



CONSERVE WILDLIFE
FOUNDATION OF NEW JERSEY

2015 Great Bay Terrapin Project Summary

December 28, 2015

Purpose of Study:

The purpose of this study/project is to reduce the amount of road kills and injuries of Northern diamondback terrapins (*Malaclemys terrapin terrapin*) in the Barnegat Bay, Great Bay, and Absecon Bay Watersheds (Ocean and Atlantic Counties). Each year CWF recruits volunteers (Wildlife Conservation Corps) to assist with seasonal road patrols to protect nesting terrapins from becoming road killed or injured while attempting to cross roadways. During the nesting season, from May through July, CWF biologists and volunteers (surveyor) conduct patrols of roads using a motor vehicle, bicycle, or on foot. The surveyor drives a route and looks for terrapins in the roadway. If and when they encounter a live or dead terrapin they stop and collect data on the encounter.

Methods and Materials:

Methods for conducting surveys consist of volunteers traveling the length of road a number of times per day during the nesting season. Using motor vehicles or bicycles volunteers will conduct hourly surveys from 0800 – 1600 hours, with a few random night surveys occurring from 2000 – 0100 hours. Volunteers record live and dead individuals that are encountered on roadways and/or roadsides. Usually one volunteer will cover each road during the day.

Garmin GPS units and personal GPS units (unknown device, by surveyor) were used to collect location data. No terrapins were contained for more than 15 minutes, and they are released where they were found (or in the direction they were headed if found in the roadway). If injured terrapins were encountered then they were transported to the Wetlands Institute in Stone Harbor or Stockton University for treatment and care. Dead terrapins are moved off the road and onto the shoulder of the road in woody vegetation to avoid recounting. If a kill is recent and the female is gravid then we will harvest the eggs and transport them to a local hatchery or will place them in a man-made nest cavity and protect them with a predator enclosure.

Data Collected:

From early June through mid-July volunteers conducted road patrols along roads where high road mortality of terrapins has been documented. These roads include: Cedar Run Dock Rd., West Creek Dock Road, Parkertown Dock Rd, South Green St., Great Bay Blvd. and Route 30. Volunteers filled out sightings on datasheets that were provided and marked locations using a handheld GPS, an “on-vehicle” GPS, or smartphone to record coordinates of exact locations.

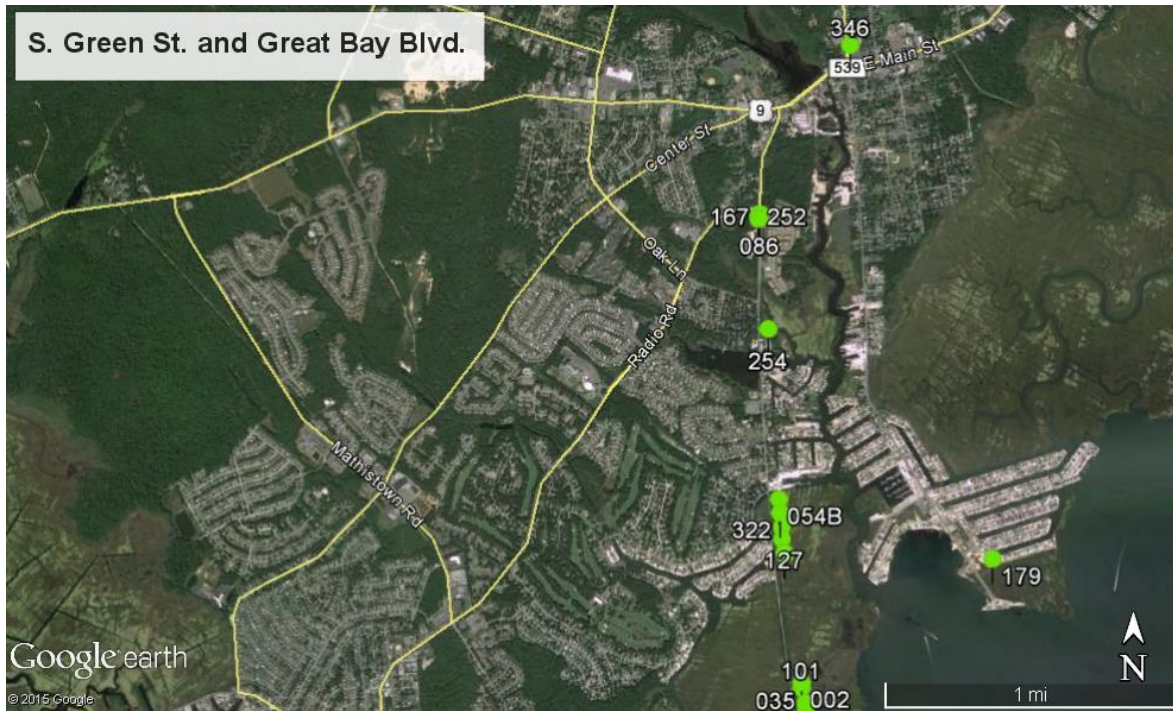
From May 29 to July 10, we collected a total of 786 sightings of terrapins. Of those a total of 80 were road killed.

Ocean County Roads	<i>Live</i>	<i>Dead</i>	<i>Total</i>
Cedar Run Dock Road	11	6	17
West Creek Dock Road	12	6	18
Parkertown Dock Road	0	0	0
South Green Street	0	2	2
Great Bay Blvd	801	34	835
Atlantic County Roads			
Route 9	1	6	7
Motts Creek Road	n/a	n/a	n/a
Route 30	0	27	27
Total:	825	81	906

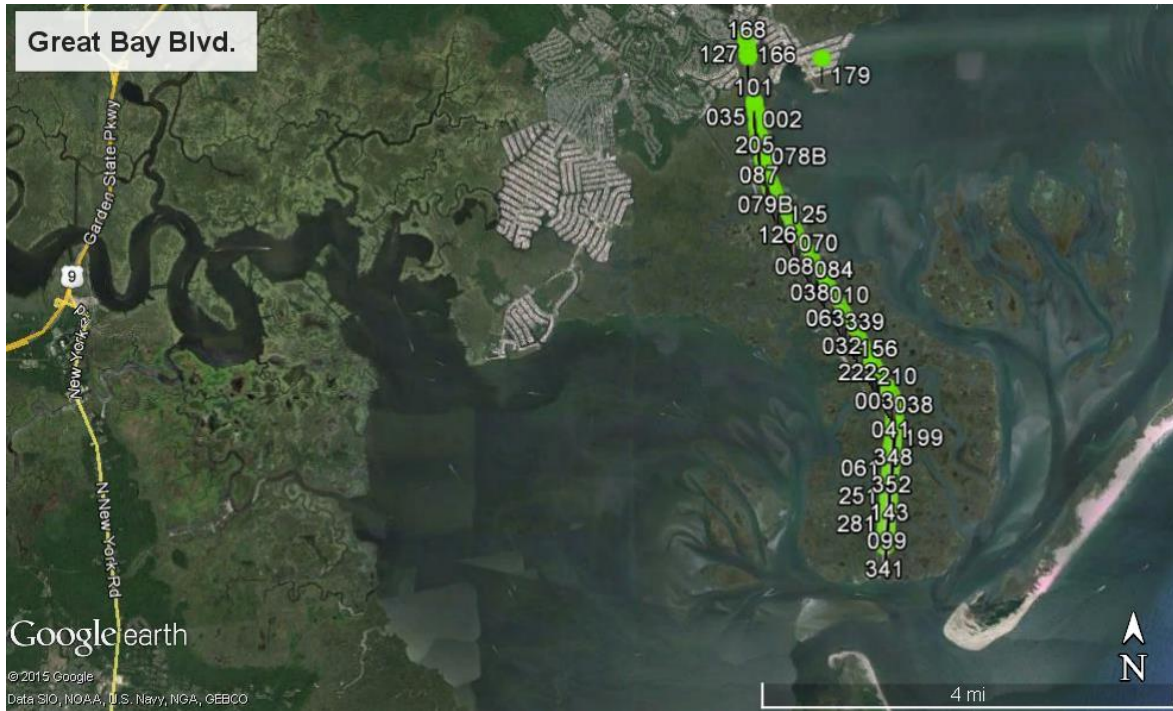
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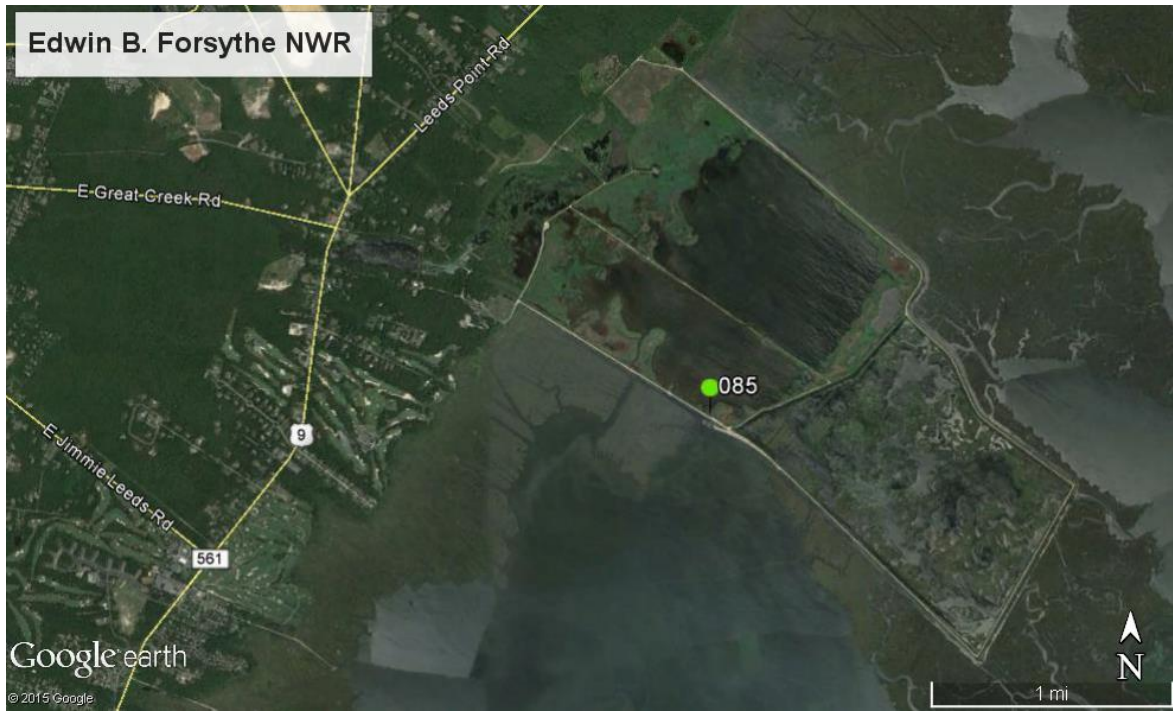
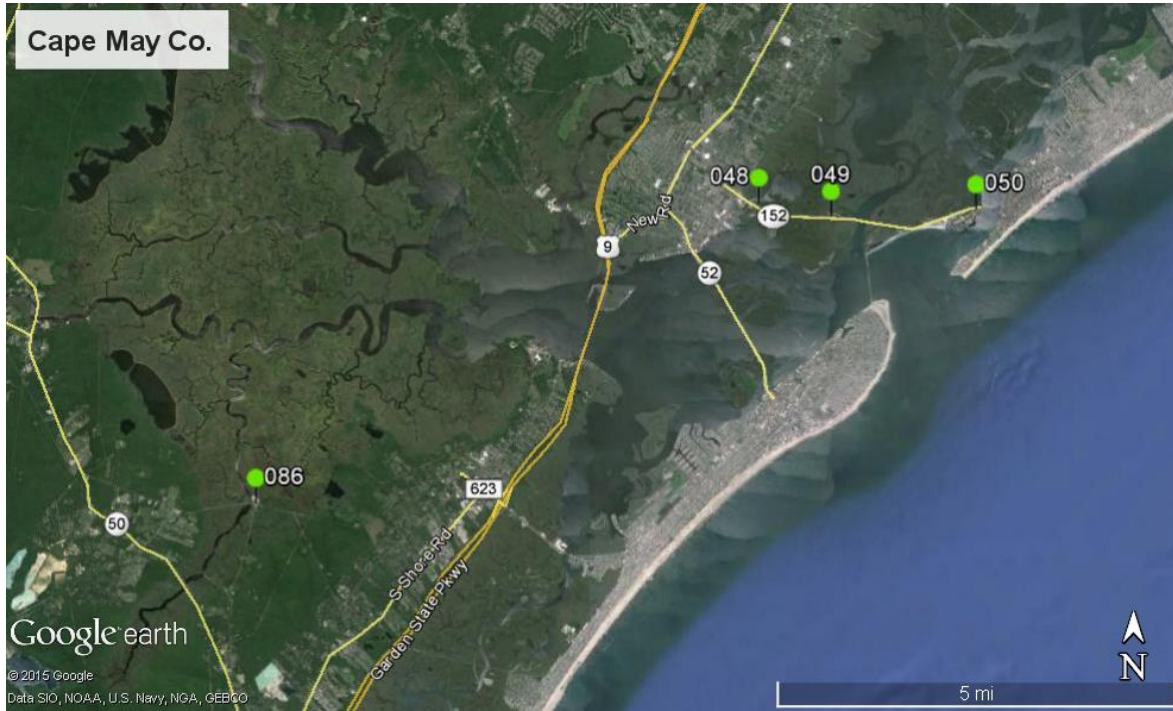
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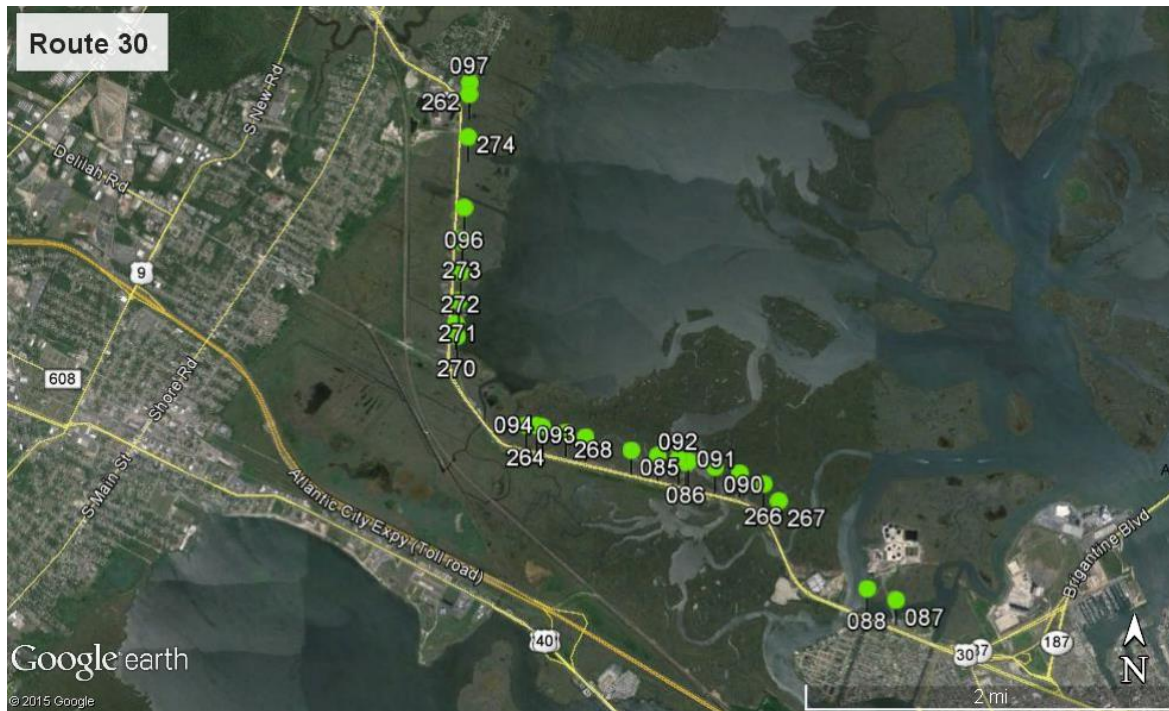


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Maps:





Locations: See attached .kmz file(s).

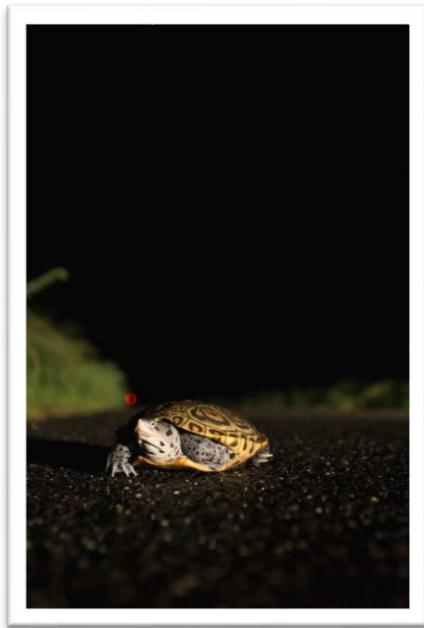
Re-sightings: We recaptured one adult female on 6/11/15 on Great Bay Blvd.. Her measurements were 195mm (carapace), 175mm (plastron length), and 1332.3g. As compared to when she was first caught on 6/14/05 she was 186.07mm (carapace), 162.76mm (plastron). She was aged at 7 in 2005.

Results and Summary:

The research being conducted with this project is necessary to determine how long term road mortality is affecting the local population. Previous studies in the area have determined that adult females are smaller and less numerous (Avissar, 2002). The data collected from these surveys will be used to measure success of awareness efforts and will help estimate the health of the local population. The data is also being submitted for inclusion in the Northeast Regional Conservational Strategy for terrapins. The impacts of this study on terrapins and the surrounding habitat has been positive. Road mortality has been reduced since the beginning of the project. We believe that many locals and visitors are more aware of terrapins while driving during summer months. The value of this project is eminent to the long term conservation of Northern diamondback terrapins in New Jersey.



To sum up our Great Bay Terrapin Conservation Project, our volunteers patrolled for 137 hours and counted a total of 715 northern diamondback terrapins on Great Bay Blvd. and another 72 on other roads. With the dedication of our volunteers we were able to keep the mortality rate from motor vehicles low, at 4.76%, which is half the average (10%) found in a 2005 study on Great Bay Blvd. Morphological data was collected from 122 adult females (see Excel spreadsheet for raw data). We installed several new signs this year, one in partnership with Little Egg Harbor Twp (see attached photos). The other was a large signs made from old shipping pallets. We believe that the raising awareness of drivers is key to help prevent road mortality of terrapins. We got one recapture of a female who was tagged in 2005 as a 7 year old, which makes her at least 17 years old. Amazingly enough, over the past 10 years she only grew 10 millimeters!



We are learning of new challenges as the project goes on. In my personal experience and through observations I believe that most of the road kills we see happen at night or in the twilight time of day, especially the early morning hours. Nesting terrapins are quite active at night, especially when daytime high temperatures reach 90°F. Research conducted by the Wetlands Institute has shown that nearly half (43%) of all roadkills occurred at night. (Wood, 1997). We will be planning to do more night patrols in 2016 and more public awareness during that time of day.

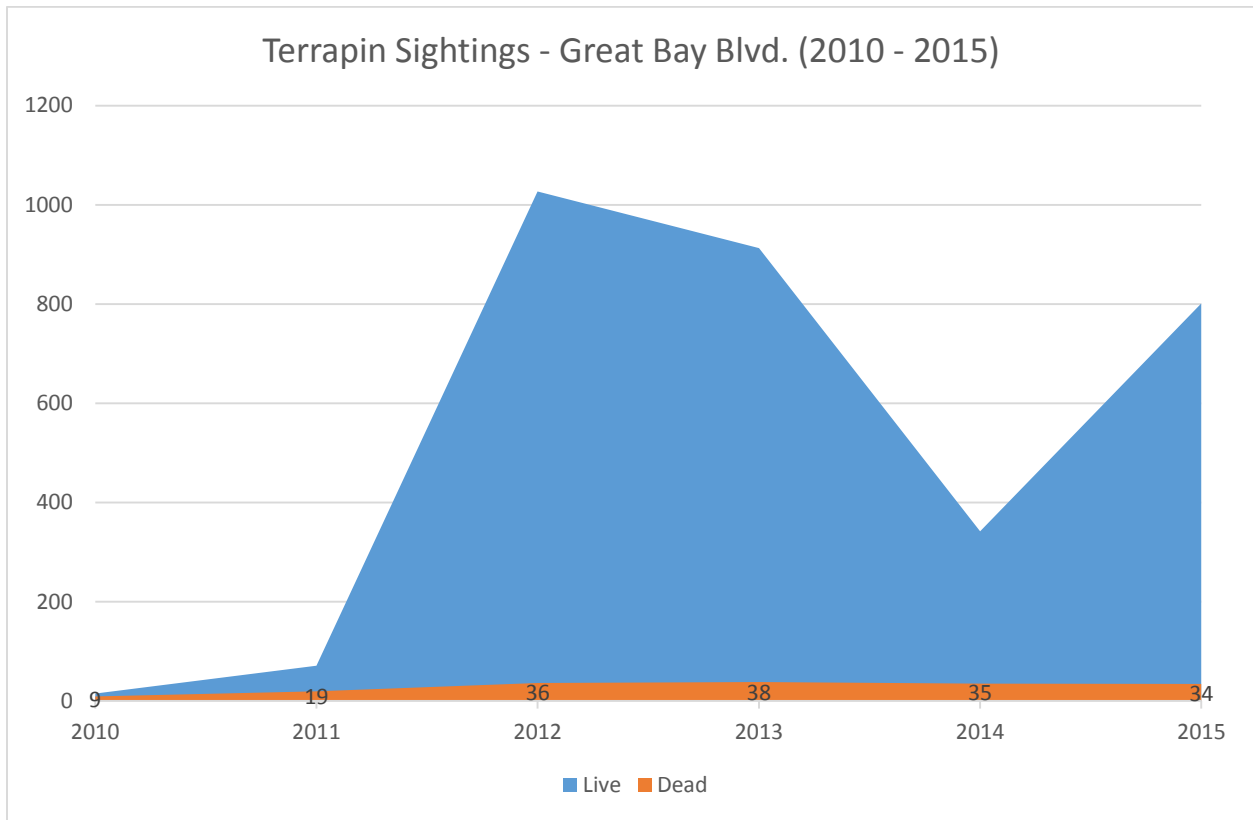
We hope to be able to replicate a study conducted by my colleague in 2004-2005 to compare results and get a more accurate representation of how healthy the local population is.

We continue to survey additional roads with high road mortality. One survey was completed on Route 30 where a total of 27 road kills were recorded. In its current state, the road is death trap for gravid adult female terrapins. High vehicle speed limit, concrete jersey barriers, and no barrier fencing do not give female terrapins a chance of surviving if they attempt to cross Route 30. We are hopeful that barriers will be installed along the length of this highway when future resurfacing projects are completed.

Comparison of Results from Previous Years on Great Bay Blvd:

Year	2010	2011	2012	2013	2014	2015
# Live Terrapins	15	71	1027	913	342	801
# Dead Terrapins	9	19	36	38	35	34
Total	24	90	1063	951	377*	835

**Less surveys were performed this year.*



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References:

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