



Photo by Larry Wood

# **NEARSHORE HARDBOTTOM FUNCTIONS FOR MARINE TURTLES: FIELD STUDY**

# Marine turtle field study

- Surveys
  - visual transect surveys (boat)
  - overlay fish and invert sites
  - super-impose depth % cover



# Marine turtles

- Survey criteria
  - excellent water conditions
  - surveyor experience (visual id)
  - visibility (depth and radius)



# Marine turtles

- Data
  - OBSERVATIONS
    - time (start,end,transect)
    - Marine turtles
      - species
      - life history stage
      - activity
      - water depth
      - water column position
      - position to transect



Photo by David Snyder

# Marine turtles

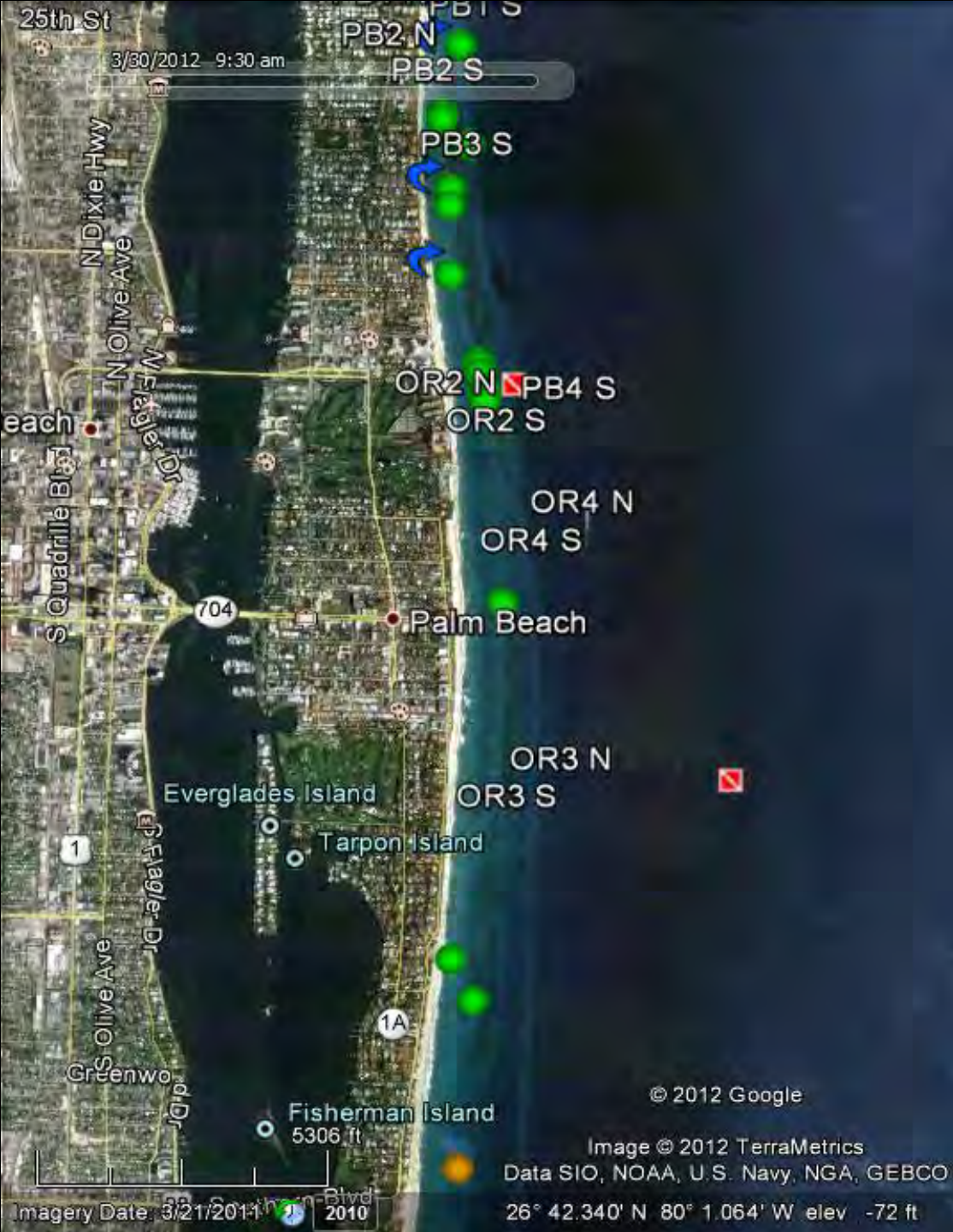
- Data
  - ENVIRONMENTAL
    - water conditions (surface, seas)
    - water clarity
    - tide, temp, wind, wind direction



# Marine turtles

- Data analysis
  - Turtles
    - water depth
    - temporal
    - bottom-type (natural, artificial, reef vs. sand)
    - spatial
    - behavior
    - transect
    - species and life history stage





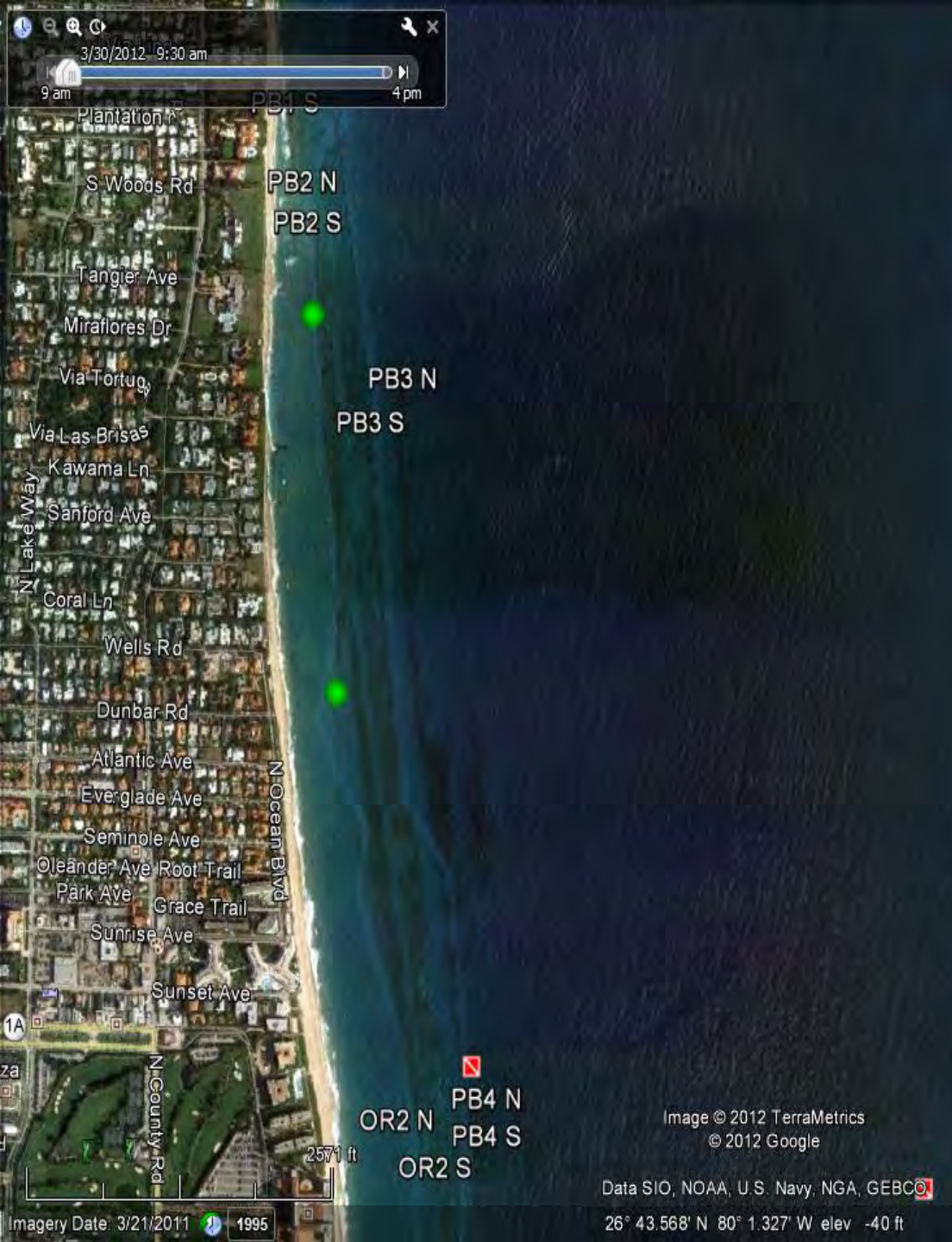
Marine turtles observed during transect survey conducted March 30, 2012 .

Sites were assigned letters for Palm Beach (PB) and Ocean Ridge (OR) with numbers 1-4 for depth stratifications (1 = sites in 0-1m, 2 = 1-2m, 3 = 2-4m, 4 = 4-6m water depths). Artificial reef sites were SI4 and ORA (not shown here).

Green dots = green turtles (*Chelonia mydas*)

Orange dots = loggerhead turtles (*Caretta caretta*).

Blue arrows = schools of > 8 spinner sharks (*Carcharhinus brevipinna*).

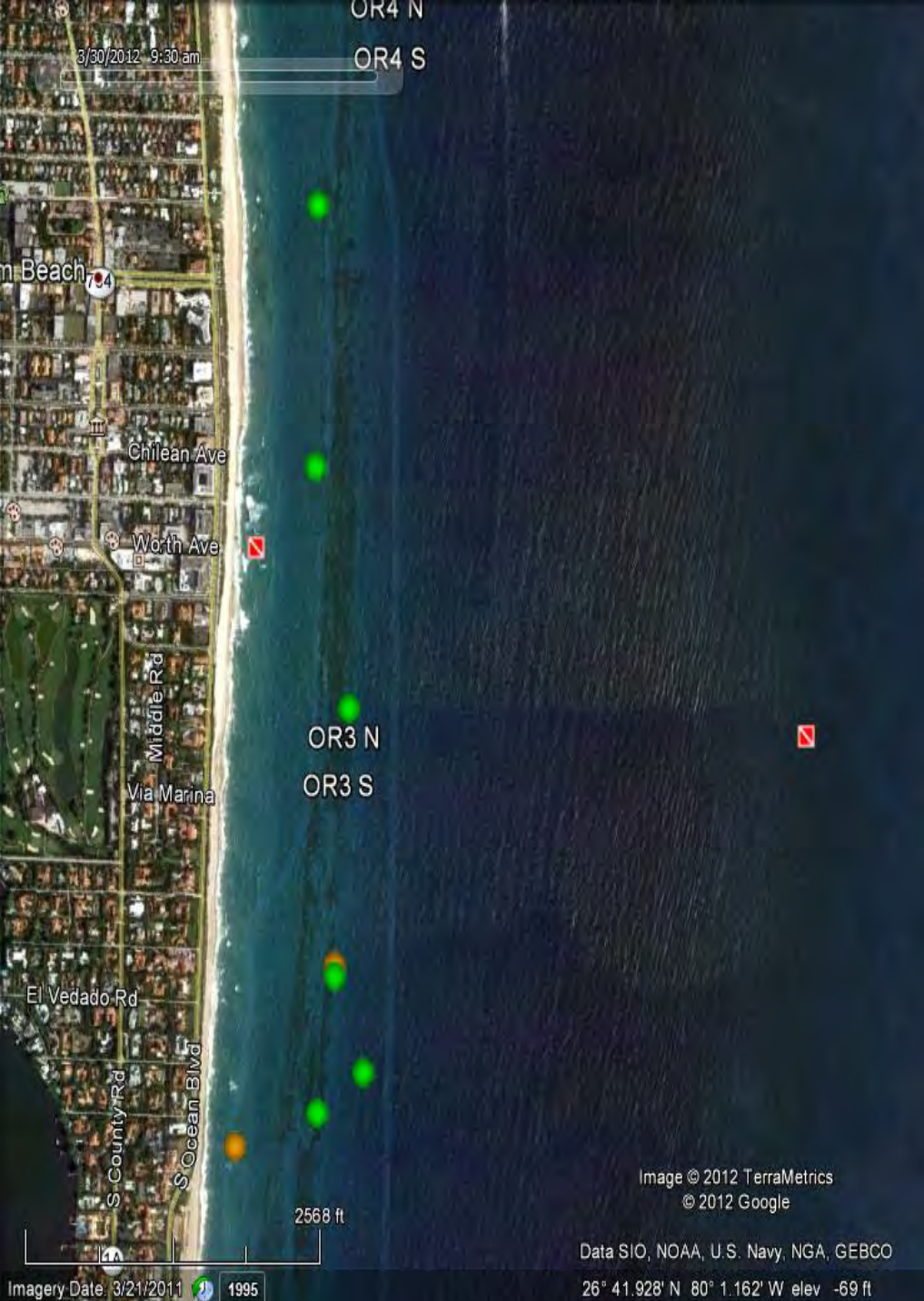


Marine turtles observed during transect survey conducted July 5, 2012.

Sites were assigned letters for Palm Beach (PB) and Ocean Ridge (OR) with numbers 1-4 for depth stratifications (1 = sites in 0-1m, 2 = 1-2m, 3 = 2-4m, 4 = 4-6m water depths).

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Marine turtles observed during transect survey conducted July 5, 2012.

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Green dots = green turtles (*Chelonia mydas*).  
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# Marine turtles

	NHB sampling sites*	Depth range (m)	Depth range (ft)	Turtle transect ID	Transect (km)	3/30/2012 Total	Cm	Cc	Ei	
1	OR1	0-1	0-3.3	OR 1-2 <sup>+</sup>						
2	OR2	1-2	3.3-6.6		1.8	3	2	1	0	
3	OR3	2-3	6.6-9.8		OR 2-3	2.7	8	8	0	0
4	OR4	3-4	9.8-13.1		OR 3-4	0.9	0	0	0	0
AR - OR	Inner				0.6	0	0	0	0	
	Middle				0.7	0	0	0	0	
	Outer				0.7	0	0	0	0	
SPOT (and distance)	0-1	0-1	0-3.3			0	0	0	0	
1	PB1	0-1	0-3.3	PB 1-2						
2	PB2	1-2	3.3-6.6		2.0	5	5	0	0	
3	PB3	2-3	6.6-9.8		PB 2-3	1.3	2	2	0	0
4	PB4	3-4	9.8-13.1		PB 3-4	0.8		0	0	0
AR - SI	Inner				0.15	0				
	Middle				0.40		0	0	0	
	Outer				0.40	0	0	0	0	
SPOT	0-1	0-1	0-3.3		N/A		0	0	0	
						18	17	1	0	

# Marine turtles

	NHB sampling sites*	Depth range (m)	Depth range (ft)	Turtle transect ID	Transect (km)	7/5/2012 Total	Cm	Cc	Ei
1	OR1	0-1	0-3.3	OR 1-2 <sup>+</sup>	1.8	2	1	1	0
2	OR2	1-2	3.3-6.6						
3	OR3	2-3	6.6-9.8						
4	OR4	3-4	9.8-13.1						
AR - OR	Inner				0.6	N/A	0	0	0
	Middle				0.7		0	0	0
	Outer				0.7		0	0	0
SPOT (and distance)	0-1	0-1	0-3.3			N/A			
1	PB1	0-1	0-3.3	PB 1-2	2.0	2	2	0	0
2	PB2	1-2	3.3-6.6						
3	PB3	2-3	6.6-9.8						
4	PB4	3-4	9.8-13.1						
AR - SI	Inner				0.15	N/A			
	Middle				0.40	0	0	0	0
	Outer				0.40	0	0	0	0
SPOT	0-1	0-1	0-3.3		N/A	N/A			
						6	5	1	0









