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*Photo Credit: Wolf River Conservancy

Water Snakes (*Nerodia spp.*)

North America's Water Moccasin Look-Alikes

Water snakes are medium to large, fairly heavy bodied colubrid snakes that can vary greatly in color and pattern depending on species. They may be banded, blotched, diamond or chain linked, striped, or solid colored with blacks, grays, browns, reddish browns, olives, or any combination of these colors thereof. They are often unfortunately mistaken or confused with venomous water moccasins or other venomous snakes, and are needlessly killed, even in areas where water moccasins do not occur naturally. They will often bite, and readily excrete musk and feces if initially handled or disturbed, however. As their common names imply, water snakes are usually found in, or immediately near lakes, ponds, streams, rivers, marshes, and other permanent to semi-permanent bodies of water, although they can also be found further from water on occasion as well. As with several other species of natricine snakes, large congregations of breeding balls of water snakes may also be observed in the spring and early summer when many males attempt to court and mate with a single, same female. This further lends to the erroneous belief that venomous water moccasins create nests when they do not in actuality. Water snakes are hardy and undemanding snakes to maintain, and can often become hand fed, although they are not frequently bred in captivity.

Taxonomy

Life: All living, physical, and animate entities

Domain: Eukaryota

Kingdom: Animalia

Phylum/Sub Phylum: Chordata/Vertebrata

Class: Reptilia

Order: Squamata

Suborder: Serpentes

Infraorder: Alethinophidia

Family: Colubridae

Subfamily: Natricinae

Genus: *Nerodia*

Species: *Nerodia spp.**

**Taxonomy subject to change and revision.*

Lifespan and Longevity

If provided the proper care, water snakes can attain longevity of 10 to 15 years or more.

Species

Species include the Northern and Midland (Common) Watersnakes (*Nerodia sipedon* ssp.), Diamondback Watersnake (*Nerodia rhombifer*), Brown Watersnake (*Nerodia taxispilota*), Plain Bellied/Yellow Bellied/Red Bellied Watersnakes (*Nerodia erythrogaster* ssp.), Banded Watersnakes (*Nerodia fasciata* ssp.), Green Watersnakes (*Nerodia cyclopion* ssp.), and the Salt Marsh Watersnakes (*Nerodia clarkia* ssp.)

Distribution and Habitat

Watersnakes are a very widely ranging genus of relatively medium sized to large, aquatic to semi-aquatic colubrid snakes indigenous to a wide range of the United States, and into southern and southeastern Canada and northern Mexico. The Common Watersnake, which comprises of the northern and midland watersnake subspecies, occupies southern to southeastern Canada to Ontario, much of the Midwestern, eastern, northeastern, southeastern, to east-central U.S. The similar Banded Watersnake occurs within the coastal eastern to southeastern U.S., while the Brown Watersnake occurs in the southeastern U.S., Plain bellied Watersnake ranging from the south-central to southeastern and eastern U.S. The Diamondback Watersnake also ranges from northern Mexico, through the south-central and central to east-central U.S. The Gulf Salt Marsh Watersnakes occupy the Gulf coastal regions of the southern, southeastern, to eastern U.S. Within this range, watersnakes occupy primarily terrestrial to semi-aquatic environments, including most types of permanent to semi-permanent lakes, ponds, rivers and streams, river backwaters and oxbows, marshes, swamps, ditches, canals, reservoirs, and the Great Lakes shorelines. Watersnakes especially favor well vegetated, or overhanging or adjacent shoreline vegetation, rocky areas, and similar micro-environments which provide them ample basking, foraging, and retreat opportunities.

Origin/History

Nerodia spp. Baird & Girard, 1853. *Nerodia taxispilota* (Holbrook, 1842); *Nerodia sipedon* (Linnaeus, 1758); *Nerodia rhombifer* (Hallowell, 1852); *Nerodia floridana* (Goff, 1936); *Nerodia fasciata* (Linnaeus, 1766); *Nerodia erythrogaster* (Forster, 1771); *Nerodia clarkii* (Baird & Girard, 1853). Specific subspecies of all of these species would have other authors first describing them in other years.

Watersnakes probably began to be kept in captivity when the pet trade generally began during the 1950's and 1960's, but were often viewed as "trash" or "junk" snakes (along with other Natricine snakes) in favor of more exotic boas and pythons, or other species of North American colubrids. Most that are available were, and still mostly are wild-collected of assorted species. Captive-breeding of any of the *Nerodia* genus remains infrequent to this day despite being hardy and easy to keep in captivity.

Their bad or pugnacious reputations may have prevented them from seeing much popularity or fanfare, although these snakes have been reported to become easily acclimated to captivity, and could oftentimes even be hand-fed.

Experience Level Required

Novice/Beginner.

Size

Water snakes begin and range from 5 to 8 inches as neonates, and 24 to 48 inches, or about 2 to 4 feet as adults depending on the species and subspecies. Some of the larger species of water snakes can reach up to 54 inches, or 5 feet or slightly more.

Housing and Enclosure

Enclosure System: Primarily Terrestrial to Semi-Aquatic. Housing must be sealed, secure, and

escape proof. Most species of water snakes do not require a predominately aquatic setup, and conditions that are too wet or moist without access to dry areas should be avoided. Neonate to juvenile water snakes can be housed in a 10 gallon terrarium or enclosure. Adult water snakes of most species should be housed in a minimum of a 20 to 40 gallon long terrarium or enclosure. Water snakes are primarily terrestrial, and floor space is more important than height. Provide a substrate that can enable burrowing or hiding such as fine aspen shavings, cypress mulch, or coconut fibers. Do not use pine or cedar shavings, as these substrates are toxic to snakes. Provide additional basking and hiding opportunities using live or artificial foliage, rocks, logs, driftwood, or other hides. Also be sure to include a large, sturdy water bowl or dish as well that these snakes can still use for soaking and foraging for prey.

Temperature, Lighting, and Humidity

Create a thermal gradient (or a warm side) in the cage/enclosure with an appropriate sized UTH (or tank heating pad), ceramic or radiant heat emitter, or incandescent, UVA/UVB, or other heat producing bulb. Ideal temperatures for water snakes range from 75 to 80 degrees F on the cool side and 80 to 88 degrees F on the warm side. Most species of snakes have fairly simple and undemanding heating and lighting requirements in captivity, and do not require additional UVA/UVB lighting, although providing it can be greatly beneficial for their health, immune system, and overall wellness. Also be sure to spot clean the enclosure for urates, feces, or uneaten food at least once per week. Be sure to periodically replace the substrate, clean, and disinfect the enclosure and its furnishings at minimum every 2 to 3 months. More specific lighting, heating, and humidity product suggestions and recommendations that can best suit one's needs, as well as those of one's animals can be given as well. Water snakes should be maintained at relatively moderate relative humidity levels, which may vary somewhat depending on the species and subspecies, from about 40 to 60%, with additional humid hides or retreats to assist with shedding and overall health.

Feeding, Diet, and Nutrition

Carnivorous; In the wild, water snakes are carnivorous, and will prey upon insects, worms, and other invertebrates, as well as small fish, amphibians, smaller reptiles, and occasionally small rodents or birds. In captivity, water snakes can be given nightcrawlers, earthworms, redworms, and feeder fish of appropriate nutritional value. Some species will accept frozen thawed rodents, such as rats and mice as well. Frozen fish can also be given, but with many piscivorous, or fish eating snakes, including garter and water snakes, husbandry issues with thiamine deficiencies can arise if they are not nutritionally balanced. Some of these food items for water snakes may also require supplementation with vitamin D3 or calcium supplements for optimal health and well-being. Food items can gradually be increased as needed depending on the age, size, and overall health of the animal. A general rule of thumb to follow when feeding snakes is to provide prey items that are approximately the same width as the widest point of the snake. More specific dietary and supplementary product suggestions and recommendations that can best suit one's needs, as well as those of one's animals can be given as well.

Handling

Many water snakes when first captured or handled can be ornery and cantankerous, biting, defecating, and/or excreting a very noxious smelling musk in defense. Many water snakes in captivity however can become quite docile or acclimated to people, and will often even be able to be hand fed.

****Also be sure to practice basic cleanliness and hygiene associated with proper husbandry after touching or handling any animals or animal enclosures to prevent the possibility of contracting salmonellosis or any other zoonotic pathogens****

Contact

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