U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office
Species Account
LONGHORN FAIRY SHRIMP
Branchinecta longiantenna

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 longhorn fairy shrimp (*Branchinecta longiantenna*), is a small crustacean in the Branchinectidae family. It ranges in size from 0.5 to 0.8 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.

Longhorn fairy shrimp inhabit clear to rather turbid vernal pools. These include clear-water depressions in sandstone outcroppings near Tracy, grass-bottomed pools in Merced County and claypan pools around Soda Lake in San Luis Obispo County. Longhorn fairy shrimp have been collected from late December to late April. (Eriksen and Belk 1999)

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-three days. (Eriksen and Belk 1999)

DISTRIBUTION

The four known populations of longhorn fairy shrimp include: (1) areas within and adjacent to the Carrizo Plain National Monument, San Luis Obispo County; (2) areas within the San Luis National Wildlife Refuge Complex, Merced County; (3) areas within the Brushy Peak Preserve, Alameda County and (4) areas within the Vasco Caves Preserve, near the town of Byron in Contra Costa 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.

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