



Fairy Shrimp

Order Anostraca

March 2017

Field Notes



Male (above) and female (below) fairy shrimp (*Streptocephalus texanus*). Note egg pouch on female's abdomen and enlarged male antennae.

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General Description

Fairy shrimp are creatures of inland, ephemeral water around the world. Children know them as sea monkeys—easily hatched in home aquariums. Adults of most species are one-quarter- to one-inch-long (6–25 mm). Their translucent bodies drift or dart upside down through pockets of water in the late spring. Eleven sets of leaf-shaped legs propel their elongated, segmented bodies along in an undulating, wave-like motion. Their legs are also known as phyllopods (phyllo = leaf; pod = foot). Two large, compound eyes protrude from the head on stalks. Hues of gray, blue, green, yellow, orange, red, color their bodies, depending on available food.

Fairy shrimp are crustaceans related to marine crabs and shrimp. They represent the order, Anostraca, within the class, Branchiopoda. Branchiopods are a primitive group of crustaceans named for having gills on their legs (branchio = gill), which is true for fairy shrimp.

Habitat

Fairy shrimp are uniquely adapted to places where water collects and then dries up seasonally—vernal pools. They can occur almost anywhere, including mountain

meadows, seasonal wetlands, and desert or prairie potholes. Fairy shrimp rarely inhabit large, permanent water bodies, where predators, like fish, could take advantage of their defenseless, slow-moving form.

Life Cycle

Like the transient pools they inhabit, fairy shrimp life cycles are short and sweet. The entire life cycle can last just a few short weeks to a few months before the pools dry up. Eggs hatch in early spring with the return of water. The young outgrow and shed their exoskeletons several times before adulthood. This complete molt of the exoskeleton is known as ecdysis.

Adult fairy shrimp typically reproduce sexually, although the females of some species produce viable eggs without fertilization (parthenogenesis, or cloning). The enlarged antennae on a male's head are specialized to clutch and hold onto the female for up to several days during fertilization. Females may lay several clutches of eggs (10–250 per clutch) that hatch and grow to adulthood over the course of one season. Late in the season, they also lay hard-shelled eggs (cysts) that survive desiccation and winter freeze until hatching the next spring. These end-of-season “resting” eggs are remarkably durable; they can survive the digestive system of animals or last for years before hatching if conditions dictate. Traveling in an animal's gut or blowing around with the dust also helps disburse the eggs widely.

Diet and Predators

Fairy shrimp feed on organic matter filtered from the water or scraped off surfaces. Algae, bacteria, protozoa, and detritus (dead organic matter) are common food sources. In turn, fairy shrimp are preyed upon by migrating waterfowl, as well as amphibians and larger carnivorous insects.

Conservation

Species range from rare to abundant within Anostraca. Brine shrimp (genus *Artemia*) cysts are cultivated for fish food in Utah's Great Salt Lake and in the San Francisco Bay area in California.



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Brine shrimp egg slick on the Great Salt Lake, Utah.

Conversely, several species of fairy shrimp in southern Oregon and California are federally endangered (Conservancy fairy shrimp (*Branchinecta conservatio*), longhorn fairy shrimp (*Branchinecta longiantenna*)) or threatened (vernal pool fairy shrimp (*Branchinecta lynchi*)). Loss of vernal pool habitat is the biggest factor in population declines.

Where to See

Fairy shrimp are known to occur in Crater Lake and Lassen Volcanic National Parks, but may also occur anywhere shallow depressions form vernal pools in and around other parks in the Klamath Network.

More Information

https://www.fws.gov/oregonfwo/documents/RecoveryPlans/Vernal_Pool_Fairy_Shrimp_RP.pdf

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