



The Southern Toad is a member of the True Toad family commonly called “hop toads”



The round vocal sac of the Southern Toad is pretty impressive

Brunswick Wildlife The Birds Sure Were Ugly Yesterday

Lately we have had too many gray, rainy mornings. Mornings not made for photography. Any photo taken above eye level may be too backlit to salvage. While looking for birds at Orton Pond on one such morning, in the midst of a beautiful cacophony of song, I pointed the lens down for a great photo op of some “ugly birds”.

At the beginning of a week, I generally have a number of potential subjects for these articles...an inventory of in-progress articles in various states of completion. By the end of a week, however, a subject from the week’s experience usually has chosen me. Sometimes the subject leaps right out at me.

This story is a combination of a current experience and a “parked” article...a “leaper and hopper” article was left over from 2008...The Year of the Frog. On February 29 2008, zoos, aquariums, and conservation organizations around the world celebrated Leap Day to promote amphibian conservation, a celebration that lasted throughout the year.

To participate, I decided expand my infinitesimal knowledge over the remainder of the year. I purchased a newly published book of North Carolina frogs and toads and attended a North Carolina Wildlife Resources Commission workshop. Unfortunately, I had forgotten most of what I learned by the time I came upon these guys so this is now a fresh beginning.

How hard can it be? There are sixty-four species of toads and frogs in eastern North America. Thirty found in our state and twenty-three of those reside in the Lower Cape Fear. Not as easy as I originally thought but much easier that dealing with the 400 plus species of avian projectiles that might whiz by in a given year and season.

Frogs and toads are ancient. They and other amphibians go back 250 million years, pre-dating dinosaurs and they have survived ice ages and asteroids slamming into the earth. They are in the middle of the food web and, as skin breathers, they are vulnerable to pollution and water quality issues. Their demise may cause repercussions up and down the food web as other species start disappearing.

The goal of The Year of the Frog was to create awareness of the plight of amphibians and promote conservation. We are in the middle of a global epidemic. At least one half of known amphibian species are threatened with extinction.

Some species have been decimated and around the world populations have crashed because of the rapidly spreading infectious disease chytridiomycosis (called chytrid), caused by the fungus *Batrachochytrium dendrobatidis*. The fungus deprives amphibian skins of oxygen

The long term goal is to control chytrid in the environment; however, for now it is not known how it is spread so control seems a distant dream. In the meantime frogs are being held in captivity in safe haven “arks” to preserve threatened species until the threat passes or scientists can breed resistant individuals to use to repopulate their territory.

For now we can at least take two steps to help in our area. Know and honor the best practices for keeping storm water runoff clean and do not flush out-of-date medicines, especially birth control pills.

Frogs and toads (Order *Anura*) are amphibians and scientist frequently use “frog” generically for both. Amphibians (Class *Amphibia*) are differentiated from reptiles (Class *Reptilia*) in that reptiles have scales, shields, and plates plus they have claws on their toes. Amphibians have moist, glandular skin and their toes do not have claws.

The word amphibian is derived from Greek meaning “living a double life”. Young anurans’s double life consists of passing through a larval, aquatic stage as a tadpole before they metamorphose an adult.

If not for other clues to toad and frog identity, the biggest identification challenge would be the coloration and pattern differences within a species. Occasionally, an individual is missing one or more pigment and look more reddish, yellowish, bluish, whitish (albino or leucistic), or even black (melanistic). Also, some frogs may turn color due to environmental conditions.

For this article, our two subject make great representatives for their families and of the differences between frogs and toads. The Southern Toad is a member of the True Toad Family (*Bufonidae*). Individuals in this family may be differentiated by the location found, the size and shape of the parotid gland (on their shoulder), cranial ridges, number and prominence of their warts, and color and pattern.

Toads generally have dry warty skin and hop, while frogs have smooth, moist skin and leap instead of hopping.

Our guy, the Southern Toad, may be identified by the large knobs on its cranial crests, field marks that viewed from the right angle make the toad look like it has horns.

They are fairly common and the only large toads in the lower coastal plain. Their cousins, the American Toad and Fowler’s Toads, are found inland from us and in the northeast coastal plain respectively.

Color may be brown, tan, reddish, gray or blackish with a variable number of warts in each large dark spot on the back. Also, they may have a light mid-dorsal stripe.

They breed in shallow water and may be heard March through October depending on location and weather conditions. They usually become active at twilight and forage through the night.

By contrast, the Southern Leopard Frog is a member of the True Frog family (*Ranidae*). True frogs are long-legged, have narrow waists, fairly smooth skin and free fingers and webbed toes. Our leopard frog is slender and beautifully spotted and may be bright green, brown, tan, gold or bronze with scattered, well-defined dark brown spots. The spots are a little hard to see in the dark morph shown in the photo.

The leopard frog has prominent, unbroken ridges running along each side, long hind legs, a pointed snout, light line along its upper jaw and a plain white belly. The light dot in the center of the tympanum (external eardrum just below and behind the eye) is a great field mark used to differentiate the Southern Leopard Frog from its cousins.

Unlike the toad, leopard frogs have paired, external vocal sacs that are spherical and found on both sides of their throat.

Southern Leopard Frogs are abundant throughout most of the Coastal Plain and, in some locations, may be the most common frog. They inhabit a variety of wetlands and waterways but breed most successfully in fishless, temporary ponds.

So you too want to occasionally move from bird man to frog man? I recommend the book mentioned above, *The Frogs and Toads of North Carolina*, published by the North Carolina Wildlife Resources Commission. It includes a CD with frog vocalizations: The book may be purchased at: <http://www.ncwildstore.com/frandtoofnoc.html>.

Michael Dorcas, Associate Professor in the Biology Department at Davidson, is the principle author of the book and major contributor to the Davidson College herpetology website: http://www.bio.davidson.edu/projects/herpcons/herps_of_NC/anurans/anurans.html

John Ennis



The light dot in the center of the external eardrum (just below and behind the eye) is used to identify a Southern Leopard Frog