species, the American oystercatcher, was taken in the state of New York during 2013-2015. A total of ten American oystercatchers and one nest were taken between 2013 and 2015. These birds and nest were emergency takes at the JFK airport to prevent airplane strikes.

Table 1. Reported take of migratory birds in New York via depredation permits, 2013-2015.

Species	2013		2014		2015	
	Birds	Nests/Eggs	Birds	Nests/Eggs	Birds	Nests/Eggs
American crow	2	0	3	0	30	0

American oystercatcher	4	0	4	1	2	0
American robin	8	0	0	1	0	0
Barn swallow	82	35	24	12	8	0
Belted kingfisher	5	0	5	0	6	0
Black duck	17	0	14	0	1	0
Brant	330	0	150	0	397	0
Canada goose	1628	14	1386	184	1020	20
Cedar waxwing	100	0	150	0	150	0
Cliff swallow	0	3	0	11	0	16
Common grackle	0	0	41	0	31	0
Common merganser	0	0	2	0	0	0
Common raven	2	0	1	0	0	0
Double-crested cormorant	150	7	143	10	173	21
Gadwall	0	0	1	0	0	0
Great black-backed gull	101	58	98	23	113	28
Great blue heron	33	0	50	0	51	0
Great Egret	1	0	1	0	5	0
Herring gull	1101	65	1800	5	1358	4
Killdeer	22	0	5	2	42	0
Laughing gull	1510	0	998	0	1212	0
Mallard	109	2	59	2	54	0
Mourning dove	591	0	355	0	629	0
Osprey	0	0	1	0	4	0
Pileated woodpecker	0	0	1	0	0	0
Ring-billed gull	1149	790	1854	606	752	1117
Red-breasted merganser	0	0	1	0	0	0
Red-tailed hawk	3	0	6	0	11	0
Ruddy duck	0	0	0	0	1	0
Snow bunting	17	0	0	0	5	0
Snowy owl	4	0	0	0	0	0
Song sparrow	1	0	0	0	0	0
Tree swallow	1	0	0	0	0	0
Turkey vulture	21	0	7	0	18	0
Black vulture	40	0	45	0	62	0

MIGRATORY BIRD SPECIES INCLUDED IN THE ENVIRONMENTAL ASSESSMENT

The purpose of the EAs (USDA 2003a, USDA 2004a, USDA 2005a) was to evaluate cumulatively the individual projects conducted by WS and authorized by the USFWS in New York to manage damage and threats to agricultural resources, property, natural resources, and threats to humans associated with migratory bird species that are responsible for the majority of wildlife damage in the state. In addition to these species, WS and the USFWS also receive infrequent requests for assistance to manage damage and threats of damage associated with several other migratory bird species. These primarily occur at airports where those species pose a threat to human health and safety by way of potential aircraft strikes. These species were not analyzed further in the EAs (USDA 2003a, USDA 2004a, USDA 2005a). As a result, we have included additional analyses for each additional migratory bird species taken in the state of New York by way of depredation permits in 2013 through 2015 (see pages 17-31 below). The take of migratory bird species is authorized by the USFWS, which uses the best available science in an attempt to ensure cumulative take is not detrimental to the long-term sustainability of their populations. Take of migratory birds by all agencies and individuals will continue to be evaluated on a regular basis as new science and data are available and additional analyses deemed warranted.

ADDITIONAL POPULATION IMPACT ANALYSES FOR SPECIES INCLUDED IN THE ENVIRONMENTAL ASSESSMENTS

To ensure that management and regulatory decisions are based on the best available science and data, we hereby provide additional take analyses and assessment for certain migratory bird species that were included in the EAs (USDA 2003a, USDA 2004a, USDA 2005a) based on: 1) new information that has become available after the EAs (USDA 2003a, USDA 2004a, USDA 2005a) were completed; and/or 2) a greater need to assess the cumulative impacts of take, or potential take, for certain species based on changing conditions following the completion of the EAs (USDA 2003a, USDA 2004a, USDA 2005a).

Canada Geese

In the Atlantic Flyway, the resident population of Canada geese nests from Southern Quebec and the Maritime Provinces of Canada southward throughout the States of the Atlantic Flyway (Sheaffer and Malecki 1998, Johnson and Castelli 1998, Nelson and Oetting 1998). This population is believed to be of mixed subspecies (*B. c. canadensis*, *B. c. interior*, *B. c. moffitti*, and *B. c. maxima)* and is the result of purposeful introductions by management agencies, coupled with released birds from private aviculturists and releases from captive decoy flocks after live decoys were outlawed for hunting in the 1930s. Following the Federal prohibition on the use of live decoys in 1935, Dill and Lee (1970) cited an estimate of more than 15,000 domesticated and semi-domesticated geese that were released from captive flocks. With the active restoration programs that occurred from the 1950s through the 1980s, the population grew to over 1 million birds and has increased an average of 2 percent per year since 1995 (Sheaffer and Malecki 1998). The population size of resident Canada geese has been monitored annually by state agencies since the early 1990's, and provides estimates of population changes following the Resident

Canada Goose Management FEIS (USFWS 2005). The 2016 Atlantic Flyway Breeding Waterfowl Plot Surveys (VT to VA) indicate a current population size of at least 949,989 (Standard Error [SE] = 80,129) resident Canada geese within the northern portion of the Atlantic Flyway, with an estimate of 217,298 (SE = 33,544) breeding within the state of New York (Roberts 2016). This additional population size information supplements the findings of the EAs (USDA 2003a, USDA 2004a, USDA 2005a) that the proposed action would not likely impact populations of resident Canada geese at the state, regional or national level. This should assure that cumulative impacts, if any, on Canada goose populations would have no significant adverse impact on the quality of the human environment.

Herring Gull

Herring gulls are a very familiar gull found across North Atlantic and along the North American coast. Individuals begin breeding at year five (Peirotti and Good 1994). The global population estimate for herring gulls is between 760,000 – 1,400,000, with approximately 240,000 to 300,000 birds comprising the breeding pairs in North America (Nisbet et al. 2013). In New York, surveys revealed that the population increased nearly 23% from 1977 to 1996, but more recent investigations suggest a possible population decline (Nisbet et al. 2013). This species is not on the BCC list, nor is it a species of concern in New York, or any northeastern state. It has been estimated that take of a single herring gull nest is equivalent to the take of 1.09 adult individuals (Seamans et al. 2007). Using this estimate, and a yearly take estimate represented by the average of nests taken in 2013 through 2015 in New York, annual nest take in the state (25 nests) represents approximately 0.011% of the potential production in a given year in North America. In the United States 7,165 nests and 7,606 adults have been taken on average per year between 2013 and 2015. This represents 6.1% of the potential production of herring gulls in a given year in the United States; take numbers from Mexico and Canada are not available.

On average, 1,954 nests and 5,703 adults were taken per year from 2013-2015 in BCR 14 and 30, which includes part of New York. Using the correction factor of 1.09 for nests (Seamans et al. 2007), this nest take equates to 2130 individuals. Using the correction factor of 1.09 for nests, the average annual take for herring gulls in BCR 14 and 30 between 2013 and 2015 was 1,471; 834 from nest take and 637 from adult take. Using a Potential Biological Removal (PBR; Runge et al. 2009) model, Seamans et al. (2007) estimated that 8,360 individuals could be removed annually while still maintaining a population and growth rate at which stable productivity occurs. Because the average annual take of nests and adults (7,833) falls below the sustainable annual take estimate of 8,360 developed by Seamens et al. (2007) for BCR 14 and 30, USFWS considers that the issuance of depredation permits, and the allowable take associated with these permits, will not result in cumulative impacts to herring gull populations. Furthermore, this quantity of permitted herring gull take allows USFWS to provide a vehicle for managing herring gull damage while allowing for sustainability of herring gull populations.

Ring-billed Gulls

Ring-billed gulls are comfortable around humans, and they frequent parking lots, garbage dumps, beaches, and fields in North America. Most ring-billed gulls nest in the interior of the continent, near freshwater, with the largest breeding populations occurring in the Great Lakes

region. A black band encircling the yellow bill helps distinguish adults from other gulls species (Ryder 1992). The worldwide population as of 2006 was estimated at 2,550,000 individuals (Delany and Scott 2006). The most recent North American population estimate for ring-billed gulls is around 590,000. Research suggests that the North American population has fluctuated greatly between the 1970s and 2007 (Nisbet et al. 2013). However, the population growth rate over 1999-2009 was estimated at 9.6% per year in the Eastern United States (Sauer et al. 2011). Similarly, in the state of New York, the trend from the BBS spanning 1966-2015 revealed a growth of 9.44% (95% CI 6.13 to 12.58). In addition, the continent wide trend from the BBS spanning 1999-2015 suggests a 4.27% population increase (95% CI 0.26 to 11.98)

From 2013-2015, annual take of ring-billed gulls in New York, the northeast region, and nationally averaged 1252, 2680, and 10,443, respectively. In New York, an average of 838 nests and 1252 adults were taken in 2013 through 2015. Using a correction factor of 1.10 for nests (Seamans et al. 2007), this equates to a take of 922 individuals from nests. The total authorized take for ring-billed gulls in New York between 2013 and 2015 was 2,174; 922 from nest and 1252 adults. Using a population estimate of 590,000, the national take estimate represents approximately 1.77% of the potential production in a given year in North America. Population estimates at the state and regional level are not available and a PBR model has not been developed for areas outside of the northern portion of BCR 14; estimates of N_{min}, a required model input parameter, for the majority of the northeastern region are not available (Seamans et al. 2007). USFWS considers that the issuance of depredation permits, and the allowable take associated with these permits, will not result in cumulative impacts to ring-billed gull populations. This level of permitted ring-billed gull take allows USFWS to provide a mechanism to manage ring-billed gull damage while allowing for sustainability of ring billed gull populations.

Great Black-backed Gull

Great black-backed gulls are the largest gulls found along the east coast of North America. Maximum observed longevity is 19 years old and the species begins to breed in their 4th or 5th year (Good 1998). Numbers of this species, and the species range, increased enormously on both sides of the Atlantic during the 20th century; it is likely that anthropogenic forage resources largely attributed to this increase (Nisbet et al. 2013). The global population estimate for great black-backed gulls is between 170,000 – 180,000, with approximately 61,000 breeding pairs found in North America. Research suggests that in the northeastern US, the population increased between 1980 and 2007 (Nisbet et al. 2013). This species is not on the BCC list, nor is it a species of concern in New York, or any northeastern state. It has been estimated that take of a single nest is equivalent to the take of 1.12 adult individuals (Seamans et al. 2007). Using this estimate and a yearly take estimate represented by the average of nests taken in 2013 through 2015 in New York, annual nest take in the state (36 nests) represents approximately 0.066% of the potential production in a given year in North America. In the United States, 834 nests and 651 adults have been taken on average per year between 2013 and 2015. This represents 2.4% of the potential production of great black-backed gulls in a given year in the United States; take numbers from Mexico and Canada are not available.

On average, 745 nests and 637 adults were taken per year from 2013-2015 in BCR 14 and 30, which includes part of New York. Using the correction factor of 1.12 for nests (Seamans et al. 2007), this nest take equates to 834 individuals. Following the inclusion of the correction factor, the average annual take for great black-backed gulls in BCR 14 and 30 between 2013 and 2015 was 1,471; 834 from nest take and 637 from adult take. Using a PBR, Seamans et al. (2007) estimated that 5,614 individuals could be removed annually while still maintaining a population and growth rate at which maximum productivity occurs. Because the average annual take of nests and adults (1,471) for all of BCR 14 and 30 falls below the sustainable annual take estimate of 5,614 developed by Seamens et al. (2007) for BCR 14 and 30, USFWS considers that the issuance of depredation permits, and the allowable take associated with these permits, will not result in cumulative impacts to great black-backed gull populations. Furthermore, this quantity of permitted great black-backed gull take allows USFWS to provide a vehicle for managing great black-backed gull damage while allowing for sustainability of great black-backed gull populations.

Double-crested cormorants

Double-crested cormorants are commonly found in both freshwater and saltwater environments. The current population size of double-crested cormorants in northeast North America is estimated to be 273,356 (USFWS, unpublished report 2016). The total number of double-crested cormorants reported to have been taken under depredation permits within the Northeast Region during 2015, the most recent complete reporting year, was 2296, and take reported under the Public Resource Depredation Order in the Northeast Region during the same year was 1,052. When combined (3,348), this number represents less than 1.2% of the northeast North American population of double-crested cormorants. Based on the best biological information available resulting from a PBR (Runge et al. 2009, USFWS unpublished report 2016) and the cumulative take of double-crested cormorants within the Northeast Region, current take levels remain well below the Potential Take Level estimate of 13,900 (the amount of take that would likely reduce the population growth rate of double-crested cormorants) and achieves population stability in this region.

On May 25, 2016, the U.S. District Court for the District of Columbia vacated two depredation orders—the Aquaculture Depredation Order and the Public Resource Depredation Order—for double-crested cormorants as FWS did not fully update its Environmental Assessment. This FONSI includes updated information for purposes of analyzing the impacts of permitting cormorant take in New York to address human health and safety. The court noted that the Service still has the ability to issue permits under 50 C.F.R. § 21.41. Work is underway to complete a national environmental review under NEPA to consider the cumulative impacts of double-crested cormorant take across the eastern United States. Due to vacatur of the Depredation Orders, use of lethal methods for cormorant damage management will be substantially reduced state and region-wide, and thus we anticipate that current take levels remain well below the Potential Take Level estimate.

American Crow

American crows are familiar over much of the continent. They are intelligent, all-black birds with hoarse, cawing voices. They are common sights in treetops, fields, and roadsides, and in habitats ranging from open woods and empty beaches to town centers (Verbeek and Caffrey 2002). The American crow is widespread throughout North America, with a population estimate around 27,000,000 (Partners in Flight 2013). The American crow is currently a species of least concern according to Partners in Flight within the Bird Conservation Region 30 (Partners in Flight 2013). From 2013-2015, annual take authorized through depredation permits of American crow in New York, the northeast region, and nationally averaged 12, 50, and 432, respectively. Using a population estimate of 27,000,000, the national take estimate represents approximately 0.002% of the potential production in a given year in North America. Population estimates at the state and regional level are not available. USFWS considers that the issuance of depredation permits, and the average annual take associated with these permits, will not result in cumulative impacts to American crow populations.

ANALYSES, ASSESMENTS, AND CONSIDERATIONS FOR SPECIES NOT INCLUDED IN THE ENVIRONMENTAL ASSESSMENTS

Killdeer

Killdeer is a common shorebird species that is often found in human-modified habitats that include open areas such as short-grass meadows, construction sites, gravel areas and parking lots, road shoulders, athletic fields, golf courses, gravel rooftops and airports (Jackson and Jackson 2000). The killdeer is the most widespread and common plover throughout North America (Jackson and Jackson 2000), with an estimate of population estimate ranging from 1,000,000 to 2,000,000, which may be conservative (Andres et al. 2012). The killdeer is not currently included in the list of Highest Priority or High Priority within the Bird Conservation Region 30 Plan (Atlantic Coast Joint Venture 2008). From 2013-2015, annual authorized take of killdeer in New York, the northeast region, and nationally averaged 23, 513, and 2971, respectively. Using a population estimate of 1,500,000, the national take estimate represents approximately 0.02% of the potential production in a given year in North America. Potential production impacts for all species listed below, including killdeer, were calculated using the national take divided by the national population, providing a percentage of the impact to potential production. To define potential production impacts beyond how it is defined above would require knowledge of sex and age classes of the birds removed. As that information is not collected by permittees, the USFWS cannot discern more details about specific species productivity. USFWS considers that the issuance of depredation permits, and the average annual take associated with these permits, will not result in cumulative impacts to killdeer populations.

American Oystercatcher

The American oystercatcher has specialized by feeding on bivalves (oysters, clams, and mussels) (Nol and Humphrey 1994). During the breeding season, American oystercatchers can be found in coastal habitats including sand or shell beaches, dunes, saltmarsh, marsh islands, mudflats, and dredge spoil islands made of sand or gravel. During migration and winter, look for them feeding in mud or sand flats exposed by the tide, or on shellfish beds (Nol and Humphrey 1994). These conspicuous birds tend to roost on beaches, dunes, or marsh islands near their foraging sites, and

rarely venture far inland. The current population estimate for America oystercatchers is 11,000 (Andres et al. 2012). While American oystercatchers are listed on the Birds of Conservation Concern list (USFWS 2008) they are not listed by NYDEC as a state T&E species. USFWS generally does not permit the take of American oystercatchers except in emergency take situations at airports. From 2013 through 2015, annual authorized take of American oystercatchers in New York, the northeast region, and nationally averaged 3, 3, and 3, respectively. Using a population estimate of 11,000, the national take estimate represents approximately 0.03% of the potential production in a given year in North America. Population estimates at the state and regional level are not available. USFWS considers that the issuance of depredation permits, and the average annual take associated with these permits, will not result in cumulative impacts to American oystercatcher populations.

Snowy Owl

During 2013-2015, five snowy owls were taken in New York by way of lethal removal. An additional three snowy owls were trapped and relocated during the same time frame. In 2013, four were lethally removed and zero were trapped and relocated. In 2014, one snowy owl was lethally removed and two were trapped and relocated (USFWS, unpublished data). In 2015, zero were lethally removed while one owl was trapped and relocated (USFWS, unpublished data). There is currently no available data on the return rate of snowy owls to airports in New York. Recent increases in migrating and wintering snowy owls in the Northeast and Mid-Atlantic Region could lead to an increased risk of snowy owl/aircraft strikes at airports. Snowy owls are large, circumpolar-breeding owls that are extremely nomadic and winter regularly in the northern US. They typically are found in geographically large, open areas where they often perch on prominent natural and man-made structures (Parmelee 1992). With the exception of their primary wintering range in the Great Plains, such characteristics are often found at airports in the Northeast. Snowy owls are often referred to as irruptive migrants, due to the great variation in timing, direction and distances migrated which is believed to be in response to unpredictable food supplies (Newton 2006). At least 17 notable increases in wintering numbers (irruptions) took place in North America from 1882 to 1946, each occurring at approximately 3-5 year intervals (Parmalee 1992). Annual wintering population trends in the U.S. were highly variable from 1990-2015 based on Christmas Bird Counts. Snowy owls appear to exhibit differential wintering patterns in North America, with immature males wintering further south, and irruptive movements in the east and west comprised primarily of first-year males (Kerlinger and Lein 1986).

The global snowy owl population size is estimated at between 200,000 (Partners in Flight Science Committee 2013) and 300,000 individuals (Rich et al. 2004). Snowy owls are not on the list of priority species within the Bird Conservation Region 30 Plan (Atlantic Coast Joint Venture 2008). The snowy owl is classified as a species of “least concern” by the IUCN Red List (BirdLife International 2012) based on its population size and known threats. Previous, sporadic take levels at airports in the northeast have been negligible considering their population size and widespread distribution in the Arctic.

Regarding the risks that snowy owls pose to air safety, the Federal Aviation Administration (FAA) has ranked the species 29th out of 86 species commonly involved in collisions, in terms

of the potential damage it can cause. See Wildlife Strikes to Civil Aircraft in the United States 1990-2012, FAA & APHIS-WS, Sept. 2013, Table 19, p. 68; see http://wildlife.faa.gov/downloads/StrikeReport1990-2012.pdf. Between 1979 and 2012 nationwide, 84 snowy owls collided with aircraft, causing damage in 15 of those instances.

Because of concerns related to potential increases in snowy owl strikes at airports, a PBR was developed. Increasing human-wildlife conflicts caused by migratory bird species and their potential impacts on sensitive species and their habitats, has resulted in greater use of analytical tools to evaluate the effects of authorized take on target species (Runge et al. 2009). The PBR was intended to estimate the number of snowy owls that could potentially be taken nationally under depredation permits while also ensuring that such populations remain stable.

Use of the PBR method to determine levels of sustainable take, or cumulative impacts over a large geographic area, requires a minimum estimate of the population size using science-based monitoring programs (Breeding Bird Surveys, Christmas Bird Counts, coordinated colony surveys, etc.), and the intrinsic rate of population growth. The formula for PBR is:

$$PBR = \frac{1}{2} R_{max} N_{min} F_R$$

where R_{max} is the maximum population growth rate at low densities, and in the absence of removal (Runge et al. 2004), N_{min} is the minimum population size, and F_R is a recovery factor ranging from 0.1 to 2.0. The recovery factor is a qualitative assessment that is typically set at low levels for endangered ($F_R = 0.1$) or threatened species ($F_R = 0.5$; Taylor et al. 2000), or if the status of the population is poorly known (Runge et al. 2004). However, using a recovery factor above 1.0 has been discussed for species in which the management objective is to hold the population at a smaller fraction of its carrying capacity (Runge et al. 2009). To date, the PBR method has been applied to a limited number of species, such as gulls, vultures, and wood ducks. In general, it is often assumed that take of each species would come from all age-classes. If take occurs at colony sites, and thus only birds of breeding age are killed, PBR should be recalculated with a smaller minimum population size to reflect that breeding birds are the population targeted for take.

The maximum growth rate (R_{max}) used in calculating PBR is the population growth rate that would be expected in the absence of harvest and when density is low (Runge et al. 2004). An age-structured population projection matrix was used (Caswell 2001) to estimate expected population growth rate (λ_{max}) and R_{max} [$R_{max}=\ln(\lambda_{max})$]. The R package Popbio was used to find the dominant eigenvalue of the projection matrix, which represents (λ_{max}; Caswell 2001). A post-breeding birth pulse model with 2 age classes that incorporated age-specific survival rates and reproductive parameters was assumed. The specific elements of the matrix were populated using the following age specific vital rates:

$$A=\begin{bmatrix} f_1 * S_1 & f_A * S_A \\ S_1 & S_A \end{bmatrix},$$

where f_1= fecundity (fledglings per adult female) of 1-year old birds, f_A= fecundity of adult (>1-year) owls, S_1 = survival of 1-year-olds, and S_A= survival of adults. Therrien et al. (2012) estimated that adult snowy owl annual survival rates ranged from 0.85 to 0.92. An estimate of

0.85 was used in the assessment to be conservative. Published reports on the estimate of first-year survival are not available, so first year survival was assumed to be 10% lower than adult survival. Another assumption was that first-year birds did not reproduce ($f_1 = 0$; Parmelee 1992). Menyushina (1997) observed 197 fledglings from 68 nests. Assuming a 50:50 sex ratio of fledglings, it was assumed that 98.5 (197/2) females fledged and that $f_A = 98.5/68 = 1.45$ females fledged per nest. Evidence suggests that almost all individuals that are of breeding age attempt to nest (Parmelee 1992, Therrien et al. 2012), so it is believed that this is an accurate measure of fecundity over a wide range of environmental variability. The dominant eigenvalue from the matrix indicated $\lambda_{max} = 1.48$, yielding an $R_{max} = 0.39$. Maximum sustainable take rate ($R_{max}/2$; Runge et al. 2004) with these demographic rates is approximately 0.19. To guard against uncertainty in determining sustainable take estimates, a minimum population estimate of 100,000 (Partners in Flight Science Committee 2013) to 150,000 snowy owls was assumed (half the estimate of Rich et al. 2004). With this conservative population estimate, we project a sustainable mortality level of approximately 19,000 to 29,000 snowy owls in North America.

As sustainable take can include all forms of mortality, factors based on the recoveries of banded snowy owls include: miscellaneous causes (34.2%), collisions with vehicles (12.6%), starvation (14.1%), shooting (11.9%), collisions with towers or wires (3.9%), entanglement (2.7%) and airplane strikes (2.1%; Holt et al. 2015). Assuming that the authorized lethal take of snowy owls at airports is commensurate with the mortality associated with being struck and killed by aircraft, 1.4% of 19,000 to 29,000, or approximately 266 to 406 snowy owls could be taken at airports nationally to protect human health and safety while also ensuring that such levels of take do not negatively impact the population. However, the lethal take that has occurred and the number of reported collisions are far lower than the model allocates. This suggests that the current take levels are sustainable. USFWS records reveal the following levels of lethal take of snowy owls via depredation permits in the U.S. from 2003 to the present: 4 in 2003, 1 in 2005, 3 in 2008, 4 in 2009, 1 in 2010, 4 in 2011, 26 in 2012, 21 in 2013, 29 in 2014 and 10 in 2015. Reported annual aircraft-snowy owl strikes in the U.S. from 2003 to the present includes: 0 in 2003, 1 in 2004, 6 in 2005, 4 in 2006, 0 in 2007, 12 in 2008, 11 in 2009, 0 in 2010, 6 in 2011, 12 in 2012, 40 in 2013, 50 in 2014 and 25 in 2015 (FAA). Given these analyses, USFWS considers that the issuance of depredation permits, and the average annual take associated with these permits, will not result in cumulative impacts to snowy owl populations.

Black Vultures

Runge et al. (2009) estimated sustainable take levels for black vultures within the state of Virginia, which was recently updated and expanded to include other states within the current range of black vultures (Zimmerman et al., unpublished report 2016). As in the previous assessment, the updated approach relied on current Breeding Bird Survey (BBS) data for each state where black vultures were detected in the Atlantic and Mississippi Flyways. The Potential Take Level (PTL) method employed by Runge et al. (2009) used demographic rates (e.g., recruitment, survival) to estimate an annual, biologically sustainable take rate (Runge et al. 2004, Johnson et al. 2012). The estimate of take rate could be multiplied by a population size estimate to derive an estimate of allowable take in numbers of birds. Zimmerman et al. (unpublished report, 2016) used the same demographic rates and uncertainty as Runge et al. (2009) to conduct the updated PTL estimates, although a key difference is that the updated PTL estimate used the

relationship between maximum intrinsic growth rate and theta (θ), which is characterized as the relationship between the growth rate and the population size and identified by Johnson et al. (2012) to incorporate non-linear density dependence into the estimate of maximum allowable take rate. For the updated assessment, Zimmerman et al. (unpublished report, 2016) assumed a management objective of maximum sustained yield.

The updated PTL assessment used the same approach that Runge et al. (2009) used to estimate BBS indices for each state, and then expanded the indices to population size estimates. Their analysis allowed for different detection rates on and off road, which required the area on- and off-road for each strata (state). They used road data from the 2015 US Census TIGER/Line shapefiles for each state in the contiguous US to estimate total on-road (within 400 m) and off-road (>400 m) area. They projected shapefiles for each state into UTM and buffered all roads in the shapefiles by 400 m. The area of the resulting buffer was the total on-road area in each state. They calculated the total off-road area by subtracting the on-road area from the total county area. Runge et al. (2009) indicated that detection rates on- versus off-road were similar and because they had no updated data, Zimmerman et al. (2016) assumed the same. BBS indices were converted to population estimates by: (1) adjusting indices for detection rates, (2) correcting indices for area sampled along routes (assuming a detection radius of 400 m around each point), (3) adjusting the index by the proportion of birds observed flying during BBS indices (estimated from a previous unpublished study) to derive a population estimate of flying vultures, and (4) correcting the population estimate of flying vultures for availability to be detected during surveys (based on unpublished telemetry data). They did not have updated estimates of detection (step 1), proportion of birds flying (step 3), and availability (step 4), so they used the same values as Runge et al. (2009).

The updated assessment was conducted at the scale of individual states and USFWS regions. Uncertainty in take levels were generated through Monte Carlo simulations where values of demographic rates, θ, and population size were sampled from statistical distributions based on their means and variances. Results were summarized as medians and 95% quantiles from the distributions of take levels from 100,000 iterations of the Monte Carlo simulations.

The estimate of maximum intrinsic growth rate (r_{max} = 0.105, 95%CI = 0.017-0.194) was similar to Runge et al. (2009), which was expected given we used the same demographic parameters. However, their estimated take rate (h_{max} = 0.068, 95% CI = 0.010-0.149) was slightly higher than Runge et al. (2009, assumed to be 0.5× r_{max}) because their estimate of θ was >1 with high uncertainty (θ = 2.556, 95% CI = 0.373-17.585). Population estimates based on BBS data were highly uncertain with the lowest mean Coefficient of Variation (CV's) at the larger scales (28% for the Atlantic Flyway). Almost all regions indicated increasing trends of black vultures, with some areas having increases resembling exponential growth. Flyway-wide population estimates were approximately 2.5 million black vultures in the Atlantic Flyway and 1.75 million in the Mississippi Flyway. From 2013-2015, annual authorized take of black vultures in New York, the northeast region, and nationally averaged 49, 1262, and 6780, respectively. Using a population estimate of 11,800,000 the national take estimate represents approximately 0.06% of the potential production in a given year in North America. Given these analyses, USFWS considers that the issuance of depredation permits, and the average annual take associated with these permits, will not result in cumulative impacts to black vulture populations.

Mallards

Mallards are a widely distributed gamebird species that is found in most wetland habitats, such as marshes, ponds, lakes, floodplains, and estuaries (Drilling et al. 2002). Mallards are widespread throughout North America, with an estimate of population in 2016 around 11,800,000 million, which is similar to the 2015 estimate (USFWS 2016b). In the northeast region, the mallard population estimate is 550,000 (USFWS 2016b). Mallards are currently not listed as threatened or endangered (Drilling et al. 2002). From 2013-2015, annual take of mallards authorized through depredation permits in New York, the northeast region, and nationally averaged 74, 572, and 3701, respectively. Using a population estimate of 11,800,000 the national take estimate represents approximately 0.003% of the potential production in a given year in North America. Using a regional population estimate of 550,000 the regional take estimate represents approximately 0.1% of the potential production in a given year in North America. Population estimates at the state level are not available. USFWS considers that the issuance of depredation permits, and the average annual take associated with these permits, will not result in cumulative impacts to mallard populations.

Ruddy Duck

Ruddy ducks are a widely distributed gamebird species in North America that is often found in most wetland habitats, such as marshes, ponds, lakes, and floodplains, but breed in the prairie pothole region in the US and Canada, with a long-term population estimate around 410,000 (Brua 2002). Ruddy ducks are currently not listed as threatened or endangered (Brua 2002). Average take of ruddy ducks authorized through depredation permits in New York, the northeast region, and nationally from 2013 through 2015 was < 1, < 1, and 14, respectively. Using a population estimate of 410,000, the national take estimate represents approximately 0.004% of the potential production in a given year in North America. Population estimates at the state and regional level are not available. USFWS considers that the issuance of depredation permits, and the average annual take associated with these permits, will not result in cumulative impacts to ruddy duck populations.

American Black Duck

Black ducks are widespread throughout eastern and central North America, with a population estimate of around 612,000 in 2016 (USFWS 2016b). Black ducks are currently not listed as threatened or endangered although there have been declines in population in the past fifty years (Longcore et al. 2000). From 2013-2015, average annual take of American black ducks authorized through depredation permits in New York, the northeast region, and nationally averaged 11, 43, and 44, respectively. Using a population estimate of 612,000, the national take estimate represents approximately 0.007% of the potential production in a given year in North America. Population estimates at the state and regional level are not available. USFWS considers that the issuance of depredation permits, and the average annual take associated with these permits, will not result in cumulative impacts to American black duck populations.

Common Merganser and Red-breasted Merganser

Common Mergansers are streamlined ducks that float gracefully down small rivers or shallow shorelines. These large ducks nest in hollow trees and in winter they form flocks on larger bodies of water (Mallory and Metz 1999). The Red-breasted Merganser is a large diving duck with a long thin bill that is found in large lakes, rivers and the ocean. It prefers salt water more than the other species of merganser (Titman 1999). Common and red-breasted mergansers are widespread throughout eastern and central North America, with an estimated population of 439,000 in 2016 (USFWS 2016b). Common and red-breasted mergansers are currently not listed as threatened or endangered (Mallory and Metz 1999, Titman 1999). From 2013-2015 annual take authorized through depredation permits of common and red-breasted mergansers in New York, the northeast region, and nationally averaged 4, 13, and 45, respectively. Using a population estimate of 439,000, the national take estimate represents approximately 0.01% of the potential production in a given year in North America. Population estimates at the state and regional level are not available. USFWS considers that the issuance of depredation permits, and the average annual take associated with these permits, will not result in cumulative impacts to common and red-breasted merganser populations.

Gadwall

This widespread, adaptable duck has dramatically increased in numbers in North America since the 1980s (LeSchack et al. 1997). Gadwalls breed mainly in prairie potholes, which are small ponds, scattered throughout the Great Plains and Canadian prairies. Some also breed on tundra, deltas, and wetlands in boreal forests of the far north. They choose well-vegetated wetlands with plenty of emergent plants to feed among and take cover in. Gadwalls are widespread throughout North America, with an estimate of population in 2016 around 3,712,000 (USFWS 2016b). Gadwalls are currently not listed as threatened or endangered. From 2013-2015 annual take of gadwall authorized through depredation permits in New York, the northeast region, and nationally averaged < 1, 2, and 47, respectively. Using a population estimate of 3,712,000 the national take estimate represents approximately 0.001% of the potential production in a given year in North America. Population estimates at the state and regional level are not available. USFWS considers that the issuance of depredation permits, and the average annual take associated with these permits, will not result in cumulative impacts to gadwall populations.

Barn Swallows

Barn swallows are a widely distributed bird species that is often found in human-modified habitats that include open areas such as short-grass meadows, parking lots, road shoulders, athletic fields, golf courses, and airports (Brown and Brown 1999). Barn swallows are widespread throughout North America, with an estimated population ranging from 28,000,000 to 33,000,000 (Partners in Flight 2013). The barn swallow is currently a species of least concern according to Partners in Flight within the Bird Conservation Region 30 (Partners in Flight 2013).

From 2013-2015, authorized annual take of barn swallows in New York, the northeast region, and nationally averaged 38, 309, and 1651, respectively. Using a population estimate of 28,000,000, the national take estimate represents approximately 0.006% of the potential production in a given year in North America. Population estimates at the state and regional level are not available. USFWS considers that the issuance of depredation permits, and the average annual take associated with these permits, will not result in cumulative impacts to barn swallow populations.

Tree Swallow

Tree swallows are a widely distributed bird species that is often found in fields, marshes, shorelines, and swamps (Winkler et al. 2011). Tree swallows are widespread throughout North America, with an estimated population ranging between 16,000,000 and 17,000,000 (Partners in Flight 2013). The tree swallow is currently a species of least concern according to Partners in Flight within the Bird Conservation Region 30 (Partners in Flight 2013). From 2013-2015, authorized annual take of tree swallows in New York, the northeast region, and nationally averaged < 1, 74, and 161, respectively. Using a population estimate of 16,000,000, the national take estimate represents approximately 0.001% of the potential production in a given year in North America. Population estimates at the state and regional level are not available. USFWS considers that the issuance of depredation permits, and the average annual take associated with these permits, will not result in cumulative impacts to tree swallow populations.

Cliff Swallow

These common, sociable swallows are usually found in large groups, often chasing insects high above the ground, preening on perches, or dipping into a river for a bath (Brown and Brown 1995). Cliff swallows are widespread throughout North America, with an estimate of population estimate around 40,000,000 (Partners in Flight 2013). According to Partners in Flight, the cliff swallow is currently a species of least concern within Bird Conservation Region 30 (Partners in Flight 2013). From 2013-2015, annual authorized through depredation permits take of cliff swallows in New York, the northeast region, and nationally averaged 10, 16, and 2293, respectively. Using a population estimate of 40,000,000, the national take estimate represents approximately 0.006% of the potential production in a given year in North America. Population estimates at the state and regional level are not available. USFWS considers that the issuance of depredation permits, and the average annual take associated with these permits, will not result in cumulative impacts to cliff swallow populations.

Song Sparrow

The song sparrow is one of the most familiar North American sparrows (Arcese et al. 2002). Song sparrows are widespread throughout North America, with a population estimate of 130,000,000 (Partners in Flight 2013). The song sparrow is currently a species of least concern according to Partners in Flight within the Bird Conservation Region 30, although there have been declines in populations over the past fifty years (Partners in Flight 2013). From 2013-2015, annual authorized through depredation permits take of song sparrows in New York, the northeast region, and nationally averaged < 1 for all three spatial extents. Using a population estimate of

130,000,000 the national take estimate represents < 0.001% of the potential production in a given year in North America. Population estimates at the state and regional level are not available. USFWS considers that the issuance of depredation permits, and the average annual take associated with these permits, will not result in cumulative impacts to song sparrow populations.

Mourning Doves

The mourning dove is one of the most abundant bird species in North America. As a highly coveted game species, maintenance of dove populations in a healthy, productive state is a primary management goal throughout the country. Management activities include regular population assessments, adjustments to harvest regulation, and habitat management. The Breeding Bird Survey provided evidence that dove abundance increased in the Eastern Management Unit (EMU) states during the last 50 years (Seamans 2016). Estimates of absolute abundance are available since 2003 (Seamans 2016), with a most recent estimate of 266,000,000 mourning doves occurring in the U.S. immediately prior to the 2015 hunting season. From 2013-2015, annual take of mourning doves in New York, the northeast region, and nationally averaged 525, 2387, and 19,536, respectively. Using a population estimate of 266,000,000 the national take authorized through depredation permits estimate represents approximately 0.007% of the potential production in a given year in North America. Population estimates at the state and regional level are not available. USFWS considers that the issuance of depredation permits, and the average annual take associated with these permits, will not result in cumulative impacts to mourning dove populations.

Atlantic Brant

Atlantic brant is a small goose that primarily nests on islands of the eastern Canadian Arctic and winters along the Atlantic Coast from Massachusetts to North Carolina. The Midwinter Survey provides an index of this population within its winter range of the Atlantic Flyway (USFWS 2016b). The 2016 Midwinter Survey index was 157,900 brant, 42% greater than the 2015 count of 111,400 (USFWS 2016b); these indices did not exhibit a significant temporal trend from 2007–2016 ($P = 0.161$). Productivity from the previous year is estimated by the proportion of juveniles in the population during November and December. From 2013-2015, annual take of Atlantic brant authorized through depredation permits in New York, the northeast region, and nationally averaged 292, 297, and 297, respectively. Using a population estimate of 157,900 the national take estimate represents approximately 0.002% of the potential production in a given year in North America. Population estimates at the state and regional level are not available. USFWS considers that the issuance of depredation permits, and the average annual take associated with these permits, will not result in cumulative impacts to Atlantic brant populations.

Pileated Woodpeckers

Pileated woodpeckers are a widely distributed bird species that is often found in open woodlands along with human-modified habitats such as short-grass meadows, city parks, backyards, and vacant lots (Jackson and Ouellet 2002). Pileated woodpeckers are widespread throughout North America, with an estimated population of 1,900,000 (Partners in Flight 2013). The pileated woodpecker is currently a species of least concern according to Partners in Flight within the Bird

Conservation Region 30 (Partners in Flight 2013). When addressing statewide bird depredation issues, FWS will not authorize take of any woodpecker species that are on the BCC 2008 list. From 2013-2015, authorized annual take of pileated woodpeckers in New York, the northeast region, and nationally averaged < 1, 1, and 11, respectively. Using a population estimate of 1,900,000, the national take estimate represents approximately < 0.001% of the potential production in a given year in North America. Population estimates at the state and regional level are not available. USFWS considers that the issuance of depredation permits, and the average annual take associated with these permits, will not result in cumulative impacts to pileated woodpecker populations.

Laughing Gull

Laughing gulls are found along the Atlantic coast of North America and summer in the northeastern United States. Individuals begin breeding at year two or three (Burger 1996). The global population estimate for laughing gulls is around 270,000, with approximately 160,000 breeding pairs found in North America (Nisbet et al. 2013). Surveys of populations from Long Island, New York to Maine, revealed that the population increased by 27-fold from 1971 to 2008, although there had been some population fluctuations during that time frame (Nisbet et al. 2013). This species is not on the BCC list, nor is it a species of conservation concern in New York, or any northeastern state. It has been estimated that take of a single laughing gull nest is equivalent to the take of 1.09 adult individuals (Seamans et al. 2007). Zero laughing gull nests were taken in New York in 2013 through 2015. In the United States 2,976 nests and 5,896 adults have been taken on average per year between 2013 and 2015. This represents 5.5% of the potential production of laughing gulls in a given year in the United States; take numbers for Mexico or Canada are not available.

In BCR 14 and 30, which includes part of New York, an average of 2,775 active nests and 3,666 adults were taken in 2013 through 2015. Using the correction factor of 1.09 for nests (Seamans et al. 2007), this equates to a take of 3025 individuals from nests. The total average authorized take for laughing gulls in BCR 14 and 30 between 2013 and 2015 is 6,691; 3,025 from nest and 3,666 adults. Using a PBR, Seamans et al. (2007) estimated that 7,685 individuals could be removed while maintaining a growth rate at which stable productivity occurs. Because the total take of nests and adults (6,691) falls below the allowable take of 7,685 developed by Seamens et al. (2007) for BCR 14 and 30, USFWS considers that the issuance of depredation permits, and the allowable take associated with these permits, will not result in cumulative impacts to laughing gull populations. Furthermore, this quantity of permitted laughing gull take allows USFWS to provide a vehicle for managing laughing gull damage while allowing for sustainability of laughing gull populations.

Great Blue Heron

Great blue herons are a common, large wading bird that can be found throughout most of the United States year-around (Wilson et al. 2012). Great blue herons are most often observed in freshwater and brackish mashes, lakes, rivers, lagoons and are generally colonial nesters, nesting in trees, on rock ledges, and on coastal cliffs up to 30 km from foraging areas. The diet of great

blue herons consists mainly of fish but they also consume invertebrates, amphibians, reptiles, birds, and mammals (MANEM Region Waterbird Working Group 2006).

The International Union of Conservation of Nature - Species Survival Commission Heron Specialist Group (IUCN-SSC Heron Specialist Group) reported the range wide population of great blue herons to range between 100,000 to 250,000 individuals (IUCN-SSC Heron Specialist Group). Vennesland and Butler (2011) reported a North American population estimate of 83,000. Most nesting great blue heron colonies in the northeastern United States occur along the coastal areas located in BCR 30 and BCR 14. In the 1970s, the known breeding population of great blue herons in BCR's 30 and 14 was 6,824 birds distributed among 37 nesting colonies. By the 1990s, the known breeding population of great blue herons in BCR's 30 and 14 had increased by 367% to 31,838 birds nesting in 232 colonies; all colonies are not likely accounted for. The breeding populations in BCR 30 and BCR 14 have been given a ranking of lowest concern (MANEM Region Waterbird Working Group 2006). In addition, great blue herons are showing an increase across all survey routes of the Breeding Bird Surveys. For example, since 1966, the number of great blue herons observed across the United States has increased at an annual rate of 1.3% (Sauer et al. 2014). From 2013-2015, authorized annual take of great blue herons in New York, the northeast region, and nationally averaged 45, 1200, and 7841, respectively. Using a population estimate of 129,000 (average of known population estimates listed above), the New York, northeast region, and national take estimates represent approximately 0.03, 0.9 and 6.1% of the North American population. Using a MANEM Region Waterbird Working Group conservative population estimate of 31,838, the regional take estimate represents approximately 3.8% of the potential production in a given year in the northeast region. Population estimates at the state level are not available.

The best available information on great blue herons suggests that the population is increasing. As such, USFWS considers that the issuance of depredation permits, and the allowable take associated with these permits, is not likely to result in cumulative impacts to great blue heron populations and it allows USFWS to provide a vehicle for managing great blue heron damage.

Great Egret

In North America, the distribution of great egrets has been expanding northward in the past century, and most recently they began breeding in southern Ontario (IUCN-SSC Heron Specialist group 2017). Nesting and wintering populations are high in North America and reported as increasing in Louisiana, Texas and California (Fleury and Sherry 1995, IUCN-SSC Heron Specialist Group 2017). The North American Waterbird Conservation Plan estimates that there are over 180,000 breeding birds on the continent. The great egret is not listed on the 2014 State of the Birds Watch List (Mccrimmon et al. 2011). In addition, great egrets are showing an overall increase across all survey routes of the Breeding Bird Surveys. For example, since 1966, the number of great egrets observed across the United States has increased by 1.9% (Sauer et al. 2014). In New York, from 1966-2015, the number of great egrets observed across the state increased by 2.46%. From 2013-2015, annual authorized take of great egrets in New York, the northeast region, and nationally averaged 2, 79, and 5083, respectively. Using a population estimate of 180,000, the national take estimate represents approximately 2.82% of the potential

production in a given year in North America. Population estimates at the state and regional level are not available.

The best available information on great egrets suggests that the population is stable or increasing. As such, USFWS considers that the issuance of depredation permits in New York, and the allowable take associated with these permits, is not likely to result in cumulative impacts to great egret populations and it allows USFWS to provide a vehicle for managing great egret damage.

Cedar Waxwing

Cedar waxwings are a widely distributed bird species that is often found in woodland along with short-grass meadows, old farm fields, and airports (Witmer et al. 2014). Cedar waxwings are widespread throughout North America, with an estimate of population estimate around 52,000,000 (Partners in Flight 2013). The cedar waxwing is currently a species of least concern according to Partners in Flight within the Bird Conservation Region 30 (Partners in Flight 2013). From 2013-2015, annual authorized take of cedar waxwings in New York, the northeast region, and nationally averaged 133, 134, and 320, respectively. Using a population estimate of 52,000,000 the national take estimate represents < 0.001% of the potential production in a given year in North America. Population estimates at the state and regional level are not available. USFWS considers that the issuance of depredation permits, and the average annual take associated with these permits, will not result in cumulative impacts to cedar waxwing populations.

Snow Bunting

Snow buntings are widespread throughout the northern portion of North America, with a population estimates ranging from 7,900,000 (Montgomerie and Lyon 2011) to 14,000,000 (Parnters in Flight 2013). Wintering population trends are highly variable based on Christmas Bird Count data. Snow buntings are not currently included in the list of priority species within the Bird Conservation Region 30 Plan (Atlantic Coast Joint Venture 2008), and previous take levels have been negligible considering their population size. From 2013-2015, annual authorized take of snow buntings in New York, the northeast region, and nationally averaged 7, 64, and 74, respectively. Using a population estimate of 7,900,000, the national take estimate represents < 0.001% of the potential production in a given year in North America. Population estimates at the state and regional level are not available. USFWS considers that the issuance of depredation permits, and the average annual take associated with these permits, will not result in cumulative impacts to snow bunting populations.

Common Grackle

Common grackle is a blackbird species that is often found in human-modified habitats that include open areas such as short-grass meadows, agricultural field, road shoulders, athletic fields, golf courses, and airports (Peer and Bollinger 1997). The common grackle is widespread throughout North America, with population estimates ranging from 55,000,000 to 61,000,000 (Partners in Flight 2013). The common grackle is currently a species of least concern according to Partners in Flight within Bird Conservation Region 30 (Partners in Flight 2013). From 2013-

2015 authorized annual take of common grackle in New York, the northeast region, and nationally averaged 24, 94, and 850, respectively. Using a population estimate of 55,000,000, the national take estimate represents approximately 0.002% of the potential production in a given year in North America. Population estimates at the state and regional level are not available. USFWS considers that the issuance of depredation permits, and the average annual take associated with these permits, will not result in cumulative impacts to common grackle populations.

Common Raven

Common ravens occur over most of the Northern Hemisphere in nearly any habitat (eastern forests and the open Great Plains are exceptions). These include coniferous and deciduous forests, beaches, islands, chaparral, sagebrush, mountains, desert, grasslands, agricultural fields, tundra, and ice floes. They do well around human habitations including farms, rural settlements and isolated houses (Boarman and Heinrich 1999). The common raven is widespread throughout North America, with a population estimate of 20,000,000 (Partners in Flight 2013). The common raven is currently a species of least concern according to Partners in Flight within the Bird Conservation Region 30 (Partners in Flight 2013). From 2013-2015, authorized annual take of common raven in New York, the northeast region, and nationally averaged 1, 11, and 3923, respectively. Using a population estimate of 20,000,000, the national take estimate represents approximately 0.02% of the potential production in a given year in North America. Population estimates at the state and regional level are not available. USFWS considers that the issuance of depredation permits, and the average annual take associated with these permits, will not result in cumulative impacts to common raven populations.

Belted Kingfisher

The belted kingfisher is widespread throughout North America and has a population estimate of 1,700,000 (Partners in Flight 2013). Belted kingfishers need access to bodies of water for feeding, and vertical earthen banks for nesting. Some of their most common habitats are streams, rivers, ponds, lakes, estuaries, and calm marine waters. Belted kingfishers live mostly on a diet of fish including sticklebacks, mummichogs, trout, and stonerollers. They also eat crayfish and may eat other crustaceans, mollusks, insects, amphibians, reptiles, young birds, small mammals, and even berries (Kelly et al 2009). The belted kingfisher is currently a species of least concern according to Partners in Flight within the Bird Conservation Region 30 (Partners in Flight 2013). From 2013-2015 authorized annual take of belted kingfishers in New York, the northeast region, and nationally averaged 5, 136, and 368, respectively. Using a population estimate of 1,700,000 the national take estimate represents approximately 0.021% of the potential production in a given year in North America. Population estimates at the state and regional level are not available. USFWS considers that the issuance of depredation permits, and the average annual take associated with these permits, will not result in cumulative impacts to belted kingfisher populations.

American Robin

American robins are common birds distributed across the North American continent. They can

be found on lawns, fields, and city parks, as well as in more wild places like woodlands, forests, mountains up to near treeline, recently burned forests, and tundra. During winter, many robins move to moist woods where berry-producing trees and shrubs are common. American robins eat large numbers of both invertebrates and fruit. In spring and summer, they consume large numbers of earthworms as well as insects, and some snails (Sallabanks and James1999). The American robin is widespread throughout North America, with a population estimate around 310,000,000 (Partners in Flight 2013). The American robin is currently a species of least concern according to Partners in Flight within the Bird Conservation Region 30 (Partners in Flight 2013). From 2013-2015, authorized annual take of American robins in New York, the northeast region, and nationally averaged 3, 80, and 1981, respectively. Using a population estimate of 310,000,000, the national take estimate represents < 0.001% of the potential production in a given year in North America. Population estimates at the state and regional level are not available. USFWS considers that the issuance of depredation permits, and the average annual take associated with these permits, will not result in cumulative impacts to American robin populations.

Osprey

Ospreys are widespread throughout North America, their populations having rebounded following the ban on the pesticide DDT (Poole et al. 2002), with an estimated population of estimate around 500,000 (Partners in Flight 2013). Ospreys nest in a wide variety of locations, from Alaska to New England, Montana to Mexico, Carolina to California. Suitable habitat includes almost any expanse of shallow, fish-filled water, including rivers, lakes, reservoirs, lagoons, swamps, and marshes. Whatever the location, osprey nesting habitat must include an adequate supply of accessible fish within a maximum of about twelve miles of the nest, open, usually elevated nest sites free from predatory mammals such as raccoons, and a long enough ice-free season to allow the young to fledge (Poole et al. 2002). The osprey is currently a species of least concern according to the Partners in Flight within the Bird Conservation Region 30 (Partners in Flight 2013). From 2013 through 2015, annual authorized take of osprey in New York, the northeast region, and nationally averaged 2, 69, and 93, respectively. Using a population estimate of 500,000, the national take estimate represents approximately 0.019% of the potential production in a given year in North America. Population estimates at the state and regional level are not available. USFWS considers that the issuance of depredation permits, and the average annual take associated with these permits, will not result in cumulative impacts to osprey populations.

Red-tailed Hawk

Red-tailed hawks occupy just about every type of open habitat on the continent. This includes desert, scrublands, grasslands, roadsides, fields and pastures, parks, broken woodland, and (in Mexico) tropical rainforest. Mammals make up the bulk of most red-tailed hawk diets, but the species also consumes birds, snakes and carrion (Preston and Beane 1993). Red-tailed hawks are widespread throughout North America, with an estimate of population estimate around 2,300,000 (Partners in Flight 2013). The red-tailed hawk is currently a species of least concern according to the Partners in Flight within the Bird Conservation Region 30 (Partners in Flight 2013). From 2013 through 2015, authorized annual take of red-tailed hawks in New York, the northeast

region, and nationally averaged 7, 313, and 1394, respectively. Using a population estimate of 2,300,000, the national take estimate represents approximately 0.061% of the potential production in a given year in North America. Population estimates at the state and regional level are not available. USFWS considers that the issuance of depredation permits, and the average annual take associated with these permits, will not result in cumulative impacts to red-tailed hawk populations.

Turkey Vulture

Turkey vultures are a widely distributed raptor that is often found in short-grass meadows, agricultural field, road shoulders, athletic fields, and airports (Kirk and Mossman 1998). Turkey vultures are widespread throughout North America, with an estimate of population estimate around 5,000,000 (Partners in Flight 2013). The turkey vulture is currently a species of least concern according to the Partners in Flight within the Bird Conservation Region 30 (Partners in Flight 2013). From 2013 through 2015, authorized annual take of turkey vultures in New York, the northeast region, and nationally averaged 15, 264, and 1333, respectively. Using a population estimate of 5,000,000, the national take estimate represents approximately 0.027% of the potential production in a given year in North America. Population estimates at the state and regional level are not available. USFWS considers that the issuance of depredation permits, and the average annual take associated with these permits, will not result in cumulative impacts to turkey vulture populations.

Nest Destruction

A limited number of nests and associated eggs of those species indicated above are destroyed annually within New York as part of an integrated approach to managing damage and risks to human health and safety. This method is often used to inhibit nesting in an area experiencing damage due to nesting activity and is employed only at the localized level. Levels of nest take remain negligible at the population level (Table 1), or have been incorporated into take assessments (see gull species). According to the Migratory Bird Treaty Act, the take of eggs and nests with eggs is lethal take. USFWS will work with WS on future environmental reviews to ensure that egg destruction is defined by WS as lethal take. Despite describing nest and egg removal as non-lethal in some Environmental Assessments, WS has been accounting for the take of nest and eggs, listing the take of nests and eggs on Form 37s and reporting nest and egg take appropriately as lethal take on annual reports.

Raptor Trapping and Relocation

WS has been engaging in capture and relocation efforts for several raptors species. As analyzed in the John F. Kennedy Airport Final Supplement to the Environmental Impact Statement (USDA 2012), raptor capture and relocation methods may cause short term stress to the birds but are unlikely to adversely impact raptor populations due to the limited numbers authorized and the small portion of the species' ranges where trapping and relocation efforts occur. Issues associated with raptor trapping and relocation on a state wide level include the costs of equipment and the expertise required to engage in this activity. WS has observed that trap and relocation of raptors can be an effective alternative to lethal take at airports, though only large

airports usually have the resources to engage in this activity. The return rate for raptors trapped and relocated at Dulles International Airport was only 9% (18 out of 209; WS, unpublished data). Lethal raptor removal is only allowed under the USFWS permit in situations where capture and relocation is not feasible, or there is an imminent threat to aircraft which cannot be resolved with nonlethal methods. If additional raptor species are added to the USFWS Region 5 BCC list in the future, USFWS will authorize trap and relocate as the primary means of reducing the human-wildlife conflict for these species; lethal take of these raptors would only be authorized in scenarios where emergency take is needed to safeguard human health and safety.

ISSUES ASSOCIATED WITH BIRD DAMAGE MANAGEMENT ACTIVITIES

The EAs (USDA 2003a, USDA 2004a, USDA 2005a), analyzed a range of management alternatives in context of issues relevant to the scope of the analyses. These included:

- Issue 1 - Effects on Target Bird Species
- Issue 2 - Effects on Other Wildlife Species, Including Threatened and Endangered (T&E) Species
- Issue 3 - Humaneness and Animal Welfare Concerns of the Methods Used
- Issue 4 - Effects on the Aesthetic Values of Birds
- Issue 5 - Effects on Human Health and Safety
- Issue 6 - Effects on Socio-Economics of the Human Environment
- Issue 7 - Effectiveness of Canada Goose Damage Management

Two issues (effects on socio-economics of the human environment, effectiveness of Canada Goose management) appeared in only on EA each, but the majority of issues were analyzed across the documents.

The following resource values were not expected to be significantly impacted by any of the alternatives identified in the EA and accordingly were not analyzed further: soils, geology, minerals, water quality/quantity, flood plains, wetlands, visual resources, air quality, prime and unique farmlands, aquatic resources, timber, and range.

AFFECTED ENVIRONMENT

Bird damage or threats of damage can occur statewide in New York wherever those bird species occur. However, bird damage management would only be conducted by WS when requested by a landowner or manager, only on properties where a cooperative service agreement or other comparable document was signed between WS and a cooperating entity where non-lethal means have been ineffective. Upon receiving a request for assistance, activities could be conducted on federal, state, tribal, municipal, and private properties. Areas where damage or threats of damage could occur include, but would not be limited to: agricultural fields, vineyards, orchards, farms, aquaculture facilities, grain mills, grain handling areas, railroad yards, waste handling facilities, industrial sites, natural resource areas, park lands, historic sites, state and interstate highways and roads, property in or adjacent to subdivisions, businesses, industrial parks, timberlands, croplands, pastures, private and public property, and locations where birds are a

threat to human safety through the spread of disease. The areas could also include airports and military airbases where birds are a threat to human safety and to property.

DESCRIPTION OF THE ALTERNATIVES

Four alternatives were developed to respond to the issues identified in various chapters of the EAs (USDA 2003a, USDA 2004a, USDA 2005a). Although numbered differently, the EAs (USDA 2003a, USDA 2004a, USDA 2005a) propose the same alternatives. Below is a summary of the four alternatives. A more detailed discussion of each alternative may be found in the EAs (USDA 2003a, USDA 2004a, USDA 2005a).

Alternative 1 - Integrated Bird Damage Management Program (No Action/Proposed Action)

The proposed action/no action alternative would continue the current implementation of an adaptive integrated approach utilizing non-lethal and lethal techniques, as deemed appropriate using the WS Decision Model, to reduce damage and threats caused by the specific species addressed in each of the EAS (USDA 2003a, USDA 2004a, USDA 2005a) in New York. A major goal of the program would be to resolve and prevent bird damages and to reduce threats to human safety. To meet this goal, WS, in cooperation with the USFWS and in consultation with the NYDEC, would continue to respond to requests for assistance with, at a minimum, technical assistance, or when funding is available, operational damage management. Funding could occur through federal appropriations or from cooperative funding.

The adaptive approach to managing damage associated with birds would integrate the use of the most practical and effective methods to resolve a request for damage management as determined by site-specific evaluation to reduce damage or threats to human safety for each request after applying the WS Decision Model. City/town managers, agricultural producers, property owners, and others requesting assistance would be provided information regarding the use of appropriate non-lethal and lethal techniques. WS would work with those persons experiencing bird damage in addressing those birds responsible for causing damage as expeditiously as possible. To be most effective, damage management activities should begin as soon as birds begin to cause damage. Bird damage that has been ongoing can be difficult to resolve using available methods since birds are conditioned to feed, roost, loaf, and are familiar with a particular location. Subsequently, making that area unattractive using available methods can be difficult to achieve once damage has been ongoing. The USFWS could continue to issue depredation permits to WS and to those entities experiencing bird damage when requested by the entity and when deemed appropriate by the USFWS for those species that require a permit. Under the No Action alternative, all entities seeking a depredation permit from the USFWS must first consult with WS to ensure prior implementation of recommended non-lethal take measures and must submit a recommendation from WS (Form 37) in support of the permit application.

Under this alternative, WS could respond to requests for assistance by: 1) taking no action, if warranted, 2) providing only technical assistance to property owners or managers on actions they could take to reduce damages caused by birds, or 3) providing technical assistance and direct

operational assistance to a property owner or manager experiencing damage. The take of birds can only legally occur through the issuance of a depredation permit by the USFWS and only at levels specified in the permit, unless those bird species are afforded no protection under the MBTA or a depredation/control order has been established by the USFWS, in which case no permit for take is required. When applying for a depredation permit, the requesting entity submits with the application the number of birds requested to be taken to alleviate the damage. Therefore, under this alternative, the USFWS could: 1) deny an application for a depredation permit when requested to alleviate bird damage, 2) issue a depredation permit at the take levels requested, or 3) issue a permit at levels below those take levels requested.

Property owners or managers may choose to implement WS' recommendations on their own (i.e., technical assistance), use contractual services of private businesses, use volunteer services of private organizations, use the services of WS (i.e., direct operational assistance), or take no action. The property owner or manager may choose to apply for their own depredation permit from the USFWS to lethally take birds, as required by the implementing regulations of the MBTA for depredation control (see 50 C.F.R. § 21.41). The USFWS requires that non-lethal methods be used and shown ineffective or impractical before the USFWS will issue a depredation permit. In this situation, WS could evaluate the damage and complete a Migratory Bird Damage Report, which would include information on the extent of the damages, the number of birds present, and a recommendation for the number of birds that should be taken to best alleviate the damages.

The most effective approach to resolving wildlife damage is to integrate the use of several methods simultaneously or sequentially. The philosophy behind integrated wildlife damage management is to implement the best combination of effective management methods in a cost-effective manner, while minimizing the potentially harmful effects on humans, target and non-target species, and the environment. Integrated damage management may incorporate cultural practices (e.g., animal husbandry), habitat modification (e.g., exclusion, vegetation management), animal behavior modification (e.g., scaring, repellents), removal of individual offending animals (e.g., trapping, shooting, and avicides), local population reduction, or any combination of these, depending on the circumstances of the specific damage problem.

Alternative 2 - Non-lethal Bird Damage Management Only by WS

Under this alternative, USFWS would not issue a depredation permit to WS, and WS would be restricted to only using or recommending non-lethal methods to resolve damage caused by certain birds in New York. Lethal methods could continue to be used under this alternative by those persons experiencing damage without involvement by WS. In situations where non-lethal methods were impractical or ineffective to alleviate damage, WS could refer requests for information regarding lethal methods to the state, local animal control agencies, or private businesses or organizations. Property owners or managers may choose to implement WS' non-lethal recommendations on their own or with the assistance of WS, implement lethal methods on their own, or request assistance (non-lethal or lethal) from a private or public entity other than WS.

Alternative 3 – Technical Assistance Only

This alternative precludes any activities by WS to reduce threats to human health and safety, and alleviate damage to agricultural resources, property, and natural resources. WS would only provide technical assistance and recommendations with any aspect of bird damage management. All requests for assistance received by WS to resolve damage caused by birds would be referred to the USFWS, the NYDEC, and/or private entities. This alternative would not deny other federal, state, and/or local agencies, including private entities from conducting damage management activities directed at alleviating damage and threats associated with birds.

Alternative 4 - No Federal WS Bird Damage Management

This alternative precludes any activities by WS to reduce threats to human health and safety, and alleviate damage to agricultural resources, property, and natural resources. WS would not be involved with any aspect of bird damage management. All requests for assistance received by WS to resolve damage caused by birds would be referred to the USFWS, the NYDEC, and/or private entities. This alternative would not deny other federal, state, and/or local agencies, including private entities from conducting damage management activities directed at alleviating damage and threats associated with birds.

Despite no involvement by WS in resolving damage and threats associated with birds, those persons experiencing damage caused by birds could continue to resolve damage by employing those methods legally available since the take of birds could occur either through the issuance of depredation permits by the USFWS; take during the hunting seasons, and blackbirds could be taken at any time when found committing or about to commit damage or posing a human safety threat under a depredation order (see 50 C.F.R. § 21.43); Muscovy ducks could be taken under a control order (see 50 C.F.R. § 21.54), and non-native bird species could be taken without the need for a depredation permit issued by the USFWS.

CONCLUSIONS REGARDING EACH AFFECTED AREA OF THE ENVIRONMENT

• Issue 1 - Effects on Target Bird Species

The potential effects of damage management in the state of New York on specific migratory bird populations are analyzed in detail within the EAs (USDA 2003a; pages 31 – 36, USDA 2004a; pages 33 – 35, USDA 2005a; pages 36 – 43) and in this document. The take of those species would only occur by WS, agencies, or individuals, when permitted by the USFWS and the NYDEC, and only at take levels allowed under those depredation permits. The permitting of the take by the USFWS and the NYDEC ensures the take of those species occurs within population management objectives for those species and is conducted pursuant to federal and state laws and regulations. The USFWS is in agreement with the conclusion of the EAs (USDA 2003a, USDA 2004a, USDA 2005a) that limited authorized take of the migratory bird species assessed in the EAs, which comprise the vast majority of take and bird damage in New York, would have no significant adverse impact on those target species. We have also included additional analyses here related to those species not addressed in the EAs for which WS and the USFWS occasionally receive requests for assistance, primarily at airports. Based on these analyses, this limited authorized take of these species will have no significant adverse effect on these species.

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

Wildlife damage management activities conducted in New York are consistent with work plans, MOUs and policies of WS, the NYDEC and the USFWS. Based on consultation during the development of the EAs (USDA 2003a, USDA 2004a, USDA 2005a), WS and USFWS have determined that activities conducted pursuant to the proposed action would not likely adversely affect non-target wildlife species or federal or state listed T&E species. Standard operating procedures were developed through this consultation. Both agencies (WS and USFWS) have reviewed the T&E species listed by the NYDEC and the USFWS, and have determined that migratory bird damage management activities proposed by WS would not likely adversely affect T&E species in the state of New York. Cumulative impacts would be minimal on non-target species from any of the alternatives discussed. The USFWS is in agreement with the conclusion of the EAs (USDA 2003a, USDA 2004a, USDA 2005a) that limited, authorized take of the migratory bird species assessed in the EAs, and the additional species reviewed in this document, would have no significant adverse impact on non-target wildlife populations, including T&E species.

• Issue 3 - Humaneness and Animal Welfare Concerns of Methods

Based on analysis conducted in the EAs (USDA 2003a, pages 48 – 49, USDA 2004a, pages 39 – 40, USDA 2005a, pages 54 - 55) WS' use of euthanasia methods would follow those required by WS' directives (WS Directive 2.430, WS Directive 2.505) and recommended by the American Veterinary Medical Association (AVMA) for use on free-ranging wildlife under field conditions (AVMA 2013). WS has improved the selectivity and humaneness of management techniques through research and development. Research is continuing to bring new findings and products into practical use. Until new findings and products are found practical, a certain amount of animal suffering could occur when bird damage management methods are used in situations where non-lethal damage management methods are not practical or effective. If birds are to be live-captured by WS, WS' personnel would be present on-site during capture events, or capture devices would be checked frequently to ensure birds captured are addressed timely and to prevent injury. Although stress could occur from being restrained, timely attention to live-captured wildlife would alleviate suffering. The USFWS is in agreement with the conclusion of the EAs (USDA 2003a, USDA 2004a, USDA 2005a) that limited, authorized take of the migratory bird species assessed in the EAs, and the additional species reviewed in this document, would have no significant adverse impact on humaneness and animal welfare with regard to the methods used to control migratory birds that are causing damage.

• Issue 4 - Effects on Human Health and Safety

As indicated in the EAs (USDA 2003a, pages 40 - 45, USDA 2005a, pages 46 - 51), no adverse effects to human safety have occurred from WS' use of methods to alleviate bird damage. The risks to human safety from the use of non-lethal and lethal methods, when used appropriately and

by trained personnel, is considered low. The amount of chemicals used or stored by WS and cooperating agencies would be minimal to ensure human safety. Based on potential use patterns, the chemical and physical characteristics of the above mentioned toxicants and repellents, and factors related to the environmental fate, no cumulative impacts are expected from the chemical components used or recommended by the WS program in New York. The USFWS is in agreement with the conclusion of the EAs (USDA 2003a, USDA 2005a) that limited, authorized take of the migratory bird species assessed in the EAs, and the additional species reviewed in this document, would have no significant adverse impact on human health and safety.

• Issue 5 - Effects on the Aesthetic Values of Birds

As indicated in the EAs (USDA 2004a, pages 37 - 39, USDA 2005a, pages 51 - 54), under the proposed action, non-lethal methods would be employed that would primarily result in the dispersal, exclusion or removal of individuals or small groups of migratory birds to resolve damage and threats. In the event that limited take should occur, the impacts to the aesthetic value of migratory birds are not expected to have any cumulative adverse effects on the quality of the human environment, if occurring at the request of a property owner and/or manager. The USFWS is in agreement with the conclusion of the EAs (USDA 2004a, USDA 2005a) that limited, authorized take of the migratory bird species assessed in the EAs, and the additional species reviewed in this document, would have no significant adverse impact on aesthetic values of migratory birds.

• Issue 6 - Effects on socio-economics of the human environment

As indicated in the EA: Reducing Ring-billed Gull, Herring Gull, Great Black-Backed Gull and Double-crested Cormorant Damage Through an Integrated Wildlife Management Program in the State of New York (USDA 2003a, pages 45 - 48), under the proposed action, non-lethal methods would be employed that would primarily result in the dispersal, exclusion or removal of individuals or small groups of certain birds to resolve damage and threats. Dispersal of depredating birds can sometimes result in the birds causing the same or similar problems at a new location. If WS is providing direct operational assistance in relocation of such birds, coordination with local authorities who may assist in monitoring the birds' movements is generally conducted to assure they do not establish in other undesirable locations and cause economic hardship in new areas. In the event that limited take should occur, the impacts to socio-economics are not expected to have any cumulative adverse effects on the quality of the human environment, if occurring at the request of a property owner and/or manager. USFWS is in agreement with the conclusion of the EAs (USDA 2003a) that limited, authorized take of the migratory bird species assessed in the EAs, and the additional species reviewed in this document, would have no significant adverse impact on socio-economics of the human environment.

Issue 7 - Effectiveness on Target Canada Goose Management

As indicated in the EAs (USDA 2003a, pages 20), a concern among members of the public is whether the methods of reducing Canada goose damage will be effective in reducing or alleviating the damage/conflict. The effectiveness of Canada goose management can be defined in terms of decreased potential for health risks, decreased human safety hazards, reduced

property damage, reduced agriculture damage, reduced natural resource damage and improved quality of human life. USFWS is in agreement with the conclusion of the EA (USDA 2003a) that limited, authorized take of the migratory bird species, in combination with the non-lethal measures described in detail in the EA (USDA 2003a) will have a high level of effectiveness on target Canada goose management. The take of those Canada geese would only occur by WS, agencies, or individuals, when permitted by the USFWS and the NYDEC, and only at take levels allowed under those depredation permits. The permitting of the take by the USFWS and the NYDEC ensures that take of this species is conducted pursuant to federal and state laws and regulations.

MONITORING

The USFWS migratory bird program will annually review the effects of take on migratory bird species in which take occurs to ensure such take does not impact the viability of those migratory bird species. In addition, new EAs will be reviewed to ensure that the analyses are sufficient. The USFWS will review these documents to ensure approved activities do not impact the long-term sustainability of migratory bird species.

CUMULATIVE IMPACTS OF THE PROPOSED ACTION

Cumulative impacts, as defined by the U.S. Council on Environmental Quality (40 CFR § 1508.7), are impacts on the environment which result from the incremental impact of the proposed action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. This analysis considers the reasonably foreseeable, relevant factors that could contribute to cumulative impacts on migratory birds and their associated biological/socioeconomic environmental factors.

Habitat has the most significant impact on the size and health of any migratory bird population (Banks 1979). Many species may experience population declines in response to destruction and fragmentation of prime habitat as land is converted to accommodate the growing human population. A very serious concern is the impact global climate change will have on the remaining valuable migratory bird habitats. The rate of global climate change is accelerating, and many areas are predicted to experience extensive warming, changing precipitation patterns, shifts in vegetation, rising sea levels, increased frequency and intensity of severe weather events (e.g., fire, flood, drought), increased numbers of pests, pathogens, and invasive species, changes in the timing and length of the seasons, and declining snow packs (MacCracken et al. 2003, Inkley et al. 2004).

The effects of the proposed action likely have very little impact on migratory bird populations, either directly or indirectly. The specific impacts will depend greatly upon local conditions and the ability of migratory bird species to respond to various components of the changing environment. Computer-run, mathematical simulations of the atmosphere and ocean are the principal tool for predicting the projected outcome of global climate change and most models make projections for the year 2100 and beyond. Model predictions forecast climate and habitat

changes for nearly every region important to migratory birds in North America. The impact these changes will have on migratory birds is uncertain in many cases, but recent studies suggest that factors such as timing of migration, range distribution, and productivity may all be affected (Crick 2004).

The projected impacts of climate change are based on model predictions, generally for the year 2100, and thus are subject to considerable uncertainty. Furthermore, the extent to which migratory birds will be able to adapt to these changes is not presently known. Complete adaption by all species, however, is viewed as highly unlikely (Crick 2004). The USFWS approach to authorizing take via the issuance of depredation permits will continue to be one of annual assessments and regulation consistent with the population status of individual migratory bird species.

All greenhouse gas (GHG) emissions contribute to cumulative climate change impacts. However, for most Federal agency actions, the Council on Environmental Quality (CEQ) does not expect that an EIS would be required based solely on the global significance of cumulative impacts of GHG emissions, as it would not be consistent with the rule of reason to require the preparation of an EIS for every Federal action that may cause GHG emissions regardless of the magnitude of those emissions. Based on the agency identification and analysis of the direct and indirect effects of its proposed action, NEPA requires an agency to consider the cumulative impacts of its proposed action and reasonable alternatives. The analysis of the effects of GHG emissions is essentially a cumulative effects analysis that is subsumed within the general analysis and discussion of climate change impacts. Therefore, direct and indirect effects analysis for GHG emissions will adequately address the cumulative impacts for climate change from the proposed action and its alternatives, and a separate cumulative effects analysis for GHG emissions is not needed. GHG emissions are not expected to be impacted by the alternatives analyzed here.

No significant cumulative environmental impacts were identified from any of the four alternatives, including the proposed action. Under the proposed action, the authorized lethal removal of migratory birds by WS would not have significant impacts on statewide, regional or national migratory bird populations. No risks to public safety were identified under each proposed action alternative given that only trained and experienced personnel would conduct recommended damage management activities. There would be a slight increased risk to public safety when persons conduct their own activities when no assistance is provided under Alternative 3. However, under all of the alternatives, those risks would not be to the point that the effects would be significant. The analysis in the EAs (USDA 2003a, USDA 2004a, USDA 2005a) indicates that an integrated approach to managing damage and threats caused by birds would not result in significant cumulative effects on the quality of the human environment. Therefore, the USFWS adopts the cumulative effects analysis from the EAs (USDA 2003a, USDA 2004a, USDA 2005a) in addition to the analyses presented in this document.

DECISION AND FINDING OF NO SIGNIFICANT IMPACT

I have carefully reviewed the EAs (USDA 2003a, USDA 2004a, USDA 2005a) which evaluated alternatives similar to the alternatives presented to USFWS here. In addition, I have reviewed

the decision documents (USDA 2003b, USDA 2004b, USDA 2005b) and the more recent decision and summary report (USDA 2009), as well as the additional analyses contained in this document. The proposed action alternatives from the three EAs (Alternative 1, USDA 2003a, Alternative 1 USDA 2004a; Alternative 2 USDA 2005a) all support Integrated Bird Damage Management and are thus considered to be the same alternative. I find this proposed action alternative to be environmentally acceptable, addressing the issues and needs while balancing the environmental concerns of management agencies, landowners, advocacy groups, and the public. The analysis in the EAs (USDA 2003a, USDA 2004a, USDA 2005a) and the analyses presented in this document adequately address the identified issues and reasonably confirm that no significant impacts to the quality of the human environment are likely to occur, individually or cumulatively, from the proposed action, and that the proposed action does not constitute a major federal action warranting completion of an EIS.

Based on the analysis in the EAs (USDA 2003a, USDA 2004a, USDA 2005a) and this document, the need for action and the issues identified are best addressed by selecting the proposed alternative and applying the associated mitigation measures and standard operating procedures referenced in the EAs (USDA 2003a, USDA 2004a, USDA 2005a). The proposed alternative:

1) Addresses migratory bird damage management using a combination of the most effective methods and does not adversely impact the environment, property, human health and safety, target species, and/or non-target species, including T&E species;
2) Offers a high likelihood of maximizing effectiveness and benefits to resource owners and managers;
3) Presents the greatest chance of maximizing net benefits while minimizing adverse effects to public health and safety;
4) Offers a balanced approach to the issues of humaneness and aesthetics when all facets of those issues are considered; and
5) Supports interagency efforts to manage bird damage in New York using the current integrated approach of issuing a depredation permit to WS and those individuals who WS recommends authorizing via a Form 37.

Further analysis may be triggered if changes occur that broaden the scope of damage management activities 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 as described herein.

Based on the analysis provided in the EAs (USDA 2003a, USDA 2004a, USDA 2005a) and the analyses contained within this document, there are no indications that the proposed action alternative 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.

The rationale for this decision is based on several considerations. This decision takes into account public comments on the incorporated EAs, social/political and economic concerns, public health and safety, and the best available biological science on the status of migratory bird

populations. The foremost considerations are that: 1) management actions would be consistent with applicable laws, regulations, policies and orders, and 2) no significant effects to the environment were identified in the analyses. Our decision to authorize take by WS and other qualifying entities in the State of New York is not expected to have significant impacts to the populations of migratory bird species at the state, regional or national level or other significant impacts on the quality of the human environment. This document will be available to the public via the USFWS Division of Migratory Birds, Northeast Region web site, at: https://www.fws.gov/northeast/migratorybirds/additional_information.html

Pamela Toschik — 11 September 2017

Pamela Toschik, Chief, Division of Migratory Birds,
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Date

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