

Red-sided Garter Snake



ASSESSING HABITAT QUALITY FOR PRIORITY WILDLIFE SPECIES IN COLORADO WETLANDS



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Red-sided garter snakes (*Thamnophis sirtalis parietalis*, Family Colubridae) occur in wetlands on Colorado's northeastern plains.

Species Description

Identification

Red-sided garter snakes, sometimes referred to as common garter snakes, can grow as long as 49 inches. In Colorado, they are usually considerably smaller and may only grow as long as about 3 feet (36 inches). They have patches of red between their lighter stripes.

Preferred Habitats

Garter snakes hibernate during the winter, up to seven or eight months in the more northern parts of their range. While they are active, they are wetland-dependent, occupying most wetland habitat types within Colorado.

Diet

Red-sided garter snakes consume primarily amphibians, fish, and earthworms.

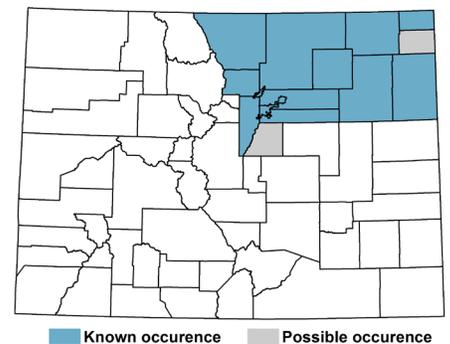
Conservation Status

The abundance of red-sided garter snakes is mostly unknown. In Colorado, they are listed as a Species of Concern and a Tier 2 Species of Greatest Conservation Need (CPW 2015). Population declines of other garter snakes, such as the western terrestrial garter snake (*Thamnophis elegans*) that consume mostly amphibians, have apparently been tied to amphibian declines. Because the red-sided garter snake eats primarily amphibians, it is possible populations of red-sided garter snakes are associated with populations of amphibians.

Species Distribution

Range

The red-sided garter snake is found in Canada and the western United States, with a disjunct distribution in the western United States. In Colorado, they are found in the northeast and north-central part of the state.



North America map used from Wild Animals of Manitoba (<http://www.gov.mb.ca/conservation/wildlife/mbsp/fs/rsgarter.html>). Colorado map based on Hammerson (1999) and NDIS (2014).

Preferred Habitat Conditions

| | |
|------------------------|--|
| Dominant vegetation | emergent, sedges, grasses, and other vegetation that provides cover |
| Landscape context | close and unfragmented connection between upland hibernacula (hibernation sites) and wetlands (foraging habitat) |
| Percent emergent cover | very dense |
| Size of habitat | not well understood, but larger is better |
| Water quality | pH = 6.1–7 with no visual evidence of turbidity or other pollutants |

Management Recommendations

This fact sheet contains easy-to-use guidelines for understanding habitat needs of Colorado Parks and Wildlife priority wetland-dependent wildlife. A number of practical steps can be taken to improve habitat for red-sided garter snakes.

Hydrology

- For breeding ponds, maintain depth of >20 inches until metamorphosis completed.
- After mid-July, draw down water containing predatory fish and bullfrog larvae.

Vegetation

- Provide grass buffers around breeding ponds.
- Manage for dense emergent vegetation.

Containment

- Reduce nitrogen loading.
- Reduce pesticides, chemicals and other toxins.
- Reduce predatory fish.
- Possibly reduce or change mosquito control.

Land Use / Other

- Eliminate livestock access to ponds.
- Avoid or minimize clear-cutting.

Conservation

- Translocate frogs to re-establish populations that can serve as a food source.
- Promote conservation programs to provide grassland component in the landscape.
- Promote native species in adjacent lands.



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Acknowledgements

Tina Jackson (Colorado Parks and Wildlife) reviewed an earlier version and provided input on preferred habitat conditions.

Suggested Reading and Citations

CPW (Colorado Parks and Wildlife). 2015. State Wildlife Action Plan: A Strategy for Conserving Wildlife in Colorado. Denver, Colorado.

Hammerson, G. A. 1999. *Amphibians and Reptiles in Colorado*. University Press of Colorado, Niwot, Colorado.

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Manitoba Wildlife Branch. 2015. Wild animals of Manitoba: Red-sided garter snake fact sheet. <https://www.gov.mb.ca/conservation/wildlife/mbsp/fs/rsgarter.html>.

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NDIS (Natural Diversity Information Source). 2014. On-line mapping tool formerly available through Natural Resource Ecology Laboratory, Colorado State University, Fort Collins, Colorado.

Shine, R., M. J. Elphick, P. S. Harlow, I. T. Moore, M. P. LeMaster, and R. T. Mason. 2001. Movements, mating, and dispersal of red-sided gartersnakes (*Thamnophis sirtalis parietalis*) from a communal den in Manitoba. *Copeia*, Vol. 2001, No. 1 (Feb. 16, 2001): 82-91.

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Habitat Scorecard for Red-sided Garter Snakes (v. Jan 2016)

Assessment of habitat before and after restoration or management actions

Project Name: _____ Date(s) of Assessment: _____

Instructions: Enter one value that best describes early to mid-summer conditions of each habitat variable, using the numbers in the value column. Habitat variables are in shaded boxes; ranges of condition are directly below each variable. If condition is outside range or is not described, enter a zero.

| Key habitat variable and conditions | Value | Before | After |
|--|-------|--------|-------|
| Percent of emergent vegetation | | | |
| >60 – 100% | 36.4 | | |
| >40 – 60% | 24.2 | | |
| 20 – 40% | 12.1 | | |
| Amphibians in same habitat | | | |
| Abundant amphibians present | 36.4 | | |
| Only occasional amphibians noted | 12.1 | | |
| Water quality | | | |
| No visual evidence of turbidity or other pollutants | 27.2 | | |
| Some turbidity or presence of other pollutants, but limited to small and localized areas within the wetland; water may be slightly cloudy | 18.2 | | |
| Water is cloudy or has unnatural oil sheen, but the bottom is still visible (note: if the sheen breaks apart when you run your finger through it, it is a natural bacterial process and not water pollution) | 9.1 | | |
| Total (of 100 possible): add all numbers in before or after columns | | | |