

Living Shorelines: What We Lose When We Lose The Edge

To a female turtle looking to nest on a soft, sandy beach, a pile of riprap must look as inviting as a treeless parking lot in August. As more and more landowners "harden" their shorelines with rock, more and more of our native species are finding it hard to survive. Marguerite Whilden has been working to improve habitat for the diamondback terrapin, a project with the Maryland Department of Natural Resources. (See www.dnr.state.md.us/terrapin)

by Marguerite Whilden

As children, whenever we found turtles and presented them to Mother, she would assign to them the highest of animal acumen. "Look into those eyes," she would say. "This one has been around for a very long time." Reverence for anything venerable was instilled in me at an early age, and certainly the turtle qualifies, having been around for over 200 million years. So, as Mother instructed, we always returned the turtle to its rightful place in the garden, or the wood lot, or down by the water. Whose childhood does not feature a turtle or two? Who does not love a turtle?

The State of Maryland has conferred similar reverence to the turtle, adopting the diamondback terrapin as its State Reptile and University mascot. Originally, it was the diamondback, not the oyster or the crab, that spread the fame of the Chesapeake's bounty around the world. Terrapin graced the tables of Maryland elite, and recipes from the finest restaurants in Philadelphia and Baltimore made their way to Europe along with our coveted reptile, which could be shipped live without refrigeration.

Although the terrapin is clearly a reptile, it was a valuable commercial fishery in the Chesapeake; terrapin and snapping turtle continue to be managed as "fish" by the DNR Fisheries Service. A commercial terrapin fishery continues in some areas of the state, though most of the harvest is shipped to Philadelphia and New York. The Chester River supported at least a few terrapin harvesters in recent years. Although not well identified, there are pockets of healthy terrapin populations scattered throughout the middle Chesapeake Bay, rivers and tributaries. In the more developed areas and tributaries further north of the Bay Bridge, terrapin populations have disappeared entirely as habitat vital to nesting and juvenile survival has been replaced with bulkheads, rock and revetment.

When I started studying terrapins for the DNR in 1998, I began by looking in my corner of the Severn River watershed. Though my neighbors had not seen terrapins in the area for over twenty years, I was surprised to find eight nesting females all using a small, but ideal sand beach at the confluence of Whitehall Bay and Meredith Creek. We still have no idea how many terrapins inhabit this subsystem, but it's always a good sign for species recovery to document nesting and reproduction.

I was inspired to approach the owner of the sand beach to ask if we could place a "Terrapin Nesting Sanctuary" sign on site. The owner agreed, knowing it would help keep destructive trespassing under control while providing nesting ground for the gentle terrapin. With this simple gesture, the fisheries habitat component of my work began. The animal that begins its life at the water's edge would become the metaphor for a renewed ethic at the shoreline.

In the Maryland tidewater, one reason for the terrapin's disappearance in the developed creeks is the permitted use of commercial crab pot gear by homeowners in shallow waters. Since the 1940's, commercial crab potters have been restricted to the deeper main areas of the Bay. But as the waterfront became more developed, new owners wanted to use crab pots, and were permitted to use no more than two at their pier or from the shoreline. As a result, thousands of air-breathing animals, turtles, muskrats and otters have drowned annually when caught as by-catch. In 1998, a simple device known as a By-Catch Reduction Device was proposed for use in the non-commercial crab pots and is now a regulation for homeowners.

The terrapin is an interesting evolutionary transition from sea turtles to fresh water turtles; it is the only turtle that spends its entire life in brackish water. The terrapin has modest requirements. It needs access to shoreline areas, above the high tide line, where it begins life. After hatching, the offspring need protected tidal marshes in which they can hide and feast on tiny terrapin treats, like grass shrimp and stuff they forage for in the sand. Adult terrapins are rather hardy and use more of the river system for forage and brumation (a form of hibernation) during winter.

Animals and plants are equipped with fascinating strategies to sustain their species. Since terrapins can live as long as 50 years, their annual reproduction need not be abundant. Unlike crabs, which live an average of only three years but produce approximately 8 million eggs over its lifetime, the terrapin's egg production is about 2000 over a lifetime. Male terrapin reach a maximum size of 5 or 6 inches measured along the plastron (bottom shell) and are rather slim in features and weight. Females, by contrast, are 9 inches along the plastron and can become quite rotund in their later years, which allows them to accommodate more eggs, averaging 13 eggs per nesting. Terrapin females place their

eggs on land, in nests dug with strong back legs and precision timing. After depositing all the eggs, the female obscures the nest so well, only her tell tale foot prints can be seen.

Most people need a connection to nature before they can be concerned enough to listen, learn, and change their behavior. The terrapin connects in many ways. While I hesitate to admit it, I wept the first time I witnessed a terrapin hatching. Since then, I've seen others as deeply moved, perhaps by the pure determination of such a tiny creature. Maybe terrapins and other turtles are simple reminders of how much we admire the qualities of tolerance and persistence. These are qualities we seek in our friendships and wish for in our children.

While working with the terrapin program, I've learned that citizens are eager to contribute to tangible conservation efforts. Inspired by the terrapin and other terraqueous creatures (those dependent on both land and water), I know several property owners who are taking away rock and restoring a natural shoreline. Consider it "off-shore gardening for wildlife." These shorefront owners are seeking new, softer ways to protect their shoreline, but keep it alive. I do not mean to suggest we can eliminate the use of rock altogether. There will always be high-energy areas where rock is the only alternative. However, I see a lot of perfectly good rock being wasted along shorelines that do not need that degree of protection. In these areas, we are learning that softer, less expensive, lower profile strategies are quite suitable. Sand bags, for instance, make a perfectly effective shoreline stabilization alternative, and if placed at lower profiles, allow the critters and us to reach the beach. Too many turtles are being trapped in crevices in riprap, unable to climb back out once they tumble inside.

The fisheries habitat restoration project underway at the Horsehead Wetlands Center in Grasonville will be of a scale that can be duplicated on private shorelines, and affordable to more property owners. There, we will soon have examples of a combination of shoreline restoration techniques, including sand bags, which property owners can observe and replicate. It's a gentler approach to saving our shorelines, and it is creating and restoring habitat. Property owners are taking away the obstructions, cultivating tide gardens, and inviting shoreline species back to their natural domain. If you restore your beach, the terrapins will come. And fish and crabs and wading birds will follow.

Sidebar

Meet Margie Whilden and see diamondback terrapins up close on Saturday, June 8 at Horsehead Wetland Center in Grasonville, at the "4th Annual Wade-In" sponsored by the Upper Eastern Shore Tributary Strategy Team. The event features live music, free t-shirts, raptors, canoeing, fish seining, face painting, DNR's touch tank and a variety of exhibits, one of which demonstrates "soft" shoreline protection measures that are kind to wildlife. What is a wade-in? Retired State Senator Bernie Fowler created the tradition 14 years ago when he returned to his native Patuxent River to see how far he could wade into the water before losing sight of his white sneakers. The "Sneaker Index," though a non-technical measure of water quality, has become a popular annual event in each of Maryland's 10 major tributaries. Plan to get your sneakers wet at 2:30. For information, call Susan Phelps Larcher at DNR: 410.260-8832; or contact the Horsehead Wetlands Center: 410.827.6694. Margie Whilden can be reached at 410.260.8269 or mwhilden@dnr.state.md.us