



San Joaquin County Multi-Species Habitat Conservation and Open Space Plan

SJCOG, Inc.
555 E. Weber Ave
Stockton, CA 95202
(209) 468-3913
(209) 468-1084 fax
www.sjco.org/habitat

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SPECIES SUMMARY

Giant garter snake *Thamnophis gigas*

The original reported range of the giant garter snake was the San Joaquin Valley from the vicinity of Sacramento and Antioch southward to Buena Vista Lake, Kern County. The present known distribution extends from the vicinity of Gridley, Butte County, to the vicinity of Burrel, Fresno County (CDFG 1989). It is now considered extirpated from the Buena Vista Lake and Tulare Lake Basin (CDFG 1990 in Renshaw 1991). Throughout its remaining range, the species and its supporting habitat are depleted (CDFG 1989). There are 14 records for the giant garter snake in the project database, eight of which identify occupied habitat. The giant garter snake is one of the most aquatic of garter snakes and is usually found in streams, marshes, and sloughs with mud bottoms (Stebbins 1985). It also occurs in drainage canals and irrigation ditches (CDFG 1989).

Giant garter snake habitat includes marshes, sloughs, ponds, small lakes, low gradient streams, other waterways and agricultural wetlands such as irrigation and drainage canals, rice fields and the adjacent uplands. Essential habitat components consist of (1) adequate water (either permanent aquatic habitat, or seasonally flooded during the snake's active season, early spring through mid-fall) to provide a prey base and cover; (2) emergent, herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and foraging habitat; (3) upland habitat, including grassy banks, for basking, cover and retreat sites; and (4) higher elevations uplands for cover and retreat sites during the snake's active season and refuge from flood waters during the dormant season. Giant garter snakes are typically absent from larger rivers and other water bodies that support introduced populations of large predatory fish, and from wetlands with sand, gravel, or rock substrates. Riparian woodlands typically do not provide suitable habitat because of excessive shade, lack of basking sites, and absence of giant garter snake prey.

Giant garter snakes are apparently absent from large rivers, and from wetlands with sand, gravel or rock substrates (G. Hansen, 1980, Rossman and Stewart 1987, Brode 1988, G. Hansen 1988). Surveys have failed to detect giant garter snakes along larger rivers within the Central Valley. However, channelization, flood control, land reclamation for agriculture, and alterations of flows and substrate from hydraulic mining may have removed suitable habitat associated with these larger waterways. Historically, oxbows, overflow areas, and backwater sloughs or channels could have provided suitable habitat. Riparian woodlands do not typically provide suitable habitat because of excessive shade, lack of basking sites, and the absence of prey populations (G. Hansen 1980).

Giant garter snakes have fairly specific habitat requirements that are compatible with certain agricultural practices, such as rice farming, but are incompatible with a number of human uses, including recreation, flood control, and even winter waterfowl management. Since they are aquatic hunters, they must have permanent, though not necessarily extensive, water. They have probably lost much potential habitat because young snakes are preyed upon by introduced predaceous game fish such as bass.

Flooding destroys winter hibernacula (chambers above the highest flood level used for hibernation); the giant garter snake must have a protected, non flooding upland site in which to overwinter. Unlike most of the SJMSCP Covered fish species and riparian associated birds, giant garter snakes are not greatly benefitted by tree and shrub cover on banks; on the contrary, they require banks covered with vegetation and high grass as cover against predators (e.g., notably egrets, herons, and northern harriers that are plentiful in the Valley) on which to bask and from which to dive when alarmed. When disturbed by human activity, they will move great distances, possibly out of the areas set aside for their protection. All of these factors may contribute to the current rarity of this species.

INCIDENTAL TAKE MINIMIZATION MEASURES

5.2.4.8 Giant Garter Snake

A. Full avoidance of giant garter snake known occupied habitat is required in compliance with Section 5.5.9 (C) for the following SJMSCP Covered Activities with the potential to adversely affect the GGS and which have not been mapped: golf courses; religious assembly; communications services; funeral; interment services; public services - police, fire and similar; projects impacting channel or tule island habitat; major impact projects including landfills, hazardous waste facilities, correctional institutions and similar major impact projects; recreational trails and campgrounds, recreational outdoors sports clubs; utility services, museums and similar facilities. Known occupied habitat for the giant garter snake is that area west of I-5 on Terminous Tract, Shin Kee Tract, White Slough Wildlife Area, and Rio Blanco Tract. New sites identified during the life of the SJMSCP as confirmed habitat sites for the giant garter snake shall be considered known occupied sites for the purposes of this section.

B. For areas with potential giant garter snake habitat, the following is required. Potential GGS habitat elements are described in SJMSCP Section 2.2.2.2 and exist in the Primary Zone of the Delta and the Central Zone contiguous with known occupied habitat in the White Slough area north to the San Joaquin/Sacramento County line and south to Paradise Cut; in the Central Zone east of Stockton in Duck Creek, Mormon Slough, Stockton Diverting Canal, Little John's Creek, Lone Tree Creek, and French Camp Slough (wherever habitat elements are present); and the Southern Center Zone and Southwest/Central Transition Zone including the area east of J4 from the Alameda-San Joaquin County Line to Tracy and area south of Tracy and east of Interstate 580 to the east edge of Agricultural Habitat Lands east of the San Joaquin River.

1. Construction shall occur during the active period for the snake, between May 1 and October 1. Between October 2nd and April 30th, the JPA, with the concurrence of the Permitting Agencies' representatives on the TAC, shall determine if additional measures are necessary to minimize and avoid take.
2. Limit vegetation clearing within 200 feet of the banks of potential giant garter snake aquatic habitat to the minimal area necessary.
3. Confine the movement of heavy equipment within 200 feet of the banks of potential giant garter snake aquatic habitat to existing roadways to minimize habitat disturbance.
4. Prior to ground disturbance, all on-site construction personnel shall be given instruction regarding the presence of SJMSCP Covered Species and the importance of avoiding impacts to these species and their habitats.
5. In areas where wetlands, irrigation ditches, marsh areas or other potential giant garter snake habitats are being retained on the site:
 - a. Install temporary fencing at the edge of the construction area and the adjacent wetland, marsh, or ditch;
 - b. Restrict working areas, spoils and equipment storage and other project activities to areas outside of marshes, wetlands and ditches; and
 - c. Maintain water quality and limit construction runoff into wetland areas through the use of hay bales, filter fences, vegetative buffer strips, or other accepted equivalents.
6. If on site wetlands, irrigation ditches, marshes, etc. are being relocated in the vicinity: the newly created aquatic habitat shall be created and filled with water prior to dewatering and destroying the pre existing aquatic habitat. In addition, non predatory fish species that exist in the aquatic habitat and which are to be relocated shall be seined and transported to the new aquatic habitat as the old site is dewatered.
7. If wetlands, irrigation ditches, marshes, etc. will not be relocated in the vicinity, then the aquatic habitat shall be dewatered at least two weeks prior to commencing construction.
8. Pre-construction surveys for the giant garter snake (conducted after completion of environmental reviews and prior to ground disturbance) shall occur within 24 hours of ground disturbance.
9. Other provisions of the USFWS Standard Avoidance and Minimization Measures during Construction Activities in Giant Garter Snake Habitat shall be implemented (excluding programmatic mitigation ratios which are superseded by the SJMSCP's mitigation ratios).