

**DEPARTMENT OF THE INTERIOR****Fish and Wildlife Service****50 CFR Part 17**

RIN 1018-A171

**Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the San Diego Fairy Shrimp (*Branchinecta sandiegonensis*)****AGENCY:** Fish and Wildlife Service, Interior.**ACTION:** Proposed rule.

**SUMMARY:** We, the U.S. Fish and Wildlife Service (Service), propose to designate new critical habitat units pursuant to the Endangered Species Act of 1973, as amended (Act), for the San Diego fairy shrimp (*Branchinecta sandiegonensis*). The San Diego fairy shrimp is listed as an endangered species under the Act. A total of approximately 2,468 hectares (6,098 acres) of land within Orange and San Diego counties, California, are within the boundaries of proposed critical habitat.

Critical habitat receives protection from destruction or adverse modification through consultation under section 7 of the Act with regard to actions carried out, funded, or authorized by a Federal agency. Section 4 of the Act requires us to consider economic and other relevant impacts when specifying any particular area as critical habitat.

We are soliciting data and comments from the public on all aspects of this proposal, including data on economic and other impacts of the designation, and our approaches for handling any future habitat conservation plans and Department of Defense installations. We may revise this proposal prior to final designation to incorporate or address new information received during the comment period.

The drafting and review of this proposed rule revealed a number of difficult and complex issues regarding which public comment would be particularly helpful, especially given the strict court-ordered deadline pursuant to which this proposal is being published. Therefore, in addition to the general comments requested above, we are requesting public comment either in support of or opposition to a number of specific issues associated with this proposal to assist in development of a final rule.

**DATES:** We will accept comments until June 23, 2003. Public hearing requests must be received by June 6, 2003.

**ADDRESSES:** If you wish to comment, you may submit your comments and materials concerning this proposal by any one of several methods:

(1) You may submit written comments and information to the Field Supervisor, Carlsbad Fish and Wildlife Office, U.S. Fish and Wildlife Service, 6010 Hidden Valley Road, Carlsbad, CA 92009.

(2) You may also send comments by electronic mail (e-mail) to [FW1SDFS@r1.fws.gov](mailto:FW1SDFS@r1.fws.gov). See the Public Comments Solicited section below for file format and other information about electronic filing.

(3) You may hand-deliver comments to our Carlsbad Fish and Wildlife Office, U.S. Fish and Wildlife Service, 6010 Hidden Valley Road, Carlsbad, CA 92009.

Comments and materials received will be available for public inspection, by appointment, during normal business hours at the above address.

**FOR FURTHER INFORMATION CONTACT:** Field Supervisor, Carlsbad Fish and Wildlife Office, at the above address (telephone 760/431-9440; facsimile 760/431-9618).

**SUPPLEMENTARY INFORMATION:****Background**

The San Diego fairy shrimp (*Branchinecta sandiegonensis*) is a small aquatic crustacean in the order, Anostraca, restricted to vernal pools in coastal southern California and south to northwestern Baja California, Mexico. Vernal pools contain water in the winter months which drains and evaporates giving way to a vernal display of wildflowers. The San Diego fairy shrimp is a habitat specialist found in smaller, shallow vernal pools and ephemeral (lasting a short time) basins that range in depth from approximately 5 to 30 centimeters (cm) (2 to 12 inches (in)) (Simovich and Fugate 1992; Hathaway and Simovich 1996). Water chemistry is also an important factor in determining fairy shrimp distribution (Belk 1977; Gonzales *et al.* 1996). This species does not occur in riverine or marine waters. All known localities are below 701 meters (m) (2,300 feet (ft)) and are within 64 kilometers (km) (40 miles (mi)) of the Pacific Ocean.

San Diego fairy shrimp is one of several *Branchinecta* species that occur in southern California (Simovich and Fugate 1992). Other species of *Branchinecta* in southern California include the nonlisted versatile fairy shrimp (*B. lindahli*) and the federally threatened vernal pool fairy shrimp (*B. lynchi*). Male San Diego fairy shrimp are distinguished from males of other species of *Branchinecta* by differences

found at the distal (located far from the point of attachment) tip of the second antennae. Females are distinguishable from females of other species of *Branchinecta* by the shape and length of the brood sac, the length of the ovary, and by the presence of paired dorsolateral (located on the sides, toward the back) spines on five of the abdominal segments (Fugate 1993).

Mature individuals lack a carapace (hard outer covering of the head and thorax) and have a delicate elongate body, large stalked compound eyes, and 11 pairs of swimming legs. They swim or glide gracefully upside down by means of complex wavelike beating movements of the legs that pass from front to back. Adult male San Diego fairy shrimp range in size from 9 to 16 millimeters (mm) (0.35 to 0.63 in.); adult females are 8 to 14 mm (0.31 to 0.55 in.) long. The second pair of antennae in males are greatly enlarged and specialized for clasping the females during copulation, while the second pair of antennae in the females are cylindrical and elongate. The females carry their eggs in an oval or elongate ventral brood sac (Eriksen and Belk 1999). Fairy shrimp are presumed to feed on algae, bacteria, protozoa, rotifers, and bits of organic matter (Pennak 1989; Eng *et al.* 1990; Parsick 2002).

Adult San Diego fairy shrimp are usually observed from January to March; however, in years with early or late rainfall, the hatching period may be extended. The species hatches and matures within 7 to 14 days, depending on water temperature (Hathaway and Simovich 1996; Simovich and Hathaway 1997). San Diego fairy shrimp may no longer be visible after about a month, but animals will continue to hatch if subsequent rains result in additional water or refilling of the vernal pools (Branchiopod Research Group 1996). The eggs are either dropped to the pool bottom or remain in the brood sac until the female dies and sinks. The "resting eggs," or "cysts," are capable of withstanding temperature extremes and prolonged drying. When the pools refill in the same or subsequent rainy seasons, some but not all of the eggs may hatch. Fairy shrimp egg banks in the soil may be composed of the eggs from several years of breeding (Donald 1983; Simovich and Hathaway 1997). Simovich and Hathaway (1997) found that vernal pools and ephemeral wetlands that support anostracans, small aquatic crustaceans like the San Diego fairy shrimp, and occur in areas with variable weather conditions or filling periods, may hatch only a fraction of the total