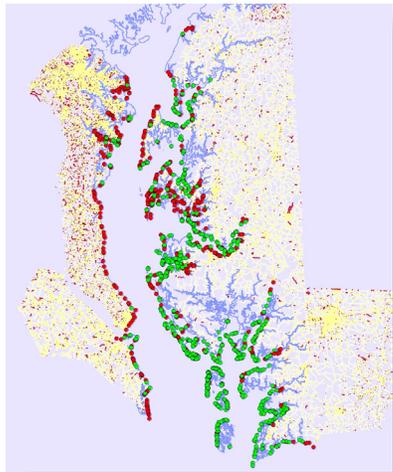


Patuxent Wildlife Research Center

Monitoring Diamondback Terrapins in the Chesapeake Bay



The Challenge: The Diamondback terrapin is the only obligate brackish water turtle species in North America. As its life history depends on many of the Bays resources, the status of terrapin closely reflects the ecological health in the Chesapeake Bay. Terrapin populations have declined in many States because of commercial harvest, urban development, loss of critical habitat, pollutants, and decreased water quality. In the future, extreme events associated with climate change and sea level rise may eliminate marsh islands and other key shoreline nesting beaches, and shift environmental temperature and sand salinity conditions on which terrapins depend. Methods and baseline data are needed to rapidly evaluate the extent to which the terrapin may be affected by such changes in their resources.



The Science: Studies of demographics and population estimates from 3 distinct regions in the Chesapeake have broadened the understanding of the current terrapin genetic population, level of site fidelity, and seasonal use of habitat. Shoreline nest distribution data collected in 2002-2003 on the MD Chesapeake Bay are now available for identifying areas critical to terrapins (<http://www.pwrc.usgs.gov/terrapiin/results.cfm>). Adapting traditional commercial harvesting techniques, USGS biologists monitored terrapins within known wintering grounds and recorded a wide range of terrapin population viability and recruitment. An alternative box trap was designed allowing localized and seasonal monitoring of terrapins within marsh islands' shallow pools and creeks.



The Future: USGS findings on the impact of commercial harvesting of terrapins supported management decisions to discontinue terrapin fisheries in MD. While terrapins are abundant and reproduce well in the Tangiers area, evidence points to populations being far less resilient at other locations. Capture techniques and methods used to collect the baseline data on terrapin distribution and abundance at specific study sites in 2003-2005 may be applied to effectively monitor their status in the next 10 years, and evaluate critical scientific measures for preserving diamondback terrapins in the Chesapeake Bay.