

5-YEAR REVIEW

San Francisco gartersnake (*Thamnophis sirtalis tetrataenia*)

GENERAL INFORMATION

Species: San Francisco gartersnake (*Thamnophis sirtalis tetrataenia*)

Date listed: March 11, 1967

FR citation: 32 FR 4001

Classification: Endangered

Most recent status review:

The most recent status review of the San Francisco gartersnake was a 5-year review completed by the Sacramento Fish and Wildlife Office in 2006.

Methodology used to complete the review:

In accordance with section 4(c)(2) of the Endangered Species Act of 1973, as amended (Act), the purpose of a 5-year review is to assess each listed species to evaluate whether or not the species' status has changed and it should be classified differently or removed from the Lists of Threatened and Endangered Wildlife and Plants. The U.S. Fish and Wildlife Service's (Service) Sacramento Fish and Wildlife Office (SFWO) conducted a Species Status Assessment (SSA) and developed an SSA report on the San Francisco gartersnake (Service 2020), which was used to inform this 5-year review. The SSA report represents our evaluation of the best available scientific information, including the habitat and demographic needs and the current and future condition of the species. Independent peer reviewers and partner representatives reviewed the SSA report.

FR Notice citation announcing this status review:

A notice announcing the initiation of the 5-year review for this taxon and the opening of a 60-day period to receive information from the public was published in the Federal Register on July 26, 2019 (84 FR 36116). We received two responses from federal agencies to our request for comments, which are incorporated in our analysis in the SSA report.

REVIEW ANALYSIS

Updated Information and Species Status

A summary of new information included throughout the SSA report is included in Chapter 1. The SSA report provides a summary of the factors influencing viability of the species, management and conservation measures, and current status of the species in Chapter 4, and projects potential future condition of the species under three plausible scenarios in Chapter 5. The SSA report provides an analysis of the current and future condition of 12 population complexes throughout the current range of the species, and also describes a 13th population complex that was formerly considered the most abundant population but is now considered to be extirpated. A summary of species viability is presented in Chapter 6.

Threats

Current or potential future threats to San Francisco gartersnake include: fragmentation and urbanization (Factor A); changes to aquatic habitat, including saltwater intrusion, drought, and water management activities (Factor A); seral succession (Factor A); illegal collection (Factor B); predation by non-native invasive bullfrogs and fish (Factor C); disease, specifically the emerging threat of Snake Fungal Disease (Factor C); small population size (Factor E); and climate change (Factor E).

Recovery Criteria

Recovery Plan: San Francisco Garter Snake Recovery Plan (September 1985); Recovery Outline completed in July 1995

Recovery criteria for downlisting of the San Francisco gartersnake focus on abundance estimates at six significant populations defined in the Recovery Plan. Specifically, the criteria call for 200 or more individuals at a 1:1 sex ratio at each of the sites for five consecutive years. Recovery criteria for delisting the San Francisco gartersnake focus on maintaining the same abundance and sex ratio criteria for at least 15 years at the six significant populations, plus four populations at undefined sites.

Chapter 4 of the SSA includes a comparison of current condition of the San Francisco gartersnake to the recovery criteria for the species. There is only one population with over 200 individuals, and populations with the smallest abundance estimates may have shifted sex ratios. Thus, the downlisting criteria for this species are not met.

Synthesis

When the recovery plan for the San Francisco gartersnake was written in 1985, the primary threats to the survival and recovery of the San Francisco gartersnake were the alteration and isolation of habitats resulting from urbanization. Habitat loss and the degradation of remaining habitat continue to be primary threats to the species' recovery. After reviewing the best available scientific information and comparing current and future condition with the recovery criteria for the species, we conclude that the San Francisco gartersnake remains an endangered species.

RESULTS

Recommended Classification:

- Downlist to Threatened**
- Uplist to Endangered**
- Delist** (*Indicate reasons for delisting per 50 CFR 424.11*):
 - Extinction*
 - Recovery*
 - Original data for classification in error*
- No change is needed**

New Recovery Priority Number: No change

The Service has determined that the current recovery priority number (3C) should remain unchanged. The current recovery number, "3", indicates that a subspecies has a high degree of threat as well as a high recovery potential. The "C" indicates conflict with construction or other development projects or other forms of economic activity.

RECOMMENDATIONS FOR FUTURE ACTIONS

- *Continue demographic and genetic monitoring of the species:* Continued trapping surveys for populations with estimated abundance and genetic diversity will assist with assessing status and trends for the species.
- *Encourage conservation among private landowners:* Conservation by private landowners should be encouraged. In addition to including public entities in conservation and recovery efforts, participation by private land owners from both agricultural and urban settings is needed to recover the San Francisco gartersnake. This is especially important in locations where substantial quantities of suitable habitat persist. In order to accomplish this, ongoing efforts to conduct outreach meetings to educate the public as to the needs of the species should be fully supported by the Service and its partners. The Service and partners can explore the possibility of working with private and non-federal property owners to develop Safe Harbor Agreements (SHAs), voluntary agreements which contribute to the recovery of species listed as endangered or threatened under the ESA
- *Conduct habitat assessments and surveys for population complexes with unknown conditions or in suitable habitat without known populations:* Recent trapping surveys of known San Francisco gartersnake populations have been conducted as part of an effort to identify potential donor sources for a headstarting program focused on known populations with high quality habitat, many (but not all) of them on public lands. Habitat assessments and trapping surveys in the central part of the species range where conditions are largely unknown is necessary to evaluate the current and future condition of the species in those areas. Surveys on private lands, with landowner support, can help encourage private landowners to participate in conservation and recovery efforts.
- *Establish a San Francisco gartersnake working group or recovery implementation team.* The group would serve to coordinate and facilitate headstarting efforts and prioritize other recovery actions and implementation. By conducting organized discussions with relevant parties, coordination in conservation efforts will be increased.
- *Continue efforts towards headstarting San Francisco gartersnakes:* Identify source and donor recipient populations, determine recommended protocols for headstarting (and/or captive breeding, rearing, etc.) and measuring success, complete a genetic management plan for translocations and introductions/reintroductions, and conduct restoration for donor populations as appropriate.

- *Focus on habitat restoration to restore connectivity within and between populations:*
Reinstating connectivity can increase genetic diversity and enhance representation for the species.

REFERENCES

U.S. Fish and Wildlife Service (Service). 2020. Species Status Assessment for the San Francisco gartersnake (*Thamnophis sirtalis tetrataenia*) Version 1.0. May 2020. Sacramento, CA.

**U.S. FISH AND WILDLIFE SERVICE
5-YEAR REVIEW of San Francisco gartersnake**

Current Classification: Endangered

Recommendation resulting from the 5-Year Review:

- Downlist to Threatened
- Uplist to Endangered
- Delist
- No change needed

FIELD OFFICE APPROVAL:

Lead Field Supervisor, Fish and Wildlife Service

Approve  Date 05/21/2020

The lead Field Office must ensure that other offices within the range of the species have been provided adequate opportunity to review and comment prior to the review's completion. The lead field office should document this coordination in the agency record.