

Western Ecological Research Center

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MISSION: THE WESTERN ECOLOGICAL RESEARCH CENTER (WERC) WORKS WITH ITS PARTNERS TO ENSURE THE AVAILABILITY OF THE SCIENTIFIC INFORMATION AND TECHNOLOGIES NEEDED TO MANAGE ECOLOGICAL RESOURCES IN CALIFORNIA, NEVADA, ARIZONA, AND UTAH. • RESEARCH IS CONDUCTED WITHIN A NUMBER OF IMPORTANT ECOLOGICAL SYSTEMS IN THE PACIFIC SOUTHWEST, INCLUDING THE SACRAMENTO AND SAN JOAQUIN VALLEYS, SAN FRANCISCO BAY AND DELTA, PACIFIC FLYWAY, KLAMATH BASIN, SIERRA NEVADA MOUNTAINS, MOJAVE AND SONORA DESERTS, COASTAL SOUTHERN CALIFORNIA FLORISTIC PROVINCE, NEAR-SHORE MARINE AND COASTAL AREAS, CHANNEL ISLANDS, MODOC PLATEAU, AND BASIN RANGES OF CALIFORNIA AND NEVADA.



Desert tortoise (Gopherus agassizii)

About the Center

The Western Ecological Research Center develops strategies to assess the status and trends of biota and predict the ecological consequences of management actions. WERC uses biological, physical, and social sciences. It leads in developing and using information technologies to synthesize, analyze, and disseminate biological and ecological information. An important emphasis is on partnerships with agencies, academia, businesses,

and other private sector and international organizations at the local, State, and Federal level.

The WERC headquarters is on the campus of the California State University at Sacramento. Twenty field research stations, including three Cooperative Park Studies Units, make up the WERC.



Divers collecting data from monitoring plot (Channel Islands Field Station).

These stations have national and international reputations for scientific excellence. WERC has more than 80 scientists and staff with broad



Collecting sediment samples during high flows in Redwood Creek, California.



Fire and fuel dynamics study site—Tharps research burn (Yosemite Field Station).

expertise in rare and common plant and animal taxa, their ecosystems, and the natural and human-altered ecological and physical processes influencing them. The Center scientists pro-

vide information for use by managers in decision making.

Success Stories

The work of researchers has supported potential de-listing of several species from the endangered species list.

Researchers have also participated in the review of State and Federal agency resource policies and regulations. Work in intertidal and marine population monitoring programs has led to the reevaluation of fish and shellfish harvest programs in

California. Research on selenium and its effects on wildlife has been used extensively by the California Water Quality Control Board to guide management of San Joaquin Valley agricultural drain water.

WERC research has been used in identifying oil spills and gill-net fishing as important sources of mortality of sea otters, common murres, and other seabirds on the Pacific Coast.

Some Current WERC Activities

- Developing a geographic information system (GIS) of known giant garter snake habitat for the Giant Garter Snake Ecosystem Initiative.
- Conducting compre-



Western pond turtle with radio telemetry package is part of research on habitat use (Piedras Blancas Field Station).

hensive population and habitat-use studies in natural wetlands and rice fields to develop a Giant Garter Snake Habitat Conservation Plan in the Natomas Basin.



Investigating wetland restoration by surveying elevation contours (San Francisco Bay Estuary Field Station).

- Investigating the life history of the California red-legged frog to learn more about its life history and how various threats will affect its long-term conservation. This newly listed endangered species is currently found only in wetlands and streams in coastal drainages of central California. It has been extirpated from 70% of its former range and threatened within its remaining range by many factors including urban encroachment, construction of reservoirs and water diversions, introduction of exotic predators and competitors, livestock grazing, and habitat fragmentation.



California red-legged frog with radio tag as part of research on population status and habitat use (Piedras Blancas Field Station).

- Managing the Biological Resources Division Ecosystem Initiative research in southern California desert to address habitat requirements and persistence of various ver-



Placing satellite transmitters on geese is part of the research on snow goose migration ecology (San Francisco Bay Estuary Field Station).

tebrate species utilizing coastal sage scrub in conjunction with the Natural Community Conservation Planning program.

- Surveying water bird use of harvested rice in winter in cooperation with Ducks Unlimited, California rice growers, and the University of California, Davis. Results will allow farmers to develop techniques to dispose of residual rice straw without burning, while enhancing migratory waterfowl habitat.
- Serving as repository for all population status and trends data for sea otters, including the expanded native populations and the newly reestablished Washington population.
- Comprehensively inventorying native and introduced fishes in the lower San Joaquin River system so that State and other agencies can identify "beneficial uses" of the river and its tributaries.
- Conducting a broad-based survey of declining amphibians in California. For example, researchers have found that native frogs are disappearing in the Angeles National Forest in southern California. WERC is helping the U.S. Forest Service design future monitoring.
- Examining the role of natural processes in the Sierra Nevada and similar ecosystems, especially the role of fire and climate change. This research has led to broad reevaluation of fire control and prescribed fire programs in parks and wilderness areas.

For more information, please contact:

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Piedras Blancas Field Station

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Point Reyes Field Station

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**San Francisco Bay Estuary
Field Station**

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**Sequoia & Kings Canyon Field
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