

## LARGE MAMMAL AERIAL SURVEYS

Livestock production and large mammal conservation are complementary land uses when the numbers of each are monitored and adjusted to align with forage availability. The East Foundation is generating estimates of available forage (see Cattle and White-tailed Deer Competition for Forbs summary) and has initiated a project, aimed at developing a system to monitor changes in large mammal herds over time on its lands.

### Specific objectives of the project are to:

- Perform helicopter surveys on four Foundation ranches to estimate the size and composition of large mammal herds
- Develop a data system for recording information in the helicopters that can easily be transferred to a computer database
- Evaluate the effectiveness of surveys during different seasons (autumn and winter)
- Assess the effects of covariates (habitat type, distance from transect, animal age, group size) on survey observations and population estimates
- Determine the optimal survey design and sampling intensity (percentage of land surveyed – 25%, 50%, etc.)
- Make recommendations regarding the optimal survey design and sampling intensity for a robust long-term monitoring program for large mammals



Several interesting outcomes from this project have already been produced. For example, initial survey efforts during February 2014 from El Sauz, when compared to historic surveys from February 2010 from El Sauz, indicate a 53% reduction in the nilgai herd and a 22% reduction in the wild pig herd. These reductions in exotic animals, which threaten the productivity of our native rangelands, coincide with removal efforts of the Foundation's Exotic Ungulate Control Program on its lands.

Survey design recommendations generated through this project will be used long term to monitor changes in large mammal herds and inform management decisions based of forage availability and other factors. Landowner throughout the South Texas Sand Sheet will benefit from the development and refinement of this important survey technique.

**Partner: Caesar Kleberg Wildlife Research Institute**

