

Public Abstract

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Title:RAPTOR AND WADING BIRD MIGRATION IN VERACRUZ, MEXICO: SPATIAL AND TEMPORAL DYNAMICS, FLIGHT PERFORMANCE, AND MONITORING APPLICATIONS

This dissertation deals with different aspects of my long-term studies of migratory raptors, vultures, and wading birds, in Veracruz, Mexico (1991-2004). Among the outstanding findings of this project is documenting the most important migratory flyway for raptors in the World, where 5.1 million hawks can be observed in one field season. These migrations are dominated by seven species: American White Pelican, Anhinga, Wood Stork, Turkey Vulture, Mississippi Kite, Broad-winged Hawk, and Swainson's Hawk.

The timing of migration of these migrations is highly variable, and I found differences across years for all species. I also studied the behavior of nine species of soaring birds and quantified their wing beat frequency in order to understand the differential flight performance among species and migration seasons. Larger birds require less energetic expenditure in their flights, and spring is a season that demands higher energetic expenditure.

Last, I use migration count data to assess population trends of all some species. The populations of Turkey Vulture, Osprey, Cooper's Hawk, Broad-winged Hawk, and Swainson's Hawk have been increasing at a rate between +1.6 and +11.1% year and a mean cumulative increase of 26% between 1993-2004.

What is significant in my research is the generation of baseline information on bird migration ecology from one of the very few sites in the Neotropics where a long-term program has been sustained. This research has some immediate conservation applications, particularly the use of migration counts to monitor the populations of many species.