Pituophis catenifer sayi

Bull Snake

*Other names:* Gopher Snake, Pine Snake

**Physical Description:** Bull snakes are usually yellow in color, with brown, black or reddish colored blotching or saddle spots on the sides of the snake. There are dark spots placed between the blotches or saddle spots. Below this is a further row of smaller dark spots. The belly is light brown. Many variations in color have been found, including albinos and white variations. This snake has a small head and a large nose shield, which it uses to dig. They often exceed 6 feet in length, with specimens of up to 100 inches being recorded. Males are generally larger then females.

The bull snake is 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.

**Diet in the Wild:** Bull snakes eat small mammals, such as mice, rats, large bugs as well as ground nesting birds, lizards and the young of other snakes. Juveniles depend on insects, small lizards and baby mice.

**Diet at the Zoo:** Rats and mice.

**Habitat & Range:** Bull snakes have one of the most expansive ranges of any species in the genus. They are found throughout much of the western half of United States and northern Mexico. They live in sandy areas, prairies, open forest, agricultural fields and brush.

**Life Span:** These snakes can live 20-25 years in captivity.

**Perils in the wild:** Birds of prey, some carnivores, human activity.

**Physical Adaptations:**
- Bull 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 and the Jacobson’s organ

**Behavioral Adaptations:**
Like all reptiles, snakes cannot maintain their own body temperature and must depend upon the environment for warmth and cooling. They regulate their temperature by moving to warmer and cooler areas and between sun and shade.

Bull snakes are diurnal, hunting in the early morning, late afternoon, and early evening, when the temperature is warm without the strong, direct heat of the midday sun. They will bask in the morning sun for a considerable period of time each day. During midday they usually find shelter from the heat in animal burrows or in the cavities formed by the root systems of fallen trees, although they are capable of digging a burrow.

During hot weather bull snakes may be active at night, but usually the night is spent in a burrow or other shelter.

Reproduction and Development:
- Bull snakes mate in the spring. The females are oviparous or egg-laying. Females dig a shallow, sandy burrow and lay 3-29 cream colored eggs in a clutch. The incubation period is about 64-80 days. Newborns are from 1-1 ½ feet long.
- The hatchlings are vigorous feeders and double their size quickly. In good conditions the adult females may lay two clutches a season.

Additional Information:
Bull snakes are often confused for rattlesnakes and killed by people. Due to its coloration, dorsal pattern and semi-keeled scalation the bull snake superficially resembles the Western diamondback rattlesnake, which is also common within the same range. The bull snake capitalizes on this similarity by performing a very impressive rattlesnake impression when threatened. It hisses or exhales through the glottis making a “rattle” sound, and will vibrate its tail rapidly in the leaves and flatten its head to make it look more triangular-shaped like rattlesnakes. These defensive behaviors are meant to scare away threats. This snake is also called the gopher snake in western North America and the pine snake in eastern North America.

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.

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.

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

**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