

ATTACHMENT A WORK PLAN

A. JUSTIFICATION AND OBJECTIVES

On January 15, 2009, US Airways Flight 1549 struck a flock of Canada geese approximately 4 miles from LaGuardia Airport, New York City which damaged both engines. The plane made an emergency landing in the Hudson River and all 155 passengers and crew survived. The \$60 million aircraft was destroyed. Over the past 10 years, there have been 78 reported Canada goose strikes with aircraft in New York. These strikes have caused more than \$2,231,864 in aircraft damage, excluding US Airways Flight 1549. In addition, in 1995 an Air France Concorde departing John F. Kennedy International Airport ingested Canada geese destroying 2 of the aircraft's 4 engines, causing more than \$7 million in estimated damage.

The State of New York has close to 250,000 resident Canada geese, which is more than three times the state's population goal of 85,000.¹ The Metropolitan New York region has an estimated 20,000 – 25,000 resident Canada geese, which is approximately five times the amount that most people would find socially acceptable (B. Swift, pers. comm.). The increasing abundance of these 8-10 pound flocking birds in urban and suburban landscapes has resulted in a significant aviation safety hazard for the flying public and military aircraft.

The Federal Aviation Administration advisory circular 150/5200-33B recommends a distance of 5 miles from the edge of any airport to the wildlife hazard attractant. The Federal Aviation Administration and Air Force have established a zero-tolerance policy for Canada geese on or near airports due to the high probability of aircraft damage and reduced public safety.

The population of resident Canada geese needs to be reduced in metropolitan New York City to protect aviation safety, water supplies from fecal contamination, public and private property from damage to turf and ornamental plantings, loss of land use due to excessive fecal droppings, and against unintended consequences of hazing programs. In addition, the population of Canada geese within 5 miles of John F. Kennedy International Airport and LaGuardia Airport should be eliminated to the extent reasonable.

Background

In North America there are many different classifications of Canada geese, but the principal distinction for management is whether geese are "migratory" (generally those that breed in northern Canada or Alaska) or "resident" (those that breed locally in the U.S. and southern Canada). Most migratory Canada geese nest north of the 48° N latitude in sub-Arctic Canada, and these populations likely spend very little time in the New York City area, as they pass through over a few weeks during spring and fall

migration. Resident Canada geese nest south of the 48° N latitude and are a product of releasing live bird collections and live decoys, and stocking of Canada geese by state agencies to establish huntable populations in rural areas (Atlantic Flyway Council 1999). These geese generally remain in the local area year-round, except when very severe winter weather forces the birds south to find open water or food

The first releases of geese that established the resident population occurred in New York in the early 1900s. In 1935, the federal government prohibited the use of captive Canada geese as decoys for hunting, and many of those semi-domesticated geese were released by live bird collectors and hunting clubs in Long Island Sound, Delaware Bay, and Chesapeake Bay. State wildlife agencies in the eastern U.S. relocated or stocked thousands of Canada geese from the 1950s to the 1980s, mostly in rural huntable areas.

Atlantic Flyway Resident Canada Goose Management Plan

Resident Canada geese have increased in numbers to an estimated 1.02 million birds living in the Atlantic Flyway in 2008. The Atlantic Flyway is comprised of 17 eastern states along the Atlantic Ocean. In response to the increasing number of resident Canada geese and escalating damage to public and private property, natural resources, and human health and safety, the U.S. Fish and Wildlife Service published a management plan for resident Canada geese, the "*Atlantic* Flyway Resident Canada Goose Management Plan". The purpose of the plan is to strike a balance between people who enjoy consumptive and non-consumptive uses of resident Canada geese, land owners and managers, and the public. This management plan supports National Environmental Policy Act compliance for federal actions related to resident Canada goose management. A Final Environmental Impact Statement for Resident Canada Goose Management was completed in 2006, and USDA, APHIS-WS and the U.S. Fish and Wildlife Services have issued their Records of Decision to implement the Environmental Impact Statement. The States, local governments, and individuals would be unable to implement actions to manage migratory Canada geese or receive permits to reduce their damage unless the federal agencies complied with the Act.

The goal of the Atlantic Flyway Resident Canada Goose Management Plan is to reduce the number of resident Canada geese in the 17 Atlantic Flyway states to 650,000 birds. New York State established a population goal of 85,000 resident Canada geese. Population estimates for resident Canada geese are determined in the states each spring using the Breeding Waterfowl Populations Survey. Annual estimates tend to vary somewhat, but in recent years there have been an estimated 250,000 resident Canada geese in the state of New York.

The New York State Department of Environmental Conservation, Bureau of Wildlife, Fisheries, and Marine Resources estimates 20,000 – 25,000 resident Canada geese live in metropolitan New York region, including Long Island and the Lower Hudson Valley. Resident Canada geese have high survival in urban and suburban areas due to restrictions on the discharge of firearms which affects federal and state management plans to manipulate population levels by legal hunting. Furthermore, there are additional distinct biological differences between resident Canada geese and migratory Canada geese which

compound the difficulty of managing a species infrequently exposed to hunting mortality. Resident Canada geese are sexually mature at age 2 while migratory Canada geese may not reproduce until 3-5 years of age due to the harsh climate where they nest. Resident Canada geese restrict most of their daily movements to 1.5 – 3.0 miles according to three recent New York studies (Holevinski et al. 2007, Preusser et al. 2008, Seamans et al. 2009). Resident Canada geese also adapt to hunting by locating properties where hunting is prohibited or does not occur.

Geese Population Reduction Programs

Numerous hazing programs have been implemented by state and federal agencies, local municipalities and private landowners. Non-lethal hazing programs have also been promoted by animal interest groups, the consequences of which have recently been identified:

- 1) Hazing moves problem geese from one property to another (Holevinski et al. 2007, Preusser et al. 2008), which increases management costs to all landowners and distributes the property damage over additional properties;
- 2) Egg and nest destruction increases the number of resident geese that molt migrate to the sub-arctic, resulting in damage to vegetation and loss of food resources for nesting migratory geese (Luukkonen et al. 2008). It was reported at the February 2009 Atlantic Flyway meeting that some 200,000 resident Canada geese may be spending the summer in the sub-arctic;
- 3) Increasing the risk of bird-aircraft collisions because the resident Canada goose population in many suburban and urban areas is permitted to continue to increase due to a lack of mortality when these resident populations should be reduced in abundance to reduce risk of a bird strike to aircraft (Holevinski et al., 2007),
- 4) High hazing costs continue annually to protect drinking water supplies from fecal coliform bacteria, cryptosporidium, and giardia instead of reducing the abundance of resident Canada geese (Klett et al. 1998, Nadeski, pers. Commun. April 21, 2009,); and
- 5) Hazing is an ineffective and costly strategy for long term management of Canada goose populations (Holevinski et al. 2008).

Hunting is the traditional method used by state and federal wildlife agencies to manage Canada goose populations within social and biological carrying capacities. Hunters call and decoy geese into locations used as part of the daily feeding and loafing routine. The federal government allows hunters to use shotguns or bow and arrows to harvest migratory birds. The discharge of a shotgun with shot of the appropriate size to harvest a goose could travel up to 300 yards. Many municipalities, including New York City, have local ordinances prohibiting the discharge of firearms for public safety reasons. The high density of people and structures in New York City makes the discharge of shotguns infeasible for most locations in the city, even if the discharge ordinance was not in effect.

The Federal Aviation Administration issued Advisory Circular 150/5200-33B in August 2007 to provide guidance about certain land uses that have the potential to attract hazardous wildlife on or near airports. The Federal Aviation Administration funded studies about wildlife hazards to aircraft and learned not all wildlife are equally

hazardous. Canada geese are the third most hazardous animal which planes strike in North America due to the high probability of the strike resulting in damage or major damage to the aircraft (Dolbeer et al 2000). Only deer and vultures are more hazardous to aviation than Canada geese. Seamans et al. (2009) recommended management of all Canada geese, including lethal removal, within 5 miles of airports to reduce the risk of a strike to aircraft. The higher risk of damage which may be caused by Canada geese caused the Federal Aviation Administration and Air Force to declare a zero tolerance policy for Canada geese.

John F. Kennedy International and LaGuardia Airports have active bird hazing program to reduce the abundance of birds in critical airspace for approach and departure of aircraft. Even though both airports implement wildlife control measures to reduce risk of a bird strike or damaging bird strike to aircraft, strikes do occur. While the risk of a strike is low the consequences can be catastrophic. At John F. Kennedy International Airport there have been 676 reported bird strikes from January 2004 to December 2008. Five of these strikes involved Canada geese of which 1 strike caused substantial damage and 1 strike caused minor damage to the aircraft. At LaGuardia Airport there have been 410 reported bird strikes from January 2004 to December 2008. Four of these strikes involved Canada geese of which 1 strike caused minor damage.

Objective

To conduct best efforts to remove all resident Canada geese from all City-owned public parks, ballfields, and other man-made and natural habitats within 5 miles of airports in metropolitan New York City. This objective was created from guidance provided in Federal Aviation Administration, Advisory Circular 150/5200-33B.

B. RESULTS OR BENEFITS EXPECTED

The United States Department of Agriculture, Wildlife Services program and the City of New York, Department of Parks and Recreation surveyed parks, ballfields, and other properties near LaGuardia and John F. Kennedy International Airports in February and March 2009 and June 2008. USDA, APHIS-WS counted 822 Canada geese on 10 properties within 8 miles of LaGuardia Airport in March 2009 and 1,129 Canada geese on 27 properties within 8 miles of JFK International Airport in June 2008. Parks and Recreation surveyed Canada geese on 29 properties within 5 miles of both airports in March 2009. A total of 54 different sites were surveyed by the government agencies, including some non-city owned properties. The number of geese at each site ranged from about 2 to 450. Some of the properties were surveyed by both government agencies. An estimated 3,000 – 4,000 resident Canada geese may be using the 54 different sites.

Decreasing the resident Canada goose population will reduce the year-round risk these birds pose to aviation safety. While migrating birds temporarily increase the risk to aviation safety, the reduction of resident Canada geese is a step in reducing the abundance of larger-bodied birds that cause the most damaging strikes to aircraft.

C. APPROACH

The USDA, APHIS-WS is the agency with expertise and authority to manage wildlife damage. The USDA, APHIS-WS program would use an evaluation and removal approach outlined in its National Environmental Policy Act documents. The document "Canada Goose Damage Management in the State of New York" is located at http://www.aphis.usda.gov/regulations/ws/ws_environmental_new_york.shtml

Site Evaluation

A wildlife biologist will visit each site during the second half of May or early June to conduct a site evaluation to determine if the geese are to be removed during the summer molt of about June 15 to July 15. Only City-owned properties will be included in the site evaluation and geese removal. The site evaluation documents the number of Canada geese and other bird species of concern using the site and damage to the site. Other damage, such as risk to local aircraft movements, will be assessed. Additionally, efforts to reduce damage caused by Canada geese and other pertinent information (e.g., no feeding waterfowl ordinance) will be documented. The list of sites eligible for geese removal will be reviewed and confirmed with USDA and the City.

Removal

Canada geese can be removed by several methods. As this action will take place during summer molt (when the birds are unable to fly), USDA, APHIS-WS will most likely capture geese by herding the geese into capture pens. Canada geese are captured during the molt using panels about 4 x 10 foot in size. Depending on the number of geese, from 6 – 10 panels would be used to encircle the geese. If the geese are in the water, then biologists and specialists will use kayaks, canoes, or motor boats to push the geese towards shore. The captured geese are placed alive in commercial turkey crates. The geese would be brought to a secure location and euthanized with methods approved by the American Veterinary Medical Association. Euthanized geese would be buried. Various other methods such as hand grabbing or netting nesting geese may be used infrequently.

The following two methods may also be used, but will not be the preferred method within molting season:

- 1) Sedating: The USDA can use appropriate sedatives to immobilize and capture Canada geese when the legal hunting season is closed and up to 30-days before the hunting season. Sedated geese would be placed alive in turkey crates. The geese would be brought to a secure location and euthanized with methods approved by the American Veterinary Medical Association. Euthanized geese would be buried. If this method is required, the City and the USDA will work together to mutually approve the sedatives used.

- 2) Cannon or rocket net: a net about 40 x 60 feet in size is folded up and placed on the ground at a location where geese congregate to feed or loaf. The location has been pre-baited to accustom the geese to the site and net. The net is fired over the geese by using one of three mechanisms. Nets can be fired over the geese by 3-4 heavy projectiles attached to the net and propelled by smokeless powder, black powder or compressed air. The captured geese are placed alive in commercial turkey crates. The geese would be brought to a secure location and euthanized with methods approved by the American Veterinary Medical Association. Euthanized geese would be buried. Rocket and cannon nets can be used any time of year, but involve the use of explosives that are subject to New York City regulations.

Public Notification

USDA, APHIS-WS will coordinate its public affairs staff with public affairs staff of the New York City government, New York State Department of Environmental Conservation, and U.S. Fish and Wildlife Service. The City of New York will take the lead on informing the public and political leaders about the Canada goose management action. USDA, APHIS-WS will support the City through jointly developed communication plan.

The City of New York may need to provide security during the capture and removal of Canada geese from public parks and lands. USDA, APHIS-WS will work with the New York Police Department or other law enforcement entities when capturing and removing Canada geese.

D. RESOURCES REQUIRED

The capture of Canada geese during the molt will require about 6 people trained to capture and handle the birds. USDA, APHIS-WS shall provide a district supervisor and 4 wildlife specialists for this project. New York City Department of Environmental Protection shall provide at least one, but not more than two, wildlife biologists to assist with this project. It is estimated that about all identified sites could be visited and geese removed during the molt over a 4-week period in New York City.

E. STIPULATIONS AND RESTRICTIONS

USDA, APHIS-WS' activities under this cooperative effort will be limited to the State of New York. Techniques will be environmentally sound, safe and selective. If applicable, any needed Federal, State and local permits will be secured to perform wildlife damage management activities, and these activities will be within the policy guidelines of USDA, APHIS-WS. All program activities will be conducted within local, State and Federal regulations.

The performance of wildlife damage management actions by USDA, APHIS-WS under this agreement is contingent upon a determination by USDA, APHIS-WS that such actions are in compliance with the National Environmental Policy Act, Endangered Species Act, and any other applicable environmental statutes. USDA, APHIS-WS will not make a final decision to conduct requested wildlife damage management actions until it has made the determination of such compliance.

F. AUTHORIZATIONS

Migratory birds are protected by the Migratory Bird Treaty Act and regulations in Title 50 Code of Federal Regulations. The taking of migratory birds is a highly regulated activity requiring compliance with federal and state statutes. Migratory birds may be taken under the authority of a permit issued by the U.S. Department of Interior, Fish and Wildlife Service or under the authority of a depredation order. The federal government published a depredation control order for resident Canada geese at airports or military airfields. The State of New York allows the management of resident Canada geese within the constraints of this federal depredation order. Title 50 Code of Federal Regulations, Part 21.49 allows USDA, APHIS-WS to act as an agent of the airports in New York City and to take resident Canada geese on property within 3-miles of the airport after permission has been authorized by the landowner. Resident Canada geese residing from 4-5 miles from the airport will be taken under a depredation permit issued to USDA, APHIS-WS by the U.S. Fish and Wildlife Service.

G. REPORTS

USDA, APHIS-WS will prepare a report by August 31 summarizing Canada geese removed from properties within 5 miles of airports in New York City.

H. MEASURES OF ACCOMPLISHMENT

The effectiveness of the Canada goose program in New York City will be evaluated by using existing metrics:

- 1) Reduction in Canada goose strikes at New York City airports,
- 2) Reduction in risk to aviation, measured by evaluating the number of geese at airports through monthly monitoring already being conducted at the airports by the Port Authority,
- 3) Surveying parks, ballfields, and other properties within 5-miles of the airports during the month of May or June annually, and
- 4) Monitoring the change in Canada geese harassed or removed at airports in New York City on a monthly and annual basis.

I. LITERATURE CITED

Atlantic Flyway Council. 1999. Atlantic Flyway Resident Canada Goose Management Plan.

42 pp.

Dolbeer, R. A., S. E. Wright, and E. C. Cleary. 2000. Ranking the hazard level of wildlife species to aviation. *Wildlife Soc. Bull.* 28:372-378

Holevinski, R. A., P. D. Curtis, and R. A. Malecki. 2007. Hazing of Canada geese is unlikely to reduce nuisance populations in urban and suburban communities. *Human – Wildlife Conflicts* 1:257-264.

Klett, B. R., D. F. Parkhurst, and F. R. Gaines. 1998. The Kensico Watershed Study: 1993 - 1995. <http://www.epa.gov/owowwtrl/watershed/Proceed/klett.html>

Luukkonen, D. R., H. H. Prince, and R. C. Mykut. 2008. Movements and survival of molt migrant Canada geese from southern Michigan. *J. Wildl. Manage.* 72:449-462.

Preusser, S. E., T. W. Seamans, A. L. Gosser, and R.B. Chipman. 2008. Evaluation of an integrated non-lethal Canada goose management program in New York (2004-2006). *Proc. Vertebr. Pest Conf.* 23:66-73

Seamans, T. W., S. E. Clemons, and A. L. Gosser. 2009. Observations of neck-collared Canada geese near John F. Kennedy International Airport, New York City. *Human – Wildlife Conflicts* 3:214-222.

J. EFFECTIVE DATES

The cooperative agreement shall become effective on June 1, 2009, and shall expire on May 31, 2010.

Plans developed by government for Canada goose management

1. USDA, Wildlife Services. 2003. Canada goose damage management in the State of New York. Environmental Assessment. 45 pp + appendices.
www.aphis.usda.gov/regulations/ws/ws_nepa_environmental_documents.shtml
2. United States Fish and Wildlife Service. 2005a. Final Environmental Impact Statement: Resident Canada Geese Management. Division of Migratory Bird Management, U.S. Fish and Wildlife Service, 4401 North Fairfax Drive, MBSP-4107, Arlington, Virginia 22203.
<http://www.fws.gov/migratorybirds/CurrentBirdIssues/Management/cangeese/finaleis.htm>
3. Atlantic Flyway Council. 1999. Atlantic Flyway resident Canada goose management plan. 42 pp.
4. U.S.D.I., Fish and Wildlife Service. 1998. Environmental Assessment: Permits for the control and management of injurious resident Canada geese. Office of Migratory Bird Management. Washington, D.C. 92 p.