

# Snakes in the Salt Marsh (are *not* cottonmouths)

By Frederick Boyce

I missed a good opportunity to educate the other day and hopefully can make up for it a little by addressing the issue in this month's article. I was out in the Snake Pavilion of the NC Aquarium at Pine Knoll Shores, talking to visitors and answering questions, a favorite activity that I wish I had time to do a lot more, and a gentleman asked me if cottonmouths (aka water moccasins), our only aquatic venomous snakes, were ever found in brackish water. I answered that these tough and resilient snakes can be tolerant of brackish water and certainly have no problem with entering or traversing salt marshes or estuaries in search of food, but do not normally live there or seek out such habitats. He said that he had seen some snakes swimming in brackish water and mentioned that they appeared darker than the cottonmouth we have on display. At the time, I thought little of his remark as cottonmouths often do darken with age, although in our area they tend to be greenish or greenish-yellow with chestnut brown-and-black bands.

There was, as usual, a large crush of folks looking at the snakes, many of whom had questions of their own, so I became distracted and didn't have time to consider his interesting question further until much later, when I thought about it and realized that I had completely overlooked one other very interesting possibility. North Carolina has two reptiles and one amphibian that are *endemic*, meaning that they are found in no other state and, indeed, nowhere else in the world.

The amphibian is an attractive, foot-long aquatic salamander with bushy red gills called the Neuse River waterdog that is only found in the Neuse River and its tributaries.

The two reptiles are both snakes—one is the Outer Banks kingsnake, a subspecies of the familiar black-and-white eastern kingsnake in which the normally solid black areas between the white bands are broken up by white speckling. As its name suggests, the Outer Banks kingsnake occurs only on the Outer Banks between Cape Hatteras and Cape Lookout. These unique snakes are highly prized by fanciers and are strictly protected in NC as a “species of special concern,” so collecting or molesting them in the wild is prohibited.

Also protected is our other endemic snake, the Carolina watersnake, *Nerodia sipedon williamengelsi*, a subspecies of the common and more widespread northern watersnake, *Nerodia sipedon*, which is found across much of the eastern and mid-United States. The Carolina watersnake is also known as the Carolina salt-marsh snake, as it does indeed prefer to live in brackish water environments and can be found in salt marshes and estuaries along the Outer Banks as well as the mainland shores of the Pamlico and Core sounds from Dare County to Cape Lookout. I have heard unconfirmed reports of their being seen on Bogue Banks, but have encountered none here myself, as we are just a little bit south of their established range. I have found them swimming in the intracoastal waterway in the Adams Creek area near the Neuse River, and have also found them killed on Merrimon Road, between the salt marshes near the intersection of Laurel Road and Merrimon Road. They are certainly found Down East along both sides of Core Sound.

Carolina salt-marsh snakes live on a diet of mostly small fish, such as mummichogs or sheepshead minnows, and eels. They will also catch frogs on rainy nights—especially leopard frogs, one of the few amphibians that can tolerate low levels of salinity for brief periods. In color, the Carolina salt-marsh snake is overall a very dark snake, having a dark gray background with heavy black bands. They are much darker than typical northern watersnakes, which are shades of brown and tan, and can often appear to be entirely black, especially when wet. Their undersides are shiny black and marked profusely with tiny white half-moon shapes.

I now feel certain that the gentleman I spoke with at the aquarium had actually been seeing dark Carolina watersnakes and not cottonmouths, and I wish I could go back now and talk to him again. I would like to know where he had seen them as

their distribution in the brackish waters of eastern North Carolina is still a point of great interest to herpetophiles.

Thanks to Dr. Rusty Gaul, who has spent a significant amount of time and effort studying these interesting watersnakes, for his assistance with this article.

*Frederick Boyce is the staff herpetologist at the NC Aquarium at Pine Knoll Shores.*



A Carolina watersnake—Photo by Nathan Shepard, wildlife biologist with the NC Natural Heritage Foundation

**KAYAK**  
for the  
**WARRIORS**  
Pine Knoll Shores, NC

**SAVE**  
— THE —  
**DATES**

**SATURDAY, MAY 26**

**5K K4TW Beach Run/Fun Run**

**8-11 a.m. @ The Inn at Pine Knoll Shores/Beacon's Reach**

**THURSDAY, MAY 31**

**Beginning at 6 p.m., Kayak for the Warriors reception and auction at the NC Aquarium at Pine Knoll Shores**

**SATURDAY, JUNE 2**

**Kayak/Paddleboard Race, 10 a.m. @ Garner Park  
Lunch Feast @ 11:30 a.m.**

**Awards @ 12 noon  
Ongoing Raffle**

**To donate, register or learn more about our events, please visit our website at [k4tw.org](http://k4tw.org).**