



Project Terrapin LLC

at Barnegat Bay, NJ
“Learning more through research”

Project Terrapin 2021 Forked River Diamondback Terrapin Sightings

Overview and Study Site:

During the summer of 2021 we worked with residents at Forked River Beach located on Beach Boulevard in Lacey Township (Figure 1) to get a better idea about the diamondback terrapin population in that location. Throughout the summer, there were four adult female terrapin observations and one observation with seven hatchlings confirmed. Forked River Beach includes Bayfront Park that features a playground, parking area and there is a continuous gabion sea wall. South of the area with the gabion structure is a residential area with a shoreline that is part of a homeowner’s association (Figure 4). This area is undergoing a shoreline prevention erosion project being conducted by the American Littoral Society as part of an NJ Department of Environmental Protection Grant.

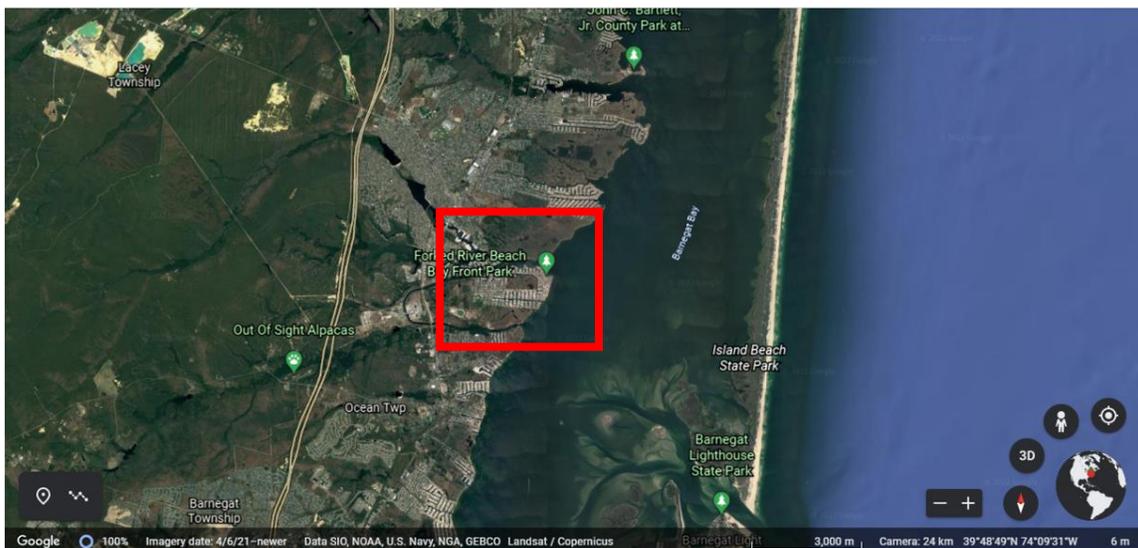


Figure 1. Highlighted in red is the location of the Forked River Beach at Barnegat Bay, NJ.

Observations:

A Google Form was created for residents to report observations and to upload a picture to verify terrapin occurrences. As a result, four adult female diamondback terrapins and a diamondback terrapin hatchling were observed on throughout the summer. No terrapins were measured and marked, only observations were recorded. GPS positions were reported as latitude and longitude, and then mapped on Google Earth (Table 1; Figure 2).

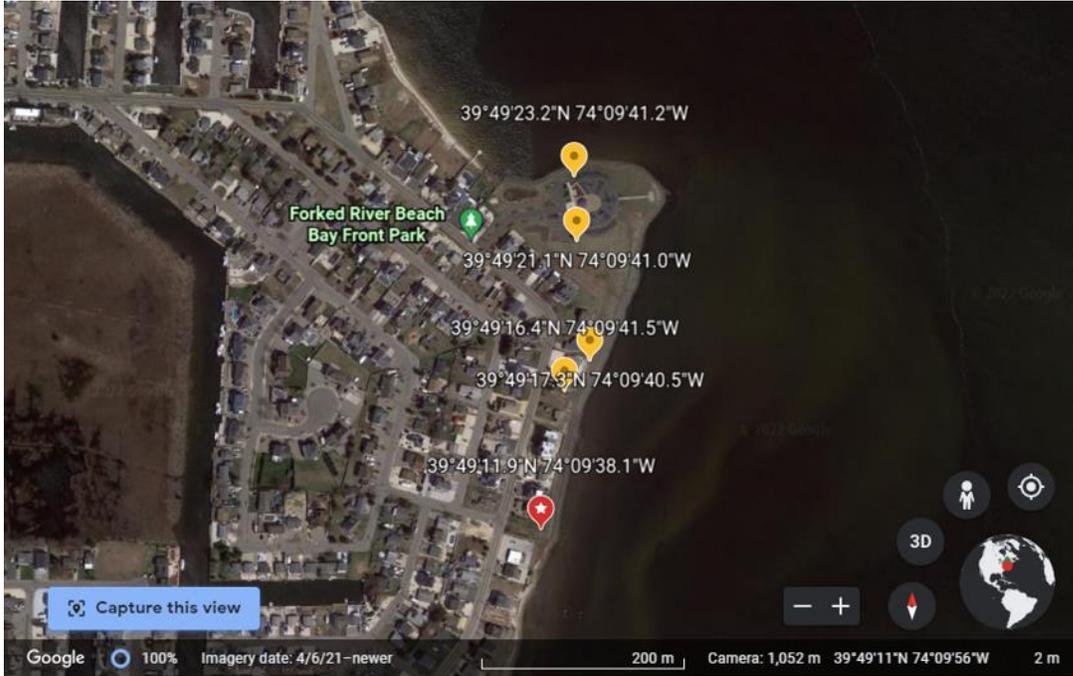


Figure 2. Diamondback terrapin sightings at Forked River Beach. Adult females are marked in yellow, while the hatchling observations (7) are marked in red.

Table 1: Capture information at Forked River Beach. All observations occurred during sunny days during the summer of 2021.

Date/Time	Terrapin Designation & Number	Reported By	Comments
6/27/2021 9:00 AM	Adult Female - 1	Billy Hibbs/Pat Doyle	Bayfront Park NW Corner on Mulch
6/29/2021 9:00 AM	Adult Female - 1	Darlene Trause	Digging a nest
6/29/2021 9:00 AM	Adult Female – 1	Michelle Kiely-Cramer	Digging a nest
6/29/2021 8:00 AM	Hatchlings - 7	Resident	1702 Beach Blvd.
7/8/2021 10:56 AM	Adult Female – 1	Pat Doyle	“Good condition”

Observation Information:

Two of the observations occurred at the Forked River Bayside Park, which is located on the northern end of the gabion sea wall structure. The park features playground equipment including rubber mats and mulch that surrounds the playground equipment. More interior is an area with sand to serve as a “Turtle Garden”; however, it seems that at least one of the terrapins observed were trying to nest in the mulch (June 27, 2021; Figure 3). On June 29, two adult females were observed digging nests in an area that is closer to Barnegat Bay (between the back of the houses and gabion sea wall. There is a home that has an open area in the back that could serve as a terrapin nesting area. However, the emergence of hatchlings in this area may prove challenging as a result of the walking trail alongside the gabion sea wall, the park to the north, and lack of immediate marsh and/or wetlands for the hatchlings to travel and get established. However, on June 29, it was reported that seven terrapin hatchlings emerged in area behind 1702 Beach Boulevard, which were assumed to be overwintering hatchlings. This area is south of the gabion sea wall and has a shoreline that is on Barnegat Bay (Figure 4).



Figure 3. Female terrapin found at the Forked River Beach Bayside Park. *Photo submitted by Pat Doyle.*



Figure 5. Female diamondback terrapin captured at the Bayside Beach. Notice the gabion shoreline sea wall structure in the back. *Photo provided by Pat Doyle and Billy Hibbs.*

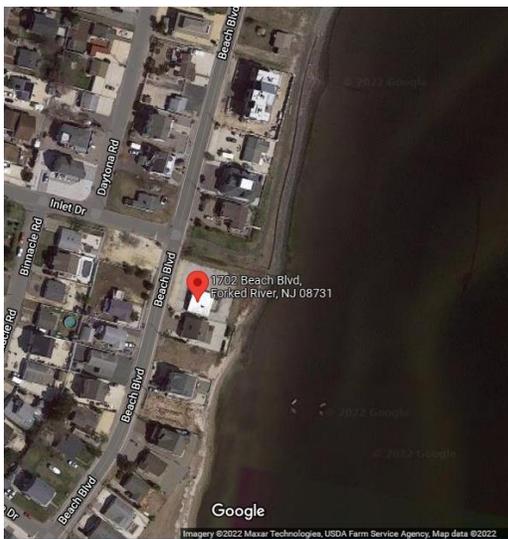


Figure 4. Location of seven hatchlings reported on June 29, 2021. The area is south of the gabion structure, which is part of a private beach.

Summary and Recommendations:

Based on the captures of adult female terrapins during nesting season and hatchlings that were found, it is clear that this area serves as an active nesting area. There is a project to reduce wave energy along the Bayside Beach shoreline being conducted by the American Littoral Society through an NJDEP grant, which features the use of “oyster castles” to create a reduction in energy through wave attenuation. The gabion structure to the north is the current method at the bay beach, but does pose some concern for terrapins accessing nesting sites (Figure 5). Traveling over the gabion sea wall can be difficult and may pose some potential entanglement scenarios as the structure ages. With this being said, the reduction in wave energy to the south to reduce erosion coupled with a sustainable shoreline, or even accretion is promising for terrapins nesting in that location. However, there is little research about wave attenuation projects and/or living shoreline projects and how they affect diamondback terrapin nesting. This location and project may help to provide such information as we gather baseline nesting information at this time for future comparisons.

The following are recommended for the Forked River Bayside Beach area:

- Continue to monitor diamondback terrapin landings and assess if adult female terrapins are gravid.
- Monitor the area for hatchlings emergence; the main concern is suitable habitat for the hatchlings especially the distance to wetlands and marshes. The open bay is not a suitable habitat for the survival of emerging terrapin hatchlings.
- Eventually mark captured terrapins and monitor their movement after landing on Forked River Beach, possibly using radio telemetry to track their movement.
- Enlist and educate more residents to get a better indication of the population.

If terrapins are found to be in residence around the Forked River Beach then...

- Assess the presence of terrapins around the “oyster castle” structures; but also determine the presence of other marine organisms that can be potential food sources for terrapins.

Acknowledgements:

We wish to thank Pat Doyle for her observations and photos, as well as Billy Hibbs. Thanks to Michelle Kiely-Cranmer and Darlene Trause for their observation data. These observations were conducted under Scientific Research Permit #2021091.

Report was submitted by Dr. John Wnek. Project Terrapin LLC on February 6, 2022.