

Will Slow & Steady Win the Race?

Turtles in a Post-Modern World

By Scott Smith

The early morning light was just beginning to suffuse the dark as the workboat sidled up to the tie-off poles at the peeler bank trap, the trap rising to a few feet above the waterline. The boat secured, Buck, our captain, maneuvered the boom over the trap. Hooking the center rope, he hoisted the entire trap onto the edge of the cull board. The trap was alive with blue crabs, a few white perch, and a single specimen of our quarry today: the diamondback terrapin.

We opened the trap door and gently shook out all the trap occupants onto

populations in the waters of Somerset County.

Beginnings

A Native American creation myth places the earth on the Great Turtle's back, with the turtle supporting the world. Certainly the turtle's presence on this planet goes back a long ways: they are the oldest living reptiles, with their origins traced back at least 200 million years. Some scientists are now even placing them in their own group, separate from the reptiles.

In part due to this widespread distribution and their compelling nature, turtles have been part of the folklore and culture of every civilization. Our own venerable state reptile, the diamondback terrapin, has played a central part in Chesapeake Bay lore. With a vibrant fishery at the beginning of the 20th century, it was celebrated in the stew pots of the most distinguished restaurants.

Trouble Brewing

But that was before we knew much about turtle biology or had witnessed population



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Captain Buck, waterman, hoists the bank trap using block and tackle mounted on a boom.

the board. While Craig Patterson, my assistant, snagged the lone turtle, Buck and I closed the trap and lowered it back into place at the end of a 75-foot long lead connecting the trap to the shore, the lead acting as a drift fence funneling animals moving along the shallow shoreline through the "heart" and into the bank trap. Thus began the modest early stages of a DNR study of terrapin



A just-released adult female Diamondback Terrapin (*Malaclemys terrapin*) swims away. Note the concentric rings or "diamonds" on its carapace (top shell) which give this species its name.

There are currently 322 recognized turtle species worldwide (315 freshwater, 7 marine), which include 56 species in the U.S. and Canada, 19 of which are found in Maryland. Turtles are found on every continent except Antarctica, and while the sea turtles are found primarily in tropical waters, some do venture close to the Polar Regions.

declines. Today, it is widely recognized that many turtle species are in trouble due to conflicts between our post-modern lifestyles and the turtle's basic life history characteristics and behavior.

These include delayed sexual maturity (in most species females must live about 10 years before becoming mature), high nest predation rates (typically 95-100 percent fail due primarily to elevated raccoon





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The spiny softshell (*Apalone spinifer*) is a state endangered species whose lone population occurs in Garrett County.

populations), low juvenile survival rates due primarily to predation (about 75 percent lost in the first few years), and loss of adults (particularly females) to a host of factors. The future of turtle populations is in the adult females, as their entire life history strategy is to live a long life and hopefully reproduce successfully at least once, that is, replace themselves in the population. Turtle populations are not capable of rapid population recovery due to their basic biology, thus commercial harvest is unsustainable. Unfortunately, they are also not well-suited to the rapid pace of today's world; and their critical habitats are increasingly fragmented by roads and lost to development. Of the 322 turtle species worldwide, 65 percent are red-listed by the International Union for Conservation in Nature and 41 percent are considered threatened.

Terrapin Tales

The diamondback terrapin serves as a classic example of turtle biology in conflict with the post-modern world. Females traveling to distant landward nesting sites are subjected to increased road-kill. Also, University of Ohio researcher Dr. Willem Roosenburg found that female terrapins were more susceptible to boat propeller strikes than males because they are more often in deeper waters.

Many terrapins drown in recreational crab pots and in derelict or "ghost" crab pots. DNR regulations require all recreational crab pots used by shoreline owners be fitted with a terrapin excluder device; however a recent study by Dr.



The Eastern Mud Turtle (*Kinosternon s. subrubrum*) prefers the shallow waters of marshes, wet meadows and ponds.

Roosenburg and his colleagues found only a 16-17 percent compliance rate.

Turtles are not fish – they are air-breathers and, during the warmer months, need to surface every few hours or they will drown.

Terrapin nesting beaches are increasingly armored with rip-rap or bulk-headed, making them inaccessible, or are altered and made inhospitable by development. No nesting beaches means no terrapins!

The China Trade

Turtles are also under pressure from the illegal pet trade, with many of our native species worth enough to make it worth the risk for criminals. However, over the past 15 years, a new and much greater threat has emerged – China has been buying up U.S. turtles for food and to establish captive breeding facilities, particularly for those species with large adult body size: softshells, snappers, terrapins, sliders, cooters, and map turtles. The focus on U.S. turtles comes after most Southeast Asian turtle species have been collected to near extinction. North America is recognized as one of the global centers of turtle diversity; thus it has become a prime target for this trade. While it took most states well over a decade to realize the impact the China trade was having on their turtle resources, today many states have either banned or limited the harvest of freshwater turtles.

In 2007, an Act of the Maryland legislature banned the commercial harvest of diamondback terrapins. In 2009, collection of the remaining harvestable turtle species was banned by DNR regulation, except for snapping turtles.



The spotted turtle (*Clemmys guttata*) has suffered from wetland habitat loss and illegal collecting for the pet trade.

However, the minimum size for snappers was increased in 2009 from 9 1/2 inches to an 11-inch curved carapace (the top shell) length to protect 50 percent of adult females. Previous DNR regulations not allowing harvest from non-tidal waters were also reaffirmed.

Return to Eden

A high reef of billowing white clouds dominated the landscape as I motored to the mouth of Mine Creek to begin the release of our day's catch of terrapins, already weighed, measured and marked. Hazard Island and the small watermen's community of Frenchtown loomed low on the horizon. With the sun shining, a favorable breeze and the tangy scent of the Tangier Sound in my nostrils, I could not help but feel hopeful. The abundance of terrapins in this area added to my positive vibes.

With the harvest of terrapins no longer allowed, now the main threats to address are recreational crab pot mortality and loss of nesting beaches. Solutions to the first are already available, turtle excluder devices; people just need to be responsible and begin using them (they are required by law). The solution to the latter, which plagues our entire native turtle species (i.e., loss of habitat), will be more difficult to address. Only we as a society can decide if there is a place in the world for turtles – but it will require us to develop the same strategy that the turtle uses – think and act for the long term! n

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