



## **Research and Conservation at Georgia Aquarium**

Georgia Aquarium is a leading facility for aquatic animal conservation and research. The Aquarium conducts research to improve husbandry methods, develop innovative and exciting new exhibits, contribute to the understanding of the underwater world and apply new discoveries to the conservation of aquatic life. Every day, researchers in the Aquarium's exhibits and labs are learning more about marine life in order to develop new methods of animal care and veterinary medicine. By combining field research with the study of on-site animals in a controlled environment, the Aquarium is contributing to the advancement of human knowledge in the area of animal science.

### **The Correll Center for Aquatic Animal Health**

The Correll Center for Aquatic Animal Health is a state-of-the-art animal health facility with more than 10,500 square feet and was designed by world-class veterinary professionals. Currently, Georgia Aquarium is the only facility that has opened with a program which is an integration of an aquarium and veterinarian teaching hospital in the specialty fields of wildlife medicine and veterinary pathology. The partnership with the University of Georgia (UGA) Veterinary Teaching Hospital will allow the Aquarium to provide a complete aquatic animal pathology and clinical medicine program while training veterinary residents, interns and veterinary students. The Aquarium provides the same veterinary diagnostic, medical treatment and surgical services that you would find at the best veterinary teaching hospitals.

Georgia Aquarium has one of the largest and most modern aquarium veterinary hospitals in the world – facilities that will change the face of aquatic animal medicine. The Aquarium conducts research to improve medicine and husbandry methods, develop innovative and exciting new exhibits, contribute to the understanding of the underwater world and apply new discoveries to the conservation of aquatic life. Research is shared with conservation organizations throughout the world, allowing a better understanding and protection of many of the species located at Georgia Aquarium.

Georgia Aquarium is currently working in collaboration with the Florida Atlantic University, University of Georgia, University of Miami School of Medicine, Georgia State University, Georgia Institute of Technology, Savannah State University, Skidaway Institute of Oceanography, Jekyll Island Sea Turtle Rehabilitation Center, Marine Mammal Alliance, U.S. Fish & Wildlife Service, and the National Oceanic & Atmospheric Administration and Sea Grant College Program.

The Correll Center for Aquatic Animal Health is based on the first floor of Georgia Aquarium and is centrally located for easy, behind the scenes access to all exhibits via an enormous corridor that wraps around the building in a large "U." The corridor makes it easy for animals from the various exhibits to be transported to our surgical suite. Each major exhibit has its own dedicated hoist way with crane system to raise and lower animals. Most of the large exhibits have space within them to facilitate medical

procedures. All of our medical/surgical and diagnostic equipment can be moved poolside if necessary. The Aquarium has full-service, seven-day medical coverage with 24-hour care if necessary.

In 2006, A.D. "Pete" Correll, retired chairman and CEO of Georgia-Pacific, and his wife, Ada Lee, helped ensure the success of Georgia Aquarium's aquatic animal medicine and aquatic conservation programs by giving a gift to name The Correll Center for Aquatic Animal Health.

Pete Correll graduated from the University of Georgia (UGA) with a degree in business, and his wife Ada Lee graduated from UGA with a degree in education. Pete Correll is a member of the Aquarium's Board of Advisors. The Corrells were particularly gratified by the unique opportunities that the Correll Center will offer UGA students and faculty in both research and teaching.

The Correll Center for Aquatic Animal Health is a partnership between Georgia Aquarium and the University of Georgia College of Veterinary Medicine. UGA faculty and graduate students research and train at the Correll Center, the first aquatic veterinary teaching hospital integrated into an aquarium. As a 501(c)3 organization, Georgia Aquarium relies on community support to fund our special programs including education and veterinary services.

#### **4R Program**

The 4R Program was created to make a positive difference in the health and well-being of aquatic life around the world. The program allows the public to be directly involved in making a positive difference in the lives of animals through their financial contributions. The 4R program focuses on one project at a time and is funded in a large part by individual donations. **R**ehabilitation, **R**esponsibility, **R**escue and **R**esearch are the four areas of focus for this program.

#### **Seafood Savvy Program**

Seafood is an important and widely available source of nutrition for populations around the world. Increased demand for popular seafood is depleting global fish stocks and harming the health of our oceans. Individuals, along with restaurants, retailers and other businesses, can play a vital role in conserving the health of our oceans. The Seafood Savvy Program is designed to empower seafood consumers and businesses to make informed choices for healthy oceans and ensure abundant supplies of seafood for the future. The Seafood Savvy Guide is a resource to access while ordering from a restaurant menu or making a selection at your seafood market. Seafood Savvy Guides can be accessed online 24/7 at [georgiaaquarium.org/seafoodsavvy](http://georgiaaquarium.org/seafoodsavvy) or pocket cards are available at the Information Desks at Georgia Aquarium or participating sustainable seafood restaurants in the Atlanta area.

#### **Whale Shark Research**

Georgia Aquarium has been carrying out research on whale sharks since 2003 with a number of partners including the Mexican government, Mote Marine Laboratory, University of South Florida, Georgia State University, Emory University and the Georgia Institute of Technology. In 2009, the Aquarium became official partners in Project Domino, a consortium led by the Mexican department of protected areas (CONANP) that studies, monitors and conserves whale sharks in the state of Quintana Roo on the

Yucatan Peninsula. Based in part on the data produced by this collaboration, in June 2009 the Mexican Government declared the Whale Shark Biosphere Reserve off the northern tip of the Yucatan. This new protected area is one of the first in the world to specifically target the conservation of whale sharks.

In previous years, the Aquarium's field research has focused on calculating how many whale sharks visit the Yucatan, what they feed on while they are there and where they go when they leave. Satellite and visual tags attached to the animals provided most of the early data, but recently Georgia Aquarium scientists have focused efforts into aerial surveys that allow researchers to cover a much larger area and visualize the gathering of whale sharks relative to geographic features and the distribution of other animals that can also be seen from the air, like manta rays. These studies have shown that the Yucatan is a phenomenal place for whale shark aggregations; at times, hundreds of whale sharks can gather in the same place to feed on plankton and fish eggs.

In 2011, Georgia Aquarium will continue whale shark field studies and begin new initiatives to try and understand what odor chemicals whale sharks use to sniff out patches of food in the open ocean. The tracking of animals using satellite tags takes on new significance because many of the animals Georgia Aquarium researchers have tagged in previous years subsequently traveled into the Gulf of Mexico, where this year they may encounter oil plumes associated with the Deepwater Horizon oil spill.

Having whale sharks in an aquarium setting is a fantastic research opportunity to study growth, behavior, health and genetics. Recent advances have included a detailed exploration of the chemistry of their blood using cutting edge analytical techniques at Georgia Tech, and an exciting new program with Emory University to study the genomics of whale sharks based on tissue samples collected from animals at the Aquarium. By comparing the genomics of the Aquarium animals (which are from Taiwan) with samples collected from free-ranging whale sharks in Mexico, Aquarium scientists and their collaborators will be able to tell whether whale sharks form one big population in the whole world, or whether differences exist between Pacific and Atlantic populations.

### **Beluga Whales in Alaska**

With partners in the National Marine Fisheries Service, Georgia Aquarium helped pioneer health assessments for beluga whales in Alaska in 2008, using methods developed in the aquarium setting. In 2011, work will focus on understanding nutrition of beluga whales in Bristol Bay relative to the population in Cook Inlet, which was recently listed as endangered. In particular, Georgia Aquarium researchers will focus on what beluga whales eat based on stable isotopes in their blood and biopsies, as well as test for any exposure to pollution.

### **Georgia Aquarium Conservation Field Station**

Located in Marineland, Florida, Georgia Aquarium Conservation Field Station (GACFS) was established in 2008 as part of Georgia Aquarium's ongoing research and conservation efforts through our 4R Program. The field station is dedicated to furthering our understanding of dolphins, marine mammals and aquatic species found along our coast through the 4Rs: **R**escue, **R**esearch, **R**ehabilitation and **R**esponsibility.

The state-of-the-art research facility is fully equipped to respond to medical emergencies, perform field studies and help with the rehabilitation and release of animals that need urgent care.

Georgia Aquarium's GACFS is an active member of the National Marine Fisheries Service's Marine Mammal Stranding Network and is currently authorized to respond to marine mammal strandings in Flagler County, Florida. As a member of the South East Region, GACFS also plays a supporting role in stranding and rescue events with neighboring network participants.

GACFS is also able to assist in larger strandings, like the cold stunned turtles in February of 2009 along the entire east coast. An estimated 5,000 sea turtles were stranded along the Atlantic coast in February 2010, 4,500 in Florida alone, as temperatures dropped, in some places reaching a frigid 50 degrees. With the help of GACFS, Georgia Aquarium was able to respond to an emergency call and rescue five stranded loggerhead sea turtles.

Georgia Aquarium's GACFS research programs help the veterinary services team better understand why marine mammals strand and on a larger scale the health of oceans worldwide. Current GACFS research programs are documenting the cause of marine mammal strandings and the identification of emerging diseases in these species.

Georgia Aquarium's GACFS actively participates in conservation outreach programs in Mexico, Belize, South America, Dubai and at Colombian and Brazilian Amazon sites. Through these outreach programs, the Aquarium is able to provide veterinary care to aquatic mammal species, while training local caregivers to provide future care. Presently, conservation outreach programs involving Antillean manatees and Amazonian manatees are ongoing in Mexico, South America, Colombia and Brazil and with dugongs in Dubai.

### **Penguins in South Africa**

Georgia Aquarium has partnered with non-profit wildlife rehabilitation group SANCCOB to study, for the first time anywhere, the health of free-ranging African penguins, like those in the Georgia-Pacific Cold Water Quest gallery. Sampling will take place off the coast of Namibia on the western side of South Africa.

### **Heavy metal manatees, Mexico**

Among other tropical places, manatees occur in the shallow coastal waters of Quintana Roo, Mexico, but little is known about their health, so this project seeks to understand whether manatees in this area show any signs of heavy metal contamination.

### **Indian River Dolphin Research**

Bottle-nosed dolphins in the Indian River Lagoon are excellent sentinels of environmental health because they are permanent residents of the lagoon and are at the top of the food chain, so they can

indicate problems below them in the ecosystem. Senior Vice President Dr. Greg Bossart has been heavily involved in understanding the health of these animals for many years. They face a number of threats from pollution and emerging infectious diseases, so work will continue in 2010 in partnership with Florida Atlantic University and the federal Government. This research will take full advantage of the Georgia Aquarium Conservation Field Station in St. Augustine.

### **Mega-reef exhibits**

Georgia Aquarium and the Steinhart Aquarium at the California Academy of Sciences have something in common: operating two of the largest living reef aquariums in the world. This is a tremendous technical challenge, therefore staff members from the two aquariums are collaborating to better understand how to build and maintain thriving live reef exhibits on such a large scale.

### **Turtle nesting in Georgia**

Many people are unaware that the endangered loggerhead turtle nests in several wildlife refuges right on the Georgia Coast. Georgia Aquarium is partnering with the Fish and Wildlife Service and the Caretta Research Project to survey these turtle nesting areas in Georgia to better understand the needs of both adults and offspring, and how to protect them.

### **Spotted Eagle Rays in Florida**

With their graceful polka-dotted wings, eagle rays are found in all the tropical oceans of the world, but only recently has it been realized that they reproduce in the coastal waters of Florida. In partnership with the Shark Research group at Mote Marine Laboratory, Georgia Aquarium staff will study the population size, make-up and movements near Sarasota, to build vital knowledge about these poorly understood but beautiful creatures.

### **Right whales in Georgia**

Did you know that the right whale is Georgia's state mammal? These large baleen whales breed every year in the warm waters of the South Atlantic Bight, which includes the Georgia coast. This year the Aquarium is partnering with scientists from Woods Hole to monitor right whale populations in local Georgia waters.

### **Water Conservation**

Water conservation is a concern of Georgia Aquarium, and necessary measures are taken to ensure water supply is plentiful. All Georgia Aquarium exhibits are closed systems in which the water is filtered, treated as required and returned to the exhibit. The Aquarium recycles and reuses as much water as possible within the limits of providing animals living at the Aquarium with the most exceptional care. A few of the many water conservation measures include:

- Adding waterless urinals that save approximately one million gallons of water per year.

- Recapturing condensation from our cooling units, saving 1.5 million gallons of water per year.
- Life Support operational changes that save approximately 4.5 million gallons of water per year.
- Observing the outdoor watering ban on all our landscaping.
- Shutting off all non-essential water features, such as the waterfall, atrium lake and shrimp boat moat.
- Educating the public at the Aquarium through our staff and volunteers on the floor, signage/displays and Web site about ways individuals can conserve water.

### **Education Research**

The Georgia Aquarium, in collaboration with the University of West Georgia, is conducting educational research classes. In the pilot study, 5<sup>th</sup> grade students who completed the course experienced significant increases in test scores.

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### **About Georgia Aquarium**

Georgia Aquarium in Atlanta, Georgia, is the world's largest with more than ten million gallons of water and the largest collection of aquatic animals. The mission of Georgia Aquarium is to be an entertaining, educational and scientific institution featuring exhibits and programs of the highest standards; offering engaging and exciting guest experiences promoting the conservation of aquatic biodiversity throughout the world. Georgia Aquarium is an accredited member of the Association of Zoos and Aquariums and the Alliance of Marine Mammal Parks and Aquariums. For additional information, visit [www.georgiaaquarium.org](http://www.georgiaaquarium.org).

### **About Georgia Aquarium's Conservation Collaborators**

Georgia Aquarium is currently working in collaboration with the Mote Marine Laboratory, University of Georgia, Georgia State University, Georgia Institute of Technology, Savannah State University, Skidaway Institute of Oceanography, Jekyll Island Sea Turtle Rehabilitation Center, Marine Mammal Alliance, U.S. Fish & Wildlife Service, National Oceanic & Atmospheric Administration and Sea Grant College Program.