

INTEGRATED MANAGEMENT PROGRAM TO REDUCE BIRD STRIKES WITH AIRCRAFT AT JOHN F. KENNEDY INTERNATIONAL AIRPORT, 1991-2000

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The collision of birds with aircraft is a serious problem at John F. Kennedy International Airport (JFKIA), New York. Gulls (*Larus* spp.), of which 60% were laughing gulls (*L. atricilla*), accounted for 86% of bird strikes (an aircraft striking ≥ 1 bird) from 1988-1990, averaging 261 strikes/year. Laughing gulls are present from May-September in association with a 7,629-nest colony (1990) in Jamaica Bay adjacent to the airport. A program to reduce gull collisions with aircraft was conducted from May-August 1991-2000 in which 2-5 biologists from the U.S. Department of Agriculture stationed on airport boundaries shot gulls flying over the airport. In 9,459 person-hours of shooting, 63,051 gulls were killed (2,263-14,866/year), comprised of 56,968 laughing gulls and 6,083 other gulls. The number of aircraft striking laughing gulls was reduced by 62% in 1991 and 76-99% in 1992-2000, compared with the mean of 157 strikes/year for 1988-1990. Strikes by the 3 other gull species (*L. argentatus*, *L. marinus* and *L. delawarensis*) were reduced by 48-76% over the same time period. Although the local nesting population of laughing gulls in Jamaica Bay declined by 64% from 7,629 nests in 1990 to 2,720 nests in 2000, the shooting program had no impact on the regional (Delaware to Massachusetts) or national (USA) population. Our recommended long-term solution to minimize gull-aircraft collisions is to relocate the nesting colony away from JFKIA. In the interim, a seasonal gull shooting program should continue at JFKIA to maintain the laughing gull colony at less than 3,000 nests and to discourage laughing gulls and other gull species from frequenting the airport. As a result of the shooting program that has dramatically reduced strikes by gulls, the overall number of strikes (all species of birds) at JFKIA has declined from a mean of 302/year in 1988-1990 to 121/year in 1991-2000. As a consequence, the proportion of strikes caused by non-gull species has increased from 14% (1988-1990) to 61% (1997-2000). In response to the changing nature of bird strikes at JFKIA, JFKIA must continue developing an integrated management program to minimize strikes by gulls and these other bird species. To this end JFKIA has implemented a number of improvements and innovations to their bird management program during the 1990s in addition to the gull-shooting program. These changes include: 1) hiring of a full-time professional wildlife biologist (1995); 2) improved training and equipment for bird-patrol personnel; 3) improved food-waste management including closure of landfills near JFK (1985, 1990); 4) improved drainage to remove standing water on airport; 5) improved vegetation management to discourage wildlife (i.e., mowing grass 6-10 inches; 1999); 6) implementation of falconry program (1996); and 7) aggressive management against Canada geese (1995).