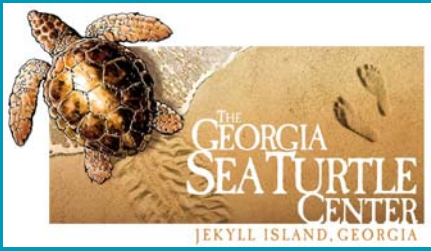


Summer 2011



caretta chronicles

TOUGH PATIENTS & TOUGH DECISIONS



Sea turtles are often presented to hospitals and clinics with buoyancy disorders, a condition where they float on the water's surface and are unable to dive. This is an abnormal condition that places turtles in danger of boat strike injuries or predatory attacks. It can be extremely challenging to diagnose the primary cause of a floating condition and treat it successfully. Any condition leading to gas or air accumulation in an organ or in the body cavity itself may cause abnormal buoyancy. Common causes of this condition include 1) pneumonia, 2) gastrointestinal disease (such as intestinal tract disorders, foreign material or obstructive blockages that lead to gas accumulation), or 3) air trapped within the body cavity, which may occur from a lung or intestinal leakage. Our efforts are directed towards finding the primary cause of the problem. This process begins with blood work, radiology (xrays), advanced imaging scans such as CT and MRI, endoscopy, and laparoscopy. Sometimes the solution is simple; trapped air in the body cavity can be suctioned out through a carefully placed needle. Lung tears usually heal without surgical intervention.

Griffin, an adult male loggerhead sea turtle and *Erika*, an adult female loggerhead sea turtle are two of the most challenging buoyancy cases we have treated at the Georgia Sea Turtle Center. Extensive diagnostic testing was performed on both turtles. Griffin had several problems that may cause flotation problems, including pneumonia, ileus (decreased intestinal motility with gas accumulation), and a stroke-like event affecting his brain. Erika had air trapped in her body cavity, most likely due to a tear in her lung. Despite multiple laparoscopic surgeries with experts from all over the Southeast, we could not locate the lung tear. Both were long term cases lasting three and a half years for Griffin and two for Erika. (continued page 3)



EXPANDING RESEARCH HORIZONS

The Georgia Sea Turtle Center (GSTC) is divided into three departments: rehabilitation, education, and research. When you visit the Center, you have the opportunity to observe rehab and education teams firsthand. The rehabilitation staff works alongside turtle patients - cleaning tanks, feeding, and treating their ailments. Educators are the folks in teal, willing and eager to answer questions in the gallery and lead a variety of educational programs throughout the day.

While the work done by rehab and education is highly visible to the public, the research initiatives and projects are often behind the scenes. This is because we work strange hours and spend most of our time away from the Center.

The GSTC research department consists of eight AmeriCorps members lead by staffer Dr. Kimberly Andrews. Our main research initiative is collecting data on nesting female sea turtles on Jekyll Island and monitoring their nests throughout the incubation period. In order to accomplish everything, we work in two teams: night patrol and dawn patrol. Night patrol roams the beach after dark searching for turtles and dawn patrol makes sure nothing was missed in the dark.

Although we spend most of our time conducting research on sea turtles, all AmeriCorps Members are required to develop and conduct their own project during their term of service. With the guidance of Dr. Andrews, my fellow AmeriCorps Members and I have developed some pretty interesting projects.

Jake is currently carrying out an inventory of the reptile species on Jekyll Island with the help of coverboards. Coverboards are plywood boards that are placed in areas where reptiles are likely to be found. The boards create a microhabitat that the animals find suitable. Every week, Jake returns to these coverboards to inventory the types of reptiles that have taken up residence beneath them.

Alia is conducting a bird survey. Several times a month, Alia visits sites on the island to bird watch in an effort to document every species of bird found on Jekyll.

For my project, I began a study on the behavior, distribution, and abundance of alligators on Jekyll Island. Since late April, I have completed a census of the island once a month and a behavioral study every two weeks. The census consists of two counts, one in the morning and another at night. Morning counts allow data collection on alligator size and behavior; however, morning counts are not an accurate method for (continued on page 3)





(from page 2) determining the actual number of alligators on the island. Alligators are less active during the day and often hide out of sight in heavy vegetation.

On the other hand, night time searches have proven to be much more useful in determining alligator abundance. These searches begin when the sun goes down and typically last about 3 hours. After dark, use of a high powered spotlight detects eyeshine, produced when light bounces off the *tapetum lucidum* present in an alligator's eye. The *tapetum lucidum* (latin for 'bright carpet'), is a layer of tissue that reflects light through the retina allowing nocturnal animals to see at night.

The same structure can be found in household animals such as cats and dogs.

I have recorded between 75 and 100 alligators on the island during night counts.

Approximately 60% of these individuals are less than three feet in length, a good indication that they were born within the last few years.

Although my AmeriCorps position will end on August 31st, this project will last for years to come. Dr. Andrews is currently in the process of writing a proposal to conduct a more in-depth study of the alligators on the island including capturing, marking and tracking of alligator movements.

Collaboration between the three departments at the Georgia Sea Turtle Center allows us to continue saving turtles. Yet, as the Center grows, so does our ability to conduct research on more Southeastern species. Knowing more about these animals will allow us to protect their habitat and insure they do not join sea turtles on the endangered species list.

~Greg Skupien, AmeriCorps Research Member

(from page 1) One of the hardest things we face in rehabilitation is euthanasia of our patients, especially if they have been with us for an extended period of time. In Griffin's case, we ultimately decided that humane euthanasia was the best course of action. On necropsy (an animal autopsy), he had a chronic pneumonia in his dorsal lung. Unfortunately, there was no way to gain access to this area of the lung with laparoscopic surgical equipment. We are awaiting results of microscopic examination of tissue samples by our consulting pathologist.



We recently decided to do one last surgery on Erika, one that utilized the expertise of a human surgeon familiar with the procedure. A laparoscope was used to visualize all the body organs and while no lung tear was found, a large amount of air remained trapped inside of her shell. A lung biopsy was taken to determine the presence of any microscopic abnormalities unseen by the human eye. A chest tube was placed in an effort to remove the air, allowing the lungs to adhere to the body wall and seal any potential leaks. Post-surgery, Erika sank deeper into the water and tolerated the chest tube well. On the third day, she suddenly went down hill and passed away. Nothing significant was found during the



necropsy, although microscopic evaluation is still pending. (continued page 5)



See turtle conservation in action!

Nest Walks

Join us for a beach ecology walk & sea turtle nest excavation! \$12/person
Call (912) 635-4444 for reservations

THE SCIENCE OF A SEA TURTLE RELEASE

It's that time of year!

Warmer temperatures mean that it is time to release rehabilitated sea turtle patients. As turtles are outfitted with flipper tags and satellite transmitters, more and more guests at the center

begin to ask: "What do you do before a turtle is released?" Well, there are many things we evaluate to determine if a turtle is ready for release...



First, we make sure that a turtle is eating well and gaining or maintaining a healthy weight. The turtle must also be able to consume what they would in the wild (for example, loggerheads must hunt live blue crabs and green sea turtles must consume a heavily herbivorous diet.) If a turtle is eating well but not defecating properly, that can be an issue. We not only keep track of what goes in to our patients, but what comes out, too.

Secondly, we must ensure that the blood work of each turtle is within normal limits. A turtle can eat well and maintain a healthy weight, but if their blood work is off the charts, we may need to diagnose and treat additional problems. Packed cell volumes (the amount of red blood cells in the blood) must read a minimum of 25% and all other values (calcium, phosphorus, glucose) must fall within normal ranges.

Finally, we watch our patients closely. Each turtle must exhibit normal behaviors before they are considered for release. A restless and active patient is often a good indication that they feel better!

Keep an eye on our blog or facebook page for announcements so that you can join us for a sea turtle release. You won't be disappointed!



~Rachel Thomas
Rehabilitation Technician I



(continued page 4) Numerous turtles with flotation abnormalities, including lung tears, have responded to less intensive therapy. It is difficult to know how extensive diagnostic testing and treatment will be. The turtle may recover and be ready for release in a month or it may take years. Our primary goal for rehabilitating all turtles is release back to the wild where they can contribute to the overall population. While this is not always the outcome, turtles that are not releasable can serve as ambassadors for their species as exhibit animals, such as in a zoo or aquarium setting. Unfortunately, a floating turtle does not fit either category and at some point we have to make hard decisions.



Griffin's remains were cremated and incorporated into a Reef Ball, a concrete structure designed to encourage regrowth of coral reefs. These structures are deployed off the coasts in an effort to create artificial reefs and reverse the effects of human encroachment and destructions of natural marine habitats. Griffin's Reef was completed at the GSTC with personal messages written by our staff, volunteers, guests and adoptive parents. The Reef will be deployed off the coast of Miami, FL, by the close of 2011.

Griffin and Erika have touched the hearts of our staff, volunteers, and visitors and will be greatly missed. We have learned a tremendous amount from them and thank them for all they have

taught us. Both turtles will continue to serve as an ambassador for sea turtles at the GSTC. Their memories live on through our educational programs and mission, the greatest tribute any sea turtle could be given.

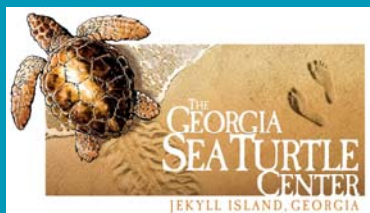


~ Terry Norton DVM, Director & Veterinarian

THANK YOU, NALLEY OF BRUNSWICK



**for your generous donation of camp transportation this summer!
Our sea turtles & campers appreciate your sea-port!**



The Georgia Sea Turtle Center is an operating department of the Jekyll Island Authority. Donations go to the general operations of the GSTC. Donations of \$500 or more are processed through the Jekyll Island Foundation, a 501(c)(3) non-profit organization.

georgiaseaturtlecenter.org
jekyllisland.com jekyllislandfoundation.org

