FORMERLY CRYSTAL COAST OUTDOORS MAGAZINE // SAME GREAT CONTENT, EXCITING NEW LOOK

DECEMBER /JANUARY 2012

Carolina Salt

your life on the Crystal Coast

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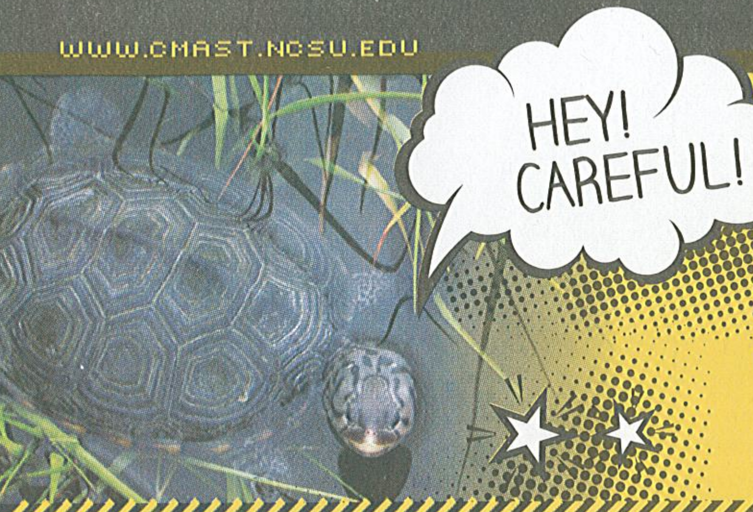

DIAMONDBACK TERRAPINS:

LOCAL SCIENTISTS WORKING TOGETHER TO HELP SAVE A SPECIES

BY HEATHER BROADHURST
CVM RESEARCH TECHNICIAN

Turtles are some of the most popular animals for visitors to spot when visiting the Crystal Coast, and the lesser known diamondback terrapin is no exception.

Smaller than sea turtles, terrapins are the only aquatic turtles in North America to live in the brackish water found in coastal marsh habitats along the East and Gulf Coasts. Two of the seven subspecies of terrapins are found in North Carolina: the Northern and the Carolina diamondback terrapin.

Diamondbacks are well known for the beautiful markings on their shells and skin. Their unique look makes them appealing as possible pets; however, diamondbacks aren't good pets for many reasons. They have specific needs, and more importantly, state laws protect them as a "species of special concern."

> TERRAPINS WERE ONCE HIGHLY PRIZED FOR THEIR MEAT, AND OVERHARVESTING CAUSED A SEVERE DECLINE IN THEIR NUMBERS.

In order to learn as much as possible about these turtles to help protect them, NCSU Center for Marine Sciences and Technology (CMAST) veterinarians and staff teamed up with Lori Lester, doctoral candidate (Drexel University) and Wendy Dow-Piniak, doctoral candidate (Duke University), to investigate the hearing ability of diamondback terrapins. Lori's focus of study is the effects of boats on terrapins. She works with her advisor, Dr. Harold Avery, mainly in Barnegat Bay, New Jersey, where he has a mark-recapture study looking at the population ecology of the terrapins in that area. Many of the terrapins that are captured exhibit evidence of boat strike injuries. Lori's research addresses whether terrapins can hear boats and whether they behaviorally respond to the sound of boat engines. Wendy studies the hearing sensitivity of sea turtles in an underwater environment. Her experience testing the hearing capabilities of various sea turtle species underwater was key in helping to organize and implement this collaborative project.

In marsh habitats, turbidity, or low visibility, may cause turtles to rely more on their hearing to sense their surroundings, find food, locate mates, and avoid predators. Studies have been done to learn the hearing sensitivity of diamondback terrapins in air; however, it has never been studied underwater. The hearing sensitivity of the terrapins was tested using auditory evoked potential (AEP) measurement techniques, emitting a series of sounds at various frequencies and measuring the brain's response resulting in an audiogram. This is similar to how the hearing sensitivity of a human baby is tested.

The results of this particular study will be the first measure of underwater hearing sensitivity of terrapins and allow these to be compared to in-air hearing abilities. The results will also show evidence of whether or not terrapins are able to hear the frequencies that are produced by boat motors. This information can be used to further investigate ways to deter terrapins from fisheries and boat interactions.

Terrapins face many challenges interfacing with humans; therefore, other studies can also help us learn about the biology of these animals and protect them in their natural environment. Commercial and recreational crab pots are also serious problems for terrapins. Attracted by the blue crabs, one of the their favorite foods, terrapins crawl into the pots and become trapped. Because they are air breathers, they drown when they are unable to get out. Researchers are studying the effectiveness of Terrapin Excluder Devices (TEDS) that can be added to crab pots to decrease terrapin mortalities.

Terrapins were once highly prized for their meat, and overharvesting caused a severe

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>>HISTORY CONTINUED FROM P16

ties and embedded itself in the brick walls of the fort. That shell casing is still visible.

There is plenty to learn at Fort Macon, and plenty more stories. If you are curious about the shot in the wall, or if you just want to know more about life during the War Between the States, visit *www.ncparks.gov* and search for Fort Macon to find activities, events and other park information.

Friends of Fort Macon are working to acquire replicas of the cannons that were used in the 1800s to enhance the authentic feel of the ramparts of the fort. For more information, visit *www.clis.com/friends*.

And as always, join me next time as I continue to explore the North Carolina Highway Historical Marker Program.

{ DID YOU KNOW THAT FORT MACON AND OTHER FORTS AT ONE TIME PROTECTED A PLACE CALLED CAROLINA CITY? }

>>TERRAPINS CONTINUED FROM P17

decline in their numbers. These appealing animals also are injured each year by automobiles while attempting to cross roads to lay eggs. Habitat destruction and pollution are even greater threats.

If you find a terrapin crossing a road or highway, relocate it to a marsh area if possible. And remember, keeping waterways and shorelines free of litter and pollution helps all coastal marine life.

For more information about projects and research at CMAST, visit *www.cmast.ncsu.edu*.

TERRAPIN WITH BOAT STRIKE INJURY.
PHOTO BY LORI LESTER