

FISHERIES SERVICE SUMMARY ON DIAMOND-BACKED TERRAPIN CONSERVATION IN MARYLAND

APRIL, 2016

BACKGROUND

The Northern diamond-backed terrapin, *Malaclemys terrapin terrapin* (Schoepff, 1793), is one of seven terrapin subspecies (Crother, 2012). For the purpose of this discussion, the Northern diamond-backed terrapin will be referred to as “terrapin” since it is the only terrapin that occurs in Maryland waters.

The terrapin is listed as a species of greatest conservation need in the 2015 Maryland State Wildlife Action Plan (SWAP). This 2015 plan, written by MD DNR’s Wildlife and Heritage Service, (http://dnr2.maryland.gov/wildlife/Pages/plants_wildlife/SWAP_How-to-Help.aspx) significantly revises the 2005 SWAP. The new plan includes 610 species, of which 260 are vertebrates and 350 are invertebrates. The species, some very rare and critically endangered and others relatively common but facing a variety of threats, were not prioritized but were placed into conservation status groups. The terrapin was placed into conservation status group C, sharing that designation, among turtles, with the spotted turtle and box turtle. In Maryland, the terrapin has never been listed as endangered or threatened, but it is recognized as a species of concern by DNR Wildlife and Heritage Service due to its life history characteristics and threats.

The draft 2015-2025 Maryland State Wildlife Action Plan shows the conservation status rank and state and federal legal status of species of greatest conservation need. Because terrapins are neither threatened nor endangered, the species has no special legal status. Its conservation status rank is listed in the plan as global rank G4 and state rank S4. Both G4 and S4 ranks share the same definition: “Apparently Secure – At fairly low risk of extinction or extirpation due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of recent declines, threats, or other factors.” These G4 and S4 conservation status rankings are between the G5/S5 – “Demonstrably Secure” and G3/S3 “Vulnerable/Watchlist”. The Department recognizes the concern and threats to terrapins inherent to the S4 ranking definition.

Since the 2007 harvest moratorium, management of the terrapin has shifted from the Fisheries Service (FS) to the Wildlife and Heritage Service (WHS). However, FS has continued to cooperate with WHS and others through the Maryland Terrapin Working Group. Cooperative projects include a study of crab pots at Poplar Harbor in 2011, communications efforts for by-catch reduction device (BRD) requirements in FS fishing guides in print and online, participation in the annual “head-count” surveys (FS and WHS staff), and input to the Integrated Project Review program to include terrapin habitat into project review.

Although the commercial harvest of terrapins has ceased, some major threats to terrapins throughout their range continue to be crab pots in tributaries, commercial gear, and loss of nesting beaches. Nest predation can be very high and many adult terrapins exhibit healed injuries from boat strikes. Commercial harvesting of terrapin has not been a source of mortality since the

moratorium in 2007. However, some other threats have continued, most notably crab pots used by waterfront property owners without by-catch reduction devices and a significant loss of habitat. Areas of concern are discussed below.

AREAS OF CONCERN

Loss of Nesting Beaches

Terrapins require access to their traditional tidewater nesting beaches to reproduce and maintain local populations. When shorelines are hardened by bulkheading or with continuous stone revetment, the nesting beaches are lost. This issue is also important to Fisheries Service because terrapins share habitat with fish species at various life stages. The terrapin is considered to be an “umbrella species” in recognition of its association with many other critical species. These species would benefit from protection of the essential habitat and promotion and utilization of living shorelines that are designed in a way that supports the preservation and maintenance of terrapin nesting habitat.

High Nest Predation

When terrapins nest successfully on their traditional nesting beaches, nest predation is very high. Nest predation is commonly over 90%, and 100% predation is not unusual. Raccoons and foxes themselves have no predators and are in high abundance due to increased edge habitat from land development.

Boat Strikes

Terrapins collected in tributaries exhibit a high degree of healed damage from boat strikes. Mortality from this source of injury is unknown. Ohio University researchers found adult females were more likely to be struck as they venture farther from shore than males.

By-Catch

Commercial fishing and crabbing gear has the potential to capture species incidental to their intended targets. Pound nets, peeler bank traps, fyke nets, eel pots, and commercial crab pots all have the potential to catch terrapins. The careful setting, operation, and placement of these gear types helps to reduce the potential for bycatch that would lead to terrapin injury or mortality. Fisheries biologists perform studies that are “fisheries dependent” and participate with commercial fishermen to sample their catch to either take measurements or collect scales, otoliths, or tissue. This is an opportunity to gain knowledge about bycatch. Often biologists use much of the same gear with little to no modifications in their dependent sampling efforts. In both categories, it is very rare that terrapins have been observed in commercial fishing gear by Fisheries Service biologists.

Crab Pot By-Catch

The crab pot was invented by B.F Lewis of Harryhogan VA and patented in 1928. His design was modified in 1938 and this modification continues to be used today (VanEngel, 1962). Before this new commercial crabbing gear could be widely used legally, it was banned in Maryland from 1941 to 1942, pending completion of studies. The crab pot was tested and found to be highly effective (Davis, 1942). However, the study concluded that the crab pot was a “distinctly destructive implement if used in the shallower waters of creeks and along marshy shores” citing

terrapin and fish incidental captures (Davis, 1942). Based upon this study, the state of Maryland allowed crab pots in 1943 for commercial purposes only and their usage was strictly limited to the open waters of the Chesapeake Bay, among other restrictions on commercial crabbers. Terrapins typically are not found in such exposed locations as the main portion of the Bay. Commercial crabbers were not allowed to set crab pots in the tributaries of the Bay. That 1943 restriction on commercial crabbers has remained. Maryland is the only mid-Atlantic state that prohibits commercial crabbers from using crab pots in tributaries and this restriction has likely significantly reduced the mortality of terrapins in Maryland waters compared to other states. Commercial crabbers in other states are quite familiar with terrapin bycatch in crab pots used in shallow water and marshy habitats while many Maryland commercial crab potters have never seen a terrapin as bycatch.

In 1975, by emergency regulation, Maryland waterfront property owners were allowed to set crab pots from their waterfront properties (Md. R. Doc. No. 75-214), much of which are in prime terrapin habitat. Initially, waterfront property owners were allowed to set four pots but that number has since been reduced to two. These riparian crab pots have, as predicted by Davis in 1942, proven to be “distinctly destructive” to terrapins. Rectangular bycatch reduction devices (1.75” x 4.75”) have been required since 1999 on these crab pots used by waterfront property owners. Other states also require these bycatch reduction devices (BRD’s). They have been manufactured commercially in plastic and heavy galvanized wire. The simple, inexpensive devices are effective at preventing terrapins from entering crab pots. They are widely available in bait and tackle shops and hardware stores as well as online. Many dealers sell crab pots with the BRDs, as well as cull rings, already attached. Despite the efforts of press releases and law enforcement, compliance rates in Maryland have been called “low” (Radzio et al.,2013). In 2014, the Department implemented regulations that require waterfront property owners to get a free crab pot registration. This registration helps the Department identify the individuals using this gear and the locations; and education materials regarding the BRD requirement can be sent to the registrants.

LITERATURE CITED

- Crother, B.I. 2012. Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, with Comments Regarding Confidence in our Understanding. Society for the Study of Amphibians and Reptiles, Herpetological Circular No.39.
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- Van Engel, W.A. 1962. The blue crab and its fishery in Chesapeake Bay; Part 2 – Types of gear for hard crab fishing. *Commercial Fisheries Review* Vol. 24 No. 9. 10p.

TFAC Action Item from Minutes “Diamond-backed” Terrapins:

Update to the Commission,

It has been requested that the Fisheries Service over see the management of Diamond-backed Terrapins. Traditionally, the FS manages species that are Commercially harvested, since 2007 Terrapins have been under a harvest moratorium per the Maryland General Assembly. When the moratorium was enacted Terrapins were assigned to the DNR Wildlife and Heritage Service for their oversight, where it remains. In Maryland, Terrapins have never been listed as endangered or threatened, its conservation status ranking is defined as “Apparently Secure” at a fairly low risk of extinction.

Apparently, the request for FS to manage Terrapins is thought to lead to additional Conservation measures/studies to further protect the species. By-catch by Recreational Crab pots, and other Commercial gear along with Shoreline Habitat issues are among the sited concerns. Past by-catch studies have not proven to conclude that a major problem exists, per the (Poplar Harbor study in 2011) and more recent “headcount” surveys has indicated a recovering population of Terrapin in a number of locations throughout the Ecosystem.

The ultimate Conservation measure is a harvest Moratorium that continues to protect this recovering species. It would seem to be unclear what the purpose would be to change the management of Terrapins from the WHS to the FS when there are no requests for harvest consideration. We are not aware of any request from the WHS or The Maryland Diamond-backed Terrapin Working Group to change the management of Terrapins. Given the competing number of projects before the different agencies of DNR to embark upon additional studies for a species under Moratorium would seem to be unwarranted at this time.

Submitted by,

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