

Patuxent Wildlife Research Center

Population Viability of the Eastern Migratory Population of Whooping Cranes (*Grus americana*)



Ultralight aircraft have been used to train young birds in the Eastern Migratory Population to follow the migratory path. This research will help inform the success of this effort, as well as what management options are most likely to result in long-term success. Photo by Sarah Converse.



The long-term goal of the Whooping Crane Eastern Partnership is the reintroduction of a self-sustaining migratory whooping crane population in eastern North America. Photo by Sarah Converse.



- **The Challenge:** The Whooping Crane Eastern Partnership (WCEP) is a partnership of public and private organizations formed to support introduction of a migratory flock of whooping cranes in eastern North America. In 2001, the WCEP project initiated introductions of cranes taught to migrate behind ultralight aircraft; a total of 10 year-classes of cranes have been released through 2010. The fundamental objective of the Whooping Crane Eastern Partnership is to establish a self-sustaining population of whooping cranes in Eastern North America. Given the biological importance and monetary cost of the program, careful evaluation of success and strategic development of ongoing management plans are critical. This project focuses on an examination of the viability of the Eastern Migratory Population (EMP) to evaluate, to the extent possible, the success of the program to date, the potential for long-term success, and the management options available to increase the likelihood of success.
- **The Science:** The project will proceed in 3 stages: demographic estimation, initial model development, and integration of management decisions and challenges. The first stage will involve estimation of demographic parameters to be used in later population modeling phases. Demographic parameters describe rates of survival, reproduction, and movement in populations. The second stage will be initial model development, involving integration of the demographic parameter estimates into a basic model. Parameter estimates based on the results of the demographic analysis will be used to form a basic population simulation model for use in population projections and viability analysis. The third stage will be an integration of management decisions and challenges into the model, which will involve adding additional complexity to the model to examine potential impacts of future management decisions. Some analyses will include: breeding and release decisions with respect to genetic indicators, and the impact of genetic indicators on population success; impact of breeding season dispersal on project success, and strategies for addressing dispersal; and impact of management strategies for improving reproductive success.
- **The Future:** This work will inform decision making about this population reintroduction within the Whooping Crane Eastern Partnership and partner organizations. It will stand as an example about potential future reintroduction efforts for whooping cranes, and will also serve as a general example of the use of population modeling in management applications for endangered species.