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Threatened fishes of the world: *Gambusia georgei* Hubbs & Peden, 1969 (Poeciliidae)

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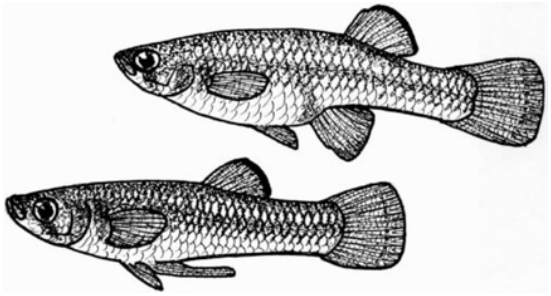

Common name: San Marcos gambusia. **Conservation status:** *Gambusia georgei* is listed as federally endangered by the United States (U.S. Fish and Wildlife Service 1980) and endangered by the state of Texas. **Identification:** The San Marcos gambusia is a plainly marked poeciliid. The scales of *G. georgei* tend to be strongly crosshatched in contrast to the less distinct markings on the scales of sympatric *G. affinis* (western mosquitofish). In addition, *G. georgei* tend to have a prominent dark pigment stripe across the distal edges of their dorsal fins and, in dominant individuals, a diffuse mid-lateral stripe extending posteriorly from the base of the pectoral fin to the caudal peduncle. A dark subocular bar is present and the caudal fin has few spots or dusky pigmented regions. The median fins of wild-caught specimens of San Marcos gambusia tend to be lemon yellow, approaching a bright yellowish-orange, especially around the gonopodium in dominant males. A bluish sheen is evident in more darkly pigmented individuals, especially near the anterior dorsolateral surfaces of adult females Sympatric *Gambusia geiseri* (largespring gambusia), by contrast, has a black post-anal streak and numerous spots on the sides of their bodies. Drawings by Robert G. Howells. **Distribution:** The San Marcos gambusia was restricted to the headwaters of the San Marcos River, within the City of San Marcos, Hays County, Texas. The species was found in collections taken in 1884 by Jordan and Gilbert and in later collections (as a hybrid with *G. affinis*) taken in 1925 (Hubbs & Peden 1969). Since that time, nearly every specimen of *G. georgei* has been taken approximately 3 km downstream from the headsprings in a 1 km stretch of the San Marcos River (U.S. Fish and Wildlife Service 1996). **Abundance:** During an extensive study of the species during the late 1970s, *G. georgei* was extremely rare accounting for only 0.09% of all *Gambusia* captured (Edwards et al. 1980). **Habitat and ecology:** *Gambusia georgei* have been found mostly over muddy but not silted substrates, and generally in shaded or partially shaded habitats (Hubbs & Peden 1969, Edwards et al. 1980). **Reproduction:** There is little information on the reproductive capabilities of *G. georgei*. Two individuals kept in laboratory aquaria produced 12, 30 and 60 young, although the largest clutch appeared to have been aborted and did not survive (Edwards et al. 1980). Hybridization between *G. georgei* and *G. affinis* was first noted by Hubbs & Peden (1969) and the production of hybrid individuals between them continued for many years without apparent problems for either of the parental species. However, during the series of collections taken during the early 1980s, hybrid individuals were more abundant than 'pure' *G. georgei* (U.S. Fish and Wildlife Service 1984, 1996). **Conservation action:** An endangered species recovery plan is in effect for the conservation of this species (U.S. Fish and Wildlife Service 1996); however, the prognosis for recovering this species is, at best, remote. Although the San Marcos River has been extensively sampled throughout the past five decades, the last individual of this species was taken in 1982. The San Marcos gambusia is, in all likelihood, extinct.

Edwards, R.J., E. Marsh & C. Hubbs. 1980. The status of the San Marcos gambusia, *Gambusia georgei*. U.S. Fish and Wildlife Service, Endangered Species Report 9: 1–34.

Hubbs, C. & A.E. Peden. 1969. *Gambusia georgei* sp., nov. from San Marcos, Texas. Copeia 1969: 357–364.

U.S. Fish and Wildlife Service. 1980. Listing of the San Marcos salamander as Threatened, the San Marcos gambusia as Endangered, and the listing of critical habitat for Texas wild rice, San Marcos salamander, San Marcos gambusia and fountain darter. Federal Register 45: 47355–47364.

U.S. Fish and Wildlife Service. 1984. San Marcos River Recovery Plan. U.S. Fish and Wildlife Service, Albuquerque. v + 109 pp.

U.S. Fish and Wildlife Service. 1996. San Marcos and Comal Springs and Associated Aquatic Ecosystems (Revised) Recovery Plan. U.S. Fish and Wildlife Service, Albuquerque. x + 93, 28 pp. appendices.