U. S. Department of Energy/National Nuclear Security Administration (USDOE/NNSA):

Pantex- A Multi-Dimensional Approach to Contributing to Migratory Bird Conservation Across Hemispheres

A second-year male Purple Martin after having been fitted with a geolocator data-logger at a Pantex-supported study site in the Texas Panhandle. Photo credit: Susan K. Ray.

Without mandate, the USDOE/NNSA Pantex Plant has developed a multi-dimensional migratory bird management and research program that demonstrates leadership in agency goals – commitment to on-site bird protection, outreach and diverse research strategies (in-house and contracted collaborations, opportunistic partnerships; and of local, regional, and hemispheric scopes) –and, consequently, can demonstrate a conservation reach that extends through North, Central and South America.

Pantex recommendations have led to USDOE/NNSA sponsorship of a Raptor Research Foundation conference and a new purple martin colony at the Amarillo Zoo. Other partnerships include Texas Tech University (including the USGS Texas Cooperative Fish and Wildlife Research Unit), West Texas A&M University, Canada's University of Manitoba and York University, Purple Martin Conservation Association, Disney World Wide Fund, Texas Parks and Wildlife Department, and many property owners and volunteers.

Protection strategies implemented on the 18,000-acre Pantex facility include installing protective devices on >500 utility poles to protect raptors from electrocution and capping dozens of open-topped pipe fence posts to protect small birds from entrapment; these practices were promoted to other agency sites. An innovative outreach program enabled the banding of >12,000 purple martins in two states and staff participation with university faculty and students in studying a 72,000-record citizen scientist dataset.

Multi-year university-led research projects have focused on the ecology of western burrowing owls in rural versus urban areas, avian use of prairie dog colonies, influences of wind farms on avian populations (mortality, avoidance), and year-round ecology and conservation needs of Swainson's hawks and the declining purple martin. Pantex-generated G.P.S. and geolocator data have identified risk areas for Swainson's Hawks (related to wind energy development) and stopover and wintering areas in Central and South American used by Southern Great Plains purple martins as part of an important range-wide research and conservation effort. This data provides considerable value-added contributions to the understanding of migratory bird ecology and issues and has been shared through more than 46 technical presentations, seven theses/dissertations, eleven magazine articles, and ten scholarly articles; and other manuscripts are in review or press. The Pantex biologist has further promoted migratory bird conservation through 30 additional publications, frequent presentations, and various media.

Considering the high-level issues, data collected, shared management implications, and on-site protection strategies, the Pantex partnership may benefit the full suite (442 species) of birds that breed in, migrate through, and winter in the Southern Great Plains. Research plot data include 28 “special status species” and 26 others have been documented using the site. Multitudes of bird species and individuals fly through, rest, and feed on the Pantex property during migration, and all the while they must navigate through many potential threats and an ever-growing number of wind farms. Students working on projects are graduating well-versed in migratory bird issues and advanced technology. Some having tracked Swainson’s hawks and purple martins across “the Americas” have already contributed to migratory bird conservation of hemispheric or global significance.