

Drought

By Frederick Boyce

This year North Carolina experienced one of the driest springs on record, with drought conditions occurring in the eastern part of the state during May that were finally alleviated by the coming of rains in June. Whereas we typically have a drought in the middle of every summer, this one was earlier than usual and may have disrupted the normal cycle. While long and severe droughts can have devastating effects, there are also benefits to the natural drought cycle for many animals.

The significance of swamps and ditches as vital wetland habitats that basically function as freshwater estuaries is often overlooked. With their shallow water, both are very susceptible to the action of drought. Not surprisingly, the effects of drought can be catastrophic for such aquatic animals as fish and amphibians, but as it so often seems, the misfortunes of some can be a bonanza for others.

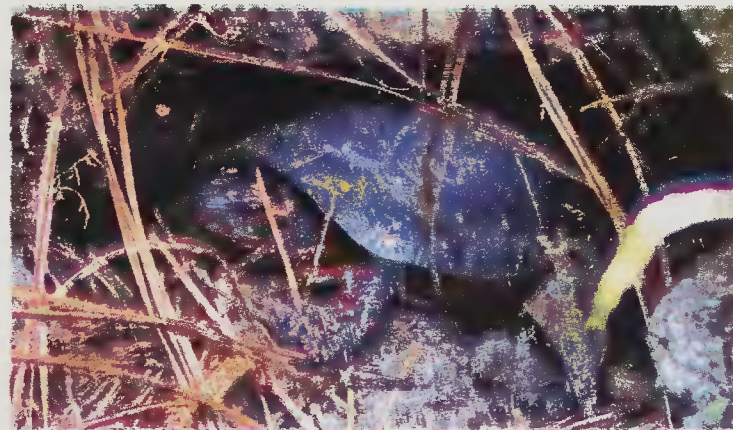


A large male cottonmouth engulfs a dead bullhead catfish.—Photos by Fred Boyce

As water levels recede in the shallow swamps and ditches, fish and amphibian larvae (tadpoles) are stranded in shallow puddles, becoming easy prey for a wide variety of animals. Raccoons and opossums, otters and turtles, a wide array of birds and even bears partake of the all-you-can-eat buffet, but among the greatest beneficiaries are snakes, especially semi-aquatic species that feed largely on fish and amphibians. At my study site in eastern North Carolina (not on Bogue Banks)



Sometimes the tables are turned. A juvenile cottonmouth was caught traversing an open patch of woods during the drought by a foraging eastern kingsnake.



A shy and normally very aquatic spotted turtle takes refuge in a cavity under the roots of pine tree.

these include nonvenomous banded and red-bellied water snakes as well as ribbon snakes and the ubiquitous black racers, which have a taste for amphibians (along with practically everything else). Above all, however, it is a feast for the cottonmouths, the most abundant snakes at this location and the primary subjects of my long-term behavioral study.



A beautiful swamp, empty of water.

Despite their much-exaggerated and mythologized reputations, cottonmouths are actually rather clumsy and awkward predators that seem to have a difficult time just capturing tadpoles stranded in a puddle. They are certainly not able to compete with anglers for healthy fish. Scavengers such as cottonmouths and snapping turtles actually help clear the waterways of dead and dying fish, keeping both water and fish healthy. My observations of this population of cottonmouths over the last three or four years indicate that the adults are dedicated scavengers that hardly ever capture live prey. I have often seen adult cottonmouths basking peacefully on the banks of ditches, taking no interest at all in the abundance of nearby leopard frogs sharing the bank. Whereas young cottonmouths will use their bright yellow tail tips as lures to attract small frogs and lizards within range, the adults seem to have become dependent upon the scavenging opportunities provided by the annual cycle of drought, much as African predators in the Serengeti have come to depend on the annual concentrations of prey animals that crowd dwindling water holes during the dry season.

(Continued on page 9)