



COMMANDER OF THE FOREST

DIRK J. STEVENSON

The magnificent indigo snake is one of the largest serpents in North America, and large adult males have the most extensive home ranges—up to 3,500 acres—of any snake on the continent. Given its size, beauty, and status as a powerful predator, the indigo is truly the “commander of the forest.”

From the burrow comes heavy breathing, the sounds of bodies and tails slapping sand, the sounds two seven-foot long bull indigo snakes make when grappling for the attentions of a receptive female.

Astonished, I lay on the ground at the mouth of the burrow – a long and cavernous excavation made by an adult gopher tortoise – and crane my neck to better listen. I continue to hear the hiss-like exhalations of the battling pair, and they are getting closer. Then, only a foot or so from my face, the dark head and serpent-form of an enormous indigo

slowly emerges from the burrow. It seems to take an eternity for the entire length of this reptile to slink from the darkness into the surrounding wiregrass, golden in the afternoon sun.

The naturalist in me quivers with delight as a second massive indigo appears – an orange-throated brute well over seven feet long and pushing ten pounds. The victor of the combat ritual, this male will soon entwine with his “scaly honey” at the bottom of the burrow. He pops his head from the hole, looks around briefly, and, seemingly satisfied, draws back into their lair.

Each of Georgia’s 41 species of snakes is interesting and beautiful, but the eastern indigo snake (*Drymarchon couperi*) is downright remarkable. Residing in lightly-settled portions of southern Georgia’s sultry Coastal Plain, the indigo is one of the largest of North American snakes, with males commonly reaching seven to eight feet in length and eight to eleven pounds in weight. (For the record, the longest wild indigo found to date measured eight feet and nine inches.) The “smaller” females devote many calories toward producing annual clutches of six to twelve eggs (two-and-a-half to three inches long) and are typically only five to six feet long.

An indigo’s lustrous bluish-black scales are the source of the handsome serpents’ common name. When observed in sunlight, those that have recently shed their skins are strikingly iridescent, almost violet-purple, in coloration. Such

OPPOSITE PAGE: When threatened, indigo snakes (like this six-foot male) flare the scales on their necks vertically.

regal and sizeable serpents leave a lasting impression on those who encounter them, and indigos are regarded with respect by many local folks who have grown up around the snakes.

“We always called ’em gopher snakes growing up,” Joe Lewis of Brantley County told me on one occasion. “One day when I was real little,” he continued, “we walked the tracks home after school and there was a pile of black railroad ties that suddenly crawled off. It was a big gopher snake. Man, he was beautiful, slick and shiny in the sun, but even the big girls walking with me were scared!”

Indigo snakes are known to travel great distances to visit both upland and wetland habitats. In a recent field study conducted by Dr. Natalie Hyslop of the University of Georgia, 32 adult indigo snakes were surgically implanted with radio-transmitters, released at their original capture sites, and subsequently “tracked” two to three times per week. Dr. Hyslop determined that the territories – termed “home ranges” by herpetologists – of indigos may encompass from hundreds of acres (adult females) to over 3,500 acres (large adult males), the latter being the largest home ranges ever reported for any snake species native to the United States.

Some of Dr. Hyslop’s charges moved annually two to three miles from their cool-season dens in gopher tortoise burrows located in sandhill habitats to reach shady hardwood swamps and other wetlands rich in frog and rodent prey. Interestingly, despite ranging so far from the sandhills, individuals return each autumn throughout their lives to the same tortoise colonies, commonly using the very same tortoise burrows, in search of mates and dens.

In fact, one of the “fighting” males mentioned above was a snake I had marked – by injecting a microchip beneath the skin – eight years earlier on the *same* sand ridge. In today’s world, most habitats include lots of folks and

lots of roads. Large, diurnal (daytime active) snakes like indigos that move great distances between various habitats are particularly vulnerable to the effects of habitat fragmentation, and are often killed by vehicles and by misinformed persons.

The indigo’s generic name (Drymarchon) – derived from the Greek words Drymos and archos and roughly translating to “Forest Commander” – is surely appropriate. Indigos are impressive search-and-destroy predators, but not constrictors, of rodents, birds, amphibians, small turtles, and snakes. A large Fort Stewart indigo captured by herpetologist Robert Mount disgorged a toad, a pigmy rattler, a southern hognose snake, and a juvenile gopher tortoise.

Indigos disable snakes, a common part of their diet, by a rapid movement to seize the head, followed by savage chewing administered via the indigo’s powerful jaws. All six species of venomous snakes native to Georgia are included on the indigo menu, and rattlesnakes up to four feet long are frequently consumed. Even if an indigo is bitten while preying on a venomous snake, well, no need to fret. Like eastern kingsnakes, indigos are mostly immune



A budding naturalist, Genevieve Printiss, cradles a seven-foot long male indigo snake found in Telfair County, Georgia.

to venom and suffer no lasting effects.

Perhaps Nature is indifferent to irony. Although eastern indigo adults depend on the security of gopher tortoise burrows for winter dens and for escape from fire and temperature extremes, they frequently consume hatchling tortoises (the softish shells of the little ones have yet to fully calcify, and are entirely digested). In contrast, large indigos and adult tortoises exist amicably, often co-inhabiting the same bur-

At hatching, eastern indigo snakes are from 18-24 inches long.





LEFT: An adult – and three juvenile – gopher tortoises. Although indigo snakes depend on the presence of tortoise burrows for shelters, they commonly eat very small tortoises. **CENTER:** The pine snake is an impressive, beautiful constrictor capable of digging its own burrow in loose sandy soil. **RIGHT:** This attractive specimen, a four-and-half-foot long female eastern diamondback first collected in 2004, and recently recaptured, is estimated to be 10 to 12 years old.

rows; they simply ignore each other.

The enchanting south Georgia sand ridges where indigos and tortoises thrive are odd – austere, dune-like habitats sparsely vegetated with longleaf pines, turkey oaks, and an assortment of scrubby plants. Many extensive sand ridge habitats have been decimated by sand-mining, development, and the planting of off-site pine species for commercial timber production. But recent efforts by the Georgia Department of Natural Resources and The Nature Conservancy have helped set aside some notable landscapes, several of which are accessible to the public, including the Ohoopee

Wonderful floral displays greet the late summer visitor to the Ohoopee Dunes Natural Area and other south Georgia sandhills.



Dunes Natural Area Preserve in Emanuel County, the Griffin Ridge Wildlife Management Area in Long County, and the Fall Line Sandhills Natural Area in Taylor County.

Any experienced snake-seeker will tell you of other scaly giants that lurk in the tortoise burrows. The golden-scaled eastern coachwhip, lithe as a mamba and owner of a peevish gaze, is another snake of the sandhills that frequents gopher turtle holes. So is the imperiled Florida pine snake, a stout-snouted hissing machine that spends more than 90% of its life underground. And, if you’ve never encountered the yellow coils of a five-foot eastern diamondback lying in dappled sun beneath a saw palmetto fan, belly swollen plump with a recently ingested cottontail...well, consider taking up snake-observing.

The diamondbacks’ penchant for seeking refuge in tortoise burrows during the cooler months has led to problems for the indigo. Some unscrupulous rattlesnake hunters have been known to excavate, or even introduce gasoline into, tortoise burrows in an effort to extract their quarry. An Auburn University study has shown that “gassing” burrows is lethal to indigo snakes and other wildlife species. Disturbing the burrows of the protected gopher tortoise, our state reptile, in any way, is now illegal.

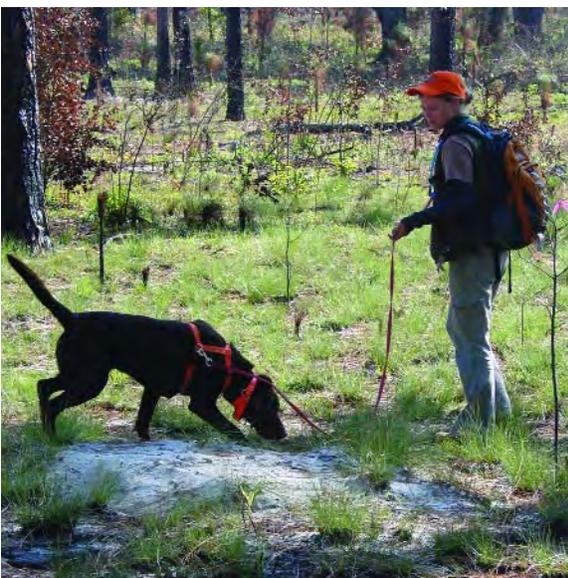
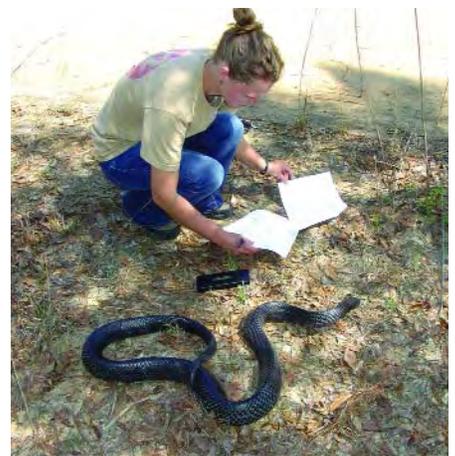
The eastern indigo snake, federally listed as a threatened species in 1978 under the Endangered Species Act due to habitat loss, over-collection, and gassing by rattlesnake hunters, remains imperiled today. An exciting new development related to the recovery of the eastern indigo snake in the wild has recently surfaced. Project Oriante: The Indigo

Snake Initiative is supported by philanthropist Dr. Thomas Kaplan and directed by herpetologist Dr. Chris Jenkins. This project is dedicated to the conservation, management, and study of this magnificent reptile.

Habitat acquisition and management, population census and monitoring, and captive breeding and reintroduction will be the focal efforts of Project Oriante, a non-profit organization. As an ecologist with the project, one of my current duties has been to assist with a study to test the effectiveness of a trained dog to locate indigo snakes in the field by their scent. Our canine, C.J., a handsome 85-pound chocolate lab on loan from a professional dog training facility located in Washington State, excels in wildlife surveys (and slobbering). Preliminary results of this effort have been encouraging and indicate that using dogs may prove an effective survey method to locate indigo snakes.

Georgia’s diverse and abundant snake fauna is an important part of our natural heritage. Most Georgians recognize the value of the snakes, their singular – if oft maligned – beauty, and the significant ecological role they play in our swamp and forest habitats. Ophidiophiles (snake-lovers) like myself feel fortunate to live in such a serpent-rich region, a land of so many impressive and interesting reptiles, a land that is home to the iconic and wonderful indigo, truly a commander of the forest. ▀

Dirk J. Stevenson is a freelance writer and herpetologist in Hinesville.



LORA L. SMITH

ABOVE: A gorgeous, five-foot long female indigo snake recently found in sand ridge habitat in McIntosh County, Georgia. **TOP RIGHT TO BOTTOM:** 1. Herpetologist Dr. Natalie Hyslop radio-tracks an eastern indigo snake in Evans County, Georgia. 2. Indigo snake hatchlings emerge from their eggs at lengths of 16-24 inches (held by Dr. Natalie Hyslop) 3. Kara Ravenscroft records field data for a large male indigo snake captured as part of a population monitoring study. 4. Herpetologist Kara Ravenscroft weighing a large indigo snake that has been bagged within a pillowcase. **LEFT:** Herpetologist and dog-handler Kara Ravenscroft with her indigo snake-sniffing canine, C.J.