

PIT TAG FACT SHEET

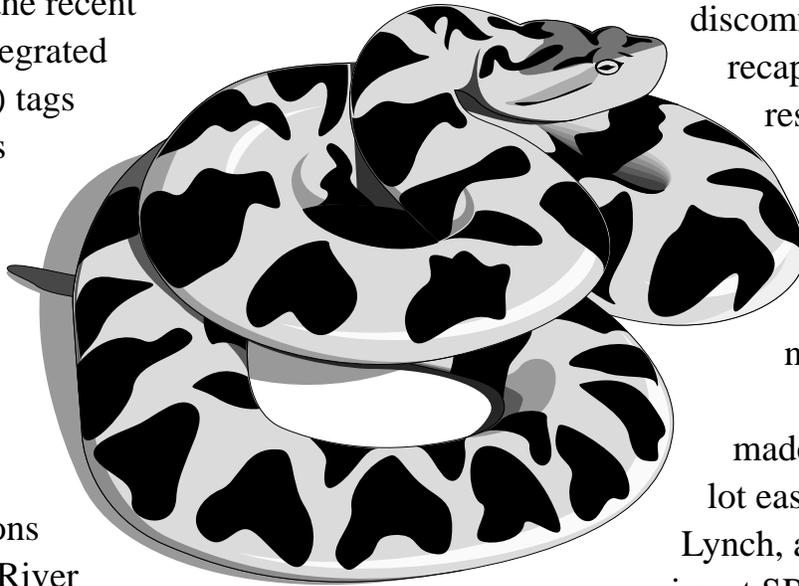
Tagging animals, one of the biggest technological challenges in wildlife biology, is easier now at the Savannah River Ecology Laboratory with the recent use of passive integrated transponder (PIT) tags on non-poisonous snakes, researchers said.

In their mission to conduct long-term monitoring of reptiles and other wildlife populations on the Savannah River Site, researchers must capture animals, mark them with some sort of unique identification, release them and then recapture them periodically. With the use of PIT tags, researchers are better able to study the individual growth, reproduction, survival and movement patterns of reptiles and other wildlife.

“PIT tags are one of the biggest breakthroughs in identification of wildlife,” said Dr. Whit Gibbons, a senior research ecologist at

SREL. “Identifying individual snakes especially has been a problem until now.”

SREL researchers began



using PIT tags on reptiles in October 1991 and have tagged about 725 non-poisonous snakes to date. The technology -- at \$3 per tag, still very expensive -- has been available since the mid-1980s and has been used in other U.S. ecology laboratories on fish and turtles. SREL is among the first laboratories to use PIT tags on snakes.

The tag, about the size of a grain of wild rice, consists of a coded microchip encased in glass. Researchers

inject the tag into a snake's body cavity through a syringe poked between its lower belly scales. This procedure causes no known discomfort. When they recapture the snake researchers use a decoder to read the individual reptile's unique identification number.

“PIT tags have made identification a lot easier,” said Tracy Lynch, a research technician at SREL. “There is much less error involved. We don't have to take the time to count a snake's scales to identify them. Now we can ID a snake in seconds.”

Before using PIT tags, SREL researchers identified snakes by counting a snake's belly scales from its anal opening and clipping the scale edges at a different numbered location on each snake. This method is not as accurate as PIT tags because of the possibility for human error, as well as the

deletion of researchers' markings caused by snakes getting injured or killed by vehicles and/or predators, Ms. Lynch said.

PIT tags, because of their durability, are particularly suited for use at SREL, where long-term research is made possible by the Savannah River Site's controlled public access and its designation as a National Environmental Research Park, Dr. Gibbons said.

Researchers at SREL also will continue to use PIT tags because of the importance of monitoring the snake population, Dr. Gibbons said.

"Snakes are an important link in ecological food chains," Dr. Gibbons said. "It's clear from research that diverse biological systems are interrelated. If you remove one link, it can devastate the system. Also, snakes are important preda-

tors of organisms that carry human diseases, such as Lyme disease. For example, mice, which some snakes eat, are carriers during the intermediate stage of the Lyme tick.



"Another reason for studying snake population dynamics and movement patterns is to give land managers guidance in how forest management practices affect snake populations. . . . Snake population dynamics provide insight into subtle environmental

changes stemming from land management," Dr. Gibbons said.

Researchers at SREL have conducted ongoing reptile studies for more than 25 years. Such a long-term perspective has revealed that snakes thrive on the SRS because of its large areas of natural habitats, Dr. Gibbons said.

"The snake populations on the SRS may be at levels perhaps comparable to what they were well before colonial settlement," Dr. Gibbons said. "And we hope the snake populations in the surrounding area will someday attain comparable undisturbed levels because local residents are learning through SREL's Outreach and Education program that snakes are not nasty creatures and shouldn't be killed."

This information is provided as a public service by The University of Georgia's Savannah River Ecology Laboratory located on the Savannah River Site near Aiken, S.C. SREL operates under a cooperative agreement with the U.S. Department of Energy. For more information about SREL, you may call Outreach at (803) 725-0156 or Public Relations at (803) 725-2473.



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