

T E N N E S S E E  A Q U A R I U M

RIVERWATCH

WINTER 2008 • \$1.50

An underwater scene featuring two divers in the foreground, silhouetted against bright light filtering from above. They are surrounded by various marine life, including several sharks of different sizes and many smaller fish. The water is clear and blue, with bubbles rising from the divers. The overall atmosphere is serene and majestic.

**The Best Diving
in the Region**

The Best Diving in the Region

By Thom Benson, communications manager

PHOTOGRAPHY BY TODD STAILEY

Atlanta resident Lisa Faunce packs up her wetsuit and takes what she calls a mini vacation once a month. “I boast to my friends that I don’t have to go out of the country to find a great dive spot,” Faunce said. Since becoming scuba-certified 20 years ago, Faunce has explored the underwater world in numerous tropical locations. She learned about the great diving at one of her favorite spots while on vacation. “I met my dive buddy, Denise Kwiatkowsky, while our families were scuba diving in Bonaire,” Faunce said. “After our trip was over, I asked

Denise when she was diving again. She explained that she was a volunteer at the Tennessee Aquarium.” That was two years ago. Now Faunce enjoys two back-to-back days of diving at the Aquarium with her dive buddy once every four weeks.

Denise Kwiatkowsky has been a volunteer diver since 2004. She says she looks forward to her dive days every month even though it’s roughly 200 miles to drive round-trip from her home in Marietta. “When people hear that I volunteer at the Tennessee Aquarium, eyes light up, they



get really interested and start asking all kinds of questions. That allows me to teach them about the Aquarium, marine life and the health of our oceans and rivers,” Kwiatkowsky explained.

There are 170 other stories like Lisa’s and Denise’s according to Mark Craven, the Aquarium’s dive safety officer. That’s how many people come to downtown Chattanooga to volunteer for what he says is the best diving in Tennessee. “First of all, you won’t get almost 100 feet of visibility and salt water anywhere else in the state,” Craven said. “A dive vacation even in an area as close as Florida would cost a couple of hundred bucks. During a typical ocean dive you’ll have to spend quite a bit of time or cover quite a bit of ground before you see the number of animals you will see here in a single dive.”

Volunteer divers come from all walks of life. One day the man who fixed your car could be waving at you from inside the Gulf of Mexico tank right next to a six-foot green moray eel.

Another day, it could be the woman who approved your loan feeding sturgeon in the Nickajack Lake exhibit. Or it might even be an attorney joking with guests about being in the Secret Reef dive show with seven sharks. Most guests don’t realize the divers are volunteers and aren’t biologists by trade. “They do a fabulous job,” Craven said. “Our volunteers seek out information with a zealous nature that impresses me every day. Every morning during the dive briefing I am questioned by them about the animals and the exhibits. It’s like being on a daily quiz show.”

While floating weightless in prime dive conditions is awesome for divers, the Aquarium benefits the most from the services they provide. After Craven’s safety briefing, the volunteers begin



Pictured above: Lisa Faunce (right) and Denise Kwiatkowsky (left) surface after a scrub dive in the Secret Reef. Opposite page: Volunteer divers Robin (above) and Chris Rice. On the cover: Volunteer divers Jennifer Kueter (on left) and Paul Campbell.

the day cleaning inside the Secret Reef exhibit. A big salt-water fish tank requires plenty of elbow grease to keep the decor and windows looking great for visitors and the environment healthy for the animals. Once the “scrub dive” is complete, half of the crew will stay in Ocean Journey taking turns being the featured expert for the dive shows or acting as a safety diver. The rest of the divers head next door to River Journey to clean and feed the animals in the Nickajack and Gulf exhibits.

Huntsville, Alabama resident Alvin Underbrink enjoys feeding dives at the Tennessee Aquarium. “I’m beginning to learn the personalities of some of the fish,” Underbrink said. “The big jack in the Gulf of Mexico exhibit is a pretty cool guy. I can see him eyeing the squid in my outstretched hand as he maneuvers to swing around and hit it. He can move

Did you know?

Total Volunteer Divers:	174
Total Staff Divers:	21
Total Volunteer Diver Hours:	14451
Total Dives:	5028
Total Dives by Volunteers:	4621
Total hours underwater:	269

Based on 2007 numbers

pretty fast! So far, I've managed to make sure he doesn't get my fingers."

The majority of divers come in to volunteer once or twice a month, says Craven, who has the massive job of filling out the schedule. "We bring them in seven days a week, 363 days a year in teams of six," he said. "During a typical day we'll do about seven dives." That means the pool of talent needs to be replenished from time to time. He is currently accepting applications for the 2009 recruitment. For anyone with the right qualifications and skills, this might be an excellent chance to enjoy prime diving while meeting 170 new dive buddies. "Our primary responsibilities are animal health and keeping the exhibits looking the very best for our visitors. But this job just happens to be a lot of fun," said Craven with a smile. 💧

For more than 14 years now, we've been diving at the Aquarium and loving every minute. Jeff also serves as a member of the Aquarium's Board of Trustees. We decided to support the campaign to build *Penguins' Rock* because we truly believe the Aquarium is making a difference every day by teaching people how to keep our waters clean and healthy.

Jeff & Susie Parker
Divers, docents, board member



Joining the Tennessee Aquarium Volunteer Dive Program

- You must be a certified scuba diver at least 18 years of age with a minimum of 25 open water dives.
- You must have 12 open water dives within the past year.
- Applicants must hold current certifications in First Aid, CPR and emergency oxygen administration.
- If you meet these requirements, fill out the online application at: www.tnaqua.org/Get_Involved/Volunteer.asp.



Each day the volunteer divers ensure guests enjoy spotless views by cleaning the acrylic on all 26 views inside of the Secret Reef.



Giant Leap for Amphibians

By Thom Benson, *communications manager*

PHOTO OF POISON DART FROGS BY TODD STAILEY

When Aquarium member Dena Cutshall brings her son Hogan to River Journey, he spends quite a bit of time studying the amphibians. “He’s very interested in frogs,” Mrs. Cutshall said. Hogan spent several minutes investigating the interactive Disappearing Amphibians station. He might be too young to soak up the information presented, but the smile on his face says he likes the sight and sound of frogs calling. “I think we are reaching people with direct and brief messages,” said Dave Collins, the Aquarium’s curator of forests. “Everyone who looks at and touches that display seems to enjoy it and has at least gained an appreciation for these frogs.”

Nearly two dozen amphibian species can be seen at the Tennessee Aquarium, including four new tropical species that were added for the “Year of the Frog.” Even though the calendar says this Leap Year is ending, the effort to raise awareness about the amphibian extinction crisis will continue at the Aquarium. “We have added a new focus to our collection that is nice for us. The Year of the Frog is a challenge that puts us in a position to develop our amphibian expertise for the future,” Collins said.

Aquarium herpetologists were a bit surprised by how prolific the mossy frogs were this year. Several broods appeared in their exhibit throughout the year and Collins hopes other frog species at the Aquarium will breed successfully in the years to come. “Giant monkey tree frogs are very rarely bred in captivity and we are working with them as well as some of the poison dart frogs,” Collins said.

Collins points out that native species like the eastern hellbender salamander might also benefit for years to come from the added attention. “We introduce the hellbender to a lot of visitors,” Collins said. “They are an absolutely incredible creature right here in our backyard. Perhaps the heightened awareness will increase involvement from those who have taken a keen interest in amphibian conservation programs.”



Please join the Conservation Society.

Your annual gift includes your Aquarium membership and helps support the Aquarium’s conservation and education initiatives. Visit tnaqua.org and click on Contributions and Membership.



KAREN ESTES

Working on a cure for NDD

By Thom Benson, communications manager

There's a catfish living at Calvin Donaldson Environmental Science Academy in Alton Park. Hundreds of students have seen it by now, not knowing the fish was the beginning of a special relationship between the school and the Tennessee Aquarium. Educators like Julia Gregory and Bill Haley have been working with CDESA students for several years, adding to their studies by presenting programs on undersea wonders, rivers or "Creepy Crawlies." "They get to see a giant hissing cockroach, a tarantula and an African millipede. It helps them understand what an arthropod is," said Haley, the Tennessee Aquarium's education outreach coordinator. Fifth grade student Demarjanek Coates remembers Mr. Bill's insect program well. "They brought a bug that looked like a stick. I saw spiders and all kinds of insects," she said.

Thanks to a new grant from the Community Foundation of Greater Chattanooga, the efforts of the Aquarium's education department are going to be multiplied. This source of additional funding will pay for a multi-faceted approach to environmental programming

designed to bridge the gap between today's students and the natural world. The timing could not be more critical to meet a challenge that has been labeled Nature Deficit Disorder, or NDD. Although not an official medical term, there is a small but growing body of evidence that suggests children who spend more time out in nature are more focused in the classroom and tend to be higher achievers than children who do not. "With the increase in video games and TV over the last 50 years, what [researchers] have found is, kids have an attention issue inside the classroom," said Heidi Chapin, CDESA's magnet expedition specialist. "If you give children more time outside in nature, their ability to focus on studies will be increased proportional to the time they spend outside."

George Bartnik, education programs manager at the Tennessee Aquarium, traveled with Calvin Donaldson fifth graders to the Great Smoky Mountains Institute last year. The students hiked everywhere as they examined rocks and soil, explored waterfalls, performed tree IDs and conducted salamander surveys during their three-day trip. They even

Pictured above: Calvin Donaldson students Marquis Holloway and Lebrisha Jordan are amazed to learn the school's flathead catfish could one day grow to four feet in length.



KAREN ESTES

Pictured above: Aquarium educator Charles Hayslett helped lead Calvin Donaldson fifth grade students on an eco-adventure in the Great Smoky Mountains. Below: CDESA students explore a mountain stream to learn about food webs and habitats.

experienced an early spring snowfall in the mountains. “They go out with their eyes wide open while learning about nature and conservation. But they also learn about working in groups, community living and getting along with each other,” Bartnik said. The teachers and principal noticed better behavior when these students returned to school. They seemed more accepting of each other and more focused in the classroom. As a result, this year’s trip has been moved from the end of the year to the first nine weeks.

The Community Foundation grant ensures 52 outreach programs will touch students at CDESA from Pre-K through 5th grade in their classrooms. The grant also includes trips for several classes aboard the Tennessee Aquarium River Gorge Explorer to study water quality, field trips to a small local stream, programs at the Aquarium and a limited number of summer camp scholarships.

It’s an ambitious effort, but one that everyone agrees signals optimism for tomorrow’s environmental stewards. “We hope that students will feel more at ease in the classroom and develop an appreciation for the natural world as a result of this partnership,” said Bartnik. Chapin echoes those desires. “I hope we are increasing their environmental awareness and these experiences will inspire them to finish school and go on to college,” Chapin said. 💧



CHARLES HAYSLETT



IT'S A TROPICAL HOLIDAY, MON!

The Tennessee Aquarium has become a welcome part of the holiday season for many families. For some the tropical theme, special programs and Caribbean music offer a refreshing break. For others, A Tropical Holiday Adventure is a relaxing family outing with guests who may be visiting from out-of-town.

Last year, one member wrote to let us know how time at the Tennessee Aquarium had become a family tradition. "My husband works hard all year. So while I am finishing the holiday shopping, he takes our two daughters to the Tennessee Aquarium. It's one of those special times when he has them all to himself. They enjoy it so much we have made it a tradition for the past several years."

"The Light Before Christmas" will debut at the IMAX Theater this year. This charming new holiday film transports audiences into the famous poem "The Night Before Christmas" to experience the wonder and delight of Santa's visit. Endearing animated characters like Hob the Elf and Candleman will delight young and old.

Another family tradition is seeing the "Polar Express 3D" at the IMAX Theater. People call every year asking if we'll show the film. There's something truly magical about seeing "Polar Express 3D" on the giant IMAX screen.

Don't forget – an Aquarium membership makes a great gift. Members enjoy unlimited visits for an entire year, so it's a gift that will get a lot of use and keep its value throughout 2009. 💧

DAILY SCHEDULE

Nov. 21, 2008 - Jan. 4, 2009

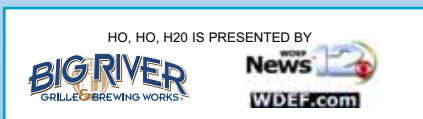
(The Aquarium is closed on Thanksgiving and Christmas Day.)

OCEAN JOURNEY

- 10:15 a.m. Feeding at Shark Island.....Level 4
- 10:30 a.m. Butterfly releaseLevel 4
- 11 a.m. Secret Reef "Santa" divers show...Level 2
- 11:30 a.m. Secret Reef "Santa" divers show...Level 2
- 1 p.m. Macaw programLevel 4
- 2 p.m. Secret Reef "Santa" divers show...Level 2
- 2:30 p.m. Secret Reef "Santa" divers show...Level 2
- 4 p.m. Butterfly release.....Level 4

RIVER JOURNEY

- 11:15 a.m. Otter feedings and enrichment...Level 4
- 3:30 p.m. Seahorse feeding.....Level A





CONTENT FOR "GETTING OUR FEET WET" IS PROVIDED BY THE TENNESSEE AQUARIUM EDUCATION DEPARTMENT.

Hey Kids! In each "Riverwatch" issue, look for fun activities in this section. Collect the Tennessee Aquarium's Animal Trading Cards, send us your own Animal Art or Silly Animal Jokes and Riddles and ask us your "How Do They Do That" questions. Send all submissions to jal@tnaqua.org. Please include your name and age.

Blue Poison Dart Frog
Dendrobates azureus

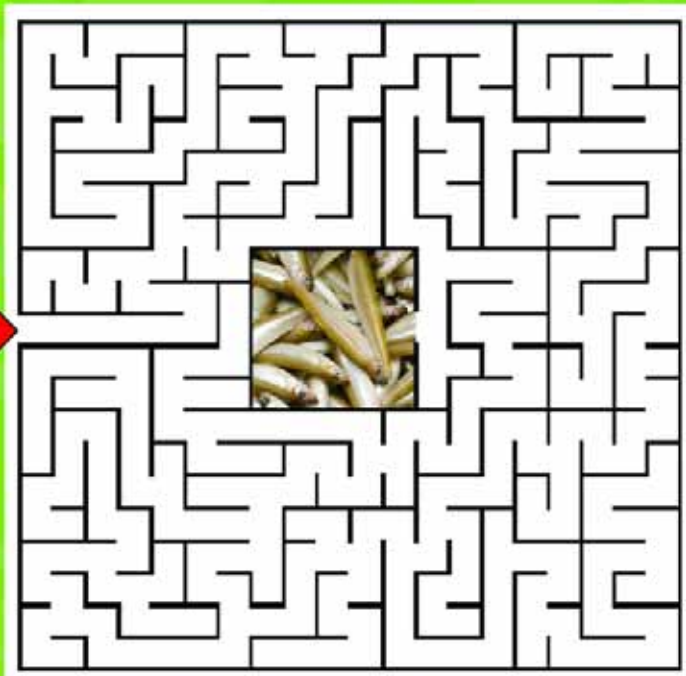


Cuckoo Catfish
Synodontis multipunctata



HUNGRY OTTER FISH HUNT

Can you help Pete the river otter find his smelt dinner?

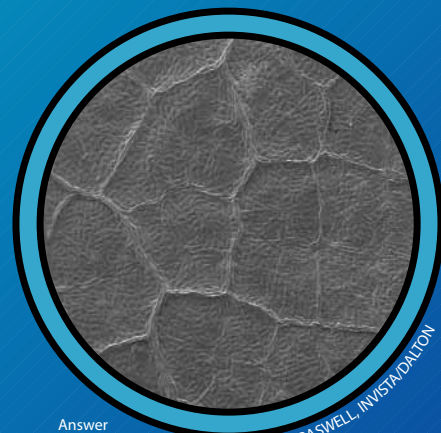


River otters spend a lot of time searching for their meals underwater. The long whiskers on an otter's face are very sensitive and help locate food. Otters cannot see, smell or hear fish or other prey in the water.

SILLY ANIMAL JOKES & RIDDLES

What do frogs drink in winter?
Hot croakoi

WHAT IS IT?



Answer on page 18

JEFF BRASWELL, INVISIDALTON

Tennessee Aquarium **A011**

Blue Poison Dart Frog
Dendrobates azureus

- **Habitat** — These small diurnal frogs can be found in dark moist environments near water and moss covered rocks of southern Suriname. While they tend to prefer the ground, they have been found as high as 16.4 feet (5 m) in trees.
- **Diet** — Small arthropods including ants, termites, spiders, mites, beetles, flies, maggots and caterpillars make up the diet of adult blue poison dart frogs. Tadpoles feed on unfertilized eggs provided by the mother frog.
- **Size** — Blue poison dart frogs grow to between 1.18 and 1.77 inches (30-45 mm) with the females being slightly larger.

WOW! Blue poison dart frogs produce toxic skin secretions strong enough to paralyze or kill their prey. It appears that the frogs absorb the toxins from what they eat, particularly ants.

Blue poison dart frogs can be seen in the Discovery Hall exhibit on Level 3 of the Tennessee Aquarium's River Journey building.

Tennessee Aquarium **F???**

Cuckoo Catfish
Synodontis multipunctata

- **Habitat** — Cuckoo catfish can be found along the muddy bottoms of Lake Tanganyika in Africa.
- **Diet** — Insects and gastropods including snails make up a majority of the cuckoo catfish's diet.
- **Size** — They can reach 10.8 inches (27.5 cm).

WOW! Cuckoo catfish practice brood parasitism meaning they find the eggs of mouth brooding cichlids and mix its own eggs with them. The female mouth brooding cichlid takes her eggs and those of the catfish into her mouth. The young catfish grow faster than the young cichlids and will feed on them. The unsuspecting mother cichlid raises the young catfish as it was her own.

Cuckoo catfish can be seen in the Rivers of the World exhibit on Level 2 of the Tennessee Aquarium's River Journey Building.

WHAT IS IT?



TODD STALLEY

It's the leaf of a sweetgum tree. The sweetgum tree loves to have its roots in a wet place. Pioneers once peeled the bark and scraped inside for a resin-like solid to produce chewing gum. A number of sweetgum trees can be found on the Aquarium plaza

ANIMAL ART

"Coral Reef" by Jake Graves (age 7½)

Thanks, Jake, for sending in this great drawing! Want to show off your artistic talent? Send a drawing of your favorite Tennessee Aquarium animal to jal@tnaqua.org. Art will be selected in a random drawing for each *Riverwatch* issue. Be sure to put your name and age on your masterpiece!



STEEL CAN LUMINARIES

MATERIALS:

- Soup can(s)
- Notebook paper
- Tape
- Pencil or crayon
- Hammer and nail
- Candle(s)

DIRECTIONS:

1. Remove the label and thoroughly wash (inside and out) a steel can (like a soup can).
2. Fill with water and freeze until solid.
3. Cut a piece of paper that will wrap once around the can and cover it top to bottom.
4. Draw a simple winter design on the paper. The larger and simpler your design is, the better this will work!
5. Draw dots at strategic points along your design and tape the paper in place around the can. Secure the paper so that it will not slip.
6. With a hammer and nail, make holes in the can everywhere there is a dot on your paper. The ice inside the can will hold the can's shape while you hammer.
7. Allow the ice in the can to melt and the can to dry. Insert a candle and enjoy your design in brilliant points of light!



The Desperate Dozen

By Dr. Anna George,
Tennessee Aquarium chief research scientist

Freshwater conservation issues brought nearly 200 ichthyologists to Chattanooga recently. These fish scientists from throughout the region gathered for the second annual meeting of the Southeastern Fishes Council (SFC), hosted by the Tennessee Aquarium. This year the group focused its attention on the “Desperate Dozen,” the twelve most imperiled fish species from the southeastern United States.

If you're an ichthyologist, the Southeast is a great place to work. There are more than 675 species of fish to study, which is more than half of the total number of species found in the U.S. Unfortunately, 25% of these are now considered imperiled. “This major conservation crisis calls for immediate action to conserve and protect the remaining populations and their habitats,” says Dr. James Williams, SFC Meeting Co-Chair. “We decided to focus our efforts on those 12 species most likely to become extinct, the Desperate Dozen, in order to reverse their precipitous decline and put them on the path to recovery.” During this past summer, a group of experts ranked these species based on the size of their range, abundance, and severity of threats. These results were presented at the SFC meeting so that scientists and resource managers can discuss how best to preserve them. Though most of these species are small in size and range, their role in the region is large. “Our native fishes are part of our natural heritage in the Southeast,” says Dr. Bernard Kuhajda, Chair of the SFC. “We have to conserve that heritage so that our kids and grandkids can enjoy the same quality of life — and fishes — that we have now.”

Half of the Desperate Dozen are from a group known as darters, named because they lack a swim bladder and dart across the bottoms of streams. These brightly colored fishes have been nicknamed the “Warblers of the Water,” not only for their appearance, but also their distinctive behaviors. The Conasauga logperch, the closest of the Desperate Dozen to Chattanooga, feeds by flipping rocks on stream bottoms and eating the bugs found underneath. Another



imperiled darter displays reversed parental roles. “Male relict darters are in charge of the eggs. They protect nests on the underside of flat rocks. Females actually look for the presence of eggs in these nests to ensure their potential mate is a good choice for guarding their offspring,” says Dr. Kuhajda.

However, these remarkable characteristics mean these

The Desperate Dozen

1. *Cottus paulus* – Pygmy Sculpin
2. *Etheostoma chermocki* – Vermilion Darter
3. *Etheostoma chienense* – Relict Darter
4. *Percina aurora* – Pearl Darter
5. *Crystallaria cincotta* – Diamond Darter
6. *Etheostoma rubrum* – Bayou Darter
7. *Percina jenkinsi* – Conasauga Logperch
8. *Elassoma alabamae* – Spring Pygmy Sunfish
9. *Scaphirhynchus suttkusi* – Alabama Sturgeon
10. *Erimystax cahni* – Slender Chub
11. *Noturus crypticus* – Chucky Madtom
12. *Speoplatyrhinus poulsoni* – Alabama Cavefish

darters can be extremely sensitive to habitat changes in our waters. When stream banks erode, the resulting sedimentation impacts habitat quality. When rocks become embedded in sediment, logperch are not able to flip them. Relict darters lose nest sites when sediment fills the space between rocks and the stream bed. Other species, such as the vermilion darters, may have difficulty finding their brightly colored counterparts in the cloudy water.

Species that are found only in a small part of a small stream are even more threatened by habitat change; there just isn't anywhere to move if the neighborhood turns bad. With the ongoing drought in the Southeast, our aquatic habitats are under increasing stress from the competing demands placed on them. Without rain, spring and river systems are not recharged, and more water is pumped away for irrigation. For fish that are restricted to a single spring or cave, such as the pygmy sculpin or Alabama cavefish, the likely outcome is extinction.

It isn't only fishes with small ranges that suffer from the effects of habitat change; fishes that were once found in hundreds of miles of big rivers are now hovering on the brink of extinction. Only two individuals of the Alabama sturgeon, a fish that once roamed more than 1,000 river miles of the Mobile Basin in Alabama and Mississippi, have been captured in survey efforts over the last eight years. "Habitat changes can have impacts upstream and downstream," says Dr. Kuhajda, "which is why it's so important to have this discussion on a regional scale."

Because these fishes are so imperiled, you won't be able to find any on display in the Aquarium. However, you can have a scavenger hunt on your next visit to find fish that are closely related to them. If you look closely at the Darter Tank in the Tennessee River Gallery, you can find two other species of logperch that also feed by flipping rocks. Look for sturgeon and pygmy sunfish on display in River Journey as well. However, just seeing close relatives of these species isn't enough. These Desperate Dozen fish represent a unique part of our freshwater ecosystems. "They are the canary in the coalmine," says Dr. Williams. "And that canary is currently very, very sick."

In order to save the Desperate Dozen, we still need to learn more about them and share that information in meetings like the SFC. Diamond darters, found in the Elk River in West Virginia, were only discovered as a new species early this year. Chucky madtoms were only formally described and given a scientific name three years ago. At the Tennessee Aquarium Conservation Institute, we're working with researchers across the region to find new species, study our native fishes, and preserve both them and their habitats. Thanks to our ongoing recovery initiatives, the Barrens topminnows didn't make the "desperate dozen" list. By hosting SFC in Chattanooga, we hope to have 12 more success stories to tell in the next decade. 💧



Travelers say the Tennessee Aquarium Rocks!

Two fins up! The Tennessee Aquarium has been chosen one of the nation's top aquariums based on traveler popularity by TripAdvisor, the world's largest online travel community.

Two surveys released by Trip Advisor rank the best aquarium and zoo experiences in the United States. The Tennessee Aquarium's "mountains to the sea" theme is the type of experience many aquarium visitors are seeking today. "These aquariums and zoos offer wonderful learning experiences about animals and their habitats, and truly let travelers take a walk on the wild side," said Michele Perry, vice president of global communications for TripAdvisor.

Here are the Top Five Aquariums and Zoos as chosen by traveler popularity and TripAdvisor editors.

TOP FIVE U.S. AQUARIUMS

1. Ripley's Aquarium of the Smokies, Gatlinburg, Tennessee
2. Tennessee Aquarium, Chattanooga, Tennessee
3. Monterey Bay Aquarium, Monterey, California
4. Ripley's Aquarium, Myrtle Beach, South Carolina
5. Oregon Coast Aquarium, Newport, Oregon

TOP FIVE U.S. ZOOS

1. Memphis Zoo, Memphis, Tennessee
2. Arizona-Sonora Desert Museum, Tucson, Arizona
3. St. Louis Zoo, St. Louis, Missouri
4. Henry Doorly Zoo, Omaha, Nebraska
5. San Diego Zoo, San Diego, California

Aquarium Marketing Team Wins Big

The Association of Zoos and Aquariums recently honored Cindy Todd and the Tennessee Aquarium's marketing team with the 2008 Marketing Excellence Award. This prestigious award recognizes the most successful and creative integrated marketing campaigns in the industry. Judges based their decision on how zoo and aquarium marketing teams across the country met strategic challenges, executed their creative plans and achieved measured results.

The Aquarium took top honors for the Penguins Rock campaign which included a multi-faceted approach to spotlight this exciting gallery.

The center piece was an award-winning television commercial featuring a gentoo penguin that appeared to waddle through both of the Tennessee Aquarium's buildings. Go behind the scenes to see how this commercial was produced by checking out the Penguins Rock page at www.tnaqua.org.

Hello and Hola!

If you leave your cell phone in the car the next time you visit the Aquarium, you will be missing out on extra animal information served up on our new audio tour. Want to know more about penguins, sharks, otters or butterflies? Dial in to hear the keepers tell you about their jobs and the animals they care for. Audio stops are posted throughout both River Journey and Ocean Journey. This bi-lingual service is sponsored by AT&T's Real Yellow Pages.



Truly Fine-Feathered Friends

You might have noticed the residents of Penguins Rock looked a little scruffy recently, this was caused by an interesting annual feather replacement cycle.

Penguins have 70 to 80 feathers for nearly every square inch of their bodies. Each year, penguins go through what's called a catastrophic molt. They lose all of their feathers within two to three weeks as new feathers grow in and push the old ones out of place. So it's no wonder gentoos and macaronis get a little grumpy when they are molting. "The birds won't eat and usually don't swim. Molting is a very stressful time because they probably don't feel normal," explains Amy Graves, the Aquarium's penguin keeper.

Because this process is physically taxing, the penguins bulk up prior to the molt. This also explains why they also seem a little off balance at this time of year. "The penguins gain twenty percent of their body weight which explains why they appear extra clumsy on land during their molting season," Graves said.

Penguins molt right after the breeding season, which occurs at Penguins Rock from April to June. So look for scruffy-looking, kind of clumsy penguins again next September and October.

By the way, Nipper takes the award for fastest molt at the Tennessee Aquarium. He sported his new gentoo feathers in about two weeks. Iggy the macaroni was one of the slow pokes. His molt took more than three weeks. All of the birds look sleek, slim and relatively sure-footed now.

Grab the binoculars and let's go.

Now that the leaves have fallen, it's time to get outdoors and see what summer has kept hidden away. Right now is prime time to cruise into Tennessee's Grand Canyon for an unobstructed view of the rocky mountain faces. Passengers aboard the River Gorge Explorer can now see farther into the wooded slopes allowing for even more animal sightings. Winter can also provide spectacular scenery if snow coats the landscape with white or ice glistens in the trees. Fear not fair-weather friends, the Explorer's cabin will be toasty warm inside if it's cold outside. Check cruise times and purchase tickets online at www.tnaqua.org. 💧



Football Hero Helps Tennessee Aquarium

The holiday spirit was felt in both Aquarium buildings a little early this year. Thanks to Peyton Manning's Payback Foundation, two groups from Big Brothers, Big Sisters were able to "Sleep in the Deep." Smiling faces and the sounds of laughter lasted long after dark while these children had fun at the Aquarium learning about the environment. This sleep-over program included activities designed to help children develop social skills and think critically about the world around them.

The Tennessee Aquarium was one of 34 organizations in the state to receive grant money from the Payback Foundation this year. "We are honored to be able to impact the lives of thousands of children and their families through our grant program," said Foundation president Peyton Manning. 💧

Gifts and Contributions

The Tennessee Aquarium gratefully acknowledges the following gifts received through September, 2008:

In Memory Of:	Walter C. Champion, Jr.	In Honor Of:	Anna George & Dave Neely
Given By:	Mr. & Mrs. Gerald J. Grekowitz	Given By:	Tim Baker
			George Bartnik
			Heather DeGaetano
			Lee Friedlander
In Memory Of:	Diana Veal		Susie Grant
Given By:	Mr. David S. Barham		Jordan O'Rylee
	Mr. Steve Lardinois		Christina Newman
			Molly Samuels
In Honor Of:	Joseph DeGaetano		Amber & Josh Smith
	Charles W. Belin, Jr.		Thad Taylor
	John Belin		
Given By:	Heather & Lucie DeGaetano	In Honor Of:	Julia Gregory
		Given By:	Heather, Joe & Lucie DeGaetano
In Honor Of:	Ray Jordan		
Given By:	Melanie Jordan		
In Honor Of:	Jennifer Adams		
Given By:	Andy Hodes		

If you would like to honor special people in your life, please send your request to Development Department, 201 Broad St., Suite 200, Chattanooga, TN 37402 or visit the Aquarium's website at www.tnaqua.org and click on "Contributions and Membership." Please include the name and address of the person you would like to be notified of your gift. To discuss how the contribution will be used, please contact Heather DeGaetano, Director of Development, at (423) 785-4106 or hbd@tnaqua.org.

Holiday Gift Idea — A virtual journey where few have gone before!

The Aquarium's behind-the-scenes tours are awesome, but there are still some areas off-limits to everyone except staff members. Your all-access behind the scenes pass is now available online and at the Tennessee Aquarium gift shops.

"Beyond the Looking Glass" is a new DVD that takes viewers on a virtual tour from top to bottom of both Aquarium buildings. Cameras follow animal experts into the restricted areas of the Butterfly Garden and Penguins Rock. Playful otters were recorded leaping and splashing for treats, and our beautiful hyacinth macaws were spotted searching for "treasure" during enrichment activities. Viewers will also witness a fish transfer from the Aquarium's animal care facility to Ocean Journey.

This hour-long tour behind the scenes was produced locally by Video Ideas Productions. Their crews were able to capture tons of fun and interesting footage. Learn more about our volunteer divers or watch an arapaima smack the water's surface during feeding. Investigate the maze of pumps and pipes that ensure crystal clear water for our exhibits.

Most visitors only see our animals through a large viewing window. But there's another world of adventure to enjoy when you go.... "Beyond the Looking Glass." 💧

2008 Official Sponsors

We gratefully acknowledge these Official Sponsors and Partners of the Tennessee Aquarium, IMAX Theater and River Gorge Explorer. These partnerships help support the Aquarium's many conservation, education and research programs. To learn how you can become an Official Sponsor, please contact Cindy Todd at (423) 785-3004 or email cgt@tnaqua.org.

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"I give because I believe in the Tennessee Aquarium. Several times each year, I drive all the way from Powder Springs, Ga. to Chattanooga so that my sons can experience the Aquarium. The look on their faces in the Butterfly Garden or at *Penguins' Rock* confirms for me what a great place this truly is."

Gavin Brannan

Aquarium donor & Conservation Society member

Pictured at left: Gavin's son, William Brannan

Make a Splash with Your Year End Gift

The success of the Aquarium is closely related to the support we receive from our donors. The Aquarium relies on your annual gift to make a significant impact on the community. Make your gift by December 31st to receive a tax deduction for 2008 and to support the great work the Aquarium does every day.

What impact does my contribution have on the community?

The Tennessee Aquarium is, at its core, an organization of people: members, volunteers, donors, Trustees, staff and friends. The people behind the institution are what make the Aquarium's tremendous impact on this community possible. In the last year, the Aquarium:

- Released nearly 12,000 imperiled lake sturgeon into regional rivers with its partners.
- Educated nearly 16,000 students and teachers during 500 educational classroom programs.
- Reached nearly 30,000 people through Aquarium outreach programs across the region.
- Welcomed more than 85,000 students visiting as part of organized field trips.

How does the Aquarium use donations?

The Aquarium has been and will continue to be an excellent steward of our donor's contributions. For example, joining the Conservation Society at the \$1,000 level means that \$100 purchases your annual membership and \$900 goes directly to the Aquarium's Conservation and Education Fund. Those funds

are used for things like providing free admission to deserving students and supporting conservation programs in the region.

The Aquarium strives to be as transparent as possible. The Aquarium uses only one percent of its revenue for fundraising purposes, more than 80% for programming and just under 19% for the highest quality administration and management. We have updated our website to include financial information you may be interested in. To find it, just visit tnaqua.org and click on contributions and membership. We are listed on Guidestar at www.guidestar.org where you can find 10 years of financial history. The Aquarium is a long-time member of the Chattanooga Chamber of Commerce and is a founding member of the Riverfront Business and Resident Partnership. We are also accredited by the Association of Zoos and Aquariums which endorses our sound business practices.

How can I help? Here are eight ways you can support the Aquarium in 2008...

- 1) Visit our website at www.tnaqua.org and click on Contributions & Membership.
- 2) Call us at (423) 785-4106.
- 3) Email us at contributions@tnaqua.org.
- 4) Make a gift of appreciated stock... help the Aquarium and reduce your taxes.
- 5) Give the gift of membership or make a gift in honor or memory of a loved one.
- 6) Join the Aquarium's Conservation Society or elect an upgraded membership.
- 7) Name the Aquarium as a beneficiary in your estate or other financial plans.

Thank you for all that you do for your



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The Tennessee Aquarium is a non-profit institution. Your dollars support our many education, conservation and research programs. Visit www.tnaqua.org.

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The Tennessee Aquarium inspires wonder and appreciation for the natural world.

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SCHEDULES ARE SUBJECT TO CHANGE. CALL (423) 266-IMAX.

