

Project Update: June 2014

SUMMARY OF THE ACTIVITIES REALIZED ON THE PERIOD

Eight field trips realized to verify the viability of the use of side scan sonar to estimate the abundance of the Antillean manatee on the estuary.

38 days on board, realized during the field trips.

One partial data bank of the Antillean manatee acoustic repertoire.

- Utilization of hydrophone and digital recorder on 17 days on board;
- 13 hours and 45 minutes of manatee vocalization recordings;

Identify and monitor the environmental quality of the estuary, through estuary water and sediments analysis:

- Five samples of water collected during the field trips to toxicology analyses;
- 21 samples of sediment collected for heavy metals analysis;
- 13 samples of sediment analyzed to search heavy metals;
- 8 samples of sediment collected and been prepared for organochlorines analysis.

Describe the variables (biotic, physiographic and physicochemical), that influence the spatial and temporal distribution of manatees on the estuary:

- Utilization of refractometer, digital anemometer and Secchi disk on 38 days on board;
- One partial data bank with the environmental variables collected.

Identify food availability for the Antillean manatee on the estuary:

- Dives at different points off the estuary;
- Five areas identified with the presence of food;
- None freshwater source found until this moment;
- Four collections realized through diving;
- Eight species and four genus of algae identified until the present moment;
- Twenty-two samples of manatee faeces collected.

FIELD TRIP DATES

Table 1. Field trips realized, dates and source of the financial support.

Field trips realized		
Field trip number	Date	Financial support
10	November, 10 to 15, 2013	RUFFORD
11	January, 12 to 17, 2014	FBPN
12	January, 26 to 31, 2014	FBPN
13	February, 9 to 14, 2014	FBPN
14	February, 23 to 28, 2014	FBPN
15	March, 9 to 14, 2014	RUFFORD
16	March, 23 to 28, 2014	RUFFORD

ACTIVITIES

Activity 1: Verify the viability of the use of sidescan sonar to estimate the abundance of the Antillean manatee on the estuary.

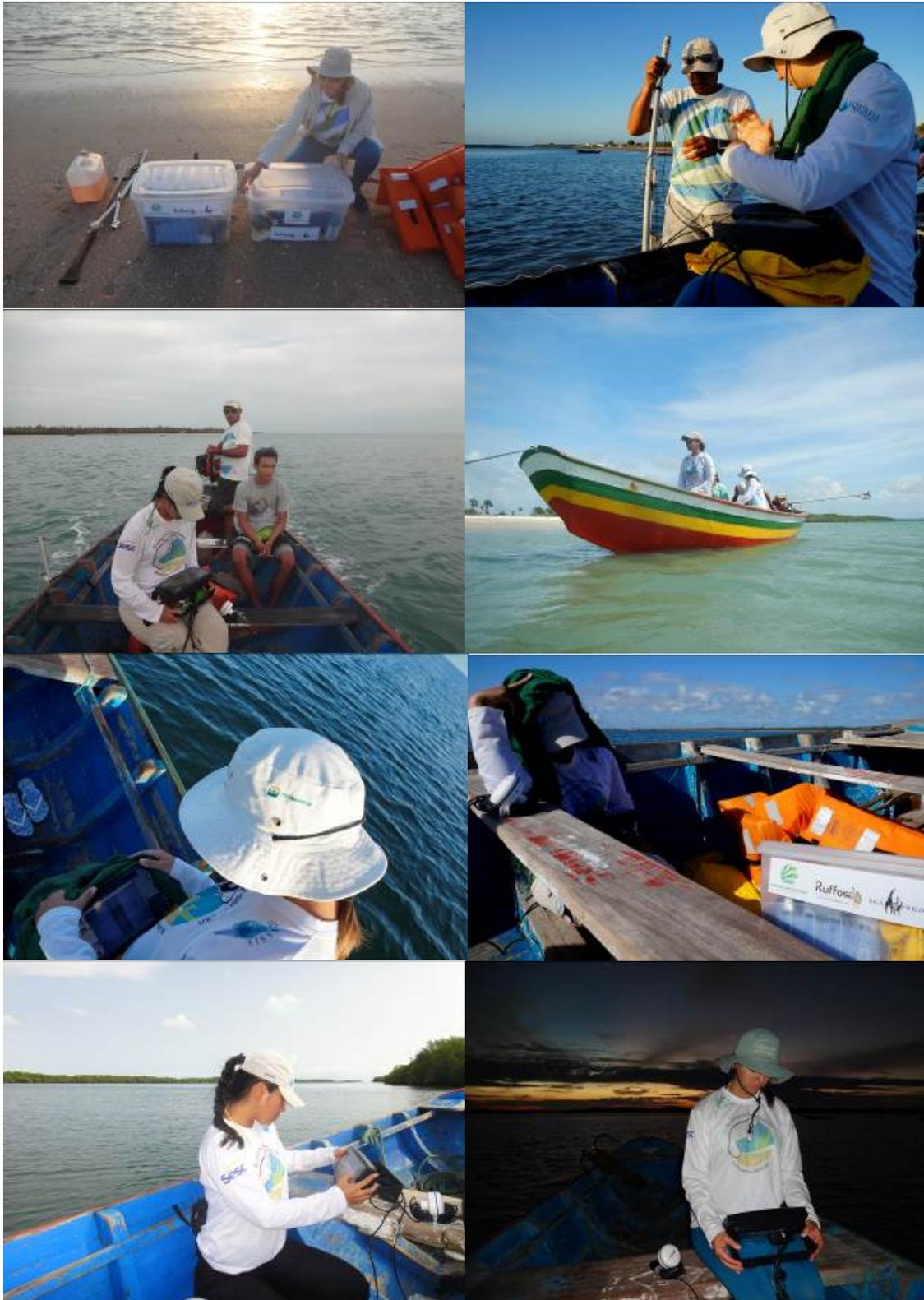




Table 2 shows the stretches travelled in each trip, the time the team left (**Hs**), the time of the arrival (**Hc**), beginning (**Hi**) of collecting data, end (**Hf**), sampling effort (**EA**) and average speed (**VM**).

Table 2. Dates of the outputs and stretches travelled.

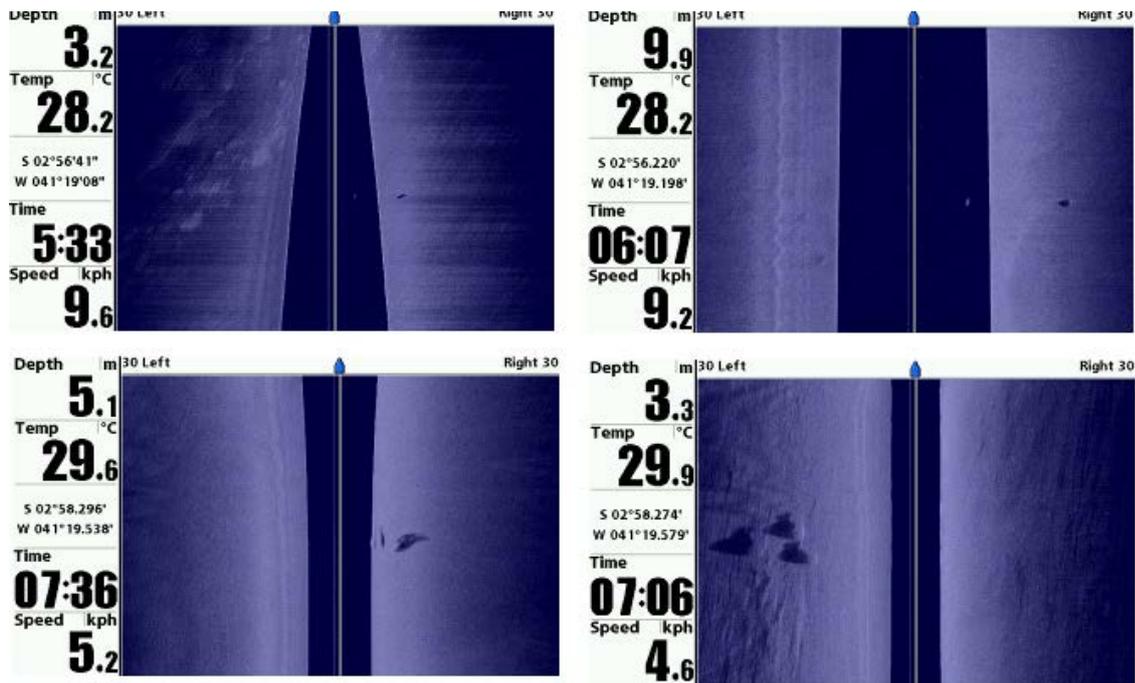
Day	Stretches	Hs	Hi	Hf	Hc	EA	VM
November, 11	II and III	5h50	6h40	9h46	10h45	3h06	6Km/h
November, 12	II and III	5h50	6h29	9h20	10h10	2h51	6Km/h
November, 13	I	5h50	6h50	9h50	10h40	3h	6Km/h
November, 14	I and II	5h50	6h50	9h10	10h00	3h	6Km/h
November, 15	II and III	5h50	6h44	10h20	11h55	3h36	6Km/h
January, 13	I	5h45	6h35	9h23	10h20	2h48	6Km/h
January, 14	II and III	5h50	6h35	9h30	10h10	2h55	6Km/h
January, 15	I	5h50	6h32	9h50	10h30	3h18	6Km/h
January, 16	II and III	5h50	6h34	10h00	12h40	3h26	6Km/h
January, 17	II and III	5h50	6h27	9h30	10h10	3h03	6Km/h

January, 27	I	5h50	6h45	9h22	10h10	2h47	6Km/h
January, 28	II and III	5h55	6h24	9h40	10h40	3h16	6Km/h
January, 29	II and III	5h55	6h37	9h50	11h00	3h13	6Km/h
January, 30	I	5h50	7h26	10h20	11h30	2h54	6Km/h
January, 31	II and III	4h30	5h27	7h45	08h30	2h18	6Km/h
February, 11	I	5h50	6h30	8h50	10h00	2h20	6Km/h
February, 12	II and III	5h50	6h27	9h05	10h10	2h38	6Km/h
February, 13	I	5h50	6h29	9h05	10h00	2h36	6Km/h
February, 14	II and III	5h50	6h55	8h57	10h00	2h02	6Km/h
February, 24	II and III	5h50	6h30	9h50	10h50	3h20	6Km/h
February, 25	I	6h50	7h28	10h20	11h00	3h08	6Km/h
February, 26	II and III	5h50	6h36	9h50	11h10	3h14	6Km/h
February, 27	I	5h10	6h04	10h04	10h50	3h00	6Km/h
February, 28	II and III	4h44	5h31	9h15	10h00	3h44	6Km/h
March, 10	II and III	5h50	6h30	9h40	10h10	3h10	6Km/h
March, 11	I	5h50	6h30	9h40	10h10	3h10	6Km/h
March, 12	II and III	5h50	6h34	9h48	10h20	3h14	6Km/h
March, 13	I	5h50	6h46	9h44	10h25	3h00	6Km/h
March, 14	II and III	5h50	6h32	8h45	9h15	2h13	6Km/h
March, 24	II and III	5h35	6h30	10h00	10h30	3h30	6Km/h
March, 25	I	13h30	14h25	17h40	18h00	3h15	6Km/h
March, 26	II and III	5h35	6h17	10h00	11h15	3h43	6Km/h
March, 27	I	5h35	6h20	10h00	11h15	3h40	6Km/h
March, 28	II and III	6h45	7h34	10h28	11h10	2h54	6Km/h
April, 07	II and III	5h30	6h15	11h40	12h00	5h25	6Km/h
April, 08	I	5h30	6h10	9h30	10h10	3h20	6Km/h
April, 09	II and III	5h25	6h05	9h30	10h10	3h25	6Km/h
April, 10	II and III	5h30	5h58	8h45	9h20	2h47	6Km/h

Table 3. Summary of the effort made.

Field Trips	8
Boarding outputs	38
Boarding hours	152h
Effective hours of boarding effort	115h19m
Hidrophone recording hours	13h45m
Number of images generated with the side scan sonar	1.444
Covered area	10 Km ²
Total Kilometers travelled by boat	480 Km

Some images from the Antillean manatee, captured with the side scan sonar



Activity 2: Describe the sound repertoire of the Antillean manatee on the estuary, checking the feasibility of using this tool to estimate abundance.

Field team recording the Antillean manatee vocalizations





Activity 4: Identify and monitor the environmental quality of the estuary, through estuary water and sediments analysis.

Water samples collections during the period





Sediment samples collections during the period



Preparation of the sediment samples collected for the heavy metals analysis





Preparation of the sediment samples collected for the organochlorine analysis



Activity 5: Describe the variables (biotic, physiographic and physicochemical), that influence the spatial and temporal distribution of manatees on the estuary.



Measurement of wind speed and air temperature using anemometer and the salinity of water using refractometer.