

# At the Water's Edge – Citizen Scientist Surveys of Diamondback Terrapin

## Populations in the Florida Panhandle



Hatchling

### Situation

Diamondback terrapins (*Malaclemys terrapin*) are the only brackish water turtles in the United States and inhabit coastal marshes and mangroves from Cape Cod MA to Brownsville TX. The population status of this animal has changed over time with commercial harvest, incidental take in the blue crab fishery, and loss of nesting habitat due to coastal development. Many become roadkill on highways, drowned in crab pots, and up to 90% of their nest are depredated by the raccoon (and others) on some beaches. Today the illegal pet trade has added extra pressure to indigenous populations. Within this range there is a large knowledge data gap concerning their status in the Florida panhandle. It is not known how frequently they are nesting, if populations are stable, or if there are issues with derelict fishing gear and illegal harvest. Both the United States Geological Survey and the Florida Fish and Wildlife Conservation Commission are interested in the status of this brackish water turtle, and are considering listing two subspecies within our state.

### Response

In response to the knowledge gap, natural resource agents with the University of Florida IFAS Extension in the Florida panhandle have partnered with USGS to develop the Panhandle Terrapin Project. This effort is to train citizen science volunteers to survey known, and potential, nesting beaches for the frequency of nesting, predation of those nests, number of individual heads found in the lagoons, and assist the USGS with mark-recapture (taking tissue samples) of these animals. UF IFAS Extension conducts volunteer trainings in March and volunteers survey their assigned beaches from April 1 to September 30.



Depredated eggs, most likely by raccoon

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Volunteer with adult Mississippi diamondback terrapin



Modified terrapin traps

### Results

Citizen science surveys began in 2007 and UF IFAS Extension became a partner in 2015, with USGS in 2019.

Year	Trainings	Trainees	Survey Participants	% Participated	# of Surveys	Hours Surveyed
2015	2	25	17	.68	136	272
2016	5	19	8	.42	64	128
2017	9	33	11	.33	88	176
2018	5	38	17	.45	136	272
2019	6	19	19	1.00	152	304
<b>TOTAL</b>	<b>27</b>	<b>134</b>	<b>72</b>	<b>.54</b>	<b>576</b>	<b>1152</b>

### Outcomes

Over the past five years UF IFAS Extension has trained 72 citizens to monitor terrapin activity in the Florida panhandle. During that time they were able to (1) determine that terrapins do exist in each of the panhandle counties, (2) identified six nesting beaches in three counties, (3) were able to capture, mark, and collect tissue samples from six animals. The results of these surveys have been presented at both state and national terrapin meetings. Work continues to increase the number of tagged terrapins and tissue collected.



Terrapin tracks



Volunteer with captured terrapin