Diamondback Terrapin Turtles

By

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Primary Research Questions

- How does commercial crabbing affect age and size in terrapin populations?
  - Comparison between Felgate and Goodwin

- How does raccoon predation affect population structure at the Goodwin islands
  - Comparison between Goodwin islands
How do water and air temperatures affect the number of turtles found onshore at the Goodwin islands?

What abnormalities and deformities are found in terrapins at the Felgate site?

How do shell and body colors vary and what patterns, if any, are found in the variation?
Nest Predation

- Turtles lay eggs between May and August
- Raccoons and other predators find nests
- Majority of nests are predated, exact percent varies by island
Terrapins have been shown to return to the same tidal creek area to nest.

Islands with higher rates of predation are not getting as many new recruits as lower predated islands.

**Hypothesis:** Females on West Island will be older than Middle Island, and even older than East Island.
# Previous Research at W&M

Nest predation data adapted from Ruzicka, 2006

<table>
<thead>
<tr>
<th></th>
<th>WI</th>
<th>MI</th>
<th>EI</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depredated</td>
<td>302</td>
<td>570</td>
<td>219</td>
<td>1091</td>
</tr>
<tr>
<td>Partially Predated</td>
<td>0</td>
<td>11</td>
<td>10</td>
<td>21</td>
</tr>
<tr>
<td>Intact</td>
<td>9</td>
<td>8</td>
<td>24</td>
<td>41</td>
</tr>
<tr>
<td>Hatched/Emerged</td>
<td>4</td>
<td>59</td>
<td>146</td>
<td>209</td>
</tr>
<tr>
<td>Total</td>
<td>315</td>
<td>648</td>
<td>399</td>
<td>1,362</td>
</tr>
<tr>
<td>Percent predated</td>
<td>96</td>
<td>88</td>
<td>55</td>
<td>80</td>
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**Nest Data**

- Older females lay larger nests
- Previous years’ data showed one egg higher average on the west island
- Successful nests are just beginning to hatch

<table>
<thead>
<tr>
<th>Island</th>
<th>Total Nests</th>
<th>Avg. Clutch size</th>
</tr>
</thead>
<tbody>
<tr>
<td>West</td>
<td>73</td>
<td>5.8</td>
</tr>
<tr>
<td>Middle</td>
<td>686</td>
<td>7.4</td>
</tr>
<tr>
<td>Middle Back</td>
<td>207</td>
<td>7.4</td>
</tr>
<tr>
<td>East</td>
<td>410</td>
<td>7.3</td>
</tr>
<tr>
<td>Felgate</td>
<td>41</td>
<td>6.0</td>
</tr>
</tbody>
</table>
Daily Methods

- CANOE!!!
- Walk on beach searching for egg shells
- Modified crab pots
- Turtles
  - Measure length, width, depth
  - Weight
  - Age
  - Tag turtle
Felgate Movements

15, 15, 4, 4
6, 6, 10
4, 1, 8
4, 3, 8
7, 5, 6
10, 12, 17
7, 5, 10

6, 8, 15, 15
6, 8, 8
Body and Shell Colors

- Carapace
  - Brown, black, wood pattern

- Plastron
  - Varying shades of orange, wood pattern

- Body
  - Shade varies from white to black
  - Spots often visible, but usually not seen on darker turtles

- Head
  - Spots joined or distinct
  - Stripes above mouth, diamond on head
  - Color can be different than body color
Other Sights to See!