

PROGRAMMATIC REPORT FORMAT (maximum of 2 pages)

Grantee: East Coast Biologists, Inc.

Contract Number: Sea Turtle Grant # 03-R02

Project Title: Characterizing the population structure and foraging ecology of marine turtles utilizing the nearshore reefs in central Brevard County.

Report Period: Final Programmatic Report. July 1, 2003 through September 15, 2004.

Project Manager(s)/Principle Investigator(s): Karen G. Holloway-Adkins (P.I.)

Tasks for Scope of Work

¹²Project Tasks and Cost Estimates (by quarter):

Task 1 – Project startup – ESTABLISHED IN THE 6-MONTH REPORT DURING 1ST & 2ND QUARTERS

- A. Equipment purchases, travel, gas, set-up labor and data entry
- B. Establish important procedures: netting, chain of events and emergencies
- C. Initial boat trip to the study area: Please refer to events in Table 1.
- D. Initial marine turtle capturing trip:
 - The first netting trip was conducted on August 24, 2003.
 - Netting was attempted on 13 trips.
 - Transect data was recorded on 14 trips.
 - We had a total of 8 trips that resulted in the capture of green turtles (Table 1).
 - There were 18 boat research days and 3 shore-based research days.
- E. Data entry:
 - a. set-up Microsoft Access database to enter sea turtle data.
We entered the data into Microsoft Excel program (Table 2). The program is more frequently used by the agencies that need access to our data (ACCSTR, FWC).
 - b. spreadsheet for CPUE calculations, GPS downloads.
We calculated CPUE (catch-per-unit-effort) based on 1km/hour of net soak (Table 3).
GPS locations of turtle sightings and netting locations were manually entered into Excel and mapped onto a GIS map of the Brevard County shoreline (Figure 1, 2).
 - c. copy or scan pap map data sheets.
No turtles with FP were captured during this study. All sea turtle data sheets were copied and will be forwarded to the ACCSTR for their database.
 - d. back-up netting data to Zip disk.
Two copies of the sea turtle photographs and morphometric data were backed up on CD-Rom. A copy is included with this report.

F. Submit invoices and reporting to Marine Turtle Grant Committee
Current task.

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Task 2 – Project continuation of inwater work: see TASK 1D

- A. Marine turtle capturing trips:
- B. Data entry: see TASK 1E
- C. Submit invoices and reporting to Marine Turtle Grant Committee
Current task.

Task 3 – Project continuation of inwater work see TASK 1D,1E

- A. Marine turtle capturing trips:
- B. Data entry:

Task 4 – Project continuation of inwater work/final reporting to FFWCC

- A. Marine turtle capturing trips: see TASK 1D,1E
- B. Data entry and final reporting:
 - e. perform statistical analysis of data
Current task
 - f. prepare final report for Marine Turtle Grant Committee
Current task
- C. Perform statistical analysis of data/ preparation of final reporting
Current task
- D. Submit invoices and reporting to Marine Turtle Grant Committee
Current task
 - a. Submit final reporting to Marine Turtle Grant Committee
Submitting final report September 15, 2004 (Current task).
 - b. Submit draft of publication in process
Abstract submittal for Sea Turtle Symposium (Savannah, Georgia), January 27, 2005.
Draft of proposed publication will be submitted November 2004.

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¹³Project Timetable

MONTH	1	2	3	4	5	6	7	8	9	10	11	12
TASK	1A	1D	1D	2A	2A	2A	3A	3A	3A	4A	4A	4A
	1B	1E	1E	2B	2B	2B	3B	3B	3B	4B	4B	4B
	1C- D									4C	4C	4C
DELIV			1F			2C			3C			4D

The purpose of our study was to initiate an investigation to characterize marine turtles utilizing nearshore reefs in Brevard County, Florida. This study was the first attempt to characterize this area as developmental habitat for marine turtles, in particular, juvenile green turtles (*Chelonia mydas*). Our study was initiated by several preliminary trips to examine the area by boat and record visual (or transect) sightings of turtles. Trips to the study area were limited by ocean and weather conditions, however, we were able to conduct 14 trips during which transect data were recorded and 13 trips where we were able to set tangle nets to catch turtles and record more specific data on individual animals. Every new project has a learning curve and even with the collective experience of our crew we are still “learning” every time we conduct our research. We were ultimately successful in capturing turtles using a tangle net in June 2004. Of course, the summer months produce more amenable conditions for working on the water. We want to emphasize, however, that turtles were observed throughout the year and believe that the transect data is important to our study as well as, the actual capture data. We believe that all of this information is important to agencies that have a responsibility for the protection and management of our shoreline resources.

The hardbottom nearshore areas in Brevard County are composed of a combination of worm rocks (structures formed from the reef-building *Phragmatopoma lapidosa* or sabellariid worm), coquina and limestone outcroppings. The water conditions over the nearshore reefs in Brevard County are highly dynamic throughout the year; turbulent with high wave energy and normally poor visibility. Portions of the reef have been described as ephemeral; being covered and uncovered by shifting sands during extreme tide and storm events. Nevertheless, there are more than 300 invertebrate species, 192 fish species and over 100 marine algal species dependent on the resources of worm reefs for development and survival throughout their life history. Our study is focused on the marine turtles using the nearshore reef system as foraging and developmental habitat. We captured marine turtles with the use of tangle and dip nets set east of the reef formations. We measured, weighed, tagged and photographed each turtle and recorded its’ overall condition. We photographed portions of the reef (when possible) and noted the presence of the predominant vegetation growing in the area. An esophageal

flushing technique was used to collect a small sample of what turtles were eating. Our preliminary examination indicates green turtles in this area are foraging on a diverse number of marine algae including: *Gelidium* spp., *Gracilaria mammalensis*, *Ceramium* spp., *Jania adhaerens*, *Ulva* spp., *Chaetomorpha* spp., and marine invertebrates including: snails, jellyfish, hydroids and tunicates. The predominant marine algae at each site observed was *Caulerpa prolifera*. A more detailed analysis of the lavage samples will be conducted and the results presented at the 2005 Sea Turtle Symposium in Savannah, Georgia. A total of 21 juvenile green turtles were captured during this study period. The average straight carapace length was 37.0cm with a size distribution that ranged from 64.6cm to 26.4cm. None of the captured turtles showed signs of the tumor-producing disease, fibropapillomatosis. The first turtle was captured via dipnet and was heavily restricted in monofilament line that was wrapped around both front flippers and the head. The animal trailed a lead weight, 2 fishhooks and a mass of sargassum seaweed from its body. The restrictions were new and we were able to remove the line and release the turtle unharmed. We captured one bonnethead shark (*Sphyrna tiburo*) in similar condition with monofilament, 2 fishhooks and a lead sinker from its' mouth. All the turtles that were captured appeared healthy and robust.