

St. Andrew Bay
RESOURCE MANAGEMENT ASSOCIATION
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30 October 2014

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St. Andrew Bay Resource Management Association
6509 Palm Court
Panama City Beach, Florida 32408

Meghan Koperski
Florida Fish and Wildlife Conservation Commission
19100 SE Federal Highway
Tequesta, Florida 33469

Dear Meghan:

This letter summarizes results of disorientation incidents during the 2014 nesting season on Panama City Beach (Permit 038). We documented significant hatchling disorientations this season, with 1545 of 2628 loggerhead hatchlings (58.8%) affected by artificial lights at 20 nests. Additionally, three adult female loggerheads were disoriented on the beach while returning to the water after nesting. The following provides detailed results for each incident and includes a description of the survey area, methodology used to quantify disorientations, and types of lights contributing to disorientation incidents.

Survey Area, Nest Marking, and Monitoring Procedure. The survey area extends 17.6 miles from St. Andrews State Park to Camp Helen State Park. This entire area is now under a lighting ordinance, passed in 2009 by the City of Panama City Beach and Bay County. We found 37 loggerhead nests here in 2014. With one exception, all were marked with four stakes, orange survey tape, and an informational sign with the nest number. The exception was a nest left unmarked (37), because it was mistakenly identified as a false crawl. It was later identified from hatchlings tracks. We checked the marked nests for signs of emergence each morning (6-8 am), early evening (7-9 pm), and late night (10-12 pm). The early morning checks were done by the surveyors, while volunteers performed the early evening and late-night checks. The start date for nighttime monitoring was determined from the measured sand temperature in the vicinity of the nest. Nighttime monitoring of the nests is not required by our permit but is performed due to the serious lighting problems in our survey area.

Method to Quantify Hatchling Disorientations. We submit disorientation reports only for main emergences and not for small numbers of hatchlings that may emerge afterward. All reports are submitted electronically to local code enforcement officers during the season, usually within three days of the incident. Most incidents are documented during night surveys by volunteers who are at the nest when the hatchlings emerge or arrive shortly after the emergence while hatchlings are still on the beach and tracks are fresh. Volunteers collect disoriented hatchlings and estimate the number of turtles reaching the water by observing the animals or counting tracks. Volunteers note the location of lights attracting the hatchlings and document the sky condition at the time of emergence, including the presence or absence of moonlight. When volunteers are present during the emergence, the number of disoriented hatchlings is determined by how many the volunteers collect, in addition to any turtles observed reaching the water after wandering. Nest excavation data are used to adjust some disorientation estimates. For example, if

volunteers arrive after an emergence and see all tracks leading away from the water, the nest is assumed to have 100% disorientation and the number of disoriented hatchlings is obtained from the excavation data. Disoriented turtles collected at the nest site are released at Sunnyside Beach, the darkest part of our survey area.

Hatchling Disorientation Results. Table 1 shows results for 30 nests that hatched at night, including those at which no disorientation occurred. The seven remaining nests were excluded because one failed to hatch (22), three hatched during the day (26, 34, 36), and no data were obtained for three hatched nests due to surf and rain which washed away the tracks (27, 33, 35). The column for “Total Emerged” represents the main emergence which excludes stragglers that may have emerged afterwards. The column for “Local Gov” indicates the jurisdiction of the nest location, either Panama City Beach or Bay County. Information also is provided on the method used to document the hatchling emergence. Results show that 1545 of 2628 hatchlings were disoriented by artificial lights, giving a combined disorientation of 58.8%. Turtle Watch personnel observed the main emergence at 23 nests. The remaining seven nests were documented by tracks observed and hatchlings collected after the emergence.

Adult Disorientation Results. Table 2 shows results of three disorientation incidents involving adult loggerheads. For each incident, disorientation was determined based on a wandering track found during the morning survey after the turtle had returned to the water. Figure 1 shows locations of all disorientation incidents in 2014.

Lights Contributing to Hatchling Disorientation. Figure 2 shows the types of lights contributing to hatchling disorientation incidents this year. Street lights were the largest contributor at 16%, continuing a trend from previous years. Other contributors were condo exterior lights (15%), condo interior lights (11%), and parking lot lights (12%). Note that interior lights are not covered by the lighting ordinance. The figure includes a miscellaneous category called “other” which contributed 9%. Lights in this category consisted of fireworks, condo pool lights, and an outdoor vending machine.

If you have questions on the enclosed material, please contact me during business hours at (850) 234-4643 or at pcbturtle@yahoo.com. Thanks.

Sincerely,

Kennard Watson

Kennard Watson
Turtle Watch Coordinator

Attachments: 20 hatchling disorientation reports, 3 nesting turtle disorientation reports

Table 1. Nighttime loggerhead hatchling emergences on Panama City Beach in 2014 (30 nests).

Nest No.	Nearest Landmark	Incident Date	Total Emerged	Number Disoriented	Percent Disoriented	Method Used to Document Hatchling Emergence	Report Filed	Local Gov
1	Edgewater Beach Resort, 11212 Front Beach Rd	18-Aug	43	35	81%	Night survey: hatchlings observed emerging from nest	Yes	City
2	Ramsgate Condo, 23011 Front Beach Rd	18-Aug	79	68	86%	Night survey: hatchlings observed emerging from nest	Yes	County
3	House, 20816 Front Beach Rd	13-Aug	90	0	0%	Night survey: hatchlings observed emerging from nest	No	County
4	Sandpiper Beacon Resort, 17403 Front Beach Rd	25-Aug	107	107	100%	Night survey: hatchlings observed emerging from nest	Yes	City
5	House, 20608 Front Beach Rd	25-Aug	114	8	7%	Night survey: hatchlings observed emerging from nest	No	County
6	Townhouse, 5920 Gulf Dr	23-Aug	74	73	99%	Night survey: hatchlings observed emerging from nest	Yes	County
7	House, 14204 Front Beach Rd	29-Aug	46	46	100%	Morning survey: tracks identified and hatchlings collected	Yes	City
8	House, 298 Beachside Dr	22-Aug	91	70	77%	Night survey: hatchlings observed emerging from nest	Yes	County
9	Seascape Inn, 14929 Front Beach Rd	31-Aug	120	120	100%	Night survey: tracks identified and hatchlings collected	Yes	City
10	Grandview Condo, 10713 Front Beach Rd	28-Aug	61	55	90%	Night survey: hatchlings observed emerging from nest	Yes	City
11	Seachase Condo, 17351 Front Beach Rd	1-Sep	77	77	100%	Night survey: hatchlings observed emerging from nest	Yes	City
12	House, 21312 Front Beach Rd	29-Aug	84	61	73%	Night survey: hatchlings observed emerging from nest	Yes	County
13	Fontainebleau Terrace, 14401 Front Beach Rd	4-Sep	102	102	100%	Night survey: hatchlings observed emerging from nest	Yes	City
14	House, 19400 Front Beach Rd	2-Sep	1	0	0%	Night survey: bystander report	No	County
15	Shoreline Villas, 23007 Front Beach Rd	4-Sep	72	0	0%	Night survey: tracks identified	No	County
16	Townhouse, 22401 Front Beach Rd	6-Sep	118	0	0%	Night survey: hatchlings observed emerging from nest	No	County
17	House, 19907 Front Beach Rd	5-Sep	95	3	3%	Night survey: hatchlings observed emerging from nest	No	County
18	Schooner's, 5121 Gulf Dr	1-Sep	103	91	88%	Night survey: hatchlings observed	Yes	County

						emerging from nest		
19	Pineapple Villas, 19979 Front Beach Rd	4-Sep	98	67	68%	Night survey: hatchlings observed emerging from nest	Yes	County
20	Ramsgate Condo, 23011 Front Beach Rd	7-Sep	141	0	0%	Morning survey: tracks identified	No	County
21	Townhouse, 7901 Surf Dr	10-Sep	82	6	7%	Night survey: hatchlings observed emerging from nest	No	County
23	House, 387 Beachside Dr	19-Sep	51	44	86%	Night survey: hatchlings observed emerging from nest	Yes	County
24	Pinnacle Port Condo, 23223 Front Beach Rd	18-Sep	97	97	100%	Night survey: hatchlings observed emerging from nest	Yes	County
25	Moonspinner Condo, 4425 Thomas Dr	12-Sep	118	6	5%	Night survey: hatchlings observed emerging from nest	No	County
28	House, 17885 Front Beach Rd	28-Sep	59	59	100%	Night survey: hatchlings observed emerging from nest	Yes	City
29	House, 17485 Front Beach Rd	6-Oct	81	65	80%	Morning survey: tracks identified and hatchlings collected	Yes	City
30	House, 5407 Gulf Dr	2-Oct	130	62	48%	Night survey: hatchlings observed emerging from nest	Yes	County
31	House, 5407 Gulf Dr	2-Oct	134	134	100%	Night survey: hatchlings observed emerging from nest	Yes	County
32	Moonspinner Condo, 4425 Thomas Dr	3-Oct	71	0	0%	Night survey: hatchlings observed emerging from nest	No	County
37	Mariner West Condo, 6213 Thomas Dr	26-Sep	89	89	100%	Morning survey: tracks identified and hatchlings collected	Yes	County
TOTAL			2628	1545	58.8%			

Table 2. Adult loggerhead disorientation incidents on Panama City Beach in 2014 (3 nests).

Crawl No.	Crawl Type	Nearest Landmark	Incident Date	Observations	Report Filed	Local Gov
13	Nest	Fontainebleau Terrace, 14401 Front Beach Rd	1-Jul	Turtle crawled east parallel to shore about 100 ft before entering water after nesting.	Yes	City
27	Nest	Pinnacle Port Condo, 23223 Front Beach Rd	22-Jul	Turtle crawled east parallel to shore about 70 ft before entering water after nesting.	Yes	County
33	Nest	House, 19907 Front Beach Rd	7-Aug	Turtle crawled west parallel to shore about 100 ft before entering water after nesting.	Yes	County

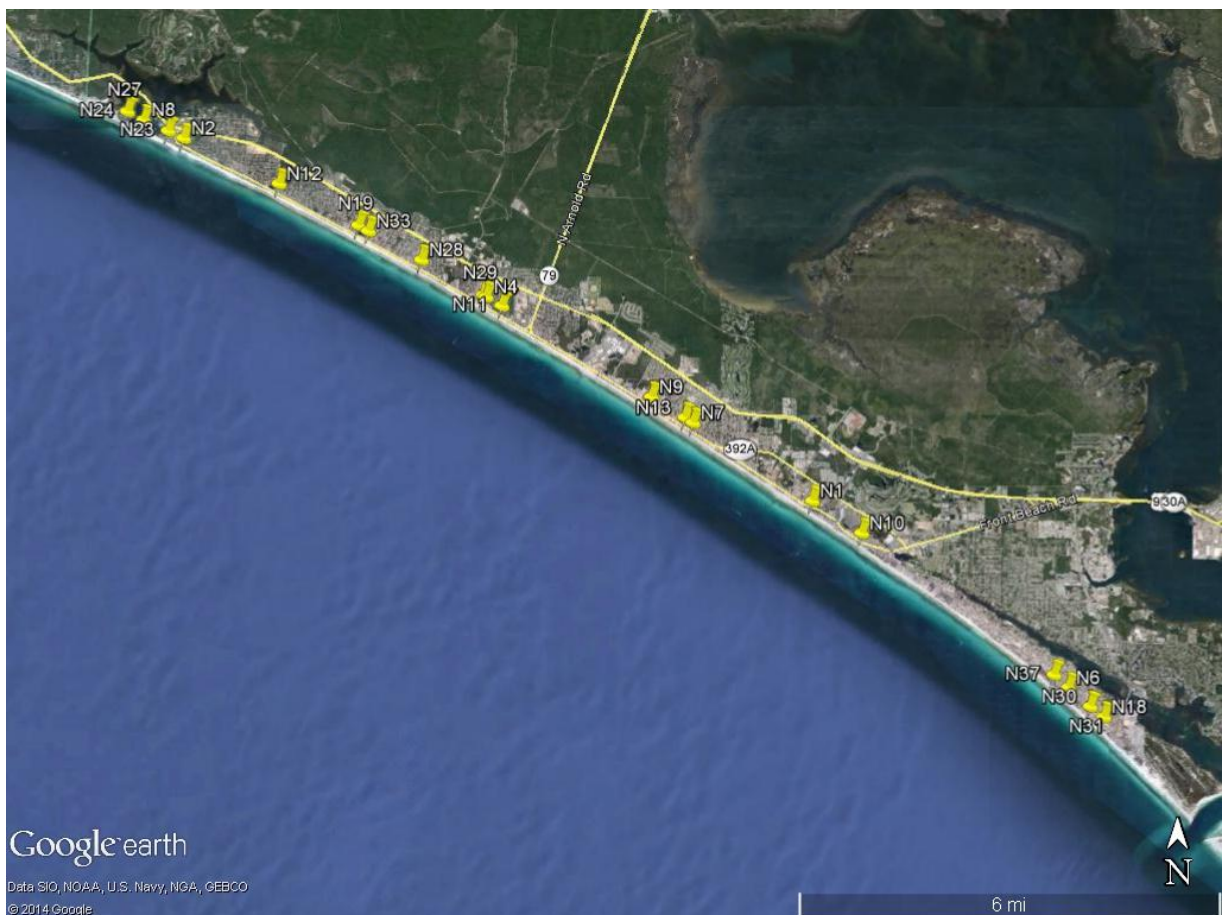


Figure 1. Map showing locations at which hatchling and adult turtle disorientation reports were filed on Panama City Beach in 2014 (33 nests).

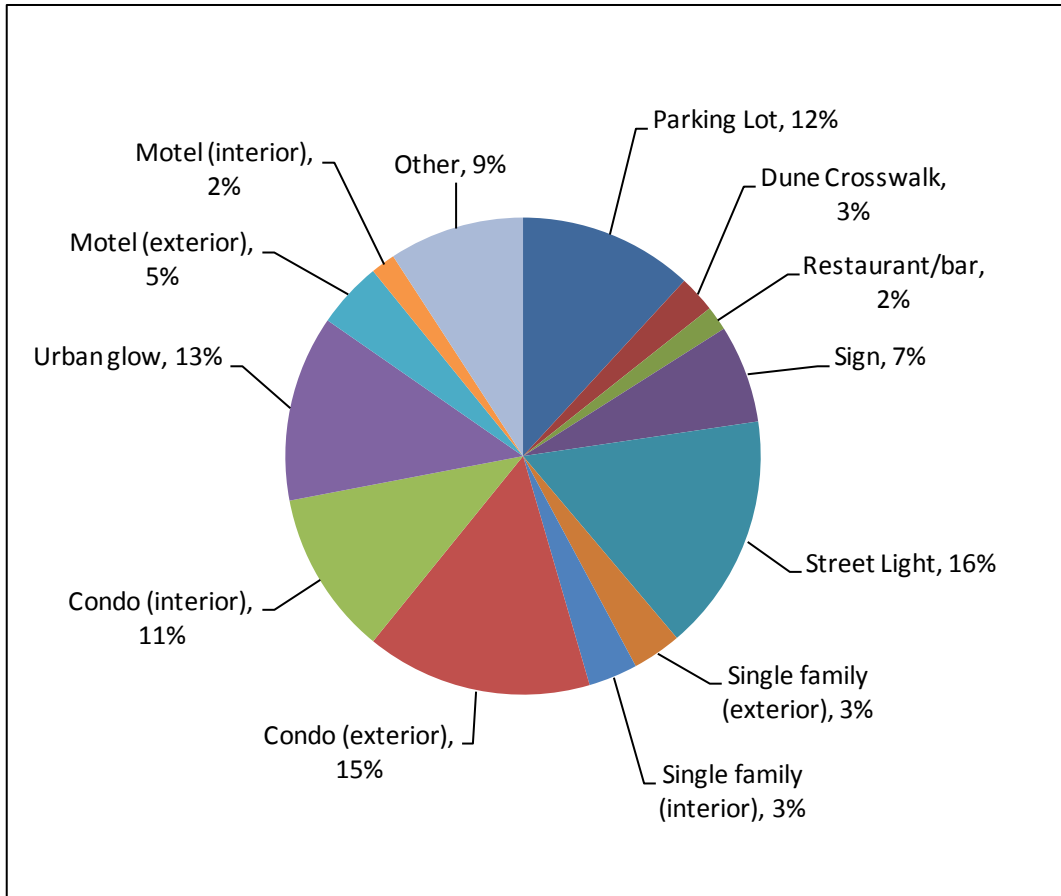


Figure 2. Lights contributing to hatchling disorientation incidents on Panama City Beach in 2014 (20 nests).