

Endangered Species Facts



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The San Francisco garter snake is an *endangered species*. Endangered species are plants and animals that are in immediate danger of becoming extinct.

Threatened species are plants and animals whose population numbers are so low that they may become endangered in the future.

The U.S. Environmental Protection Agency's (EPA) Endangered Species Protection Program (ESPP) will help ensure that pesticide use does not jeopardize the survival of listed species.

Thamnophis sirtalis tetrataenia

San Francisco Garter Snake

Thamnophis sirtalis tetrataenia

Description and Ecology

Status Endangered, listed March 11, 1967.

Critical Habitat Not designated.

Appearance The elusive, San Francisco garter snake is frequently described as one of North America's most beautiful snakes. Running down the center of its back is a wide, greenish-yellow stripe edged on each side by black bands. These black bands, in turn, are edged by red bands. Here the juncture between the black and red may be less distinct, and sometimes the red band is broken or divided. Yet another parallel black band edges the red band further down on each side. All bands run parallel the length of the body, except for on the head; the top of the head is fully red. The lower head and belly are greenish-blue or turquoise blue. The eyes are large. The length of this slender, beautiful snake which is not a threat to humans, may extend to 51 inches.

Range The historic range of the San Francisco garter snake was largely restricted to the San Francisco Peninsula, stretching south from near the San Francisco-San Mateo County border along the eastern and western base of the Santa Cruz Mountains. Populations may have occupied the Buri Buri Ridge along the San Andreas Rift and then locations south in an arc from the San Gregorio-Pescadero Highlands west to Tunitas Creek. Populations likely extended south from there along the western coast of the Peninsula to what is now Ano Nuevo State Reserve. While recent surveys indicate that the overall range of the San Francisco garter snake has not diminished, some local populations within that range have been extirpated and others seem to be declining.

Habitat The preferred habitats of San Francisco garter snakes are densely vegetated ponds near open hillsides. Because San Francisco garter snakes can only hunt in water that is 2 inches deep or less, aquatic habitats with shallow water edges are essential. In the spring and early summer, during their first peak of activity, San Francisco garter snakes are often found around ephemeral ponds hunting Pacific

tree frogs. Pacific tree frogs utilize ephemeral ponds for reproduction to avoid the usual predators found in permanent ponds.

As ephemeral ponds dry and Pacific tree frogs (metamorphs following the adults) retreat to wooded areas, San Francisco garter snakes shift to more permanent aquatic habitats. California red-legged frogs reproduce later in the season and select aquatic habitat that will not dry up before the young of the year metamorphose in July and August. These become the next important food source for the San Francisco garter snake and stimulate a second peak of activity. Dispersing frogs may encourage snake dispersal along riparian corridors. San Francisco garter snakes also prey upon California newts, western toads, mosquito fish and, on occasion, small mammals.

San Francisco garter snakes also require upland habitat: south or west facing slopes with suitable sites for basking, and rodent burrows or thick mats of grass for shelter and hibernacula. Optimal hillside vegetation is thought to be a grassland/shrub matrix with a density of one shrub for every 20-30 square feet. This provides both protective cover and exposed surfaces for thermoregulation.

Reproduction and Life Cycle Although mating can occur in the fall, the first warm days of March encourage encounters as San Francisco garter snakes emerge from their hibernacula and concentrate in nearby aquatic habitat. Like other garter snakes they are ovoviviparous, that is, following fertilization the female retains the eggs inside her body until hatching occurs so that in July and August offspring are born live, and independent. There may be 12-24 in a litter.

Bullfrogs prey upon young San Francisco garter snakes and further impact garter snake populations by preying upon California red-legged frogs.

San Francisco Garter Snake

Recovery Plan The U.S. Fish and Wildlife Service (FWS) developed a recovery plan for the San Francisco garter snake in 1985. Recovery plans outline reasonable actions that FWS believes are required to recover or protect listed species. FWS prepares recovery plans, sometimes with the assistance of recovery teams, contractors, state agencies, and others. Recovery plans do not necessarily represent the views nor the official positions or approvals of any individuals or agencies, other than FWS, involved in the plan formulation. Approved recovery plans are subject to modification as dictated by new findings, changes in species' status, and the completion of recovery tasks.

San Francisco Garter Snake Information Sources

Primary Reference Beacham, Walton, Castronova, Frank F., and Sessine, Suzanne (eds.) 2001. *Beacham's Guide to the Endangered Species of North America*, Gale Group, New York. Vol. 1, pp. 672–674.

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http://ecos.fws.gov/docs/federal_register/fr18.pdf

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http://ecos.fws.gov/docs/recovery_plan/850911.pdf

Species Account U.S. Fish and Wildlife Service, Sacramento Field Office.
http://www.fws.gov/sacramento/es/animal_spp_acct/sf_garter_snake.pdf



*Pacific treefrog, prey species for San Francisco garter snake /
Mike Bettaso, FWS Trinity River Herpetofauna Research*



*Adult San Francisco garter snake, San Mateo County
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*Underside of adult San Francisco garter snake
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