

**UNITED STATES DEPARTMENT OF AGRICULTURE  
ANIMAL AND PLANT HEALTH INSPECTION SERVICE  
WILDLIFE SERVICES**

**BIRD HAZARD REDUCTION PROGRAM: JOHN F. KENNEDY  
INTERNATIONAL AIRPORT  
RECORD OF DECISION**

This Record of Decision (ROD) has been developed by the U.S. Department of Agriculture (USDA), Animal and Plant Health Inspection Service, Wildlife Services (APHIS-WS) in compliance with the requirements of the National Environmental Policy Act (NEPA) of 1969, as amended, the Council on Environmental Quality's (CEQ) regulations implementing NEPA, and the USDA and APHIS NEPA implementing regulations and procedures.

This ROD is intended to: (a) state APHIS-WS' decision, present the rationale for its selection, and describe its implementation; (b) identify the alternatives considered in reaching the decision, including the alternative considered environmentally preferable; and (c) state whether all means to avoid or minimize environmental harm from implementation of the selected alternative have been adopted (40 CFR 1505.2).

Bird strikes, bird collisions with aircraft, kill birds; are a hazard to human health and safety; and can cause major financial losses due to aircraft destruction, equipment damage, runway closure, personnel costs, flight delays, and passenger accommodations. U.S. Department of Transportation, Federal Aviation Administration (FAA) regulations (14 CFR 139.337) require airports to assess wildlife hazards and, as needed, develop and implement wildlife hazard management plans. The location of John F. Kennedy International Airport (JFK) within a major bird migratory corridor (Atlantic Flyway), adjacent to a wildlife refuge (U.S. Department of the Interior [USDI], National Park Service (NPS), Gateway National Recreation Area [Gateway NRA], Jamaica Bay Wildlife Refuge), and the presence of a large colonial nesting bird colony (Laughing Gulls) at the end of two runways (within the wildlife refuge) combine to present JFK with unique bird strike hazards.

Increasing gull strike problems and public concern regarding the environmental impacts of management alternatives resulted in the development of an Environmental Impact Statement (EIS) on bird strike management at JFK which was completed in 1994 (hereafter 1994 FEIS). At the time the 1994 FEIS was prepared, gulls (Ring-Billed (*Larus delawarensis*), Laughing (*Larus atricilla*), Herring (*Larus argentatus*) and Greater Black-Backed (*Larus marinus*) Gulls) comprised the majority of bird strike hazards at JFK. Gull strikes decreased substantially after the implementation of the integrated bird hazard management program analyzed in the 1994 FEIS.

Land uses and bird populations have changed since the completion of the 1994 FEIS, and so have bird strike hazards for aircraft using JFK. For the period of 1994-2009, there were 1,759 bird strikes involving 98 bird species at JFK. APHIS-WS and cooperating

agencies prepared a Supplement (SEIS) to the 1994 FEIS to address changes in bird strike hazards at JFK, including management of hazards identified within a 7-mile radius of the airport, and update information on the implementation of the existing bird hazard management program. The SEIS was prepared in cooperation with the FAA; USDI Fish and Wildlife Service (USFWS); Gateway NRA; New York State Department of Environmental Conservation (NYSDEC); New York City Departments of Environmental Protection and Parks and Recreation; and the Port Authority of New York and New Jersey (PANYNJ).

APHIS-WS responds to requests for assistance from individuals, organizations and agencies experiencing damage caused by wildlife. APHIS-WS is the federal program authorized by law to reduce damage caused by wildlife (Act of March 2, 1931, as amended (46 Stat. 1486; 7 U.S.C. 426-426b) and the Act of December 22, 1987 (1 01 Stat. 1329-33 1,7 U.S.C. 426c).

## **ENVIRONMENTAL IMPACT STATEMENT AND SUPPLEMENT**

In February 1994, APHIS-WS issued a draft EIS on a gull hazard management program for JFK and the final (FEIS) was issued the following May. CEQ granted a request for a 16-day waiver of the 30-day waiting period for recording the decision on the program. APHIS-WS issued a ROD on May 25, 1994. In January 14, 2011, APHIS-WS and cooperating agencies made the draft SEIS available for a 45-day public comment period. The final SEIS was issued in May 2012.

## **PUBLIC INVOLVEMENT**

A notice of the availability of the draft SEIS was published in the federal register on January 14, 2011. Electronic copies (47) of the 1994 FEIS and draft SEIS and notices of availability (165) were sent to interested individuals and organizations. APHIS-WS published a legal notice and posted the 1994 EIS, 1994 ROD and draft SEIS on the APHIS web page in accordance with established WS procedures (72 FR 13237-13238). APHIS-WS also issued a press release on the project. Ten comments were received on the draft SEIS. Responses to issues raised in comments on the draft SEIS are provided in Appendix H of the final SEIS. A notice of availability of the final SEIS was published on May 11, 2012. As with the draft SEIS, APHIS-WS also notified the public of the availability of the final SEIS through direct mailings, a legal notice and publication on the APHIS-WS web page. More than 700 letters were received during the period between the publication of the final SEIS and completion of the ROD (ROD Appendix A – Responses to Comments). Review of comments on the final SEIS indicated there were no new issues or proposed alternatives which warranted revision of the final SEIS.

Copies of the 1994 FEIS and final SEIS may be obtained by writing the New York WS State Director, 1930 Route 9, Castleton, NY 12033-9653 or on the internet at [http://www.aphis.usda.gov/wildlife\\_damage/nepa.shtml](http://www.aphis.usda.gov/wildlife_damage/nepa.shtml).

## ISSUES

Key issues relevant to the analysis were identified through consultation among the lead and cooperating agencies, comments received on the draft 1994 FEIS and comments received on the draft SEIS. The 1994 FEIS analyzed available alternatives with regard to their potential impact on target and nontarget species and their habitats including threatened and endangered species; water quality; parks and recreation; socioeconomics; air quality; noise; airport operations and safety; and Coastal Zone Management Act. The final SEIS analyzed the same issues as the 1994 FEIS, but also added consideration of humaneness and animal welfare concerns, and potential to cause impairment or unacceptable impacts in Gateway NRA.

## ALTERNATIVES

The final SEIS used information on gull hazard management in the 1994 FEIS, an extensive review of the literature, input from wildlife professionals, public comments received on the 1994 FEIS, data from reports and research prepared and conducted specifically for JFK as well as the recommendations of the JFK Bird Hazard Task Force to identify all reasonable methods that could be used to reduce all bird strike hazards at JFK. The individual management techniques were combined to form a series of 6 management alternatives representing the range of possible management actions that could be taken to reduce hazards at JFK. Alternative 1 (No Action Alternative) is a continuation of the JFK gull hazard management program described in the 1994 FEIS and the ongoing actions of the JFK Wildlife Management Unit (JFKWMU). Alternatives 2-5 were created as modules which could be added to the current program singly or in combination to address bird hazards. Alternative 6 involved adding a combination of Alternatives 2-4 to the current program. A seventh alternative discontinuing current use of lethal methods and only using nonlethal methods on and off-airport was considered, but omitted from detailed analysis because review of individual methods in the 1994 FEIS, the bird hazard management history of JFK and data in the SEIS indicate that the alternative would not adequately address bird hazards at JFK.

### **Alternative 1: Continue Current Bird Hazard Management Activities (No-action Alternative)**

The 1994 FEIS limited its analysis to evaluating options for managing gull hazards to aircraft because, during the period of 1988-90, gull strikes comprised approximately 86% of all bird strikes at JFK. However, the 1994 FEIS and the USFWS ROD acknowledged that the JFKWMU also conducted activities to reduce bird strike hazards and property damage associated with other bird species. For purposes of this analysis, it is the combined multi-species bird hazard management program that is the No-action Alternative. Combining the analysis of all bird hazard management activities in one document enables the agencies to more clearly communicate and evaluate bird hazards and bird hazard management activities to the public and enhances interagency coordination and communication regarding bird hazard management at JFK.

Including all bird hazard management activities in the SEIS also enables WS, at the request of the JFKWMU, to participate in all facets of bird hazard management allowed under this alternative. However, WS involvement is not required. The PANYNJ and off-airport landowners/managers may conduct the work themselves, or seek assistance from volunteers, organizations or other contractors. Off-airport landowners/managers are also free to choose to take no action.

The current program consists of all on-airport use of nonlethal and lethal methods to reduce hazards to aircraft, and technical advice and outreach to off-airport landowners and property managers regarding ways to reduce bird attractants (Table 4-2). General strategies include water, insect, waste, vegetation and building management to discourage bird use; direct wildlife management including nonlethal and lethal bird deterrent methods; monitoring of program activities and research on hazard management methods; and consultation with off-airport landowners/managers to reduce hazards. The PANYNJ could provide financial assistance for off-airport bird hazard management, but off-airport bird hazard management for JFK would not be conducted by WS.

### **Alternative 2: Add Additional Nonlethal Methods On and Off-Airport to Current Bird Hazard Management Program**

Under this alternative, existing on-airport bird hazard management efforts would be augmented by improved recording of bird hazard management activities, establishing a regular bird hazard monitoring program, increasing nonlethal methods which may be used on-airport and by enabling the lead and cooperating federal agencies to permit, recommend and use nonlethal bird hazard management methods at off-airport sites to reduce bird hazards at JFK. This alternative does not include the use of nonlethal methods to reduce or relocate the Laughing Gull colony. However, it does include efforts to reduce the resident Canada Goose population within 7 miles of the airport via nonlethal methods (e.g., capture and relocation, reproductive inhibitors, etc.). This alternative also includes the use of nonlethal methods to reduce hazards to aircraft from birds at Gateway NRA, particularly at Rulers Bar Hassock, and Pennsylvania and Fountain Avenue Landfills<sup>1</sup>. Species which may be targeted for off-airport management actions under this alternative include gulls (except the Laughing Gull colony), geese, ducks, Mute Swans (*Cygnus olor*), Double-crested Cormorants (*Phalacrocorax auritus*), blackbirds (Red-winged Blackbirds (*Agelaius phoeniceus*), Brown-headed Cowbirds (*Molothrus ater*), Common Grackles (*Quiscalus quiscula*), Boat-tailed Grackles (*Quiscalus major*)), crows (American (*Corvus brachyrhynchos*) and Fish Crows (*Corvus ossifragus*)), Rock Pigeons (*Columbia livia*), and European Starlings (*Sturnus vulgaris*). These species have been selected because they tend to move from Jamaica Bay through JFK airspace to

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<sup>1</sup> Any action proposed for Gateway NRA would not be conducted without authorization/approval from the NPS.

locations within the city and/or because they form large flocks which move in the approach and departure lanes for JFK.

This alternative could include use of nonlethal bird hazard management methods within Gateway NRA. Specifically, it may include use of bird dispersal methods (e.g., pyrotechnics, electronic harassment devices, trained pursuit on foot or with dogs, lasers, vehicle presence, paintballs), at Pennsylvania Avenue and Fountain Avenue Landfills. There may also be times Gateway NRA may choose to alter habitat to achieve specific wildlife management goals consistent with its plans and policies. For example, as upland areas predominated by grass and forbs mature toward a shrubland habitat, Canada Goose use of the habitat would be expected to decrease because the site no longer provides suitable food or habitat. Enforcement of “Do Not Feed the Birds”, and trash disposal policies at the park may also be increased (human behavior management).

### **Alternative 3: Add Additional On-Airport Lethal Bird Hazard Management Activities to Current Bird Hazard Management Program**

This alternative would increase the duration of the annual supplemental on-airport shooting program from May through August to May through October which would allow the program to augment JFKWMU actions during more of the peak period for hazards from large-bodied gulls (e.g., Herring Gulls). The current supplemental on-airport shooting program was developed primarily to address hazards from Laughing Gulls, but Herring Gull strikes are now the most common gull struck at JFK.

Under this alternative, staff at the gull shooting stations could be authorized to assist the JFKWMU by using lethal methods to keep large-bodied birds which pose particular risks to aircraft (i.e., Canada Geese, Atlantic Brant (*Branta bernicula*), Mute Swans, Double-crested Cormorants, ducks) from entering JFK airspace in the same manner as the four gull species. Supplemental on-airport shooting program personnel would also be authorized to take individuals from flocks of Rock Pigeons, European Starlings, crow and blackbirds to prevent birds from entering JFK airspace and to frighten remaining flock members from the site.

Black-tailed jackrabbits (*Lepus californicus*), Eastern cottontail rabbits (*Sylvilagus floridanus*) and small rodents (mice (*Mus spp.*, *Peromyscus spp.*), rats (*Rattus spp.*), voles (*Microtus spp.*)) are a food source for raptors and can attract these species to JFK. This alternative could also include use of lethal rabbit and rodent control measures to reduce attractants for raptors.

#### **Alternative 4: Add Off-Airport Lethal Bird Hazard Management to Current Bird Hazard Management Program**

This alternative would enable WS to recommend and conduct lethal bird hazard management projects at off-airport sites. It does not include activities to reduce or relocate the Laughing Gull colony. Most management actions would be restricted to the 5-mile radius around JFK. However, this alternative also includes actions to manage the resident Canada Goose population within 7 miles of the airport (e.g., live-capture and euthanasia, egg oiling/addling, nest and egg destruction, shooting). Work in the 5-7 mile radius area would be conducted as needed to augment the population reduction efforts in the 5-mile radius around JFK and is not proposed as a uniform reduction of all resident Canada goose populations in the 5-7 mile radius.

Species which may be targeted for off-airport management actions under this alternative include resident Canada Geese, Mute Swans, Double-crested Cormorants, blackbirds, crows, Rock Pigeons, and European Starlings.

This alternative could also include the use of lethal methods to reduce hazards to aircraft from resident Canada Geese and Mute Swans at Gateway NRA, particularly at Rulers Bar Hassock, and Pennsylvania and Fountain Avenue Landfills<sup>1</sup>. Lethal bird hazard management proposed for Gateway NRA includes the use of capture and euthanasia to reduce the number of resident Canada Geese at Ruler's Bar Hassock, Pennsylvania Avenue Landfill and Fountain Avenue Landfill; and egg oiling/addling and nest and egg destruction to reduce the number of Mute Swans. If the number of resident Canada Geese at Rulers Bar Hassock is reduced, egg oiling may be used at Rulers Bar Hassock to help maintain goose numbers at the reduced level.

#### **Alternative 5: Add Reduction or Relocation of the Laughing Gull Colony to Current Bird Hazard Management Program**

Reduction or relocation of the Laughing Gull colony in Gateway NRA was included as a damage management alternative in the 1994 FEIS. However, there was agency disagreement as to the need for direct action to reduce the Laughing Gull colony, and none of the methods proposed to directly manage the Laughing Gull colony have been implemented. The integrated gull hazard management program at JFK has been effective in reducing Laughing Gull strikes. Reduction/relocation of the Laughing Gull colony was reviewed in the SEIS as a potentially preferable long-term management alternative because the current program continues to result in the lethal removal of over 2,000 Laughing Gulls annually in 2008 and 2009 and over 4,000 Laughing Gulls annually in 2006 and 2007 (Washburn et al. 2009). Depending on the success of the program and where the gulls go, relocation of the Laughing Gull colony could reduce the number of Laughing Gulls which are shot each year at JFK.

## **Alternative 6: Increase Integrated Bird Hazard Management – Preferred Alternative/Proposed Action**

This alternative would be a combination of Alternatives 1-4 above. When presented in the draft SEIS, this alternative also included management actions discussed in Alternative 5. However, after review of material in the draft SEIS and public comments, the agencies decided to omit attempts to relocate/reduce the Laughing Gull colony from Alternative 6 in the final SEIS. This decision was based on available information on the difficulty in reducing/relocating established Laughing Gull colonies, concerns that the level of activity and effort required to relocate the colony could lead to adverse impacts on nesting nontarget species and saltmarsh habitat, and public comments which indicated that the current level of Laughing Gull mortality is preferable to the possibility that New York State would lose its only breeding colony of Laughing Gulls. Gateway NRA also noted that actions which could jeopardize the existence of a native species on lands under their management when a viable alternative is available would also be contrary to NPS policy.

This alternative would enable the agencies to use and recommend the full range of bird hazard reduction techniques. An Integrated Wildlife Damage Management approach would be implemented which would allow use of nonlethal and lethal methods, used singly or in combination, to resolve conflicts with wildlife affecting the use of the airfield and safe airport operations. Preference would be given to practical and effective non-lethal methods, but non-lethal methods may not always be applied as a first response to each damage problem. The most appropriate response could be a combination of non-lethal and lethal methods, or there could be instances where application of lethal methods alone would be the most appropriate strategy.

### **DESIGNATION OF ENVIRONMENTALLY-PREFERRED ALTERNATIVE**

Analysis in the final SEIS identified several issues relative to the environmental impacts of the alternatives which must be considered including impacts on target species populations. Although localized reductions in bird abundance could occur, none of the alternatives would jeopardize the viability of target species populations on the state, regional or national level with the possible exception of Alternative 5. Efforts to relocate/reduce the Laughing Gull colony (Alternative 5) would not jeopardize the regional or national Laughing Gull population but, depending on where birds went in response to relocation efforts, could potentially result in loss of the only breeding colony of Laughing Gulls in the state. Gateway NRA also noted that actions which could jeopardize the existence of a native species on lands under their management when a viable alternative is available would also be contrary to NPS policy. Uncertainty regarding impacts on Laughing Gulls at the state level, and potential impacts on nontarget species discussed below make Alternative 5 unsuitable for inclusion in an environmentally-preferred alternative.

During review of the draft SEIS and after publication of the final SEIS, several individuals and organizations expressed their objection to the use of lethal methods, stating that any alternative which used lethal methods was not an environmentally or morally acceptable strategy. Viewed exclusively from this perspective, Alternative 2 would be the environmentally-preferred alternative because it would not cause any additional intentional animal deaths. APHIS-WS shares public concerns regarding the humane use of management methods and program policy gives preference to nonlethal methods where practical and effective (APHIS-WS Directive 2.101). Analysis in the final SEIS indicates that nonlethal methods can help to reduce on and off-airport bird strike hazards depending on the circumstances (SEIS Sections 4.4 and 6.2) although reductions may not be as great as for Alternative 6 (Section 6.2). For this reason, implementation of Alternatives 3 and/or 4 without also implementing Alternative 2 has been excluded from consideration as the environmentally-preferred alternative.

However, analysis in the final SEIS identified several other issues relative to the environmental impacts of Alternative 2 which must also be considered. Nonlethal methods are a valuable component of effective and responsible wildlife damage management strategies. However, nonlethal methods such as harassment and relocation only move problem birds to new locations unless contraceptive methods such as nicalbazin are available and employed. For some species this is not a concern, but for abundant species (e.g. resident Canada Geese) or non-native species (European Starlings, Mute Swans, Rock Pigeons), relocated birds may cause environmental problems in their new locations. Concerns associated with bird relocation discussed in the final SEIS include over-grazing and vegetation damage; increased risk of disease transmission; and fecal contamination associated with high concentrations of birds. Relocated birds may disrupt or displace other bird species.

Some nonlethal management methods such as harassment may have an adverse impact on nearby nesting bird species, especially if a prolonged effort is required. Similarly, habitat management may not be suitable for all circumstances because it also renders the site unsuitable for species with similar habitat needs (although it usually results in opportunities for different species) or is contrary to the landowner/manager's use of the site. Integrated use of nonlethal and lethal alternatives may allow for the development of off-airport site-specific management strategies which meet landowner/manager objectives and minimize impacts on nontarget species and the environment in ways which cannot be achieved through exclusive use of nonlethal methods. For example, a carefully conducted live-capture and euthanasia project conducted once per year or less may be less disruptive to nesting birds and sensitive habitats such as wetlands than a recurring harassment program conducted during the most months of the year<sup>2</sup>. Lethal removal of non-native species or reduction of over-abundant species may provide ecological benefits incidental to project goals.

The final SEIS also reviewed aesthetic and recreational impacts of the alternatives. Impacts are variable and will depend on individual values and uses for sites. Overall

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<sup>2</sup> Harassment programs are not used during periods when birds cannot fly to escape harassment (e.g., molt, early development of chicks).

management objectives for bird hazard reduction are the same no matter what alternative is implemented. Therefore, if a nonlethal only alternative could be successfully implemented (See Decision below), it would result in similar reductions in geese in parks and associated recreational opportunities as Alternatives 4, 6 and a combination of Alternatives 2 and 4. Under Alternative 2, people with attachments to individual birds would have the emotional benefit of knowing that the birds had not been subject to lethal removal, even though they still have fewer birds to view at the parks. Others may consider reductions in goose abundance near JFK to have beneficial aesthetic and recreational impacts because of reductions in factors such as fecal contamination in parks. Some individuals may consider repellent treatments of grass, the noise and activity associated with some nonlethal methods or the visual impact of habitat modifications and exclusion systems to be detrimental to their aesthetic or recreational enjoyment of a site.

Alternative 6 consists of an integrated program which gives preference to practical and effective nonlethal methods, but which also allows access to lethal methods such as egg treatments or live-capture and euthanasia, and shooting. Limits on take, standard operating procedures and oversight by the USFWS and NYSDEC are established in the SEIS to ensure that program activities do not jeopardize target or nontarget species populations. This alternative best allows for the development of site-specific management strategies which meet landowner/manager objectives and minimize impacts on nontarget species and the environment in ways which cannot be achieved through exclusive use of nonlethal methods. For example, a carefully conducted live-capture and euthanasia project conducted once per year or less may be less disruptive to nesting birds and sensitive habitats such as wetlands than a recurring harassment program conducted during most months of the year<sup>3</sup>. Lethal removal of non-native species or reduction of over-abundant species may provide ecological benefits incidental to project goals. Unfortunately, as noted in the comment letters and the final SEIS, use of lethal methods will adversely impact individuals who have formed attachments to birds at project sites.

APHIS-WS acknowledges that risks of a serious bird-strike are very low, but the consequences are potentially catastrophic. After consideration of the alternatives, APHIS-WS concludes that although the impacts on individual birds and people who are opposed to lethal removals is regrettable, Alternative 6 provides benefits and mechanisms for reducing risk of adverse environmental impacts for situations which cannot be achieved through exclusive use of nonlethal methods and is the environmentally-preferred alternative.

## **DECISION**

APHIS-WS' decision is to implement Alternative 6 - Increase Integrated Bird Hazard Management as described in the final SEIS. Review of the ability of the alternatives to achieve management objectives indicates that Alternative 6 provides the greatest opportunity to reduce bird strike hazards at JFK.

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<sup>3</sup> Harassment programs are not used during periods when birds cannot fly to escape harassment (e.g., molt, early development of chicks).

APHIS-WS actions are contingent upon authorizations from applicable regulatory agencies including but not limited to the USFWS and NYSDEC. APHIS-WS actions are also dependent upon decisions by landowners/ managers. U.S. Department of Transportation, Federal Aviation Administration (FAA) regulations (14 CFR 139.337) require airports to assess wildlife hazards and, as needed, develop and implement wildlife hazard management plans. Although the FAA acknowledges the technical expertise of APHIS-WS, airports are not required to use APHIS-WS to implement hazard management plans. The PANYNJ may choose to use APHIS-WS on all or only a portion of the actions addressed in the final SEIS. Although FAA guidance encourages airports to work with off-airport landowners/managers to reduce risks to aircraft and passenger safety, there is no requirement for off-airport landowners/managers to take action. These individuals, organizations and agencies may choose to implement PANYNJ recommendations on their own or with the assistance of volunteers, organizations, private contractors or APHIS-WS. They may also choose to implement alternatives different from those recommended by PANYNJ or take no action.

## **Research**

APHIS-WS National Wildlife Research Center (NWRC) functions as the research arm of APHIS-WS by providing scientific information on wildlife, its habitat, and its relationship with the human and natural environment. This information is used to develop methods for wildfire damage management that are effective and environmentally responsible. NWRC scientists work closely with wildlife managers, other researchers, field specialists and cooperating agencies to develop and evaluate wildlife damage management techniques that improve the efficacy, selectivity and humaneness of management programs. The NWRC has been and continues to be involved in research pertaining to bird hazard monitoring and management at JFK and will continue to do so in the future (SEIS Section 2.2.8).

## **Mitigation Measures**

Chapter 7 of the final SEIS describes mitigation measures and standard operating procedures which serve to minimize adverse impacts of the alternatives. All measures except those specific to relocation of the Laughing Gull colony (Section 7.2.1) are applicable to the proposed action. Additional procedures and methods for minimizing or preventing adverse impacts are built into the proposed action and are primarily included in the analysis of impacts of the proposed action and the description of the current program but may also be found in the Chapter 4 review of management methods. APHIS-WS Directives govern APHIS-WS' use of damage management tools and will be incorporated into operational activities as appropriate under the selected alternative. APHIS-WS Directives are available at [http://www.aphis.usda.gov/wildlife\\_damage/ws\\_directives.shtml](http://www.aphis.usda.gov/wildlife_damage/ws_directives.shtml). The following list summarizes mitigation measures relevant to the proposed action:

- All activities involving direct management of birds including lethal take will be conducted in accordance with permits and authorizations from the USFWS and NYSDEC. All take of birds will be reported to the USFWS and NYSDEC annually for monitoring potential impacts to bird populations or trends in populations to assure that the magnitude of take will not have a significant adverse cumulative impact on the viability of native bird populations.
- Carcasses of birds will be recovered whenever possible and disposed of daily in accordance with applicable state, federal and local regulations.
- The lead and cooperating agencies will continue to monitor the Laughing Gull colony.
- Where practical and effective alternatives are available and do not conflict with the original use of the site, preference will be given to habitat management, exclusion and similar nonlethal measures which provide long-term reductions in the utility of sites for target species.
- Gateway NRA staff will be consulted prior to conducting capture and removal and egg oiling to arrange for locations and times which allow for management but which also minimize impacts on nontarget species and vegetation.
- Sites at Gateway NRA will be monitored prior to conducting management actions to identify locations which may be actively used by sensitive species and should be avoided while conducting management actions.
- Management at any location including Gateway NRA will only be conducted with the consent of the landowner/manager.

Other key standard operating procedures and program features which minimize impacts of the proposed action relevant to comments received on the final SEIS include but are not limited to.

- APHIS-WS will continue to provide annual reports on bird hazard management activities conducted APHIS-WS and associated impacts on bird strikes at JFK. All bird hazard management activities for JFK would continue to be subject to review and guidance from the JFKWMU and JFK Bird Hazard Task Force.
- APHIS-WS will monitor its program activities in accordance with the final SEIS to ensure that the SEIS adequately address the need for action and that impact analyses in the 1994 FEIS and final SEIS adequately address project impacts.
- The preferred alternative includes implementation of a wildlife hazard monitoring program for ongoing evaluation of wildlife hazards and the impacts of management actions.
- APHIS-WS has consulted with the USFWS and NYSDEC regarding risks to state and federally-listed threatened and endangered species and will conduct all bird hazard management activities in accordance with their requirements for the protection of listed species. APHIS-WS and/or the JFKWMU would re-initiate consultation with the USFWS and NYSDEC as applicable following incidental take of a threatened or endangered species.
- Gateway NRA staff will be consulted prior to conducting capture and removal and egg oiling to arrange for locations and times which allow for management but which also minimize impacts on nontarget species and vegetation.

- Sites at Gateway NRA will be monitored prior to conducting management actions to identify locations which may be actively used by sensitive species and should be avoided while conducting management actions.
- All pesticides will be stored, applied and disposed of in accordance with label directions and state and federal regulations to minimize risks of adverse impacts from pesticide use.
- With the exception of bird feeding which is discouraged at any recreational site and reductions in the number of birds (waterfowl in particular) that may be seen at some locations, off-airport bird hazard management recommendations will be designed to accommodate and retain the recreational purpose of the sites where they are conducted.
- Wherever possible, bird hazard management activities including harassment, bird removal and pesticide use would be conducted at times that allow for effective use of the method but also minimize adverse impacts on recreational use of sites.
- The use of newly developed proven nonlethal methods would be encouraged when appropriate (after applicable NEPA review).

### **Environmental Consequences of APHIS-WS' Selected Action**

The 1994 FEIS and final SEIS contain a full analysis of the selected actions to which we refer the reader for specific details. APHIS-WS expects to be involved in the increased hazard management actions planned for JFK including use of nonlethal and lethal management methods. Analysis in the SEIS indicates that the proposed action will not result in cumulative impacts which will jeopardize the viability of state, regional or national target species populations with the possible exception of the Laughing Gull colony. The on-airport shooting program has resulted in a reduction in the Laughing Gull colony. In recent years, the colony has declined further, for reasons which appear to be related to habitat loss in the marsh. However, the colony is still large with over 1,900 nests counted in 2011. Although reduced from former levels, with a colony of this size it is possible but unlikely that gulls will abandon the site. APHIS-WS will continue to work with the cooperating agencies to monitor the gull colony and will review management strategies as appropriate pursuant to NEPA if cumulative impacts appear likely to jeopardize the colony.

The proposed action in combination with other management actions in and around the project area will result in a reduction in the number of resident Canada Geese within 7 miles of JFK. Reductions within the 5-mile radius are likely to be more pronounced than in the 5-7 mile radius. However, the proposed reductions will not jeopardize the viability of the metropolitan New York City, state, regional, or national resident Canada Goose population. Cumulative impacts of the proposed program are consistent with NYSDEC and Atlantic Flyway management objectives for resident Canada Geese. Anticipated maximum cumulative impact in the New York City area is likely to lead to densities consistent with what would occur if NYSDEC management objectives are achieved. Individuals who have formed emotional attachments to the geese in specific areas would be particularly upset by the removal of the geese. However, limited numbers of geese are expected to remain at or immigrate to the sites shortly after removals are conducted.

While the existence of limited numbers of geese will not balance the impact of the goose mortality for people concerned about the fate of individual birds, it does mean that opportunities to view and enjoy resident Canada Geese will not be eliminated. Given that potential impacts are consistent with state and regional management objectives, and will not eliminate viewing opportunities or jeopardize the viability of the metropolitan New York City, state, regional or national resident Canada Goose population, we conclude the proposed action will have a moderate but not significant impact on the local resident Canada Goose population. This determination is consistent with findings based on the APHIS-WS record of Decision for the EIS on management of resident Canada Geese in the U.S. (USFWS 2005, APHIS-WS 2007).

APHIS-WS has consulted with the USFWS and NYSDEC regarding potential risks to state and federally-listed species. The USFWS and NYSDEC have concurred that the proposed action either will have no effect on or may affect but is unlikely to adversely affect threatened and endangered species. Review of impacts on other nontarget species indicates that the proposed action will not adversely impact nontarget species and contains sufficient built-in procedures and mitigations to prevent significant adverse impacts on nontarget species populations. In situations where over-abundant and non-native species are also having adverse impacts on natural resources, some of the proposed actions may have limited incidental beneficial impacts. Review in the final SEIS indicates the proposed action will have low impacts on water quality, noise, air quality, and socioeconomics. Impacts on parks and recreation and perceptions of humaneness of the proposed alternative will vary depending upon individual values and relationships with the affected bird species.

## **RATIONALE FOR DECISION**

As stated in the CEQ regulations, "the agency's preferred alternative is the alternative which the agency believes would fulfill its statutory mission and responsibilities, giving consideration to economic, environmental, technical and other factors." Actions under the preferred alternative have been selected for implementation based on consideration of a number of environmental, regulatory, and social factors. Based on our analysis and evaluation, it is APHIS-WS' determination that the integrated bird hazard management program as described under Alternative 6 would be more effective than the current program, is environmentally sound and does not threaten the viability of state, regional or national wildlife populations or any other environmental resource. The alternative would enable the lead and cooperating agencies to use a wide range of nonlethal and lethal methods on and off-airport to minimize bird hazards to aircraft using JFK. It would also best enable development of site specific off-airport management strategies which reduce hazards, minimize a range of environmental impacts and meet the objectives of landowner/managers.

APHIS-WS did not select the No Action Alternative (Alternative 1) because information presented in the final SEIS indicates that the program developed the 1994 FEIS and ROD is not adequate to address changing bird hazards. The environmental analysis provided in

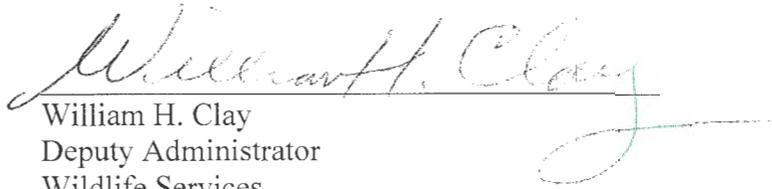
the final SEIS indicated that conflicts were more likely to be resolved under other options than under the No Action Alternative (SEIS Section 6.2).

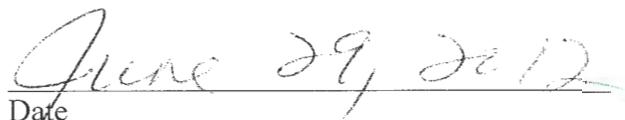
Alternative 2 would enable bird hazard management actions to address on and off-airport hazards, and would likely be preferred by many individuals opposed to the use of lethal management methods. However if effective, this alternative would reduce the number of resident Canada Geese at many off-airport locations including parks which, although not as objectionable as lethal removal, would still be opposed by individuals who want to see large numbers of resident Canada Geese and individuals attached to particular geese which may be deterred from using a specific site. Analysis in the SEIS indicates that this alternative would not be as effective in reducing hazards to aircraft and passenger safety as Alternative 6. Of particular concern is the fact that most nonlethal methods only relocate birds. If birds do not move to locations outside the project area, some nonlethal methods such as harassment may actually increase bird flights and associated risks to aircraft as birds seek new locations in the project area. As noted above in the determination of the environmentally preferred alternative, a management alternative which integrates lethal and nonlethal methods may provide benefits and mechanisms for reducing risk of adverse environmental impacts in some situations which cannot be achieved through exclusive use of nonlethal methods.

Alternative 3 and 4 were not selected for use individually or in combination with one another because they did not include use of socially and environmentally preferable nonlethal methods where practical and effective. For example, where appropriate, some nonlethal methods such as exclusion and habitat modification have the potential for long-term hazard reduction which is preferable to recurring use of lethal methods. Alternative 3 does not address off-airport bird strike hazards, and Alternative 4 does not address changes in on-airport hazards. A combination of alternatives 2 and 3 would improve on-airport hazard management but would still have off-airport limitations discussed above for Alternative 2. Similarly, a combination of Alternatives 2 and 4 would improve off-airport hazard management but would not be as effective in addressing more immediate on-airport hazards.

Alternative 5 was not selected because information in the SEIS indicated that Laughing Gull hazards are being adequately addressed by the current program and that implementation of Alternative 5 could have adverse environmental impacts without substantively changing hazards to aircraft. Information on and agency experience with the challenges in reducing/relocating established Laughing Gull colonies raised concerns regarding agency ability to fully achieve the objective of this alternative. There were also concerns that the level of activity and effort required to relocate the colony could lead to adverse impacts on nesting nontarget species and saltmarsh habitat. Public comments on the draft SEIS indicated that the current level of Laughing Gull mortality is preferable to the possibility that New York State would lose its only breeding colony of Laughing Gulls. Gateway NRA also noted that actions which could jeopardize the existence of a native species on lands under their management when a viable alternative is available would also be contrary to NPS policy.

Although risks of damaging bird strikes are very low relative to total flights, the potential consequences of a damaging strike can be catastrophic for people and the environment. It is APHIS-WS' determination that when all factors are considered, Alternative 6 best balances the need to reduce bird strike hazards and minimize environmental impacts of program activities.

  
\_\_\_\_\_  
William H. Clay  
Deputy Administrator  
Wildlife Services

  
\_\_\_\_\_  
Date

**APPENDIX A:  
BIRD HAZARD REDUCTION PROGRAM: JOHN F. KENNEDY  
INTERNATIONAL AIRPORT**

**RESPONSES TO COMMENTS**

APHIS-WS received slightly over 700 comments during the period between the publication of the final SEIS and completion of the ROD. All letters were reviewed for substantive new issues and alternatives which would warrant revision of the analysis. The following responses provide clarification of issues raised and material in the SEIS. No substantive issues warranting revision of the final SEIS were identified in the comments.

**1. Will lethal removal of birds, particularly geese, be effective in reducing strikes? Won't new birds just move into vacancies left by removals? NYC has been removing geese from parks for several years now and there is no measurable reduction in strikes.** Implementation of the on-airport shooting program as described in the 1994-FEIS has been effective in reducing gull strikes (Sections 4.3 and 6.2). The SEIS provides available data on the expected efficacy of lethal methods included in Alternatives 3-6 (Sections 4.5-4.8, 6.2) including off-airport removal of resident Canada Geese (SEIS Section 4.6.5). NYC Park resident Canada Goose Survey data indicate that goose numbers, and associated risks to aircraft continue to decline on NYC owned lands with 1,124 birds counted in 2010, 797 counted in 2011 and 398 counted in 2012. The SEIS acknowledges that immigration of new birds and reproduction in remaining birds will lead to eventual return to pre-treatment levels if removals are not continued or augmented with additional methods such as habitat management, reproductive control, egg treatments or additional removals.

**2. Agencies (landowners/managers) should notify the public whenever and wherever a removal project will be implemented. Agencies should permit video documentation of resident Canada Goose removals.** It is important to minimize the number of people at locations where removals occur for a number of reasons including minimizing stress of the birds and to allowing professional wildlife management staff to conduct work activities. NYC government arranged for media to record roundup of Canada Geese on a NYC owned park in 2010. These photos are in the public domain and were published by NYC newspapers. There are other photos and video of roundups in the public domain from other areas in the country if a person wanted to learn how a roundup is conducted and birds are normally treated by APHIS-WS employees. The public has had opportunities for involvement in the planning process for the draft SEIS, the New York APHIS-WS state Canada Goose management Environmental Assessment (USDA 2004), the USFWS EIS on resident Canada Goose management in North America (USFWS 2005) and local government public involvement processes.

**3. Is it appropriate to use tax money for lethal methods which some taxpayers consider inappropriate and unnecessary? Should there be public meetings to determine if tax money is used?** PANYNJ funding for bird hazard management comes

from PA property user fees. Although the SEIS recommends and enables off-airport bird hazard management, the decision to conduct bird hazard management off-airport and the type of method to be used is the decision of the landowner/manager or managing agency (FSEIS Sections 2.3, 3.1.1). The decision to allocate tax money for off-airport bird hazard management is ultimately made by elected officials in the cooperating agency based on evaluation of the need for action and input from constituents. Public meetings relative to use of meeting would be conducted in accordance with applicable policies of the funding agencies.

**4. Other countries including Israel, Canada and Great Britain resolve their strike issues with exclusive use of nonlethal methods, why can't JFK?** Statement is incorrect. Low levels of lethal control are used to support routine nonlethal bird hazard management on UK airports. The government issues a blanket permit to all airport operators to kill, or take eggs from a range of species on airfields and/or within 7.8 miles (13 km) of airports depending upon the species. Airports can also apply for special permits to address issues with birds that are not on the national permit (J. Allan, Bird Strike Management Unit, Food and Environment Research Agency, United Kingdom). In Canada, lethal control is generally not a priority method, but it is used at most, if not all, major airports (G. Searing, Bird Strike Association of Canada, pers. comm.). The information from Israel provided by commenters refers to a military aircraft program similar to that used by the U.S. military. It includes use of radar and other bird movement data to make adjustments to flight routes and schedules, habitat management and harassment to reduce risks to military aircraft. Habitat management and harassment are included in the preferred alternative. JFK is working with researchers and developers on a system to incorporate radar data into bird hazard management for JFK. However, seasonal modifications to flight schedules and routes are more readily adapted to military aircraft flights than civil aircraft flights. Military aircraft have greater flexibility in flight times and routes than commercial flights which are constrained by schedules linked to connections with other airports, and constraints on flight paths which consider a variety of factors including traffic from nearby airports and noise impacts on communities near the airport (1994 FEIS, SEIS Sections 3.1.2, 4.3.1).

**5. If agencies were serious about giving preference to nonlethal methods, they would implement an alternative which requires that nonlethal methods be implemented first. The commenter's proposal would require agencies to attempt nonlethal methods even in situations where nonlethal alternatives are anticipated to be ineffective or less than optimal for a specific site (e.g., an extended harassment program which may have more impacts on wetlands and other nesting species than a once-per year or less trip to remove geese). If ineffective or impractical methods are excluded from use, then the results of this alternative will be similar to the preferred alternative which gives preference to practical and effective nonlethal methods (Alternative 6).**

**6. It is inappropriate to refer to national strike statistics when determining need for action at JFK?** The goal of any airport wildlife hazard management program is to prevent strikes. Consequently data from individual airports are not usually sufficient to assess the risks to aircraft associated with strikes by a particular species. Review of

national strike statistics enables agencies to assess the relative risks to aircraft from specific bird species and focus management efforts at those species most likely to pose risks to aircraft (SEIS Section 1.7).

**7. Commenter opposed to use of DRC-1339 because it causes a prolonged and agonizing death, birds die at locations away from treatment site, and it will only lead to more birds in the project are than before the product was used.** The use of DRC-1339 for blackbirds, starlings and pigeons is possible but unlikely. If these birds are a threat to aviation and property then other methods are more likely to be used (capture and euthanasia and shooting). DRC-1339 for pigeons and blackbirds is federally-registered with EPA for use at staging areas, but is not currently registered with the state of New York. It was included in the SEIS as a potential option if other methods prove ineffective in reducing risks associated with pigeons, blackbirds and starlings.

APHIS-WS recognizes that any use of lethal methods, toxicants in particular, is considered by many individuals to be inhumane even if time until death and pain experienced appear to be minimal. The majority of birds that consume the bait die within 24 hours, but most within 4 to 12 hours. There are no reports available on the pain experienced by birds treated with DRC-1339, but information on acute kidney failure in people indicates that it may be erroneous to assume that birds treated with DRC-1339 experience a very painful death. Symptoms of renal failure vary among individuals, with some individuals experiencing no symptoms while others may experience symptoms such as fluid retention, headache, nausea, fatigue and/or chest pain or pressure, and/or seizures (Mayo Clinic 2011, American Urological Association 2011). Location of bird deaths associated with DRC-1339 use is addressed in SEIS Appendix H, Response 45. There is no scientific evidence that bird populations will increase beyond initial levels if lethal removals are implemented. Factors which limit the population will remain. It is possible that the remaining birds may experience increased productivity and/or decreased mortality due to changes in resource availability while local population numbers are reduced. However, these factors are only likely to hasten recovery to pre-treatment levels. The ability of wildlife populations to recover from or sustain removals is addressed in context of the population impact analyses in Chapter 6.

**8. There should be more public involvement and analysis before lethal methods are used in Gateway NRA. Actions need more justification and review before they are implemented.** The SEIS provides a thorough environmental review of lethal actions proposed for Gateway NRA, specifically removal of resident Canada Geese at 3 sites, egg treatments for Mute Swans, and, potentially, resident Canada Geese (if numbers are reduced). No additional analysis will be conducted for these actions. The SEIS acknowledges that there are concerns pertaining to risks associated with nesting Herring and Great Black-backed Gulls and Double-crested Cormorants in the Bay but also states that data are insufficient at this time to propose action involving these species in the Bay. Additional review would be conducted pursuant to NEPA prior to initiating projects involving lethal removal of species other than resident Canada Geese and Mute Swans in Gateway NRA.

**9. How does SEIS address conflicts with migrant birds? Real issue in publicized strikes is migrant birds.** Chapter 1 of the SEIS documents bird strike hazards at JFK from resident and migrant birds. Methods which may be employed to reduce hazards from migrant birds include ongoing development of radar systems, research and development of on-board systems to enhance bird detection and avoidance of aircraft (e.g., lighting systems, SEIS Section 4.3.1 and 4.3.2). The FAA continues to review aircraft design standards which may reduce risks from bird strikes. Many migrant birds stopover in Jamaica Bay, for these birds, on-airport methods which reduce risks from resident birds also reduce risks from migrant birds. Some methods, such as nonlethal harassment, appear to be more effective with migrant birds which have not habituated to the range of stimuli on and around JFK.

**10. Are the agencies attempting to sterilize the airport of all wildlife?** The PANYNJ strives to minimize risks to aviation safety and property damage in accordance with requirements of the Federal Aviation Administration. From a legal and regulatory perspective, the airport must show due diligence to reduce the risk to aviation from bird strikes. Management on and off-airport emphasizes species of greatest risk to aircraft, although hazard management activities within the Aircraft Operations Area do seek to reduce all bird activity (SEIS Section 2.2.6). In more remote sections of airport property, efforts to manage low-risk species are not as focused or intensive. It should also be noted that bird strikes almost always result in the death of the bird. Nonlethal management activities which succeed in moving birds to safer environments are beneficial to birds and aircraft.

**11. Proposed action covering a broad area around JFK is not specific to real risks – a more targeted nonlethal approach should be used and is proportionate to miniscule level of risk.** The proposed action does use a targeted approach to address bird strike hazards which emphasizes management of species of greatest risk to aircraft. Where practical and effective, preference is given to use of nonlethal methods. Lethal methods are only proposed for a fraction of the bird species struck on (98) and off (35) airport (SEIS Section 6.6.1 and Appendix C). Even off-airport nonlethal methods are only proposed for a fraction of the total bird species struck on and off airport (Section 6.4.1). Hazard management activities in the 5-7 mile radius around JFK only target resident Canada Geese and are based on information in the literature and from studies conducted in New York State (Preusser et al. 2008) and in New York City (Seamans et al. 2009).

**12. APHIS-WS failed to provide the public with any opportunity to help create objectives for project or explain origin of objectives and provide evidence of their utility/relevance.** Reasoning for objectives is provided in SEIS Sections 1.6, 3.1.1 and 6.2. Objectives were based on agency experience with bird hazard management at airports and in consultation with the JFK Bird Hazard Task Force and New York City Wildlife Hazard Steering Committee. The public had opportunity to review and participate in development of objectives during the review period for the draft SEIS.

**13. Assertion that no risk is acceptable from FAA letter in 1994 FEIS is undermined by agency decision to exclude certain bird species because the risk from the other species is acceptable. Even among the high risk larger-bodied birds there must be some level of risks that is acceptable too because the agencies have determined that 10 or 20 geese per park is acceptable depending on distance from airport.** For reasons stated in the 1994 FEIS, SEIS and FAA letter, including the fact that bird strikes almost always result in the death of the bird, the agencies strive to prevent all strikes. The agencies realize that prevention of all strikes is unlikely, and focus efforts on species most likely to cause damage to the aircraft when involved in strikes (SEIS Section 1.7). Management of strikes requires a balance of several factors. For example, management actions for one species may result in conditions favorable to a different species. Off-airport, management is dependent upon the willingness of the landowner/manager to implement project recommendations and must accommodate the site management objectives of the landowner manager. On NYC lands, these objectives include the desire to continue to provide opportunities for the public to view and enjoy resident Canada Geese.

**15. The SEIS fails to provide sufficiently detailed site-specific information on bird numbers near JFK to indicate what current levels are and what desired targets would be (Objective 2). Site-specific data on goose abundance for each location near JFK should have been disclosed.** Because of the dynamic nature of bird activity at off-airport sites (SEIS Section 3.1.1) and data on movement patterns of birds in the JFK area (Seamans et al. 2009), we believe the scale of the data and analysis and objectives (e.g., NYC metropolitan area) provided in the SEIS is appropriate to the nature of the project. No long-term site-specific goals have been established for individual off-airport properties. Although in some situations, resident Canada Geese would be allowed to remain as long as the numbers remain low (less than 10 birds per site within the 5-mile radius, less than 20 birds per site in the 5 to 7-mile radius), these numbers can be modified depending on circumstances (e.g., the birds are known to be involved in specific hazards at JFK, SEIS Section 6.3.1.2) and landowner/manager objectives. The sites where Canada Geese are captured and removed are evaluated by APHIS-WS prior to the molt in late May or June. These documents and management recommendations are provided to the landowner/manager (e.g., NYC government) for review and a decision in concurrence or opposition to the recommendations. Data from some of these surveys were used in the development of the SEIS (Collins 2009, Collins and Humberg 2010a, b). These documents have also been made available by NYC government through the Freedom of Information Act process and the media. As far as site specific goals for Canada Goose abundance for each property, no such document or plan has been developed. Additionally, Table 5-3 contains a list of parks within the 7-mile radius of JFK with features attractive to gulls and Canada Geese where bird hazard management may be conducted.

**16. The NEPA requires agencies to consider every reasonable and feasible alternative. SEIS did not do that. There are an abundance of other alternatives that should be in SEIS including alternatives which vary the methods and species which may be managed at varying distances from the airport.** NEPA does not

require that every possible variation on an action be analyzed. When there are potentially a very large number of alternatives, only a reasonable number of examples, covering the full spectrum of alternatives, must be analyzed and compared in the EIS. (CEQ 1981).

We believe that the options discussed by the commenter fall within the range of alternatives reviewed by the agency. The agency did not consider in detail an entirely nonlethal alternative because it would not meet the purpose or underlying need for action (see reasoning for Alternative 7 and Appendix H responses to comments #26, 27, 33, and 34). For example the proposed action varies the species which may be targeted and methods which may be used (nonlethal vs lethal) depending on distance from airport and landowner/manager (e.g., list of species which may be managed at Gateway NRA is more limited than at other sites). Annual site-specific management actions may be adjusted using an adaptive management strategy such as the APHIS-WS decision model (SEIS Section 3.1.1) and available data (new hazard monitoring program for JFK) so long as actions and impacts remain within the parameters established in the SEIS.

**17. The SEIS wrongly dismissed nonlethal methods because they are costly, must be implemented continuously, and take more time. Analysis in the SEIS indicates that nonlethal methods, used properly with rotation and integration will be sufficient. Discussion of costs should not be included in reasoning as to whether or not nonlethal methods should be used affected entities (airlines, PANYNJ, etc.). Decisions on that level should be left to individual cooperators and agencies in consideration of social norms, public expectations and demands and agency sensitivities.** Very few nonlethal management methods were eliminated from consideration. There is an error in SEIS Table 4-2. Repellents and reproductive inhibitors could be recommended for use. Impacts of these methods are included in the impacts analysis in Chapter 6 (SEIS Section 6.4 and 6.8). Reasoning for not considering a nonlethal only alternative or only implementation of Alternative 2 are clearly stated in the 1994 FEIS, the SEIS (Section 3.3.7) and in this ROD. However, as noted in the SEIS, in the ROD and by commenter, landowners/managers are free to choose to implement nonlethal alternatives or a nonlethal-only strategy if they so choose depending on factors such as site use, individual/organization and agency values, public expectations and other factors. It is unrealistic to expect that factors considered by some landowners/managers will not include cost of project implementation.

**18. SEIS failed to consider impacts of reasonably foreseeable past, present and future actions for cumulative impact assessment including development of new parks, roads, housing, playing fields, and wetlands created or destroyed.** Factors such as those described by commenter are an ongoing process in the NYC metropolitan area and throughout the region used by many of the bird species encountered at JFK. Conditions in and around JFK relevant to the analysis are addressed in the 1994 FEIS and in Chapter 5 of the SEIS. Impacts of the actions described by commenter relevant to the SEIS fall into three general categories – changes in bird movement patterns and associated aircraft hazards, cumulative impacts on target species, cumulative impacts on nontarget species, and impacts on recreation. Because these types of changes are an ongoing process, the SEIS has developed a dynamic system including mitigations and

standard operating procedures, and built in measures which allow the agencies to monitor for and adjust to impacts of ongoing changes in the affected environment (SEIS Sections 3.1.1, 6.3). The current program includes and encourages working with off-airport landowners on development and other projects which may impact bird hazards. This type of planning and communication can facilitate use of nonlethal preventive methods to address anticipated hazards. The hazard monitoring program will provide current data on bird hazards and allow the program to adapt to changes within the parameters established and analyzed in the SEIS. Coordination of project activities and program review with the JFK Bird Hazard Task Force also enables identification of and adjustment to changes relevant to bird hazard management at JFK and potential changes in risks to target and nontarget species. Established mitigation for the project includes reporting all take to the USFWS and NYSDEC annually for review of project-specific and cumulative impacts on wildlife populations. APHIS-WS will also monitor activities conducted under this analysis in context of the issues analyzed in detail to determine if the need for action and associated impacts remain within parameters established and analyzed in the 1994 FEIS and SEIS and will supplement the analysis and/or modify program actions in accordance with applicable local, state and federal regulations including the NEPA. Monitoring will include review of state and federally-listed threatened and endangered species and consultation with the NYSDEC and USFWS as appropriate to avoid adverse impacts on threatened and endangered species. In this way, we believe the proposed action accounts for is responsive to ongoing changes in the cumulative impacts of actions conducted on and around JFK in accordance with the NEPA.

**19. It is inappropriate for the JFK database to have information that is not in the FAA database. Two databases should match. JFK database should be publicly accessible.** The differences in the two databases are explained in SEIS Section 1.5. The PANYNJ switched to maintaining all strike records in the FAA data base in 2010. The PANYNJ also works with staff who maintain the FAA database to identify and, if needed, correct discrepancies between the two databases. However given that the JFK database was originally intended to specifically address on-airport hazards, the two databases will not match perfectly. All data used in the SEIS is available for review as per the requirements of the Administrative Procedures Act. Commenter requested access to the database in the afternoon of the day prior to the closing of the comment period which was not sufficient time for the agency to provide information prior to the close of the comment period. Agencies are not obliged to turn over accesses to databases and associated software, but APHIS-WS will work requestors to provide the relevant information as it pertains to analyses in the SEIS.

**20. SEIS should consider economic value of birds for bird watching, ecological role and aesthetic value to NYC residents.** See SEIS Appendix H Responses 1 and 68 and the FAA note in the FEIS regarding “acceptable” levels of bird strikes. While the intrinsic and extrinsic value of birds is high, and the risk of strikes is low, the consequences of a bird strike are potentially catastrophic economically, emotionally and environmentally. The FAA requires airports to address wildlife hazards through regulation and advisory circulars. If the airports fail to comply with FAA requirements

of maintaining a safe operating environment then the airports operating certificate can be withdrawn.

**21. The SEIS fails to consider impacts of control actions on individual animal welfare, mated pairs, dependent young and species social dynamic. SEIS fails to specifically address suffering to individual birds if shot, captured or euthanized.**

Impact on individual animal welfare is addressed in the SEIS in context of the review of humaneness of the individual alternatives. Decision makers and wildlife management professionals strive to minimize animal welfare impacts on wildlife because they deeply care about animals and minimizing suffering and have committed their careers to the wellbeing of wildlife populations. The impact on individual animal welfare is one of the factors reviewed by decision-makers when balancing the need to solve a problem while also minimizing the impact on animals' lives and people with affectionate bonds for these animals.

Loss of a mate occurs in all species due to natural (e.g. predation) and human-induced causes and may cause stress. Impacts on dependent young will vary depending on the species and the timing of the management. For example, adult and young geese are removed during resident Canada Goose capture and euthanasia projects. In other species, it is possible that chicks may die because one or both members of a pair have been taken. This situation is regrettable and undesirable for the public and the agencies. Where feasible and effective, the agencies will strive to conduct lethal removals, particularly off-airport, in a manner which minimizes risks to dependent young. However, the agencies are also obliged to respond to and address threats to aircraft, especially on-airport, in a timely manner. This is particularly true for the use of lethal methods on-airport. Review of the existing on-airport bird hazard management program indicates that while there may be local reductions in some species (e.g., Laughing Gulls), when all factors are considered cumulatively, the regional and national populations are not jeopardized by the proposed action.

In general, birds of reproductive age which lose a mate are able to obtain a new mate with the same or for subsequent breeding seasons. Current data and understanding of bird population dynamics indicates that while these issues may be important, consideration of birds lethally taken is sufficient to predict potential impacts on the populations and is the standard by which agencies assess impacts of removals on bird populations.

**22. Was non-gull management for JFK conducted in accordance with NEPA?**

Management of non-gull species was conducted in accordance with relevant Categorical Exclusions and Environmental Analyses (EAs).

**23. There is conflicting data about duration of extending the on-airport shooting program.** We regret any confusion which may have resulted from errors in the document. The shooting program will end on or before November 1 each year and is analyzed as such.

**24. Will there be assessments of actual risks prior to targeting populations that contain 21 or more geese. SEIS contains statements that assessment of actual risk would be a precondition of taking action.** APHIS-WS conducts site visits at locations where geese may be captured and euthanized prior to conducting removals. APHIS-WS will evaluate this information before making a recommendation to NYC government for action. The NYC government reviews the proposals in context of its own concerns and site management objectives including sociological issues and approves or disapproves the project.

**25. It is impossible to reduce strikes to zero. At some point additional efforts will not decrease strikes and continued effort would pose unnecessary impacts to target species, nontarget species and environment. Provision needs to include factors for identifying when this point has been reached.** APHIS-WS will conduct annual monitoring of program actions and report to the cooperating agencies as appropriate. The proposed action also includes a regular, standardized bird hazard monitoring program. Efficacy and impacts of program actions and recommendations for future management are also made bi-annually by the JFK bird hazard task force. The SEIS will be revised as appropriate under NEPA if there may be impacts or actions which are not considered in the 1994-FEIS and SEIS.

**26. SEIS needs to clearly state which specific species will be targeted for control. Use of “include” instead of “limited to” before list of off-airport species leaves open possibility that other species will be added.** Species which may be targeted for off-airport management are limited to species discussed in SEIS Chapter 6 analysis. On-airport, take will primarily involve listed species, but the SEIS includes provisions for emergency take of limited numbers of other birds so long as they are not state or federally-listed as threatened or endangered. Take in addition to that analyzed for each of the alternatives in Chapter 6 may not occur without additional analysis pursuant to the NEPA.

**27. The SEIS fails to consider unintended impacts on species of conservation concern.** Chapter 6 of the SEIS contains an analysis of risks to all nontarget species with additional review provided for state and federally-listed threatened and endangered species for each of the alternatives. The USFWS, NYSDEC which have responsibility for management and protection of species of conservation concern were cooperating agencies in the preparation of the analysis. Neither agency identified unacceptable impacts on or risks to nontarget species including species of conservation concern. Analysis provided in SEIS contains sufficient detail to assess risks to all bird species including species of conservation concern.

**28. SEIS does not identify how negative impacts on natural resources will be mitigated. Breadth of proposed action is likely to cause unacceptable impacts on species from nonlethal and lethal methods. Proposed actions which will change quality of habitat in area and have a high potential for adverse impacts on species of conservation concern must be accompanied by mitigation. Agency needs to provide funding for research and habitat restoration elsewhere in the Bay to compensate for**

**adverse impacts.** The 1994 FEIS Section 7.1 and SEIS Section 7.2 establish mitigation measures for the proposed action. The SEIS includes built in features which reduce risks of adverse impacts including Standard Operating Procedures discussed in Section 7.1 and management practices described in Chapter 4 descriptions of the methods and Chapter 6 analysis of potential impacts on nontarget species. The measures proposed in the 1994 EIS and SEIS are consistent with and more detailed than mitigation measures established in plans for Double-crested Cormorant Management in North America (USDA 2003, USFWS 2003) and resident Canada Goose Management in North America (USFWS 2005, USDA 2007).

The proposed action is not expected to adversely impact state, regional, or national populations of target species. The SEIS includes sufficient monitoring and mitigations prevent adverse impacts from occurring. Analysis of impacts on nontarget species including saltmarsh habitat are addressed for each of the proposed Alternatives in Chapter 6 of the SEIS and are sufficient to address concerns regarding species of conservation concern. None of the alternatives would adversely impact nontarget species populations including threatened and endangered species on a state, regional or national level (See issues 27 above). Similarly, no significant impacts on habitat were identified for the proposed alternative. There was some potential for adverse impacts on the state population of Laughing Gulls, nontarget species and saltmarsh habitat from actions proposed in Alternative 5, but these actions have been excluded from the proposed alternative.

APHIS-WS may provide technical assistance on but does not conduct habitat management. Habitat management actions are implemented by the landowner/manager who is also responsible for compliance with applicable, local, state and federal regulations.

Based on the above information be believe the proposed mitigations, Standard Operating Procedures, and built in protective measures are sufficient to address potential adverse impacts and additional mitigation measures are not warranted.

**29. Situation would be resolved if pilots were better trained to deal with strikes.**

Pilot training is extensive and includes responses to a wide variety of emergency situations. The FAA reviews pilot training requirements and adjusts them as appropriate to address evolving hazards to aircraft from all sources. However, pilot training will not be sufficient to safely resolve all strike risks. It may not always be possible to detect and avoid birds or compensate for aircraft damage.

**30. APHIS-WS should not donate goose meat because there is a report that documents toxicants in meat from New York.** The report documented trace amounts of lead in geese which appears to be the result of non-government entities shooting geese with lead ammunition. APHIS-WS does not use lead ammunition to remove geese. Amounts were below hazardous levels, but as a precaution the New York State Department of Health advises that individuals who consume donated geese use the same

recommendations for waterfowl consumption that are already in place for waterfowl taken by hunters.

**31. Airport should work with city on planning projects which may impact airport safety to discourage establishment of trash transfer facility.** APHIS-WS and the PANYNJ advise the city relative to bird hazards to aircraft and have provided input on the proposed transfer station. The NYC Department of Environmental Protection and NYC Department of Sanitation are members of the JFK Bird Hazard Task Force. Transfer facilities are not habitats which are attractive to resident Canada Geese. Depending on the design and management of the site, aircraft risks associated with trash handling facilities are more likely to involve gulls and other scavenging birds and species which may be attracted to rodents at the site. The trash transfer station is outside the 7-mile radius of JFK and is more of an issue for LaGuardia International Airport than JFK.

**32. The proposed action is an ongoing program.** Need for off-airport management actions will be assessed and planned based on information from the hazard monitoring program for JFK, monitoring of the efficacy and impacts of the bird hazard management plan and input from the JFK bird hazard task force and off-airport landowners/managers.

**33. Goal to reduce number of birds shot on airport is inappropriate because there is no link between birds shot and reduced strikes.** The goal of an effective hazard management program is to recognize hazards and prevent strikes, not to wait until strikes occur to initiate management actions. Shooting is generally used only when there is a species which is not responsive to nonlethal methods such as harassment and when there is an imminent threat to aircraft. Both situations are indicators of elevated risk to aircraft.

**34. There is no evidence that off-airport DCCO colonies are part of problem. Data from Swinburne and South Brother Island colonies show birds rarely if ever go near airports. More data is needed before off-airport action is taken to manage cormorants.** Analysis in the SEIS limits off-airport management of cormorants to areas within the 5-mile radius of the airport. Both colonies discussed by commenter are outside the 5-mile radius of JFK and are not under consideration as a hazard to aircraft using JFK. See also SEIS Appendix H Responses 30 and 31.

**35. No species of conservation concern should be targeted for lethal control or other control that will limit their local or regional population or population viability without further review.** Review in SEIS indicates that the proposed action will not limit populations of Species of Conservation Concern. Ongoing monitoring and review of actions by NYSDEC and USFWS will help to ensure that adverse impacts do not occur.

**36. There must be certifiably correct statistics on the number of geese in the NYC metro area before removals can be conducted. Estimates are not sufficient.** The system of population estimates used to assess the number of resident Canada Geese are the same estimate that are used by natural resource agencies nation-wide to manage waterfowl populations. More detailed and site specific information on birds in the area around JFK are collected each year to guide local management decisions.

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