

1 November 2020

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Panama City Beach Turtle Watch, Inc.  
6509 Palm Court  
Panama City Beach, Florida 32408

Dan Rowe, Executive Director  
Bay County Tourist Development Council  
17001 Panama City Beach Parkway  
Panama City Beach, Florida 32417

Dear Mr. Rowe:

This letter provides results for the 2020 sea turtle nesting season on Panama City Beach. The information is submitted by Panama City Beach Turtle Watch, Inc. to fulfill requirements of our contract with the Bay County Tourist Development Council. Highlights of the 2020 season include:

- Active nesting season with 47 nests and 24 non-nesting crawls made by loggerhead and green turtles, continuing a recent trend of increased nesting activity and species diversity.
- Low hatchling production due to numerous Gulf storms which flooded and washed out many nests.
- Nesting turtles encountered on 7 occasions, four of which occurred during nighttime enforcement of the Leave No Trace ordinance. Flipper tags were applied to three of these turtles.
- Four areas posted to protect nesting least terns and black skimmers, which face many of the same threats as sea turtles on our beach. Turtle Watch surveyors coordinated with state biologists who identified and marked the seabird nesting sites.
- Briefed the Panama City Beach Community Redevelopment Agency (CRA) on impacts of street lights which are a major cause of hatchling disorientation incidents on our beach. The CRA is investigating the use of wildlife-friendly street lighting for future construction on Front Beach Road.

Major results are summarized below. Additional reports and data forms have been submitted to the Florida Fish and Wildlife Conservation Commission (FWC) as part of reporting requirements under our State Permit No. 038. These documents are available upon request.

Survey Area and Nourishment Activities. Turtle Watch monitors sea turtle activity along 17.5 miles of Gulf beach between St. Andrews State Park and Camp Helen State Park. Portions of the survey area were nourished in 2017 with sand pumped onto the beach from an off-shore source. Figure 1 is a map of the survey area showing the four construction sites totaling 4.13 miles located at Treasure Island Condo, M.B. Miller County Pier, Russell-Fields City Pier, and Pinnacle Port Condo. This is the final year of post-construction monitoring for the 2017 project.

Nest Identification and Relocation. Morning surveys to identify sea turtle crawls started on May 1 as in past years. The surveys normally end on September 1 but were extended this year to September 13. All nests laid within the four nourished sections were left in place per FWC guidelines. FWC also specified “control areas” adjacent to each nourished section where nests were left in place and could not be moved for any reason. These areas have equivalent total length to the nourished beach and are shown in Figure 1. Nests found outside of the nourished and control areas could be moved only if near a storm drain or below the daily high tide line. However, we suspended all nest relocations this season to comply with health guidelines during the pandemic (relocations require two volunteers working in close proximity). Regarding nest identification, all nests found during the morning surveys were identified solely from the physical evidence left in the sand by the nesting turtle (body pit and sand mound created by flippers).

Nesting and Hatchling Production. We found 47 nests and 24 non-nesting emergences (false crawls) during 2020. Of the 47 nests, 40 were made by threatened loggerheads and 7 by threatened greens. Of the 24 false crawls, 22 were made by loggerheads and 2 by greens. Locations of nests and false crawls are shown in Figure 2, a map of the

survey area with each column of symbols representing activity on a 0.5 mile section of beach (35 sections). While not a record, these numbers continue a trend of increased nesting and more species diversity observed since 2012. Tables 1-2 provide detailed information on each nest and false crawl, including the location and date found. Additional findings are as follows:

- Loggerhead nests produced 1380 hatchlings from 2871 eggs, giving overall emergence success of 48% (31 evaluated nests). Excluding washed-out nests, the average nest size was 100 eggs (range 66-151). The average incubation period was 63 days (range 55-75, 17 nests). See Figures 3-4 and Table 3.
- Green nests produced only 26 hatchlings from 690 eggs, giving an overall emergence success of 4% (5 evaluated nests). The average nest size was 138 eggs (range 114-169), and average incubation period was 64 days (range 60-70, 3 nests). See Figures 3-4 and Table 4.
- One tropical storm (Cristobal) and three hurricanes (Laura, Sally, and Delta) flooded many nests. Ten nests were completely washed away, 9 were partially washed out, and another 16 were washed over by high surf from the storms.
- Metal flipper tags were applied to three nesting loggerheads encountered at night. Cleaning crews operating at night during Leave No Trace ordinance enforcement encountered two nesting loggerheads and two green turtles.
- Eggs were not found at the excavation attempt for one green nest. It is possible that eggs were present and we simply missed them, or we may have incorrectly identified the nest which was actually a false crawl. The nest designation was not changed per FWC guidelines.
- Two loggerhead nests were missed by the morning surveys and found by tourists who saw the nesting turtle. The nests were marked and evaluated after hatching.
- Three loggerhead nests were subjected to poaching attempts showing evidence digging for eggs within the marked nest area. The incidents were reported to FWC. No eggs appear to have been taken at two nests. Digging into the clutch was observed at one nest.
- No nests were relocated. All were left in place this year.

Stranding Activities. Seven (7) loggerheads and two Kemp's ridleys stranded within the survey area between May and October (Table 5). All were found dead on the beach or in the surf, and two were entangled in monofilament.

Beachfront Lighting Affecting Nesting and Hatchling Turtles. Compared to last year, significantly fewer lighting incidents occurred this season due to storm flooding which damaged many nests, resulting in low hatchling production. However, artificial lights from beachfront development continue to be a serious threat to sea turtles on our urban beach. We provided a report to FWC with more on this subject, including methodology and copies of the disorientation reports. Key results are as follows:

- Lights affected 59% of hatchlings that emerged at night (611 of 1040) from 12 nests.
- Hatchling mortality was documented at 4 nests. We estimated that 171 disoriented hatchlings were lost in dune vegetation or taken by predators.
- Lights from single family homes (interior and exterior) contributed 43% of the disorientation incidents, along with condo lights (interior and exterior) which contributed 35%. See Figure 5 for details.
- Only one disorientation incident of an adult female was recorded this season, a green turtle that wandered about 200 feet in the dunes after nesting.

Beach Furniture Affecting Nesting Turtles. Nesting turtles encountered obstructions on the beach at night at 21% of the nests (10 of 47 nests) and 6 false crawls (Table 6). As in previous years, the obstructions were almost exclusively vendor-owned lounge chairs left on the beach at night, often in tightly spaced rows near the shoreline.

Seabird Monitoring Coordination. Turtle Watch surveyors coordinated with FWC personnel who surveyed the beach for seabird nesting activity. FWC posted four locations within the survey area to protect nesting least terns and black skimmers: Bid-a-Wee Beach, Russell-Fields City Pier, Laguna Beach, and Santa Monica Beach. Key results provided by FWC are as follows:

- All sites suffered nest failures during Tropical Storm Cristobal in June, but many birds successfully re-nested after that event.
- Bid-a-Wee Beach had approximately 11 black skimmer nests and fledged 3 chicks. Least terns did not use the Bid-a-Wee site this year.
- Russell-Fields City Pier had no successful nesting. Least terns were observed courting, but the site was abandoned before any nests were laid and birds did not return.
- Laguna Beach had 24 least tern nests and fledged 3 chicks.
- Santa Monica Beach had the most nesting with at least 30 least tern nests and 4 black skimmer nests. However, the site only fledged 10 least tern chicks.
- Major threats to nesting seabirds are vehicles driving on the beach and domestic cats which are believed to have caused many nesting failures this year.

Beach Cleaning Coordination. Turtle Watch supported beach cleaning in two ways. Our morning surveys used walkers along with riders on all-terrain vehicles to accommodate beach cleaning by Coastal Parasail. Turtle Watch surveyors notified the beach cleaner immediately when sections were cleared or nests identified. Additionally, Turtle Watch provided Wildlife Observers as part of nighttime enforcement of the Leave No Trace ordinance. Coastal Parasail operated small vehicles on the beach at night between June 18 and September 13, removing tents and other personal gear covered by the ordinance. To maintain physical distance from the cleaning crew during the pandemic, Wildlife Observers drove ahead of crews in a separate vehicle provided by Coastal Parasail, watching for nesting and hatchling turtles and other wildlife, including seabirds. The cleaning crews followed in a separate vehicle and were advised to halt operations and turn off vehicle lights when turtles were observed, as happened on four occasions. Crews received training from Turtle Watch representatives on driving practices to minimize impacts on beach wildlife.

Street Light Management. Recent meetings of the Panama City Beach Community Redevelopment Agency (CRA) discussed street lights affecting sea turtles. At the September meeting, I presented results showing that street lights are the second most common cause of hatchling disorientation incidents on Panama City Beach, based on reports filed to FWC since 2013 when our lighting ordinances went into full effect (Figure 6). Most of these lights are located on Front Beach Road, just outside of the ordinance boundary, which generally follows the southern border of the roadway. The ordinances have therefore not led to significant improvements in street lighting. The CRA will investigate the use of “intelligent” street lighting that can be manually dimmed, brightened, and have their color changed to reduce impacts to sea turtles. These lights would be installed on future re-development segments of Front Beach Road.

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 Director

cc: Robbin Trindell (FWC Tallahassee), Meghan Koperski (FWC Tequesta), Beth Mongiovi (FWRI St Petersburg), Nick Vitale (FWC Panama City), Patty Kelly (FWS Panama City), Lisa Armbruster (Sustainable Beaches), Bonnie Samuelson (Audubon Florida), Lauren Albrittain (GWMI), James Tindle (PCB Code Enforcement), Timothy Justice (Bay County Code Enforcement), David Campbell (CRA Manager), Joy Masters (TW Legal)

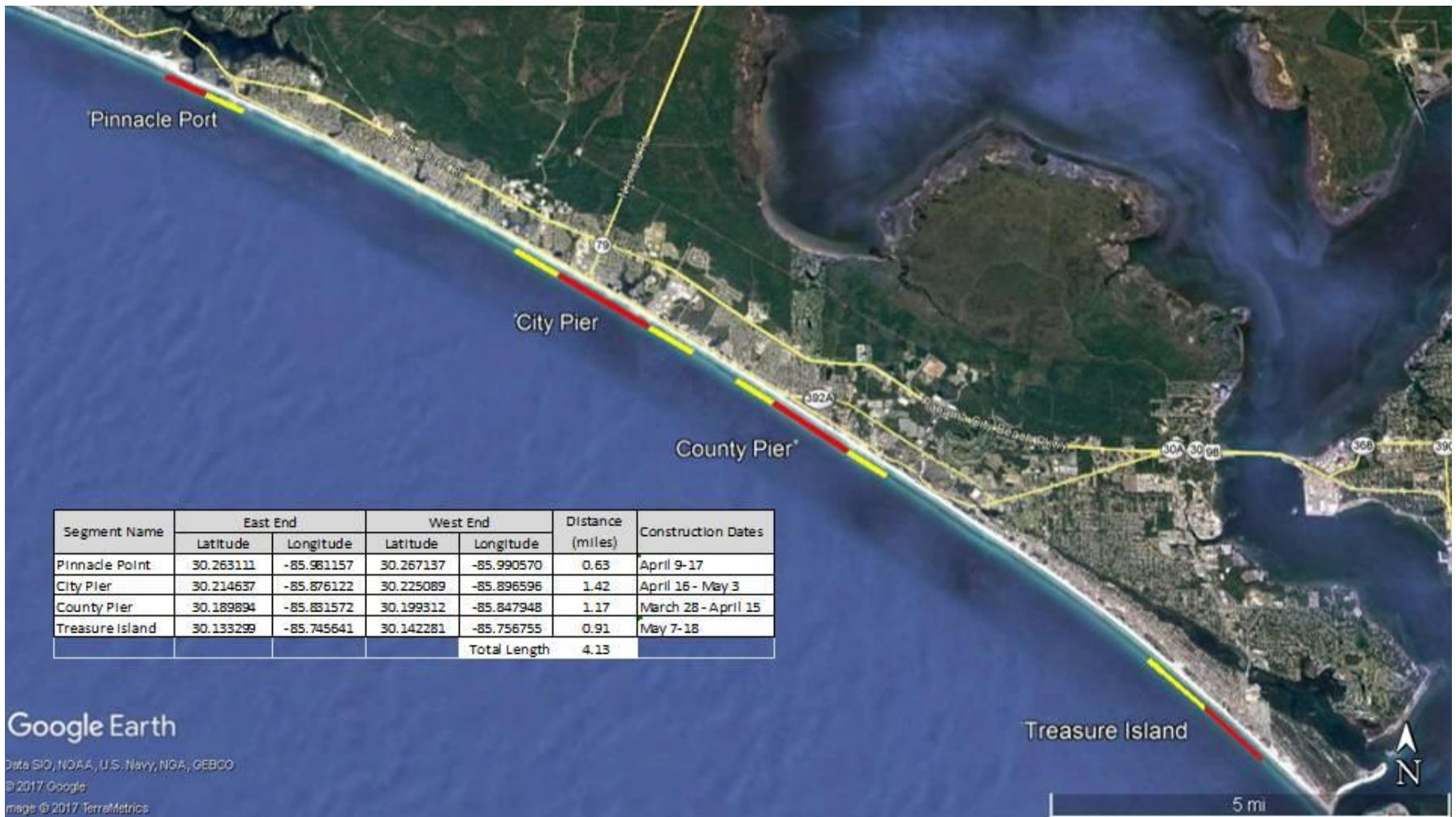


Figure 1. Survey area showing four beach sections nourished in 2017 (red nourished, yellow control).

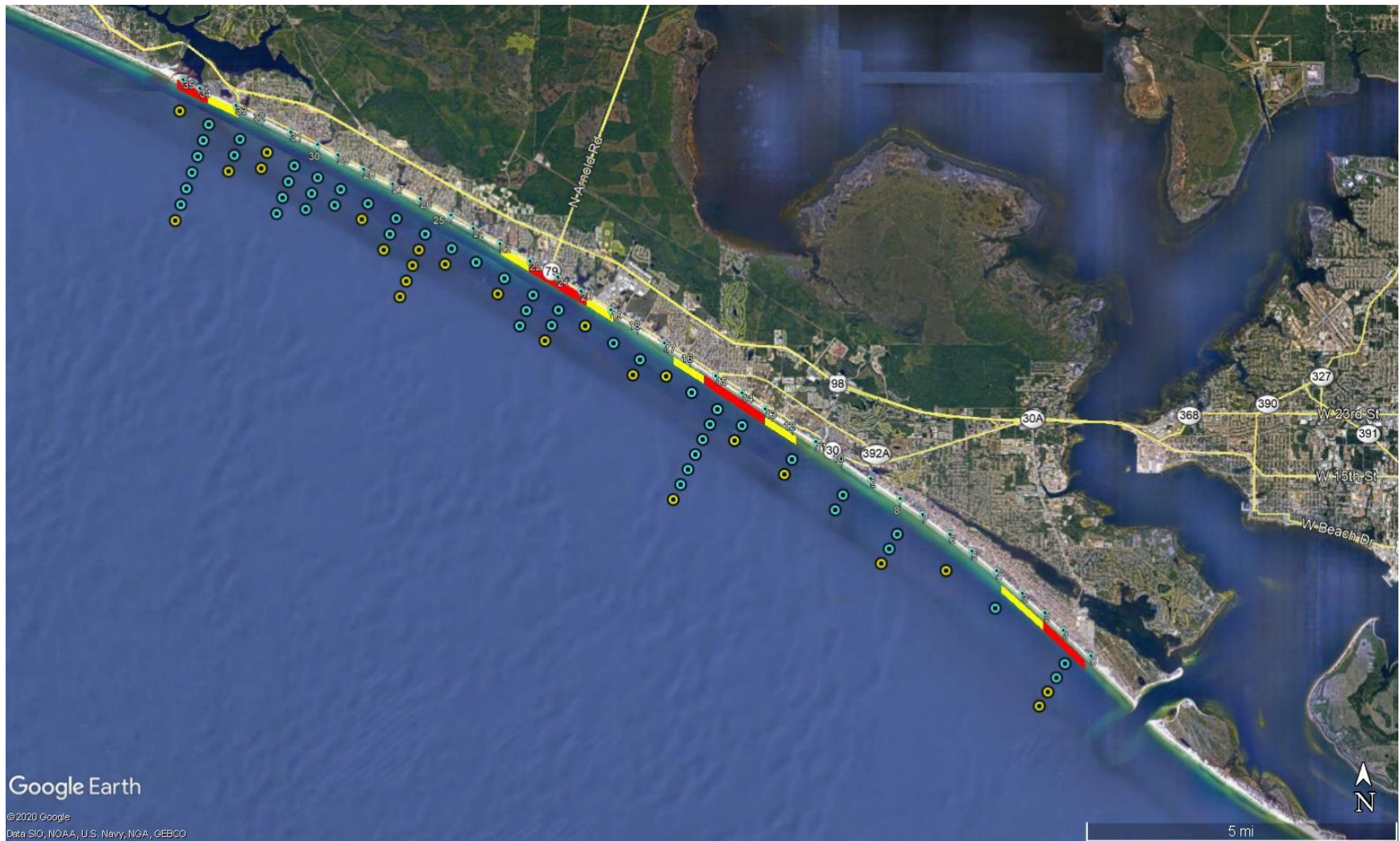
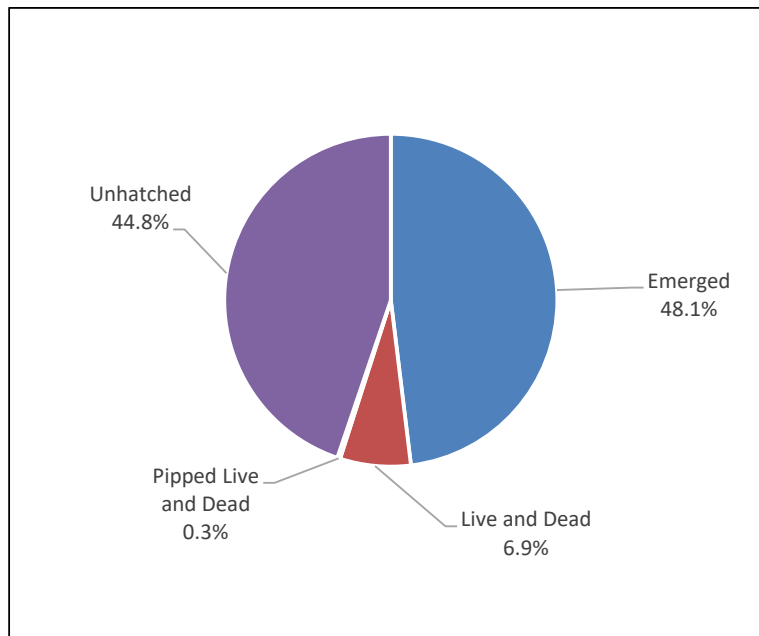
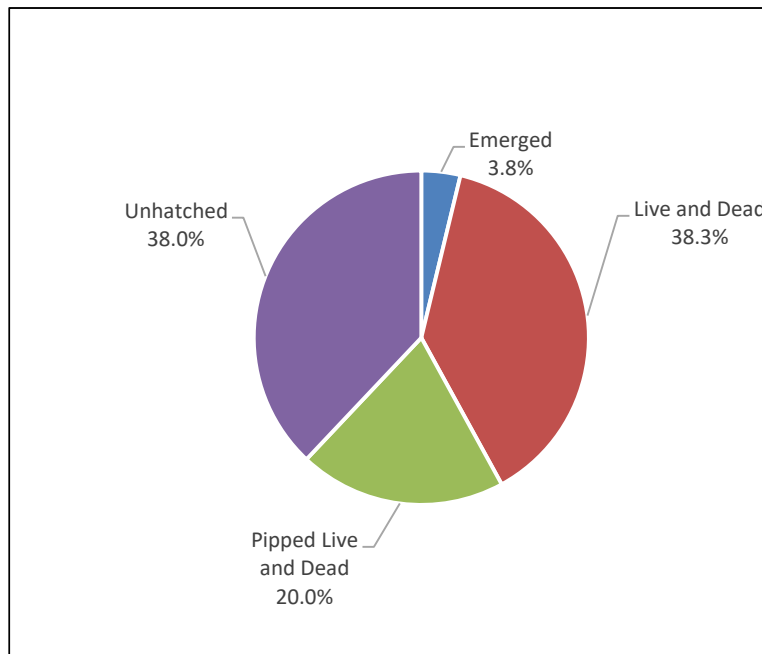


Figure 2. Sea turtle nest and false crawl locations on Panama City Beach in 2020. Each column of symbols represents crawls on ½-mile beach segment (blue circles nests, yellow circles false crawls). Nourished sections shown by red line, control areas yellow.



(a) Loggerhead nests (31 in situ)



(b) Green nests (5 in situ)

Figure 3. Emergence success for loggerhead and green nests on Panama City Beach in 2020 (36 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.

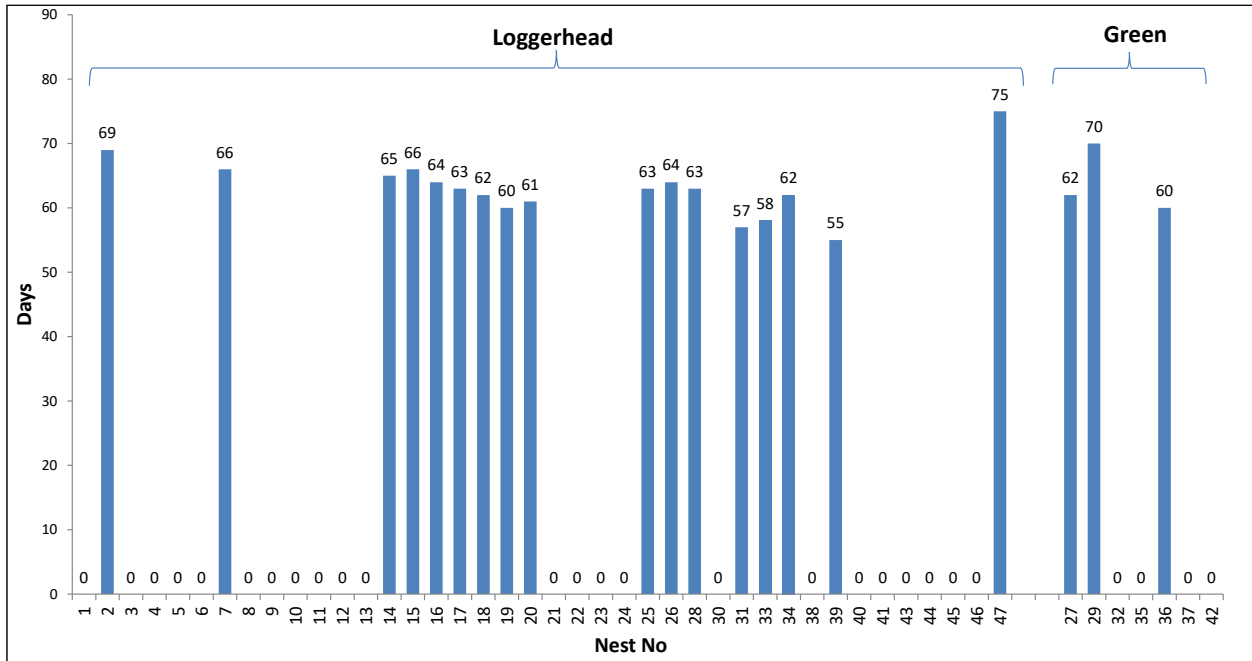


Figure 4. Loggerhead and green incubation periods on Panama City Beach in 2020 (17 loggerhead nests, 3 green nests). Zeroes indicate nests that failed to hatch or had unknown incubation periods.

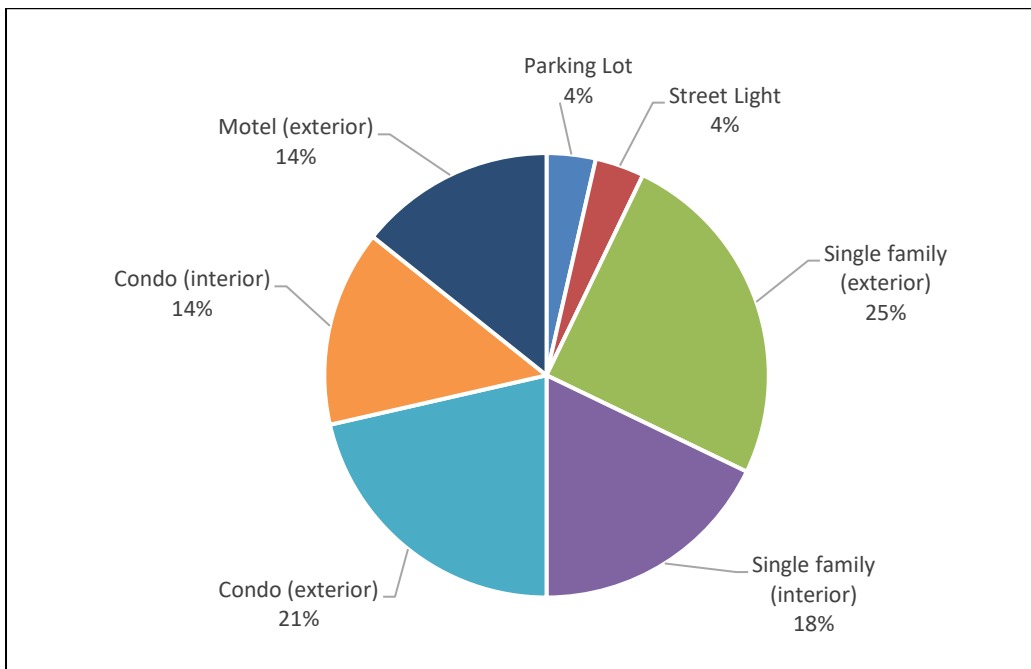


Figure 5. Lights contributing to hatchling disorientation incidents on Panama City Beach in 2020 (7 loggerhead nests).

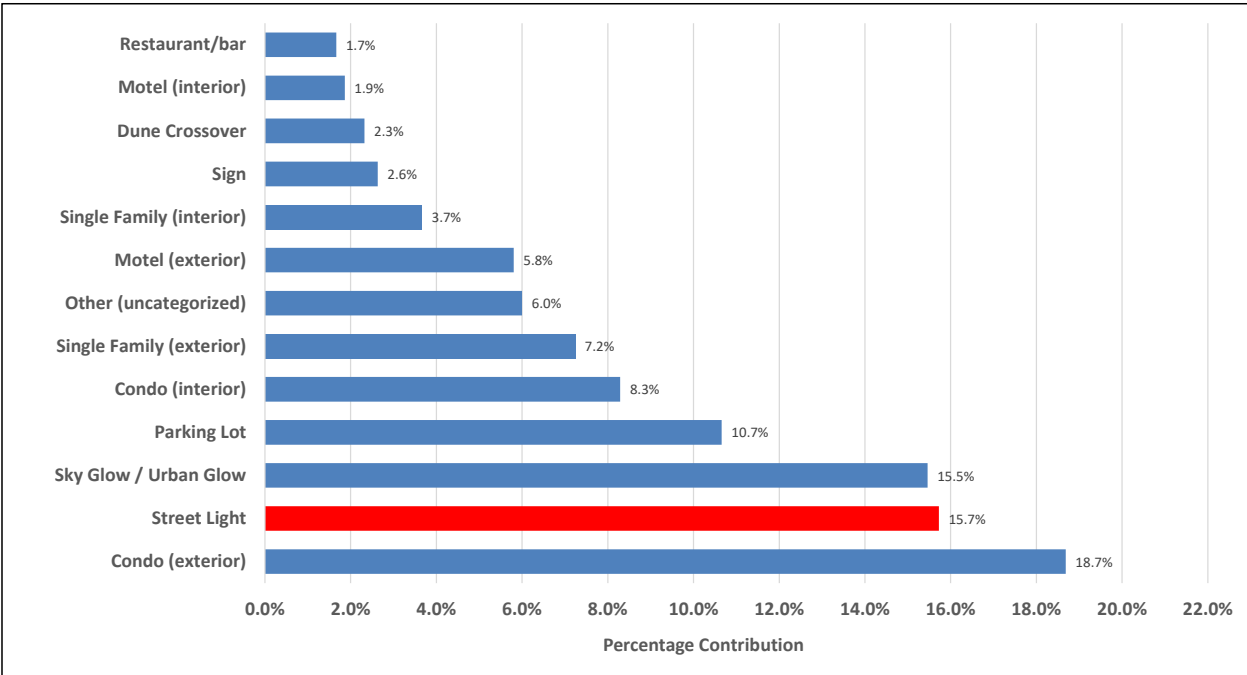


Figure 6. Lights contributing to hatchling disorientation incidents on Panama City Beach during 2013-2020 (152 nests).

Table 1. Sea turtle nest locations and hatching information on Panama City Beach in 2020.  
Latitude/longitude data obtained from GPS unit. Species Cc loggerhead, Cm green, UNK=unknown

Nest No	Species	Address	In Situ or Relocated	Date Laid	Date Hatched	Incubation (days)	Total Eggs	Emerged	Latitude	Longitude
1	Cc	House, 19512 Front Beach Rd	In situ	20-May	UNK	UNK	46	0	30.239199	-85.92577
2	Cc	House, 105 Beachside Ct, Carillon Beach	In situ	20-May	27-Jul	69	69	18	30.262188	-85.978441
3	Cc	Sharky's Restaurant, 15201 Front Beach Rd	In situ	25-May	UNK	UNK	66	0	30.208088	-85.864457
4	Cc	Aqua Resort, 15625 Front Beach Rd	In situ	27-May	UNK	UNK	107	1	30.21155	-85.87091
5	Cc	House, 13217 Oleander Dr	In situ	28-May	UNK	UNK	8	0	30.196841	-85.844115
6	Cc	Latitude 29 Condo, 21703 Front Beach Rd	In situ	30-May	UNK	UNK	UNK	0	30.252711	-85.955681
7	Cc	Townhouse, 17175 Front Beach Rd	In situ	31-May	5-Aug	66	86	8	30.223187	-85.893188
8	Cc	House, 13309 Oleander Dr	In situ	1-Jun	UNK	UNK	99	0	30.197245	-85.844640
9	Cc	Commodore Condo, 4715 Thomas Dr	In situ	2-Jun	UNK	UNK	41	0	30.136589	-85.749678
10	Cc	House, 376 Beachside Dr, Carillon Beach	In situ	2-Jun	UNK	UNK	150	0	30.262088	-85.978113
11	Cc	Springhill Suites, 12513 Front Beach Rd	In situ	3-Jun	UNK	UNK	UNK	0	30.191344	-85.834566
12	Cc	House, 408 Beachside Dr, Carillon Beach	In situ	4-Jun	UNK	UNK	101	0	30.260969	-85.976148
13	Cc	Nautical Watch Condo, 6205 Thomas Dr	In situ	6-Jun	UNK	UNK	UNK	0	30.149250	-85.765840
14	Cc	Vacant lot, 21328 Front Beach Rd	In situ	10-Jun	13-Aug	65	89	86	30.251280	-85.951791
15	Cc	House, 17811 Front Beach Rd	In situ	13-Jun	18-Aug	66	113	111	30.233853	-85.913985
16	Cc	House, 386 Beachside Dr,	In situ	16-Jun	19-Aug	64	91	85	30.261650	-85.977097

Carillon Beach										
17	Cc	House, 21222 Front Beach Rd	In situ	19-Jun	20-Aug	63	76	73	30.250322	-85.949751
18	Cc	Townhouse, 17329 Front Beach Rd	In situ	19-Jun	19-Aug	62	92	91	30.225455	-85.897436
19	Cc	House, 20205 Front Beach Rd	In situ	20-Jun	18-Aug	60	124	119	30.24371	-85.935585
20	Cc	Gulf Crest Condo, 8715 Surf Dr	In situ	21-Jun	20-Aug	61	93	84	30.166243	-85.790798
21	Cc	Beachside Resort, 21905 Front Beach Rd	In situ	21-Jun	UNK	UNK	86	0	30.254137	-85.958953
22	Cc	Long Beach Resort, 10511 Front Beach Rd	In situ	24-Jun	UNK	UNK	91	1	30.176743	-85.808856
23	Cc	Panama City Resort and Club, 16709 Front Beach Rd	In situ	25-Jun	UNK	UNK	91	0	30.219256	-85.885490
24	Cc	House, 13700 Front Beach Rd	In situ	25-Jun	UNK	UNK	87	58	30.199403	-85.848252
25	Cc	Shoreline Villas, 23007 Front Beach Rd	In situ	25-Jun	26-Aug	63	110	102	30.259778	-85.97246
26	Cc	Townhouse, 17655 Front Beach Rd	In situ	26-Jun	29-Aug	64	97	30	30.231429	-85.909704
27	Cm	Shores Townhouses, 22519 Front Beach Rd	In situ	27-Jun	27-Aug	62	152	14	30.258322	-85.969146
28	Cc	House, 378 Beachside Dr, Carillon Beach	In situ	28-Jun	29-Aug	63	106	101	30.262022	-85.977973
29	Cm	House, 21507 Front Beach Rd	In situ	30-Jun	8-Sep	70	124	2	30.251961	-85.95355
30	Cc	Gulf Crest Condo, 8715 Surf Dr	In situ	2-Jul	UNK	UNK	UNK	0	30.16636	-85.79122
31	Cc	House, 13223 Oleander Dr	In situ	4-Jul	29-Aug	57	122	115	30.196171	-85.842821
32	Cm	House, 21106 Front Beach Rd	In situ	4-Jul	UNK	UNK	UNK	0	30.249616	-85.948080
33	Cc	Townhouse, 17195 Front Beach Rd	In situ	5-Jul	1-Sep	58	82	78	30.223673	-85.893877
34	Cc	Holiday Inn Express, 12907 Front Beach Rd	In situ	11-Jul	10-Sep	62	78	72	30.193633	-85.838340

35	Cm	House, 19100 Front Beach Rd	In situ	12-Jul	UNK	UNK	UNK	0	30.236677	-85.920397
36	Cm	House, 21126 Front Beach Rd	In situ	12-Jul	10-Sep	60	131	0	30.249838	-85.948727
37	Cm	House, 13215 Oleander Dr	In situ	14-Jul	UNK	UNK	114	10	30.197069	-85.844100
38	Cc	Polynesian Village Condo, 16621 Front Beach Rd	In situ	19-Jul	UNK	UNK	151	16	30.218454	-85.883717
39	Cc	Townhouse, 19947 Front Beach Rd	In situ	20-Jul	13-Sep	55	127	119	30.241625	-85.931368
40	Cc	Ocean Towers Condo, 11211 Front Beach Rd	In situ	24-Jul	UNK	UNK	112	0	30.182956	-85.819328
41	Cc	House, 4811 Spyglass Dr	In situ	26-Jul	UNK	UNK	UNK	0	30.137806	-85.751121
42	Cm	House, 320 Beachside Dr, Carillon Beach	In situ	28-Jul	UNK	UNK	UNK	0	30.263510	-85.981334
43	Cc	Latitude 29 Condo, 21703 Front Beach Rd	In situ	29-Jul	UNK	UNK	UNK	0	30.252849	-85.955741
44	Cc	Townhouse, 17135 Front Beach Rd	In situ	5-Aug	UNK	UNK	UNK	0	30.221765	-85.890326
45	Cc	Sugar Sands Motel, 20723 Front Beach Rd	In situ	6-Aug	UNK	UNK	UNK	0	30.246625	-85.942064
46	Cc	Long Beach Resort, 10511 Front Beach Rd	In situ	8-Aug	UNK	UNK	UNK	0	30.176600	-85.808780
47	Cc	House, 13221 Oleander Dr	In situ	9-Aug	23-Oct	75	80	12	30.196090	-85.842689

Table 2. Sea turtle false crawl locations and crawl dates on Panama City Beach in 2020.  
Latitude/longitude data obtained from GPS unit. Species Cc loggerhead, Cm green.

Crawl No	Species	Address	Crawl Date	Latitude	Longitude
1	Cc	House, 4819 Spyglass Dr	6-May	30.13823	-85.75160
2	Cc	Pinnacle Port Condo, 23223 Front Beach Rd	20-May	30.26501	-85.98649
3	Cc	Alvin's Island, 14520 Front Beach Rd	27-May	30.20458	-85.85792
4	Cc	Seaside Villas, 4701 Thomas Dr	9-Jun	30.13558	-85.74844
5	Cm	House, 22409 Front Beach Rd	11-Jun	30.25707	-85.96644
6	Cc	House, 18290 Front Beach Rd	13-Jun	30.23602	-85.91930
7	Cc	House, 296 Beachside Dr, Carillon Beach	16-Jun	30.26389	-85.98320
8	Cc	Calypso Resort, 15817 Front Beach Rd	18-Jun	30.21340	-85.87458
9	Cc	Edgewater Beach Resort, 11212 Front Beach Rd	18-Jun	30.18460	-85.82218
10	Cc	House, 22313 Front Beach Rd	20-Jun	30.25630	-85.96465
11	Cc	Harpoon Harry's Restaurant, 12627 Front Beach Rd	22-Jun	30.19254	-85.83646
12	Cc	House, 18920 Front Beach Rd	22-Jun	30.23601	-85.91933
13	Cc	House, 19516 Front Beach Rd	23-Jun	30.24521	-85.93920
14	Cc	Holiday Inn Express, 12907 Front Beach Rd	24-Jun	30.19481	-85.84010
15	Cc	Bonita Beach Condo, 17921 Front Beach Rd	24-Jun	30.23542	-85.91813
16	Cc	Pineapple Villas, 19979 Front Beach Rd	27-Jun	30.24200	-85.93217
17	Cc	Townhouse, 8009 Surf Dr	28-Jun	30.16060	-85.78255
18	Cc	Summit Condo, 8743 Thomas Dr	4-Jul	30.16706	-85.79245
19	Cc	Townhouse, 17329 Front Beach Rd	4-Jul	30.22553	-85.89732
20	Cm	The Reef at Seahaven Hotel, 15285 Front Beach Rd	10-Jul	30.20753	-85.86344
21	Cc	Splash Condo, 17739 Front Beach Rd	10-Jul	30.23254	-85.91182
22	Cc	Townhouse, 17927 Front Beach Rd	17-Jul	30.23576	-85.91873
23	Cc	Pirates Cove Villas, 23001 Front Beach Rd	29-Jul	30.25947	-85.97155
24	Cc	Fair Oaks Condo, 16911 Front Beach Rd	30-Jul	30.22043	-85.88764

Table 3. Loggerhead nest excavation data on Panama City Beach in 2020 (31 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. **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	In Situ or Relocated
1	46	0	0	0	0	0	46	0.00	In situ
2	69	18	0	0	0	0	51	0.26	In situ
3	66	0	0	0	0	0	66	0.00	In situ
4	107	1	1	2	0	1	102	0.01	In situ
5	8	0	0	0	0	0	8	0.00	In situ
7	86	8	0	1	0	3	74	0.09	In situ
8	99	0	0	0	0	0	99	0.00	In situ
9	41	0	0	0	0	0	41	0.00	In situ
10	150	0	0	0	0	0	150	0.00	In situ
12	101	0	0	0	0	0	101	0.00	In situ
14	89	86	0	1	0	0	2	0.97	In situ
15	113	111	0	0	0	0	2	0.98	In situ
16	91	85	2	0	0	0	4	0.93	In situ
17	76	73	0	0	0	0	3	0.96	In situ
18	92	91	0	0	0	0	1	0.99	In situ
19	124	119	1	0	0	0	4	0.96	In situ
20	93	84	0	0	0	0	9	0.90	In situ
21	86	0	0	0	0	0	86	0.00	In situ
22	91	1	0	78	0	0	12	0.01	In situ
23	91	0	0	0	0	0	91	0.00	In situ
24	87	58	0	0	0	0	29	0.67	In situ
25	110	102	0	1	0	0	7	0.93	In situ
26	97	30	0	0	0	0	67	0.31	In situ
28	106	101	0	0	0	2	3	0.95	In situ
31	122	115	0	1	0	0	6	0.94	In situ
33	82	78	0	0	0	0	4	0.95	In situ
34	78	72	0	2	0	0	4	0.92	In situ
38	151	16	0	105	0	0	30	0.11	In situ
39	127	119	1	1	0	1	5	0.94	In situ
40	112	0	0	0	0	0	112	0.00	In situ
47	80	12	0	0	1	0	67	0.15	In situ
<b>TOTAL</b>	<b>2871</b>	<b>1380</b>	<b>5</b>	<b>192</b>	<b>1</b>	<b>7</b>	<b>1286</b>	<b>0.48</b>	
<b>Excluding Wash-outs</b>	<b>2197</b>	<b>1201</b>	<b>4</b>	<b>191</b>	<b>0</b>	<b>6</b>	<b>795</b>	<b>0.55</b>	

Table 4. Green nest excavation data on Panama City Beach in 2020 (5 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.

<b>Nest No</b>	<b>Eggs</b>	<b>Emerged</b>	<b>Live in Nest</b>	<b>Dead in Nest</b>	<b>Pipped Live</b>	<b>Pipped Dead</b>	<b>Unhatch</b>	<b>Emergence Success</b>	<b>In Situ or Relocated</b>
27	152	14	0	118	0	0	20	0.09	In situ
29	124	2	0	0	0	13	109	0.02	In situ
36	131	0	8	100	0	1	22	0.00	In situ
37	114	10	0	37	0	0	67	0.09	In situ
42	169	0	0	1	0	124	44	0.00	In situ
<b>TOTAL</b>	<b>690</b>	<b>26</b>	<b>8</b>	<b>256</b>	<b>0</b>	<b>138</b>	<b>262</b>	<b>0.04</b>	

Table 5. Sea turtle strandings on Panama City Beach from May to October 2020.  
 Latitude/longitude data obtained from GPS unit or estimated from Google Earth.  
 Species Cc loggerhead, Lk Kemp's ridley.

No.	Date	Location	Latitude	Longitude	Species	Shell Length (inches)	Final Disposition
1	6-May	Aqua Resort, 15625 Front Beach Rd	30.21164	-85.87125	Lk	24.7	Dead on beach, disposed in landfill
2	8-May	House, 8225 Surf Dr	30.16260	-85.78524	Cc	38.8	Dead on beach, disposed in landfill
3	31-May	Russell-Fields City Pier, 16201 Front Beach Rd	30.21504	-85.87804	Cc	30.5	Dead in water at pier, entangled in line, disposed in landfill
4	6-Jun	Aqua Resort, 15625 Front Beach Rd	30.21140	-85.87086	Cc	38.5	Dead on beach, disposed in landfill
5	12-Jul	Venture Out Beach Rentals, 4345 Thomas Dr	30.13543	-85.74802	Lk	23.1	Dead on beach, entangled in line, disposed in landfill
6	7-Aug	Edgewater Beach Resort, 11212 Front Beach Rd	30.18377	-85.82105	Cc	31.5	Dead on beach, disposed in landfill
7	28-Aug	Majestic Condo, 10901 Front Beach Rd	30.18008	-85.81443	Cc	32.9	Dead on beach, disposed in landfill
8	18-Sep	Splash Condo, 17739 Front Beach Rd	30.23247	-85.91167	Cc	32.9	Dead on beach, hook in mouth, tags in front flippers, salvaged
9	18-Oct	Townhouse, 17185 Front Beach Rd	30.22306	-85.89314	Cc	36.0	Dead in surf, disposed in landfill

Table 6. Obstacles encountered by sea turtles during nesting attempts on Panama City Beach in 2020. Latitude/longitude data obtained from GPS unit. Species Cc loggerhead, Cm green.

Crawl No	Species	Crawl Type	Address	Latitude	Longitude	Incident Date	Obstacles Encountered
4	Cc	Nest	Aqua Resort, 15625 Front Beach Rd	30.21155	-85.87091	27-May-20	lounge chairs
7	Cc	Nest	Townhouse, 17175 Front Beach Rd	30.223187	-85.893188	31-May-20	Hole
9	Cc	Nest	Commodore Condo, 4715 Thomas Dr	30.136589	-85.749678	2-Jun-20	lounge chairs
16	Cc	Nest	House, 386 Beachside Dr, Carillon Beach	30.26165	-85.977097	16-Jun-20	lounge chairs
20	Cc	Nest	Gulf Crest Condo, 8715 Surf Dr	30.166243	-85.790798	21-Jun-20	lounge chairs
30	Cc	Nest	Gulf Crest Condo, 8715 Surf Dr	30.16636	-85.79122	2-Jul-20	lounge chairs
34	Cc	Nest	Holiday Inn Express, 12907 Front Beach Rd	30.193633	-85.83834	11-Jul-20	lounge chairs
40	Cc	Nest	Ocean Towers Condo, 11211 Front Beach Rd	30.182956	-85.819328	24-Jul-20	lounge chairs
42	Cm	Nest	House, 320 Beachside Dr, Carillon Beach	30.26351	-85.981334	28-Jul-20	lounge chairs
45	Cc	Nest	Sugar Sands Motel, 20723 Front Beach Rd	30.246625	-85.942064	6-Aug-20	wooden post for jet ski vendor
1	Cc	False Crawl	House, 4819 Spyglass Dr	30.13823	-85.7516	6-May	concrete stormwater outfall
8	Cc	False Crawl	Calypso Resort, 15817 Front Beach Rd	30.2134	-85.87458	18-Jun	lounge chairs
9	Cc	False Crawl	Edgewater Beach Resort, 11212 Front Beach Rd	30.1846	-85.82218	18-Jun	lounge chairs
20	Cm	False Crawl	The Reef at Seahaven Hotel, 15285 Front Beach Rd	30.20753	-85.86344	10-Jul	lounge chairs
21	Cc	False Crawl	Splash Condo, 17739 Front Beach Rd	30.23254	-85.91182	10-Jul	lounge chairs
22	Cc	False Crawl	Townhouse, 17927 Front Beach Rd	30.23576	-85.91873	17-Jul	Hole 3 ft diameter, 3 ft deep