



U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office
Species Account
CALIFORNIA FRESHWATER SHRIMP
Syncaris pacifica



CLASSIFICATION: Endangered
Federal Register 53:43884; October 30, 1988
http://ecos.fws.gov/docs/federal_register/fr1497.pdf

This species is undergoing a 5-year review.
The results have not been published yet.
Read March 22, 2006 [news release](#) announcing the review.

CRITICAL HABITAT: None designated

RECOVERY PLAN: Final
California Freshwater Shrimp (*Syncaris pacifica* Holmes) Recovery Plan. August 28, 1988.
http://ecos.fws.gov/docs/recovery_plan/980731a.pdf

DESCRIPTION

The California freshwater shrimp (*Syncaris pacifica*) is a 10-legged crustacean of the family Atyidae. Shrimps from this family can be distinguished from others by the length of their pincer-like claws (*chelae*) and presence of terminal bristles (*setae*) at the tips of the first and second chelae. The presence of a short spine above the eye and the angled articulation of the second chelae with the *carpus* ("wrist") separate the California freshwater shrimp from other shrimp found in California.

Shrimp coloration is quite variable. Males are translucent to nearly transparent. They have small surface and internal color-producing cells (*chromatophores*) clustered in a pattern to disrupt perception of their body outline and maximize the illusion that they are submerged, decaying vegetation. Undisturbed shrimp move slowly and are virtually invisible on submerged leaf and twig substrates, and among the fine, exposed, live roots of vegetation along undercut stream banks.

The coloration of females ranges from a dark brown to a purple color. In some, a broad tan dorsal band also may be present. Females may change rapidly from this very dark cryptic color to nearly transparent with diffuse chromatophores. Females are generally larger and deeper bodied than males.

California freshwater shrimp have evolved to survive a broad range of stream and water temperature conditions characteristic of small, perennial coastal streams. They have been found only in low-elevation (less than 380-foot) and low-gradient (generally less than 1 percent) streams. Excellent habitat conditions include:

- Streams of 12 to 36 inches in depth
- with exposed live roots of trees such as alder and willow

- along undercut banks greater than 6 inches
- with overhanging overhanging woody debris or stream vegetation and vines such as stinging nettles, grasses, vine maple and mint.

Such areas may provide refuges from swift currents as well as some protection from high sediment concentrations associated with high stream flows. During the winter, the shrimp is found in undercut banks with exposed fine root systems or dense, overhanging vegetation.

Adults reach sexually maturity by the end of their second summer of growth. Thereafter, they breed once a year in the fall. Females produce about 50 to 120 eggs, which remain attached to their mother throughout the winter.

According to Serpa, "California freshwater shrimp are detritus feeders, feeding on the buffet of small, diverse particles brought downstream to their pools by the current. As the water slows, the particles are filtered out by the exposed roots and other vegetation. The shrimp simply brush up the food with tufts at the ends of their small claws, and lift the collected morsels to their mouths. . . . Colonized by algae, bacteria, fungi, and microscopic animals, the particles are more nutritious than they seem. Although shrimp usually walk slowly about the roots as they feed, these crustaceans will undertake short swims to obtain particularly tasty items." (Serpa 1996)

DISTRIBUTION

Historically, the shrimp was probably common in low elevation, perennial freshwater streams in Marin, Sonoma, and Napa counties. Today, it is found in sixteen stream segments within these counties. The distribution can be separated into four general geographic regions:

- Tributary streams in the lower Russian River drainage, which flows westward into the Pacific Ocean
- Coastal streams flowing westward directly into the Pacific Ocean
- Streams draining into Tomales Bay
- Streams flowing southward into northern San Pablo Bay.

THREATS

Existing populations of the California freshwater shrimp are threatened by introduced fish, deterioration or loss of habitat resulting from water diversion, impoundments, livestock and dairy activities, agricultural activities and developments, flood control activities, gravel mining, timber harvesting, migration barriers and water pollution.

REFERENCES FOR ADDITIONAL INFORMATION

Note There is a special CA freshwater shrimp species account for 4th, 5th and 6th grade students.
www.fws.gov/sacramento/es/animal_spp_acct/california_freshwater_shrimp_kf.htm

Eng, L.L. 1981. Distribution, life history, and status of the California freshwater shrimp, *Syncaris pacifica* (Holmes). California Department of Fish and Game. Inland Fisheries Endangered Species Program Special Publication 81-1.

Pennak, R.W. 1989. Fresh-water invertebrates of the United States: Protozoa and mollusca. 3rd Ed.

Serpa, L. 1996. The California freshwater shrimp: A ghost-like crustacean we can't afford to lose. Tidelines. U.S. Fish & Wildlife Service. Don Edwards San Francisco Bay National Wildlife Refuge. Newark, California.

Thelander, C. ed. 1994. Life on the edge: a guide to California's endangered natural resources. BioSystem Books. Santa Cruz, CA. p 408-409.

U.S. Fish and Wildlife Service. 1998. California Freshwater Shrimp (*Syncaris pacifica* Holmes) Recovery Plan. Portland, Oregon.

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