USGS
science for a changing world

USGS Western Ecological Research Center



The **Western Ecological Research Center (WERC)** is a USGS Ecosystems Mission Area center serving primarily California and Nevada — among the most ecologically diverse geographic regions in the U.S.

Home to arid deserts, coastal fog forests, massive estuaries and a broad array of ecosystems, this region faces unique challenges such as drought, sea level rise, wildfires, water shortages, and habitat encroachment. To address these concerns, resource managers from the **Department of the Interior** and other Federal, state, and local agencies need sound scientific information.

WERC provides much of that science. Stationed throughout California and near Las Vegas at USGS facilities, national parks, or universities, WERC scientists have exceptional familiarity with nearby habitats and species. They invite collaborations with Federal, state, and local governmental as well as nonprofit resource stewards to understand the needs and interactions of their ecosystems.

WERC scientists offer expertise in advanced research method capabilities, and synthesis. From microsatellite marker analysis of populations to long-range telemetry and GIS studies of migrating animals, to landscape-level monitoring of wildfires, to Bayesian modeling to ecosystem viability, our scientists develop cutting edge tools and scientific interpretations reviewed and published in leading research journals of their field.

WERC research is translated into practical products for many audiences, including concise **publication briefs** written for resource managers, as well as maps, technical manuals, databases, models and workshops. An evolving **outreach website** also translates science news for educators, the media, and the public.

The Pacific region is a dynamic landscape pivotal to our nation, the planet and its people. The USGS Western Ecological Research Center provides landscape-scale resource management science for a changing world.

RESEARCH CENTER CONTACTS

Main Research Page
https://www.usgs.gov/centers/werc

A. Keith Miles
Center Director
keith_miles@usgs.gov

Sarah Spring
Chief of Staff
sarah_spring@usgs.gov

Tom S. Kimball
Research Manager
tkimball@usgs.gov

Diane Elam
Research Manager
delam@usgs.gov

Xochitl Rojas-Rocha
Outreach Coordinator
xrojas-rocha@usgs.gov

WERC Lead Scientists and Projects







WERC LEAD SCIENTISTS

Box Springs Field Station

Kristin H. Berry, *kristin_berry@usgs.gov*

- Raven predation, invasive plant species, and translocation experiments with threatened desert tortoises in the Mojave.

Channel Islands Field Station

Kathryn McEachern, *kathryn_mceachern@usgs.gov*

- Cloud forest and native and endangered plant restoration projects in the Channel Islands, CA.

Santa Barbara Field Station

Kevin D. Lafferty, *klafferty@usgs.gov*

- Food webs and parasites' role in ecosystems from West Africa to Norway, wave energy project for BOEM.

Dixon Field Station

Josh T. Ackerman, *jackerman@usgs.gov*
Michael Casazza, *mike_casazza@usgs.gov*
Joseph P. Fleskes, *joe_fleskes@usgs.gov*
Brian Halstead, *bhalstead@usgs.gov*
Peter Coates, *pcoates@usgs.gov*

- Environmental contaminants (mercury, arsenic, etc.) in the western U.S., ecology of waterfowl, waterbirds, and giant gartersnakes, studies on Greater Sage-grouse and sagebrush in the Great Basin.

Henderson Field Station

Lesley A. DeFalco, *ldefalco@usgs.gov*
Todd C. Esque, *todd_esque@usgs.gov*
Kathy Longshore, *longshore@usgs.gov*

- Native plant restoration projects, desert tortoise research, desert sheep use of lands shared with U.S. Air Force.

Oakhurst Field Station

Matthew L. Brooks, *mlbrooks@usgs.gov*

- Wildfire patterns in the Great Basin, carbon storage in Yosemite meadows, ecology of endangered species.

WERC LEAD SCIENTISTS CONT'D

San Diego Field Station

Robert N. Fisher, *rfisher@usgs.gov*
Barbara E. Kus, *barbara_kus@usgs.gov*
Amy Vandergast, *avandergast@usgs.gov*

- Ecology of endangered songbirds, genetics of species of concern with fragmented habitats, and ecological assessments across Pacific islands.

Redwood Field Station

Phil van Mantgem, *pvanmantgem@usgs.gov*

- Informing prescribed burning and other management actions for increasing Western forests resiliency to drought, disease, and environmental change.

San Francisco Bay Estuary Field Station

Susan De La Cruz, *sdelacruz@usgs.gov*
Karen Thorne, *kthorne@usgs.gov*

- Food webs of restored wetlands, sea level rise effects on coastal marshes.

Santa Cruz Field Station

Josh Adams, *josh_adams@usgs.gov*
M. Tim Tinker, *ttinker@usgs.gov*

- Surveys and ecology of California's sea otter population, ecology of migratory seabirds, wildlife interactions with offshore renewable energy infrastructure.

Santa Monica Mountains Field Station

Erin E. Boydston, *eboydston@usgs.gov*

- Movement patterns of large mammals (bobcats, mule deer) in the transition zone between city and wildland.

Sequoia & Kings Canyon Field Station

Jon E. Keeley, *jon_keeley@usgs.gov*
Nate Stephenson, *nstephenson@usgs.gov*

- Invasive plants' effects on fires in southern California, fire risks to communities, threats to Sierra Nevada forests (including giant sequoias).'

CURRENT RESEARCH HIGHLIGHTS

- Sea level rise effects on tidal wetlands along the Pacific coast. These wetlands provide flood protection for coastal communities and habitat for wildlife.
- Comprehensive ecological study of sea otters from California to Alaska.
- Climate change effects on Sierra Nevada forests and meadows.
- Wildfire risk scenarios for Southern California.
- Effects of mercury contamination on wildlife in the San Francisco Bay.
- DNA microsatellite analysis of wildlife populations fragmented by urbanization.
- Effects of renewable energy infrastructure on marine and terrestrial wildlife, including birds and reptiles.
- Stressors (invasive predators and plants) to threatened and sensitive species like the desert tortoise of the Mojave and Greater Sage-grouse of the Great Basin.

WERC partners include: U.S. Fish and Wildlife Service • Bureau of Land Management • National Park Service • National Oceanic and Atmospheric Administration • Bureau of Ocean Energy Management • Bureau of Reclamation • U.S. Forest Service • U.S. Army Corps of Engineers • U.S. Army • Department of Energy • Department of Defense • California Department of Fish and Wildlife • California Energy Commission • Hawai'i Department of Land and Natural Resources • Nevada Department of Wildlife • Coastal Conservancy • Fisheries and Oceans Canada • SanDAG • Monterey Bay Aquarium • Seattle Aquarium • California Academy of Sciences • Desert Landscape Conservation Cooperative • Desert Managers Group • The Marine Mammal Center • Santa Barbara Museum of Natural History • Santa Barbara Zoo • San Diego Zoo • University of California at: Santa Barbara, Davis, Santa Cruz, and Los Angeles • University of Wyoming • University of Idaho • Hawai'i Pacific University • Multiple USGS Research Centers