

Center for Applied Spatial Ecology

NEW MEXICO COOPERATIVE FISH AND WILDLIFE
RESEARCH UNIT
US GEOLOGICAL SURVEY—BIOLOGICAL RESOURCES

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The Center for Applied Spatial Ecology (CASE) was created by the Research Unit in 2004. The lab has participated in a variety of research projects and has provided technical assistance to university, non-governmental organizations, and state and federal agencies.

The emphasis of CASE is to conduct spatially oriented research at various scales to support natural resources management. Research results provide managers with the ecological context needed to make management decisions at a variety of temporal and spatial scales by incorporating field investigations with the application of computer technologies. The goal of CASE is to provide technical and biological knowledge to bridge the gap between spatial research and management application.

Technical Assistance

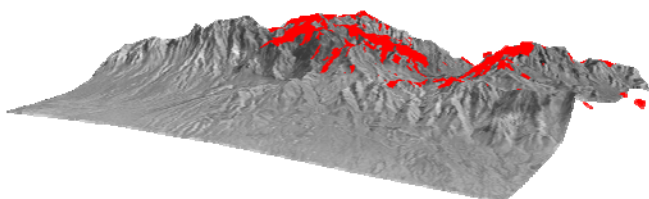
CASE staff provide technical assistance for a variety of university departments, federal agencies, and professional organizations.

Education

Staff have provided educational opportunities for a wide variety of cooperators including presentations given at the New Mexico Department of Game and Fish Game Commission Short Course.

Outreach

CASE staff have been invited speakers at professional meetings and developed, coordinated, and facilitated professional workshops.



Three dimensional depiction of Organ Mountain Chipmunk Habitat in the Organ Mountains New Mexico.

Products

- Habitat models
- Ecological Context
- Vegetation Maps
- Spatial Analysis
- Fire Risk
- Visualizations

CURRENT AND PAST RESEARCH

Research on Biodiversity

CASE was one of 5 labs that completed the Southwest Regional Gap Analysis Project (SWReGAP). SWReGAP was a broad scale assessment of biodiversity in the states of Arizona, Colorado, Nevada, Utah, and New Mexico. CASE has used GAP data to incorporate ecological context into conservation planning for Fort Bliss Military Reservation and with the New Mexico Department of Game and Fish on their Comprehensive Wildlife Conservation Strategy. CASE staff are currently working with state wildlife agencies to apply SWReGAP data to their Conservation efforts. CASE staff and graduate students are currently working on habitat models for the Western US in conjunction with the USGS Gap Analysis Program and the Northwest GAP Project.



Terrestrial Species Richness Map of the Southwestern United States.

Research on Species and Habitat

CASE has participated in specific species or species habitat research on a wide variety of scales. CASE cooperated in a multi-agency, multi-country research project on aplomado falcons. Falcon habitat was modeled in the northern Chihuahuan Desert to enhance the understanding of aplomado falcon natural history and to predict areas of potential habitat in southern New Mexico, western Texas, and northern Chihuahua. CASE examined how the Species At Risk (SAR) concept could be extended to evaluate potential of a sensitive species to impact military missions and the ability for that species to be managed in such a manner as to preclude federal listing in the future. CASE staff are completing an conservation modeling effort for Texas horned lizard on Holloman Air Force Base.

Research on Community Ecology

CASE has conducted research on fire ecology, landscape vegetation change, and invasive species. These projects represent future research direction and applications for CASE. CASE staff have conducted a fire ecology study on White Sands Missile Range on the role of fire on WSMR. CASE staff have also conducted a vegetation change analysis in the Chisos Mountains of Big Bend National Park using aerial photography and satellite imagery. CASE staff have also conducted research on invasive species modeling and risk analysis for Big Bend National Park and Holloman Air Force Base, New Mexico.

Future Directions

CASE is committed to the future of conservation management in the Southwest and its unique environment. CASE is dedicated to continued research that focuses on research that meets the evolving needs of state and federal agencies in accomplishing their mandates.

<http://fws-nmcfwru.nmsu.edu>