



U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office
Species Account
VERNAL POOL TADPOLE SHRIMP
Lepidurus packardii



CLASSIFICATION: Endangered
Federal Register 59-48136; September 19, 1994
http://ecos.fws.gov/docs/federal_register/fr2692.pdf

On October 9, 2007, we published a [5-year review](#) recommending that the species remain listed as endangered.



CRITICAL HABITAT: Designated
Originally designated in [Federal Register 68:46683](#); August 6, 2003.
The designation was revised in FR [70:46923](#); August 11, 2005.
Species by unit designations were published in [FR 71:7117](#) (PDF), February 10, 2006.

RECOVERY PLAN: Final
Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon, December 15, 2005. http://ecos.fws.gov/docs/recovery_plan/060614.pdf

DESCRIPTION

The vernal pool tadpole shrimp (*Lepidurus packardii*) is a small crustacean in the Triopsidae family. It has compound eyes, a large shield-like carapace (shell) that covers most of the body, and a pair of long cercopods (appendages) at the end of the last abdominal segment. Vernal pool tadpole shrimp adults reach a length of 2 inches in length. They have about 35 pairs of legs and two long cercopods. This species superficially resembles the rice field tadpole shrimp (*Triops longicaudatus*).

Tadpole shrimp climb or scramble over objects, as well as plowing along or within bottom sediments. Their diet consists of organic debris and living organisms, such as fairy shrimp and other invertebrates. This animal inhabits vernal pools containing clear to highly turbid water, ranging in size from 54 square feet in the former Mather Air Force Base area of Sacramento County, to the 89-acre Olcott Lake at Jepson Prairie.

The life history of the vernal pool tadpole shrimp is linked to the seasonal cycle of the vernal pool. After winter rainwater fills the pool, the population is reestablished from cysts that lie dormant in the dry pool sediments. Sexually mature adults have been observed in vernal pools three to four weeks after the pools had been filled. Some cysts hatch immediately and the others remain dormant in the soil to hatch during later rainy seasons.

DISTRIBUTION

The vernal pool tadpole shrimp has a patchy distribution across the Central Valley of California, from Shasta County southward to northwestern Tulare County, with isolated occurrences in Alameda and Contra Costa Counties.

Although vernal pool tadpole shrimp are spread over a wide geographic range, their habitat is highly fragmented and they are uncommon where they are found (Helm 1998; Service 2005a).

The [California Natural Diversity Database](#) currently reports 226 occurrences of vernal pool tadpole shrimp in the following 19 counties: Alameda, Butte, Colusa, Contra Costa, Fresno, Glenn, Kings, Merced, Placer, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Yolo, and Yuba. Sacramento County contains 28 percent, the greatest amount, of the known occurrences

THREATS

Habitat loss and fragmentation is the largest threat to the survival and recovery of vernal pool species. Habitat loss generally is a result of urbanization, agricultural conversion, and mining.

Habitat loss also occurs in the form of habitat alteration and degradation as a result of changes to natural hydrology, invasive species, incompatible grazing regimes, including insufficient grazing for prolonged periods; infrastructure projects (e.g., roads, water storage and conveyance, utilities), recreational activities (e.g., off-highway vehicles and hiking), erosion, climatic and environmental change, and contamination.

REFERENCES FOR ADDITIONAL INFORMATION

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