

Diamondback Terrapins at the Wetlands Institute

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Adult female Diamondback Terrapin searching for a place to nest adjacent to a busy road in Cape May county, NJ.

In southern New Jersey, development on barrier islands has led to habitat loss for the Diamondback Terrapin (*Malaclemys terrapin*). Traditional nesting sites (coastal dunes) no longer exist on most islands. In the absence of dunes, terrapins nest on the causeways that cross the salt marsh. Unfortunately, the highest volume of traffic on causeway roads coincides with the nesting season (late May - July) resulting in hundreds of roadkills every year. This is alarming to biologists because high survivorship is required for stable populations of long-lived species—high adult female mortality inevitably leads to population decline.

Scientists and interns at The Wetlands Institute have raised community awareness about terrapin conservation. During the nesting season, many handmade turtle crossing signs are put up by concerned citizens.



Concern for the local terrapin population led Dr. Roger Wood, Director of Research at the Wetlands Institute, to establish the Terrapin Conservation Project in 1989. During the nesting season, undergraduate interns patrol a 38-mile transect five times a day in search of terrapins on the road. In some cases, terrapins are simply helped across the road, always in the direction they are traveling. Injured terrapins are brought to a local veterinarian who repairs fractured shells. Unfortunately, many terrapins are found killed on the road. Depending on the amount of damage, dead terrapins may be dissected to retrieve eggs from the

Eggs recovered from roadkill females are incubated in the laboratory. They hatch after 40 to 60 days of incubation at 30°C.



Close-up of hatchling terrapin emerging from the egg. High incubation temperatures ensure that all of the hatchlings are female.

carcass. Terrapins exhibit temperature-dependent sex determination (TSD) and recovered eggs are incubated at 30°C (86°F) to produce only female hatchlings. In this way, the high mortality of adult female terrapins on the road is offset by increasing the number of females in the next generation.

Hatchlings from recovered eggs are reared at a special facility at The Richard Stockton College of New Jersey. Kept warm and well-fed through the winter, the resulting “headstarter” terrapins reach the size of a 3 or 4-year old terrapin in less than one year. Headstarter terrapins are marked with a microchip and released into the salt marsh. To date, several of these headstarters have returned to nest at The Wetlands Institute.



Hatchlings are raised in captivity until they reach 3-4". These “headstarters” are released by children from a local kindergarten and other members of the community.

Headstart programs are not effective in stabilizing populations unless the underlying reasons for decline are addressed; therefore, researchers at The Wetlands Institute seek to reduce roadkills and other factors that contribute

to the high mortality rate for the local population. Beginning in 2004, interns and volunteers have installed barrier fencing along the causeways to reduce roadkills in areas known to be major “hot spots”. Currently, more than 7 miles of barrier fence have been installed along roads that cross the salt marsh.



Student interns install barrier fences along the causeways to prevent turtles from entering the road.

A common thread?

Year of the Turtle News staff noticed a certain similarity in photos submitted along with interviews, biographies, and features. We bet you can spot it too. From left to right, top to bottom, below, are PARC web manager J.D. Willson; Year of the Turtle intern Josh Ream; researcher Whit Gibbons; a volunteer at a non-native turtle trapping event in Phoenix; Simon Pelletier, who translated State of the Turtle into French; researcher John Iverson; and graduate researcher Mitchell East. And this isn't even a comprehensive collection!

Note that all of them are holding their friends safely—for them and the turtle!



Lucille F. Stickel Box Turtle Research Award

CNAH, The Center for North American Herpetology, announces small grants available for research on Box Turtles.

Box Turtles have been present in North America for millions of years. But the picture is changing rapidly. Every long-term study of the Box Turtle has concluded that populations are declining at an alarming rate.

In an effort to contribute to science that may save Box Turtles, in 2009 the Box Turtle Conservation Committee (www.boxturtlesintrouble.org) established the **Lucille F. Stickel Box Turtle Research Award** to honor Stickel's Box Turtle research over a period of forty-five years.

To date, the Stickel Award has supported two important research projects; a summary of the research can be viewed at the above website.

The Committee is currently accepting grant applications (up to \$1000.00) for projects that contribute directly to Box Turtle conservation, or further our understanding of their natural history, ecology, or reproduction.



The closing date for receipt of grant applications is **1 February 2012.**