

Everglade: *Elaphe obsoleta rossalleni*

Yellow: *Elaphe obsoleta quadrivittata*

# Everglades Rat Snake

## Yellow Rat Snake

**Class:** Reptilia. **Order:** Squamata. **Family:** Colubridae.

**Other names:** Chicken snake, rat snake



**Note:** This “Natural History” describes two subspecies of rat snake, the Everglades rat snake and the yellow rat snake. Seven subspecies of rat snakes, *Elaphe obsoleta*, are found in the United States, all of which freely interbreed where geographic ranges overlap. See **Additional Information** section for more information on their population dynamics.

**Physical Description:** Hatchlings of both subspecies usually have a light gray ground color with darker gray blotches and a ventral pattern consisting of whitish-gray and dark gray checkers. Hatchlings are sometimes born with hints of orange color. In adults, both the dorsal and ventral coloration vary from orange to a deep orange-red, with specimens from the northern end of their range often having a more yellowish-orange color due to genetic influence from the yellow rat (*E. o. quadrivittata*). The dorsal pattern varies from nearly non-existent (sometimes completely absent) to a series of four typically faded stripes running the length of the body often coupled with faint blotches.

Yellow Rat Snakes are the most common color morph of rat snakes in Peninsula Florida. They are typically yellowish with four brownish black stripes along the body. The forked tongue is black and the iris is yellow-colored

As a species, rat snakes are long slim snakes with a head only slightly wider than their body. An average rat snake is between three and a half to six feet long, but some can exceed seven feet in length. Growth in length is rapid preceding sexual maturity and then slows down.

Rat snakes are a member of the family of **harmless snakes**, or **Colubridae**. This is the largest order of snakes, representing two-thirds of all known snake species. Members of this family are found on all continents except Antarctica, widespread from the Arctic Circle to the southern tips of South America and Africa. All but a handful of species are harmless snakes, not having venom or the ability to deliver toxic saliva through fangs. Most harmless snakes subdue their prey through constriction, striking and seizing small rodents, birds or amphibians and quickly wrapping their body around the prey causing suffocation. While other small species such as the common garter snake lack powers to constrict and feed on only small prey it can overpower.

Harmless snakes range in size from 5 inches to nearly 12 feet in length. The largest American species of snake is the indigo snake, a member of this family. It can grow to 11 feet as an adult!

**Diet in the Wild:** Primarily feeds on a wide variety of rodents and birds, as well as their eggs. Young rat snakes also eat lizards and frogs, especially tree frogs.

## Diet at the Zoo: Rodents

### Habitat & Range: Everglades and yellow rat snake:

- Everglades rat snake: South Florida, mainly the Everglades. Prairies of sawgrass, among trees and shrubs, and along waterways.
- Yellow rat snake: Their range includes coastal regions of North Carolina south along the coast through South Carolina and into Georgia and Florida. Habitat includes pine flatlands, slash pine scrub, coastal hardwood hammocks, oak hammocks, cypress dome swamps, and deciduous hardwoods; yellow rat snakes are commonly found around citrus groves, pastures, and abandoned buildings

### Life Span: Up to 15-20 years

### Perils in the wild: Birds of prey, some carnivores, humans.

### Physical Adaptations:

- Rat snakes have a **Jacobson's organ**, pair of pit-like organs on the roof of the mouth that are lined with olfactory cells and nerves that interpret chemical stimuli in an animal's surroundings.
- Their forked tongue, flickering through the air, picks up scent particles and conveys them to the roof of their mouth.
- Rat snakes have stout bodies, square heads.
- Belly scales flat in the middle, ends angled up sharply where they meet the sides of the body. This enables the animal to obtain a better grip for tree climbing.

### Behavioral Adaptations:

- Truly **arboreal**, Everglades and yellow rat snakes will commonly climb trees to reach and devour birds and their eggs. The snake is known to climb to heights of 60 feet search for prey in trees.
- Rat snakes are active day or night.
- Like most snakes, rat snakes are generally solitary.

### Reproduction and Development:

- Rat snakes begin to seek out a mate, typically in late April, May, and early June. Males tend to wait for the females to pass through their territory, and, by using pheromones, communicate and initiate the mating process with the female.
- Rat snakes are **oviparous** or egg-laying animals. Five weeks after mating, the female lays a clutch of about 12 to 20 oblong eggs, usually in rotten logs. The eggs hatch in about 65 to 70 days.
- The young rat snakes are grayish rather than yellow, have blotches rather than stripes and are from 11-17 inches long at birth. Sex is determined by the incubation temperature; warmer temperatures result in males and cooler temperatures favor females.

### Additional Information:

- So-called "rat snakes" occur in various parts of the world except Africa or Australia. Five or more species with many subspecies occur in the United States which includes the familiar corn snake and fox snake. Seven subspecies of the black rat snakes may be found in the United States, all of which freely interbreed where geographic ranges overlap. Several distinctive **intergrade** populations are

known due to subspecies interbreeding. An intergrade form means “to merge gradually one with another through a continuous series of intermediate forms”.

- The rat snake is a non-venomous constrictor and is one of Nature’s most beneficial and splendid reptile assets. They play an essential role in controlling destructive rodents. They do sometimes raid barnyards seeking chicks and chicken eggs, thus the name “chicken snake.” It also ascends rafters of abandoned buildings in search of birds, eggs and mice. Hawks may home in on a nest-raiding rat snake when it is being heckled by other birds. Because of its tendency to rattle its tail when threatened or startled, in the U.S. the rat snake frequently is mistaken for a rattler and killed.

### **Ecological Role of Reptiles**

- Snakes play an important role as both prey and predator in ecosystems all over the world. They can be very important in regulating the populations of pest species such as rodents which are common around human activity.
- Don’t buy pets if you don’t know where they are from. The ongoing trade in reptile products has a huge effect on the numbers of valuable species in the wild. Even buying tropical species from legal sources increases demand and encourages illegal trading.

### **Conservation Status: (IUCN Status):**

Not Assessed, IUCN 2013

### **Conservation Efforts:**

No conservation efforts at this time.

**Glossary:** List of definitions of the most important recurrent technical terms used in the text.

**aboreal-** living in trees.

**colubridae-** the family of *harmless snakes*, or *Colubridae*. This is the largest order of snakes, representing two-thirds of all known snake species. Members of this family are found on all continents except Antarctica, widespread from the Arctic Circle to the southern tips of South America and Africa. All but a handful of species are harmless snakes, not having venom or the ability to deliver toxic saliva through fangs.

**oviparity** - Reproduction in which the eggs are released by the female; development of the offspring occurs outside the maternal body. Adj., oviparous

**ovoviviparity. Adj. ovoviviparous** – Reproduction where the eggs develop within the maternal body without outside nourishment and hatch within the parent or immediately after laying.

**viviparous-** reproduction in which eggs develop within the females body, with the nutritional aid of maternal parent as in the mammals, many reptiles and some fishes.

**Jacobson’s organ-** A pair of pit-like organs on the roof of the mouth that are lined with olfactory cells and nerves that interpret chemical stimuli in an animal’s surroundings.

### **Sources:**

- Cincinnati Zoo & Botanical Gardens

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