

**CAPE HATTERAS NATIONAL SEASHORE  
SEA TURTLE MONITORING  
2012 ANNUAL REPORT**



National Park Service  
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## **ABSTRACT**

In 2012, 222 sea turtle nests (219 loggerhead nests, two green nests, and one leatherback nest) and 169 false crawls were documented at Cape Hatteras National Seashore (CAHA). The first nest was documented on May 11 and the last nest was documented on August 26, with all false crawls being observed between these dates. Mean hatch success for all nests was 79% while mean emergence success was 73%. A total of 126 stranded sea turtles were documented within CAHA in 2012 (Appendix A).

## **INTRODUCTION**

Five species of sea turtles can be found in CAHA– the loggerhead (*Caretta caretta*), green (*Chelonia mydas*), leatherback (*Dermochelys coriacea*), hawksbill (*Eretmochelys imbricata*), and Kemp's ridley (*Lepidochelys kempii*). In the 1970's, the leatherback, Kemp's ridley, and hawksbill were listed under the Federal Endangered Species Act (ESA) as endangered and the loggerhead as threatened. The green population that nests in the Northwest Atlantic was listed on July 28, 1978, and is designated as threatened.

Non-breeding sea turtles of all five species can be found in the near-shore waters during much of the year (Epperly 1995). CAHA lies near the extreme northern limit of nesting for four of the five sea turtle species, including the loggerhead, green, Kemp's ridley and leatherback. Hawksbill sea turtles are not known to nest at CAHA, but are known to occur here through strandings. The occasional Kemp's ridley nest has been documented in North Carolina over the past five years and in 2011 CAHA documented its first Kemp's ridley nest.

CAHA has been monitoring sea turtle activity since 1987 and standard operating procedures have been developed during this time. This report summarizes the monitoring results for 2012, comparisons to results from previous years, and the resource management activities undertaken for turtles in 2012. CAHA follows management guidelines defined by the North Carolina Wildlife Resources Commission (NCWRC) in the *Handbook for Sea Turtle Volunteers in North Carolina*, species recovery plans, and the Cape Hatteras National Seashore Off-Road Vehicle Management Plan and Special Regulation (ORV Management Plan).

### **ORV Management Plan**

On February 15, 2012 the ORV Management Plan was enacted at CAHA. It was developed from 2007-2012 and included a special regulation detailing requirements for off- road vehicle (ORV) use at CAHA. A copy of the ORV Management Plan and other related documents are available electronically at <http://parkplanning.nps.gov/caha>. It includes establishment of an ORV permit system to drive on CAHA beaches. It also establishes survey times and frequency and buffer requirements for sea turtle nests and hatchlings. This was the first year the ORV Management Plan guided the management of protected species, including sea turtles, at CAHA.

The Record of Decision indicates that CAHA will "conduct a systematic review of data, annual reports, and other information every 5 years, after a major hurricane, or if necessitated by a significant change in protected species status (e.g. listing or de-listing), in order to evaluate the

effectiveness of management actions in making progress toward the accomplishment of stated objectives". As part of the Reporting Requirements of the Biological Opinion (BO) for the Off-road Vehicle Management Plan (November 15, 2010), "an annual report detailing the monitoring and survey data collected during the preceding breeding season (as described in alternative F, in addition to the additional information required in the ...Terms and Conditions) and summarizing all piping plover, seabeach amaranth, and sea turtle data must be provided to the Raleigh Field Office by January 31 of each year for review and comment".

### **Cooperating Agencies**

CAHA cooperates with the National Marine Fisheries Service (NMFS), United States Fish and Wildlife Service (USFWS), and NCWRC on sea turtle protection. All nesting activity and stranding reports are reported to the North Carolina Sea Turtle Program Coordinator at NCWRC through the seaturtle.org website. An annual permit is issued to CAHA by NCWRC under the authority of the USFWS for the possession and disposition of stranded marine turtles and relocation of nests.

## **METHODS**

### **Nesting Activity**

Monitoring for sea turtle nesting activity began on May 1. Patrols utilizing UTVs (or 4X4s during inclement weather) were conducted in the morning, beginning approximately at dawn. Each nesting activity was recorded as either a false crawl or nest. All nests were confirmed by locating eggs at the nest site. One egg was taken from each clutch for research purposes. The decision to relocate the nest or for the nest to remain in situ was made at the time of nest discovery. If no eggs were laid, the nesting activity was considered a false crawl and recorded by collecting a GPS point at the apex of the crawl. All sea turtle "activities" were reported to NCWRC using the Sea Turtle Nest Monitoring System (STNMS) through the seaturtle.org website.

All nests were protected from human disturbance by installing a 10 x 10 meter signed area around the nest site. At day 50 – 55 of incubation, a closure beginning approximately 10 meters behind the nest and extending to the water line was installed, varying in width from 25 to 52.5 meters. This closure protected the nest site and hatchlings from human disturbance during hatching events. Each nest site was checked daily in order to document any disturbances or hatching events.

Approximately 72 hours after an initial hatching event, nests were excavated and closures were removed. Resource management staff collected required data to determine hatch and emergence success for each nest excavation. Live hatchlings discovered upon excavation of the nest were collected and released at or after dusk the same day. Monitoring efforts to locate new nests ended Sept 15.

## Stranding Activity

A stranded turtle is a non-nesting turtle that comes to shore either dead, sick or injured. Data were collected for each reported or observed stranding. Whenever possible, further data was collected by performing a necropsy on dead strandings. Live stranded turtles were transported to a facility for treatment and recovery. All data were reported to NCWRC using the Sea Turtle Rehabilitation and Necropsy Database (STRAND) through the Seaturtle.org website.

An increased effort to locate stranded turtles began in early November and continued throughout the winter due to the increased chance of “cold stunned” turtles. Searches for cold stunned turtles emphasized CAHA’s sound side shorelines where the majority of cold stunned turtles have been found in the past. Cold stunning refers to the hypothermic reaction that occurs when sea turtles are exposed to prolonged cold water temperatures. Initial symptoms include a decreased heart rate, decreased circulation, and lethargy followed by shock, pneumonia and possibly death (from [http://www.nero.noaa.gov/prot\\_res/stranding/cold.html](http://www.nero.noaa.gov/prot_res/stranding/cold.html)).

## RESULTS

### Nesting

A total of 222 nests (219 loggerhead nests, two green nests, and one leatherback nest) were confirmed at CAHA in 2012 (Appendix B). Of the confirmed nests, two (0.9%) were found on Bodie Island, 166 (74.8%) on Hatteras Island, and 54 (24.3%) on Ocracoke Island (Appendix C, Maps 1 – 4). This was the most nests recorded at CAHA in a single nesting season (Figure 1) since this data has been collected. The first recorded nest for the 2012 season occurred on May 11 and the last nest was recorded on August 26. While nesting occurred throughout this period, peak nesting occurred from July 1 – 7 (Figure 2).

Figure 1. CAHA Sea Turtle Nest Numbers from 2007–2012.

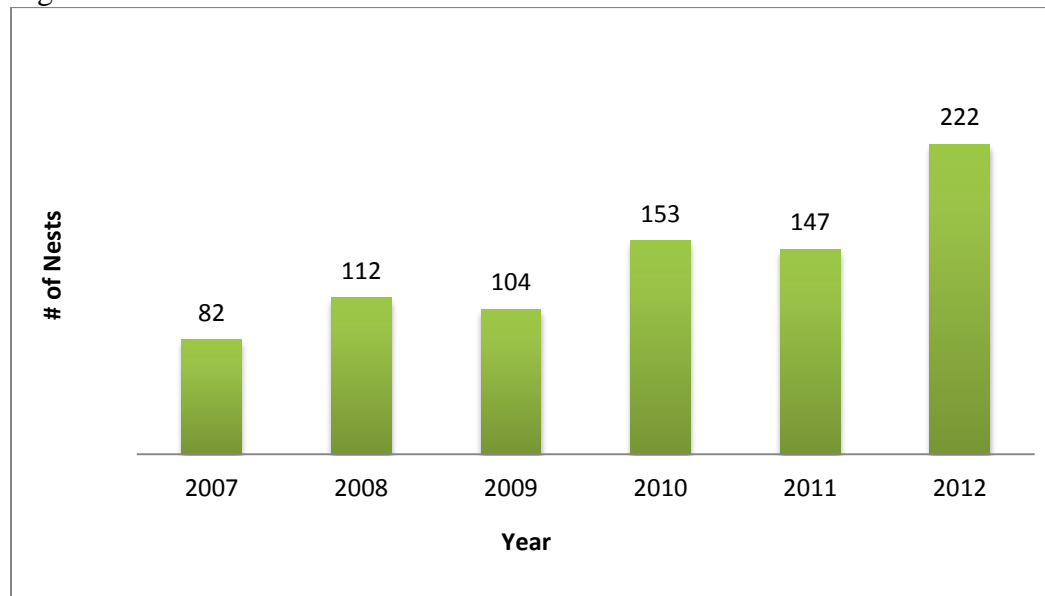
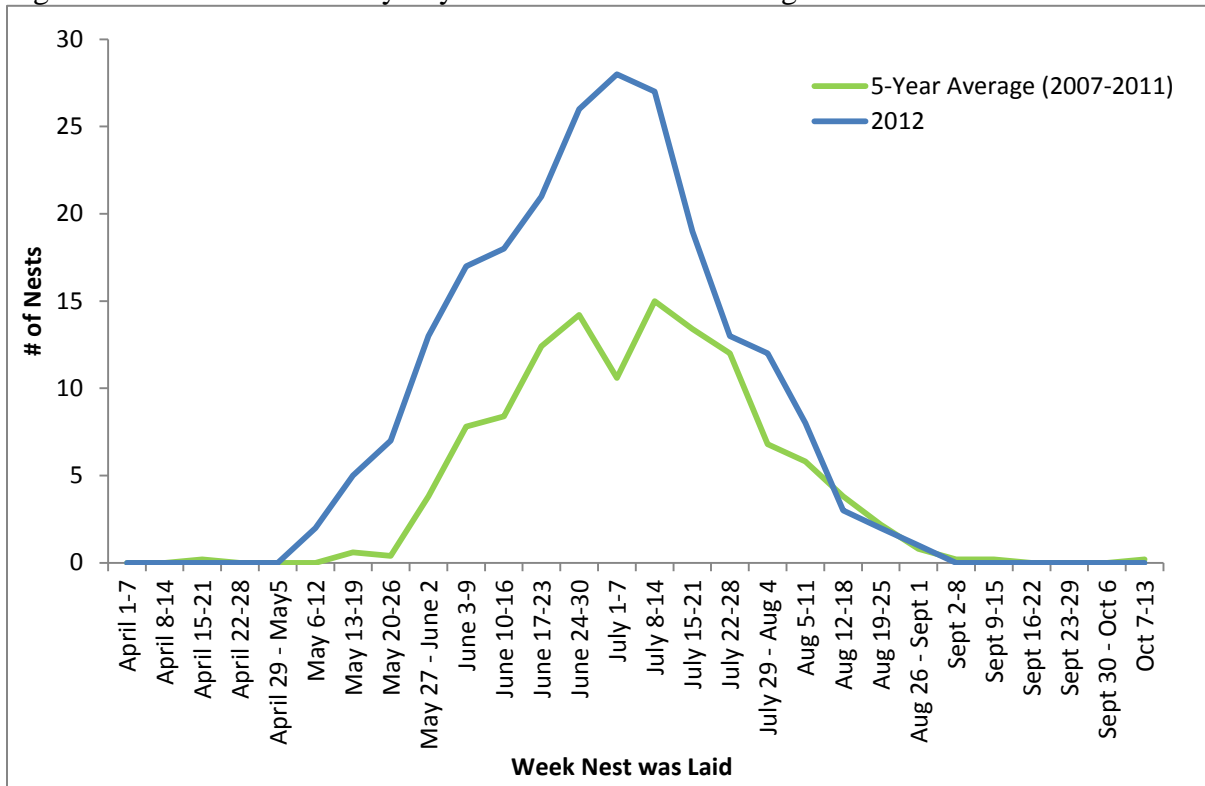


Figure 2. Number of Nests by Lay Date for 2012 and Average of Previous Five Years.



**Nest Relocation**

Of the 222 nests, 54 (24.3%) were relocated. All relocated nests were moved due to natural factors including location of nest at or below high tide line or the nest was laid in an area susceptible to erosion, etc. Relocation methods recommended by NCWRC, found in the *Handbook for Sea Turtle Volunteers in North Carolina* (2006), were followed.

**False Crawls**

During the 2012 breeding season, 169 false crawls or aborted nesting attempts were recorded (Appendix D). False crawls accounted for 43.2% of the 391 total turtle activities. Of the 169 false crawls, one (0.6%) was documented on Bodie Island, 129 (76.3%) on Hatteras Island, and 39 (23.1%) on Ocracoke Island (Appendix C, Maps 5 – 8). There were five documented green turtle false crawls while loggerheads accounted for the remaining 164 false crawls.

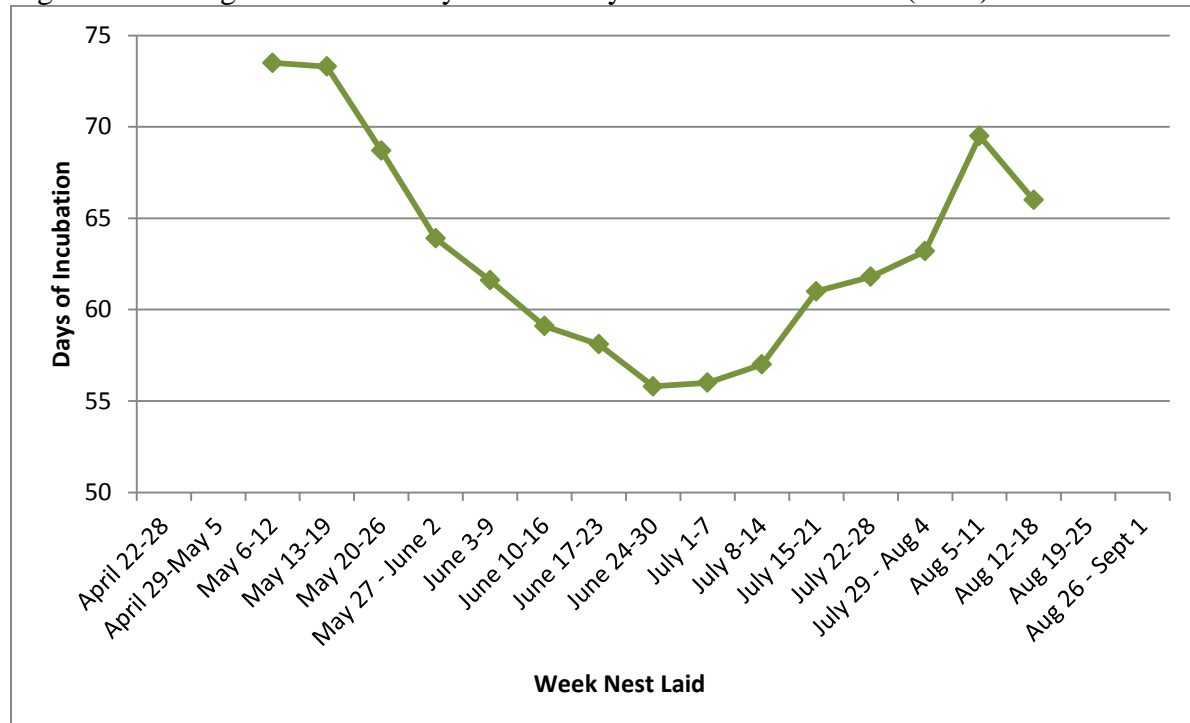
**Hatching**

In 2012, the mean clutch count was 105.3 eggs per nest (Table 1 and Appendix A). The mean clutch count was determined using total egg counts at the time of relocation from relocated nests only. Average incubation period of nests with known lay and emergence dates was 60.1 days (Table 1 and Appendix A). Incubation periods depend mostly upon sand temperature (Bustard and Greenham 1968) and ranged from 48 days to 76 days (Figure 3). Some emergences went undetected due to rain, wind, and tide.

Table 1. Sea Turtle Hatch Summary 2007-2012.

Year	Nests	Mean Clutch	Mean Incubation (days)	Emergence Success
2007	82	112.1	60.7	58%
2008	112	109.0	59.7	52%
2009	104	114.9	65	31%
2010	152	110.9	57	48%
2011	147	115.8	58.5	48%
2012	222	105.3	60.1	73%

Figure 3. Average Incubation Days of Nests by Week Nest was Laid (2012).



Mean emergence success was calculated by taking the unweighted mean of all the individual nest emergence successes. Emergence success is the total number of hatchlings that emerged unaided from the nest cavity, relative to the total number of eggs in the nest. Any hatchlings found during excavations were not considered to have emerged. Mean emergence success for 2012 was 73% (Table 1 and Appendix A).

Mean hatch success was calculated by taking the unweighted mean of all the individual nest hatch successes. Hatching success is the percentage of eggs in a nest that produce hatchlings. Any hatchlings found during excavations, live or dead, were considered hatched. Mean hatch success for 2012 was 79% (Table 1 and Appendix A).

Of the 222 nests observed, 15 had 0% emergence success and 12 had 0% hatch success. Three nests produced hatchlings but had 0% emergence success (NO27, NH129, and NH135). Upon excavation, all hatchlings were dead inside these three nests.

## Strandings

In 2012, 126 stranded sea turtles, including loggerheads, greens, Kemp's ridley, and leatherbacks, were documented within CAHA (Table 2 and Appendix C, maps 9 - 12). Resource management staff assisted with the response and data collection for strandings that were observed outside of CAHA, but these strandings were not included in the data for 2012.

Table 2. Sea Turtle Strandings at CAHA by Species, 2007–2012.

Year <sup>1</sup>	Stranding Totals	Species Composition					
		Logger-head	Kemp's Ridley	Green	Leather-back	Hawksbill	Unk.
2007	90	32	5	50	1	0	2
2008	169	39	34	94	2	0	0
2009	297	53	57	183	2	0	2
2010	444	100	108	235	0	0	1
2011	148	50	46	49	0	0	3
2012	126	34	32	50	2	0	8

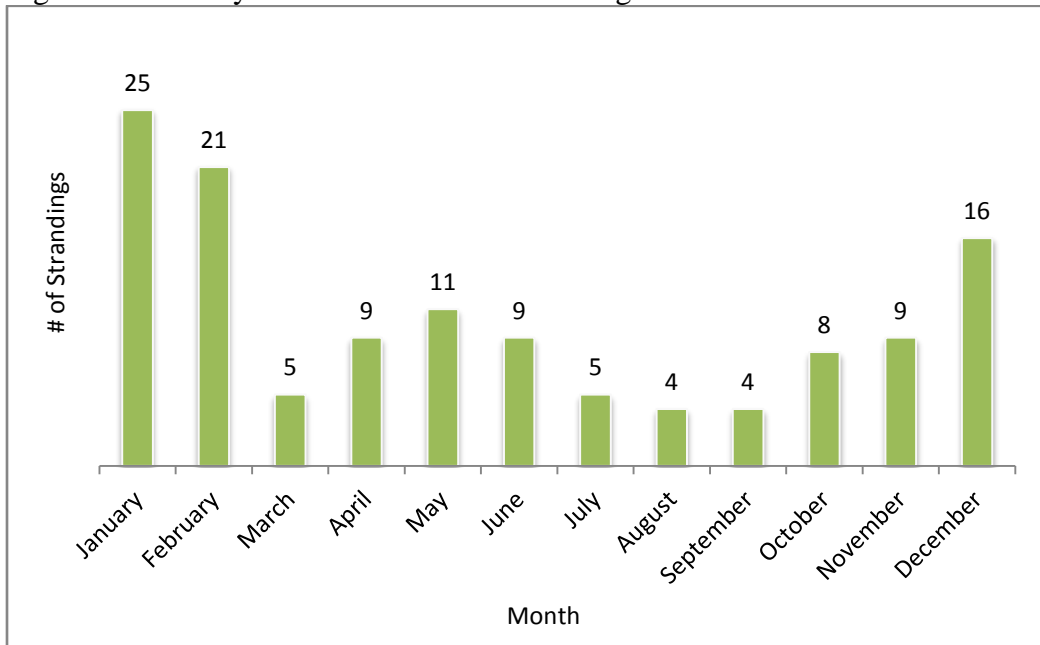
<sup>1</sup>Total stranding numbers for 2007-2011 include some strandings that occurred outside of CAHA boundaries.

Of the 126 strandings, nine (7.1%) were found alive and transferred to the North Carolina Aquarium on Roanoke Island or a similar facility for rehabilitation (Appendix E).

Efforts were made to necropsy dead strandings to determine possible cause of death, sex, any abnormalities, and to collect requested samples for ongoing research. Cause of death in most cases was unknown; however five strandings had obvious signs of human interaction. Signs of human interaction included propeller wounds and foreign objects found in the GI tract. Sex was determined in 48 strandings (36 female, 12 male). Samples collected during necropsies, including eyes, flippers, muscle, and tags, were provided to cooperating researchers.

During periods of cold water temperatures (7-10° C), sea turtles are most prone to stranding due to hypothermia (Spotilla 2004). From November to February, when waters around CAHA have the potential to become this cold, 71 strandings were documented in 2012 (Figure 4).

Figure 4. Monthly Total of Sea Turtle Strandings at CAHA in 2012.



## DISCUSSION

### DNA Study

Since 2010, CAHA, along with all other North Carolina, South Carolina, and Georgia beaches, participated in a genetic mark-recapture study of Northern Recovery Unit nesting female loggerheads using DNA derived from eggs. The study was coordinated by the Georgia Department of Natural Resources, the University of Georgia, and NCWRC. One egg from each nest (with the exception of one nest at CAHA this year) was taken and sampled for maternal DNA. The nest that was unsampled (NH136) was an undetected nest that was discovered only after its initial hatching event. This allowed each nest from North Carolina, South Carolina, and Georgia to be “assigned” to a nesting female. This research ultimately will answer questions about the total number of nesting females in the population, the number of nests each female lays per season, distance between nests laid by individual females, and other information that is important to understanding the population dynamics of sea turtles. Currently, the results of this study are preliminary and remain the copyright of the project coordinators.

### Predation

No mammalian predation was documented in 2012, but tracks of mammalian predators (including feral cats and raccoons) were observed at multiple nest sites on mornings following hatching events. It is unknown how many hatchlings were lost to these predators.

A total of 602 eggs from 122 nests were documented as predated by ghost crabs. An egg was considered predated if the shell was open and a significant portion of the egg’s contents remained inside (excluding pipped eggs). During nest excavations, 533 predated eggs were documented while the remaining 69 predated eggs were documented during the incubation period. Ghost crab predation of hatchlings was also documented at five nest sites, but the full extent of hatchling predation by ghost crabs is unknown. Observations were made of ghost crabs



in the act of predating hatchlings. These observations occurred within nest cavities during excavations as well as after hatching events inside of ghost crab holes in the vicinity of the nest site.

### **Late Nest Management**

Mean hatch success and mean emergence success was 0% for late nests. A late nest refers to a nest that is laid on or after August 1 and incubates for longer than 90 days. In 2012, two nests fit these criteria. Following NCWRC recommendations, after 90 days of incubation, an excavation began of the nests. If a viable embryo was observed, the excavation stopped and the nest was left in place. If hatching activity was not observed after 100 days of incubation, the closure extending to the water was removed and the nest site itself remained protected by a smaller closure. The eggs were then checked approximately every 10 days for viability. Nests were fully excavated when no viable embryos were observed. Protocols will be established for consistently managing late nests in the future.

### **Nests Laid on Private Property**

This season, several sea turtle nests were discovered to have been laid on private property within the villages on Hatteras Island. All nests were monitored by resource management staff and data were collected and included in this report. CAHA is currently establishing standard operating procedures to address turtle nests that occur on private property adjacent to CAHA property boundaries.

### **Incidental Take / Human Disturbance**

All species of sea turtles nesting at CAHA are protected under the ESA of 1973. Under the ESA, “take” is any human induced threat to a species that is listed. Take is defined as “to harass, harm, pursue, hunt, shoot, wound, kill, capture or collect, or to attempt to engage in any such conduct.” Harm is further defined to include significant habitat modification or degradation that results in the death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. It is unknown to what extent human activities disrupted sea turtle nesting activities during the 2012 nesting season. CAHA minimized some of these effects by closing the shorelines to non-essential ORV use from 9:00 p.m. until 7:00 a.m. to provide for sea turtle protection. The greatest threat posed by humans on the beach at night at this point is the disturbance of female turtles before they have finished nesting. From the time a female exits the surf until she has begun covering her nest, she is highly vulnerable to disturbance, especially prior to and during the early stages of egg laying. Much of CAHA’s shorelines remain open to pedestrians and CAHA staff is unable to monitor the entire shoreline for nesting turtles 24 hours a day.

### **Closure Violations**

Closure violations are documented whenever possible by resource management staff. A total of 236 pedestrian violations of turtle closures were documented. Four off-road vehicle and 29 dog violations were also documented.

### **Artificial Lighting**

This year, misorientation (directed movement of a hatchling towards an inappropriate object or goal) or disorientation (lack of directed movement towards a specific area or goal) was

documented at three nests, resulting in a loss of nine hatchlings (Appendix A). Since the majority of nests are not observed during hatching events, the extent of hatchling loss due to artificial lighting is unknown.

Artificial light is known to disturb nesting females and disorient hatchlings. Outdoor lights, beach fires, and headlights may deter nesting females from laying their nests along stretches of optimal beach. Hatchlings use natural light to navigate toward the water. When artificial lights are brighter than the natural light reflecting off the surface of the ocean, hatchlings will become disoriented and crawl away from the shoreline and toward these brighter lights and the dunes. This causes hatchling mortality due to exhaustion and increased chance of predation.

CAHA continues to try and decrease the effects of artificial lighting on sea turtles. Since 2005, black silt fencing has been utilized around most turtle nests to decrease the amount of artificial light shone onto the beach, thereby decreasing the negative effects of light on hatchlings. In 2012 a Superintendent's Order was established that sets outdoor lighting guidelines within CAHA's boundaries. CAHA staff is currently working with cooperating agencies to develop an educational public outreach campaign focusing on the effects of artificial lighting on sea turtles.

The ORV Management Plan regulates off-road night driving, which has the potential to decrease disturbance from headlights on nesting female turtles and hatchlings. Night driving was prohibited from May 1 through September 15 from 9:00 p.m. to 7:00 a.m. Starting September 16, night driving was restricted to those areas of the beach more than 0.8 km (or 0.5 mi) from any remaining turtle nests. As nests were excavated and closures removed, the shoreline was systematically re-opened to night driving.

### **Recreational Beach Items**

Recreational beach items (i.e. shade canopies, furniture, volleyball nets, etc.) that remain on the beach at night can cause turtles to abort their nesting attempt (NMFS, USFWS 1991). These items can cause a visual disturbance for nesting turtles and/or can act as a physical impediment. During the 2012 nesting season resource management staff continued to tie notices to personal property found on the beach after dawn, advising owners of the threats to nesting sea turtles as well as safety issues and National Park Service (NPS) regulations regarding abandoned property. Items left on the beach 24 hours after tagging were subject to removal by NPS staff. CAHA staff will continue to provide outreach to the public to discourage leaving unattended items on the beach, especially at night when sea turtles are most likely to come ashore.

### **U.S. FISH AND WILDLIFE SERVICE BIOLOGICAL OPINION**

In the November 15, 2010 BO, the USFWS determined that the level of anticipated take is not likely to result in jeopardy to the loggerhead, green, or leatherback sea turtle species. Through the actions taken by the resource management staff, CAHA has complied with the reasonable and prudent measures that are necessary and appropriate to minimize the take of sea turtles at CAHA. Protection was provided to sea turtles that came ashore to nest, incubating nests were monitored and protected, and emerging hatchlings were provided protection from ORVs. Proposed activities and access to nesting sea turtles, incubating turtle nests, and hatching events were timed and conducted to minimize impacts on sea turtles and sea turtle productivity. Resource management staff also responded to stranded sea turtles and coordinated the transport

and delivery of live strandings to appropriate care facilities. The non-discretionary terms and conditions for sea turtles were also met by providing the USFWS with this annual report. This annual report detailing the monitoring and survey data collected during the 2012 breeding season fulfills the reporting requirements of the November 15, 2010, BO.

## REFERENCES

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## **APPENDICES**

### **Appendix A: 2012 CAHA Project Summary Report and Guide**

### **Appendix B: 2012 CAHA Nests**

#### **Appendix C: Maps**

Map 1: Bodie Island Sea Turtle Nests, 2012

Map 2: North Hatteras Island Sea Turtle Nests, 2012

Map 3: South Hatteras Island Sea Turtle Nests, 2012

Map 4: Ocracoke Island Sea Turtle Nests, 2012

Map 5: Bodie Island Sea Turtle False Crawls, 2012

Map 6: North Hatteras Island Sea Turtle False Crawls, 2012

Map 7: South Hatteras Island Sea Turtle False Crawls, 2012

Map 8: Ocracoke Island Sea Turtle False Crawls, 2012

Map 9: Bodie Island Sea Turtle Strandings, 2012

Map 10: North Hatteras Island Sea Turtle Strandings, 2012

Map 11: South Hatteras Island Sea Turtle Strandings, 2012

Map 12: Ocracoke Island Sea Turtle Strandings, 2012

### **Appendix D: 2012 CAHA False Crawls**

### **Appendix E: 2012 CAHA Sea Turtle Strandings**

**Appendix A. 2012 Project Summary Report/Guide for CAHA Sea Turtle Nests**

**Sea Turtle Nest Monitoring System Project Summary Report**

Survey N Boundary	Ramp 1, Bodie Island (excludes Pea Island NWR)		
Survey S Boundary	South Point, Ocracoke		
Length of Daily Survey (km) <i>km = miles x 1.6</i>	104 km (~65 mi)	Total Kilometers Surveyed	14352
Total Days Surveyed	138	Days per Week Surveyed	7
Time of Day Surveyed	Dawn to ?	Number of Participants	17
Date Surveys Began	5/1/2012	Date Surveys Ended	9/15/2012
Date of First Crawl	5/11/2012	Date of Last Crawl	8/26/2012
Date of First Nest	5/11/2012	Date of Last Nest	8/26/2012
Total Nests	222	Nesting Density (nests/km)	2.13
<i>In Situ</i>	168	Undetected	1
Relocated	54 (24.3%)	Disoriented/Misoriented	3
		Washed Away Tide/Storm	0
False Crawls	169	Depredated	16
Mean Clutch Count	105.3	Incubation Duration (All)	60.1
Hatchlings Produced	19213	Incubation Duration ( <i>In situ</i> )	60.3
Hatchlings Emerged	17965	Incubation Duration (Relocated)	59.4

<b>MEAN HATCH SUCCESS</b>		<b>MEAN EMERGENCE SUCCESS</b>		<b>NEST SUCCESS</b>		<b>BEACH SUCCESS</b>	
78.70%		73.40%		90.90%		56.70%	
78%	80.96%	73.1%	74.46%	88.6%	98.10%	222	391
<i>IN SITU</i>	<i>RELOCATED</i>	<i>IN SITU</i>	<i>RELOCATED</i>	<i>IN SITU</i>	<i>RELOCATED</i>	TOTAL NESTS	TOTAL CRAWLS

<b>Eggs Lost (Total Eggs Lost = 289)</b>			
Research	217	Ghost Crab	69
Other	2	Broken eggs	1
<b>Hatchling Loss (Total Hatchling Loss = 91)</b>			
Misorientation	9 (72 live)	Ghost Crab	6
Other	4		

## **Appendix A. 2012 Project Summary Report/Guide for CAHA Sea Turtle Nests**

### **Sea Turtle Nest Monitoring System Project Summary Report Guide**

Survey N Boundary -This is the most northern point of the area surveyed for the particular year.

Survey S Boundary -This is the most southern point of the area surveyed for the particular year.

Length of Daily Survey – This is the total cumulative length in kilometers that was surveyed each day.

Total Kilometers Surveyed – This is automatically calculated by multiplying the Length of Daily Survey times the Total Days Surveyed.

Total Days Surveyed - This is the total number of days surveyed based on the survey start and end dates and number of days per week surveyed.

Days per Week Surveyed – This is the number of days per week that is surveyed throughout the nest laying portion of the season.

Time of Day Surveyed – Approximately 5 separate daily surveys are conducted at CAHA. Technicians attempt to start all surveys at dawn.

Number of Participants – This is the total number of participants conducting surveys for the particular year.

Date Surveys Begin and End – Date of first and last survey day. A survey is complete coverage of your survey area. It is not considered a survey when only checking individual nests.

Date of First and Last Crawl – This is automatically filled in using information completed in the Activity Log.

Date of First and Last Nest – This is automatically filled in using information completed in the Activity Log.

Total Nests – total number of nests (includes undetected nests). This does not include possible nests. Possible nests should be changed either to a nest or false crawl before submitting report.

*In Situ* Nests – total number of *in situ* nests.

Relocated Nests – total number of nests relocated regardless of reason.

False Crawls – total number of false crawls. This number is calculated from the Activity Log.

Nesting Density – number of nests (includes undetected nests) divided by length of daily survey.

Undetected Nests – number of nests that were undetected during the season.

Disoriented/Misoriented – number of nests that were reported as disoriented or misoriented.

## Appendix A. 2012 Project Summary Report/Guide for CAHA Sea Turtle Nests

Washed Away Storm or Tide – number of nests that were completely lost to a storm or the tide. A nest is considered lost only if nest lost is selected in the loss log.

Depredated – number of nests that were depredated. This should include nests that are depredated by any predator, including the following: Ghost Crab, Raccoon, Fox, Dog, Human, Poaching, Fire Ants, Birds, Cat, Coyote, Hog, Mink, Armadillo.

Mean Clutch Count – calculated from relocated nests.

Hatchlings Produced – This is calculated by adding up all the > 50% shells.

Hatchlings Emerged - This is the total number of shells > 50% minus (live + dead hatchlings in nest). This number is calculated from inventory data only.

Incubation Duration (All, *In Situ*, Relocated) - This is calculated by taking the mean of all individual nest incubation durations for each group (all, *in situ* and relocated). This does not include undetected nests or any nests without both a date laid and a date of emergence.

Mean Hatch Success (All, *In Situ* and Relocated) - This is calculated by taking the unweighted mean of all the individual nest hatch successes for each group (all, *in situ* and relocated). Any nest that has an inventory date or is marked as lost is included in the calculation. Any nest marked as exclude from calculations is not included in this calculation.

Mean Emergence Success (All, *In Situ* and Relocated) - This is calculated by taking the unweighted mean of all the individual nest emergence successes for each group (all, *in situ* and relocated). Any nest that has an inventory date or is marked as lost is included in the calculation. Any nest marked as exclude from calculations is not included in this calculation.

Nest Success (All, *In Situ* and Relocated) - This is calculated by counting the number of nests that hatched with  $\geq 10\%$  emergence success divided by the number of nests laid for each group (all, *in situ* and relocated).

Beach Success – This is calculated by counting the number of nests laid divided by the total number of crawls (total crawls = nest crawls + false crawls).

Eggs Lost – This is the total number of eggs lost calculated from the egg/hatchling loss log.

Hatchling Loss – This is the total number of hatchlings lost calculated from the egg/hatchling loss log. Hatchlings found alive but impacted by a loss event are included in parentheses (e.g. disorientation or misorientation).



**Appendix B. 2012 CAHA Nests**

<b>Nest #</b>	<b>Ref #</b>	<b>Lay Date</b>	<b>Species</b>	<b>Latitude (DD)</b>	<b>Longitude (DD)</b>	<b>Treatment</b>	<b>Hatch Success (%)</b>	<b>Emergence Success (%)</b>
1	NH01	5/11/2012	Cc	35.2979	-75.5126	in situ	57.4	56.5
2	NH02	5/12/2012	Cc	35.2702	-75.5181	in situ	85.9	78.1
3	NH03	5/13/2012	Cc	35.2077	-75.6949	in situ	85.5	82.9
4	NBH01	5/14/2012	Cc	35.5143	-75.4726	relocated	90.0	83.0
5	NH04	5/14/2012	Cc	35.1968	-75.7254	in situ	0.0	0.0
6	NH05	5/17/2012	Cc	35.3653	-75.4962	in situ	89.3	89.3
7	NH06	5/19/2012	Cc	35.2353	-75.5272	in situ	90.9	90.2
8	NH07	5/20/2012	Cc	35.2299	-75.6191	in situ	92.9	88.9
9	NO01	5/21/2012	Cc	35.0784	-75.9937	in situ	68.7	46.5
10	NH08	5/21/2012	Cc	35.3239	-75.5070	in situ	69.6	69.6
11	NH09	5/21/2012	Cc	35.3420	-75.5026	in situ	94.2	94.2
12	NH10	5/22/2012	Cc	35.1991	-75.7203	in situ	55.5	54.0
13	NH11	5/23/2012	Cc	35.4108	-75.4857	in situ	92.4	92.4
14	NH12	5/25/2012	Cc	35.3102	-75.5096	in situ	22.2	20.5
15	NH13	5/27/2012	Cc	35.2218	-75.6519	in situ	72.1	72.1
16	NO02	5/27/2012	Cc	35.0862	-75.9843	relocated	81.0	81.0
17	NH14	5/28/2012	Cc	35.2477	-75.5240	in situ	91.8	88.7
18	NH15	5/28/2012	Cc	35.3364	-75.5037	in situ	73.4	71.2
19	NO03	5/29/2012	Cc	35.1248	-75.9189	in situ	0.0	0.0
20	NO04	5/29/2012	Cc	35.1360	-75.8951	in situ	1.7	1.7
21	NH16	5/29/2012	Cc	35.2327	-75.6017	in situ	0.0	0.0
22	NH17	5/30/2012	Cc	35.2622	-75.5191	in situ	76.5	73.5
23	NH18	5/30/2012	Cc	35.4131	-75.4854	in situ	52.7	52.7
24	NH19	5/31/2012	Cc	35.2488	-75.5239	in situ	86.7	74.5
25	NH20	6/1/2012	Cc	35.2715	-75.5179	relocated	80.0	66.0
26	NH21	6/2/2012	Cc	35.2277	-75.6296	in situ	89.0	87.0
27	NBH02	6/2/2012	Cc	35.5676	-75.4615	relocated	75.0	72.0
28	NO05	6/3/2012	Cc	35.1474	-75.8692	in situ	97.9	97.9
29	NBH03	6/3/2012	Cc	35.4433	-75.4839	relocated	96.0	96.0
30	NBH04	6/3/2012	Cc	35.5251	-75.4703	in situ	85.3	76.0
31	NH22	6/4/2012	Cc	35.2504	-75.5234	in situ	93.5	85.9
32	NH23	6/4/2012	Cc	35.2679	-75.5184	in situ	93.5	93.5
33	NH24	6/5/2012	Cc	35.2526	-75.5221	relocated	54.0	51.0
34	NH25	6/5/2012	Cc	35.2699	-75.5181	in situ	85.2	85.2
35	NO06	6/5/2012	Cc	35.1435	-75.8781	in situ	83.2	80.4
36	NO07	6/5/2012	Cc	35.1559	-75.8493	in situ	94.3	94.3
37	NH26	6/7/2012	Cc	35.2239	-75.6440	relocated	97.0	93.0
38	NH27	6/7/2012	Cc	35.1930	-75.7400	relocated	84.0	84.0
39	NH28	6/8/2012	Cc	35.2451	-75.5250	in situ	91.3	90.4
40	NH29	6/9/2012	Cc	35.2923	-75.5138	in situ	92.7	91.5
41	NH31	6/9/2012	Cc	35.2578	-75.5196	in situ	80.3	65.0
42	NH30	6/9/2012	Cc	35.2293	-75.6219	in situ	94.2	94.2
43	NO08	6/9/2012	Cc	35.0942	-75.9733	in situ	96.1	96.1

**Appendix B. 2012 CAHA Nests**

<b>Nest #</b>	<b>Ref #</b>	<b>Lay Date</b>	<b>Species</b>	<b>Latitude (DD)</b>	<b>Longitude (DD)</b>	<b>Treatment</b>	<b>Hatch Success (%)</b>	<b>Emergence Success (%)</b>
44	NO09	6/9/2012	Cc	35.0956	-75.9712	in situ	94.5	94.5
45	NH32	6/10/2012	Cc	35.2974	-75.5124	relocated	74.0	71.0
46	NBH05	6/10/2012	Cc	35.5687	-75.4613	relocated	83.0	58.0
47	NH33	6/11/2012	Cc	35.3123	-75.5091	relocated	51.0	49.0
48	NO10	6/11/2012	Cc	35.1545	-75.8523	in situ	79.3	79.3
49	NO11	6/11/2012	Cc	35.1668	-75.8212	in situ	96.2	96.2
50	NO12	6/12/2012	Cc	35.1216	-75.9253	in situ	85.4	85.4
51	NH34	6/12/2012	Cc	35.2344	-75.5792	relocated	90.0	88.0
52	NBH06	6/12/2012	Cc	35.5886	-75.4620	relocated	92.0	85.0
53	NO13	6/13/2012	Cc	35.0925	-75.9755	in situ	96.7	83.3
54	NH36	6/13/2012	Cc	35.2735	-75.5176	in situ	93.6	91.8
55	NH37	6/13/2012	Cc	35.3286	-75.5057	in situ	92.3	92.3
56	NH35	6/13/2012	Cc	35.2317	-75.5530	relocated	84.0	84.0
57	NH38	6/14/2012	Cc	35.2282	-75.5279	in situ	93.2	93.2
58	NO14	6/14/2012	Cc	35.1794	-75.7843	in situ	95.5	95.5
59	NBH07	6/14/2012	Cc	35.4689	-75.4817	relocated	79.0	72.0
60	NBH08	6/14/2012	Cc	35.5920	-75.4627	relocated	96.0	73.0
61	NH39	6/14/2012	Cc	35.3167	-75.5083	relocated	85.0	53.0
62	NH40	6/15/2012	Cc	35.2045	-75.7040	relocated	94.0	94.0
63	NH41	6/17/2012	Cc	35.2727	-75.5177	in situ	96.8	95.2
64	NH42	6/17/2012	Cc	35.3213	-75.5078	in situ	90.9	87.3
65	NBI01	6/17/2012	Cc	35.8292	-75.5614	relocated	78.0	78.0
66	NO15	6/18/2012	Cc	35.1213	-75.9265	in situ	93.0	93.0
67	NH43	6/18/2012	Cc	35.3754	-75.4930	in situ	68.8	68.8
68	NH44	6/18/2012	Cc	35.2827	-75.5161	in situ	84.1	84.1
69	NH45	6/18/2012	Cc	35.3881	-75.4897	in situ	96.0	96.0
70	NBH10	6/19/2012	Cc	35.5243	-75.4704	in situ	93.5	92.7
71	NO16	6/20/2012	Cc	35.0897	-75.9790	in situ	78.8	77.7
72	NH46	6/20/2012	Cc	35.2295	-75.6212	in situ	96.2	93.9
73	NO17	6/20/2012	Cc	35.1748	-75.7993	in situ	91.4	91.4
74	NH48	6/21/2012	Cc	35.2345	-75.5785	relocated	57.0	43.0
75	NH47	6/21/2012	Cc	35.2597	-75.5195	in situ	1.1	1.1
76	NH49	6/21/2012	Cc	35.2960	-75.5131	in situ	88.5	82.3
77	NH50	6/21/2012	Cc	35.3342	-75.5041	in situ	95.8	95.8
78	NO18	6/21/2012	Cc	35.1416	-75.8827	in situ	97.6	92.8
79	NH51	6/22/2012	Cc	35.2337	-75.5269	relocated	94.0	89.0
80	NO19	6/22/2012	Cc	35.1102	-75.9468	in situ	93.1	66.3
81	NBH11	6/22/2012	Cc	35.5268	-75.4695	relocated	95.0	95.0
82	NH52	6/23/2012	Cm	35.2111	-75.6847	relocated	94.0	94.0
83	NO20	6/23/2012	Cc	35.1127	-75.9423	in situ	97.9	94.6
84	NH53	6/24/2012	Cc	35.2628	-75.5190	relocated	54.0	51.0
85	NO21	6/25/2012	Cc	35.0966	-75.9693	in situ	89.9	66.7
86	NH55	6/25/2012	Cc	35.2461	-75.5245	in situ	89.3	86.9

## Appendix B. 2012 CAHA Nests

Nest #	Ref #	Lay Date	Species	Latitude (DD)	Longitude (DD)	Treatment	Hatch Success (%)	Emergence Success (%)
87	NH56	6/25/2012	Cc	35.2492	-75.5236	relocated	93.0	93.0
89	NH57	6/25/2012	Cc	35.2313	-75.6115	in situ	89.5	89.5
90	NBH12	6/25/2012	Cc	35.4719	-75.4813	in situ	48.2	45.8
91	NO22	6/26/2012	Cc	35.1248	-75.9191	in situ	97.8	96.6
92	NO23	6/26/2012	Cc	35.1529	-75.8580	in situ	98.2	98.2
93	NH58	6/26/2012	Cc	35.2319	-75.5270	relocated	83.0	72.0
94	NO24	6/27/2012	Cc	35.0926	-75.9751	relocated	94.0	94.0
95	NH59	6/27/2012	Cc	35.2228	-75.5288	in situ	94.7	93.7
96	NH60	6/27/2012	Cc	35.2240	-75.5284	in situ	88.9	87.4
97	NO25	6/27/2012	Cc	35.1297	-75.9089	in situ	92.2	92.2
98	NBH13	6/27/2012	Cc	35.5283	-75.4693	in situ	90.4	90.4
99	NBH14	6/27/2012	Cc	35.5928	-75.4628	in situ	95.1	95.1
100	NH61	6/28/2012	Cc	35.2246	-75.5284	in situ	85.4	85.4
101	NH64	6/28/2012	Cc	35.2201	-75.6581	in situ	81.4	77.5
102	NH62	6/28/2012	Cc	35.2212	-75.5290	relocated	32.0	32.0
103	NH68	6/28/2012	Cc	35.4187	-75.4849	in situ	83.3	83.3
104	NH66	6/28/2012	Cc	35.2924	-75.5139	in situ	93.6	92.8
105	NH63	6/28/2012	Cc	35.2660	-75.5186	in situ	72.7	54.6
106	NH65	6/28/2012	Cc	35.2706	-75.5180	in situ	73.1	62.5
107	NH67	6/28/2012	Cc	35.3106	-75.5096	in situ	97.3	94.6
108	NBH15	6/29/2012	Cc	35.4592	-75.4824	relocated	87.0	81.0
109	NH69	6/30/2012	Cc	35.2338	-75.5936	in situ	77.8	77.0
110	NO26	7/1/2012	Cc	35.0770	-75.9948	in situ	56.6	0.9
111	NO27	7/1/2012	Cc	35.1571	-75.8460	in situ	83.3	0.0
112	NH70	7/1/2012	Cc	35.2584	-75.5196	in situ	97.7	97.7
113	NH71	7/1/2012	Cc	35.2937	-75.5138	in situ	14.9	14.9
114	NH73	7/1/2012	Cc	35.3047	-75.5110	in situ	87.7	86.9
115	NH72	7/1/2012	Cc	35.2044	-75.7041	relocated	86.0	69.0
116	NBH16	7/2/2012	Cc	35.4626	-75.4823	relocated	84.0	63.0
117	NBH17	7/2/2012	Cc	35.5937	-75.4629	relocated	64.0	63.0
118	NH74	7/3/2012	Cc	35.2259	-75.5381	in situ	80.5	78.8
119	NH76	7/3/2012	Cc	35.2067	-75.6978	in situ	95.5	94.6
120	NH75	7/3/2012	Cc	35.2913	-75.5141	in situ	89.3	89.3
121	NH77	7/3/2012	Cc	35.4161	-75.4850	in situ	47.8	3.5
122	NO28	7/4/2012	Cc	35.1319	-75.9036	in situ	93.1	93.1
123	NH79	7/4/2012	Cc	35.4036	-75.4863	in situ	94.8	94.8
124	NH78	7/4/2012	Cc	35.2963	-75.5130	in situ	76.0	75.0
125	NH80	7/5/2012	Cc	35.3219	-75.5074	in situ	97.7	97.7
126	NO29	7/5/2012	Cc	35.1114	-75.9447	in situ	98.4	97.5
127	NO30	7/5/2012	Cc	35.1325	-75.9023	in situ	94.0	4.3
128	NO31	7/5/2012	Cc	35.1767	-75.7939	in situ	97.3	97.3
129	NH81	7/5/2012	Cc	35.2298	-75.6197	in situ	88.6	88.6
130	NH82	7/5/2012	Cc	35.1964	-75.7263	relocated	79.0	74.0

**Appendix B. 2012 CAHA Nests**

<b>Nest #</b>	<b>Ref #</b>	<b>Lay Date</b>	<b>Species</b>	<b>Latitude (DD)</b>	<b>Longitude (DD)</b>	<b>Treatment</b>	<b>Hatch Success (%)</b>	<b>Emergence Success (%)</b>
131	NH83	7/6/2012	Cc	35.3577	-75.4981	in situ	87.6	86.7
132	NO32	7/6/2012	Cc	35.1530	-75.8562	in situ	97.7	97.7
133	NO33	7/6/2012	Cc	35.1602	-75.8381	in situ	91.7	91.7
134	NH136	7/6/2012	Cc	35.2344	-75.5882	in situ	98.5	97.8
135	NO34	7/7/2012	Cc	35.0835	-75.9873	in situ	26.4	15.3
136	NH84	7/7/2012	Cc	35.2300	-75.5273	relocated	85.0	82.0
137	NBH18	7/7/2012	Cc	35.5253	-75.4698	relocated	95.0	95.0
138	NO35	7/8/2012	Cc	35.1428	-75.8798	in situ	97.7	96.9
139	NH85	7/8/2012	Cc	35.2344	-75.5778	relocated	70.0	67.0
140	NH86	7/8/2012	Cc	35.2631	-75.5190	in situ	86.4	86.4
141	NH87	7/8/2012	Cc	35.4123	-75.4853	in situ	23.3	20.3
142	NH90	7/9/2012	Cc	35.2231	-75.6469	in situ	90.0	90.0
143	NH88	7/9/2012	Cc	35.2432	-75.5254	in situ	95.3	95.3
144	NH89	7/9/2012	Cc	35.2476	-75.5241	in situ	94.8	93.9
145	NO37	7/9/2012	Cc	35.1576	-75.8447	in situ	95.7	88.4
146	NO36	7/9/2012	Dc	35.0824	-75.9884	in situ	0.0	0.0
147	NH91	7/10/2012	Cc	35.2321	-75.5271	in situ	89.7	82.1
148	NH92	7/10/2012	Cc	35.2337	-75.5645	in situ	70.3	70.3
149	NH94	7/10/2012	Cc	35.4260	-75.4845	in situ	83.5	83.5
150	NH93	7/10/2012	Cc	35.3235	-75.5069	in situ	89.6	89.0
151	NO38	7/10/2012	Cc	35.0905	-75.9780	in situ	0.0	0.0
152	NH95	7/11/2012	Cc	35.3829	-75.4911	in situ	88.2	88.2
153	NBH19	7/11/2012	Cc	35.5737	-75.4614	relocated	98.0	96.0
154	NO39	7/11/2012	Cc	35.1657	-75.8244	in situ	64.0	64.0
155	NBH20	7/12/2012	Cc	35.5864	-75.4615	in situ	88.5	88.5
156	NO40	7/13/2012	Cc	35.1679	-75.8184	in situ	98.6	98.6
157	NH97	7/13/2012	Cc	35.2231	-75.5288	in situ	87.7	86.8
158	NH96	7/13/2012	Cc	35.2645	-75.5188	relocated	0.0	0.0
159	NH98	7/13/2012	Cc	35.2909	-75.5142	in situ	80.0	75.0
160	NH100	7/14/2012	Cc	35.2343	-75.5816	relocated	94.0	94.0
161	NH99	7/14/2012	Cc	35.2573	-75.5197	in situ	93.5	91.9
162	NH101	7/14/2012	Cc	35.2651	-75.5187	relocated	82.0	74.0
163	NH103	7/14/2012	Cc	35.3940	-75.4881	in situ	90.2	90.2
164	NH102	7/14/2012	Cc	35.2781	-75.5167	in situ	82.1	81.0
165	NH105	7/15/2012	Cc	35.2345	-75.5793	relocated	93.0	91.0
166	NH104	7/15/2012	Cc	35.2464	-75.5241	in situ	77.7	72.8
167	NO41	7/15/2012	Cc	35.1190	-75.9299	in situ	0.0	0.0
168	NO42	7/16/2012	Cc	35.1785	-75.7870	in situ	71.4	71.4
169	NH106	7/16/2012	Cc	35.2312	-75.5274	in situ	92.9	92.1
170	NH107	7/16/2012	Cc	35.2336	-75.5937	relocated	91.0	91.0
171	NH108	7/16/2012	Cc	35.2254	-75.6374	in situ	91.8	90.0
172	NBH21	7/16/2012	Cc	35.5496	-75.4638	relocated	79.0	78.0
173	NH110	7/17/2012	Cc	35.3354	-75.5039	in situ	86.7	86.7

**Appendix B. 2012 CAHA Nests**

<b>Nest #</b>	<b>Ref #</b>	<b>Lay Date</b>	<b>Species</b>	<b>Latitude (DD)</b>	<b>Longitude (DD)</b>	<b>Treatment</b>	<b>Hatch Success (%)</b>	<b>Emergence Success (%)</b>
174	NH109	7/17/2012	Cc	35.3564	-75.4986	in situ	96.0	95.1
175	NO43	7/17/2012	Cc	35.1129	-75.9420	in situ	0.0	0.0
176	NO44	7/17/2012	Cc	35.1346	-75.8979	relocated	56.0	56.0
177	NH111	7/18/2012	Cc	35.2334	-75.5978	in situ	89.5	89.5
178	NBI02	7/18/2012	Cc	35.7842	-75.5338	relocated	91.0	88.0
179	NO45	7/18/2012	Cc	35.1170	-75.9344	in situ	71.7	71.7
180	NO46	7/18/2012	Cc	35.1786	-75.7875	in situ	96.3	96.3
181	NH112	7/20/2012	Cc	35.2345	-75.5872	in situ	97.4	94.8
182	NBH22	7/20/2012	Cc	35.5601	-75.4619	in situ	0.0	0.0
183	NO47	7/20/2012	Cc	35.1625	-75.8322	in situ	95.5	94.8
184	NH113	7/22/2012	Cc	35.2237	-75.5287	relocated	99.0	87.0
185	NO48	7/22/2012	Cc	35.0866	-75.9841	in situ	95.5	94.7
186	NO49	7/22/2012	Cc	35.1701	-75.8124	relocated	94.0	91.0
187	NH114	7/23/2012	Cc	35.2009	-75.7146	in situ	62.1	60.2
188	NBH23	7/23/2012	Cc	35.4487	-75.4836	in situ	90.7	89.7
189	NH115	7/24/2012	Cc	35.2928	-75.5138	in situ	92.1	77.2
190	NBH24	7/25/2012	Cc	35.4417	-75.4840	in situ	89.7	89.0
191	NH116	7/25/2012	Cc	35.3923	-75.4882	relocated	91.0	87.0
192	NH117	7/26/2012	Cc	35.2339	-75.5658	in situ	74.1	73.4
193	NBH25	7/26/2012	Cc	35.6033	-75.4644	relocated	90.0	54.0
194	NBH26	7/27/2012	Cc	35.5861	-75.4613	relocated	94.0	94.0
195	NH118	7/28/2012	Cc	35.3137	-75.5090	in situ	91.6	88.8
196	NH119	7/28/2012	Cc	35.4122	-75.4855	in situ	53.3	41.0
197	NH120	7/29/2012	Cc	35.2782	-75.5170	in situ	91.3	90.4
198	NH121	7/30/2012	Cc	35.2745	-75.5173	relocated	94.0	86.0
199	NH122	7/31/2012	Cc	35.2351	-75.5267	in situ	91.7	91.7
200	NH123	7/31/2012	Cc	35.2242	-75.5285	in situ	93.7	92.3
201	NO50	7/31/2012	Cc	35.1402	-75.8860	in situ	95.1	95.1
202	NBH27	7/31/2012	Cc	35.5385	-75.4662	relocated	92.0	84.0
203	NH124	8/1/2012	Cc	35.3236	-75.5069	in situ	76.9	76.9
204	NO51	8/2/2012	Cc	35.1412	-75.8836	in situ	87.1	85.9
205	NBH28	8/3/2012	Cc	35.5144	-75.4725	relocated	28.0	13.0
206	NH125	8/4/2012	Cc	35.2806	-75.5163	in situ	91.4	81.0
207	NH126	8/4/2012	Cc	35.3151	-75.5088	in situ	88.4	87.4
208	NO52	8/4/2012	Cc	35.1789	-75.7860	in situ	94.7	94.0
209	NH127	8/5/2012	Cc	35.2338	-75.5927	in situ	89.3	76.3
210	NH128	8/5/2012	Cc	35.2334	-75.5980	in situ	92.3	87.2
211	NO53	8/6/2012	Cc	35.0858	-75.9843	in situ	90.4	87.7
212	NH129	8/7/2012	Cc	35.4152	-75.4852	in situ	72.6	0.0
213	NH130	8/8/2012	Cc	35.3923	-75.4883	in situ	93.9	62.1
214	NBH29	8/8/2012	Cc	35.5833	-75.4614	in situ	94.3	64.8
215	NBH30	8/9/2012	Cc	35.4548	-75.4829	in situ	53.7	17.9
216	NH131	8/11/2012	Cc	35.2994	-75.5119	relocated	97.0	69.0

**Appendix B. 2012 CAHA Nests**

<b>Nest #</b>	<b>Ref #</b>	<b>Lay Date</b>	<b>Species</b>	<b>Latitude (DD)</b>	<b>Longitude (DD)</b>	<b>Treatment</b>	<b>Hatch Success (%)</b>	<b>Emergence Success (%)</b>
217	NH132	8/13/2012	Cc	35.2775	-75.5171	in situ	95.9	95.9
218	NH133	8/14/2012	Cc	35.2105	-75.6873	in situ	89.8	80.7
219	NBH31	8/15/2012	Cc	35.4946	-75.4769	in situ	0.0	0.0
220	NO54	8/20/2012	Cc	35.0924	-75.9756	in situ	0.0	0.0
221	NH134	8/21/2012	Cc	35.2348	-75.5798	in situ	0.0	0.0
222	NH135	8/26/2012	Cm	35.1979	-75.7266	in situ	0.0	0.0

**Lay Date:** date when nest was observed

**Species:** Cc = *Caretta caretta*

Cm = *Chelonia mydas*

Dc = *Dermochelys coriacea*

**Latitude:** original location in decimal degrees

**Longitude:** original location in decimal degrees

**Hatch Success:** % of eggs that produced hatchlings

**Emergence Success:** % of eggs that produced hatchlings which emerged from the nest cavity unaided

**Appendix C. 2012 CAHA False Crawls**

<b>Crawl #</b>	<b>Ref #</b>	<b>Activity Date</b>	<b>Species</b>	<b>Latitude (DD)</b>	<b>Longitude (DD)</b>
1	CH01	5/13/2012	Cc	35.2332	-75.5971
2	CH02	5/16/2012	Cc	35.2955	-75.5129
3	CH03	5/18/2012	Cc	35.2257	-75.5285
4	CH04	5/18/2012	Cc	35.2239	-75.5285
5	CH05	5/19/2012	Cc	35.2450	-75.5250
6	CH06	5/24/2012	Cc	35.1983	-75.7225
7	CH07	5/25/2012	Cc	35.4113	-75.4854
8	CBI01	5/28/2012	Cc	35.8192	-75.5513
9	CO01	5/28/2012	Cc	35.0686	-76.0038
10	CO02	5/28/2012	Cc	35.0895	-75.9792
11	CO03	5/29/2012	Cc	35.0674	-76.0048
12	CO04	5/29/2012	Cc	35.1325	-75.9025
13	CH08	5/29/2012	Cc	35.2261	-75.5279
14	CH09	5/29/2012	Cc	35.2344	-75.5810
15	CH10	5/29/2012	Cc	35.2748	-75.5173
16	CH11	5/29/2012	Cc	35.2180	-75.6644
17	CH12	5/30/2012	Cc	35.2288	-75.5443
18	CBH01	5/30/2012	Cc	35.4438	-75.4839
19	CH13	5/30/2012	Cc	35.3027	-75.5112
20	CO05	5/31/2012	Cc	35.1431	-75.8795
21	CH14	5/31/2012	Cc	35.2316	-75.5275
22	CH15	6/1/2012	Cc	35.2315	-75.6108
23	CO06	6/2/2012	Cc	35.1572	-75.8457
24	CH16	6/2/2012	Cc	35.2212	-75.6539
25	CO07	6/4/2012	Cc	35.0924	-75.9754
26	CO08	6/4/2012	Cc	35.1317	-75.9041
27	CO09	6/5/2012	Cc	35.0776	-75.9941
28	CO10	6/5/2012	Cc	35.1451	-75.8740
29	CH17	6/6/2012	Cc	35.3761	-75.4925
30	CH18	6/7/2012	Cc	35.2199	-75.5292
31	CH19	6/7/2012	Cc	35.2176	-75.5295
32	CH21	6/8/2012	Cc	35.2321	-75.5543
33	CH22	6/8/2012	Cc	35.2345	-75.5810
34	CH23	6/8/2012	Cc	35.2330	-75.5994
35	CH20	6/8/2012	Cc	35.2627	-75.5191
36	CH24	6/10/2012	Cc	35.2296	-75.5463
37	CBH02	6/10/2012	Cc	35.5409	-75.4657
38	CO11	6/11/2012	Cc	35.1403	-75.8850
39	CO12	6/12/2012	Cc	35.1397	-75.8864
40	CO13	6/13/2012	Cc	35.0737	-75.9972
41	CH25	6/14/2012	Cc	35.2314	-75.5271
42	CH26	6/14/2012	Cc	35.2257	-75.5281
43	CH27	6/16/2012	Cc	35.2181	-75.5316
44	CBH03	6/16/2012	Cc	35.4708	-75.4811

**Appendix C. 2012 CAHA False Crawls**

<b>Crawl #</b>	<b>Ref #</b>	<b>Activity Date</b>	<b>Species</b>	<b>Latitude (DD)</b>	<b>Longitude (DD)</b>
45	CBH22	6/16/2012	Cc	35.4477	-75.4838
46	CH28	6/17/2012	Cc	35.2697	-75.5181
47	CH29	6/20/2012	Cc	35.2221	-75.6505
48	CO14	6/20/2012	Cc	35.1758	-75.7958
49	CH30	6/21/2012	Cc	35.2704	-75.5180
50	CO15	6/24/2012	Cc	35.0755	-75.9961
51	CO16	6/24/2012	Cc	35.0977	-75.9670
52	CH33	6/24/2012	Cc	35.2659	-75.5186
53	CH34	6/24/2012	Cc	35.2686	-75.5185
54	CH31	6/24/2012	Cc	35.2826	-75.5160
55	CH32	6/24/2012	Cc	35.2865	-75.5149
56	CH35	6/25/2012	Cc	35.2246	-75.6410
57	CH37	6/27/2012	Cc	35.2282	-75.5275
58	CH40	6/27/2012	Cc	35.2078	-75.6942
59	CO17	6/27/2012	Cc	35.0840	-75.9864
60	CO18	6/27/2012	Cc	35.1129	-75.9420
61	CBH04	6/27/2012	Cc	35.4692	-75.4812
62	CBH05	6/27/2012	Cc	35.4821	-75.4795
63	CBH06	6/27/2012	Cc	35.4971	-75.4765
64	CBH07	6/27/2012	Cc	35.5194	-75.4715
65	CBH08	6/27/2012	Cc	35.5764	-75.4613
66	CBH09	6/27/2012	Cc	35.5880	-75.4618
67	CBH10	6/27/2012	Cc	35.6045	-75.4646
68	CH36	6/27/2012	Cc	35.2370	-75.5262
69	CH38	6/27/2012	Cc	35.2453	-75.5245
70	CH39	6/27/2012	Cm	35.2730	-75.5180
71	CBH23	6/27/2012	Cc	35.5222	-75.4709
72	CBH24	6/27/2012	Cc	35.5254	-75.4701
73	CBH25	6/27/2012	Cc	35.5912	-75.4624
74	CO19	6/28/2012	Cc	35.0771	-75.9961
75	CH41	6/28/2012	Cc	35.2666	-75.5185
76	CO20	6/30/2012	Cc	35.0892	-75.9797
77	CBH11	6/30/2012	Cc	35.4882	-75.4781
78	CO21	7/4/2012	Cc	35.1781	-75.7889
79	CH42	7/4/2012	Cc	35.3825	-75.4907
80	CH43	7/4/2012	Cc	35.3058	-75.5108
81	CH44	7/5/2012	Cc	35.2312	-75.6122
82	CH45	7/5/2012	Cc	35.2275	-75.6299
83	CO22	7/6/2012	Cc	35.0842	-75.9864
84	CO23	7/6/2012	Cc	35.0913	-75.9768
85	CO24	7/7/2012	Cc	35.0801	-75.9912
86	CO25	7/7/2012	Cc	35.0767	-75.9949
87	CO26	7/7/2012	Cc	35.0749	-75.9964
88	CO27	7/7/2012	Cc	35.0732	-75.9977



**Appendix C. 2012 CAHA False Crawls**

<b>Crawl #</b>	<b>Ref #</b>	<b>Activity Date</b>	<b>Species</b>	<b>Latitude (DD)</b>	<b>Longitude (DD)</b>
89	CBH12	7/7/2012	Cc	35.4889	-75.4780
90	CO28	7/9/2012	Cc	35.1646	-75.8263
91	CBH13	7/10/2012	Cc	35.4757	-75.4803
92	CH48	7/11/2012	Cc	35.3739	-75.4932
93	CH47	7/11/2012	Cc	35.2264	-75.5283
94	CBH14	7/11/2012	Cc	35.5990	-75.4634
95	CBH16	7/11/2012	Cc	35.5474	-75.4640
96	CBH15	7/11/2012	Cm	35.6079	-75.4653
97	CH50	7/12/2012	Cc	35.2155	-75.5303
98	CH51	7/12/2012	Cc	35.2163	-75.5305
99	CH49	7/12/2012	Cc	35.4353	-75.4842
100	CH55	7/13/2012	Cc	35.2855	-75.5157
101	CH52	7/13/2012	Cc	35.2105	-75.5303
102	CH53	7/13/2012	Cc	35.2235	-75.5351
103	CH54	7/13/2012	Cc	35.2281	-75.5428
104	CH58	7/14/2012	Cc	35.2325	-75.5569
105	CO29	7/14/2012	Cc	35.0794	-75.9918
106	CO30	7/14/2012	Cc	35.0745	-75.9966
107	CH56	7/14/2012	Cc	35.2742	-75.5174
108	CH57	7/14/2012	Cm	35.3361	-75.5038
109	CH59	7/15/2012	Cc	35.3098	-75.5099
110	CH60	7/15/2012	Cc	35.3241	-75.5068
111	CH61	7/16/2012	Cc	35.2787	-75.5165
112	CH62	7/16/2012	Cc	35.3030	-75.5113
113	CH63	7/17/2012	Cc	35.3727	-75.4938
114	CO31	7/18/2012	Cc	35.1195	-75.9290
115	CO32	7/18/2012	Cc	35.1195	-75.9289
116	CH65	7/19/2012	Cc	35.2342	-75.5839
117	CBH17	7/19/2012	Cc	35.6071	-75.4653
118	CH64	7/19/2012	Cc	35.2431	-75.5250
119	CH66	7/21/2012	Cc	35.2755	-75.5174
120	CO33	7/21/2012	Cc	35.0954	-75.9707
121	CO34	7/21/2012	Cc	35.1003	-75.9626
122	CH67	7/22/2012	Cc	35.2199	-75.5291
123	CH68	7/22/2012	Cc	35.2246	-75.5282
124	CO35	7/22/2012	Cc	35.0855	-75.9853
125	CH71	7/23/2012	Cc	35.2289	-75.5276
126	CH72	7/23/2012	Cc	35.2344	-75.5809
127	CH73	7/23/2012	Cc	35.3974	-75.4867
128	CH74	7/23/2012	Cc	35.3974	-75.4858
129	CH69	7/23/2012	Cc	35.4320	-75.4842
130	CH70	7/23/2012	Cc	35.4358	-75.4840
131	CBH18	7/24/2012	Cc	35.5400	-75.4657
132	CBH19	7/24/2012	Cc	35.5522	-75.4634

### Appendix C. 2012 CAHA False Crawls

Crawl #	Ref #	Activity Date	Species	Latitude (DD)	Longitude (DD)
133	CBH20	7/25/2012	Cc	35.4848	-75.4788
134	CH75	7/25/2012	Cc	35.3986	-75.4866
135	CH76	7/26/2012	Cc	35.2708	-75.5180
136	CH77	7/26/2012	Cc	35.2797	-75.5163
137	CH78	7/26/2012	Cc	35.2926	-75.5135
138	CH79	7/26/2012	Cc	35.3095	-75.5100
139	CH80	7/26/2012	Cc	35.3172	-75.5085
140	CH81	7/27/2012	Cm	35.2408	-75.5255
141	CH82	7/27/2012	Cc	35.2427	-75.5252
142	CH83	7/27/2012	Cm	35.2471	-75.5239
143	CH84	7/27/2012	Cc	35.2533	-75.5216
144	CH85	7/27/2012	Cc	35.2945	-75.5132
145	CH86	7/27/2012	Cc	35.3152	-75.5089
146	CH87	7/28/2012	Cc	35.2720	-75.5180
147	CH88	7/28/2012	Cc	35.2804	-75.5162
148	CH89	7/28/2012	Cc	35.2816	-75.5163
149	CH90	7/28/2012	Cc	35.2817	-75.5164
150	CH91	7/28/2012	Cc	35.2824	-75.5158
151	CH92	7/28/2012	Cc	35.2829	-75.5161
152	CH93	7/28/2012	Cc	35.3037	-75.5113
153	CH94	7/28/2012	Cc	35.3239	-75.5067
154	CH95	7/28/2012	Cc	35.3684	-75.4949
155	CH96	7/28/2012	Cc	35.3875	-75.4895
156	CH97	7/29/2012	Cc	35.2761	-75.5173
157	CH98	7/29/2012	Cc	35.2793	-75.5166
158	CO36	8/1/2012	Cc	35.1657	-75.8241
159	CO37	8/1/2012	Cc	35.1688	-75.8157
160	CO38	8/6/2012	Cc	35.0892	-75.9793
161	CH99	8/6/2012	Cc	35.3877	-75.4893
162	CH100	8/7/2012	Cc	35.2472	-75.5240
163	CH101	8/8/2012	Cc	35.3930	-75.4880
164	CH102	8/12/2012	Cc	35.3182	-75.5083
165	CH103	8/13/2012	Cc	35.2169	-75.6681
166	CBH21	8/16/2012	Cc	35.4750	-75.4804
167	CH46	8/20/2012	Cc	35.2312	-75.6127
168	CO39	8/20/2012	Cc	35.0813	-75.9902
169	CH104	8/20/2012	Cc	35.2332	-75.6002

**Activity Date:** date when activity was observed

**Species:** Cc = *Caretta caretta*  
Cm = *Chelonia mydas*

**Latitude:** in decimal degrees

**Longitude:** in decimal degrees

**Appendix D. 2012 CAHA Sea Turtle**

Stranding #	Date	Animal Code	Species	Island	Condition	Sex	Latitude (DD)	Longitude (DD)
1	1/4/2012	Cm-WPT-12-01-04-02	Cm	Hatteras	Dead	F	35.3836	-75.4961
2	1/4/2012	Cm-WPT-12-01-04-01	Cm	Hatteras	Dead	F	35.2918	-75.5155
3	1/5/2012	Cm-ECF-12-01-05-01	Cm	Hatteras	Dead	F	35.2951	-75.5149
4	1/5/2012	Cm-ECF-12-01-05-02	Cm	Hatteras	Dead	F	35.2936	-75.5158
5	1/5/2012	Cm-WPT-12-01-05-01	Cm	Hatteras	Dead	F	35.3846	-75.4959
6	1/5/2012	Lk-PKD-12-01-05-01	Lk	Hatteras	Dead	F	35.4114	-75.4932
7	1/5/2012	Cm-WPT-12-01-05-02	Cm	Hatteras	Dead	U	35.3838	-75.4960
8	1/6/2012	Lk-PKD-12-01-06-01	Lk	Hatteras	Dead	F	35.4578	-75.4857
9	1/6/2012	Cm-PKD-12-01-06-02	Cm	Hatteras	Dead	M	35.4467	-75.4870
10	1/6/2012	Cm-JMG-12-01-06-01	Cm	Ocracoke	Alive	U	35.1899	-75.7789
11	1/6/2012	Lk-PKD-12-01-06-03	Lk	Hatteras	Dead	U	35.4430	-75.4887
12	1/7/2012	Lk-WPT-12-01-07-01	Lk	Hatteras	Dead	F	35.3848	-75.4958
13	1/9/2012	Cm-ECF-12-01-09-01	Cm	Hatteras	Dead	F	35.3908	-75.4952
14	1/10/2012	Lk-EHG-12-01-10-02	Lk	Hatteras	Dead	F	35.3783	-75.4986
15	1/10/2012	Cm-EHG-12-01-10-01	Cm	Hatteras	Dead	M	35.3019	-75.5144
16	1/11/2012	Cm-PKD-12-01-11-01	Cm	Hatteras	Dead	U	35.4747	-75.4852
17	1/12/2012	Lk-ECF-12-01-12-01	Lk	Hatteras	Dead	U	35.4064	-75.4937
18	1/17/2012	Cm-WPT-12-01-17-01	Cm	Hatteras	Alive	U	35.2222	-75.6568
19	1/17/2012	Cm-PKD-12-01-17-01	Cm	Hatteras	Dead	U	35.4901	-75.4833
20	1/19/2012	Cm-EHG-12-01-19-01	Cm	Hatteras	Alive	U	35.3001	-75.5148
21	1/20/2012	Cm-JMG-12-01-20-01	Cm	Ocracoke	Dead	M	35.1658	-75.8391
22	1/21/2012	Lk-PKD-12-01-21-01	Lk	Hatteras	Dead	F	35.3993	-75.4969
23	1/28/2012	Cm-PKD-12-01-28-02	Cm	Hatteras	Dead	U	35.4294	-75.4914
24	1/28/2012	Lk-PKD-12-01-28-01	Lk	Hatteras	Dead	U	35.4323	-75.4910
25	1/31/2012	Cm-JMG-12-01-31-01	Cm	Ocracoke	Dead	F	35.1817	-75.7800
26	2/2/2012	Lk-JMG-12-02-02-01	Lk	Ocracoke	Dead	F	35.1819	-75.7729
27	2/4/2012	Cm-ELH-12-02-04-01	Cm	Ocracoke	Dead	U	35.1170	-75.9654
28	2/7/2012	Lk-JMG-12-02-07-01	Lk	Ocracoke	Dead	F	35.0680	-76.0105
29	2/10/2012	Un-ELH-12-02-10-01	Un	Ocracoke	Dead	U	35.1233	-75.9433
30	2/10/2012	Un-ELH-12-02-10-02	Un	Ocracoke	Dead	U	35.1163	-75.9571
31	2/12/2012	Cm-FGW-12-02-12-01	Cm	Hatteras	Alive	U	35.2265	-75.6500
32	2/13/2012	Lk-ECF-12-02-13-01	Lk	Hatteras	Alive	F	35.1957	-75.7386
33	2/13/2012	Cm-FGW-12-02-13-01	Cm	Hatteras	Alive	U	35.2250	-75.6518
34	2/15/2012	Lk-WPT-12-02-15-01	Lk	Hatteras	Dead	F	35.2003	-75.7326
35	2/15/2012	Cc-ELH-12-02-15-02	Cc	Ocracoke	Dead	U	35.1317	-75.9201
36	2/15/2012	Cc-ELH-12-02-15-03	Cc	Ocracoke	Dead	U	35.1339	-75.9186
37	2/15/2012	Cm-ELH-12-02-15-04	Cm	Ocracoke	Dead	U	35.1345	-75.9188
38	2/15/2012	Un-ELH-12-02-15-01	Un	Ocracoke	Dead	U	35.1314	-75.9223
39	2/18/2012	Cm-ELH-12-02-18-03	Cm	Ocracoke	Dead	U	35.1171	-75.9621
40	2/18/2012	Lk-ELH-12-02-18-02	Lk	Ocracoke	Dead	U	35.1183	-75.9639
41	2/18/2012	Un-ELH-12-02-18-01	Un	Ocracoke	Dead	U	35.1180	-75.9639
42	2/21/2012	Cc-ELH-12-02-21-01	Cc	Ocracoke	Dead	U	35.1695	-75.8179
43	2/22/2012	Cc-ELH-12-02-22-01	Cc	Ocracoke	Dead	U	35.1335	-75.9188
44	2/26/2012	Un-ELH-12-02-26-01	Un	Ocracoke	Dead	U	35.1775	-75.8074
45	2/26/2012	Un-ELH-12-02-26-02	Un	Ocracoke	Dead	U	35.1639	-75.8451
46	2/26/2012	Un-ELH-12-02-26-03	Un	Ocracoke	Dead	U	35.1575	-75.8534
47	3/6/2012	Lk-AJL-12-03-06-01	Lk	Ocracoke	Dead	U	35.0674	-76.0094
48	3/7/2012	Cm-JMG-12-03-07-01	Cm	Ocracoke	Alive	U	35.1882	-75.7752
49	3/9/2012	Lk-CTW-12-03-09-01	Lk	Hatteras	Dead	F	35.2265	-75.5395
50	3/16/2012	Lk-AJL-12-03-16-01	Lk	Ocracoke	Dead	U	35.0785	-76.0026
51	3/25/2012	Cm-WPT-12-03-25-01	Cm	Hatteras	Dead	M	35.2158	-75.6706
52	4/6/2012	Cc-PKD-12-04-06-01	Cc	Hatteras	Dead	F	35.4987	-75.4760

**Appendix D. 2012 CAHA Sea Turtle**

Stranding #	Date	Animal Code	Species	Island	Condition	Sex	Latitude (DD)	Longitude (DD)
53	4/10/2012	Lk-JNW-12-04-10-01	Lk	Ocracoke	Dead	U	35.1657	-75.8241
54	4/11/2012	Lk-JPW-12-04-11-01	Lk	Hatteras	Dead	U	35.2316	-75.5526
55	4/11/2012	Cc-AMH-12-04-11-01	Cc	Ocracoke	Dead	U	35.1846	-75.7697
56	4/21/2012	Lk-JMG-12-04-21-01	Lk	Hatteras	Dead	U	35.2285	-75.5438
57	4/22/2012	Lk-JPW-12-04-22-03	Lk	Hatteras	Dead	F	35.2344	-75.5762
58	4/22/2012	Lk-JPW-12-04-22-02	Lk	Hatteras	Dead	F	35.2344	-75.5762
59	4/22/2012	Cc-JPW-12-04-22-01	Cc	Hatteras	Dead	M	35.2336	-75.5642
60	4/28/2012	Cc-ARE-12-04-28-01	Cc	Hatteras	Alive	U	35.4536	-75.4827
61	5/2/2012	Cc-AMH-12-05-01-01	Cc	Ocracoke	Dead	U	35.1590	-75.8413
62	5/5/2012	Lk-AJL-12-05-05-01	Lk	Ocracoke	Dead	U	35.0820	-75.9888
63	5/8/2012	Cc-AMH-12-05-08-01	Cc	Ocracoke	Dead	U	35.1704	-75.8113
64	5/11/2012	Lk-JMG-12-05-11-01	Lk	Hatteras	Dead	M	35.3349	-75.5040
65	5/13/2012	Lk-ARE-12-05-13-01	Lk	Bodie	Dead	U	35.7983	-75.5414
66	5/15/2012	Cc-CTW-12-05-15-01	Cc	Hatteras	Dead	U	35.1964	-75.7377
67	5/18/2012	Lk-KEF-12-05-18-01	Lk	Ocracoke	Dead	U	35.0749	-75.9963
68	5/19/2012	Cc-DRH-12-05-19-01	Cc	Hatteras	Dead	U	35.4285	-75.4848
69	5/27/2012	Lk-EHG-12-05-27-01	Lk	Hatteras	Dead	U	35.2239	-75.6433
70	5/28/2012	Cc-WPT-12-05-28-01	Cc	Hatteras	Dead	U	35.3476	-75.5007
71	5/31/2012	Cm-AMH-12-05-31-01	Cm	Ocracoke	Dead	U	35.1743	-75.8006
72	6/2/2012	Cc-RLH-12-06-02-01	Cc	Hatteras	Dead	F	35.5503	-75.4637
73	6/3/2012	Cm-AJL-12-06-03-01	Cm	Ocracoke	Dead	U	35.1026	-75.9600
74	6/12/2012	Cc-CTW-12-06-12-01	Cc	Hatteras	Dead	F	35.2343	-75.5796
75	6/14/2012	Cc-JMG-12-06-14-01	Cc	Hatteras	Dead	F	35.2229	-75.5285
76	6/15/2012	Cm-RLH-12-06-15-01	Cm	Hatteras	Dead	F	35.4534	-75.4829
77	6/15/2012	Lk-RLH-12-06-15-02	Lk	Hatteras	Dead	U	35.5099	-75.4735
78	6/20/2012	Cc-CTW-12-06-20-01	Cc	Hatteras	Dead	F	35.2202	-75.5330
79	6/28/2012	Cc-KEF-12-06-28-01	Cc	Ocracoke	Dead	U	35.0776	-76.0043
80	6/29/2012	Cm-KEF-12-06-29-01	Cm	Ocracoke	Dead	U	35.0659	-76.0069
81	7/5/2012	Cm-AJL-12-07-05-01	Cm	Ocracoke	Dead	U	35.0773	-76.0075
82	7/13/2012	Cm-RLH-12-07-13-01	Cm	Hatteras	Dead	M	35.4648	-75.4818
83	7/15/2012	Cc-DRH-12-07-15-01	Cc	Hatteras	Dead	F	35.2576	-75.5196
84	7/15/2012	Cc-AJL-12-07-15-01	Cc	Ocracoke	Dead	F	35.1637	-75.8281
85	7/26/2012	Cm-AMH-12-07-26-01	Cm	Ocracoke	Dead	U	35.1636	-75.8285
86	8/4/2012	Cm-JMG-12-08-04-01	Cm	Hatteras	Dead	U	35.2254	-75.6375
87	8/13/2012	Cm-WPT-12-08-12-01	Cm	Hatteras	Dead	M	35.2339	-75.5666
88	8/17/2012	Cm-JNW-12-08-17-01	Cm	Ocracoke	Dead	M	35.0685	-76.0105
89	8/23/2012	Cc-ARE-12-08-23-01	Cc	Hatteras	Dead	F	35.5507	-75.4637
90	9/5/2012	Cm-AMH-12-09-05-01	Cm	Ocracoke	Dead	U	35.0975	-75.9674
91	9/6/2012	Cc-JPW-12-09-06-01	Cc	Hatteras	Dead	U	35.2162	-75.6694
92	9/18/2012	Cm-KEF-12-09-18-01	Cm	Ocracoke	Dead	U	35.1779	-75.7890
93	9/23/2012	Cc-WPT-12-09-23-01	Cc	Hatteras	Dead	M	35.2330	-75.5969
94	10/2/2012	Cm-ECF-12-10-02-01	Cm	Hatteras	Dead	M	35.1995	-75.7169
95	10/16/2012	Cc-PKD-12-10-16-01	Cc	Hatteras	Dead	F	35.5548	-75.4628
96	10/23/2012	Cm-VNM-12-10-23-01	Cm	Ocracoke	Dead	U	35.0676	-76.0087
97	10/23/2012	Cm-VNM-12-10-23-02	Cm	Ocracoke	Dead	U	35.0676	-76.0044
98	10/24/2012	Cc-VNM-12-10-24-01	Cc	Ocracoke	Dead	U	35.1295	-75.9088
99	10/31/2012	Cc-ECF-12-10-31-02	Cc	Hatteras	Dead	U	35.5820	-75.4613
100	10/31/2012	Cm-ECF-12-10-31-01	Cm	Hatteras	Dead	U	35.5824	-75.4613
101	10/31/2012	Cm-JNW-12-10-31-01	Cm	Ocracoke	Dead	U	35.1036	-75.9583
102	11/6/2012	Cc-JXY-12-11-06-01	Cc	Bodie	Dead	F	35.7966	-75.5443
103	11/6/2012	Cc-JXY-12-11-06-02	Cc	Bodie	Dead	F	35.8245	-75.5543
104	11/9/2012	Cc-ARE-12-11-09-01	Cc	Hatteras	Dead	F	35.3891	-75.4951

**Appendix D. 2012 CAHA Sea Turtle**

Stranding #	Date	Animal Code	Species	Island	Condition	Sex	Latitude (DD)	Longitude (DD)
105	11/13/2012	Cm-VNM-12-11-13-01	Cm	Ocracoke	Dead	U	35.1583	-75.8428
106	11/15/2012	Cm-VNM-12-11-15-01	Cm	Ocracoke	Dead	U	35.1620	-75.8333
107	11/19/2012	Dc-JNW-12-11-19-01	Dc	Ocracoke	Dead	U	35.0863	-75.9843
108	11/25/2012	Cc-FGW-12-11-25-02	Cc	Hatteras	Dead	U	35.2270	-75.6470
109	11/25/2012	Lk-FGW-12-11-25-01	Lk	Hatteras	Dead	U	35.2260	-75.6490
110	11/26/2012	Cc-WPT-12-11-26-01	Cc	Hatteras	Dead	F	35.2927	-75.5160
111	12/3/2012	Dc-WPT-12-12-03-01	Dc	Hatteras	Dead	F	35.4272	-75.4921
112	12/4/2012	Cc-JNW-12-12-04-01	Cc	Ocracoke	Dead	U	35.1877	-75.7733
113	12/5/2012	Cc-WPT-12-12-05-01	Cc	Hatteras	Dead	U	35.2259	-75.5390
114	12/6/2012	Cc-PKD-12-12-06-01	Cc	Bodie	Dead	F	35.7952	-75.5496
115	12/11/2012	Cm-JMG-12-12-11-01	Cm	Hatteras	Dead	U	35.2934	-75.5159
116	12/12/2012	Cm-JNW-12-12-12-01	Cm	Ocracoke	Dead	U	35.0690	-76.0111
117	12/12/2012	Cm-JNW-12-12-12-02	Cm	Ocracoke	Dead	U	35.0690	-76.0111
118	12/12/2012	Lk-JNW-12-12-12-03	Lk	Ocracoke	Dead	U	35.0682	-76.0102
119	12/14/2012	Lk-JMG-12-12-14-01	Lk	Hatteras	Dead	F	35.2188	-75.6655
120	12/18/2012	Cm-JXY-12-12-18-01	Cm	Ocracoke	Dead	U	35.1895	-75.7773
121	12/18/2012	Cm-JEG-12-12-18-02	Cm	Ocracoke	Dead	U	35.1895	-75.7773
122	12/18/2012	Lk-ELH-12-12-18-01	Lk	Ocracoke	Dead	U	35.1181	-75.9626
123	12/22/2012	Un-ELH-12-12-22-01	Un	Ocracoke	Dead	U	35.1343	-75.8984
124	12/27/2012	Lk-PKD-12-12-27-01	Lk	Hatteras	Alive	U	35.2108	-75.6857
125	12/29/2012	Cm-JXY-12-12-29-01	Cm	Ocracoke	Dead	U	35.1896	-75.7763
126	12/31/2012	Cm-PKD-12-12-31-01	Cm	Bodie	Dead	M	35.7841	-75.5346

**Date:** date when observed

**Species:**  
 Cc = *Caretta caretta*  
 Cm = *Chelonia mydas*  
 Dc = *Dermochelys coriacea*  
 Lk = *Lepidochelys kempii*  
 Un = Unidentified

**Sex:**  
 F = Female  
 M = Male  
 U = Unidentified

**Latitude:** in decimal degrees

**Longitude:** in decimal degrees



### Map 1: Bodie Island Sea Turtle Nests, 2012





## Map 2: North Hatteras Island Sea Turtle Nests, 2012





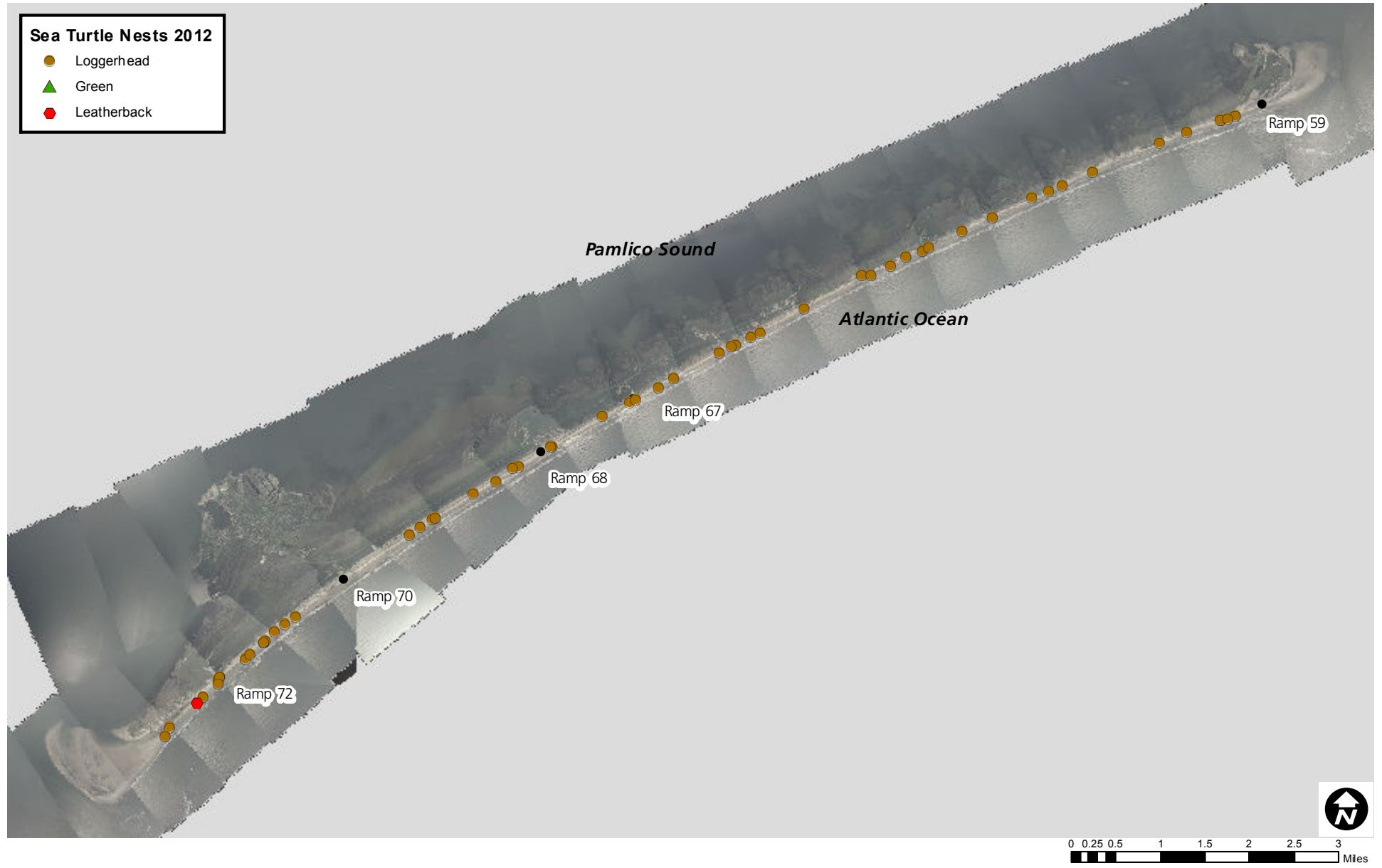
# Map 3: South Hatteras Island Sea Turtle Nests, 2012





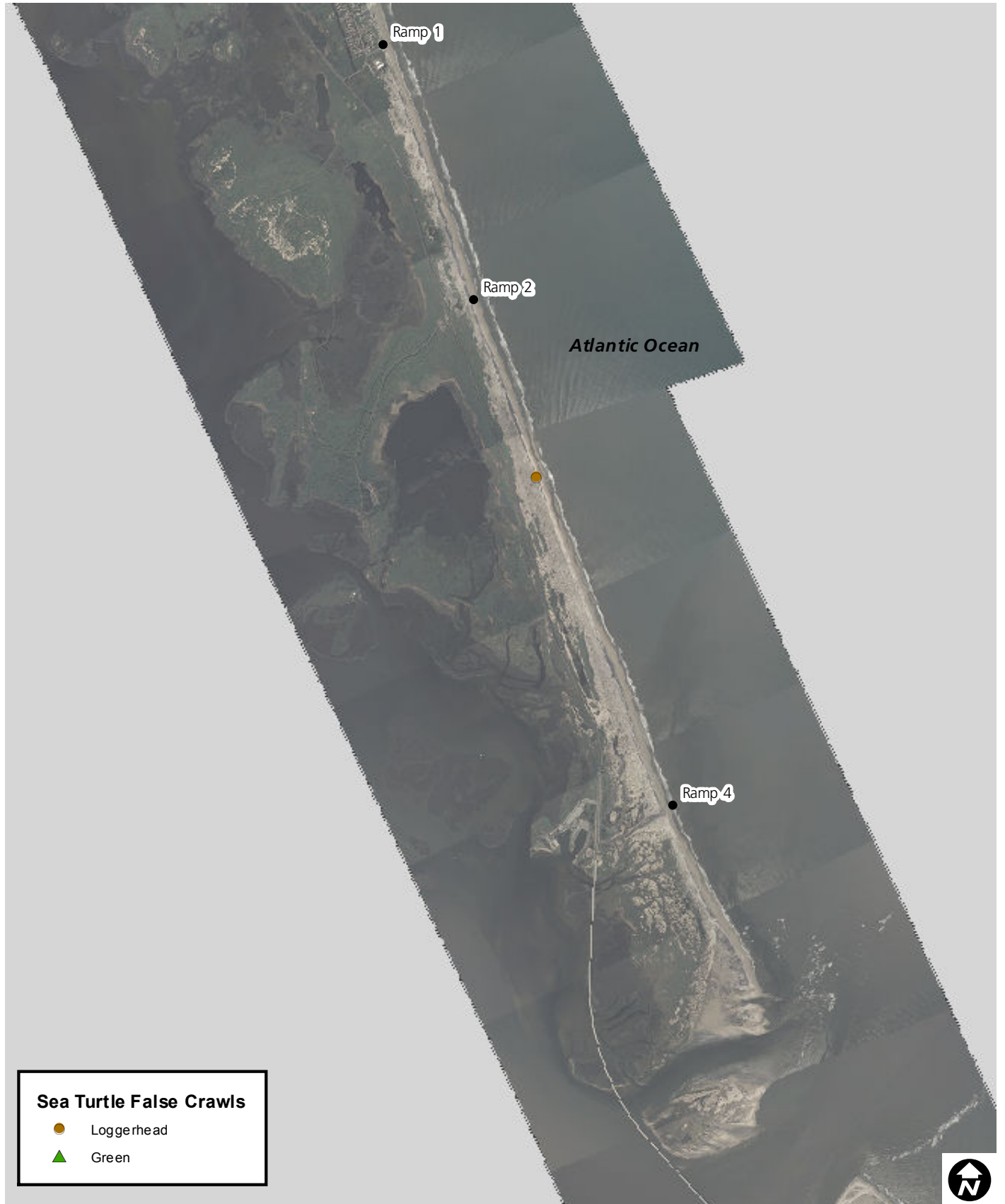


# Map 4: Ocracoke Island Sea Turtle Nests, 2012





Map 5: Bodie Island Sea Turtle False Crawls, 2012





Map 6: North Hatteras Island Sea Turtle False Crawls, 2012





# Map 7: South Hatteras Island Sea Turtle False Crawls, 2012





# Map 8: Ocracoke Island Sea Turtle False Crawls, 2012





### Map 9: Bodie Island Sea Turtle Strandings, 2012



**Sea Turtle Strandings**

**Species**

- Loggerhead
- ▲ Green
- ⬡ Leatherback
- Kemp's Ridley
- ★ Unknown





### Map 10: North Hatteras Island Sea Turtle Strandings, 2012



**Sea Turtle Strandings**

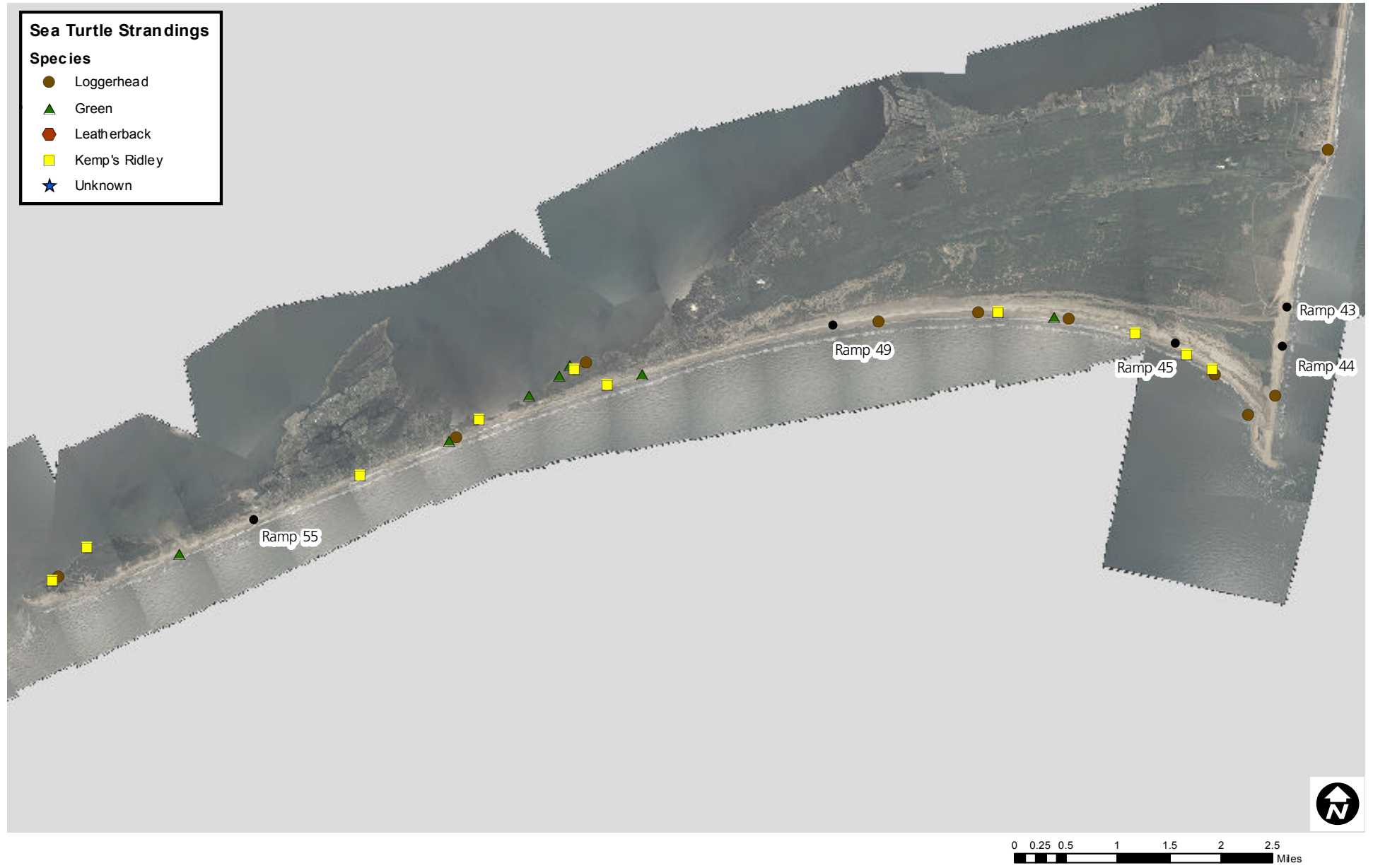
**Species**

- Loggerhead
- ▲ Green
- ⬡ Leatherback
- Kemp's Ridley
- ★ Unknown





# Map 11: South Hatteras Island Sea Turtle Strandings, 2012







# Map 12: Ocracoke Island Sea Turtle Strandings, 2012

