

# tributaries

MAGAZINE OF THE SOUTH CAROLINA AQUARIUM



## From the President

We'd like to interest you in a job.

There's no pay, but there are plenty of benefits. You'll experience a heightened sense of well-being and good mood. You'll have the opportunity to meet like-minded people who share your interests. Oh, and did I mention you can work from home – or at the beach?

Become a citizen scientist, and support the Aquarium's initiative to document the incidence of plastic pollution and marine debris in our environment. Learn more about how you can contribute to our Litter-free Digital Journal on page 6, and join the growing wave of everyday people around the world who are aiding the collection of real data and analyses in collaboration with professional scientists.

There's no need to formally apply. Just download our South Carolina Aquarium Citizen Science app for the iPhone or iPad and get started. And you can bring friends or family along with you! In fact, citizen science is a great way to engage larger groups in environmental stewardship, from school groups to Scout troops to book clubs. The data you collect will appear in an open-sourced forum that is accessible both to scientists and to other citizen science participants, so you can see how your efforts support a bigger picture.

Applied science is also at the heart of an exciting new research initiative underway at the Aquarium in partnership with Dr. Patricia Fair, an expert on bottlenose dolphin physiology. We are measuring the impact of dredging and harbor deepening on the dolphin population living in the Charleston Harbor. This study will help inform future operations here and in locations around the world, so we can better account for species at risk to human disturbances.

If you haven't visited the Aquarium this summer, you'll want to come and check out the wildly popular new Zucker Family Sea Turtle Recovery™. This time of year, you'll find smaller crowds before 11 a.m. and after 2 p.m.

As always, thanks for being a member and for supporting our commitment to preserving wildlife and wild places!



Kevin Mills, President and CEO



Leading the way to connect people with water, wildlife and wild places.

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## South Carolina Aquarium

(843) 577-FISH (3474)

Open Daily 9 a.m. – 4 p.m.

Building closes at 5 p.m.

Closed Thanksgiving Day and Christmas Day

## Membership Department

(843) 579-8518

Monday–Friday 9 a.m. – 5 p.m.

The South Carolina Aquarium is a 501(c)(3) not-for-profit organization and relies on the generosity of individuals, foundations and corporations.

To help support the South Carolina Aquarium, contact us at (843) 579-8595 or [advancement@scaaquarium.org](mailto:advancement@scaaquarium.org).

# Aquarium News



## Aquarium Receives AZA Accreditation

In April, the Association of Zoos & Aquariums (AZA) announced that its independent Accreditation Commission had granted accreditation to the South Carolina Aquarium through March of 2022.

To become accredited, the Aquarium underwent a thorough review, ensuring that it met rigorous standards of animal care and welfare, veterinary care, conservation, education and safety. Of the approximately 2,800 animal exhibitors licensed by the USDA across the country, less than 10 percent are accredited by the AZA. Our Aquarium has been accredited by AZA since 2001.

“The Association of Zoos and Aquariums accredits only those zoos and aquariums that meet the highest standards,” said AZA president and CEO Dan Ashe. “By achieving AZA accreditation, the South Carolina Aquarium demonstrates that it is dedicated to exceptional animal care, protecting species and educating visitors about the natural world.”



## Restoring Oyster Reefs at Wappoo Cut

If you're visiting the Wappoo Cut area of Charleston, take a look around at the newly restored oyster reefs. These structures are the result of South Carolina Aquarium staff and volunteers working with the South Carolina Department of Natural Resources to protect our natural world!

Our team got muddy this summer to help buffer the shoreline along Wappoo Cut, an ecologically and historically significant site along the Intracoastal Waterway. The team unloaded more than 1,000 bags of oyster shells along the bank, shielding the shoreline against erosion and rising tides. The new shell reef joins those made by others as part of the South Carolina Oyster Restoration and Enhancement (SCORE) statewide effort to increase habitat for oysters, fish, crabs, shrimp and turtles.

As we look forward to cooler autumn days and Lowcountry oyster roasts, you can help by recycling your oyster shells for future projects like this one. Learn more at [scaquarium.org/oystershells](http://scaquarium.org/oystershells).



## Total Solar Eclipse

On August 21 at 2:38 p.m., we're going dark. Don't worry, we'll still be here – enjoying a very unique natural phenomenon! On this day, a total solar eclipse will be visible from Charleston and many other parts of South Carolina for the first time since 1970.

This rare event occurs when the moon moves between the sun and the earth during its orbit, blocking the light of the sun from reaching the earth. Charleston, positioned in the line of totality, will see the Earth, moon and sun in a direct line. The last time an eclipse was visible coast to coast like this was in 1918. A solar eclipse happens somewhere in the world every 18 months – we're just in the right spot at the right time this year!

If you plan to witness this historic event, be sure to use certified protective glasses for safe solar viewing.

# What's Happening

## SEINING PROGRAMS

**AUGUST 24**  
(ADULTS ONLY)  
6 – 7:30 p.m.  
*Sullivan's Island*

**SEPTEMBER 16**  
10 – 11:30 a.m.  
*Folly Beach*

A member favorite! Assist Aquarium staff as we search the sand and water for aquatic creatures. We'll drag a seine through the surf to find fish, crabs and maybe even a small shark. Educators will give you a glimpse into the fascinating lives of fish, mollusks and other beach dwellers as we walk along. Tickets are \$10; reservations required. To reserve, call (843) 579-8518.

## DANCE MOVES

**SEPTEMBER 14**  
10 – 10:30 a.m.

**NOVEMBER 9**  
10 – 10:30 a.m.

**OCTOBER 12**  
10 – 10:30 a.m.

**DECEMBER 14**  
10 – 10:30 a.m.

A fun and energetic class from Dance Moves of Charleston! Explore basic ballet moves, warm-ups, stretches, movements across the floor, jumping and turning. Girls and boys ages 2-6 are welcome. Comfortable clothing or dance attire recommended. Free for members. Reservations required; to reserve, call (843) 579-8518.



## JUMPBUNCH

**SEPTEMBER 12**  
10 – 10:30 a.m.

**NOVEMBER 7**  
10 – 10:30 a.m.

**OCTOBER 3**  
10 – 10:30 a.m.

**DECEMBER 5**  
10 – 10:30 a.m.

Let your little ones get their sillies out in a fun setting. Jump, dance, wiggle, skip, play and have fun to music. Recommended for ages 18 months to 4 years. Free for members. Reservations required; to reserve, call (843) 579-8518.

## HOMESCHOOL EXPLORERS CLUB

**SEPTEMBER 20**  
9 a.m. – 1 p.m.

**NOVEMBER 15**  
9 a.m. – 1 p.m.

Dive into fun and learning with our program series especially for homeschooling families! Member tickets are \$9.50 for grades K-8, \$13.50 for grades 9-12 and free for member chaperones. Learn more and sign up for email updates at [scaquarium.org/homeschool](http://scaquarium.org/homeschool).

## TURTLE TREK

**SEPTEMBER 23**  
4 – 9 p.m.  
*Isle of Palms County Park and The Windjammer*

Run for the turtles! The Turtle Trek is a 5K sunset beach run/walk and kids' fun run supporting the Sea Turtle Care Center™ and the Aquarium's conservation initiatives. Registration includes T-shirt and access to the After Party with awards, food and music. To register, visit [scaquarium.org/turtletrek](http://scaquarium.org/turtletrek). Use promo code SCA17TURTLE for a \$5 discount!

## TADPOLE EXPLORERS WITH BRICKS 4 KIDZ

**SEPTEMBER 9**  
8 – 9 a.m.

**NOVEMBER 18**  
8 – 9 a.m.

Guests from ages 1 to 3 get the Aquarium all to themselves and can enjoy stations including crafts, animal encounters and DUPLO® block building. Snacks, coffee and muffins will be provided. \$10 per member child; two adults free per child. Reservations required; to reserve, call (843) 579-8518.

## LEGO® BRICK ROBOTICS WORKSHOP

**SEPTEMBER 9**  
10 – 11 a.m.

**NOVEMBER 18**  
10 – 11 a.m.

**OCTOBER 14**  
10 – 11 a.m.

Everything is awesome when you're learning with LEGO® bricks! Children will gain creative confidence as they build one-of-a-kind models from Bricks 4 Kidz project kits. Each participant will take home a customized minifigure. Recommended for ages 8 and up. \$12 per member. Reservations required; to reserve, call (843) 579-8518.

## BUILD AND BREW

**SEPTEMBER 28**  
6:30 – 8:30 p.m.

For the young at heart, channel your inner child with a night of creative fun! Build unique motorized LEGO® models from specialized project kits with the experts from Bricks 4 Kidz. Your ticket will include locally brewed craft beer and snacks! Tickets are \$45 for two adult participants. Ages 21 and up. To reserve your spot, call (843) 579-8518. Watch your inbox for further details.

# There's always more to explore

SCAQUARIUM.ORG/CALENDAR



## OCEAN TO TABLE SHRIMP-BAITING CLINIC WITH LOWCOUNTRY BOIL

**OCTOBER 7**

10 a.m. – noon

Melton Peter Demetre Park  
(Sunrise Park), James Island

Get ready for shrimping season with this hands-on clinic in partnership with the South Carolina Department of Natural Resources and Good Catch platinum partner Fleet Landing Restaurant. Find out how to shrimp from a dock, learn the basics of shrimp baiting and get tips to make your shrimping efforts more successful. Chef Drew Hedlund will demonstrate how to prepare a Lowcountry Boil. Recommended for ages 8 and up. \$15 per member. Reservations required; to reserve, call (843) 579-8518.

## UNDERWATER PUMPKIN CARVING

**OCTOBER 20**

11 a.m.

**OCTOBER 27**

11 a.m.

To celebrate Halloween, our dive show will be transformed into a pumpkin carving contest! Judge which divers' jack-o-lantern is the best and watch as the animals in the Great Ocean Tank enjoy a fun and stimulating enrichment experience.

## SALTWATER SOUNDS

**OCTOBER 21**

9:30 a.m. – noon

The Charleston Symphony Orchestra joins the Aquarium to present a marine-inspired musical performance especially for children. Enjoy tunes by the tank and visit the Instrument Petting Zoo, where children can see, hear and touch the instruments. Free with Aquarium admission.

## FISH OR TREAT

**OCTOBER 26**

5:30 – 7:30 p.m.

Ghouls and ghosties of all ages, prepare for an evening of spooky fun with the Aquarium's beasts, creepy-crawlers and creatures of the night! "Fish or treat" through the Aquarium, search for monsters lurking in the Great Ocean Tank, boogie at the Monster Mash and join in ghoulish games. Dress in your most creative costume for the costume contest. \$10 per member; children 2 and under free. Reservations required; to reserve, call (843) 579-8518.

## SCUBA CLAUS AT THE AQUARIUM

**NOVEMBER 24 – DECEMBER 23**

Old Saint Nick and his helpers from the North Pole will make special appearances in the Great Ocean Tank at select Aquarium dive shows. Free with Aquarium admission.

## SEA LIFE BY STARLIGHT

**DECEMBER 9**

8 – 11 p.m.

Spend a fun and festive night out under the twinkling stars of Charleston and among our aquatic surroundings. Enjoy cocktails, small plates, music and a silent auction while mingling with fellow supporters of marine and natural conservation. Watch your inbox for further details!

## HOLIDAY EXTRAVAGANZA

**DECEMBER 18**

5:30 – 7:30 p.m.

Join us for a festive, family friendly evening celebration! Enjoy light refreshments, pictures with Santa, cookie decorating, holiday crafts and animal encounters. Shop for friends and family with a one-day-only 20% discount in the Gift Shop. \$5 per member child; \$10 per member adult; children 2 and under attend free. Reservations required; to reserve starting November 1, call (843) 579-8518.

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### LEGEND:

MEMBERS ONLY / PUBLIC EVENT

For more information on our events or programs, call (843) 577-FISH (3474). If you are not receiving our regular e-updates, please contact [membership@scaquarium.org](mailto:membership@scaquarium.org).

SCIENCE  
FOR  
EVERYONE





### A CLASS OF THIRD GRADERS COUNTS AND IDENTIFIES BUTTERFLIES AROUND THEIR SCHOOL.

A family searches for constellations together in the night sky to measure light pollution. A retiree collects a sample of water from a stream to monitor its quality. Though their actions may seem insignificant individually, together they are part of influential projects to make a difference in the world. All of these people are serving as citizen scientists, contributing and analyzing data in collaboration with professional scientists. Public participation in research significantly accelerates the data collection process and can generate innovative results beyond the reach of scientists working alone, while also providing measurable benefits to individuals and communities.

Broadening the reach of science far past the laboratory, citizen science engages people of all ages and abilities. Modern citizen science projects enable people to collect data on subjects ranging from their own bodies' microorganisms to the vast expanse of space. Beyond data collection, it provides participants with the opportunity to analyze datasets, contribute to policy decisions and even encourage new research priorities. When nonscientists participate in citizen science, they become empowered to make an impact.

While this concept is not new, technological advances over the last two decades have sparked a renaissance for citizen science. The mass adoption of smartphones, with functionality for geotagging, timestamping and taking high-quality photos, has equipped ordinary people with all the tools they need to collect data easily and accurately. More recently, the internet of things (devices connected to each other via the internet) and wearable technology

like the Fitbit have made data collection almost effortless. Just as ordinary people can use these devices to analyze their personal statistics and improve their health or fitness, scientists can use the capabilities of these technologies in the hands of citizen partners to gather rich and unprecedented datasets.

The benefits of collaboration between scientists and citizens cannot be undervalued. Getting the public involved in research does not replace or refute the expertise of professional scientists; instead, it elevates both the quantity and quality of scientific work that is produced.

When scientists embrace the help of the public, they foster an invaluable relationship. By helping to collect and analyze data, volunteers enable research projects to move forward that may not have had the manpower or funding to do so otherwise. Cumulatively, volunteers can collect an immense amount of information, can process and analyze large datasets quickly, and can survey wide geographical areas. Because of this, citizen science provides an unparalleled ability to answer large-scale scientific questions and opens up a world of opportunity for researchers.

However, the citizens who participate in these projects benefit just as much as the scientists do. Involvement in citizen science projects improves scientific literacy, an essential skill for understanding how to apply the scientific method in the real world.





It helps these individuals identify sound experimental design, and it prepares them to make routine decisions that rely on understanding science, from the doctor's office to City Hall. Participation in citizen science can even provide psychological benefits. For example, a recent study by environmental psychologist Dr. Kayleigh Wyles found that participation in beach sweeps was associated with positive mood and the intent to engage in more pro-environmental behaviors.

Citizen science isn't just for adults, either! Young people can become citizen scientists while having fun and developing important skills. When children contribute to scientific research, they get senses of belonging in a community and self-worth as valued contributors to a larger goal. They also develop the confidence to make observations, collect data and explore the natural world. These encounters build the next generation of scientists and prepare them for future careers in science, technology, engineering and math (STEM).

Partaking in citizen science helps children develop critical thinking skills that aid them in all areas of their lives. From observing and recording data, to analyzing and applying meaning, students can experience the full process of critical thinking. Unlike traditional science classes that deliver a compendium of accrued facts, these projects establish that science is a process for questioning how the world works, and show that our understanding can change over time as we uncover new knowledge!



With so many benefits for the people involved, it is no surprise that citizen science is also advantageous for the overall perception of science. Involving nonscientists in research democratizes science, making it more accessible to and inclusive of a wider variety of people. It creates open lines of communication and authentic connections between professional scientists and citizens, and it holds them accountable to one another. It promotes confidence in science and combats declining public trust in scientific authorities. Its positive effects reach far beyond the projects themselves.

### **THIS FALL, YOU CAN BECOME A CITIZEN SCIENTIST USING THE SOUTH CAROLINA AQUARIUM CITIZEN SCIENCE APP!**

Make a difference by contributing to the study of local environmental issues like plastic pollution, sea level rise or invasive species. The app features a collection of environmental research projects led by professional scientists at the South Carolina Aquarium who need your help collecting data.

Collaborate with Aquarium researchers to remove litter from the environment and track plastic pollution trends using the Litter-free Digital Journal, a project within the South Carolina Aquarium Citizen Science app. Help us discover



where debris is accumulating and what impact these pollutants have on our state's communities and habitats. The Litter-free Digital Journal includes an innovative feature called Nowcasting, developed by Bigelow Laboratory for Ocean Sciences, which uses prevailing winds, topography and nearby human population to predict debris-human interactions and debris flows through watersheds from the mountains to the sea. The accuracy of this unique tool improves as new data is added. This citizen science project is the perfect complement to your next street cleanup or beach sweep!

Contribute quickly and easily to the South Carolina Aquarium Citizen Science app from your mobile device. Download the app for free in the App Store for iPhone and iPad.

## CITIZEN SCIENCE IN ACTION

### CHRISTMAS BIRD COUNT

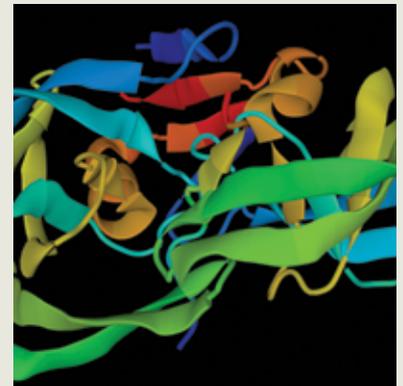
The National Audubon Society has learned to harness the power of citizen science in its annual Christmas Bird Count, one of the largest, longest-running and most well-known citizen science projects in the world. The first count was held in 1900 as an alternative to the old holiday tradition of hunting birds for sport. Back then, the Christmas Bird Count encouraged citizens to enjoy birdwatching as a progressive solution to overhunting while also collecting useful data for researchers.



Starting with just 27 birders, the Christmas Bird Count now involves more than 58,000 people worldwide, including a team from the South Carolina Aquarium, in an annual bird census to measure and track bird populations. More than a century's worth of data from the project informs researchers and policymakers, such as the Environmental Protection Agency, as they make recommendations regarding critical issues like climate change.

### FOLDIT

In 2008, researchers at the University of Washington in Seattle experienced surprising results when they used an experimental puzzle game to engage citizens in science. The scientists were studying how chains of amino acids folded into specific shapes to form proteins. Through a method called distributed computing, they utilized volunteers' personal computers during idle time to run a program that calculated protein-folding structures and displayed the process as a screensaver.



However, the volunteers soon came up with more optimal ways to fold the proteins than those they saw displayed on their computers. To channel the volunteers' abilities, computer scientists at the university developed Foldit, a video game that challenged its players to fold the structures of selected proteins as well as possible.

Foldit's players have provided results that matched or outperformed the computer's solutions. In fact, Foldit made headlines when, in 2011, its players caused a breakthrough in AIDS research, deciphering the structure of an HIV-related enzyme in about ten days! Scientists can use solutions generated by citizens, like this one, to create biological innovations that target and may even someday eradicate diseases.

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# Protecting our Dolphins

## THROUGH RESEARCH



Although there are no dolphins living here at the Aquarium, we love to point out “our” wild bottlenose dolphin population that makes its home in the Charleston Harbor! These dolphins are frequently spotted in the water just off the Harbor Overlook swimming, feeding and playing.

The Charleston Harbor’s desirable conditions make it a hotspot not only for dolphins, but also for humans. As a shipping channel, the harbor has an enormous impact on South Carolina’s economy, with containers and vehicles being transported worldwide via the Port of Charleston. Recreational boating and sightseeing are also popular in the calm, sheltered waters of the harbor.

This year, the South Carolina Ports Authority will begin a project to

deepen the main shipping channel in the Charleston Harbor, making Charleston the deepest harbor on the East Coast and enabling larger cargo ships to access the area’s ports. A change to the environment that is caused by humans, like this one, is called an anthropogenic disturbance. While we don’t yet know how the deepening will affect the harbor’s ecosystem, previous research shows us that anthropogenic disturbances can be drivers of ecosystemic change.

The Aquarium is collaborating with Dr. Patricia Fair, a dolphin research physiologist from the Medical University of South Carolina, to study the effects of the harbor deepening on our local dolphin population. We are using a variety of non-invasive methods to record dolphins’ behaviors before, during and after the harbor deepening

and to identify any changes that occur. Using photo identification, we will individually identify the bottlenose dolphins by their unique dorsal fins and track their long-term movement and behavior. Historical data on individuals in our local dolphin population exists dating back to the early 1990s when research began on these animals. By analyzing that data alongside the data we are collecting, we can track some dolphins over years or even decades!

In addition, scientists from the University of South Carolina Beaufort have deployed acoustic devices to record the soundscape in locales that are popular with dolphins. These animals use sound to communicate with each other, to navigate, to locate food and to learn about their surroundings. The devices will help

scientists determine if the dredging significantly changes the ambient sounds in the harbor and whether our dolphins are affected.

We are also studying the health of our local dolphins. The dolphins in our region carry heavy loads of contaminants in their blubber, or fat. These contaminants accumulate in large concentrations in animals at the top of the food chain through a process called biomagnification. Animals at each level of the food chain transfer their contaminant loads to the next, resulting in the highest concentrations at the top. Additionally, mother dolphins pass their contaminant loads to their offspring through the processes of gestation and lactation. Dolphins with high contaminant loads have weakened immune responses and other health problems.

Aside from protecting our beloved dolphins, this research can provide insight into the overall health of the environment, including human health! Dolphins are sentinels for the health



of their total ecosystem; what affects them at the top of the food chain is affecting every level below them. Humans consume a lot of the same food as dolphins and share the same waterways. If a health concern affects dolphins, it likely affects humans too.

“This research will help us understand how to better protect our local dolphins and their environment,”

says biologist Meghan Galipeau, the Aquarium’s resident dolphin expert. “However, everyone can have a positive impact on the dolphins and their environment through their daily actions. Even small choices can make a big difference!”

## WHILE WE WORK ON PROTECTING DOLPHINS THROUGH RESEARCH, YOU CAN PROTECT DOLPHINS TOO THROUGH RESPONSIBLE EVERYDAY HABITS.



Begin by using fewer single-use plastics, which can leach contaminants if eaten by marine life.



Keep our waters clean by properly disposing of household chemicals to reduce runoff.



Finally, while you are boating or kayaking, remember to obey the law and respectfully observe wild dolphins (and all marine mammals) from a distance of 50 yards or more.

**TOGETHER, WE CAN MAKE A DIFFERENCE FOR THESE TREASURED ANIMALS AND THE ENVIRONMENT WE SHARE!**



# What's Your Story?

*PNC  
FOUNDATION*

*PNC FOUNDATION  
INVESTS IN EARLY  
CHILDHOOD EDUCATION  
AT THE AQUARIUM.*



For many Aquarium members, the South Carolina Aquarium is a special place for families to share their passion for protecting animals and to instill a love of nature in their children. Thanks to a generous investment by the PNC Foundation, the Aquarium will soon include a new area especially for those preschool-age children to be inspired.

PNC has committed to support early childhood education through its Grow Up Great Initiative, a multi-year commitment to prepare the youngest learners for success in school and life. PNC invests in programs that help young children, specifically underserved preschool children from birth to age 5, prepare for school by focusing on readiness in vocabulary development, science, math and the arts.

The Aquarium has already benefited from PNC's support of Aquarium Rovers, which has enabled us to reach more than 2,000 preschoolers statewide with hands-on, engaging science curriculum. This tailored outreach program has shown marked improvement in participants' STEM vocabulary.

PNC's latest investment will create a permanent home in the Aquarium for early childhood education in Kids Coast, a new, interactive educational play space for toddlers and their families.

"PNC believes that science is an integral part of early childhood development and that achievement in our community happens when we work together," said Jim Hansen, PNC regional president for the Eastern Carolinas and Aquarium board member. "We are dedicated to working with organizations like the South Carolina Aquarium to provide unparalleled opportunities for preschoolers to explore and discover the world around them."

What's your  
story?

**THE WATERSHED CAMPAIGN**  
Come together at  
[scaquarium.org/watershed](http://scaquarium.org/watershed)

# The Watershed Campaign:

*CONNECTING OUR COMMUNITY'S LITTLEST LEARNERS WITH MARINE SCIENCE*



## A NEW PLAY AREA FOR CHILDREN

With support from the PNC Foundation, we are excited to introduce the upcoming addition of Kids Coast on the Aquarium's second floor! Kids Coast will be an interactive and educational play space specifically designed for toddlers and their families.

Kids Coast will support play, exploration and discovery of the natural world among the next generation of environmental stewards. The area will also provide a safe, dedicated space for young guests and a specially designed area for pre-K education programs.

Kids Coast will be constructed in two phases.

Phase 1 will be located where the pirate ship currently resides and will contain various "soft play" elements, activities and seating for parents. Construction will begin this fall.

Phase 2 will be a wall-mounted activity along the adjacent hallway and will include an interactive display powered by air and water.



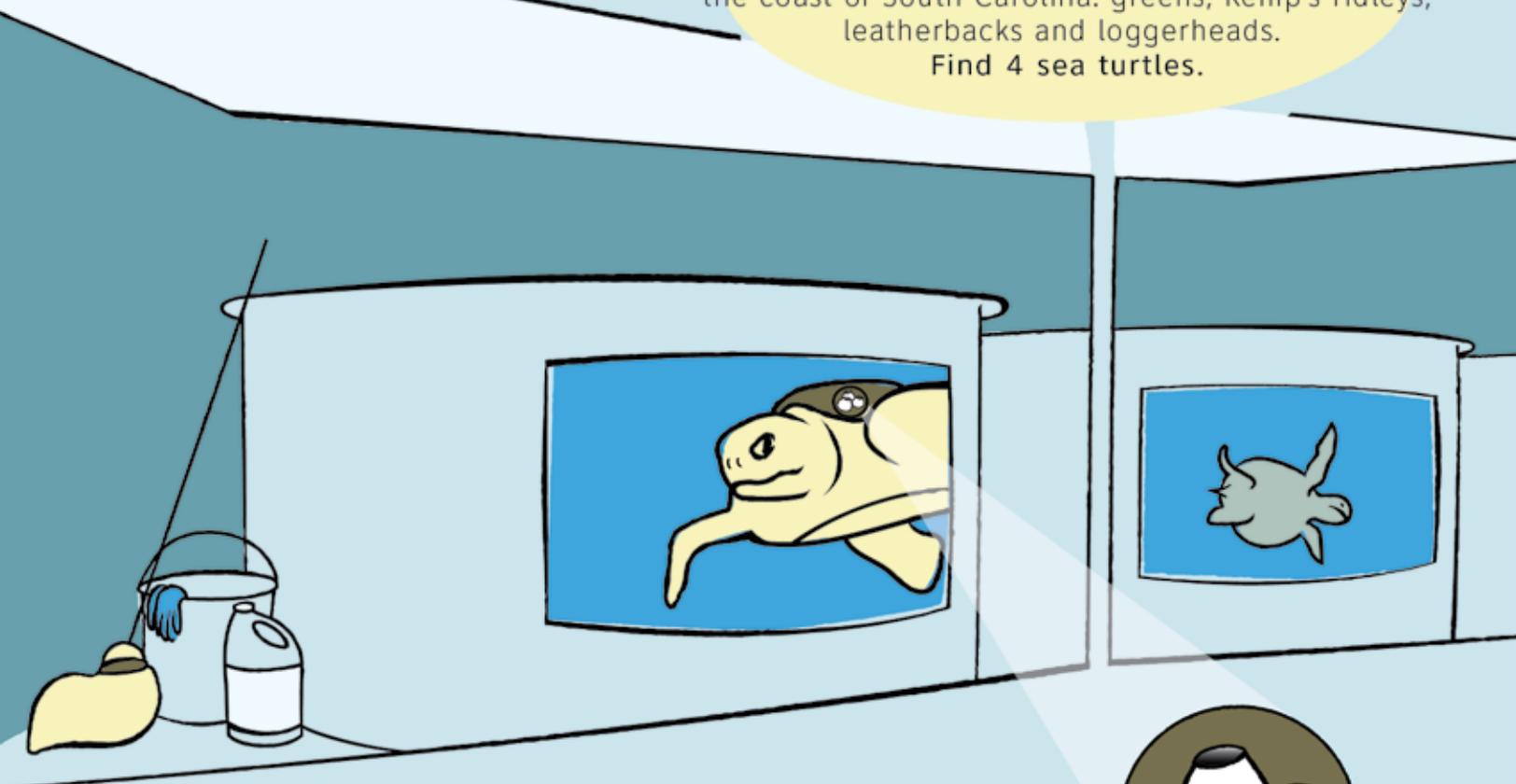
# Spot the Objects in Sea Turtle Recovery

Use the clues below to learn more about sea turtles and find the objects in Zucker Family Sea Turtle Recovery™.

**Q. How many species of sea turtles are found in South Carolina waters?**

**A.** Four species of sea turtles are known to inhabit the coast of South Carolina: greens, Kemp's ridleys, leatherbacks and loggerheads.

**Find 4 sea turtles.**



**Q. What are the white bumps on the turtles' backs?**

**A.** Those are barnacles, small animals that hitch a ride on slow-moving things in the ocean. It is normal for a sea turtle to carry some barnacles. However, a heavy load of barnacles can be an indicator to biologists that a turtle has been sick for a long time.

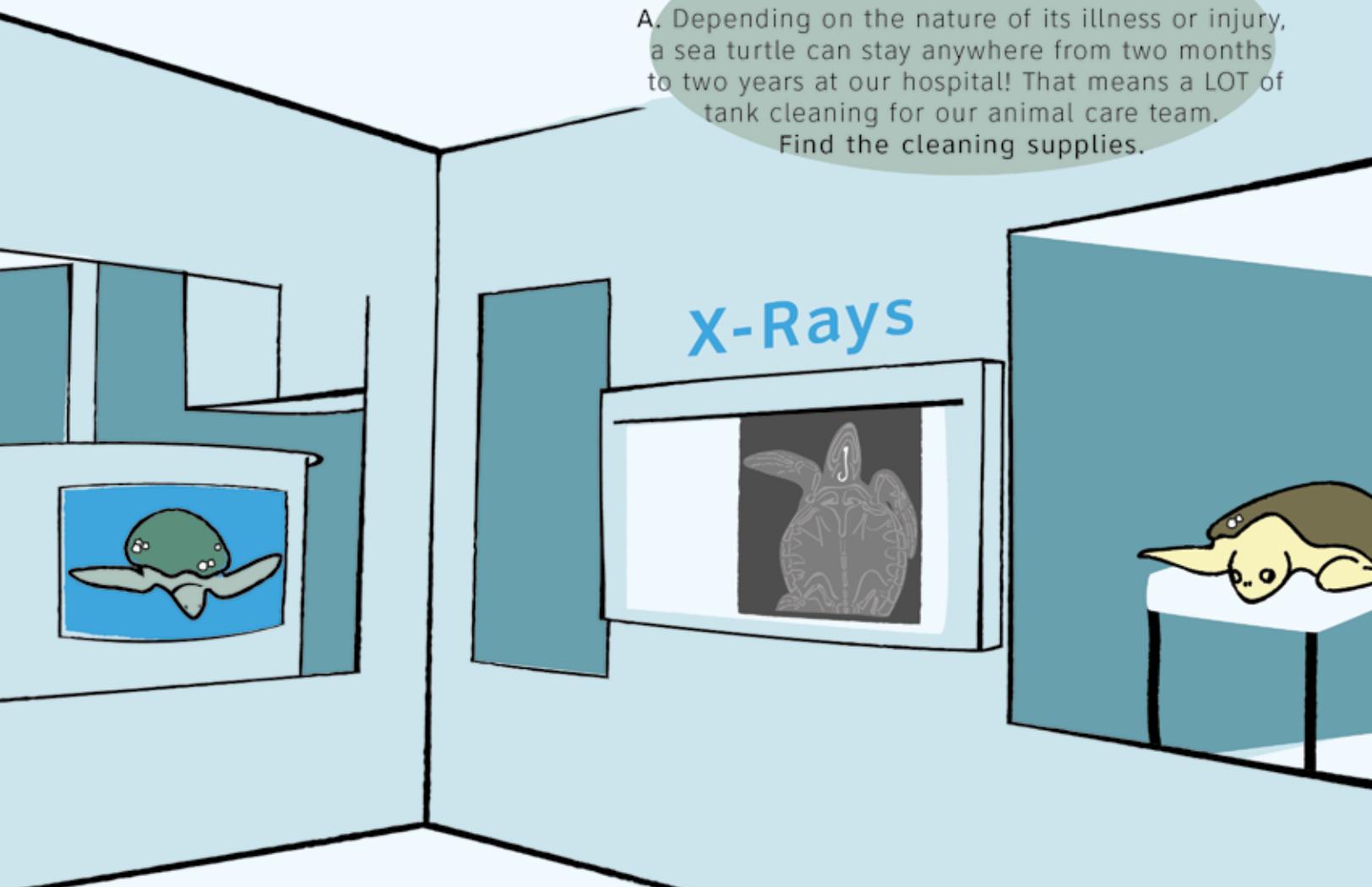
**Find 11 barnacles.**

**Q. What should I do if I catch a sea turtle while fishing?**

A. If you catch a turtle on hook-and-line, start by reeling in the turtle with care, supporting its body weight with a dip net while lifting it from the water. Remove the hook if it can be done easily without injury to you or the turtle, and release the turtle. If you cannot safely remove the hook, call the South Carolina Department of Natural Resources Sea Turtle Hotline at (800) 922-5431.  
Find 1 fishhook.

**Q. What is the average length of stay in the Sea Turtle Care Center?**

A. Depending on the nature of its illness or injury, a sea turtle can stay anywhere from two months to two years at our hospital! That means a LOT of tank cleaning for our animal care team.  
Find the cleaning supplies.



**Q. How does the veterinarian know if a turtle has internal injuries?**

A. Our veterinarian uses X-ray imaging to reveal the turtle's internal anatomy and identify problems like bone injuries, intestinal blockage and foreign objects. For complex cases, the vet also might use more advanced imaging like CT scans.  
Find the X-ray image.



HOLLAND  
**Lifelong Learning**  
SOUTH CAROLINA AQUARIUM

Explore top issues in conservation, research and science with expert-led discussions geared towards adults in a relaxed social environment.

**Dolphins Are Sounding the Alarm: Are We Listening?**

09 • 20 • 17

**The Tide Is High: Where Art and Action Collide**

10 • 23 • 17

**Biomedicine in Our Backyard: The Power of Blue Blood**

11 • 15 • 17

Learn more and register to attend at  
[scaquarium.org/lifelonglearning](http://scaquarium.org/lifelonglearning).

