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Jessica Dewey
Animal and Plant Health Inspection Service - Wildlife Services

Martin Lowney
Animal and Plant Health Inspection Service - Wildlife Services

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ATTEMPTED RELOCATION OF A RING-BILLED GULL ROOST AT WASHINGTON NATIONAL AIRPORT

JESSICA DEWEY, USDA - Animal and Plant Health Inspection Service - Wildlife Services, 775 Gateway Dr. SE #410, Leesburg, Virginia 20175

MARTIN LOWNEY, USDA - Animal and Plant Health Inspection Service - Wildlife Services, PO Box 130, Moseley, Virginia 23120

Abstract: Gulls, particularly ring-billed gulls [*Larus delawarensis*], have been identified as a threat to aircraft operations at Washington National Airport (now Ronald Reagan National Airport) in northern Virginia. Through bird surveys conducted in 1992, 1993, and 1997, an estimated 7,000 gulls were observed roosting during winter on the Potomac River near the airport. A harassment program was run on 5 consecutive evenings, 24-28 February 1997, to relocate the roosting gulls. Six to 8 people shot pyrotechnics from shore and 2 boats for 2 hours prior to dusk each evening. Each evening the gulls arrived consistently later than the prior evening and formed the roost in different locations on the Potomac and Anacostia Rivers. No difference in gull numbers was seen within critical airspace or on the airport through bird surveys conducted before, during, and after the harassment program. Although the harassment program seemed to change the gulls' behavior, no significant difference was observed in the threat presented by gulls to aircraft. Potential alternatives to increase the effectiveness of future harassment programs include harassing the gull roost earlier in the winter season and reinforcing harassment with lethal shooting.

Key Words: airport, gulls, harassment, *Larus delawarensis*, pyrotechnics, roost dispersal

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INTRODUCTION

Birds can pose a serious hazard to aviation. When birds are present in the vicinity of an airfield, they may collide with incoming or departing aircraft and cause the plane to crash, resulting in the possible loss of human life (Godin 1994). A collision involving a bird, or flock of birds, and an aircraft commonly is known as a "bird strike". Gulls, the most commonly struck birds in the United States, are involved in 30% of all reported strikes in which the species was identified (Cleary et al. 1996). The Federal Aviation Administration (FAA) recognizes the threat that bird strikes pose to aircraft safety and has defined rules governing wildlife hazard management at airports bearing FAA certificate.

Birds, including several species of gulls (*Larus* spp.), have been recognized as potential threats to aircraft operations at Washington National Airport located in northern Virginia (Figure 1). Due to various bird-aircraft collisions at National Airport, the FAA determined in 1991 that an ecological study was warranted (Federal Aviation Regulation, Part 139.337). National Airport officials requested the assistance of the Wildlife Services (WS) program of the United States Department of Agriculture, Animal and Plant Health Inspection Service, to perform an ecological and monitoring study in 1992 and 1993, respectively. Prior to 1 August 1997, WS was known as Animal Damage Control. The studies revealed approximately 7,000 mixed species of gulls (approximately 98% ring-billed gulls [*Larus delawarensis*] and 2% greater black-backed gulls [*L. marinus*] and herring gulls [*L. argentatus*]) roosting on the Potomac River, at the confluence with the Anacostia River adjacent to the airport, from September-March each year. As a result of these studies, several management actions were recommended to the airport, one of which was to relocate the winter gull roost (Lowney 1994).

In 1996, National Airport again enlisted WS to assist in identifying and managing existing wildlife hazards at the airport. Most management alternatives previously recommended by WS had been implemented, including filling and re-grading of the airfield to reduce standing water, removal

of pier pilings used by gulls for loafing, and thinning of woodland habitat used by blackbirds for roosting. Gull abundance was reduced within the airfield since 1993, but no change in the roosting population was observed. WS again recommended the relocation of the winter gull roost to reduce gull presence at the airport. Subsequently, the airport agreed to implement a relocation program. This paper reports the results of the gull roost harassment effort.

STUDY AREA

National Airport accommodates commercial air carrier, commuter, and business and private aircraft. National served 15.5 million passengers and handled 304,776 take-off and landings in 1995 (Metropolitan Washington Airports Authority 1996).

The airport covers approximately 800 acres and contains 3 runways, 3 terminal buildings, numerous parking areas, and a grass covered Aircraft Operations Area (AOA). To the north of the AOA is Roaches Run Wildlife Sanctuary, which is managed by the National Park Service, to the east is the Potomac River and its confluence with the Anacostia River, to the south is a 300-acre bay of the Potomac River, and to the west is Alexandria, Virginia.

Roaches Run Sanctuary contains a grassy park, a shallow 100-acre tidal lake, and 2 parking areas. The lake is encircled with a strip of hardwood trees. During winter, gulls, primarily ring-billed gulls, often loaf on mud flats at the south end of the lake during low tide. The Potomac River is approximately ½ to ¾ mile wide in the area adjacent to the airport. The large bay on the south end is shallow and much of its bottom is exposed during low tide.

METHODS

Gull harassment was conducted on 5 consecutive evenings, 24-28 February 1997. Six to 8 people were positioned each afternoon to harass gulls with pyrotechnics. A minimum of 4 people were located along the shoreline of the airport, including an Airport Operations Officer, who had contact with the control tower. In addition, 2 boats were out on the Potomac River each day; each boat contained a driver and a person to fire pyrotechnics. Pyrotechnics used included bird bangers and screamers fired from single or double shot pistols and shell crackers fired from a 12-gauge shotgun. Harassment began 2 hours before sunset and ceased at dark to decrease the possibility of harassing gulls into the path of an approaching plane. Runways remained open for all but 42 minutes throughout the harassment program.

Gull numbers were recorded through standardized bird surveys, conducted 3 times each month by WS biologists, as well as incidental observations made by Airport Operations and River Rescue personnel. An F-test (ANOVA) was used to test for differences in gull numbers related to the harassment program.

RESULTS

Approximately 600 screamers, 200 bangers, and 165 shell crackers were fired throughout the harassment program. Survey results showed no significant difference ($p>0.05$) in the number of gulls observed before, during, and after implementing a harassment program ($F=0.52$, df=2,3) (Table 1).

Throughout the period of harassment, changes in gull behavior were observed. Initially, gulls flew into the area approximately 1 hour before dusk and well above the surface of the water. They congregated on Hains Point, a peninsula located between the Potomac and Anacostia Rivers, before moving down onto the water. Subsequent to roost dispersal, gulls flew in close to the water's surface. Additionally, gulls no longer landed on Hains Point. Gulls seemed to arrive each evening later than the prior evening and settled on the river immediately. The timing of the gulls' initial arrival was not recorded, so this conclusion was based only upon observation. The number of gulls seen entering the roosting area did not diminish (Table 2).

BIRD STRIKES

The only bird strike recorded occurred on 25 January 1997, prior to initiation of harassment. An A320 aircraft struck 12 ring-billed gulls upon take-off from runway 18/36. That flight continued to its destination; the runway was closed briefly, cleared of debris, and then re-opened immediately. We believe that other bird

strikes occurred at National Airport during February-March 1997, but none were reported to Airport Operations.

DISCUSSION

The harassment effort to relocate the ring-billed gull roost from the Potomac River adjacent to National Airport did not reduce the threat that gulls pose to aircraft operations. There are several potential alternatives that may increase the effectiveness of the harassment program for future years.

Whereas 5 consecutive evenings is sufficient to disperse blackbird [Family *Icteridae*] and European starling [*Sturnus vulgaris*] (Johnson and Glahn 1994, Transport Canada 1992) and cormorant [Family *Phalacrocoracidae*] roosts (Mott et al. 1992), gulls may need a longer period of harassment to affect their behavior. Site fidelity in gulls may be stronger to a particular roost site than that of starlings, blackbirds, or cormorants.

This harassment program was conducted in late February, after gulls had been established on the roost for several months. Booth (1994) stated that birds are more likely to leave a roost site if they have occupied it only for a short time than if they have been there for several weeks. A harassment effort commencing in November, when the winter roost is just forming, may be more effective in dispersing the gulls at National Airport.

Three types of pyrotechnics were used throughout this harassment program: bangers, screamers, and shell crackers. Supplemental methods of harassment could be used in conjunction with those already listed to make the program more effective. Tape recordings of distress calls and sirens can be played through a loudspeaker on a vehicle or a boat to supplement pyrotechnics (Godin 1994). Pyrotechnics also can be reinforced by shooting a limited number of birds (Godin 1994). Pyrotechnics reinforced by shooting reduced gull abundance from 5,400 to 400 gulls in a 3-day period at a New York landfill (Forbes 1996). The deployment of shooters at John F. Kennedy International Airport reduced gull strikes by 66-90% (Dolbeer and Bucknall 1994).

An alternative to an intensive, 1-time roost relocation effort would be to harass employment of a seasonal, full-time harassment team has proven to be effective in reducing strikes involving gulls at Atlantic City International Airport (USDA 1993).

The attempted roost relocation effort provided us the opportunity to review previously used methods for similar undertakings. With the information collected throughout this effort, potential improvements in these methods have been identified and can be implemented in the next project of this nature.

LITERATURE CITED

Booth, T.W. 1994. Bird Dispersal Techniques. Pages E-19 - E-24 *in* S.E. Hygnstrom, R.M. Timm, and G.E. Larson, eds. Prevention and Control of Wildlife Damage. University of Nebraska Cooperative Extension Service, Lincoln, NE

Cleary, E.C., S.E. Wright, and R.A. Dolbeer. 1996. Wildlife strikes to civilian aircraft in the United States 1993-1995. Report prepared by USDA/APHIS/WS/ NWRC for USDOT/FAA, Washington, DC. 33 pp.

Dolbeer, R.A., and J.L. Bucknall. 1994. Shooting gulls reduces strikes with aircraft at John F. Kennedy International Airport, 1991-1993. Proceedings of the Bird Strike Committee Europe 22. Vienna, Austria.

Forbes, J. 1996. Controlling gulls at a landfill in Albany, NY. Proceedings of the Bird Strike Committee Canada 24. Richmond, British Columbia.

Godin, A.J. 1994. Birds at Airports. Pages E-1 - E-4 *in* S.E. Hygnstrom, R.M. Timm, and G.E. Larson, eds. Prevention and Control of Wildlife Damage. University of Nebraska Cooperative Extension Service, Lincoln, NE.

Johnson, R.J., and J.F. Glahn. 1994. Starlings. Pages E-109 - E-120 *in* S.E. Hygnstrom, R.M. Timm, and G.E. Larson, eds. Prevention and

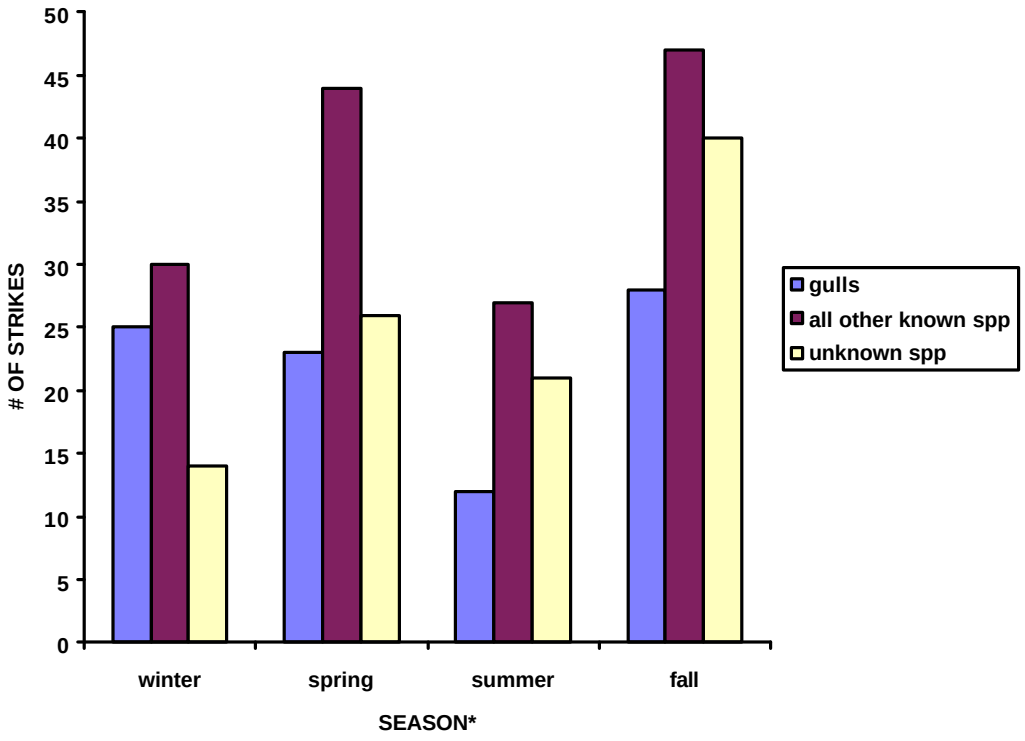
Control of Wildlife Damage. University of Nebraska Cooperative Extension Service, Lincoln, NE.

Lowney, M.S. 1994. Monitoring of bird populations utilizing Washington National Airport, February 1993 through January 1994. Unpublished Report, Moseley, VA. 44pp.

Mott, D.F., K.J. Andrews, and G.A. Littauer. 1992. An evaluation of roost dispersal for reducing cormorant activity on catfish ponds. Proceedings of the Eastern Wildlife Damage Control Conference 5:205-211.

Transport Canada. 1992. Wildlife Control Procedures Manual. Volume II. Environmental Services, Airports Group. 146pp.

US Department of Agriculture. 1993. Bird Hazard Reduction Force - Annual Report of Activities: Fiscal Year 1993. Animal Plant Health Inspection Service, Animal Damage Control, NJ Unpublished Report. 14pp.



*winter - December, January, and February
spring - March, April, and May
summer - June, July, and August
fall - September, October, and November

Figure 1. Total number of bird strikes reported to FAA involving gulls, other birds of known species, and birds of unidentified species within each season at Washington National Airport from 1989 - 1996.

Table 1. Number of ring-billed gulls observed at Washington National Airport during each survey period on survey days before, during, and after the gull roost relocation program 24-28 February 1997.

	SURVEY PERIOD			
DATE	1 (at dawn)	2 (at 9:45)	3 (at 13:30)	4 (at 16:15)
13 February	1055	241	113	1235
28 February	417	103	72	182
5 March*	836	54	45	92

*low visibility due to fog, numbers were probably higher

Table 2. Number of ring-billed gulls observed at the confluence of the Potomac and Anacostia Rivers at the end of the survey days before, during, and after the gull roost relocation program conducted at Washington National Airport 24-28 February 1997.

DATE	TIME	# OF GULLS OBSERVED
5 February	17:45	>3500
13 February	16:45	>2500
28 February	17:50	>2700
5 March*	17:05	>350
17 March	18:20	>3500

*low visibility due to fog, numbers were probably higher