

**St. Andrew Bay  
RESOURCE MANAGEMENT ASSOCIATION**  
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Panama City, Florida 32406  
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11 November 2016

Kennard Watson, Turtle Watch Coordinator  
St. Andrew Bay Resource Management Association  
6509 Palm Court  
Panama City Beach, Florida 32408

Dan Rowe, Director and CEO  
Bay County Tourist Development Council  
P.O. Box 9473  
Panama City Beach, Florida 32417

Dear Mr. Rowe:

This letter provides results for the 2016 sea turtle nesting season on Panama City Beach. The information is submitted by the St. Andrew Bay Resource Management Association (RMA) to fulfill requirements of our contract with the Bay County Tourist Development Council. Highlights of the 2016 season include:

- Largest loggerhead nesting (55) since monitoring began in 1991, continuing a recent trend of increased nesting activity on Panama City Beach.
- Increased disorientation of hatchlings affected by lights from beachfront development. Oil spill grant funds are available to reduce lighting impacts, and four condos on Panama City Beach are pursuing these funds to retrofit exterior light fixtures.
- Reduced hatching success due to Hurricane Hermine and other unnamed storms which flooded or washed out 30 nests. In spite of the storms, hatchling production was still well above average.
- Addition of Wildlife Observers supporting nighttime enforcement of the Leave No Trace ordinance. Four nesting loggerheads were encountered during night operations, and metal identification tags were installed in the front flippers.

Major results are summarized below. The attachments contain forms submitted to the Florida Fish and Wildlife Conservation Commission (FWC) as part of reporting requirements under our State Permit No. 038.

Survey Area. RMA monitors sea turtle activity along 17.6 miles of Gulf beach between St. Andrews State Park and Camp Helen State Park. Portions of the survey area were nourished in 2011 with sand pumped onto the beach from an off-shore source.

Nesting and Hatchling Production. Fifty five (55) nests and 33 non-nesting emergences (false crawls) were made by threatened loggerhead turtles during 2016, representing the highest annual nesting since monitoring began in 1991. No crawls from other species were found. Figure 1 shows nest and false crawl locations on a map of the survey area, with each column of symbols representing crawls identified on a 0.5 mile section of beach (GPS locations available elsewhere in this report). The record nesting continues a recent trend of increased activity that began in 2012, as shown in Figure 2. The average is 24

nests/year for the 26-year period of 1991-2016 but has increased to 43 nests/year during the past 5 years. Figures 3 and 4 show results of the nest evaluations and incubation periods. The nests produced 2878 hatchlings from 4265 eggs for an overall emergence success of 68% (44 evaluated nests). Fifteen (15) nests laid close to the water and one laid near a storm drain were moved to a higher elevation nearby within 12 hours of deposition to protect the eggs from flooding. The relocated nests had an overall emergence success of 82%, compared to 60% for the in situ nests. Of the 30 nests affected by flooding, the most severe impacts were due to Hurricane Hermine, which washed out 10 nests and flooded 10 others. Average nest size was 98 eggs (range 50 to 131), and average incubation period was 59 days (range 53 to 65). Four nesting turtles were tagged this year, all encountered during nighttime cleaning operations as part of Leave No Trace ordinance enforcement (see below). Tables 1-3 and Attachments 1-5 provide detailed information on each nest and false crawl, including the location and date found. Four nests were missed by the morning surveys (17, 37, 38, 53) and were reported by the public.

Stranding Activities. Eight sea turtles stranded within the survey area between May and October (Table 4). Four were threatened loggerheads and four were endangered Kemp's ridley turtles. All were found dead on the beach or in the surf. One of the turtles had swallowed a hook with fishing line attached.

Beachfront Lighting Affecting Hatchling Turtles. Artificial lights from beachfront development continue to be a serious threat to sea turtles on this urban beach. Results showed that lights affected 71% of loggerhead hatchlings that emerged at night (1481 of 2082). While most of the disoriented turtles were rescued by Turtle Watch personnel, mortality was recorded at two nests, the most severe of which was at nest 53, located at 15525 Front Beach Rd, where 15 dead turtles were collected on Front Beach Rd. Figure 5 shows that indirect lighting from urban glow was the largest contributor at 23%, followed by exterior condo lights (21%) and street lights (13%). Dune crosswalks contributed 11% due to unshielded lights at Carillon Beach walkovers. The combined hatchling disorientation rate of 71% is much higher than the 50% value recorded last year. While there is no obvious explanation for this year's increase, the results point to the continuing need for effective enforcement of the lighting ordinance. To encourage compliance, funds are available to retrofit lights at beachfront developments in Bay County as part of a grant made available after the BP Deepwater Horizon Oil Spill. The grant is administered by the Sea Turtle Conservancy, a Florida nonprofit organization currently working with four condos on Panama City Beach to change their exterior light fixtures. See Attachment 3 for more discussion on this subject, including methodology and copies of the disorientation reports.

Beachfront Lighting Affecting Nesting Turtles. Nesting loggerheads became disoriented at 4% of the nests found this year (2 of 55 nests). Additionally, one turtle became disoriented on the beach without nesting. Each incident was assessed based on a wandering track found during the morning survey after the turtle had returned to the water. The most serious incident occurred at nest 20, located at the Sugar Sands Motel, where a loggerhead became disoriented after nesting and crawled over 360 feet before entering the water, encountering numerous obstacles along the way. Figure 6 shows pictures of the track when the nest was found.

Beach Furniture Affecting Nesting Turtles. Nesting loggerheads encountered obstructions on the beach at night at 14% of the nests found this year (8 of 55 nests) and eight false crawls. Referring to Table 5, the obstructions were almost exclusively vendor-owned lounge chairs left on the beach at night, often in tightly spaced rows near the shoreline. These items pose numerous risks for nesting turtles. Rows of chairs can prevent the turtle from accessing the beach, forcing her to nest too close to the water. This happened at Nest 14, located at Tidewater Beach Resort, which had to be moved to a higher spot nearby after the turtle nested near a row of lounge chairs only 12 feet from the water (Figure 7). These obstacles also can injure or disorient turtles while searching for a nesting site or returning to the water after nesting. The Leave No Trace ordinance should be amended to require stacking of vendor-maintained items at the base of the dune (or off the beach) nightly during the nesting season.

Beach Cleaning Coordination. Wildlife Observers worked under our state permit this year as part of nighttime enforcement of Leave No Trace. Coastal Parasail operated small vehicles on the beach at night between May 23 and August 15 removing tents and other personal gear covered by the ordinance. The Wildlife Observer's role was to ride with the crew and watch for nesting and hatchling sea turtles. Crews were advised to halt operations and turn off vehicle lights when turtles were observed, as happened on four occasions when nesting loggerheads were encountered. Turtle Watch personnel responded to tag the turtles and mark the nests. Additionally, the morning nesting surveys continued using walking surveyors along with riders on all-terrain vehicles to accommodate beach cleaning by Coastal Parasail. The 17.6-mile survey area was divided into six equal-length zones, and mechanical raking was performed during May through August in two zones daily, Monday through Saturday, with no raking on Sunday. As required by state permit, raking must be performed during daylight hours after nesting surveys are completed. The surveys were expedited to allow maximum time for raking before service vendors and tourists began setting up their gear. This was done using additional survey personnel to monitor the zones at the east and west ends of the survey area. These areas were monitored on foot (zones 1 and 6) on days when raking occurred, while areas in between (zones 2-5) were checked by surveyors on all-terrain vehicles. Surveyors notified the beach cleaner by text message when zones were cleared or nests identified. Surveys normally were done by 7 am or earlier each morning.

Other Management Issues. (1) Turtle surveyors coordinated with FWC personnel who surveyed the beach for shorebird nesting activity this summer and posted nesting areas. Following the same procedure as last year, FWC posted three locations within the survey area to protect nesting least terns and black skimmers: Sunnyside Beach, Bid-a-Wee Beach, and an undeveloped beachfront parcel near the Chateau Motel. (2) Beach driving is prevalent throughout the survey area and occurs day and night, posing numerous risks to sea turtles and shorebirds. Authorized nighttime beach driving by police and emergency vehicles should follow Best Management Practices developed by state and federal agencies which recommend use of red-filtered headlights and low-pressure tires to avoid producing ruts (this practice was followed during night operations for Leave No Trace enforcement). (3) No poaching or predator incidents occurred this year, other than some minor nest vandalism and a few nests depredated by ghost crabs.

If you have questions, please contact me during business hours at (850) 238-9895 or at [pcbturtle@yahoo.com](mailto:pcbturtle@yahoo.com). Thanks.

Sincerely,

*Kennard Watson*

Kennard Watson  
Turtle Watch Coordinator

cc: Lisa Yarbrough (FWS Panama City), Robbin Trindell (FWC Tallahassee), Beth Brost (FWRI St Petersburg), Kimberly Middlebrooks (FWC Panama City), Robert Majka Jr. (Bay County Manager), Martin Jacobson (Community Development Manager), Kathi Ashman (Bay County Code Enforcement), Cecilia James (Bay County Code Enforcement), Mario Gisbert (Panama City Beach City Manager), James Tindle (Panama City Beach Code Enforcement), Lisa Armbruster (Sustainable Beaches), Linda Fitzhugh (RMA), Jeff Whitton (RMA), Secret Holmes (Gulf World), Bonnie Sammuelson (Florida Audubon), Lauryn Wright (Sea Turtle Conservancy)

Attachments: (1) Nesting reports, (2) Nest productivity worksheets, (3) Disorientation incident reports, (4) Obstructed nesting attempt reports, (5) Nesting turtle tagging reports.

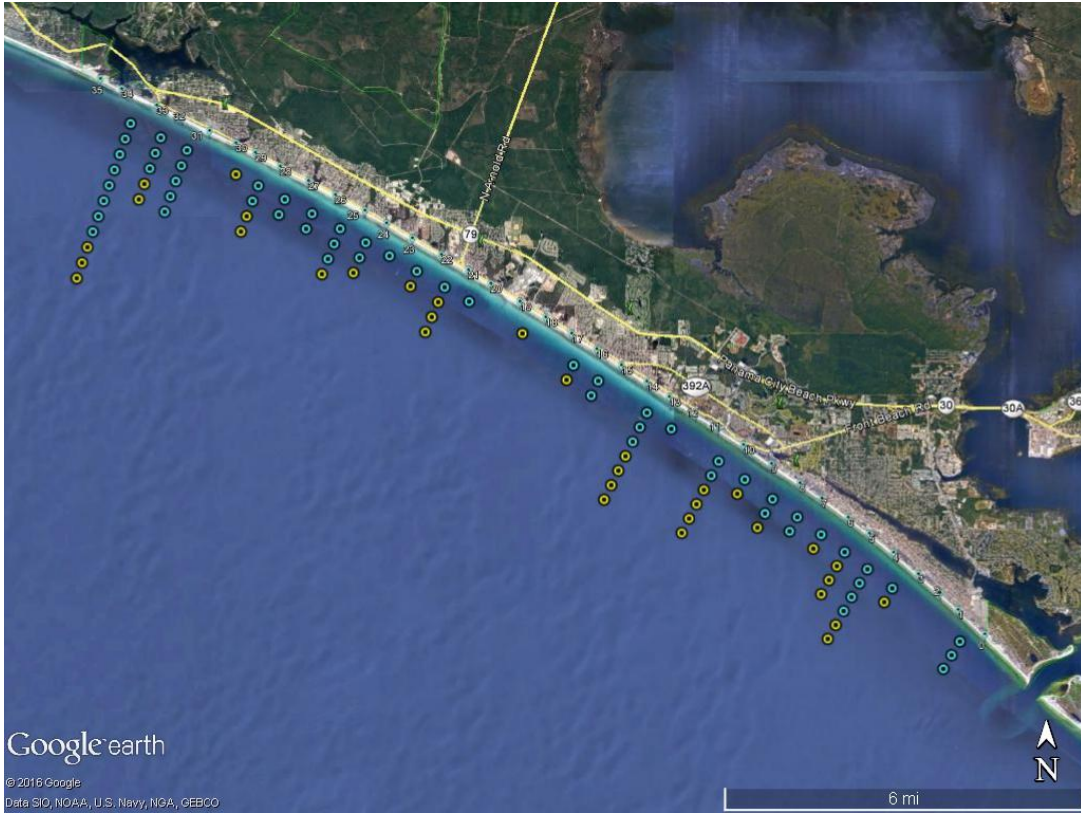


Figure 1. Loggerhead nest and false crawl locations on Panama City Beach in 2016. Each column of symbols represents crawls on ½-mile beach segment (blue circles loggerhead nests, yellow circles loggerhead false crawls).

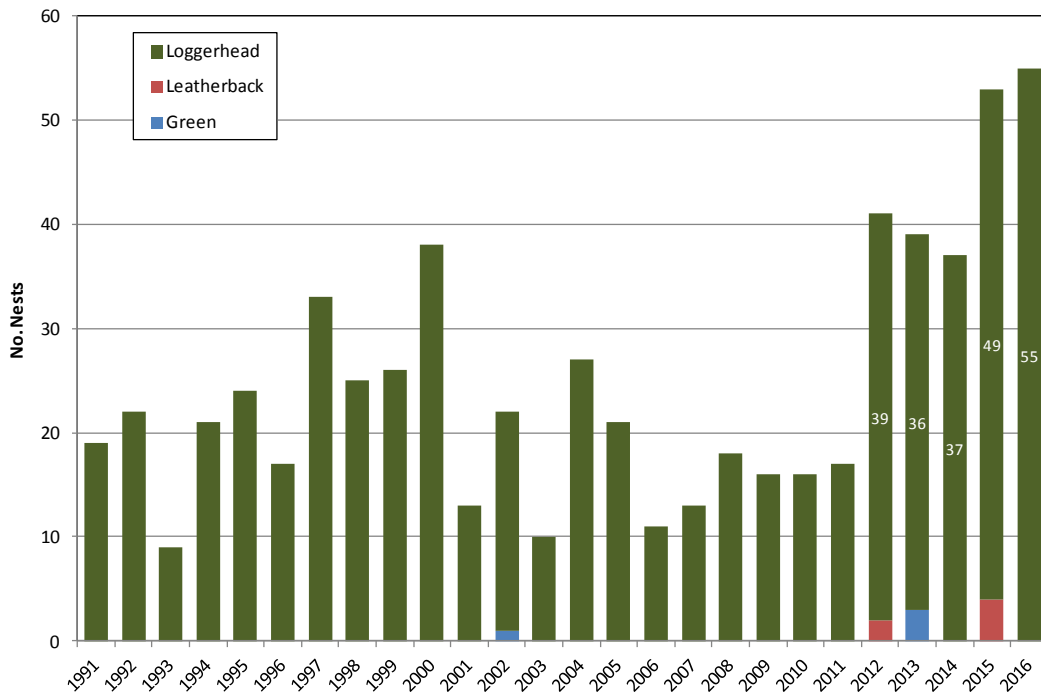
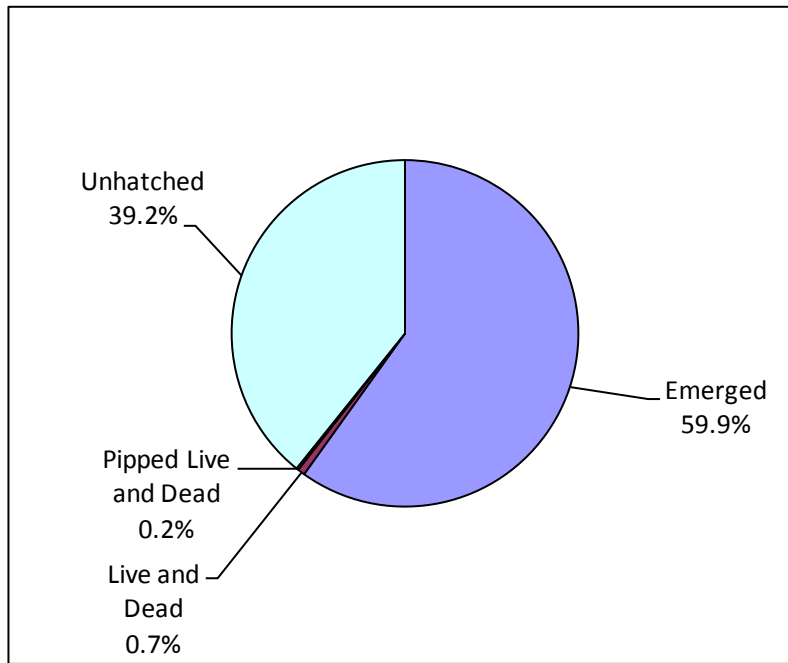
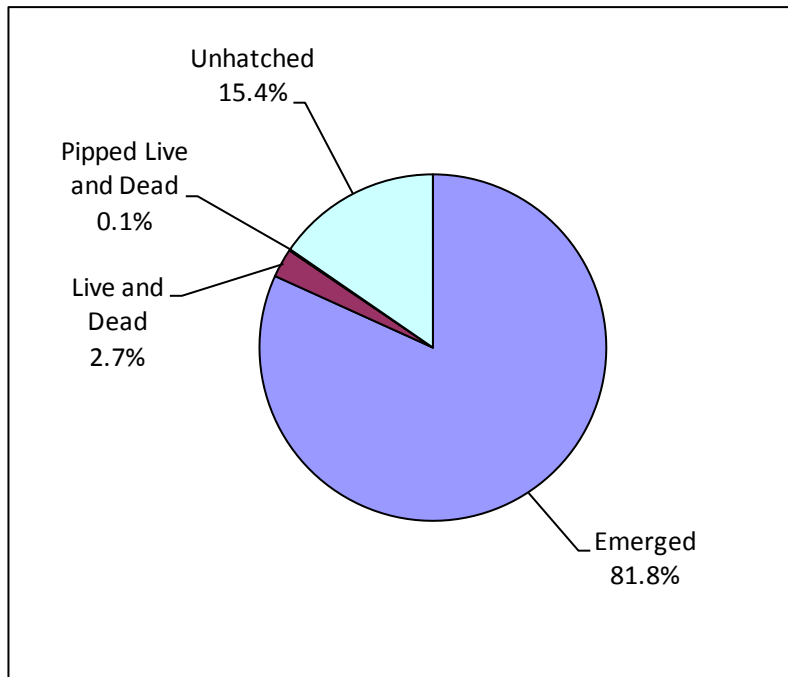


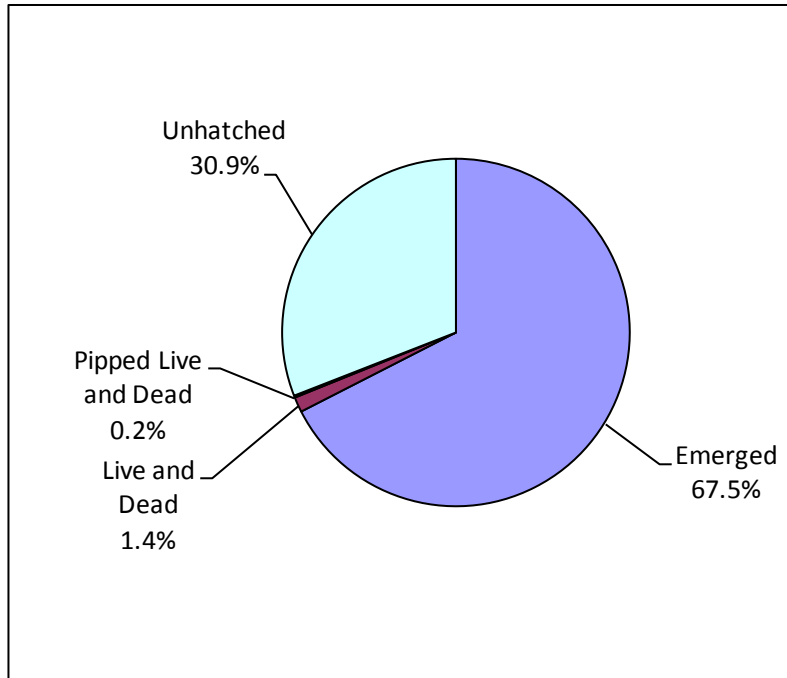
Figure 2. Annual season turtle nesting on Panama City Beach, 1991-2016.



(a) In situ loggerhead nests, excluding partial washouts (26)



(b) Relocated loggerhead nests (15)



(c) All loggerhead nests (45)

Figure 3. Emergence success for loggerhead nests on Panama City Beach in 2016 (45 nests). Contents are unhatched eggs, live and dead hatchlings found in nest, pipped eggs where hatchling partially broke free of shell, and emerged hatchlings that escaped the nest.

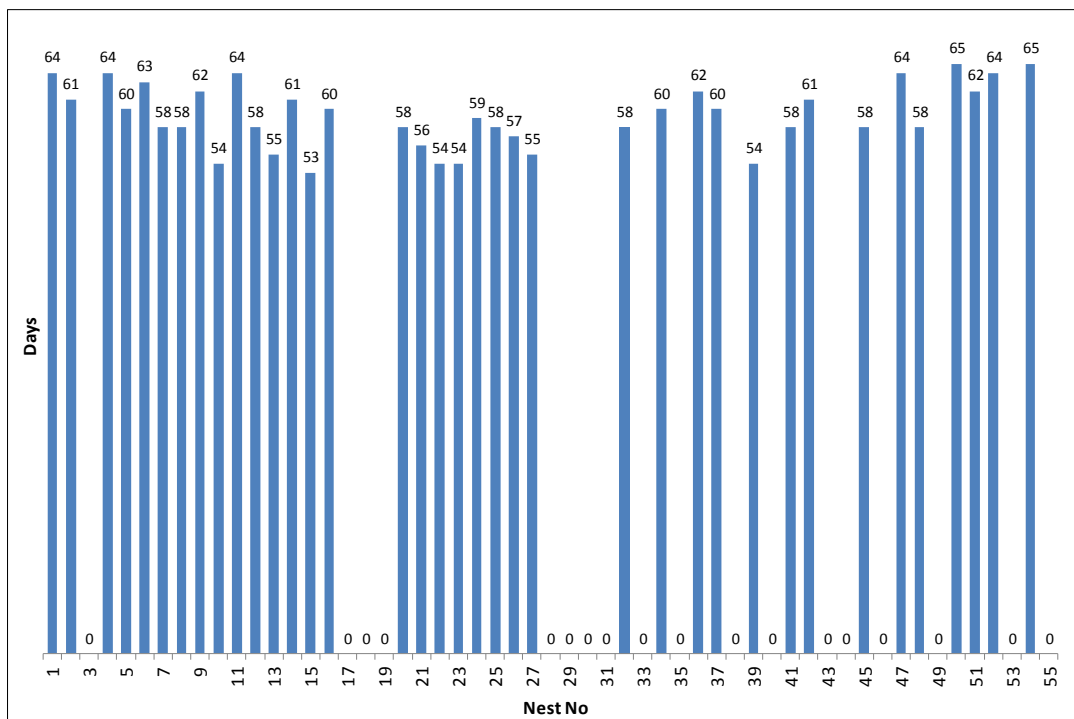


Figure 4. Loggerhead incubation periods on Panama City Beach in 2016 (37 nests).

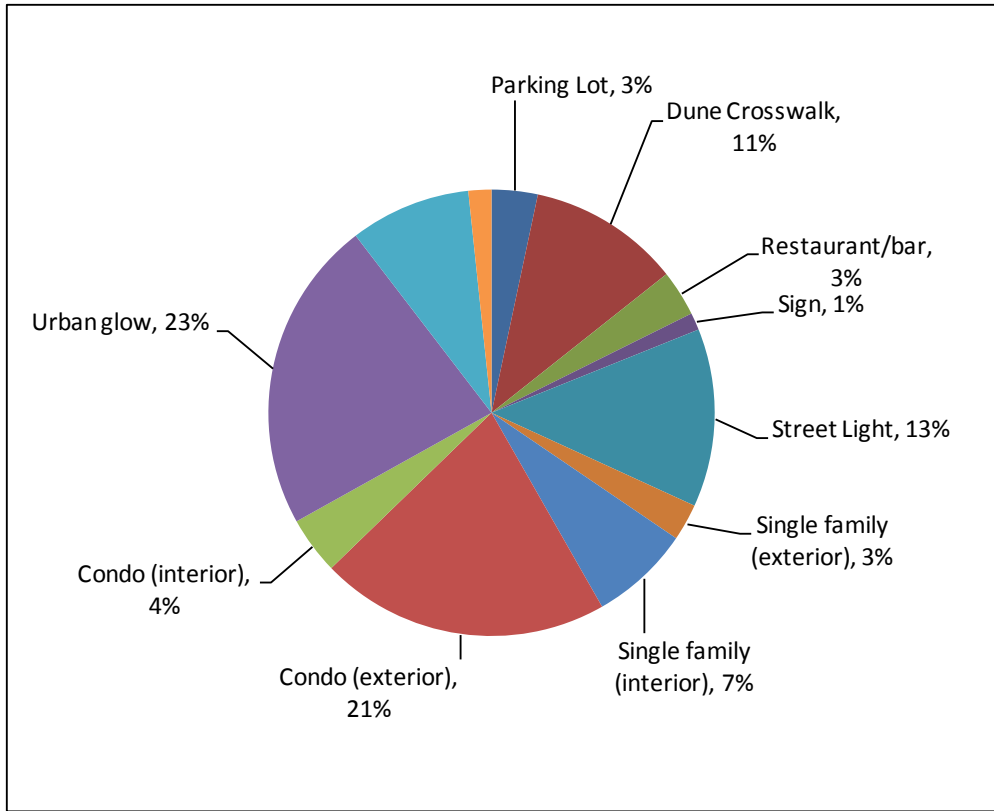


Figure 5. Lights contributing to loggerhead hatchling disorientation incidents on Panama City Beach in 2016 (20 nests).



Figure 6. Pictures of track at nest 20 at Sugar Sands Motel where loggerhead became disoriented after nesting.



Figure 7. Picture of nest 14 at Tidewater Beach Resort where loggerhead was impeded by lounge chairs and nested close to water.

Table 1. Loggerhead nest locations and hatching information on Panama City Beach in 2016. Latitude/longitude data were obtained from a GPS unit.

Nest No.	Address	In Situ or Relocated	Date Laid	Date Hatch	Incubation (days)	Eggs	Emerge	Latitude	Longitude
1	House, 14118 Front Beach Rd	Relocated	26-May	28-Jul	64	115	100	30.20176	-85.85275
2	House, 19214 Front Beach Rd	Relocated	27-May	26-Jul	61	77	76	30.23737	-85.92195
3	Moonspinner Condo, 4425 Thomas Dr	In situ	31-May	Failed	Failed	118	0	30.13427	-85.74699
4	House, 9800 Beach Blvd	In situ	4-Jun	6-Aug	64	62	53	30.17325	-85.80287
5	House, 19404 Front Beach Rd	Relocated	5-Jun	3-Aug	60	105	102	30.23786	-85.92283
6	House, 14006 Front Beach Rd	In situ	9-Jun	10-Aug	63	110	94	30.20133	-85.85152
7	Emerald Isles Condo, 17545 Front Beach Rd	In situ	10-Jun	6-Aug	58	95	89	30.22937	-85.90546
8	Dunes of Panama Condo, 7205 Thomas Dr	In situ	11-Jun	7-Aug	58	102	92	30.15755	-85.77742
9	Runaway Island Restaurant, 14521 Front Beach Rd	In situ	15-Jun	15-Aug	62	103	71	30.20478	-85.85819
10	Moonspinner	In situ	17-Jun	9-Aug	54	124	111	30.13474	-85.74732

	Condo, 4425 Thomas Dr								
11	Gulf Crest Condo, 8715 Surf Dr	In situ	18-Jun	20-Aug	64	107	105	30.16658	-85.79161
12	Dunes of Panama Condo, 7205 Thomas Dr	Relocated	18-Jun	14-Aug	58	113	104	30.15816	-85.77811
13	Ramsgate Condo, 23011 Front Beach Rd	In situ	21-Jun	14-Aug	55	92	87	30.26077	-85.97532
14	Tidewater Beach Resort, 16819 Front Beach Rd	Relocated	22-Jun	21-Aug	61	92	88	30.21977	-85.88616
15	House, 19987 Front Beach Rd	In situ	22-Jun	13-Aug	53	87	85	30.24249	-85.93301
16	Days Inn, 12818 Front Beach Rd	In situ	24-Jun	22-Aug	60	111	40	30.19379	-85.83839
17	House, 17883 Front Beach Rd	In situ	25-Jun	Failed	Failed	?	0	30.23482	-85.9168
18	House, 20609 Front Beach Rd	In situ	25-Jun	Failed	Failed	?	0	30.24541	-85.93954
19	Townhouse, 6805 Gulf Dr	In situ	26-Jun	Failed	Failed	?	0	30.15448	-85.773
20	Sugar Sands Motel, 20723 Front Beach Rd	In situ	29-Jun	25-Aug	58	111	26	30.24682	-85.94247
21	House, 286 Beachside Dr, Carillon Beach	Relocated	1-Jul	25-Aug	56	96	95	30.26416	-85.98398
22	House, 400 Beachside Dr, Carillon Beach	In situ	2-Jul	24-Aug	54	86	84	30.26147	-85.97707
23	Vacant lot, 17851 Front Beach Rd	Relocated	3-Jul	25-Aug	54	97	78	30.23430	-85.91553
24	Boardwalk Beach Resort, 9500 S. Thomas Dr	In situ	4-Jul	31-Aug	59	70	69	30.17128	-85.79924
25	House, 22221 Front Beach Rd	Relocated	4-Jul	30-Aug	58	91	63	30.25613	-85.96416
26	House, 382 Beachside Dr, Carillon Beach	In situ	5-Jul	30-Aug	57	note 1	101	30.26171	-85.97780
27	House, 382 Beachside Dr, Carillon Beach	In situ	5-Jul	28-Aug	55	78	70	30.26169	-85.97776
28	House, 22219 Front Beach Rd	In situ	6-Jul	Failed	Failed	?	0	30.25571	-85.96327
29	Condo, 22803 Front Beach Rd	In situ	6-Jul	Failed	Failed	120	0	30.25898	-85.97113
30	Holiday Terrace Motel, 11831 Front Beach Rd	In situ	7-Jul	Failed	Failed	15 note 2	0	30.18680	-85.82661
31	Grandview East Condo, 10713 Front Beach Rd	In situ	9-Jul	Failed	Failed	?	0	30.17913	-85.81299

32	House, 8207 Surf Dr	In situ	9-Jul	4-Sep	58	95	91	30.16238	-85.78445
33	Grandview East Condo, 10713 Front Beach Rd	In situ	13-Jul	Failed	Failed	50	0	30.17886	-85.81245
34	House, 19816 Front Beach Rd	Relocated	13-Jul	10-Sep	60	93	87	30.24036	-85.92861
35	House, 400 Beachside Dr, Carillon Beach	In situ	13-Jul	Failed	Failed	105	0	30.26147	-85.97713
36	Townhouse, 17477 Front Beach Rd	Relocated	14-Jul	13-Sep	62	122	113	30.22780	-85.90232
37	House, 408 Beachside Dr, Carillon Beach	In situ	15-Jul	12-Sep	60	28 note 2	17	30.26090	-85.97588
38	Long Beach Resort 10511 FBR, west side	In situ	16-Jul	Failed	Failed	?	0	30.17800	-85.81106
39	Townhouse, 21000 Front Beach Rd	Relocated	17-Jul	8-Sep	54	131	108	30.24805	-85.94534
40	House, 308 Beachside Dr, Carillon Beach	In situ	17-Jul	Failed	Failed	59	0	30.26357	-85.98236
41	Shores Condo, 22519 Front Beach Rd	Relocated	18-Jul	13-Sep	58	81	65	30.25802	-85.96886
42	House, 22101 Front Beach Rd	In situ	19-Jul	17-Sep	61	86	39	30.25505	-85.96136
43	House, 22605 Front Beach Rd	In situ	13-Jun	Failed	Failed	?	0	30.2452	-85.93911
44	Dunes of Panama Condo, 7205 Thomas Dr	In situ	23-Jul	Failed	Failed	?	0	30.15621	-85.77547
45	Days Inn, 12818 Front Beach Rd	Relocated	24-Jul	19-Sep	58	92	64	30.19375	-85.83837
46	House, 6617 Gulf Dr	In situ	24-Jul	Failed	Failed	?	0	30.15286	-85.77074
47	House, 4823 Spyglass Dr	In situ	27-Jul	28-Sep	64	122	101	30.1384	-85.75194
48	Ramsgate Condo, 23011 Front Beach Rd	Relocated	27-Jul	22-Sep	58	107	97	30.26011	-85.97395
49	Townhouse, 22513 Front Beach Rd	In situ	30-Jul	Failed	Failed	95	0	30.25759	-85.96748
50	Pelican Walk Condo, 6905 Thomas Dr	In situ	1-Aug	4-Oct	65	110	74	30.155267	-85.774167
51	Carousel Store, 19440 Front Beach Rd	Relocated	2-Aug	2-Oct	62	108	3	30.23843	-85.92415
52	Beachcomber by the Sea Motel,	Relocated	5-Aug	7-Oct	64	83 note 2	9	30.22123	-85.88899

	17101 Front Beach Rd								
53	Chateau Motel, 12525 Front Beach Rd	In situ	?	4-Aug	?	101	83	30.19137	-85.83398
54	House, 22115 Front Beach Rd	In situ	8-Aug	11-Oct	65	119	44	30.25554	-85.96274
55	Moondrifter Condo, 8817 South Thomas Dr	In situ	19-Aug	Failed	Failed	?	0	30.16897	-85.79576

Note 1: Nest completely washed out after hatch.

Note 2: Nest partially washed out.

Table 2. Loggerhead false crawl locations and crawl dates on Panama City Beach in 2016. Latitude/longitude data were obtained from a GPS unit.

Crawl No.	Address	Crawl Date	Latitude	Longitude
1	Princess Condo, 6415 Thomas Dr	25-May	30.15045	-85.76772
2	Fontainebleau Terrace, 14401 Front Beach Rd	26-May	30.20317	-85.85545
3	Townhouse, 7835 Surf Dr	28-May	30.15950	-85.78062
4	En Soleil Condo, 7505 Thomas Dr	9-Jun	30.15894	-85.77946
5	Dunes of Panama Condo, 7205 Thomas Dr	9-Jun	30.15776	-85.77767
6	Dunes of Panama Condo, 7205 Thomas Dr	9-Jun	30.15701	-85.77642
7	Hidden Dunes Condo, 7115 Thomas Dr	9-Jun	30.15631	-85.77544
8	Ambassador Beach Condo, 15617 Front Beach Rd	13-Jun	30.21141	-85.87086
9	Aqua Vista Condo, 17155 Front Beach Rd	13-Jun	30.22297	-85.89262
10	Bikini Beach Motel, 11001 Front Beach Rd	14-Jun	30.18122	-85.81663
11	Chateau Motel, 12525 Front Beach Rd	15-Jun	30.19194	-85.83525
12	Majestic Beach Resort, 10901 Front Beach Rd	18-Jun	30.18073	-85.81561
13	Ramsgate Condo, 23011 Front Beach Rd	20-Jun	30.26029	-85.97430
14	House, 402 Beachside Dr, Carillon Beach	20-Jun	30.26118	-85.97654
15	Hooter's, 12709 Front Beach Rd	24-Jun	30.19277	-85.83673
16	Chateau Motel, 12525 Front Beach Rd	14-Jun	30.19127	-85.83403
17	Chateau Motel, 12525 Front Beach Rd	25-Jun	30.19205	-85.83556
18	House, 17883 Front Beach Rd	26-Jun	30.23532	-85.91719
19	Long Beach Resort, 10511 Front Beach Rd	28-Jun	30.17690	-85.80899
20	Sandpiper Beacon Beach Resort, 17403 FBR	28-Jun	30.22667	-85.90024
21	Vacant lot, 20825 Front Beach Rd	2-Jul	30.24717	-85.94328
22	Gulf Gate Condo, 8200 Surf Dr	3-Jul	30.16171	-85.78373
23	House, 21320 Front Beach Rd	4-Jul	30.25072	-85.95103
24	Palmetto Motel 17255 FBR	7-Jul	30.22392	-85.89440
25	House, 300 Beachside Dr, Carillon Beach	7-Jul	30.26379	-85.98296
26	Palazzo Condo, 17281 Front Beach Rd	9-Jul	30.22479	-85.89613
27	House, 21001 Front Beach Rd	9-Jul	30.24908	-85.94727
28	Majestic Beach Resort, 10901 Front Beach Rd	10-Jul	30.18052	-85.81502
29	Majestic Beach Resort, 10901 Front Beach Rd	10-Jul	30.17944	-85.81335
30	House, 9812 Beach Blvd	10-Jul	30.17319	-85.80315
31	House, 300 Beachside Dr, Carillon Beach	14-Jul	30.26379	-85.98296
32	Condo, 22803 Front Beach Rd	25-Jul	30.25898	-85.97113
33	Blue Horizon Retreat, 19016 Front Beach Rd	28-Jul	30.23652	-85.92022

Table 3. Loggerhead nest excavation data on Panama City Beach in 2016. Contents are unhatched eggs, live and dead hatchlings found in nest, pipped eggs where hatchling partially broke free of shell, and emerged hatchlings that escaped the nest. Rows in red indicate nests partially washed out.

Nest No.	Eggs	Emerged	Live in Nest	Dead in Nest	Pipped Live	Pipped Dead	Unhatch	Emergence Success	Relocated or in situ
1	115	100	0	0	0	0	15	0.87	Relocated
2	77	76	0	0	0	0	1	0.99	Relocated
3	118	0	0	0	0	0	118	0.00	In situ
4	62	53	0	0	0	0	9	0.85	In situ
5	105	102	0	0	0	0	3	0.97	Relocated
6	110	94	0	0	0	1	15	0.85	In situ
7	95	89	0	0	0	1	5	0.94	In situ
8	102	92	0	0	0	0	10	0.90	In situ
9	103	71	0	0	0	0	32	0.69	In situ
10	124	111	1	0	0	0	12	0.90	In situ
11	107	105	0	0	1	0	1	0.98	In situ
12	113	104	0	0	0	0	9	0.92	Relocated
13	92	87	0	0	0	0	5	0.95	In situ
14	92	88	0	0	0	0	4	0.96	Relocated
15	87	85	1	0	0	0	1	0.98	In situ
16	111	40	1	0	0	0	70	0.36	In situ
20	111	26	1	1	0	1	82	0.23	In situ
21	96	95	1	0	0	0	0	0.99	Relocated
22	86	84	0	0	0	0	2	0.98	In situ
23	97	78	4	0	0	0	15	0.80	Relocated
24	70	69	0	0	0	0	1	0.99	In situ
25	91	63	12	1	0	1	14	0.69	Relocated
26	101	101	?	?	?	?	?	?	In situ
27	78	70	0	1	0	0	7	0.90	In situ
29	120	0	0	0	0	0	120	0.00	In situ
30	15	0	0	0	0	0	15	0.00	In situ
32	95	91	2	0	0	0	2	0.96	In situ
33	50	0	0	0	0	0	50	0.00	In situ
34	93	87	0	0	0	0	6	0.94	Relocated
35	105	0	0	0	0	1	104	0.00	In situ
36	122	113	2	0	0	0	7	0.93	Relocated
37	28	17	0	1	0	1	9	0.61	In situ
39	131	108	10	2	1	0	10	0.82	Relocated
40	59	0	0	0	0	0	59	0.00	In situ
41	81	65	3	3	0	0	10	0.80	Relocated
42	86	39	0	2	0	0	45	0.45	In situ
45	92	64	1	0	0	0	27	0.70	Relocated
47	122	101	0	0	0	0	21	0.83	In situ
48	107	97	2	0	0	0	8	0.91	Relocated
49	95	0	0	0	0	0	95	0.00	In situ
50	110	74	1	2	0	0	33	0.67	In situ
51	108	3	0	0	0	0	105	0.03	Relocated
52	83	9	1	0	0	0	73	0.11	Relocated
53	101	83	1	0	0	0	17	0.82	In situ
54	119	44	3	0	0	0	72	0.37	In situ
<b>TOTAL</b>	<b>4265</b>	<b>2878</b>	<b>47</b>	<b>13</b>	<b>2</b>	<b>6</b>	<b>1319</b>	<b>0.68</b>	

Table 4. Sea turtle strandings on Panama City Beach during 1 May to 31 October 2016.  
Latitude/longitude data were obtained from a GPS unit.

No.	Date	Location	Latitude	Longitude	Species	Shell Length (inches)	Final Disposition
1	21-May	Pinnacle Port Condo, 23223 Front Beach Rd	30.26457	-85.98578	Kemp's ridley	16.5	Disposed in landfill
2	4-Jun	Majestic Motel, 10901 Front Beach Rd	30.18007	-85.81468	Loggerhead	37.4	Disposed in landfill
3	11-Jul	Boardwalk Beach Resort, 9450 S Thomas Dr	30.17008	-85.79772	Kemp's ridley	?	Disposed in landfill
4	27-Jul	County pier	30.18783	-85.83298	Loggerhead	26.4	Disposed in landfill
5	7-Aug	Wyndham Condo, 14700 Front Beach Rd	30.20043	-85.85958	Loggerhead	29	Disposed in landfill
6	17-Aug	Ramsgate Harbour Condo, 23011 Front Beach Rd	30.26068	-85.97535	Loggerhead	29	Disposed in landfill
7	27-Aug	Shores of Panama Resort, 9900 S Thomas Dr	30.17540	-85.80672	Kemp's ridley	21.6	Disposed in landfill
8	20-Sep	Sterling Reef Condo, 12011 Front Beach Rd	30.18736	-85.82751	Kemp's ridley	26.2	NMFS

Table 5. Obstacles encountered by loggerheads during nesting attempts on Panama City Beach in 2016. Latitude/longitude data were obtained from a GPS unit.

<b>Crawl No.</b>	<b>Crawl Type</b>	<b>Address</b>	<b>Latitude</b>	<b>Longitude</b>	<b>Incident Date</b>	<b>Obstacles Encountered</b>
11	Nest	Gulf Crest Condo, 8715 Surf Dr	30.16658	-85.79161	18-Jun	lounge chairs
14	Nest	Tidewater Beach Resort, 16819 Front Beach Rd	30.21977	-85.88616	22-Jun	lounge chairs
16	Nest	Days Inn, 12818 Front Beach Rd	30.19379	-85.83839	24-Jun	deep hole
19	Nest	Townhouse, 6805 Gulf Dr	30.15448	-85.773	26-Jun	hobie cat
20	Nest	Sugar Sands Motel, 20723 Front Beach Rd	30.24682	-85.94247	29-Jun	lounge chairs, vendor box, trash can
24	Nest	Boardwalk Beach Resort, 9500 S. Thomas Dr (near Arcade pavilion)	30.17128	-85.79924	4-Jul	lounge chairs
40	Nest	House, 308 Beachside Dr, Carillon Beach	30.26357	-85.98236	17-Jul	lounge chairs
44	Nest	Dunes of Panama Condo, 7205 Thomas Dr	30.15621	-85.77547	23-Jul	lounge chairs
4	False Crawl	En Soleil Condo, 7505 Thomas Dr	30.15894	-85.77946	9-Jun	lounge chairs
7	False Crawl	Hidden Dunes Condo, 7115 Thomas Dr	30.15631	-85.77544	9-Jun	lounge chairs
8	False Crawl	Ambassador Beach Condo, 15617 Front Beach Rd	30.21141	-85.87086	13-Jun	lounge chairs
13	False Crawl	Ramsgate Condo, 23011 Front Beach Rd	30.26029	-85.9743	20-Jun	deep hole
20	False Crawl	Sandpiper Beacon Beach Resort, 17403 FBR	30.22667	-85.90024	28-Jun	lounge chairs
22	False Crawl	Gulf Gate Condo, 8200 Surf Dr	30.16171	-85.78373	3-Jul	lounge chairs
26	False Crawl	Palazzo Condo, 17281 Front Beach Rd	30.22479	-85.89613	9-Jul	lounge chairs
29	False Crawl	Majestic Beach Resort, 10901 Front Beach Rd	30.17944	-85.81335	10-Jul	lounge chairs