USGS
science for a changing world

Texas Gulf Coast Field Research Station

Columbia Environmental Research Center
www.cerc.usgs.gov/frs_webs/gulf_coast/

Burrowing Owls Winter in South Texas

Burrowing owls (*Athene cunicularia*) are unique migratory birds. In the western United States and southern Canada, they breed in dry grasslands, using animal burrows, such as those of prairie dogs, for nest sites. In the winter, burrowing owls migrate to Texas, and parts of Mexico. Although they do not nest during the winter, they still require burrows for protection.

Burrowing owls are small, long-legged birds of open country from Canada to Mexico, but are declining at an alarming rate. The burrowing owl is one of only 11 species of birds identified for joint protection by an international environmental agreement between the United States, Canada, and Mexico. It is listed as endangered in Canada and threatened in Mexico. In the United States, the U.S. Fish and Wildlife Service currently classifies the burrowing owl as a Species of Management Concern and has initiated a formal review of its population status.

Photo courtesy of Geoff Holroyd.

Helen Trefry (right), Canadian Wildlife Service, and Denise Auriat (left), University of Alberta, place a leg band on a young burrowing owl in Alberta. The leg band will enable USGS scientists to identify the bird on its winter range in south Texas.

Photo courtesy of Matthew Rowe.

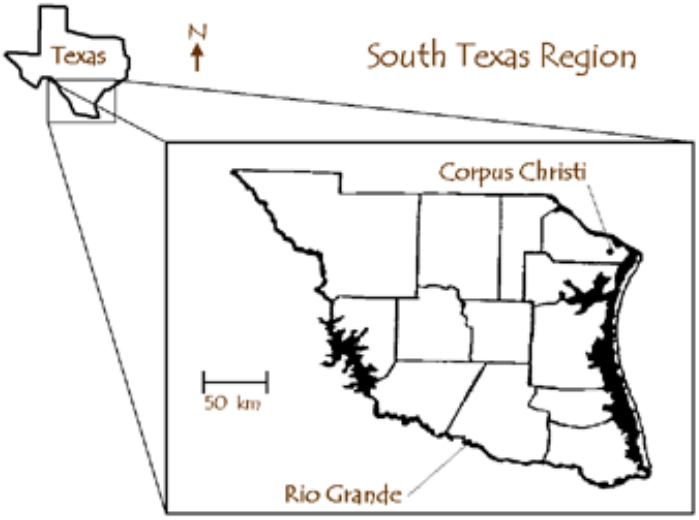
Research

South Texas is a major wintering area for the burrowing owl, based on recent bird surveys conducted by the Texas Gulf Coast Field Research Station (TGCFRS), Texas A&M University-Corpus Christi (TAMU-CC), and the Canadian Wildlife Service (CWS). The importance of south Texas to burrowing owls was not formerly known because the owls disperse widely over this large region of Texas, and they inhabit highly altered or disturbed habitats normally not considered good wildlife habitat.

South Texas historically featured coastal prairie and native brush, but with the conversion of much of this region to agriculture, native grasslands containing animal burrows have also been lost. As a result, burrowing owls wintering in south Texas use road culverts (usually along roads adjacent to cultivated fields) instead of natural burrows. Vehicles

pose a serious threat for burrowing owls roosting along roads.

The use of culverts, instead of natural burrows, appears to be an adaptation to a drastically changed landscape and has presented wildlife managers in south Texas with an unusual challenge. The TGCFRS has joined TAMU-CC and the CWS to study the winter ecology of this species, in hopes of finding answers to why burrowing owl numbers are declining. Reversing the decline in burrowing owl populations is a long-term goal for this research team.



Research Focus in South Texas

Long-term objectives for burrowing owl research and conservation in south Texas are:

1) Identifying where burrowing owls winter in south Texas to estimate the population size.

2) Constructing artificial burrows made from industrial drain pipe, placed away from roads, then monitored over several winters.

3) Identifying individual burrowing owls in south Texas and tracking their movements during the winter period by fitting the owls with leg bands and radio transmitters.

4) Determining daily activities and behavior of burrowing owls using video surveillance at selected burrow sites.

5) Calculating winter survival rates and determining causes of mortality.

6) Determining burrowing owl winter diet by identifying prey remains in regurgitated pellets.

7) Mapping owl locations and territories using Geographic Information System (GIS) software.

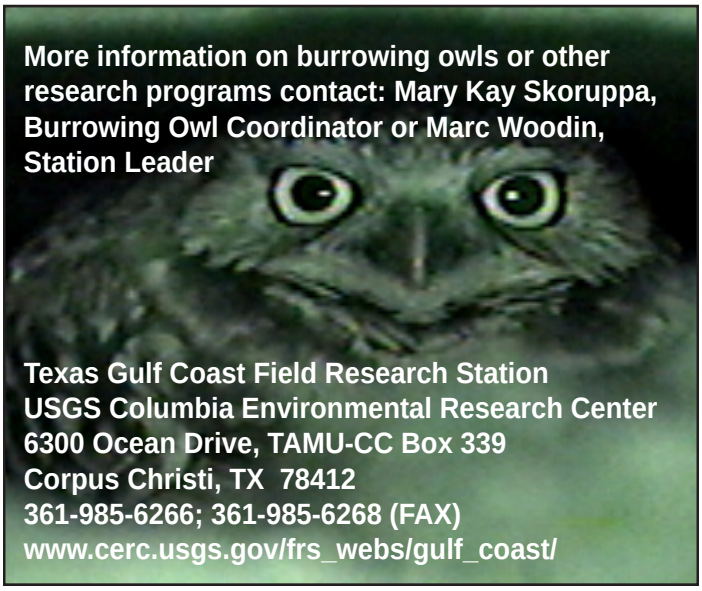
8) Assessing any contaminants that may occur in the owl diet by sampling insects and small rodents near known roost sites, then analyzing these prey items for contaminants.

9) Developing educational materials and partnering with local news media to improve public awareness of this species.

Photo courtesy of Jerry Batey.

A typical winter home for burrowing owls in south Texas. This culvert was used by a burrowing owl during the winter of 1999-2000. The availability of suitable burrows is essential to burrowing owl survival. In winter, burrows provide shelter from the weather and protection from predators.

More Information



More information on burrowing owls or other research programs contact: Mary Kay Skoruppa, Burrowing Owl Coordinator or Marc Woodin, Station Leader

Texas Gulf Coast Field Research Station
USGS Columbia Environmental Research Center
6300 Ocean Drive, TAMU-CC Box 339
Corpus Christi, TX 78412
361-985-6266; 361-985-6268 (FAX)
www.cerc.usgs.gov/frs_webs/gulf_coast/

Photo courtesy of Jerry Batey.