

Partnerships with the National Park Service



Brooks University

Together, the NPS and WERC are addressing the greatest hurdles facing public lands today.

The Western Ecological Research Center (WERC) is a USGS science center serving primarily California and Nevada — the most ecologically diverse geographic region in the U.S. and home to some of America’s most iconic national parks.

WERC has a strong and productive history of collaborating with the National Park Service (NPS), with five of our 12 field stations co-located within national parks and the remaining eight field stations also currently serving NPS research needs. Our efforts are part of the greater USGS mission to provide sound scientific information to federal, state and local agencies, including the Fish and Wildlife Service, USDA Forest Service, Bureau of Land Management, and the Department of Defense.

Much of our diverse portfolio of projects and expertise has cross-cutting applications for parks issues, and greatly enriches our ability to support the NPS mission. We invite collaborations with park managers, academia, area partners and organizations, and seek to understand the needs and interactions of our resource stewards and public users, and their ecosystems.



USGS



USGS



USGS

RESEARCH CONTACTS

Main Research Page

<https://www.usgs.gov/centers/werc>

A. Keith Miles

Center Director

keith_miles@usgs.gov

Tom S. Kimball

Research Manager

tkimball@usgs.gov

Diane Elam

Research Manager

delam@usgs.gov

USGS/NPS Co-Locations:

- Erin Boydston, Santa Monica Mountains
- Matt Brooks, Yosemite
- Brian Halstead, Point Reyes
- Jon Keeley, Sequoia & Kings Canyon
- Kathryn McEachern, Channel Islands
- Nate Stephenson, Sequoia & Kings Canyon
- Phil van Mantgem, Redwood

WERC-NPS Studies



MOUNTAIN RANGES OF CALIFORNIA

The forests and meadows of California's mountains support diverse plant and animal communities, and provide essential ecosystem services like carbon storage. WERC scientists study droughts, wildfires, and other pressing issues to inform NPS management efforts. Projects include:

- Studying the endangered Sierra Nevada yellow-legged frog in **Yosemite NP**
- Helping the **Sierra Nevada NP network** develop a monitoring and conservation strategy for the threatened Yosemite toad
- Packstock influences on meadow vegetation in Yosemite
- Fire ecology and prescribed fire effects on forest resilience to drought in the **Klamath NP network**
- Research for the Western Mountain Initiative assessing ecosystem changes in western mountain forests
- Modeling effects of temperature changes on meadow hydrology and alpine vegetation/mammal interactions in the Sierra Nevada NP network
- Synthesizing climate and stream flow monitoring data for **Klamath, San Francisco Bay NP networks**
- Recommending options for NP networks and reserves for adapting to shifting temperatures and species migrations
- Evaluating fire effects on vegetation, wildlife and carbon stocks in the Sierra Nevada NP network
- Conducting vegetation inventory, distribution modeling, and mapping in the Sierra Nevada NP network



COASTAL AND ISLAND STUDIES

WERC studies the coastal and island ecosystems of the Western U.S., an area with a long history of human influence. Studies involve:

- Amphibian monitoring, acoustic sampling to determine bat assemblages and trends at **Point Reyes National Seashore**
- Small mammal predator control efforts to protect the endangered Hawaiian Petrel at **Haleakala NP**
- Partnering with **Channel Islands NP** regarding research priorities for seabirds
- Collaborating with NP networks as laboratories to assess and understand amphibian declines in CA
- Avian breeding trends at **Alcatraz Island** in the **Golden Gate NRA**
- Baseline avian and marsh surveys in Point Reyes National Seashore
- Assessing ecological and hydrological recovery after removal of livestock from Channel Islands NP
- Rare and endangered plant response to invasive species and environmental change at Channel Islands NP and the **Great Lakes NP network**
- Monitoring influence of prescribed burns on ecosystem recovery and native plants at San Clemente Island

SOUTHERN CALIFORNIA LANDSCAPES

- Collaborating with **Santa Monica Mountains NRA** on urban bobcat and coyote research
- Wildfire impacts on natural resources in CA chaparral with the Santa Monica Mountains NRA, balancing resource conservation with fire hazard reduction near cities
- Working with Santa Monica Mountains NRA staff to uncover genetic evidence of habitat and population fragmentation for multiple species



DESERTS OF THE WEST

WERC researchers examine the ways that non-native plants, wildfires, alternative energy infrastructure, and other environmental changes affect Western deserts. The Mojave and Sonoran deserts are home to listed plants and animals that depend on their unique ecosystems. Projects include:

- Modeling and measuring threatened desert tortoise condition, disease, movement, and habitat to assist land managers in the Mojave NP network
- Genetic variability of desert bighorn sheep translocated from **Lake Mead NRA** to Great Basin
- Developing early detection and control strategies for invasive plants in desert and mountain NP networks
- Evaluating fire history/behavior/effects and post-fire management strategies for Mojave NP network
- Diet, movements, and habitat of the golden eagle, desert tortoise, and Mohave ground squirrel in and around the Mojave and Sonoran desert NP networks



Other partners on these projects include: U.S. Fish and Wildlife Service • U.S. Bureau of Ocean Energy Management • U.S. Bureau of Land Management • U.S. Navy • U.S. Forest Service • U.S. Department of Defense • UC Berkeley • Humboldt State University • South Bay Salt Pond Restoration Project • California Landscape Conservation Cooperative • The Nature Conservancy • Stanford University

The Western Ecological Research Center is a USGS Ecosystems Mission Area science center serving California and Nevada. Online at www.usgs.gov/centers/werc