



U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office
Species Account
CONSERVANCY FAIRY SHRIMP
Branchinecta conservatio



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 Conservancy fairy shrimp (*Branchinecta conservatio*), is a small crustacean in the Branchinectidae family. It ranges in size from about ½ to one inch long. Fairy shrimp are aquatic species in the order Anostraca. They have delicate elongate bodies, large stalked compound eyes, no carapaces, and eleven pairs of swimming legs. They glide gracefully upside down, swimming by beating their legs in a complex, wavelike movement that passes from front to back. Fairy shrimp feed on algae, bacteria, protozoa, rotifers and bits of detritus.

Conservancy fairy shrimp inhabit rather large, cool-water vernal pools with moderately turbid water (Eriksen and Belk 1999). The pools generally last until June. However, the shrimp are gone long before then. They have been collected from early November to early April.

Female fairy shrimp carry their eggs in a ventral brood sac. The eggs either are dropped to the pool bottom or remain in the brood sac until the mother dies and sinks. When the pool dries out, so do the eggs. They remain in the dry pool bed until rains and other environmental stimuli hatch them.

Resting fairy shrimp eggs are known as *cysts*. They are capable of withstanding heat, cold and prolonged desiccation. When the pools refill, some, but not all, of the cysts may hatch. The cyst bank in the soil may contain cysts from several years of breeding.

Hatching can begin within the same week that a pool starts to fill. Average time to maturity is forty-nine days. In warmer pools, it can be as little as nineteen. (Eriksen and Belk 1999)

DISTRIBUTION

Currently, the Service is aware of eight populations of Conservancy fairy shrimp, which include (from north to south): (1) Vina Plains, Butte and Tehama counties; (2) Sacramento National Wildlife Refuge, Glenn County; (3) Yolo Bypass Wildlife Area, Yolo County; (4) Jepson Prairie, Solano County; (5) Mapes Ranch, Stanislaus County; (6) University of California, Merced, Merced County; (7) Grasslands Ecological Area, Merced County and (8) Los Padres National Forest, Ventura County.

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

Eriksen, C.H., and D. Belk. 1999. Fairy shrimps of California's puddles, pools, and playas, Mad River Press, Eureka, CA.

Holland, R.F. 1978. The geographic and edaphic distribution of vernal pools in the Great Central Valley, California. California Native Plant Society, Special Publication 4:1-12.

Holland, R. F., and S. Jain. 1988. Vernal pools. Pages 515-533 *In*: M.E. Barbour and J. Major, eds. Terrestrial vegetation of California, new expanded edition. California Native Plant Society, Special Publication Number 9, Sacramento, CA.

U.S. Fish & Wildlife Service. 1994. Endangered and Threatened Wildlife and Plants; [Determination of Endangered Status](#) for the Conservancy Fairy Shrimp, Longhorn Fairy Shrimp, and the Vernal Pool Tadpole Shrimp; and Threatened Status for the Vernal Pool Fairy Shrimp. Portland, Oregon.

U.S. Fish and Wildlife Service. 2003. Endangered and Threatened Wildlife and Plants; [Final Designation of Critical Habitat for Four Vernal Pool Crustaceans and Eleven Vernal Pool Plants in California and Southern Oregon](#) [Vernal pool crustaceans and plants in California and Oregon](#). Portland, Oregon.

U.S. Fish and Wildlife Service. 2005. Endangered and Threatened Wildlife and Plants; [Final Designation of Critical Habitat for Four Vernal Pool Crustaceans and Eleven Vernal Pool Plants in California and Southern Oregon; Evaluation of Economic Exclusions From August 2003](#) [Final Designation; Final Rule](#). Portland, Oregon.

U.S. Fish and Wildlife Service. 2006. Endangered and Threatened Wildlife and Plants; [Designation of Critical Habitat for Four Vernal Pool Crustaceans and Eleven Vernal Pool Plants; Final Rule](#). Portland, Oregon.

U.S. Fish and Wildlife Service. 2005. Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon. Portland, Oregon.

Photo Credit: Dwight Harvey, U.S. Fish & Wildlife Service

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