

**ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM**

Animal Abstract

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CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Thamnophis eques megalops*

COMMON NAME: Northern Mexican Gartersnake, Mexican Garter Snake

SYNONYMS: *T. subcarinatus megalops*

FAMILY: Serpentes: Colubridae

AUTHOR, PLACE OF PUBLICATION: *Thamnophis eques* was first described as *Coluber eques* by Reuss (1834). Early misapplication of the name was corrected by Smith (1951). *T. e. megalops* was first described by Kennicott, R. 1860. Proc. Acad. Nat. Sci. Philadelphia 12(1861):331.

TYPE LOCALITY: The type locality of *T. e. megalops* was given as "Tucson, Arizona, or Santa Magdalena, Sonora," but it was later restricted to Tucson (Smith and Taylor 1950; Schmidt 1953).

TYPE SPECIMEN: The syntype is USNM 965, collected by Major Emory and A. Schott, date of collection unknown (Cochran 1961).

TAXONOMIC UNIQUENESS: There are about 19 species in the genus, which ranges from southern Canada to Costa Rica. Three subspecies in *T. eques* but only *megalops* occurs in Arizona (Stebbins 1985).

DESCRIPTION: The Mexican Gartersnake reaches a total length of 45.7-101.6 cm (18.0-40.0 in), with females measuring larger than males. It is stout-bodied and brown or greenish-brown with a yellow-white stripe down the back. Another stripe runs down the third and fourth scale rows on each side of anterior (neck) part of body. It has large brown blotches on the back of head separated from the corner of the mouth by a light crescent (Stebbins 1985).

AIDS TO IDENTIFICATION: The midstripe separating the blotches behind the head may cause confusion with the black-necked gartersnake (*Thamnophis cyrtopsis*) which is found in the same area. However, *T. e. megalops* is lighter, at least posteriorly, in color; has anterior side stripes on the third and fourth scale rows up from ventrals instead of the second and third; and has a more pronounced crescent-shaped greenish intrusion into the black blotch at the corner of the mouth (Shaw and Campbell 1974).

ILLUSTRATIONS: Color drawing (Stebbins 1985: plate 42)

Color photo (Behler and King 1979: plate 528)

Color photo (Degenhardt et al. 1996: plate 108)

TOTAL RANGE: *Thamnophis eques* ranges from southeastern Arizona and extreme southwestern New Mexico, southward into the highlands of western and southern Mexico, to Oaxaca (Stebbins 1985).

RANGE WITHIN ARIZONA: *T. e. megalops* occurs in the southeast corner of state from the Santa Cruz Valley east and generally south of the Gila. Recent valid records (post 1980) occur from the San Rafael and Sonoita grasslands area and from Arivaca. It is also known from the Agua Fria River, Oak Creek, the Verde River, and from several upper Salt/Black River sites, including smaller tributaries (Rosen and Schwalbe 1988).

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: *Thamnophis eques* is active during the warmer months of the year. They may be observed foraging along watercourses, but they are quick to seek shelter in streamside vegetation or in the stream. When threatened, they will flatten their heads and bodies and will strike repeatedly. They will also emit a foul-smelling musk from glands at the base of the tail when handled roughly (Degenhardt et al. 1996).

REPRODUCTION: Females are larger than males and begin reproducing at 53-70 cm (21-28 in) total length (Degenhardt et al. 1996). Clutch sizes range up to 26 live-born young, which are born from June through August (Rosen and Schwalbe 1988; Stebbins 1985).

FOOD HABITS: *T. e. megalops* preys primarily on frogs, tadpoles, and native fish, although lizards and mice may be taken as well (Rosen and Schwalbe 1988).

HABITAT: In Arizona, these snakes are most abundant in densely vegetated habitat surrounding cienegas, cienega-streams, and stock tanks and in or near water along streams in valley floors and generally open areas, but not in steep mountain canyon stream habitat (Rosen and Schwalbe 1988).

ELEVATION: Usually ranges between 3,000 and 5,000 ft (914 - 1525 m) (Rosen and Schwalbe 1988), but may reach elevations of 8,500 feet (2593 m).

PLANT COMMUNITY: *T. e. megalops* occupies riparian, cienega, and marsh areas in desert grassland, and occasionally in desert and lower oak woodland habitats (Rosen and Schwalbe 1988).

POPULATION TRENDS: Population numbers are decreasing, with extirpations at several localities since 1950 as habitat is changed and introduced predators invade habitat (Rosen and Schwalbe 1988).

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: C (USDI, FWS 2008)
 [None USDI, FWS 1996]
 [C2 USDI, FWS 1994]
 [C2 USDI, FWS 1991]
 [C2 USDI, FWS 1989]

STATE STATUS: WSC (AGFD, WSCA in prep)
 [State Candidate AGFD, TNW 1988]

OTHER STATUS: Forest Service Sensitive (USDA, FS Region
 3 1999)
 [Forest Service Sensitive USDA, FS Region
 3 1988]
 Determined Threatened (Secretaría de
 Medio Ambiente 2000)
 [Listed Rare, Secretaría de Desarrollo Social
 1994]

MANAGEMENT FACTORS: Management concerns for *T. e. megalops* include predation by introduced bullfrogs and predatory fishes, urbanization and lowered water tables, and habitat destruction, including that due to overgrazing (Rosen and Schwalbe 1988).

PROTECTIVE MEASURES TAKEN: Collection is limited to four individuals per year with a valid hunting license (Arizona Game and Fish Commission Order 43).

SUGGESTED PROJECTS: Current distribution, habitat, population and life history studies are needed. Management should consider cienega restoration and protection, including exotic species control or eradication.

LAND MANAGEMENT/OWNERSHIP: US Fish and Wildlife: San Bernardino NWR; US Forest Service: Coconino, Coronado, and Tonto National Forests; Bureau of Land Management: Phoenix, Tucson, and Yuma Field Offices; Bureau of Indian Affairs: Fort Apache Reservation; Department of Defense: Fort Huachuca Military Reservation; State Land Department; Private.

SOURCES OF FURTHER INFORMATION**REFERENCES:**

- Arizona Game and Fish Department. 1988. Threatened Native Wildlife in Arizona. p. 12.
 Arizona Game and Fish Department. In prep. Wildlife of special concern in Arizona. Arizona Game and Fish Department Publication. Phoenix, Arizona. 32 pp.
 Behler, J.L. and F.W. King. 1979. The Audubon society field guide to North American reptiles and amphibians. Alfred A. Knopf, New York. P.668.

- Cochran, D.M. 1961. Type specimens of reptiles and amphibians in the U.S. National Museum. Bull. U.S. Natl. Mus. (220):xv + 291 p.
- Degenhardt, W.G., C.W. Painter, and A.H. Price. 1996. Amphibians and Reptiles of New Mexico. University of New Mexico Press, Albuquerque. pp. 317-319.
- Fowle, J.A., M.D. 1965. The Snakes of Arizona. Azul Quinta Press, Fallbrook, California. pp. 127-128.
- Kennicott, R. 1860. Descriptions of new species of North American serpents in the Museum of the Smithsonian Institution, Washington. Proc. Acad. Nat. Sci. Philadelphia 12(1861):331.
- Lowe, C.H. 1964. Amphibians and reptiles. The vertebrates of Arizona. University of Arizona Press, Tucson. P.167.
- Reuss, A. 1834. Zoologische Miscellen, Reptilien. Ophidier. Senckenberg Mus., Frankfurt am Main 1(2):127-162 + 3 plates.
- Rosen, P.C. and C.R. Schwalbe. 1988. Status of the Mexican and narrow-headed garter snakes (*Thamnophis eques megalops* and *Thamnophis rufipunctatus rufipunctatus*) in Arizona. Unpubl. report from Arizona Game and Fish Department (Phoenix, Arizona) to U.S. Fish and Wildlife Service, Albuquerque, New Mexico.
- Schmidt, K.P. 1953. A Check List of North American Amphibians and Reptiles 6th ed. Amer. Soc. Ichthyol. Herpetol. By Univ. Chicago Press, Chicago. Viii + 280 p.
- Shaw, C.E. and S. Campbell. 1974. Snakes of the American West. Alfred A. Knopf, New York. Pp.145-146.
- Secretaría de Desarrollo Social. 1994. Diario Oficial de la Federacion. p. 46.
- Secretaría de Medio Ambiente. 2000. Diario Oficial de la Federacion. p. 55.
- Smith, H.M. 1951. The identity of the ophidian name *Coluber eques* Reuss. Copeia 19+51:138-140.
- Smith, H.M., and E.D. Taylor. 1950. Type localities of Mexican reptiles and amphibians. Univ. Kansas Sci. Bull. 33, Pt. 2(8):313-380.
- Stebbins, R.C. 1985. A field guide to western reptiles and amphibians. Second edition, revised. Houghton Mifflin Company, Boston. pp.205.
- USDA, Forest Service Region 3. 1988. Regional Forester's Sensitive Species List.
- USDA, Forest Service Region 3. 1999. Regional Forester's Sensitive Species List.
- USDI, Fish and Wildlife Service. 1989. Endangered and Threatened Wildlife and Plants; Animal Notice of Review. Federal Register 54(4):559.
- USDI, Fish and Wildlife Service. 1991. Endangered and Threatened Wildlife and Plants; Animal Candidate Review for Listing as Endangered or Threatened Species, Proposed Rule. Federal Register 56(225):58813.
- USDI, Fish and Wildlife Service. 1994. Endangered and Threatened Wildlife and Plants; Animal Candidate Review for Listing as Endangered or Threatened Species; Proposed Rule. Federal Register 59(219):58994.
- USDI, Fish and Wildlife Service. 1996. Endangered and Threatened Wildlife and Plants; Review of Plant and Animal Taxa that are Candidates for Listing as Endangered or Threatened Species, Proposed Rule. Federal Register 61(40):7596-7613.
- USDI, Fish and Wildlife Service. 2008. Endangered and Threatened Wildlife and Plants; 12-Month Finding on a Petition To List the Northern Mexican Gartersnake (*Thamnophis*

eques megalops) as Threatened or Endangered with Critical Habitat. Federal Register 73(228):71788-71826; Proposed Rule.

Wright, A.H. and A.A. Wright. 1957. Handbook of snakes of the United States and Canada. Vol.I. Comstock Publishing Associates, Ithaca, New York. Pp.799-801.

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ADDITIONAL INFORMATION:

The past range at its northern end has been confused by nomenclature (Black-necked Garter Snake was named *T. eques cyrtopsis*). Much of the earlier literature on this species is found under the names *Eutaenia megalops*, *T. subcarinatus megalops*, or *T. macrostemma megalops* (Degenhardt et al. 1996).

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