DECISION

SUPPLEMENT TO THE ENVIRONMENTAL ASSESSMENT: STATEWIDE WILDLIFE DAMAGE MANAGEMENT AT AIRPORTS IN MASSACHUSETTS

I. INTRODUCTION

The United States Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), Wildlife Services (WS) program prepared an Environmental Assessment (EA) to analyze the potential environmental and social impacts to the quality of the human environment from the implementation of a management program to address mammalian and avian threats to aviation safety, damage to aircraft and airport property, and threats to human health, safety, and life at airports in Massachusetts (USDA 2002). The EA documents the need to reduce aircraft strike risks at airports and assesses potential impacts on the human environment of four alternatives to address that need.

The EA analyzes the effects of WS' activities to reduce threats to property and human safety at airports and surrounding areas in the Commonwealth associated with bird species and mammal species. Bird species specifically addressed in the EA include great blue heron (*Ardea herodias*), great egret (*Ardea alba*), snowy egret (*Egretta thula*), little blue heron (*Egretta caerulea*), cattle egret (*Bubulcus ibis*), green heron (*Butorides virescens*), black-crowned night heron (*Nycticorax nycticorax*), yellow-crowned night heron (*Nyctanassa violacea*), turkey vulture (*Cathartes aura*), Canada goose (*Branta canadensis*), snow goose (*Chen caerulescens*), mute swan (*Cygnus olor*), mallard (*Anas platyrhynchos*), other ducks (Family Anatidae, subfamily Anatinae), osprey (*Pandion haliaetus*), northern harrier (*Circus cyaneus*), Swainson's hawk (*Buteo swainsoni*), red-tailed hawk (*Buteo jamaicensis*), rough-legged hawk (*Bueto lagopus*), American kestrel (*Falco sparverius*), ring-necked pheasant (*Phasianus colchicus*), ruffed grouse (*Bonasa umbellus*), eastern wild turkey (*Meleagris gallopavo*), Northern bobwhite (*Colinus virginianus*), killdeer (*Charadrius vociferus*), semipalmated sandpiper (*Calidris pusilla*), upland sandpiper (*Bartramia longicaude*), common snipe (*Capella gallinago*), American woodcock (*Philohela minor*), gulls (Family Laridae, subfamily Larinae), terns (Family Laridae, subfamily Sterninae), rock pigeon (*Columba livia*), mourning dove (*Zenaida macroura*), monk parakeet (*Myiopsitta monachus*), great horned owl (*Bubo virginianus*), barred owl (*Strix varia*), snowy owl (*Nyctea scandiaca*), short-eared owl (*Asio flammueus*), chimney swift (*Chaetura pelagica*), belted kingfisher (*Ceryle alcyon*), downy woodpecker (*Picoides pubescens*), hairy woodpecker (*Picoides villosus*), Northern flicker (*Colaptes auratus*), blue jay (*Cyabicutta crustata*), American crow (*Corvus brachyrhnchos*), horned lark (*Eremophila alpestris*), tree swallow (*Iridoprocne bicolor*), cliff swallow (*Petrochelidon pyrrhonota*), barn swallow (*Hirundo rustica*), Eastern bluebird (*Sialia sialis*), European starling (*Sturnus vugaris*), snow bunting (*Plectrophenax nivalis*), northern cardinal (*Cardinalis cardinalis*), red-winged blackbird (*Agelaius phoeniceus*), Eastern meadowlark (*Sturnella magna*), common grackle (*Quiscalus quiscula*), brown-headed cowbird (*Molothrus ater*), purple finch (*Carpodacus purpureus*), house finch (*Carpodacus mexicanus*), and house sparrow (*Passer domesticus*). In addition to those avian species specifically addressed, WS could also address threats associated with other avian species at airports; however, the number of individuals addressed would be low and strikes risks associated with those species at airports occur infrequently.

Mammal species specifically addressed in the EA include white-tailed deer (*Odocoileus virginianus*), moose (*Alces alces*), Virginia opossum (*Didelphis virginianus*), black bear (*Ursus americanus*), coyote (*Canis latrans*), red fox (*Vulpes fulva*), gray fox (*Urocyon cinereoargenteus*), raccoon (*Procyon lotor*), bobcat (*Lynx rufus*), feral cat (*Felix* sp.), striped skunk (*Mephitis mephitis*), fisher (*Martes pennanti*), short-tailed weasel (*Mustela erminea*), long-tailed weasel (*Mustela frenata*), mink (*Mustela vison*), river otter (*Lutra canadensis*), beaver (*Castor canadensis*), muskrat (*Ondatra zibethica*), woodchuck (*Marmota monax*), Eastern chipmunk (*Tamias striatus*), Eastern gray squirrel (*Sciurus carolinensis*), red squirrel

(*Tamiasciurus hudsonicus*), Southern flying squirrel (*Glaucomys volans*), Northern flying squirrel (*Glaucomys sabrinus*), deer mouse (*Peromyscus maniculatus*) white-footed mouse (*Peromyscus leucopus*), boreal red-backed vole (*Clethrionomys gapperi*), meadow vole (*Microtus pennsylvanicus*), pine vole (*Pitymys pinetorum*), Norway rat (*Rattus norvegicus*), black rat (*Rattus rattus*), house mouse (*Mus musculus*), meadow jumping mouse (*Zapus hudsonius*), woodland jumping mouse (*Napaeozapus insignis*), porcupine (*Erethizon dorsatum*), European hare (*Lepus europaeus*), snowshoe hare (*Lepus americanus*), blacktail jackrabbit (*Lepus californicus*), Eastern cottontail (*Sylvilagus floridanus*), New England cottontail (*Sylvilagus transitionalis*), shrews (*Sorex* sp.), short-tailed shrew (*Blarina brevicauda*), starnose mole (*Condylura cristata*), Eastern mole (*Scalopus aquaticus*), myotis bats (*Myotis* sp.), silver-haired bat (*Lasionycteris noctivagans*), Eastern pipistrel (*Pipistrellus subflavus*), big brown bat (*Eptesicus fuscus*), red bat (*Lasiurus cinereus*), and big brown bat (*Eptesicus fuscus*). In addition to those mammalian species specifically addressed, WS could also address threats associated with other mammal species; however, the number of individuals addressed would be low and strikes risks associated with those species at airports occur infrequently.

After consideration of the analysis contained in the EA and review of public comments, a Decision and Finding of No Significant Impact (FONSI) for the EA was issued on May 17, 2002. The Decision and FONSI selected the proposed action alternative which implemented an integrated damage management program using multiple methods to adequately address the need to reduce threats of wildlife strikes at airports.

II. PURPOSE

The supplement to the EA examines potential environmental impacts of WS' program as it relates to: 1) conducting disease surveillance and monitoring in wildlife populations, 2) new information that has become available from public comments, research findings, and data gathering since the issuance of the Decision and Finding of No Significant Impact (FONSI) in 2002, 3) the analyses of WS' wildlife damage management activities at airports in Massachusetts since the Decision/FONSI was issued in 2002 to ensure program activities have been within the impact parameters analyzed in the EA, and 4) includes the United States Fish and Wildlife Service (USFWS) as a cooperating agency on the EA and the supplement to the EA for the purpose of issuing depredation permits associated with those bird species addressed in the EA and the supplement to the EA. This new Decision is based on the analyses in the EA, the 2002 Decision/FONSI, and the supplement to the EA.

III. NEED FOR ACTION

The need for action is based on a need to reduce threats associated with aircraft striking wildlife at airports in the Commonwealth. Aircraft striking wildlife can cause damage to the aircraft which can lead to costly repairs. In addition, wildlife strikes can threaten human safety if strikes cause catastrophic damage to the aircraft leading to crashes. The need for action to manage strike hazards remains as addressed in the EA and remains applicable to the supplement to the EA. WS continues to receive requests for both operational assistance and technical assistance to manage wildlife strike risks from airport authorities.

IV. CURRENT AND PROJECTED WORK

WS has and continues to prepare Wildlife Hazard Management Plans that document the strategy for addressing risks of aircraft strikes associated with wildlife identified during Wildlife Hazard Assessments conducted at an airport. Wildlife Hazard Assessments are comprehensive surveys conducted at airports to assess and identify aircraft strike risks associated with wildlife. WS conducts operational management projects at Untied States Coast Guard and Air National Guard facilities within the Commonwealth.

Additional operational control projects are conducted as requested at other airports throughout the Commonwealth. Additional Wildlife Hazard Assessments are currently anticipated for certificated airports in Massachusetts within the next five years. Additional operational control projects may be conducted at or adjacent to aviation facilities if assistance is requested.

V. RELATIONSHIP TO OTHER ENVIRONMENTAL DOCUMENTS

The relationships of the EA and the supplement to other documents that address wildlife damage management were also discussed in the EA and the supplement. WS' programmatic Final Environmental Impact Statement (FEIS) contains detailed discussions of potential impacts to the human environment from wildlife damage management methods used by WS (USDA 1997). Pertinent information available in the FEIS was incorporated by reference into the EA and the supplement to the EA. Since the completion of the EA, the USFWS has also developed a resident Canada goose management FEIS (USFWS 2005), a light goose management FEIS (USFWS 2007), a double-crested cormorant FEIS (USFWS 2003), an EA that evaluated extending the cormorant depredation orders established in the double-crested cormorant FEIS (USFWS 2009). WS has also developed an EA to evaluate rock pigeon, European starling, and house sparrow damage in the Commonwealth (USDA 2007), an EA that evaluated reducing gull damage in the Commonwealth (USDA 2010), and an EA that addressed management of predation losses to threatened and endangered species populations in the Commonwealth of Massachusetts (USDA 2011*a*). An EA that evaluates reducing Canada goose damage in the Commonwealth is awaiting issuance of a final decision (USDA 2011*b*).

VI. OBJECTIVES FOR WILDLIFE DAMAGE MANAGEMENT AT AIRPORTS

The three objectives identified in the EA for wildlife damage management conducted by WS at airports in the Commonwealth were (1) to reduce damaging wildlife strikes to less than five strikes per year per airport, (2) reduce and maintain wildlife use in hangers to less than $1,000 dollars in damage per year per airport, and (3) to maintain the runways and airfields to no down time caused by wildlife.

Based on a review of information in the supplement to the EA, WS has achieved those objectives established in the EA while implementing the proposed action alternative except in FY 2004 and FY 2005 when damaging strikes at one airport exceeded the five strikes per year per airport objective. Nine damaging strikes occurred in FY 2004 and eight strikes occurred in FY 2005 at the airport. However, WS continued to work with the airport to address wildlife strike hazards. The number of damaging strikes at the airport from FY 2006 through FY 2009 has been below the strike objective established in the EA.

VII. DECISIONS TO BE MADE

Based on the scope of the EA and the supplement, the decisions to be made are: 1) should WS continue to conduct wildlife damage management to alleviate damage and threats to property and human safety at airports in the Commonwealth, 2) should WS conduct disease surveillance and monitoring in the wildlife population when requested by the Massachusetts Division of Fisheries and Wildlife (MDFW), the USFWS, and other agencies, 3) should WS continue to implement an integrated wildlife damage management strategy, including technical assistance and direct operational assistance, to meet the need for wildlife damage management at airports in the Commonwealth, 4) if not, should WS attempt to implement one of the alternatives to an integrated damage management strategy as described in the EA, and 5) would continuing the proposed action result in adverse impacts to the environment requiring the preparation of an Environmental Impact Statement (EIS) based on activities conducted since the completion of the EA and/or based on new information available.

VIII. SCOPE OF ANALYSIS

The EA evaluates reducing wildlife strike risks at airports in the Commonwealth under four alternatives wherever such management is requested by a cooperator. The analyses in the EA are intended to apply to any action taken by WS to alleviate wildlife strike risks that may occur at any airport and at any time within the Commonwealth. The EA emphasizes major issues as they relate to specific areas; however, the issues addressed apply wherever strikes risks and the resulting management activities would occur. The standard WS Decision Model (Slate et al. 1992, USDA 1997, USDA 2002) would be the site-specific procedure for individual actions conducted by WS. The supplement adds to the analysis in the EA and the 2002 Decision/FONSI. The information and analyses in the EA remain valid unless otherwise noted in the supplement.

Management of migratory birds is the responsibility of the USFWS under the Migratory Bird Treaty Act (MBTA). The MDFW, under the Massachusetts Department of Fish and Game (MDFG), has shared responsibility for managing migratory birds within the Commonwealth. Although the MDFW cannot authorize take of migratory birds in excess of what is authorized by the USFWS, the MDFW can and often does provide additional limits by prohibiting or restricting take below the level authorized by the USFWS. As the authorities for the management of bird populations in the Commonwealth, the USFWS and the MDFW were involved in the development of the supplement to the EA. The MDFW has management authority over mammals, non-migratory birds, and reptiles and establishes hunting and trapping seasons. Additionally, the MDFW can issue depredation permits to control species under their management authority that are posing threats to aviation safety such as white-tailed deer, coyotes, red fox, and wild turkeys. Moose may not be hunted in Massachusetts but special authorization to take moose that have accessed airfields may be provided by the MDFW or the Massachusetts Environmental Police if moose have accessed an airfield and if non-lethal removal is not a viable option.

The supplement to the EA along with the EA and the 2002 Decision/FONSI were made available for public review and comment through the publication of a legal notice announcing a minimum of a 30-day comment period. The legal notice was published in the *Boston Herald* and posted on the APHIS website located at http://www.aphis.usda.gov/wildlife_damage/nepa.shtml according to WS' public notification requirements (72 FR 13237-13238). A letter of availability was directly mailed to agencies, organizations, and individuals with probable interest in wildlife damage management in the Commonwealth. No comments were received during the public comment period for the supplement to the EA.

IX. AUTHORITY AND COMPLIANCE

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

The supplement to the EA along with this Decision ensures WS' actions comply with the National Environmental Policy Act (NEPA), with the Council on Environmental Quality (40 CFR 1500), and with APHIS' implementing regulations for the NEPA (7 CFR 372). All activities conducted pursuant to the proposed action alternative from FY 2002 through FY 2009 by WS, including disposal requirements,

were conducted consistent with federal, Commonwealth, and local laws, regulations, and policies, including WS' Directives.

The supplement to the EA addresses those laws and regulations not directly addressed in the EA, including several depredation orders allowing for the take of Canada geese, cormorants, and blackbirds that have been established by the USFWS pursuant to the MBTA. Although those laws and regulations were not directly addressed in the EA, WS has been and would continue to be in compliance with those laws and regulations.

X. AFFECTED ENVIRONMENT

There are currently 246 aviation facilities registered with the Federal Aviation Administration in Massachusetts which includes 100 airports, 145 heliports, and one balloon port. Aviation facilities are often secured areas with chain-link security fencing. Sometimes deer, and other mammals, gain entrance into those secured facilities where there is adequate cover and food, and they live there for all or part of the year. Because many mammal species are common throughout the Commonwealth, it is possible for those species to be present at nearly any air facility. WS could be requested to remove mammals from airport properties at any of the airports or airbases in the Commonwealth where those mammals pose a threat to aircraft and passenger safety. Because those mammal species confined inside a perimeter fence on airport property originated from free-ranging populations outside the perimeter fence, those mammal species confined inside the security fencing on airport property would not be considered a unique population.

Avian species are highly mobile and can pose threats of aircraft strikes if present on, over, or near airport property. Birds feeding, loafing, roosting, and nesting on and/or near airport properties can pose threats to aircraft. The gregarious behavior of many of the bird species addressed in the EA, especially during the migration periods, can pose serious strike risks. WS continues to work with airports to identify aspects of airport property that could be attractive to avian species and recommends modification of those aspects to discourage the presence of avian species.

XI. ISSUES ANALYZED IN DETAIL

Issues related to wildlife damage management were initially identified and defined during the development of WS' programmatic FEIS (USDA 1997). Issues related to reducing wildlife strike risks at airports in Massachusetts were defined and preliminary alternatives were identified through consultation with the USFWS and the MDFW. The EA was also made available to the public for review and comment through notices published in local media and through direct notification of interested parties.

Chapter 2 of the EA describes in detail the issues considered and evaluated in the EA (USDA 2002). The following issues were identified as important to the scope of the analysis (40 CFR 1508.25) with each alternative evaluated in the EA relative to the impacts on the major issues:

- Issue 1 - Effects on target wildlife species populations
- Issue 2 - Effects on non-target species' populations, including T&E species
- Issue 3 - Economic losses to property
- Issue 4 - Effects on human health and safety
- Issue 5 - Effects on aesthetics
- Issue 6 - Humaneness and animal welfare concerns of lethal methods used by WS

Those issues identified during the development of the EA were evaluated in the supplement by each issue as those issues related to WS' activities conducted since the original Decision was signed in 2002. Each of those issues was also evaluated as those issues relate to conducting the proposed action alternative as described in the supplement to the EA.

XII. ISSUES CONSIDERED BUT NOT IN DETAIL WITH RATIONALE

In addition to those issues analyzed in detail, several additional issues were identified during the development of the EA but were not considered in detail. The rationale for the decision not to analyze those issues in detail is discussed in the EA. WS has reviewed the issues not considered in detail as described in the EA and has determined that the analysis provided in the EA has not changed and is still appropriate.

XIII. ALTERNATIVES ANALYZED IN DETAIL

Four alternatives were developed to respond to the issues identified in Chapter 2 of the EA and to address the need for action discussed in Chapter 1 (USDA 2002). Chapter 4 in the EA analyzes the environmental consequences of each alternative in comparison to determine the extent of actual or potential impacts on the issues. Alternatives analyzed in detail include:

- Alternative 1: Continue the Current Federal Wildlife Damage Management Program/Integrated Wildlife Damage Manage (No Action/Proposed Action)
- Alternative 2: Non-lethal Wildlife Damage Management Only by WS
- Alternative 3: Lethal Wildlife Damage Management Only by WS
- Alternative 4: No Federal WS Wildlife Damage Management

The EA contains a detailed description and discussion of the alternatives and the effects of the alternatives on the issues identified. Appendix B of the EA provides a description of the methods that could be used or recommended by WS under each of the alternatives. The supplement to the EA provides additional discussion of methods available for use since the completion of the EA.

XIV. ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DETAIL

Additional alternatives were also considered to address the issues but were not analyzed in detail with the rationale discussed in the EA (USDA 2002). WS has reviewed the alternatives analyzed but not in detail and determined the analyses in the EA are still appropriate for those alternatives considered.

XV. WILDLIFE DAMAGE MANAGEMENT METHODS

Appendix B of the EA provides a description of the methods that could be used or recommended by WS under each of the alternatives. Since the completion of the EA, trap monitors, Forward Looking Infrared (FLIR) devices, and night vision equipment have become available for use while conducting activities to reduce threats wildlife pose to aircraft from strikes. Those methods aid in the use of other methods or allow other methods to be applied more selectively and efficiently. In addition, the reproductive inhibitor containing nicarbazin has been registered for use in Massachusetts to manage local pigeon populations.

XVI. STANDARD OPERATING PROCEDURES

The WS program in Massachusetts uses many standard operating procedures and conducts work pursuant to WS' Directives. Standard operating procedures are discussed in detail in Chapter 5 of WS'

programmatic FEIS (USDA 1997) and in Chapter 3 of the EA (USDA 2002). Those standard operating procedures would continue to be incorporated into activities conducted by WS when addressing strike threats associated with wildlife at airports.

XVII. ENVIRONMENTAL CONSEQUENCES FOR ISSUES ANALYZED IN DETAIL

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

Based on the analyses in the EA, the 2002 Decision determined the need for action and the issues identified in the EA were best addressed by selecting Alternative 1 and the implementation of the selected alternative would not significantly affect the quality of the human environment (USDA 2002). Between FY 2002 and FY 2009, WS has implemented a program to reduce aircraft strike threats associated with wildlife which responds to requests for assistance using an adaptive integrated methods approach as described under Alternative 1 in the EA. The supplement to the EA evaluates the implementation of Alternative 1 from FY 2002 through FY 2009 to ensure individual and cumulative activities conducted pursuant to the alternative continue to be within the impact parameters evaluated in the EA based on current information and methods. Potential impacts of Alternatives 2, 3, and 4 on the human environment related to the major issues have not changed from those described in the EA.

The following resource values in Massachusetts are not expected to be significantly impacted by any of the alternatives based on the analyses in the EA and in the supplement to the EA: soils, geology, minerals, water quality/quantity, flood plains, wetlands, critical habitats (areas listed in T&E species recovery plans), visual resources, air quality, prime and unique farmlands, aquatic resources, timber, and range. The activities proposed in the alternatives would have a negligible effect on atmospheric conditions including the global climate. Meaningful direct or indirect emissions of greenhouse gases would not occur as a result of any of the alternatives. Those alternatives would meet the requirements of applicable laws, regulations, and Executive Orders, including the Clean Air Act and Executive Order 13514.

The following issues were analyzed in detail in the supplement as they relate to those activities conducted by WS under the selected alternative from FY 2002 through FY 2009:

Issue 1 - Effects on target wildlife species populations

Under the proposed action alternative (Alternative 1), WS would provide technical and direct damage assistance using methods described in Appendix B of the EA in an integrated approach in which all or a combination of methods may be employed to resolve a request for assistance. As addressed in the supplement, those methods that have become available since the completion of the EA could also be used as part of an integrated approach to reducing aircraft strike risks. Of primary concern is the magnitude of take on a species' population from the use of lethal methods.

Lethal methods are employed to remove an individual of a particular wildlife species or a group of individuals from a target species responsible for causing damage or the threat of damage and only after requests for such assistance are received by WS. The use of lethal methods would therefore result in local population reductions in the area where damage or threats were occurring. The number of individuals from a particular species removed from the population under the proposed action would be dependent on

the number of requests for assistance received, the number of individuals posing a strike threat, and the efficacy of methods employed.

With the exceptions of mourning doves and wild turkeys, total take of individual species to reduce strike risks at airports requesting WS' assistance did not exceed anticipated annual take evaluated in the EA during any year of the eight-year period. All take, including the take that exceeded the level evaluated in the EA, occurred within permitted take levels allowed by the USFWS and the MDFW.

The EA evaluated an annual take of up to 50 mourning doves and up to 50 wild turkeys in the Commonwealth to alleviate threats occurring at airports. In FY 2005 and FY 2008, WS exceeded the anticipated annual take of mourning doves at airports in Massachusetts by 41 and 18 individuals, respectively. The lethal take of 52 turkeys by WS in FY 2009 exceed the level evaluated in the EA by two individuals. This was due to WS' observation of hazards associated with doves and turkeys during operational management projects. Although the annual take levels of those two species exceeded the take evaluated in the EA during those years, the average annual take for those species over the eight year period never exceeded the anticipated annual take evaluated in the EA. To ensure WS' take and take by other entities did not adversely affect those species' populations, further population impact analyses occurred for doves and turkeys in the supplement to the EA.

Doves and turkeys both maintain sufficient densities to allow for annual hunting seasons. Turkeys can be harvested annually in the Commonwealth during hunting seasons and although mourning doves cannot be harvested in Massachusetts, doves can be harvested in many other states with over 17.2 million doves harvested during the 2010 hunting season (Raftovich et al. 2011). Based on the analyses in the supplement to the EA, WS' take of doves and turkeys that exceeded the level evaluated in the EA, did not adversely affect the populations of those species in the Commonwealth. WS would continue to review the number of doves and turkeys lethally taken to alleviate damage in the Commonwealth. If the number of doves and turkeys continues to exceed the level of take evaluated in the EA, a supplemental assessment would occur to evaluate a higher level of anticipated annual take by WS to ensure cumulative take does not reach a magnitude where adverse effects would occur.

Based on those quantitative and qualitative parameters addressed in the EA and the supplement to the EA, the take levels addressed under the proposed action alternative (Alternative 1) would be considered of low magnitude when compared to population trend data, population estimates, and harvest data for individual species. WS' damage management activities were site specific, and although local populations of target wildlife species may have been reduced, there was no probable adverse impact on statewide, regional, or national populations of those species from WS' activities from FY 2002 through FY 2009. The potential impacts of program activities on wildlife species have not changed from those analyzed in the EA. All take occurred under a depredation permit or order issued by the USFWS and/or the MDFW, when applicable. Therefore, based on the analyses in the EA of the proposed action alternative and WS' activities being within the scope analyzed in the EA, except for the species stated, WS' activities have not had an adverse impact on wildlife populations in the Commonwealth. WS' take would only occur at levels authorized and only when permitted by the USFWS and/or the MDFW for those species for which a permit is required for take. The permitting of the take by the USFWS and/or the MDFW ensures that cumulative take levels occur within allowable levels to maintain populations and to meet population objectives.

Since the completion of the EA, trap monitors, FLIR devices, and night vision equipment have become available for use while reducing strike risks. Those methods aid in the use of other methods or allow other methods to be applied more selectively and efficiently. Since those methods are components of other methods, there would be no adverse effects on the target wildlife populations from the use of those methods. The sampling of wildlife for diseases would not adversely affect the populations of any of the

wildlife species addressed in the EA or the supplement to the EA and would not result in any take of wildlife that would not have already occurred in the absence of disease sampling.

WS' use or recommendation of nicarbazin formulated under the trade name OvoControl® P would not adversely affect pigeon populations in Massachusetts since the effects of nicarbazin are only temporary if birds are not fed an appropriate dose of nicarbazin daily. Any reduction in the population could be fully reversed if treated bait is no longer supplied and other conditions (*e.g.*, food, disease) are favorable for population growth. In addition, any reduction in local pigeon populations could be viewed as benefitting other native wildlife since pigeons can compete with native bird species for food and shelter.

Issue 2 - Effects on non-target species' populations, including T&E species

While every precaution is taken to safeguard against taking non-targets during operational use of methods and techniques for resolving strike risks, the use of such methods can result in the incidental take of unintended species. Those occurrences are minimal and should not affect the overall populations of any species. Since FY 2002, no non-target species were lethally taken by WS during activities to reduce strike risks at airports in Massachusetts. WS' take of non-targets is expected to continue to be extremely low to non-existent. WS would continue to monitor the take of non-target species to ensure program activities or methodologies used in damage management activities do not adversely impact non-targets.

No T&E species were taken or adversely affected by WS' actions. A review of T&E species listed by the USFWS, the National Marine Fisheries Service, and the MDFW showed that no additional listing of T&E species has occurred since the completion of the EA in 2002. WS' determination that wildlife damage management activities at and around airports would have no effect on those species addressed in the EA that were not addressed in the Biological Opinion issued by the USFWS on WS' programmatic activities (USDA 1997) is still valid and appropriate for the proposed action, as supplemented. A review of those species listed in Massachusetts and discussed in the EA that were addressed in the Biological Opinion issued by the USFWS indicates that WS' wildlife damage management activities at and around airports would continue to have no adverse effects on those species addressed in the Biological Opinion. In addition, WS determined the proposed action alternative would have no effect on those T&E species listed in the Commonwealth that were not addressed in the Biological Opinion, including the use of alpha-chloralose. Program activities and their potential impacts on other wildlife species, including T&E species have not changed from those analyzed in the EA. Impacts of the program on this issue are expected to remain insignificant. The use of trap monitors, FLIR devices, night vision, and nicarbazin is expected to have no effect on any T&E species listed in the Commonwealth based on the use patterns of those methods.

Issue 3 - Economic losses to property

One concern expressed is the selected alternative must be able to reduce economic losses associated with aircraft striking wildlife at airports. Aircraft striking wildlife can cause damage to aircraft requiring extensive repairs and aircraft downtime. In addition, wildlife strikes can threaten human safety if the damage to aircraft caused by the strike results in catastrophic failure of the aircraft leading to a crash.

The EA identified three objectives that the selected alternative must be able to achieve to be successful. Those objectives were (1) to reduce damaging wildlife strikes to less than five strikes per year per airport, (2) reduce and maintain wildlife use in hangers to less than $1,000 dollars in damage per year per airport, and (3) to maintain the runways and airfields to no down time caused by wildlife.

As was addressed previously, the integrated approach to addressing strike threats under the proposed action alternative (Alternative 1) has achieved those objective identified during the development of the

EA from FY 2002 through FY 2009. The only exceptions occurred in FY 2004 and FY 2005 when the number of damaging strikes occurring at one airport where WS provided assistance exceeded five strikes per year. However, WS continued to work with the airport to identify wildlife hazards and the number of damaging strikes reported annually from FY 2006 through FY 2009 was reduced below five strikes per year.

Those methods available since the EA was developed would aid in the use of other methods and would allow those methods to be employed more efficiently and effectively. Therefore, the ability to reduce risks of property damage would be enhanced further by the use of those methods. In addition, the use of nicarbazin would provide additional methods for addressing threats associated with pigeons at airports; thereby, enhancing the ability of WS to reduce economic damage and to meet the established objectives.

Issue 4 - Effects on Human Health and Safety

WS' implementation of the proposed action from FY 2002 through FY 2009 did not result in any adverse impacts to human safety. The potential impacts of program activities on human health and safety have not changed from those analyzed in the EA. Based on the analyses in the EA and WS' programmatic FEIS, when WS' activities are conducted according to WS' directives and SOPs, according to federal, Commonwealth, and local laws, and to label requirements, those activities pose minimal risks to human safety (USDA 1997, USDA 2002).

Night vision equipment, FLIR equipment, and trap monitors are employed as components of other methods that when employed, allow those methods to be employed more efficiently and effectively. In addition, night vision equipment and FLIR equipment are most often employed with the use of a firearm which allows activities to be conducted at night when human activity tends to be lowest; therefore, the use of night vision equipment and FLIR equipment would not adversely affect human safety but potentially could further reduce risks. Trap monitors are attached directly to traps and would not pose a threat to human safety. Impacts of the proposed action alternative on this issue are expected to remain insignificant.

Based on the evaluation in the supplement to the EA, the potential use of nicarbazin to address threats associated with pigeons would not pose human safety risks if the label for the product is followed and based on the use pattern of the product.

Issue 5 - Effects on aesthetics

Wildlife often provides aesthetic enjoyment to many people in the Commonwealth through observations, photographing, and knowing they exist as part of the natural environment. The EA concluded the effects on aesthetics would be variable depending on the damage situation, stakeholders' values towards wildlife, and their compassion for those persons who are experiencing economic losses associated with wildlife strikes. Program activities and their potential impacts on aesthetics have not changed from those analyzed in the EA. Activities conducted by WS from FY 2002 through FY 2009 to alleviate threats posed by wildlife occurred at the request of cooperators seeking assistance with managing strike risks. WS' take has been minimal with the magnitude of take being low. WS' take of wildlife in Massachusetts has not adversely affected the aesthetic value of those species based on the limited take that has occurred.

Night vision and FLIR equipment allow WS to address wildlife at night or during low light conditions when those species may be most active which allows WS to more specifically identify those wildlife species posing a threat of damage. The use patterns of those additional methods addressed in the supplement to the EA would result in the methods being employed more effectively and efficiently. However, those methods would not enhance the success rate of methods to a level where adverse effects

would occur to the aesthetic value of wildlife. Wildlife removed using other methods with the aid of night vision equipment, FLIR equipment, or trap monitors would not result in an increase in the number of individuals removed since those individuals would likely have been removed without the aid of those additional methods or other methods would have been employed to remove those target wildlife.

The aesthetic value of a local pigeon population would likely lessen from a reduction in a population that would result from the use of nicarbazin. As previously mentioned, the rate of population decline would be variable from the use of nicarbazin since effectiveness of the product varies. However, the rate of decline in a localized pigeon population is likely to occur at a gradual rate compared to other lethal removal programs that target localized pigeon populations. Overall, the aesthetic value of a localized pigeon population would be similar to the use of other lethal methods discussed in the EA since a population decline would occur.

Issue 6 - Humaneness and animal welfare concerns of lethal methods used by WS

The issue of humaneness was also analyzed in detail in relationship to the alternatives in the EA. Since many methods addressed in Appendix B of the EA are available under all the alternatives, the issue of method humaneness would be similar for those methods across all the alternatives. WS' personnel are experienced and professional in their use of management methods. When employing methods to reduce strike risks, methods are applied as humanely as possible. Methods used in activities since the completion of the EA and their potential impacts on humaneness and animal welfare have not changed from those analyzed in the EA.

Trap monitoring devices would be employed when applicable that indicate when a trap had been activated. Trap monitoring devices would allow personnel to prioritize trap checks and decrease the amount of time required to check traps which decreases the amount of time captured wildlife are restrained. By reducing the amount of time wildlife are restrained, pain and stress can be minimized which would reduce the distress of captured wildlife. Therefore, the use of trap monitoring devices proposed under the supplement would likely result in traps being used more humanely. Additionally, the use of FLIR and night vision equipment to remove wildlife may improve the perceived humanness of killing wildlife using firearms since those components would aid in identifying target species and allowing for more accurate shot placements when using firearms. The use of nicarbazin would generally be considered as a humane method of managing local populations of pigeons. Nicarbazin reduces the hatchability of eggs laid by pigeons and appears to have no adverse effects on pigeons consuming bait daily and does not appear to adversely affect those chicks that do hatch from parents fed nicarbazin (Avery et al. 2006, Avery et al. 2008).

XVIII. CUMULATIVE IMPACTS

No cumulative adverse effects have been identified as a result of program activities implemented over time based on analyses contained in the EA, from monitoring reports, or from analyses contained in the supplement. WS continues to implement an integrated damage management program that adapts to the situation involving wildlife strike risks and the species associated with the strike risk using the WS Decision Model. WS only targets wildlife posing a strike risk and only after a request for assistance is received.

WS' take of wildlife in the Commonwealth from FY 2002 through FY 2009 was of a low magnitude when compared to population information, trend information, and harvest data. The USFWS and the MDFW considers all known take when determining population objectives for wildlife and can adjust the number that can be taken during the regulated hunting/trappings seasons and the number of wildlife taken for damage management purposes to achieve the population objectives. The lethal take of wildlife by WS

would occur at the discretion of the USFWS and the MDFW for those species where a permit is required for take. Any wildlife population declines or increases would be the collective objective for those species' populations established by the USFWS and/or the MDFW through the regulation of take. Therefore, the cumulative take of wildlife annually or over time by WS would occur at the desire of the USFWS and/or the MDFW as part of management objectives for wildlife in the Commonwealth.

The methods described in Appendix B of the EA and those discussed in the supplement all have a high level of selectivity and can be employed using standard operating procedures to ensure minimal impacts to non-targets species. Based on the methods available to resolve strike risks, WS does not anticipate the number of non-targets taken to reach a magnitude where declines in those species' populations would occur. No non-targets were lethally taken or adversely affected from WS' implementation of the proposed action alternative from FY 2002 through FY 2009. Based on the available information, the take of non-target species from the continued implementation of the proposed action alternative is not likely to result in an increased take of non-target species. Therefore, take of non-targets would not cumulatively impact the populations of non-target species.

WS has received no reports or documented any adverse effects to human safety from WS' implementation of the proposed action alternative from FY 2002 through FY 2009. Personnel employing methods would continue to be trained to be proficient in the use of those methods to ensure the safety of the applicator and to the public. Based on the use patterns of methods, those methods would not cumulatively impact human safety. WS employs methods as humanely as possible by applying measures to minimize pain and that allow wildlife captured to be addressed in a timely manner to minimize distress. Through the establishment of WS' Directives and standard operating procedures that guide WS in the use of methods to address wildlife strike risks, the cumulative impacts on the issue of method humaneness are minimal.

Population objectives for wildlife are established and enforced by the USFWS and/or the MDFW through the issuance of permits for take and the regulating of take during hunting and trapping seasons after consideration of other known mortality factors. Therefore, WS has no direct impact on the status of those species' populations since all take by WS occurs at the discretion of the USFWS and/or the MDFW. Since those persons seeking assistance could remove wildlife from areas where strike risks are occurring when authorized by the USFWS and/or the MDFW, WS' involvement would have no effect on the aesthetic value of those species in the area where risks are occurring. When the take of those species has been authorized by the USFWS and/or the MDFW to an airport or other entity that is experiencing strike risks, the removal of those species under that authority would likely occur whether WS was involved with taking those individuals or not.

XIX. DECISION AND RATIONALE

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

Decision

The information and analyses in the supplement to the EA have been carefully reviewed, including the analyses in the EA, the comments received during the public involvement processes, and the 2002 Decision/FONSI. After review and consideration, the proposed action alternative, based on the analyses in the supplement to the EA, has been determined to be environmentally acceptable by addressing the issues and needs while balancing the environmental concerns of management agencies, landowners, advocacy groups, and the public. The analyses in the EA and the supplement to the EA adequately

address the identified issues which reasonably confirms that no significant impact, individually or cumulatively, to wildlife populations or to the quality of the human environment are likely to occur from the proposed activities addressed in the EA or the supplement to the EA. Therefore, the analysis in the EA, as supplemented, remains valid and does not warrant the completion of an EIS.

Based on analyses in the EA and the supplement to the EA, the issues identified are best addressed by continuing the proposed action alternative, as supplemented, and applying the associated standard operating procedures discussed in Chapter 3 of the EA. The proposed action, as addressed in the supplement, successfully addresses (1) aircraft strike risks using a combination of the most effective methods and does not adversely impact the environment, property, human safety, and/or non-target species, including T&E species; (2) it offers the greatest chance of maximizing effectiveness and benefits to property owners and managers while minimizing cumulative impacts on the quality of the human environment that might result from the program's effect on target and non-target species populations; (3) it presents the greatest chance of maximizing net benefits while minimizing adverse impacts to public health and safety; and (4) it offers a balanced approach to the issues of humaneness and aesthetics when all facets of those issues are considered. Further analysis would be triggered if changes occur that broaden the scope of wildlife damage management activities, that affect the natural or human environment, or from the issuance of new environmental regulations.

Finding Of No Significant Impact

Based on the analyses provided in the EA, the 2002 Decision/FONSI, the annual monitoring reports, and the supplement, there continues to be no indications that WS' activities have had or would have a significant impact, individually or cumulatively, on the quality of the human environment. I agree with this conclusion and therefore, find that an EIS should not be prepared. This determination is based on the following factors:

1. Wildlife damage management as conducted by WS in Massachusetts would not be regional or national in scope.

2. Based on the analyses in the EA and in the supplement, the proposed action would pose minimal risk to public health and safety. Risks to the public from methods available to address strike risks at airports were determined to be low in a formal risk assessment (USDA 1997).

3. The proposed action, as supplemented, would continue to have no significant impact on unique characteristics such as park lands, prime farm lands, wetlands, wild and scenic areas, or ecologically critical areas. WS' standard operating procedures and adherence to laws and regulations that govern impacts on elements of the human environment would assure that significant adverse impacts are avoided.

4. The effects on the quality of the human environment are not highly controversial. Although there may be opposition to killing wildlife, this action is not controversial in relation to size, nature, or effects. Based on consultations with the USFWS and the MDFW, the proposed action, as supplemented, is not likely to cause a controversial disagreement among the appropriate resource professionals.

5. Based on the analysis documented in the EA, the supplement to the EA, and the accompanying administrative file, the effects of the proposed damage management program on the human environment would not be significant. The effects of the proposed activities are not highly uncertain and do not involve unique or unknown risks.

6. The proposed action, as supplemented, does not establish a precedent for future actions. This action would not set a precedent for future actions that may be implemented or planned within the Commonwealth.

7. No significant cumulative effects were identified in the analyses conducted in the EA and the supplement.

8. The proposed activities would not affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places, nor would they likely cause any loss or destruction of significant scientific, cultural, or historical resources.

9. Based on a review of activities conducted under the proposed action alternative, the determination made in the EA remains appropriate to those species listed as threatened and endangered at the time the EA was completed. The supplement to the EA determined that activities conducted pursuant to the EA, as supplemented, would continue to have no effect on those species listed since the completion of the EA.

10. The proposed action has been and would continue to be in compliance with all applicable federal, Commonwealth, and local laws.

Rationale

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

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

2/22/12
Date

XX. LITERATURE CITED

Avery, M. L., K. L. Keacher, and E. A. Tillman. 2006. Development of nicarbazin bait for managing rock pigeon populations. Pp 116-120 *in* R.M. Timm and J. M. O'Brien, eds. Proceedings of the 22nd Vertebrate Pest Conference. University of California-Davis, Davis California 95616.

Avery, M. L., K. L. Keacher, and E. A. Tillman. 2008. Nicarbazin bait reduces reproduction in pigeons (*Columba livia*). Wildlife Research 35:80-85.

Raftovich, R.V., K.A. Wilkins, S. S. Williams, H. L. Spriggs, and K. D. Richkus. 2011. Migratory bird hunting activity and harvest during the 2009 and 2010 hunting seasons. U.S. Fish and Wildlife Service, Laurel, Maryland.

Slate, D.A., R..Owens, G. Connolly, and G. Simmons. 1992. Decision making for wildlife management. Trans. North Am. Wildl. Nat. Resour. Conf. 57:51-62.

USDA. 1997. Animal Damage Control Program - Final Environmental Impact Statement – Revised October 1997. USDA/APHIS/WS-Operational Support Staff, 4700 River Road, Unit 87, Riverdale, Maryland 20737.

USDA. 2002. Environmental Assessment – Statewide wildlife damage management at airports in Massachusetts. USDA-APHIS-WS, 463 West Street, Amherst, Massachusetts 01002.

USDA. 2007. Environmental Assessment – Reducing pigeon, starling, and sparrow damage through an integrated wildlife damage management program in the Commonwealth of Massachusetts. USDA-APHIS-WS, 463 West Street, Amherst, Massachusetts 01002.

USDA. 2010. Environmental Assessment: Reducing gull damage in the Commonwealth of Massachusetts. USDA-APHIS-WS, 463 West Street, Amherst, Massachusetts 01002.

USDA. 2011*a*. Environmental Assessment: Management of predation losses to threatened and endangered species populations in the Commonwealth of Massachusetts. USDA-APHIS-WS, 463 West Street, Amherst, Massachusetts 01002.

USDA. 2011*b*. Environmental Assessment: Reducing Canada goose damage throughout the Commonwealth of Massachusetts (Pre-decisional draft). USDA-APHIS-WS, 463 West Street, Amherst, Massachusetts 01002.

USFWS. 2003. Final Environmental Impact Statement: Double-crested Cormorant Management. United States Fish and Wildlife Service, Division of Migratory Birds. Arlington, Virginia.

USFWS. 2005. Final Environmental Impact Statement: Resident Canada Goose Management. United States Fish and Wildlife Service, Division of Migratory Birds. Arlington, Virginia. http://www.fws.gov/migratorybirds/issues/cangeese/finaleis.htm.

USFWS. 2007. Final Environmental Impact Statement: Light goose management. United States Fish and Wildlife Service, Division of Migratory Birds. Arlington, Virginia.

USFWS. 2009. Environmental Assessment: Extended management of double-crested cormorants under 50 CFR 21.47 and 21.48. United States Fish and Wildlife Service, Division of Migratory Birds. Arlington, Virginia.