



## **"Black Snakes": Identification and Ecology<sup>1</sup>**

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### **Introduction**

The southeastern United States is home to a great diversity of snakes. There are about 45 species of snakes (only 6 of which are venomous) that may be found along the Atlantic and Gulf coastal states from Louisiana to North Carolina. These snakes live in a variety of upland and wetland habitats and play important roles in the region's ecology. They are both predators and prey, and thus form important links in natural food webs.

Regrettably, populations of many species of snakes are declining not only throughout the southeastern United States but also worldwide. These declines are largely due to habitat loss and degradation, high mortality on roads and pollution associated with development, agriculture and other human activities. In addition, introduction of invasive species, disease, parasitism and even climate change may exert negative effects on snake populations. Many species of snakes must also withstand pressures caused by unsustainable collection for the pet trade as well as persecution by humans as a result of misinformation or lack of knowledge regarding snakes.

### **Black-Colored Snakes in the Southeast**

Some snake species look quite similar and may be difficult for those inexperienced with snakes to confidently identify. Among these are several species of southeastern snakes commonly called "black snakes" because of their primarily black coloration. These include the Black Swamp Snake, Black Rat Snake, Ring-necked Snake, Eastern Mud Snake, Black Pine Snake, Eastern Indigo Snake and the Southern Black Racer. The latter two — Eastern Indigo and Black Racer—are the species most often referred to as "black snakes".

In addition to those listed above, individuals of several species of water snakes, the Eastern Hog-nosed Snake and the venomous Cottonmouth Moccasin may be black colored to a great extent, depending on the age of the individual and the habitat in which it is found. The following is a list of black-colored snakes found in the southeastern U.S., the habitats they occur in and some identifying features. The Eastern Indigo Snake and Southern Black Racer are given special consideration.

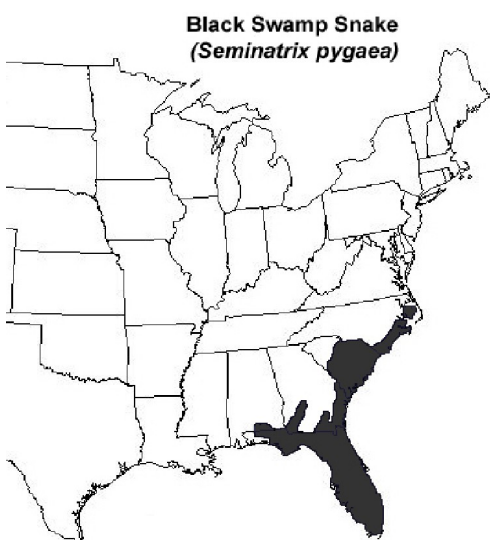
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1. This document is WEC214, of the Department of Wildlife Ecology and Conservation, Institute of Food and Agricultural Sciences, University of Florida. Published November 2006. Please visit the EDIS Web Site at <http://edis.ifas.ufl.edu>. For a better understanding of figures and graphics, please print in a color printer.

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### Black Swamp Snake (*Seminatrix pygaea*)

The Black Swamp Snake inhabits coastal areas from North Carolina to Florida (Fig. 1). This small snake (10-15 inches) has smooth scales, a glossy black back and a bright orange belly (Fig. 2). Black Swamp Snakes are only found in and around wetlands: primarily cypress swamps, marshes and lake edges, where they feed on tadpoles, worms, small fish, frogs and salamanders. In the U.S., many states have lost as much as 80% of their wetlands, resulting in the loss of great numbers of individuals of species that, like the Black Swamp Snake, are restricted to these wetland habitats.



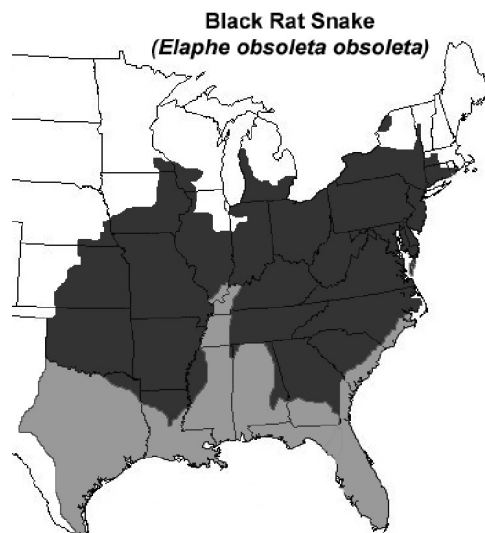
**Figure 1.** Black Swamp Snake Range (shown in black). Credits: Monica McGarrity, University of Florida



**Figure 2.** Black Swamp Snake showing bright orange belly. Credits: John Jensen, Georgia DNR, 27 Aug 2005

### Black Rat Snake (*Elaphe obsoleta obsoleta*)

The Black Rat Snake is one of several subspecies of Rat Snakes (Yellow and Gray Rat Snakes are others). Rat Snakes are common throughout the eastern U.S., although the black subspecies of rat snake does not occur in Florida (Fig. 3). This snake can be quite large (it may exceed six feet in length) and has slightly keeled scales (raised ridge along the middle of each scale) that make it appear somewhat rough. Its back is almost entirely black (small flecks of whitish color may show through the black), whereas its chin and belly have a lot of white markings (Fig. 4). Black Rat Snakes are excellent climbers and are found in a great variety of habitats, ranging from pine forests to agricultural fields. They feed primarily on rodents, birds and birds' eggs.



**Figure 3.** Black Rat Snake Range (shown in black, other Rat Snake subspecies in gray). Credits: Monica McGarrity, University of Florida

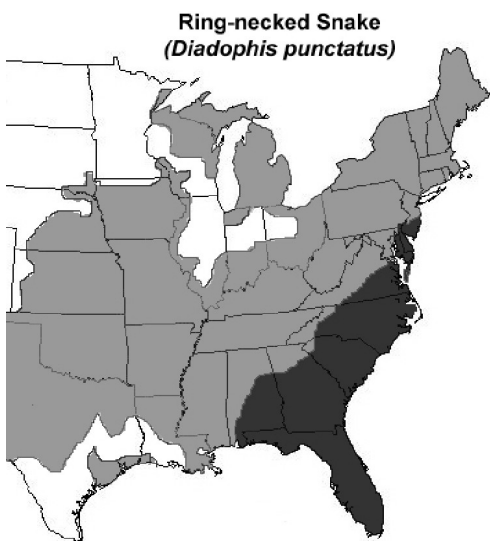
### Southern Ring-necked Snake (*Diadophis punctatus punctatus*)

Ring-necked Snakes are found throughout most of the eastern U.S. (Fig. 5). These diminutive snakes seldom grow longer than 12 inches. Ring-necked Snakes have smooth scales and a black or dark gray back, whereas the belly is a bright orange/yellow, often with a row of black spots. As the name implies, there is an obvious ring of orange/yellow around its neck (Fig. 6, Fig 7). When alarmed or threatened, Ring-necked Snakes coil their tail like a corkscrew.



**Figure 4.** Black Rat Snake showing white chin and belly markings and white flecks on back. Credits: John Jensen, Georgia DNR, May 2004

These snakes are fairly secretive and may be found under logs and rocks in moist uplands, where they eat earthworms, slugs, small salamanders and small snakes.



**Figure 5.** Southern Ring-necked Snake Range (shown in black, other ring-necked subspecies in gray). Credits: Monica McGarrity, University of Florida

**Eastern Mud Snake (*Farancia abacura*)**

Mud Snakes are found in coastal areas and river basins in the southeastern U.S. (Fig. 8). They can grow to over six and a half feet in length, but are very docile snakes despite their large size and pose no threat to people. They are thick bodied with smooth, glossy scales and a pointed tail tip (Fig. 9). The back is black, whereas the belly is a checkerboard of black and a reddish pink color that extends up onto the sides

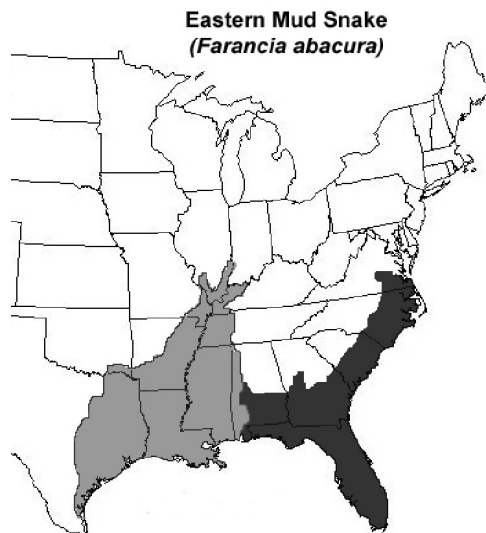


**Figure 6.** Southern Ring-necked Snake showing typical defensive posture -- note the coiled tail. Credits: Steve A. Johnson, University of Florida



**Figure 7.** Southern Ring-necked snake showing yellow belly coloration. Credits: Kenneth Krysko, FLMNH, 1996

of the snake. Mud Snakes are highly aquatic and may be found in swamps, lakes and rivers throughout the Southeast, where they feed primarily on large, eel-like aquatic salamanders such as Amphiumas.



**Figure 8.** Eastern Mud Snake Range (shown in black, other mud snake species in gray). Credits: Monica McGarrity, University of Florida



**Figure 9.** Eastern Mud Snake. Credits: Dirk Stevenson, USAEC, 13 June 2006

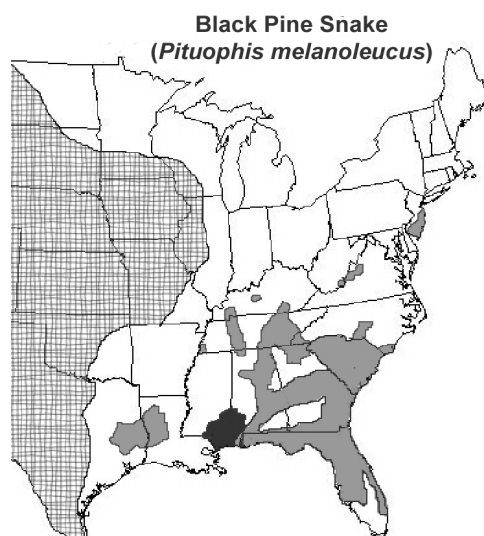
### **Black Pine Snake (*Pituophis melanoleucus*)**

The Black Pine Snake is one of a group of closely related snake species (includes other Pine Snakes, Bull and Gopher Snakes) with a fairly broad geographical range. However, the range of the Black Pine Snake is relatively limited, and this species is only found in certain parts of the southeastern U.S. (Fig. 10). Black Pine Snakes have keeled scales and a nearly uniform black or dark brown color on their backs and bellies with a faint blotched pattern often seen toward the tail (Fig. 11). Black Pine Snakes, like the other species of pine snakes, have a distinctive cone-shaped scale on the tip of their snout.

These snakes may grow as large as six feet in length. When they feel threatened, pine snakes will coil and hiss loudly. They prefer dry pinelands with sandy soils and are excellent burrowers, spending much of their lives underground in mammal burrows. They feed mainly on mammals, but will also eat birds.

### **Eastern Indigo Snake (*Drymarchon couperi*)**

Eastern Indigo Snakes are found from southeastern Georgia, Alabama and Mississippi south to the Upper Florida Keys (Fig. 12). These are magnificent, thick-bodied snakes that can grow to over eight feet long, making them the largest native snake in North America (north of Mexico). Their smooth scales are a glossy bluish-black color, including the belly, although the chin and throat may range from light cream to orange or deep maroon in color (Fig. 13). They are usually very docile in nature, but when threatened may hiss loudly and



**Figure 10.** Black Pine Snake Range (shown in black, other pine snake species in gray, Gopher and Bullsnake in crosshatch). Credits: Monica McGarrity, University of Florida



**Figure 11.** Black Pine Snake. Credits: Kenneth Krysko, FLMNH, 1996

shake their tail, making a rattling sound if the snake is in dry leaves or debris.

Eastern Indigo Snakes inhabit pine forests, hardwood hammocks, scrub and other uplands. They also rely heavily on a variety of wetland habitats for feeding and temperature regulation needs and are able to swim, even though they are not considered aquatic. In drier upland sites they inhabit the burrows of the Gopher Tortoise, which has resulted in the colloquial name of "blue gopher". Eastern Indigos are well known and respected for their ability to eat venomous snakes, such as rattlesnakes, Cottonmouths and Copperheads. In addition, they feed on other non-venomous snakes, frogs and rodents.

Habitat loss from development and agriculture, habitat degradation due to lack of fire and human activities, and collection for the pet trade have led to significant reductions in populations of Eastern Indigo Snakes, which are protected throughout their range by state and federal laws. Eastern Indigo Snakes have been listed as a threatened species by the Florida Fish and Wildlife Conservation Commission since 1971 and by the U.S. Fish and Wildlife Service under the Endangered Species Act since 1978, and it is illegal to handle, harass, kill, capture, keep or sell them without a federal permit. However, despite these protections, habitat loss and degradation throughout their range continue to cause the decline of this important snake. You should consider yourself lucky if you see one of these beautiful "black snakes."



**Figure 12.** Eastern Indigo Snake Range (shown in black). Credits: Monica McGarrity, University of Florida

### **Southern Black Racer (*Coluber constrictor priapus*)**

Black Racers, also known as Eastern Racers, are a group of closely related subspecies that are similar in appearance and range across the eastern half of the U.S. (Fig. 14). The Southern Black Racer, along with several other subspecies of racers, is the true black snake of the southeastern U.S. These snakes are long and slender; the largest reaching up to six feet in length (most are less than four feet long). They have smooth scales and range from jet black to



**Figure 13.** Eastern Indigo Snake showing maroon chin coloration. Credits: Natalie Hyslop, University of Georgia, Feb 2005

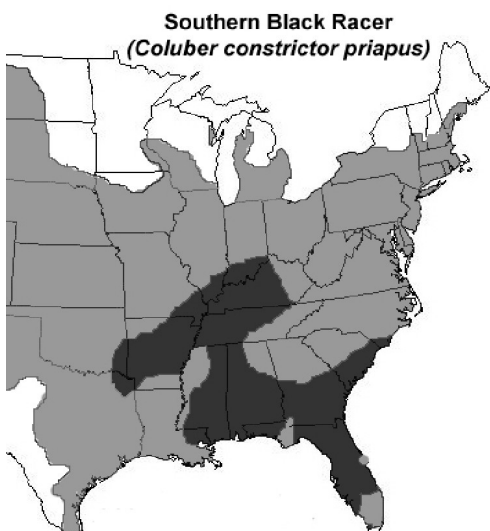
dark gray on their backs and bellies, with chins and throats that are lighter or white in color (Fig. 15).

Young Black Racers, though thin like the adults, have an overall appearance much different than adults. Juvenile Black Racers have a series of reddish to brown colored blotches down the middle of their backs on a background color of gray. They also have abundant small, dark specks on their sides and bellies (Fig. 16). Because of these mid-dorsal blotches, juveniles are sometimes confused with the venomous Pygmy Rattlesnake (*Sistrurus miliarius*), which also has blotches down the center of its back. However, Pygmy Rattlesnakes have much heavier bodies and stocky heads with a dark band from the eye to the corner of the jaw.

Despite their scientific name (*Coluber constrictor*), Black Racers do not always constrict their prey, but rather use their speed to chase down a prey animal, grab it with their strong jaws and swallow it alive. Racers are harmless to people and generally attempt to make a speedy escape when approached. However, if they feel threatened and are unable to flee, they may vigorously shake their tail (making a rattling sound on dry leaves), defecate on their captor or even bite if handled.

Black Racers inhabit a great variety of natural habitats, ranging from pine forests to the Florida Everglades. They are active during the day and are one of the most commonly encountered snakes in suburban yards and parks. As their name implies, they are swift and agile. They spend most of their

lives on the ground, yet are excellent climbers and may be found in shrubs and small trees. Black Racers eat a variety of prey items including frogs, lizards, mice, rats, small snakes and even birds' eggs.



**Figure 14.** Southern Black Racer Range (shown in dark gray, other black racer subspecies in light gray). Credits: Monica McGarrity, University of Florida



**Figure 15.** Southern Black Racer (Adult). Credits: Steve A. Johnson, University of Florida, 4 June 2005

## Summary

In spite of great variation in body size, habitat use, diet and behavior, the lack of bold, readily apparent distinguishing marks can make identification of these “black snakes” a daunting task for those inexperienced with snakes. Nonetheless, an informed observer can readily recognize the bright orange belly of the Black Swamp Snake or the namesake ringed neck of the Ring-necked Snake, and may quickly learn to



**Figure 16.** Southern Black Racer (Juvenile) - note the slender body and reddish colored blotches. Credits: Steve A. Johnson, University of Florida

distinguish between the smooth, glossy sheen of the Eastern Indigo or Black Racer and the keeled, somewhat rough look of the Black Pine and Black Rat Snakes. These snakes may seem nondescript at first glance, though knowledge of these and other more subtle, yet telltale characteristics will assist in the rewarding task of becoming familiar with the “black snakes” of the southeastern U.S.

Fortunately, there are a variety of books and web sites that are extremely helpful references for use in determining the identity of an unknown non-venomous or venomous snake. In addition, these references will assist you in learning even more about the ecology of our native snakes, and may help to further your understanding of the threats facing these species and the importance of protecting them. Certainly, knowledge is the key to understanding that the only good snake is NOT a dead snake, and that these species play vital roles in the habitats in which they are found – an important lesson that must be learned and passed on before it is too late for already threatened species like the Eastern Indigo Snake.

## Snake Identification Resources

### Web Sites

Florida Museum of Natural History—Online guide to Florida Snakes  
<http://www.flmnh.ufl.edu/natsci/herpetology/FL-GUIDE/onlineguide.htm>

University of Florida EDIS Documents - Venomous Snakes

Dealing with Venomous Snakes in Florida  
School Yards <http://edis.ifas.ufl.edu/UW225>

Emergency Snakebite Action Plan  
<http://edis.ifas.ufl.edu/UW226>

Preventing Encounters Between Children  
and Snakes <http://edis.ifas.ufl.edu/UW227>

Recognizing Florida's Venomous Snakes  
<http://edis.ifas.ufl.edu/UW229>

Baylor, J.L. & F.W. King. 1998. *National  
Audobon Society Field Guide to North American  
Reptiles and Amphibians*. New York:  
Knopf/Chanticleer Press, 743pp, illustr.

Florida Fish and Wildlife Conservation  
Commission - Snakes  
<http://www.wildflorida.org/critters/snakes.asp>

University of Georgia—Snakes of Georgia and  
South Carolina  
<http://www.uga.edu/srel/snakebrochure.htm>

Georgia Wildlife Federation - Reptiles of  
Georgia <http://www.gwf.org/commonreptiles.htm>

Alabama Department of Conservation and  
Natural Resources Snakes in Alabama  
[http://www.dcnr.state.al.us/watchable-wildlife/what/  
Reptiles/Snakes/](http://www.dcnr.state.al.us/watchable-wildlife/what/Reptiles/Snakes/)

### **Books and Guides**

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