



Airports servicing metropolitan areas are frequently constructed away from urban centers and the decisions of where to build them are usually based on socio-economic and political arguments rather than on biological factors. Consequently, airports are often placed in undeveloped areas that have high potential as wildlife habitat and may also serve as sites for municipal waste treatment and disposal. Wetlands, in particular, can be found in the vicinity of numerous airports because these habitats generally are left undeveloped and therefore may provide for airport approaches involving less risk to the public than approaches over developed areas.



and natural wetland habitats within five miles of the airfield, the U.S. Federal Aviation Administration concluded that the creation of these artificial wetlands increased the potential for bird-aircraft collisions near Bush Field.

Over a one-year period, The University of Georgia's Savannah River Ecology Laboratory conducted weekly aerial surveys of birds using the entire wetland complex to the north and northeast of Bush Field, including the newly constructed wetlands. These surveys were designed to provide precise information on the temporal and spatial distributions of birds within the area of interest.

In the case of Augusta, Georgia, for example, the 1997 construction of artificial wetlands, for testing the feasibility of wastewater treatment, placed 60 acres of wetland marsh and open water habitat within a mile of the Augusta Regional Airport at Bush Field. If successful, the artificial wetlands project could be expanded to include as much as 360 acres. Although the airport lies adjacent to the Savannah River and there are already more than 5,000 acres of both man-made

Approximately 42,000 birds representing 52 species, including the federally endangered Wood Stork and threatened Bald Eagle, were seen during the aerial surveys. More than twice as many birds were observed during the winter and spring/fall migratory periods (October–April) as during the breeding and post-breeding seasons (May–September).



Artificial wetlands near Augusta's Bush Field Regional Airport.



American Coots (top) and Ring-necked Ducks are just two species of waterfowl commonly found in wetlands of the SE United States.

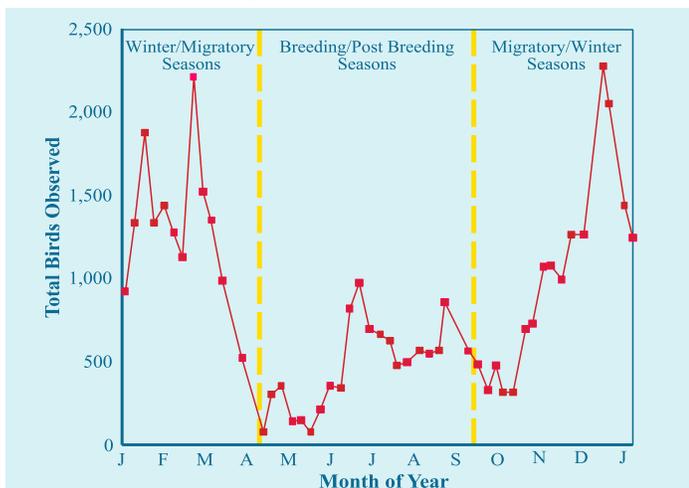


Hérons and egrets are wading birds that are often found in wetlands of the SE United States.

During the winter and migratory periods, waterfowl (including ducks, geese, and swans) and the closely allied American Coot dominated the avian assemblage, averaging 65% of all birds counted. Aerial surveys indicated that other portions of the overall wetland complex within five miles of the airport supported as many or more birds than the artificial wetlands. Flood conditions associated with periods of high rainfall increased habitat available to aquatic birds in some portions of the wetland complex and thus affected bird numbers.

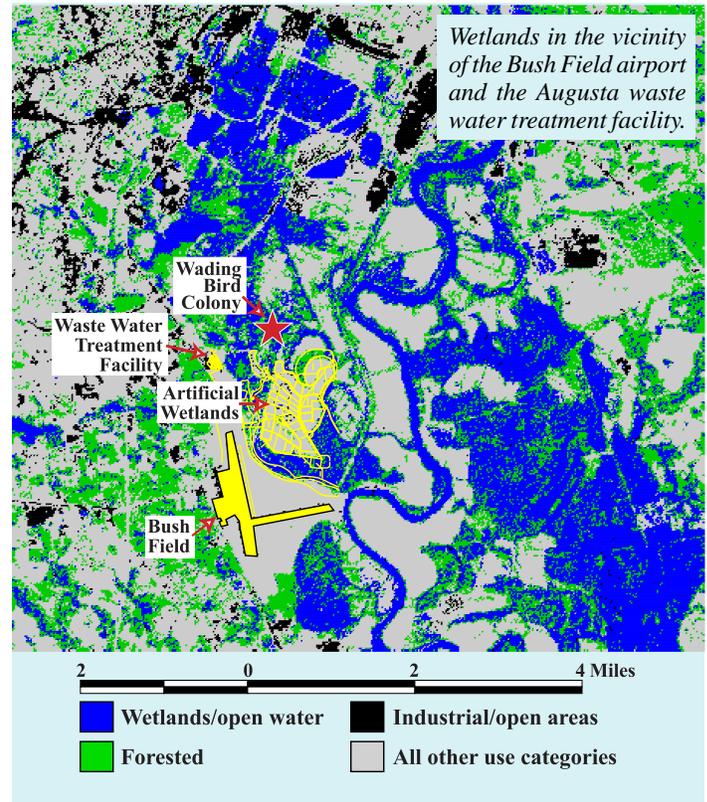
In contrast, during the breeding and post breeding seasons, medium-to-large wading birds (herons, egrets, storks, and ibises) were the most abundant, accounting for 56% of the birds typically seen. During the summer months, habitat changes within the artificial wetlands, including drawdowns, produced fish kills and exposed mudflats, thereby increasing use of the site by wading birds and shorebirds. Low water conditions throughout the wetland complex during late summer favored increased use by these same species.

Bird strike and incident reports from the airport indicated that birds were most often hit while on or over the airfield itself. Although the species involved was not always certain



Numbers of birds observed from January 1998–January 1999 in wetlands near the Bush Field Regional Airport, Augusta, GA.

in the bird strike reports, no aquatic birds were implicated, and most could be placed within the small-to-medium songbird category. Incident reports of birds further implicated small-to-medium songbirds. Starlings on the airfield accounting for the majority of sightings.



Results from this study indicate:

- Efforts to reduce bird strikes will require effective habitat management on the airport property, with a goal of reducing numbers of small land birds.
- Seasonal differences in species types and abundance are an important consideration in developing plans for reducing bird hazards to aircraft throughout the area.
- The artificial wetlands currently are not any more attractive to most birds than are other portions of the wetland complex within the five-mile zone.
- Thoughtful and effective management can minimize bird use of the artificial wetlands by making them less appealing to birds, thus displacing birds to more attractive habitats further from the airport.
- Weather patterns affect flooding and water levels, favoring different bird groups under different conditions.
- Human impacts on habitats outside of the immediate survey area, but within the local region, could represent yet another factor affecting bird populations around the airport.
- Additional studies will be needed to address questions of annual variation in patterns identified during the first year.

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