

# Taking America's rarest snake back to the woods

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This is a Louisiana pine snake. Credit: Photo by Dan Saenz

On May 1, USDA Forest Service, U.S Fish and Wildlife Service, Louisiana Department of Wildlife and Fisheries, the Memphis Zoo, and other partners released seven young Louisiana pine snakes on a restored longleaf pine stand in the Kisatchie National Forest in Louisiana. The release is the fourth in 2 years, part of a plan to restore a very rare snake to its range in Louisiana. Last year the partners released 20 newly hatched snakes; this year's snakes are 6 months old and about 3 feet long.

Four to 5 feet long as an adult and covered with a striking pattern of black, brown and beige, the Louisiana pine snake is a rare sight in its

native range in east-central Texas and across Louisiana. Craig Rudolph, Forest Service Southern Research Station research ecologist and a member of the reintroduction team, has monitored the species for decades, and concurs with other herpetologists that it well may be one of the rarest snake species in the United States. [Snakes](#) released for the restoration effort are hatched and raised in zoos, and are the offspring of Louisiana pine snakes captured from the wild.

Already listed as threatened in Texas and a candidate for listing under the [Federal Endangered Species Act](#), the Louisiana pine snake population has declined because of alterations to the its native pine longleaf pine habitat and that of its prey.

A nonvenomous species, the Louisiana pine snake spends most of its time underground in burrows of its favorite prey, the Baird's pocket gopher. The ideal habitat for both species consists of dry, sandy-soiled ridges covered with longleaf pine trees and an open understory of the grasses and forbs the pocket gophers feed on. This habitat largely disappeared due to commercial logging in the late 19th and early 20th centuries and subsequent fire suppression.

"Without fire, these upland pine savannahs rapidly develop a midstory that shades out the grassy understory that pocket gophers need," says Rudolph. "The release site on the Kisatchie, which was intentionally restored for red-cockaded woodpecker habitat, should also support pocket gophers and Louisiana pine snakes."

Only time will tell whether the Louisiana pine snake can be sustainably restored to longleaf pine ecosystems in its native range.

Researchers implanted each of the snakes released on May 1 with a passive integrated transponder (PIT) that allows them to be tracked by recorders installed on the site. "So far we've not had much success with

the recorders, which are dug into the ground in four places on the release site," says Rudolph. "We've recorded activity in the first weeks, but nothing later on. This is not unexpected, since these snakes have a large home range and probably leave the immediate area. We need to get good population estimates for the areas we've released in, but the only way to get data is by trapping, which is very time-consuming and expensive."

The animal's biology presents another constraint to its survival. While most other snakes produce large clutches of eggs, the Louisiana pine snake lays only three to five eggs, and in captive breeding programs, sometimes only one or two eggs per clutch hatch. This low reproductive rate means that the species might not recover quickly in the wild. Rudolph worries that breeding programs, which rely on the progeny of only 16 founder individuals caught in the wild, may be producing snakes that are not genetically diverse enough to survive when released.

"In the best-case scenario, there would still be Louisiana [pine](#) snakes out there that we've never caught that can breed with the released snakes," says Rudolph. "We have traps operating for thousands of trap days a year in Texas, for instance, and haven't caught a single snake in three years. When we find better ways to monitor our releases, perhaps we'll find some additional populations."

Provided by USDA Forest Service - Southern Research Station

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