

Section 3 Standard Sea Turtle Monitoring Protocol

Purpose

Unrestricted and restricted beach driving including, law enforcement and emergency vehicles, local traffic, other official personnel in vehicles and horseback riders require sea turtle patrol volunteers to clearly mark the location of sea turtle nests. The conspicuous standard marking and barricading of sea turtle nests are an effective means of protecting nests from vehicular, horseback, and pedestrian activities. Information supplied by sea turtle patrol volunteers allows the County to make proper management decisions and logical evaluations on the organization and effectiveness of the HCP and ITP.

Applicable ITP Condition - G.2.i.

- i. **Standardization of Sea Turtle Monitoring.** “Within (12) months of the effective date of this Permit, the Permittee shall develop, in coordination with State of Florida Primary Permit Holders, a Sea Turtle Nest Monitoring Plan and submit such plan to the U.S. Fish and Wildlife Service for review and approval. The Permittee shall implement the Sea Turtle Nest Monitoring Plan no later than the second full nesting season following U.S. Fish and Wildlife Service approval (beginning on May 1). The approved Sea Turtle Nesting Monitoring Plan may be subsequently amended both prior to and after its implementation upon review and approval of the U.S. Fish and Wildlife Service.”

HCP Performance During 2012

Implementation: The Florida Fish and Wildlife Conservation Commission (FWC) Imperiled Species Management Section is responsible for issuing Marine Turtle Permits to Principal Permit Holders (PPHs) through a Cooperative Agreement with the U.S. Fish and Wildlife Service (USFWS) under Section 6 of the U.S. Endangered Species Act (ESA). According to their Permits a PPH is obligated to follow FWC Standard Conservation Guidelines and coordinate with St. Johns County Standard Sea Turtle Monitoring Protocol (SSTMP) created together with the County, USFWS and FWC.

Standard Sea Turtle Monitoring Protocol (SSTMP)

The Protocol (Appendix A) was created and agreed upon by all parties involved. The SSTMP was developed to create a standardized way of monitoring and conspicuously marking sea turtle nests in the Plan Area, to spatially separate sea turtle nests from vehicular, horseback, and other pedestrian activities, through the collection of statistics on a nesting data sheet (Appendix B) and weekly reporting. Continuous communication regarding nesting and false crawls is important to the County so that proper and adaptive management decisions for coastal permitting, beach lighting, and beach access can be made. Throughout the season PPHs report weekly nesting data via a newly implemented online submittal system created by the County. The weekly summary includes nest and false crawl counts, as well as dates, species, estimated incubation periods, and GPS locations. Information is used to evaluate locations of special events and used as weekly

reporting to interested parties. At the conclusion of the season the County organizes an Annual Roundtable Discussion where the PPHs discuss concerns and suggestions so that both the County and the volunteers can work towards improving each season to move forward.

Survey Method

Sea turtle patrol activities are carried out by seven PPHs and their volunteers. Each PPH is responsible for ensuring that their volunteers understand and follow both FWC's Conservation Guidelines and HCP protocol. The HCP protocol is laid out in the SSTMP and provides information to PPHs and their volunteers on how to carry out the practices the County must follow to implement the HCP/ITP and establishes the link to their daily activities on the beach. This also gives the volunteers a chance to meet County staff, Natural Resource Deputies and other volunteers that are involved in the program.

The training covers all aspects of the SSTMP, while providing updates on nesting numbers, false crawls, lighting violations, washback survey summaries, shorebird protection, beach construction activities, and updates on beach management activities. Every nest in St. Johns County is marked with stakes, flagging and a yellow FWC issued placard. Each nest that is observed by sea turtle patrol is staked with either three or four stakes depending on the level of impact the beach receives. This routine staking requires a ranking criteria protocol (Table 3) to assist the permit holders in determining the type of staking method. During the training permit holders are provided with bundled, bright orange nesting stakes, flagging tape, beach gate keys, GPS units, waterproof cameras, and data sheets. Volunteers are additionally provided with color maps of their survey zones, sample data sheets to review during the training and additional literature regarding sea turtles.

Table 3. Staking Methods Criteria

Sea Turtle Nesting Threat Criteria	Sea Turtle Nesting Protection (Minimum)	Additional Protection Actions Taken as needed
<p style="text-align: center;">High Risk</p> <ul style="list-style-type: none"> - Vilano Beach - South Ponte Vedra Beach - Vilano Beach - St. Augustine Beach - Crescent Beach - South Ponte Vedra Beach <p>Vehicles, Development, Horseback Riding, Multiple Public Beach Access Points</p>	<ul style="list-style-type: none"> - 4 stakes, coded, bright fluorescent flagging, 1 yellow FWC placard - Driving beaches; reflective numbers placed on stakes by County staff, green flagging placed by volunteers at 47 days of incubation 	<ul style="list-style-type: none"> - Self releasing grids (only after predation and if permitted) - Nest located in driving lanes barricaded with bright green cones - Dummy nest perimeter staking, only after poaching indicated consult with FWC and HCP for direction
<p style="text-align: center;">Medium Risk</p> <p>Ponte Vedra Beach Summer Haven</p> <p>Development, Horseback Riding, Limited Public Access</p>	<ul style="list-style-type: none"> - 3 stakes, numbered, with bright fluorescent flagging and 1 yellow FWC placard 	<ul style="list-style-type: none"> - Self-releasing grids (only after predation, if permitted) - Dummy nest perimeter staking, only after poaching indicated consult with FWC and HCP for direction
<p style="text-align: center;">Low Risk</p> <p>*GTMNERR</p> <ul style="list-style-type: none"> - Anastasia State Park <p>No Vehicles, limited development, limited public access</p>	<ul style="list-style-type: none"> - 3 stakes, numbered, with bright fluorescent flagging and 1 yellow FWC placard 	<ul style="list-style-type: none"> - Self-releasing grids (only after predation, if permitted) - Dummy nest perimeter staking, only after poaching indicated consult with FWC and HCP for direction

* Guana Tolomato Matanzas National Estuarine Research Reserve

Survey Areas

As established by FWC sea turtle nesting surveys are broken into two different programs: Statewide Nesting Beach Survey (SNBS) and Index Nesting Beach Survey (INBS). Each program differs in their approach to collect data for nesting sea turtles. The SNBS program is directed toward maximizing the temporal and geographic surveillance of nesting activities on the state's beaches. It is a minimum total count of nests statewide for each survey for each species. The INBS program is directed more toward survey consistency and detail. This program uses an identical protocol to gather detailed nesting data that allows for the assessment of trends over time. Additionally, the beaches of St. Johns County include two inlets. The St. Augustine inlet divides the northern barrier island from Anastasia Island which is the middle barrier island. The Matanzas Inlet separates Anastasia Island from the most southern barrier island. The three barrier islands each have different sand types, levels of erosion and accretion, and slope type. Fort Matanzas National Monument is not included in the HCP/ITP however carries out their own surveys and through coordination with FWC. Their data is not included in this Annual Report.

Detailed Survey Description (From North to South)

Ponte Vedra Beach: FWC Permit #074, Ponte Vedra North and Beach Club Drive North, From the Duval County line south to Corona Road and Corona Road to Sawgrass - 4.28 miles (6.85 kilometers). This survey area is a St. Johns County beach but also located in the Ponte Vedra Municipal Services District that consist primarily of single family homes, condominiums, three ocean front resorts and multiple public walkovers. Monitoring efforts are coordinated and carried out by sea turtle patrol volunteers.

Ponte Vedra Beach: FWC Permit #029, Beach Club Drive South, Sawgrass Beach Club south to Old Ponte Vedra Condos - 3.5 miles (5.6 kilometers). This Ponte Vedra beach primarily consists of single family homes, condominiums and with one major public access point with amenities. Monitoring efforts are coordinated and carried out by sea turtle patrol volunteers.

Ponte Vedra Beach: FWC Permit #074, Old Ponte Vedra Condominiums, Old Ponte Vedra Condominiums south to the northern boundary of GTMNERR - 1.13 miles (1.81 kilometers). This Ponte Vedra beach primarily consists of single family homes, condominiums, and no public accesses. Monitoring efforts are coordinated and carried out by sea turtle patrol volunteers.

Guana Tolomato Matanzas National Estuarine Research Reserve (GTMNERR): FWC Permit #140, GTMNERR and south Guana River, Northern boundary of GTMNERR South to southern boundary of GTMNERR at Gate gas station - 7.26 miles (11.6 kilometers). This area consists primarily of single family homes, periodic stretches with no development, and four public access points with parking and minor amenities. Beaches are managed by the Florida Department of Environmental Protection (DEP) as state reserve lands. Monitoring efforts are coordinated by one DEP staff member and carried out by sea turtle patrol volunteers.

South Ponte Vedra: FWC Permit #056, Ponte Vedra South, Southern boundary of GTMNERR at Gate gas station south to Usina boat ramp - 5.15 miles (8.29 kilometers). This area consists primarily of single family homes, multiple public access points, and one major condominium

resort development. There is 3.31 miles (5.33 kilometers) of non-driving beach and 1.65 miles (2.65 kilometers) of restricted driving. Monitoring efforts are coordinated and carried out by sea turtle patrol volunteers.

Vilano Beach: FWC Permit #023, Usina boat ramp south to St. Augustine Inlet - 2.73 miles (4.39 kilometers). This area consists primarily of single family homes, multiple public access points with parking and minor amenities and without parking easily accessed by neighborhoods, and a redevelopment area near the inlet with hotels and beach driving access ramps. The beach consists of 0.28 miles (0.45 kilometers) of driving beach, and 2.55 miles (4.10 kilometers) of restricted driving beach. Monitoring efforts are coordinated and carried out by sea turtle patrol volunteers.

Anastasia State Park: FWC Permit #147-01, St. Augustine Inlet south to Pope Road beach access - 4.03 miles (6.48 kilometers). This area has no development with beach driving occurring along entire stretch only by official vehicles working for both the State of Florida and St. Johns County. Major erosion has occurred on the inlet side of the park with periodic re-nourishment projects occurring on the southern end of the park. Monitoring efforts are coordinated and carried out by the Department of Environmental Protection Florida State Park Rangers.

St. Augustine Beach: FWC Permit #090, Pope Road south to Crescent Beach Access Ramp - 6.1 miles (9.81 kilometers). This area is within the boundaries of the City of St. Augustine Beach with multiple beach front hotels, condominiums, and single family homes. This area consists of 0.9 miles (1.44 kilometers) of non-driving beach with 5.2 miles (8.36 kilometers) of driving beach starting at A Street beach access ramp and continuing south to Crescent Beach Access Ramp, with a total of 6 beach access points. Northern part of this beach near the pier has erosion challenges and receives periodic re-nourishment. Monitoring efforts are coordinated and carried out by sea turtle patrol volunteers.

St. Augustine Beach: FWC Permit #101, Matanzas North, Crescent Beach Access Ramp south to Fort Matanzas Beach Access Ramp - 3.87 miles (6.22 kilometers) of driving beach, multiple condominiums, and single family homes. Monitoring efforts are coordinated and carried out by sea turtle patrol volunteers

Summer Haven: FWC Permit #046, Matanzas South, This beach as it is commonly referred to as Summer Haven starts at Matanzas inlet south to the St. Johns and Flagler County line. Within this area are 2.56 miles (4.11 kilometers) of single family homes and multiple construction projects such as a sand berm and beach re-nourishment projects.

Refer to Map Figures 2 and 3 for a map of survey areas.

* Survey boundaries and driving measurements are approximate.

Biological Goal

The over-arching biological goal of the HCP is to provide a net benefit to both sea turtles and AIBM throughout the life of the ITP. The programs and policies contained in the HCP will

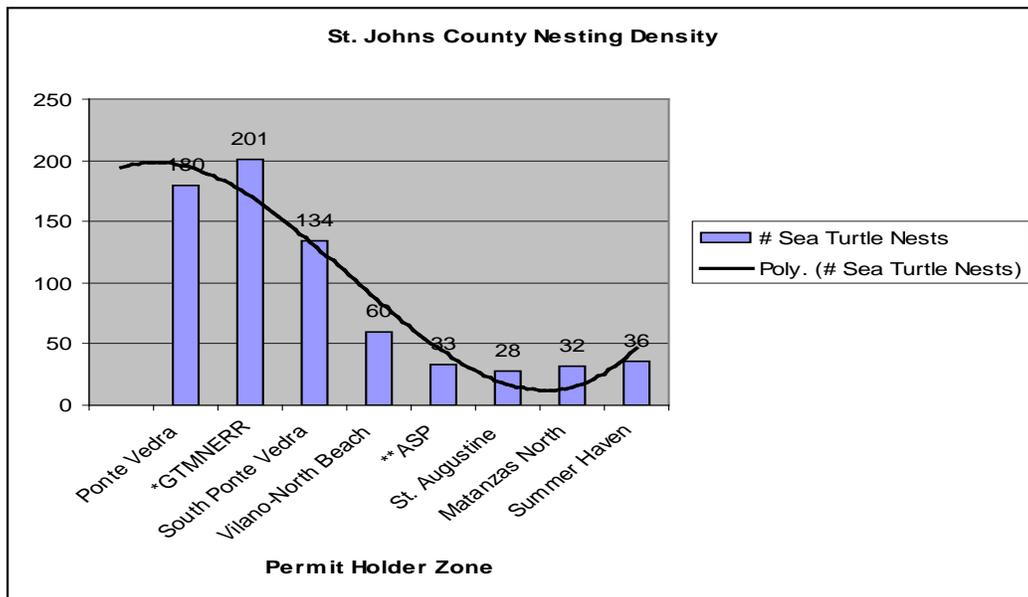
improve protected species management on the County’s beaches relative to practices currently in place.

Assessment: All data sheets were submitted to the County at the annual Roundtable Discussion, inputted and evaluated during the winter months. The annual Roundtable Discussion was attended by the USFWS HCP Program Coordinator, FWC Imperiled Species Management Section Leader, St. Johns County Environmental Director & Coordinator, Beach Manager, Environmental Specialist II, Beach Enforcement Specialist, and one Natural Resource Deputy as well as all 7 of the St. Johns County PPHs. PPHs were given the opportunity to express any concerns that developed over the course of the 2012 nesting season. The County also had the opportunity to update the PPHs on any adjustments or suggested changes to the monitoring protocol, spreadsheets, and data sheets.

Nesting Summary

Each and every nest that is marked and evaluated on St. Johns County beaches is documented through weekly reporting on a nesting data sheet and then entered into an online submittal program. The data sheets allow the County to verify if management of the beaches is effectively protecting the species while maintaining the balance with beach user groups. Each beach exhibits various levels of development, beach access, shore type and beach user groups, see above mentioned Detailed Survey Description. These combined efforts demonstrate the various nesting trends and density differences throughout the County (Graph 1).

Graph 1. St. Johns County Nesting Density for 2012 nesting season (n = 704)



*GTMNERR – Guana Tolomato Matanzas National Estuarine Research Reserve

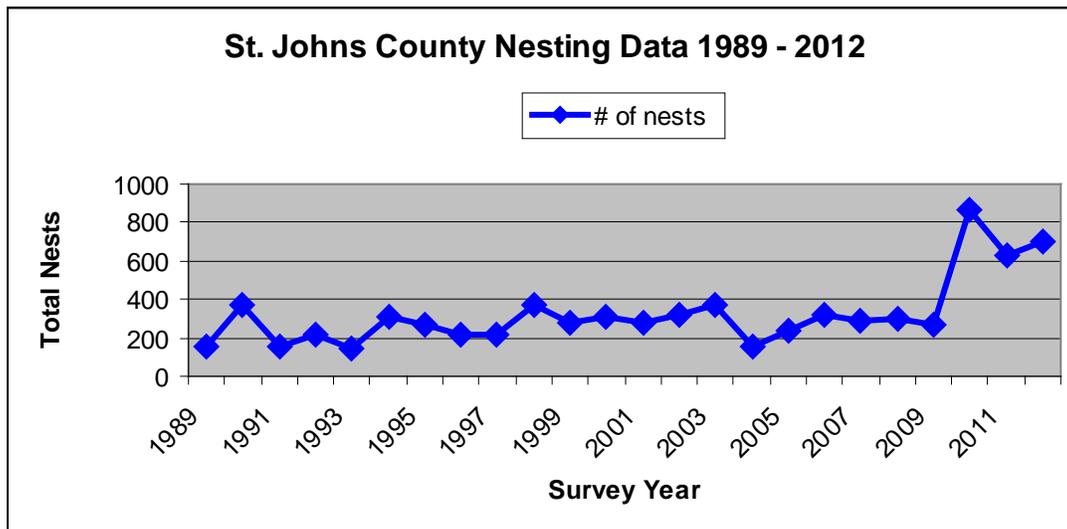
**ASP – Anastasia State Park

A total of 704 nests were recorded with the distribution of nests by species being 651 loggerheads (*Caretta caretta*), 39 greens (*Chelonia mydas*), and 14 leatherbacks (*Dermochelys coriacea*) and an overall hatchling success rate at 82% (Table 4). This is an 11% increase in nesting from the 627 nests in 2011 (Graph 2) and demonstrates a continual increase in nesting from 2010.

Table 4. Hatchling/Egg Success Summary

Species	Live Hatchlings in Nest	Dead Hatchlings in Nest	Pipped Live	Pipped Dead	Unhatched Whole	Unhatched Damaged Eggs	Hatched Eggs	Hatchlings Emerged	Total # Eggs	Hatchlings Produced	Hatchling Success Rate
Cc	1116	888	163	1123	6678	1248	50285	48281	59497	49223	83%
Cm	140	141	30	88	412	222	3604	3323	4356	3722	85%
Dc	24	62	7	25	471	26	463	377	992	434	44%
Totals	1280	1091	200	1236	7561	1496	54352	51981	64845	53379	Ave=82%

Graph 2. Total nests count since 1989

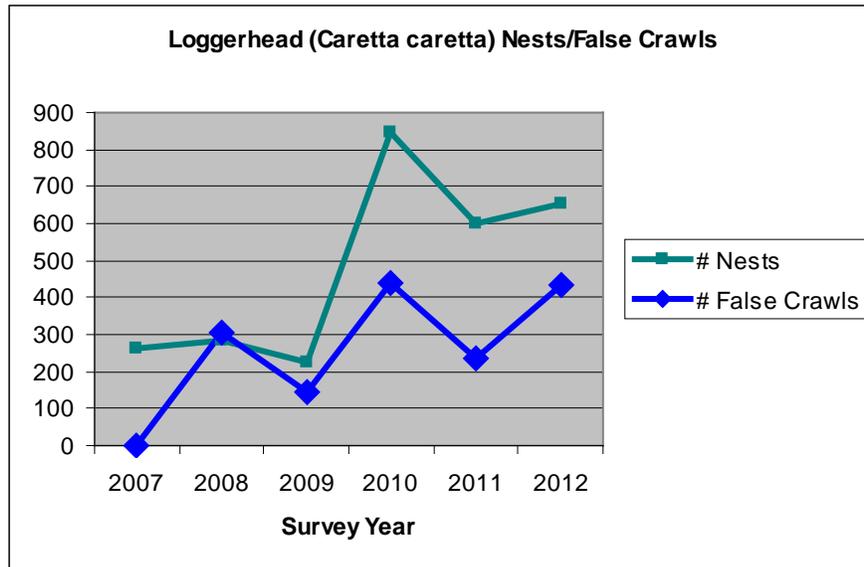


Loggerhead (*Caretta caretta*)

According to the FWC a 23 percent increase between 1989 and 1998, nest counts declined over nearly a decade. Annual nest counts show a strong increase over the last five years and the overall nest counts from 1989 to 2012 are positive (Witherington, et. al. 2012). Volunteers have been collecting more formal data in St. Johns County since 2007 allowing the County to report more efficiently its nesting activity and productivity. With 651 nests and 434 false crawls for the 2012 season (Graph 3) this is a steady increase in nesting loggerheads. With 575 nests confirmed to have hatched these nests produced 49,223 hatchlings with only 1 nest reportedly washed out during Hurricane Sandy, (Section 1: Public Vehicular Access) an large storm event that

inundated the beaches from October 25th to the 29th. The overall mean clutch was 91 eggs per nest with a range of 7 to 179 eggs. The nesting success rate for the loggerhead was 88% while the hatchling success rate was 82% with an average incubation period of 58 days.

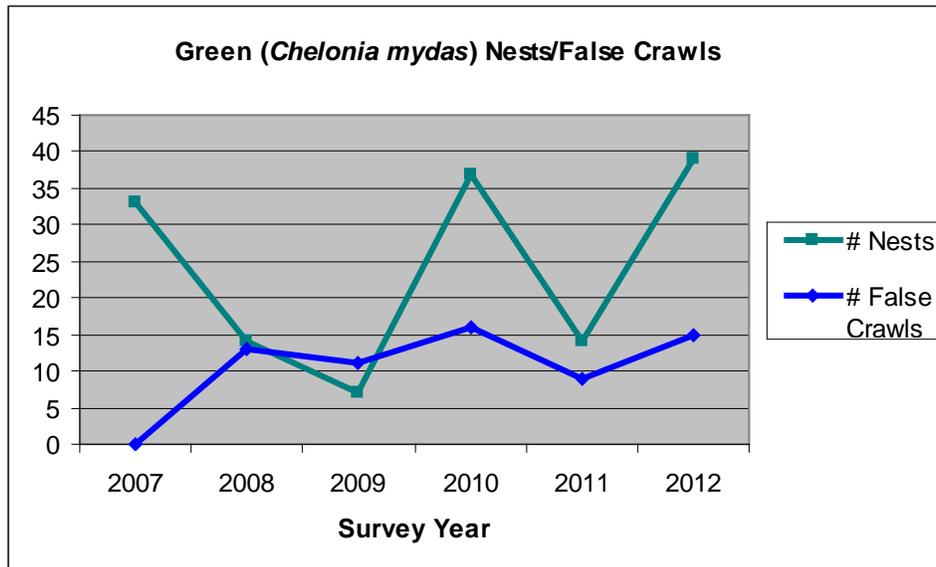
Graph 3. Loggerhead (*Caretta caretta*) Nests/False Crawls



Green (*Chelonia mydas*)

From 2007 to 2009 there appeared to be a decline of green sea turtle (*Chelonia mydas*) nesting (Graph 4) in St. Johns County. However, nesting data recorded for the 2010 season revealed a significant spike and has rebounded this past season with an even higher number of nesting with 39 nests and 15 false crawls. This is a 5% increase in nesting when compared to the 2010 record season. Of these 39 nests 34 hatched producing 3,722 hatchlings. The overall mean clutch was 112 eggs per nest with a range of 44 to 176 eggs. The nesting success rate for green was 87% while the hatching success rate was 85% with an average incubation period of 58 days.

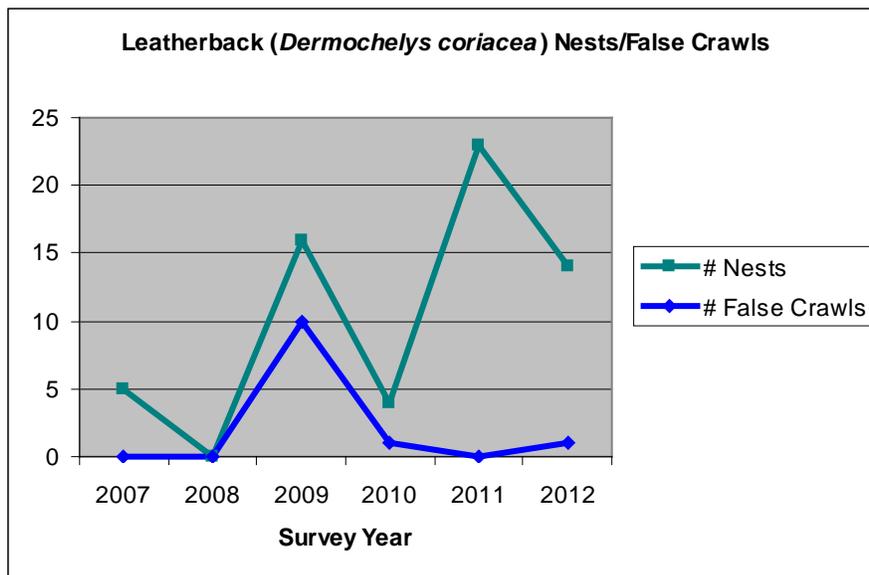
Graph 4. Green (*Chelonia mydas*) Sea Turtle Nests/False Crawls



Leatherback (*Dermochelys coriacea*)

Nesting Leatherbacks (*Dermochelys coriacea*) produced 14 nests and 1 false crawl. This pattern resembles a biennial nesting pattern that is indicative of nesting leatherbacks (Graph 5). Out of the 14 nests 7 hatched producing 434 hatchlings, 4 of which the clutch could not be found and 4 nests had eggs but did not produce hatchlings. The overall mean clutch was 71 eggs per nest with a range of 48 to 119 eggs. The nesting success rate was 50% while the hatchling success rate for leatherbacks was 44% with an average of 75 days of incubation.

Graph 5. Leatherback (*Dermochelys coriacea*) Nests/False Crawls

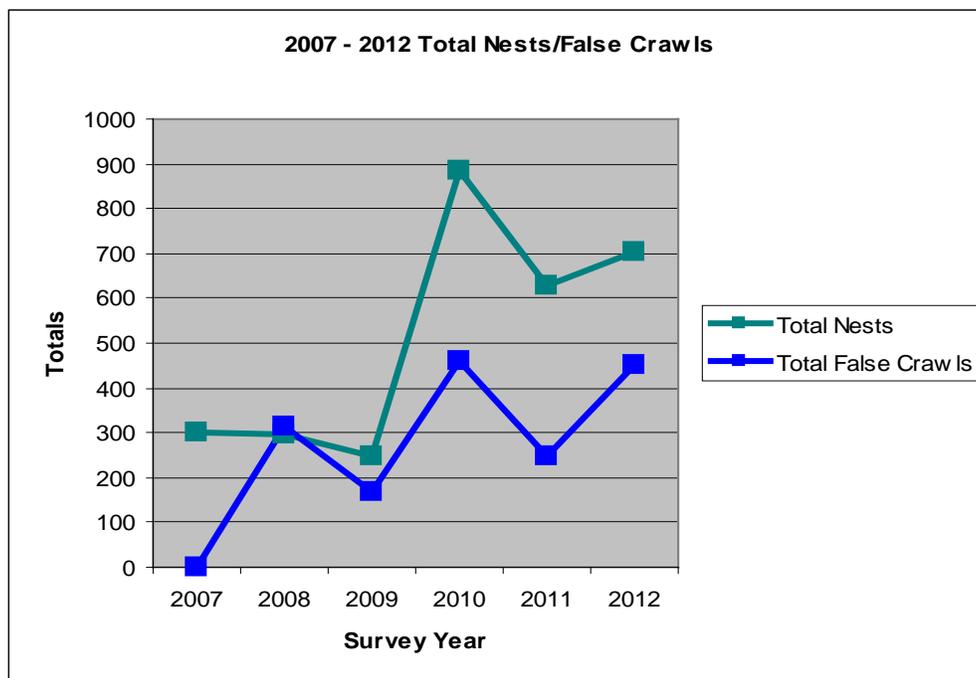


Refer to Map Figures 4 and 5 for more information regarding nesting on County beaches.

False Crawl Summary

It is reasoned that with an increase in the volume of nesting for yet another season the amount of false crawls would also increase (Graph 6) which was realized with 450 false crawls of which 434 were Loggerhead, 15 Green, and 1 Leatherback reported, a 45% increase from 2011. There is 24.8 miles (39.91 kilometers) of non-driving beach for an area that is 65% greater than the 16.3 miles (26.23 kilometers) of driving and restricted driving beach. Amongst the false crawls 26 were on driving beaches, 321 on restricted driving beaches, and 103 observed on non-driving beaches.

Graph 6. 2007-2012 Total Nests/False Crawls



Refer to Map Figures 6 and 7 for more information regarding false crawls on County beaches.

Volunteers also record the shore type and the location or apex of the crawl when recording this data. A total of 366 false crawls were recorded in front of a dune, 76 in front of an escarpment, 7 in front of seawalls (Map Figures 8 & 9), and 1 recorded in front of a rock revetment. Additionally, 296 were recorded within the CZ, 151 out of the Conservation Zone, 2 within a driving lane, and 1 recorded in an inlet. Lighting from coastal properties may contribute to the reasoning for a false crawl by a nesting female. It should be noted that during the 2012 nesting season there were 428 lighting violations issued to beachfront homes (Map Figures 11 & 12). A further analysis of this is still needed.

Clutch Size and Incubation

Although we calculate an average incubation period, which in 2012 it was at 58 days, there are three barrier islands that produce diverse average incubation periods. The northern barrier island which has coquina shell like sand was averaged at 58 days, Anastasia Island which has soft white sand was at 60 days and the southern barrier island commonly referred to as Summer Haven with a mix of soft white sand and shell like coquina was calculated at 58 days.

Relocated Nests

The standard procedures for relocating nests according to both FWC guidelines and HCP protocol require that a sea turtle nest be relocated if discovered in the most recent high tide line, if it is being washed out by a storm, during a re-nourishment project and not to be relocated if deposited in a driving lane. Throughout the season 34 nests were relocated for various reasons and mostly due to the approaching tide. A large re-nourishment project took place with in both the State Park and the City of St. Augustine Beach limits requiring volunteers to relocate 4 nests that were deposited with in the project limits. All 4 nests hatched producing 371 hatchlings resulting in an 86% hatchling success rate. As part of an ongoing sand placement/berm building project on Summer Haven this beach receives sand from time to time. Although it did not occur this past season this beach continues to experience erosion and has an escarpment that is formed in the middle of the beach where nesting does occur. Out of the 25 nests that were relocated on Summer Haven 15 were due to a high tide event, and 10 were relocated due to the escarpment. As indicated on the nesting data sheets nests were additionally relocated for the following reasons: 1 walkover; 1 late relocation; and 3 in response to the nests being washed out. Of the 34 relocated nests, 33 hatched producing 2,964 hatchlings with a 75% hatchling success rate and a 97% success rate.

Other Impacts

Sea turtle patrol volunteers are also asked to record other events that may have negative impacts to nests such as predation, overwash, vandalism and poaching. Predation typically occurs during the egg and hatchling stages of incubation (Witherington, Herren, Bresette 2006) and most tidal inundation will occur during a storm event. Although predation is a concern for volunteers and the nests the amount predated this year was lower than in years past affecting 11% of the total nests. The 69 nests affected by predation was done so by crabs 17 (25%), dogs and/or coyotes 12 (17%), fox 17 (25%), raccoons 4 (6%), ants 6 (9%), and 12 (17%) were impacted by an unknown predator. Out of those nest 33 had self releasing screens applied, 2 a self releasing cage and the remaining 668 having no protection installed.

Other natural occurrences that may have an impact to an incubating nest are washover or tidal inundation events. Washover events occur when the tide has simply washed over the nests while a tidal inundation occurs when the tidal waters flood the nest for longer than normal periods of time. These events can prevent the proper exchange of oxygen to incubating sea turtle eggs preventing the eggs from hatching. Out of the 616 confirmed nest that did hatch only 1 was washed out, 12 (2%) documented as not viable, and 62 (9%) the clutch could not be located during the evaluation process

Obstacles Encountered

When sea turtles emerge from the ocean to find a place to deposit their eggs they sometimes encounter anthropogenic and other natural obstacles. Sometimes these items cause the female to falsely attempt nesting or will continue with her crawl to deposit eggs (Table 5).

Table 5. Obstacles Encountered

Human Obstacles	Nesting	False Crawl
Sand Fencing	7	8
CZ Post	1	1
Walkover	4	5
Beach Furniture	0	0
Catamaran/Boat	0	8
Tire Tracks/Ruts	2	1
Riprap/Seawall/Bulkhead	1	4
Staked Nest	3	5
Trash Can Post	1	0
Volleyball Net Post	1	0
Cinder Block/Building Wood	4	0
Other (Unknown)	60	54
Natural Obstacles		
Vegetation	5	5
Escarpment	20	31
Log/Stick	2	0
Other (Unknown)	60	54

Spatial Patterns

Spatial patterns discussed in this section include nests laid in relation to driving and non-driving beach areas, relationship of nesting to the Conservation Zone (CZ) and relationship of nesting to the beach.

Nest deposited on driving beaches accounted for 61 (9%) nests, 455 (64%) nests on non-driving beaches and 193 (27%) nests on restricted driving beaches (Table 6).

Table 6. Driving/Non-driving beaches nests %Distribution

Beach Type	Mileage	Nest	%Distribution of County Beach	% Distribution of nest
Driving	10.6	61	26%	9%
Non-driving	24.8	455	60%	64%
Restricted	5.7	193	14%	27%
Total	41.1	709	100%	100%

The 15 foot CZ is established seaward of the base of the dune and, in theory, this would be suitable habitat for a nesting sea turtle to deposit her eggs. Within the CZ 517 (81%) nests were documented, 184 (29%) nests were located out side of the CZ, and 3 (.5%) nests within the driving lane.

The beaches of St. Johns County have multiple shore types that include dune, escarpment, revetment and seawalls. This may or may not have an impact on nesting patterns as 631 (99%) of the nests were deposited on beaches with a dune, 69 (11%) nests were deposited on beaches with an escarpment, and 1 (.2%) nest deposited in front of a rock revetment.

Temporal Patterns

The first loggerhead nest of the season was deposited on April 30th just 1 day before the opening of the official sea turtle nesting season in South Ponte Vedra. The last loggerhead nest was deposited on August 22nd on the GTMNERR beach just below South Ponte Vedra. Green sea turtle nesting typically occurs later in the season with the first nest appearing on June 6th on the northern tip of Anastasia Island within the state park boundaries and the last was deposited on September 7th on the GTMNERR beach. Leatherback nesting has occurred very early in the season, however, the earliest documented nest occurred this past season on March 26th on the GTMNERR beach. Bi-weekly patrols begin in March by GTMNERR volunteers and so it was discovered on a routine patrol. Patrols located north of this beach on South Ponte Vedra discovered the last leatherback nest of the season on June 16th.

The pattern of peak nesting fluctuates from season to season with weekly nesting (Graph 7 & 8) being at its peak on the weeks of June 3rd and July 1st with 70 nests each recorded. Peak nesting began on May 20th and concluded on July 21st. A decrease in weekly nesting occurred during the week of May 27th where according to weather reports by the National Oceanic Atmospheric Administration (NOAA) this was the only week with winds up to 25 knots and 8.8' average ocean swell were recorded. It is not known if this has any impact on nesting but can be documented as an observation. Recording of weather patterns will be incorporated into future reports.

Nesting Season Comparison

Table 7 provides relative numbers for comparison of the nesting seasons from 2007 when the County initiated standard data collection to the most current 2012 nesting season. With only five years of data trend analysis will be weak at best. Additionally, the relative three year spike in loggerhead nests requires additional years of nesting data to confirm if nesting is seeing an upward trend.

Table 7. Nesting Season Summary

	2007	2008	2009	2010	2011	2012
Nests	302	298	249	868	627	704
Cc	302	14	226	829	591	651
Cm	33	14	7	35	13	39
Dc	2	0	16	4	23	14
False Crawls	NA	316	168	458	247	450
Relocated	NA	10	23	62	66	34
Washed Out	NA	68	15	19	65	0
Average Incubation	55	60	57	52	61	63
Poached	4	0	1	3	0	2
Total # of hatchlings emerged	NA	16,892	18,771	57,160	36,029	51,981

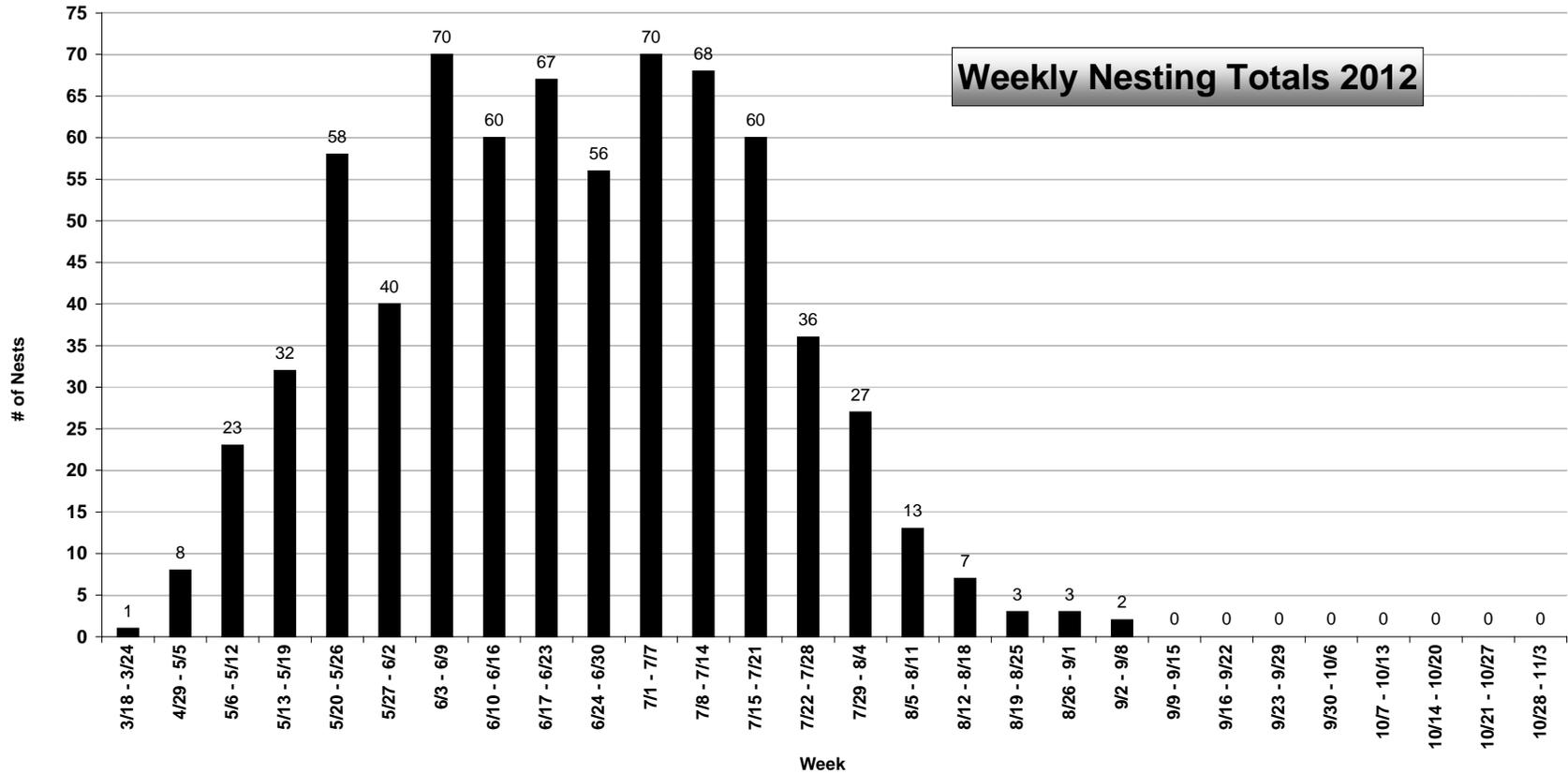
* Loggerhead (*Caretta caretta*, Cc), Green (*Chelonia mydas*, Cm), Leatherback (*Dermochelys coriacea*, Dc)

Delayed Gates

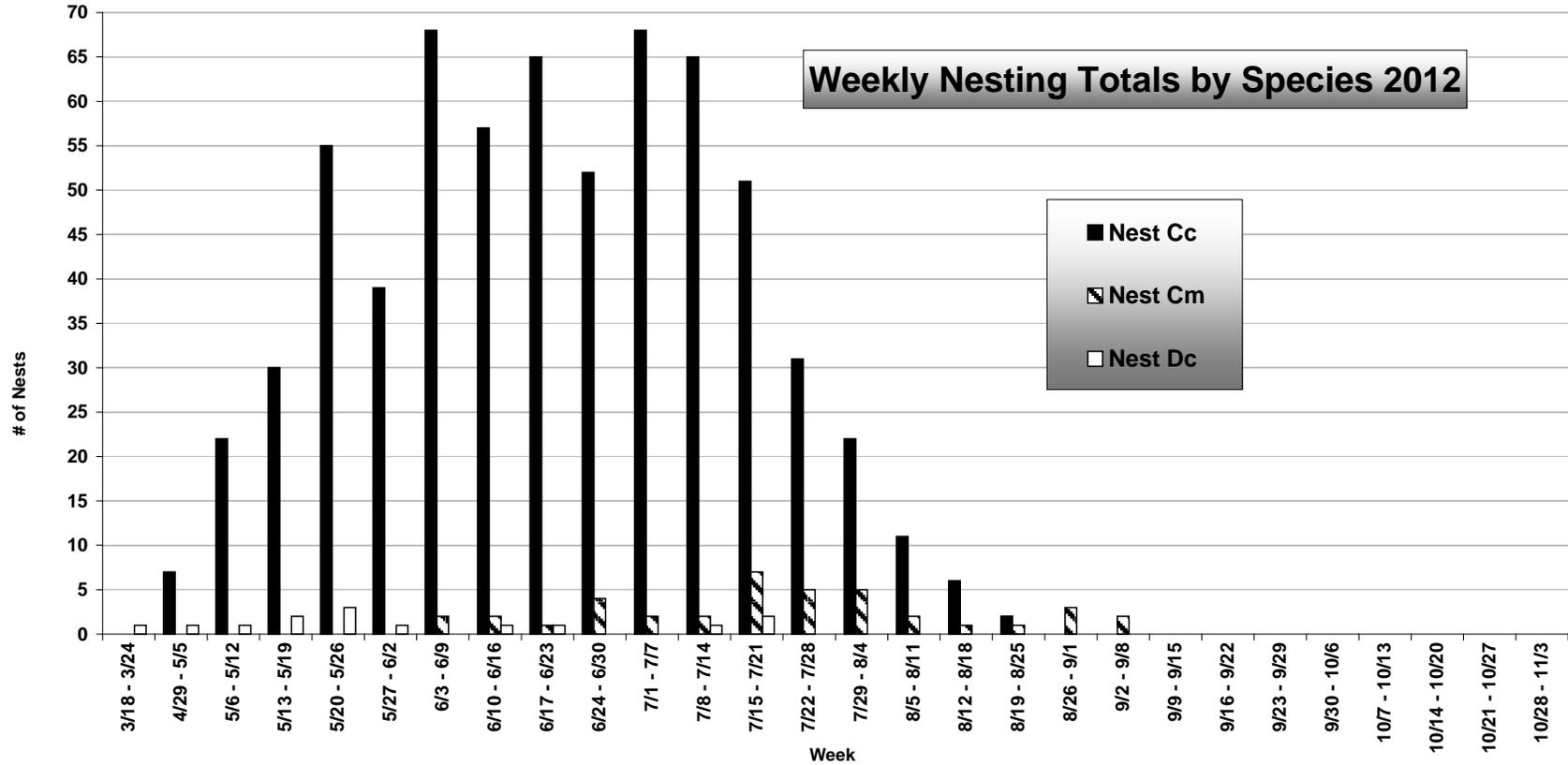
Occasionally sea turtle patrol has difficulty carrying out their tasks due to unforeseen events that may occur on the beach during their routine patrols. If and when these events occur volunteers are asked to contact the Environmental Coordinator to delay beach gate openings. Two such events occurred causing the beach gates to remain closed after 8:00 am.

- **May 30th**: Beach gates requested to remain open until 8:15 am by the St. Augustine Beach Permit Holder, 1 Loggerhead (*Caretta caretta*) was discovered swimming in a slough created by the beach re-nourishment project.
- **June 24th**: Beach gates requested to remain open until 8:20 by the St. Augustine Beach Permit Holder, 2 Loggerheads (*Caretta caretta*) were discovered to still be nesting within a short distance of each other, the survey of other nests in the area was delayed causing this request to be made.

Graph 7. Weekly Nesting Totals (n = 704)



Graph 8. Weekly Nesting Total including all species (n = 704)



Refer to Map Figure 10 for a complete view of nesting in St. Johns County

Program Improvements: The County is pleased with the increased level of coordination with the PPHs and anticipates improvements to continue. The County will continue to progress on its data recording as well as carry on with researching ways to develop additional statistical evaluations. This will improve the County's ability to make proper management decisions for the protection of listed species.