Louisiana Pine Snake

(Pituophis ruthveni)

The Louisiana pine snake is a large and beautifully patterned reptile — a spectacular sight when aroused in defense — possessing a unique assemblage of adaptations to a peculiar and threatened habitat.

Over the past several decades, the species has contracted into a handful of isolated sites — tiny fragments of Texas and Louisiana piney woods whose widely scattered locations testify to a habitat that was once far more extensive. Most of these parcels are so small — the equivalent of a few city blocks — or so marginal in quality that it is likely only a few old stragglers are keeping these spots on the list of active sites.

Louisiana pine snake (Pituophis ruthveni); photograph courtesy of Dan Saenz, U.S. Forest Service, Southern Research Station, Nacogdoches, TX.

Chris Melder at Ft. Polk Military Installation. Photo by Troy Mallach, U.S. Fish and Wildlife Service.

At five feet long, adult Louisiana pine snakes, carrying the scars from dozens of subterranean battles with prey, their scales dull and rough like pine cones, rich but somberly hued in black, browns, and russet, are a clear reflection of life for a snake in the piney woods. They are tan snakes marked with 28-38 darker blotches that become better defined towards the tail. Adults display a striking disparity between upper and belly pattern. If the front and back portions of a specimen are lined up alongside each other, they appear to be from completely different kinds of snakes.

What can I do to help?

- Support prescribed burning and other habitat management to create and maintain herbaceous ground cover in longleaf pine forests.
- Avoid the common tendency to kill snakes; including vehicle-caused mortality.
- Do not capture or collect Louisiana pine snakes.
- Educate others on the harmless and beneficial nature of Louisiana pine snakes.
- Recognize the Louisiana pine snake as an important part of the longleaf pine ecosystem.

Ideal habitat consists of dry, sandy-soiled pine ridges historically dominated by fire-climax longleaf pine-oak vegetative associations and supporting abundant pocket gophers. The grassy understory characteristic of fire-climax longleaf ridges is essential to pocket gophers because they feed almost exclusively on the roots and young shoots of this vegetation. The few remaining naturally cycling longleaf communities, with their periodic fires, support thriving pocket gopher populations, and in turn, healthy populations of Louisiana pine snakes. Remnant fragments of such forests can be found in only a few spots these days, such as in the Winn District of Kisatchie National Forest, inWinn Parish, Louisiana.

This snake's ecology is inextricably tied to pocket gophers, its main prey. The pocket gopher and its burrows are the key to understanding habitat choice, diet composition, feeding strategy, activity patterns, home range, and perhaps even aspects of reproductive biology. Louisiana pine snakes spend the majority of time below ground. Above ground activity is in the immediate vicinity of pocket gopher burrows, into which the snakes flee when disturbed. Annual home range is large, up to 300 ha, but most activity is concentrated in much smaller areas where gopher densities are high.

Pocket gopher in Kisatchie National Forest, LA. Photo by U.S. Forest Service, Steve Shively.

Encountering a Louisiana pine snake on the surface is an unforgettable experience. The foreparts draw into a series of S-shaped coils and elevated high off the ground in readiness to strike. At the same time, explosive, phlegmy hisses are blasted at the threat with each exhalation. The tail also comes into play, being shaken and producing a faint rattling sound if it comes in contact with debris. The Louisiana pine snake is not poisonous and should not be harassed, captured or killed.

The Louisiana pine snake is one of the most imperiled vertebrates in the U.S. The current distribution has receded from nine Louisiana parishes and 13 Texas counties to six disjunct patches in three parishes (Vernon, Natchitoches, Bienville) and four counties (Angelina, Jasper, Sabine, Newton).

Only 178 specimens have been documented since its description over 70 years ago. The American Zoo and Aquarium Association (AZA) manages a Species Survival Plan (SSP) for the Louisiana pine snake, headquartered at the Memphis Zoo.

- No other snake in North America lays eggs as large. Egg size — 2 x 5 inches
- Number of eggs per clutches — 4 eggs.
- Hatchlings: 18-22 inches — larger than any other North American snake.

The SSP insures that the precious captive population maintained in zoos, which sits precariously at less than 100 individuals, is managed wisely and for the long term. Most recently, in December 2003, eight federal and state agencies agreed to a Candidate Conservation Agreement for the Louisiana pine snake to enhance habitat, educate the public, acquire funding and increase research to help protect the rare reptile.

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Text courtesy Steve Reichling, Memphis Zoo.