

Assessing BASH Risk of Breeding and Migrating Osprey

DoD Legacy Resource Management Project 06-292

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The Osprey (*Pandion haliaetus*) is one of the most widely distributed and well studied bird species of the Northern Hemisphere; however, little is known about their movements patterns and potential impacts to military flight operations. Twenty-five Osprey strikes have been documented by the United States Air Force resulting in excess of \$1.3 million of damage to aircraft. Furthermore, Osprey populations in North America have shown a dramatic recovery in the past decade with breeding populations continuing to expand along the Atlantic Coast. From 1973 to 1996, the Chesapeake Bay population increased from 1,400 to over 3,500 breeding pairs. Thus, Osprey are a serious safety and economic concern to military flight operations.



A-10 Warthog Class C Reportable Osprey Strike
\$59,643, Landing Gear pod
Pope AFB, NC 3003

The goal of this project is to quantify Osprey-strike risk derived from satellite tracking migratory and breeding movements in relation to military training operations in the Mid-Atlantic Chesapeake Bay Region. The objectives of this project are to determine: 1) migratory patterns in relation to flight operations, 2) airfield occurrence in relation to breeding territories, and 3) fidelity towards breeding territory, nest, and mate in relation to management practices. The deliverable products provided by these objectives are necessary for supporting risk management decisions, legal requirements, justifying management recommendations, and determining effective solutions for reducing Osprey-strike risks on or near military airfields.

In May 2006, we captured 6 adult Osprey (3 males & 3 females) in their nesting territories adjacent to Langley Air Force Base, in the Back River of the Chesapeake Bay of Virginia. We fitted each bird with a GPS-capable satellite telemetry package (GPS/PTT 100, 35g, Microwave Telemetry, Inc.). The packages provide highly accurate location and movement information.



Tagged Osprey were tracked via the ARGOS satellite network, allowing us to collect movement data (e.g., location, flight speed, altitude) during breeding, migration, and wintering periods in 2006 and 2007. A geo-database was created to store, manage, and display movement data of each Osprey using a geographic information system (GIS).

We would like to acknowledge the gracious support and contributions of each of our project partners!

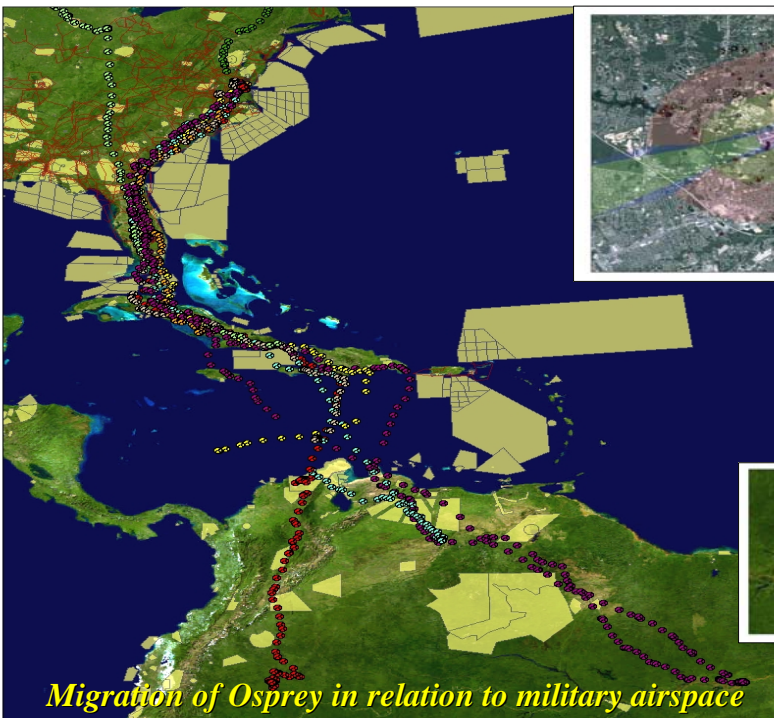


ARGOS Center

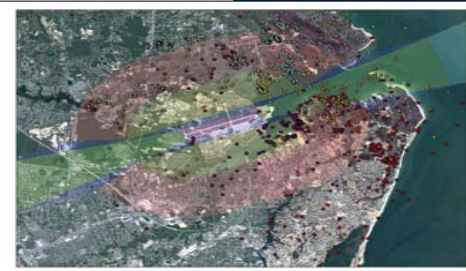
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Project Team



This map was published by Air Combat Command (ACC) GeoBase in partnership with the United States Department of Agriculture, Wildlife Services, National Wildlife Research Center and 1st Fighter Wing, Langley Air Force Base. Additional mapping products are featured on the Air Force Portal Viewer at <https://www.mv.af.mil/afp>. Support for this project (06-292) was provided by the Department of Defense Legacy Resource Management Program, <http://www.dodlegacy.org/legacy/index.aspx>.



Female Osprey migrated in August; males migrated in September. On average, migrating Osprey flew at ~ 35 kph and at ~ 350 meters AGL. Osprey F48 migrated over 4,800 miles to her wintering grounds in Brazil. During fall migrations, Osprey passed through several military operations airspace use areas along the Eastern seaboard.



During the breeding/summer period, on average male and female Osprey flew at ~ 21 kph and at ~ 63 meters AGL (range = 0 to 1,047 m). Osprey movements occurred with equal frequency throughout the day.



Preliminary analyses of Osprey movement patterns and military aircraft airspace use near Langley AFB suggest Osprey pose a significant risk to aircraft operations.



On their wintering grounds in Cuba and South America, satellite tagged Osprey utilized small areas and traveled only short distances. Wintering Osprey were actively moving less than 10% of the times they were located by the satellite tracking system.

Management Implications

Breeding and migrating Osprey pose a threat to safe military aircraft operations. Utilizing cutting-edge satellite technology and risk analysis, we will be able to provide mission planning, flight safety, pilots, and others with specific information to reduce the threat of Osprey-aircraft collisions. This project will support operational risk analysis programs such as the US Air Force Bird Avoidance Model and FalconView with authentic geospatial Osprey data. Further, information gained from this study will allow for more effective management decisions to reduce aircraft collision risk associated with breeding and migrating Osprey.