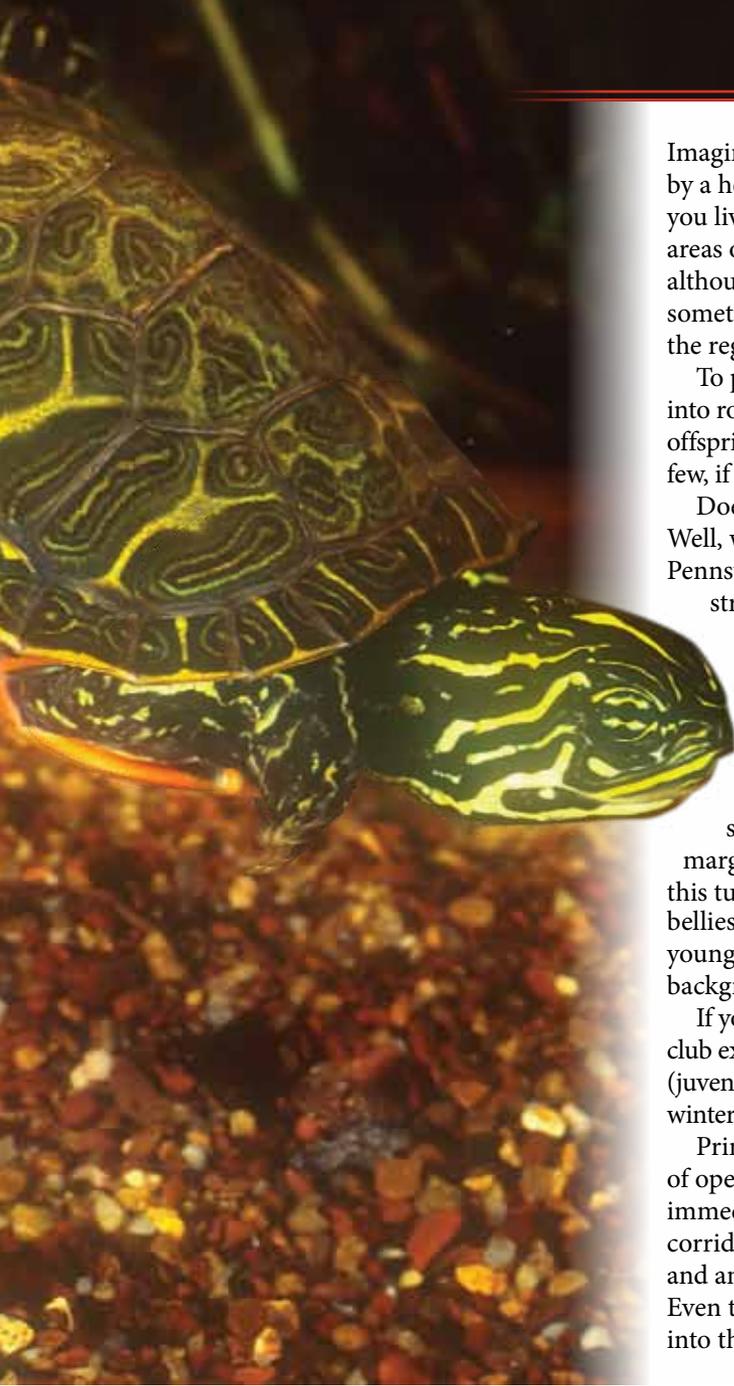


# Plight <sup>of</sup> the Eastern Redbelly Turtle

by Rob Criswell    photos by the author



Imagine for a moment that you are less than five inches tall, are encumbered by a heavy, bulky coat of armor and walk on all fours. The community where you live is located in one of the most highly developed and industrialized areas on the continent. Your primary avenue of travel is through waterways, although many are degraded or severely polluted. To move about, you must sometimes dodge traffic to cross the most heavily traveled thoroughfares in the region, but your top walking speed is less than one mile per hour.

To perpetuate your kind, you must make annual treks that take you into rough neighborhoods where there is little protection available to your offspring. They are vulnerable to a rogue's gallery of thieves and predators and few, if any, will survive to adulthood.

Doesn't sound like a great place to live and raise a family, does it? Well, welcome to the world of the eastern redbelly turtle in southeastern Pennsylvania. If you conclude from this scenario that this reptile is in dire straits in the Commonwealth, you are correct.

Eastern redbelly turtles are large comparably to other Pennsylvania's turtles. Adult males have an average length of more than ten inches, and females are nearly twelve inches. The carapace (upper shell) usually has a drab brown or blackish background with a vertical, dark red line on many of the plates (scutes), but its lower edge is reddish with black splotches. The plastron (lower shell) is a pink or salmon hue and may retain some dark markings that match the lower margin of the carapace. But, it's the brightly colored juveniles that exemplify this turtle's scientific species name of *rubriventris* with their red or orange bellies, mottled with dark spots with light halos around them. These youngsters also sport bright yellow lines that contrast with a dark green background on their soft parts.

If you didn't know better, you'd think eastern redbelly turtles live a country club existence, munching on submerged vegetation (adults) or invertebrates (juveniles), lounging in the sun for much of the day and slumbering away the winter months.

Prime habitat includes lakes, ponds, wetland complexes with lots of open water and deep, sluggish streams—the bigger the better. An immediate source of plants and small aquatic animals, a series of aquatic corridors through which they can travel safely between larger water bodies and an abundance of basking logs is also important for their well being. Even though they are sunbathers, they are shy and vigilant and will drop into their watery refuge at the first sense of danger.



*Juvenile eastern redbelly turtles have red or orange bellies and bright yellow lines that contrast with a dark green background on their soft parts.*

Eastern redbelly turtle activity creeps to a halt beginning in October, when the turtles burrow into bottom mud or pick an exposed location in deeper water to brumate (hibernating for reptiles). They have even been observed lying on a lake bottom through holes in the ice. They drag themselves out of their deep sleep the following March.

Nobody has documented the courtship and mating ritual of the eastern redbelly turtle, but sometime afterwards, in June or July, the females begin their trek to suitable nest sites. They may travel as far as a ½ mile to find suitable sand or loam to deposit their eggs, usually 10 to 12 eggs. But, as many as 35 eggs can be found in a nest dug a little less than four inches deep. This is one of the most vulnerable periods for eastern redbelly turtles, taking them across highways and railroad tracks, gravel pits and quarries.

The hatchlings, nearly round in shape, may leave the nest in late summer or early fall, or they may not emerge until the following spring. There are even reports of siblings from the same nest exercising both options. But regardless of when they strike out, the odds of survival are very slim. Before hatching, eggs are plundered by a cast of characters that include raccoons and skunks. The youngsters then must run a gauntlet of predatory fish, bullfrogs, herons and snapping turtles, as well as dogs, cars and inquisitive kids.

For a period of time in the late 1800s, all these predators had to compete with man. Commercial collectors hunted this edible species relentlessly for markets in York, Philadelphia and other eastern cities and decimated its numbers in many areas including the Chesapeake Bay region.

Although vehicles and predators take their toll, the primary threat now facing Keystone State eastern redbelly turtles is the degradation and loss of habitat. Wetlands, especially larger ones, have all but disappeared along Pennsylvania's strip of the Coastal Plain that this species favors. Marshes were once common and extensive along the tidal creeks and shores of the Delaware River. Now, Coastal Plain habitats are mostly confined to the John Heinz National Wildlife Refuge (NWR) in Philadelphia.

There are also a couple of new turtles in town, and evidence suggests that they may compete with the eastern redbelly turtle for food and habitat resources. These alien invaders, the red-eared and yellow-bellied sliders, have been discarded by pet owners in southeast waterways to the extent

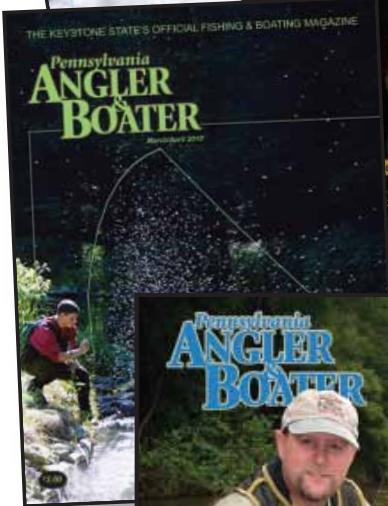
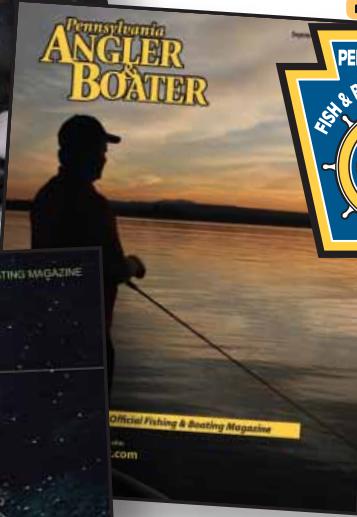
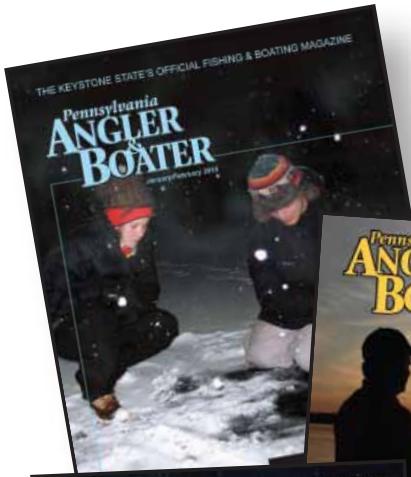
that they have established wild populations in the same ponds, lakes and wetlands that eastern redbelly turtles favor. In a recent study conducted by the Pennsylvania Fish & Boat Commission (PFBC) and Drexel University, red-eared sliders were found to occupy greater than 70 percent of the areas historically and currently occupied by the eastern redbelly turtle in the Delaware drainage. According to Chris Urban, Chief of PFBC's Natural Diversity Section, "the red-eared slider was found to be the dominant basking turtle at many of the eastern redbelly turtle sites in this drainage and likely much of southeast Pennsylvania."

Based on its fragmented distribution, low numbers and current threats, PFBC has classified the eastern redbelly turtle as a threatened species. Most of the state's population is confined to Bucks, Delaware, Montgomery and Philadelphia counties. There are also reports of isolated populations of eastern redbelly turtles as far west as Adams and Franklin counties, which may not represent viable populations.

The PFBC has supported research and funded projects to better determine this species' movements and life history, impacts of wetland fragmentation and effects of competition with the introduced red-eared slider. The PFBC is currently conducting inventory work within data gaps in the Schuylkill and Delaware drainages and conducting a radio telemetry study of eastern redbelly turtle movements associated with riverine populations. The PFBC also comments on development projects that can potentially adversely impact the eastern redbelly turtle. Through consultations with project proponents, PFBC staff biologists provide recommendations to avoid and minimize impacts to the eastern redbelly turtle and the habitat where it resides.

The eastern redbelly turtle in Pennsylvania is still considered to be an imperiled species due to its relatively low numbers and current and future threats of habitat disturbance and roadkills. Roadkills are a serious issue for the eastern redbelly turtle. Because of its size and habitat requirements, this species is capable of moving great distances to locate appropriate nesting habitat. Like many aquatic turtles living in urban settings, females often have to cross busy roads to find good nesting habitat—here they too often meet their unfortunate fate.

"Protecting the habitat eastern redbelly turtles live in is the key to their long-term viability in the Commonwealth," said Urban. However, the greatest challenge facing Pennsylvania's eastern redbelly turtles and the conservationists working to protect them is maintaining and expanding high quality habitat. To recover this species, eastern redbelly turtles will need places to call home with ample food, basking habitat and safe passage to and from good nesting habitat (movement corridors). With recovery in mind, look for PFBC to team up with other conservation professionals to realize this type of long-term protection and hopefully for the full recovery for the species in the Commonwealth. ☐



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