Mar 3rd, 2:30 PM - 3:30 PM

Diamondback Defenders: conservation through STEM based programming

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DIAMONDBACK DEFENDERS

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WHAT ARE WE DOING TODAY?

- History of Terrapin Programming at GSTC
- Natural History of Terrapins
- GSTC Terrapin Patrol
- Road Survey Activity
- Mapping Data Sheet
- What can you do to help?

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GSTC founded 2007
Terrapin Patrol founded 2009
UGA grad student work: John Maris, Brian Crawford, David Zailo
CIG grant: incorporates D. Zailo’s studies of fresh and brackish water species on Jekyll, including educational elements including on site, after school and outreach programming
Thus far we’ve reached 276 people, mostly students from 3rd grade and up.
This program blends mock road surveys designed as training materials for GSTC staff, AmeriCorps and volunteers with GPS technology and mapping techniques to expose youngsters to a realistic view of conservation biology in action.
DIAMONDBACK TERRAPINS

- Only turtles in North America that live in brackish water
- Semi-aquatic
- Feed on periwinkle snails and fiddler crabs
- Nesting season is from May-July
- Females look for high, dry grounds to nest

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THREATS DURING NESTING SEASON

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TERRAPIN PATROL

1813 Struck (2007-2016)
2009-2016
913 Saved (Those who would have been hit had no one interfered)
97 Successfully rehabbed and released

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GROUP ROLES

- Recorder – Responsible for making sure EVERYTHING on the data sheet is filled out correctly

- Morphometric Specialist – Responsible for evaluating the terrapin and measuring it

- Speaker – Responsible for presenting the scenario

- GPS Technician – Responsible for learning how to take a GPS point and relay the information to the team while completing the mapping worksheet
Diamondback Terrapin On Road Data Sheet

Name of Researcher(s): _______________________

GPS coordinates: GPS #_________ Latitude: 31________ Longitude: 81________
(Please use the highlighted GPS point for your group located in the table on the mapping sheet)

Status: (circle one)  Dead  Injured  Alive

If Alive: Would have crossed safely? Yes / No  Gravid? Yes / No

Key:

- Telephone Pole  - Terrapin

Please indicate:
1. Where the terrapin was found. (Between which two telephone poles)
   and label poles with closest numbers.
2. The direction the terrapin was facing. Be sure that the arrow is pointing in the direction the terrapin was moving or facing.

West (Hwy 17)

Pole #________

South (St. Mary's)

Pole #________

North (Brunswick)

East (Jekyll Island)

Sex:  ___ Male  ___ Female  ___ Unknown

Max. Carapace Length: __________ cm  Plastron Length: __________ cm
Max. Carapace Width: __________ cm

Recapture? Yes / No  Notch #: __________

Other Comments: ________________________________________________________________

Notch Code: The marginal scutes run around the outer edge of a turtle's carapace. Each marginal scute is assigned a letter. These scutes can be marked by taking a small clipping or drilling a small hole in them. Each turtle can then be given a unique code in order to help researchers identify them. Use the image to the right to help identify the code your terrapin has if it is notched!
DETERMINING DEAD OR INJURED

- **Deep pain response**
  Does animal move when pinched?

- **Palpebral Response**
  Do eyes blink when touched?

- **Is your turtle GRAVID?**
  Is she carrying eggs?
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Would Have Crossed Safely?

YES

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Diamondback Terrapin On Road Data Sheet

Name of Researcher(s): 

GPS coordinates: GPS # ______ Latitude: ______ Longitude: ______ 
(Please use the highlighted GPS point for your group located in the table on the mapping sheet)

Status: (circle one)  Dead  Injured  Alive

If Alive: Would have crossed safely? Yes / No  Gravid? Yes / No

<table>
<thead>
<tr>
<th>Pole #</th>
<th>West (Hwy 17)</th>
<th>Pole #</th>
<th>East (Jekyll Island)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Key:

- Telephone Pole  - Terrapin

Please indicate:
1. Where the terrapin was found. (Between which two telephone poles)
2. Name poles with closest numbers.
3. The direction the terrapin was facing. Be sure that the arrow is pointing in the direction the terrapin was moving.

Max. Carapace Length: ______ cm  Max. Carapace Width: ______ cm
Plastron Length: ______ cm
Recapture? Yes / No  Notch #:

Other Comments: ______________________

Sex:  Male  Female  Unknown

Notch Code: The marginal scutes run around the outer edge of a turtle’s carapace. Each marginal scute is assigned a letter. These scutes can be marked by taking a small clipping or drilling a small hole in them. Each turtle can then be given a unique code in order to help researchers identify them. Use the image to the right to help identify the code your terrapin has if it is notched!
Morphometrics

Max Carapace Length

Max Carapace Width

Plastron Length

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TIME FOR ROAD SURVEYS!

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RECAP

- What was the status of your turtle
  - Injured?
  - Gravid?
  - Notched?

- What was your course of action after assessing your terrapin?
MAPPING

- Each group has 4 GPS points assigned
- \((X, Y)\) (Longitude, Latitude)
- Take turns mapping the GPS points so that each member of the group gets a chance to map a point.

<table>
<thead>
<tr>
<th>Group #</th>
<th>GPS Point 1</th>
<th>GPS Point 2</th>
<th>GPS Point 3</th>
<th>GPS Point 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>31.025, -81.200</td>
<td>30.880, -81.100</td>
<td>30.960, -81.160</td>
<td>30.840, -81.080</td>
</tr>
<tr>
<td>Group 2</td>
<td>30.870, -81.100</td>
<td>30.985, -81.175</td>
<td>31.025, -81.205</td>
<td>30.910, -81.130</td>
</tr>
<tr>
<td>Group 4</td>
<td>30.940, -81.145</td>
<td>30.930, -81.150</td>
<td>31.010, -81.195</td>
<td>30.860, -81.090</td>
</tr>
<tr>
<td>Group 5</td>
<td>31.015, -81.190</td>
<td>30.870, -81.095</td>
<td>30.830, -81.060</td>
<td>30.990, -81.170</td>
</tr>
<tr>
<td>Group 6</td>
<td>30.808, -81.050</td>
<td>30.860, -81.095</td>
<td>31.010, -81.190</td>
<td>30.900, -81.110</td>
</tr>
</tbody>
</table>
HOT SPOTS AND WARM SPOTS

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HOT MOMENTS

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[Graph depicting terrapin count and cumulative percentage of individuals over time to high tide in minutes.]

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WHAT CAN WE DO WITH THE DATA COLLECTED?

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WHAT WE DO AT THE GSTC

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WHAT ARE WAYS YOU CAN HELP?

Drive slow... Fertile turtles are on the go!

Diamondback Terrapin Monitoring Project
www.georgiaseaturtlecenter.org
QUESTIONS?

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ACKNOWLEDGMENTS

- University of Georgia Savannah River Ecology Lab
- GA Department of Natural Resources
- National Oceanic and Atmospheric Administration
- Georgia Sea Turtle Center
- Jekyll Island Authority
- Jekyll Island Foundation
- AmeriCorps