



DNR

# LOGGERHEADLINES

a publication of the Marine Turtle Program - sea turtle conservation since 1977



## AND THE AWARD GOES TO...

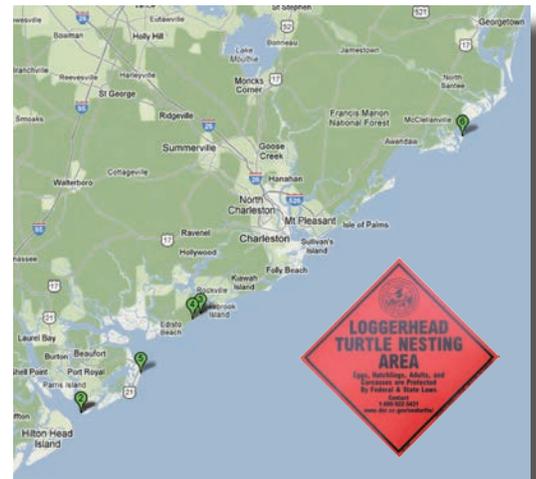
Betsy Brabson of DeBordieu Beach, South Carolina (SC) received the highest honor in volunteerism at the 2013 International Sea Turtle Symposium (ISTS) in Baltimore, Maryland. The Ed Drane Award for Volunteerism was established in memory of Ed Drane (Project Leader for Hilton Head Island for 19 years) who was Treasurer of the ISTS for more than 20 years. This award is presented to a person who is working outside his or her professional life who voluntarily commits a significant portion of their time, energy, and passion to the conservation of sea turtles. Betsy Brabson is a volunteer for the SC Department of Natural Resources (DNR) as Project Leader for the DeBordieu/Hobcaw Nest Protection Project. She has surveyed these beaches during the sea turtle nesting season for 20 years, and she does it in her spare time after being a successful business owner, mother, and wife. After discovering beach vitex, she organized researchers at Clemson University and USDA to form the Beach Vitex Task Force, which now includes North Carolina (NC) and Virginia. In 2009, she organized a large fundraiser to purchase a digital radiograph machine for the South Carolina Aquarium (SCA) animal medical facility, which treats sick and injured sea turtles. Most recently, from 2010 – 2012, Betsy organized and led a group of workhorse volunteers to help the SCDNR address sea turtle nest depredation by feral pigs on a state-owned island. The data collected by Betsy and her team acted as a catalyst for the SCDNR to increase feral pig control and has taken a nonproductive loggerhead nesting beach to a productive one in three years. She is exceptionally organized, energetic, thorough, and easy to work with. The SCDNR is honored to have such a volunteer on our team.



## NORTHERN RECOVERY UNIT LOGGERHEAD DNA PROJECT

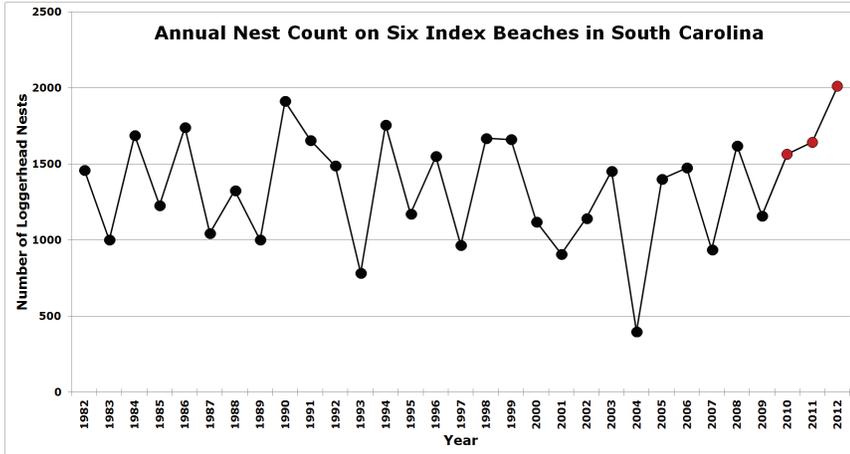
[seaturtle.org](http://seaturtle.org)

The Georgia (GA) DNR, NC Wildlife Resources Commission, and the SCDNR sea turtle programs are participating in a multi-state genetics research project along with the University of Georgia to answer several basic loggerhead sea turtle nesting questions. Answers to these questions will help biologists better understand how the loggerhead population is doing. To date, samples from 20,768 nests have been collected from GA, NC, and SC. Dr. Brian Shamblin has successfully assigned a DNA ID code to 18,863 (90.8%) of these samples identifying **5,414** unique females. A complete summary of the DNA results is on page three of this newsletter. The map to the right is an example of one SC nesting loggerhead. She laid six nests on five beaches in SC: Bay Point Island (two nests), Botany Bay Plantation, Edingsville Beach, Hunting Island State Park, and Cape Island in the Cape Romain National Wildlife Refuge. For complete information on the status of this project, please visit: [www.dnr.sc.gov/seaturtle/genetics.htm](http://www.dnr.sc.gov/seaturtle/genetics.htm).



**SEA TURTLE NESTING IN 2012**

There were 4,623 loggerhead nests on project beaches in 2012. Please refer to the table at the top of page five in this newsletter for nest counts on individual beaches. This season also included one leatherback and seven green nests. Please visit the online nest database hosted by [SeaTurtle.org](http://SeaTurtle.org) for more detailed information on the 2012 nesting season: [www.seaturtle.org/nestdb/?view=2](http://www.seaturtle.org/nestdb/?view=2).



**LONG-TERM NESTING TRENDS**

South Carolina has six index beaches with projects that have been conducting standardized ground surveys for loggerhead nests since 1982. These beaches include South Island, Cape Island, Lighthouse Island, Edisto Beach State Park, Edisto Beach, and Fripp Island. These six beaches represent approximately 41% of the nesting effort. The annual number of loggerhead nests over this 30 year period (1982 - 2012) indicates no significant change, positive or negative, but follows a period of general decline from 1980 to 2004. More recently (2005 - 2012), annual nest counts show an increasing trend. The figure above shows annual loggerhead nest counts on these index beaches from 1982 – 2012. The natural trend includes high, medium, and low years. Since 2010, there have been three strong years in a row (noted in red in the figure above). Historically speaking, nesting in SC prior to 1982 was much denser relative to current nest counts with over 2000 nests solely on Cape Island in the early 1970's. This is compared to an annual average of 1,000 nests on Cape Island in recent years. So while nesting may be rebounding, nest counts are lower than numbers seen in the past.

The South Carolina Marine Turtle Conservation Program began in 1977 with beach management research. The program further developed in the early eighties with the formation of the nest protection and stranding volunteer networks along the coast of South Carolina. Today, the program encompasses research, management, monitoring, and education within the local, regional, and international communities. We are indebted to the continued passion, dedication, and effort of our staff, partners, and volunteers.

- DuBose Griffin ~ Coordinator
- Charlotte Hope ~ Biologist
- Kelly Sloan ~ Biologist
- Jenna Cormany ~ Field Technician
- Amy Gutierrez ~ Field Technician
- Justin Jay ~ Field Technician
- Lisa Scarano ~ Field Technician

Marine Turtle Conservation Program  
 SC Department of Natural Resources  
 Post Office Box 12559  
 Charleston, SC 29422

Voice ~ (843) 953 - 9015  
 Fax ~ (843) 953 - 9282  
 Email ~ [coastbio@dnr.sc.gov](mailto:coastbio@dnr.sc.gov)  
 Web Site ~ [www.dnr.sc.gov/seaturtle/](http://www.dnr.sc.gov/seaturtle/)

The South Carolina Department of Natural Resources prohibits discrimination on the basis of race, color, gender, national origin, disability, religion, or age. Direct all inquiries to the Office of Human Resources, PO Box 167, Columbia, SC 29202.

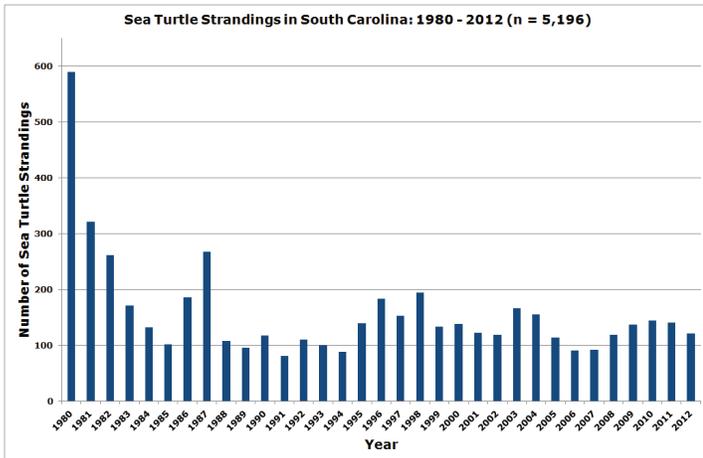
This program is funded in part with grants from NOAA Fisheries and the US Fish and Wildlife Service under Section 6 of the Endangered Species Act. Data presented in *Loggerheadlines* are not to be used in any publication, product, or commercial application without prior written consent from the data owner.

**2012 Sea Turtle Nesting Season Summary Data**

- Nests: 4,623;
- False Crawls: 6,371
- In Situ: 2,507
- Relocated: 2,116 (45.7%)
- Hatchery: 429 (9.2%)
- Lost Nests: 489 (10.5%)
- First Leatherback Nest: Kiawah Island (17 April)
- First Loggerhead Nest: Cape and Harbor Islands (30 April)
- Mean Hatch Success: 69.7%
- Mean Emergence Success: 66.8% (emerged hatchlings = 292,385)
- Mean Incubation Duration: 56.8 days
- Program Nest Success: 85.4%
- Program Beach Success: 42.0%



**STRANDING, POST-MORTEM, AND REHABILITATION**



Strandings in 2012 (n = 125) were slightly lower than 2011 (n = 139), but not different from the 10-year mean of 130. Of these 125, 24 turtles stranded alive (6 were released, 7 are undergoing care at the SCA, and 11 died). There were 10 strandings reported January through March, 15 in April, 25 in May, 14 in June, 25 in July, 17 in August, and 19 September through December. The species composition of those stranded was 78 loggerheads, 26 Kemp’s ridleys, 18 greens, 2 leatherbacks, and 1 unidentified. In recent years, there have been notable increases in the number of Kemp’s ridley and green sea turtle strandings. By county (north to south), Horry = 24, Georgetown = 19, Charleston = 52, Beaufort = 24, Colleton = 6, and Jasper = 0. Fifteen post-mortem

exams were performed. Six indicated watercraft interaction was the probable cause of stranding, eight indicated chronic mortality (disease), and one green sea turtle was a documented dredge take by the US Army Corps of Engineers. Visit [www.seaturtle.org/strand/](http://www.seaturtle.org/strand/) for more information on strandings.

Thirty-six sea turtles were admitted to the SCA Sea Turtle Hospital in 2012; this is the highest number of admissions since the program began in 2000. There were 10 loggerheads, 17 Kemp’s ridleys, 8 greens, and 1 hybrid admitted. Nineteen of the 36 were from SC; seventeen were cold-stunned off the New England coast and transported to SC. The SCA released 23 sea turtles in 2012 bringing the total number of releases to 100. We would like to thank the entire sea turtle community for helping us achieve this milestone! Keep up with the latest news from the SCA Sea Turtle Rescue Program by visiting [www.scaquarium.org](http://www.scaquarium.org).



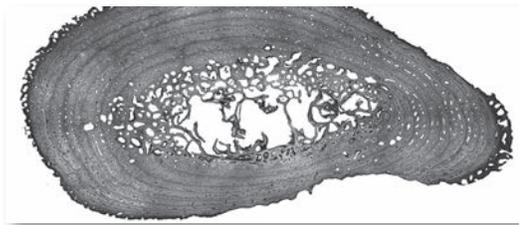
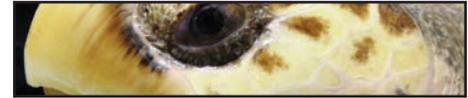
Current DNA Regional Results From 20,768 Nests (as of February 20, 2013)	
DNA Samples Assigned: 18,863 (90.8%)	Nests per Female: 3.8 nests
Unique Individual Females Nesting in Region: 5,414	Mean Site Fidelity Index: 23.63 km
Unique Females Nesting in SC: 3,086	Minimum Site Fidelity Index: 0.00 km
Unique Females Nesting in SC in 2012: 1,199	Maximum Site Fidelity Index: 663.92 km
Females with Only One Recorded Nest: 859	Mean Internesting Period: 11.66 days
Maximum Number of Beaches Visited: 7 beaches	Maximum Number of Nests: 7 nests

**TAG RECAPTURES**

Five tag recaptures were reported to SCDNR in 2012. The first was a green sea turtle that was originally captured alive on December 7, 2010 in Carteret County, NC with symptoms of cold stunning. This turtle was rehabilitated, then released on Kiawah Island on June 6, 2011. Sadly the following winter, the turtle stranded dead in Cape Lookout Bight, NC on January 4, 2012 from another cold stunning event. The second tag recapture was from a juvenile loggerhead that stranded in poor condition on March 24, 2012 in Myrtle Beach (originally tagged at the St. Lucie Power Plant on Hutchinson Island, Florida on September 12, 2009). The third recapture was an adult leatherback that stranded on Pine Island, SC. This turtle was reported by a fisherman on May 1, 2012. She was originally tagged while nesting on Trinidad and Tobago on June 25, 2000 and again on May 9, 2011. This turtle was too decomposed to determine the cause of stranding. A tagged female loggerhead became disoriented after nesting and was found in a swimming pool on Hilton Head Island the morning of June 9, 2012. The fire department returned her safely to the ocean. She was originally tagged while nesting on Jekyll Island, GA on May 20. A fifth recapture was a tagged nesting loggerhead seen on Edisto Island on July 11, 2012. She was first tagged when she nested on Blackbeard Island, GA on May 17, 2003. She was seen again nesting on Blackbeard Island seven times in 2003, three times in 2006, and five times in 2009.

## NETWORK AND REGIONAL NEWS

### NMFS Sea Turtle Aging Laboratory - Dr. Larissa Avens:



Thanks to all who have contributed to the collection of front flippers from dead, stranded sea turtles in SC. Humerus bones from those flippers were sent to the National Sea Turtle Aging Laboratory in Beaufort, NC, where they were used for analyses of skeletal growth marks (the dark, concentric lines in the image to the left of a decalcified, sectioned, and stained humerus cross-section). Research to date indicates that these marks are laid down in the bones annually and that the spacing between the marks corresponds with changes

in carapace length, making it possible to estimate total body growth rates on a yearly basis. Most recently, samples from SC are contributing to analyses of long-term growth patterns, variability in size and age at maturation, and oceanic juvenile and adult stage durations for loggerheads.

**Florida** - A detailed analysis of Florida's long-term loggerhead nesting data (1989-2012) revealed three distinct annual trends. Following a 23% increase between 1989 and 1998, nest counts declined sharply over nearly a decade. However, annual nest counts show a strong increase over the last five years. Examining only the period between the high-count nesting season in 1998 and the most recent (2012) nesting season, researchers found no demonstrable trend, indicating a reversal of the post-1998 decline. The overall change in counts from 1989 to 2012 is positive. Scientists do not yet understand what caused these changes. In contrast to the loggerhead nesting trend, nest counts for green turtles and leatherback turtles in Florida have increased dramatically over the 23-year period. Average annual increases for these two sea turtle species are approximately 12%. For more information about sea turtle nesting in Florida, visit [www.myfwc.com/research/wildlife/sea-turtles/nesting/](http://www.myfwc.com/research/wildlife/sea-turtles/nesting/).

**Georgia** - GADNR cooperators located a total of 2,241 loggerhead, 1 green, 1 Kemp's ridley, and 1 leatherback nest in 2012. The number of loggerhead nests in 2012 is the highest number documented during the 24 years the state's coastline has been closely surveyed for sea turtle nesting. The new high capped three consecutive summers of record totals, including 1,760 nests in 2010 and 1,992 in 2011. Read more about 2012 sea turtle nesting in GA here: [www.georgiawildlife.com/node/3139](http://www.georgiawildlife.com/node/3139). There were 214 sea turtle strandings in GA this year.

**North Carolina** - There were 1,069 loggerhead, 23 green, 5 leatherback, 2 Kemp's ridley, and 4 unknown sea turtle nests observed. The total number of stranded turtles was 503. North Carolina continues to experience cold stunning events (hypothermic sea turtles). For more information, visit: [www.seaturtle.org/groups/ncwrc/](http://www.seaturtle.org/groups/ncwrc/).

**2013 SEA TURTLE CALENDAR:** This calendar is dedicated to those who work with sea turtles on the beaches and at sea turtle rehabilitation facilities along the eastern US. Their dedication and your financial support are critical to the future of the species. Learn how you can help -- visit their websites and get involved. This calendar features the photographic skills of photographers from Costa Rica to Charleston, SC. Visit [www.bergwerfgraphics.com](http://www.bergwerfgraphics.com) to order the 2013 Sea Turtle Calendar. A donation from the sale of each calendar is given to the SCA.



## SEATURTLE.ORG

Do not forget about our wonderful resource [SeaTurtle.org](http://SeaTurtle.org). This web site and organization has become the online international source for all sea turtle news, events, jobs, current research, and information. [SeaTurtle.org](http://SeaTurtle.org) supports our online nest, genetic, and stranding databases. One great way to support [SeaTurtle.org](http://SeaTurtle.org) and your local project is by adopting a nest ([www.seaturtle.org/nestdb/adopt/](http://www.seaturtle.org/nestdb/adopt/)). There was an increase in the number of adopted nests this year (98 in 2011 to 148 in 2012). The number of adoptions are still small, but growing. Show your support for this great resource by adopting or donating today: [www.seaturtle.org](http://www.seaturtle.org).

2012 Sea Turtle Nest Numbers							
Waties Island	9	Sand Island	121*	Morris Island	no survey	Otter Island	85*
North Myrtle Beach	9	South Island	167	Folly Beach	74	Harbor Island	42
Myrtle Beach	12*	Cedar Island	60*	Kiawah Island	227	Hunting Island	120
Myrtle Beach S.P.	3	Murphy Island	14*	Seabrook Island	73	Fripp Island	37
Long Bay Estates	1	Cape Island	1,139	Deveaux Bank	5*	Pritchards Island	61*
Surfside Beach	7*	Lighthouse Island	352	Botany Bay Island	136	Little Capers Island	54*
Garden City	16	Raccoon Key	26*	Botany Bay Plantation	271	St. Phillips Island	2
Huntington Beach S.P.	15	Bull Island	159	Interlude	6*	Bay Point Island	82*
Litchfield Beaches	16	Capers Island	5*	Edingsville Beach	90	Hilton Head Island	320
Pawleys Island	11	Deweese Island	7	Edisto Beach S.P.	169	Daufuskie Island	68
DeBordieu/Hobcaw	73	Isle of Palms	62	Edisto Beach	173		
North Island	226*	Sullivan's Island	6	Pine Island	12*	<b>TOTAL</b>	<b>4,623</b>

\*Number represents a minimum nest count because these beaches were not surveyed every day. Increased survey effort contributed to annual total increase.

**VALUE OF VOLUNTEER TIME:** In 2010, a new initiative to document volunteer time was implemented through the [SeaTurtle.org](http://SeaTurtle.org) online reporting system. Documenting volunteer time is important for matching federal grant dollars (financial support for the program) and emphasizing the public's support of sea turtle conservation in SC. This grant matching power is critically important to our program especially during the current economic climate of our state. Visit here to learn more: [www.seaturtle.org/volunteer/](http://www.seaturtle.org/volunteer/). Documenting this time would not be possible without [SeaTurtle.org](http://SeaTurtle.org).

Year	No. Participants	Hours	Miles	Value	Match Value
2010	391 (36%)	21,922	66,286	\$ 389,595	\$ 1,168,782
2011	376 (34%)	17,364	86,249	\$ 330,583	\$ 991,749
2012	352 (32%)	20,520	87,643	\$ 391,253	\$ 1,173,759

**Protect Beach-Nesting Birds - Felicia Sanders:** Remember from April to August beach-nesting birds congregate along the coast of South Carolina to breed. These include least terns and black skimmers that nest in groups called colonies, and Wilson's plovers and American oystercatchers that nest singly. They nest above the high tide line and lay their eggs in nests that are a little more than a scrape in the sand. Eggs and chicks are camouflaged so they will not be seen by predators. Downy chicks leave their nests soon after hatching and wander between the dunes and water's edge to be fed. Young chicks may hide and rest in tire ruts below and above the high tide line. Beach-nesting birds are extremely sensitive to human disturbance. Every time a bird is forced to fly, it burns valuable energy needed to survive. When people wander too close to nesting areas, adults leave the eggs or chicks which are then exposed to extreme temperatures and predators. So please avoid driving above the high tide line where birds are possibly nesting. Be aware of birds calling loudly. This may indicate you are too close to a nest or chicks. Walk and drive carefully, especially at ends of islands and inlets, watching for cryptic eggs and chicks. These birds are declining and need your help. If you have questions about beach-nesting birds, please contact SCDNR biologist Felicia Sanders: [sandersf@dnr.sc.gov](mailto:sandersf@dnr.sc.gov). Photograph courtesy of Barbara Bergwerf.



**SCDNR Regional In-Water Trawl Survey - Mike Arendt:** An eighth year of regional sea turtle trawl surveys (Winyah Bay, SC to St. Augustine, FL) was completed in 2012. Almost four hundred sampling events captured 110 loggerheads, 45 Kemp's ridleys, and 1 male green sea turtle. Catch rates for loggerhead sea turtles in 2012 were comparable to 2011, but Kemp's ridley sea turtle catch rates in 2012 were the highest yet, and extended the steady increase since 2009. The male green sea turtle was just the 13th capture of this species after 13 field seasons. The regional survey will again be conducted in summer 2013, representing the 10th survey since 2000, and the sixth consecutive annual survey since it was resumed in summer 2008. A website showcasing the program was launched in June: [www.dnr.sc.gov/marine/sturtles](http://www.dnr.sc.gov/marine/sturtles).

## ANNOUNCEMENTS FROM THE SEA TURTLE OFFICE

**Visit our Web Site for Real-Time Updates:** The SCDNR Marine Turtle Program web site provides up-to-date information throughout the year. Be sure to visit: [www.dnr.sc.gov/seaturtle/](http://www.dnr.sc.gov/seaturtle/).

**34th Annual Sea Turtle Symposium** in New Orleans, Louisiana; early April 2014.  
Visit: <http://iconferences.seaturtle.org/>.

**SC CTurtle List Serve** - Keep up with all sea turtle news in SC and beyond by joining our list serve. If you would like to join, please send an email to [coastbio@dnr.sc.gov](mailto:coastbio@dnr.sc.gov).

**Beach Vitex Task Force:** Please continue to report any possible locations of beach vitex by submitting a report form online. It is important that the plant not be removed until it has been positively identified.  
Visit: [www.beachvitex.org](http://www.beachvitex.org).

**Adopt-a-Sea-Turtle-Nest:** You can now adopt-a-nest in South Carolina. Proceeds benefit the individual project and **SeaTurtle.org**. For more information visit [www.seaturtle.org/nestdb/adopt/](http://www.seaturtle.org/nestdb/adopt/).

**Educational Resources:** Please visit our education page for sea turtle educational materials:  
[www.dnr.sc.gov/seaturtle/outreach.htm](http://www.dnr.sc.gov/seaturtle/outreach.htm).

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SCDNR Marine Turtle Conservation Program  
PO Box 12559  
217 Fort Johnson Road  
Charleston, SC 29422  
Voice: (843) 953 - 9015  
Fax: (843) 953 - 9282  
Email: [coastbio@dnr.sc.gov](mailto:coastbio@dnr.sc.gov)  
Web Page: [www.dnr.sc.gov/seaturtle/](http://www.dnr.sc.gov/seaturtle/)



**SCDNR Needs Your Support!** The Endangered Species license plate has a new look! Citizens of South Carolina can support DNR through a direct donation to the sea turtle program, the purchase of the endangered species license plate and Check-Off for Wildlife. The Endangered Wildlife Fund is the foundation of support for threatened and endangered wildlife in South Carolina. Look for line 26 on the long form (SC1040) or line 13 on the short form (SC1040A) of the South Carolina Department of Revenue Individual Tax Return form, then complete and submit Form I-330. Help us keep wildlife in your life!  
Visit: <http://www.dnr.sc.gov/seaturtle/support.htm>.

