



SAN ANTONIO
RIVER AUTHORITY

River Reach

THE COMMUNITY NEWSLETTER OF THE SAN ANTONIO RIVER AUTHORITY

SUMMER 2024





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INSPIRING ACTIONS FOR HEALTHY CREEKS AND RIVERS

Mission

COMMITTED TO SAFE, CLEAN, ENJOYABLE CREEKS AND RIVERS

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Board Insights: Jim Campbell

JIM CAMPBELL, BOARD CHAIRMAN, BEXAR COUNTY DISTRICT 4



As District 4 Director, Jim Campbell represents the eastern portion of Bexar County. Jim is a native Texan and a graduate of Roosevelt High School in San Antonio. He holds a Bachelor of Arts, summa cum laude, from Texas A&M University. He is a governmental relations and communications professional whose career has included

employment in the United States Congress, Texas Legislature, and San Antonio municipal government. Jim has been a River Authority board member since 2015 and has served as Board Chairman since 2022.

The River Authority is involved in several events this spring. Is there one that you're most excited about?

I am excited for Race the River series this year. Although the River Authority has focused on recreational use of the river for years, if not decades, the idea of river racing, professional or amateur, was a concept that resurfaced a few years ago. The Texas Water Safari on the San Marcos River has been a great success for their river. We previously decided that this type of event was not right for the San Antonio River, but now, the idea has given birth to the Race the River series. In its own special way, the series has proven to be very impactful because of the opportunity it creates for people to literally be in contact with the river and appreciate all it has to offer.

What current River Authority project are you looking forward to?

When I came on the Board over eight years ago, one of my goals was to see the River Walk completed from where it ends now at the Pearl to the Blue Hole on the University of Incarnate Word (UIW) campus. Although the funding is not in place, the feasibility and the will are. To complete this segment of the San Antonio River, we would connect the Pearl to Brackenridge Park, past the golf course, underneath Hildebrand Ave, up to UIW. The River Authority serves as Project Manager for the Spirit Reach project, part of the Bexar County Creeks and Trails program. The Spirit Reach segment will provide a path under Hildebrand, through campus, up to the Blue Hole.



Any litter on the ground, including Fiesta items, can be quickly swept into storm drains and end up in the San Antonio River.

For me, completing this River Walk connection is as meaningful as any project that I have been involved with in my time on the River Authority Board.

In addition to having fun, how would you encourage people to enjoy Fiesta every year?

The River Authority's focus during Fiesta is in keeping the river as clean as possible. While we have a great time all over San Antonio, we need to be aware of our impact on the river. Litter that is left on the ground and not properly disposed of ends up in our creeks and rivers. This becomes a great challenge for the River Authority for trash removal but also in maintaining the overall health of our waterways. Please help us keep the rivers and creeks clean and Don't Let Litter (and Fiesta) Trash Your River!

Upcoming 2024 Events

July

YOGA ON THE CREEK, SAN PEDRO CREEK CULTURE PARK ► MONDAYS (6-7PM)

JULY 19 ► FRIDAY NIGHT HIKES AT GRAYTOWN NATURE PARK (8:30-10PM)

August

YOGA ON THE CREEK, SAN PEDRO CREEK CULTURE PARK ► MONDAYS (6-7PM)

AUGUST 13 ► DRUM CIRCLE EVENT, SAN PEDRO CREEK CULTURE PARK (7-8PM)

AUGUST 15 ► ETHNOBOTANY OF NATIVE PLANTS GUIDED TOUR, JACKSON NATURE PARK (10-11AM)

AUGUST 16 ► FRIDAY NIGHT HIKES, TRUEHEART RANCH NATURE PARK (8:30-10PM)

AUGUST 23 ► CINEMA NIGHT AT HELTON NATURE PARK (8:30-10:30PM)

AUGUST 23-25 ► FREE CAMPING WEEKEND AT HELTON NATURE PARK

September

YOGA ON THE CREEK, SAN PEDRO CREEK CULTURE PARK ► MONDAYS (6-7PM)

SEPTEMBER 6 ► RACE THE RIVER DOWNTOWN

SEPTEMBER 7 ► FIN ADDICTS AT ACEQUIA PARK (9-11AM)

SEPTEMBER 19 ► ETHNOBOTANY OF NATIVE PLANTS GUIDED TOUR AT ROOSEVELT PARK (10-11AM)

SEPTEMBER 20 ► FRIDAY NIGHT HIKES AT JACKSON NATURE PARK (8-9:30PM)

Retiring Board Member: Alicia Cowley

BRIAN MAST, DEPUTY DIRECTOR, GOVERNMENT AFFAIRS



Board Chairman, Jim Campbell (right) and General Manager, Derek Boese (left) pictured with former Goliad County Board member, Alicia Lott Cowley at her fairwell reception.

The San Antonio River Authority (River Authority) Board of Directors and River Authority staff extend their deepest gratitude to retiring board member Alicia Cowley for her dedication and commitment to safe, clean, and enjoyable creeks and rivers. Alicia has represented Goliad County on the Board since 2015.

Alicia Lott Cowley is a retired registered nurse who worked as a manager in several South Texas Emergency Departments over a 35-year career. She has been active since retiring in her home community of Goliad, working with the Goliad County Library's Center for Texas History as well as the Goliad Historical Commission. She is a sixth-generation Texan involved in conservation projects through the Goliad Farm Bureau and the Goliad County Wildlife Management Association.

During her tenure on the Board of Directors, Alicia served on the following Board committees: Executive Committee (2022-2023); Fiscal Committee (2018-2022); Communications Task Force (2021-2023); and Facilities Task Force (2023-2024), often leading committees in an officer role. Alicia's leadership in the Communications Task Force was critical to enhancing external communications and identifying future communication campaign opportunities and strategies. Her insightful guidance through the Utilities Task Force enabled the River Authority to realize operational efficiencies beneficial to the agency and local communities (pictured below right).

Alicia's strong advocacy for the Household Hazardous Waste collection events (pictured below left) in Goliad, Karnes, and Wilson counties illustrated her commitment to a safe, clean, and enjoyable San Antonio River Basin. Additionally, her support for nature-based outdoor recreation encouraged the River Authority's expansion of the Goliad and SASPAMCO paddling trails. We invite you to read more about her insights and accomplishments over the years as a board member on the River Authority blog.

Please join us in celebrating Alicia Cowley's years of service and dedication to the River Authority, and role as a friend and champion of our local waterways and communities throughout the San Antonio River Basin.



Board Insights: Michael W. Lackey

MICHAEL W. LACKEY, PE, BOARD MEMBER, BEXAR COUNTY DISTRICT 3



Michael W. Lackey, P.E. is Principal of Lackey de Carvajal Cx (LCCx), which is an Energy Efficiency Engineering firm. As a LEED Accredited Professional, Lackey verifies that complex building systems perform as intended to achieve energy and water efficiency, reduce CO² emissions and improve indoor environmental quality. Additionally,

Lackey served on the San Antonio Water System Board of Trustees from 2001 to 2009 prior to being elected to the River Authority board in 2009.

Lackey, a native and lifelong San Antonian, is a graduate of Central Catholic High School. He holds a Bachelor of Science in mechanical engineering from Texas A&M University and an M.B.A. from the University of Houston.

What do most people not know about the dams within Bexar County?

Most people don't know that the River Authority owns, operates, and maintains 42 dams—29 of which are in Bexar County. The network of dams protects the major watersheds and the people that live near the Calaveras, Leon, Martinez, and Salado creeks. It's also not well known that our dams exist in major public parks, such as McAllister, Stone Oak and Mud Creek parks, where people regularly come to hike, bike, and play soccer or baseball. The dams are multipurpose because of the support they provide the parks, but also for their recharge features. Some of these structures exist over the Edwards Aquifer recharge zone. When these dams impound water, that water recharges the aquifer. People should think of the system of dams as a network. Each dam functions individually and as part of a greater system to provide improved flood safety.



"I am very proud of the international attention and recognition that the San Antonio River and the River Authority have received for the great work that we do in our watershed."

5

What is your proudest moment on the BOD?

I served as Chairman of the Board in 2018 when San Antonio was celebrating its tricentennial. We got to meet with a delegation from our sister city, Wuxi, China, to discuss river management and channelization. Like San Antonio, Wuxi is well known for its waterways that cut through their city. We held a signing ceremony in May of that year to commemorate our discussion and cooperation, as well as our future exchanges (pictured above).

What current River Authority project are you looking forward to?

I am excited to see the completion of the San Pedro Creek Culture Park. I remember the grand opening of the culture park's first segment in 2018. San Pedro Creek is a huge local project, and we got to celebrate that segment's opening during a big year for San Antonio. This was another event with dignitaries from across the world. I remember sitting next to former United States Representative Will Hurd and former Bexar County Judge Nelson Wolff, discussing our enthusiasm for the park and its future phases. Since 2018, the project has opened several more sections, most recently the new El Paso Street trailhead to Alamo Street. We are in the final stages of the improvement project, and I look forward to celebrating this milestone.

Left, Flood Retention Dam in Northern Bexar County (Converse, TX).

Staying Safe on the River: Kayaking

JASMINE TORREZ, PARK PROGRAM COORDINATOR

Adventure awaits along the San Antonio River!

Whether you plan on kayaking, canoeing, or paddle boarding for an entire day or an hour, the San Antonio River Authority (River Authority) has paddling trails to satisfy all! You can find more information on the five paddling trails maintained by the River Authority on our website. While out enjoying your water-full adventure, safety is paramount. Read on to learn about some kayaking safety tips used and recommended by the River Authority's Recreation Team and more information on safe kayaking along the river.

Use your best judgement and don't enter the river if you are unsure of your own ability to safely travel downstream!



General Manager, Derek Boese, participating in the River Authority Paddling Series. Visit sariverauthority.org for details on future paddling series races!

Paddling Rules to Remember

1. Wear a properly fitted PFD. "PFD" stands for "personal flotation device" (or "people floatin' doohickey"). These can include a life vest, life jacket or preserver. Make sure it fits snugly and won't come off if you end up in the water.
2. Stay Informed. Read up on essential information about river conditions before you go, such as water flow and current weather.
3. Dress Appropriately. The correct clothing helps prepare for your time on or in the water. For example, long sleeves are a great way to reduce the risk of severe sunburn. Although we hope you do not capsize and end up in the water, having shoes on will protect the bottoms of your feet should they touch the bottom of the river. This is especially helpful in high fishing areas where hooks and other fishing gear may be stuck at the bottom of the river.



Paddling trail in Goliad County, TX



How to Check River Conditions

1. Head to the **Current Conditions** page on our website.
2. Scroll down to the "**Flow Conditions**" chart where you can see the flow volume and the time the flow volume was taken at each site. You can also click on each individual site number to see more in-depth information about each site.

When looking at river conditions, be weary of fast flowing water, high-level water, and your own abilities as a paddler. Checking the weather can help with determining whether the flow will be higher than normal due to rain. **Use your best judgement and don't enter the river if you are unsure of your own ability to safely travel downstream.**

Don't Forget These Essentials

Check before you go! Checking the weather can help keep you safe from heat exhaustion and heat stroke. Although some parts of the San Antonio River may be shaded, it is a good idea to always wear sun protection such as sunscreen, a hat, and sunglasses. Be sure to take water with you on your adventure and do not forget the hydration begins at home! So, remember to hydrate the day and night before as well. Bug spray is also recommended while paddling, especially at dawn and dusk when mosquitos tend to be buzzing around.

Swimming in the San Antonio River?

The water in the San Antonio River may look very tempting to jump into especially on sweltering summer days however, swimming in the San Antonio River is not recommended, and presently, swimming or wading in the San Antonio River in Bexar County is prohibited by a City of San Antonio (COSA) ordinance. There is hope that this might change in the future. The River Authority is working with COSA officials and employees to determine the potential for swimming and wading in the river. Meanwhile, you can check the *E. coli* bacteria conditions on the Current Conditions page of our website.

Stay Safe and we'll see you on the River!

2024 Earth Challenge Events

SAMANTHA VILLANUEVA, ENGAGEMENT COORDINATOR

In celebration of Earth Month, the San Antonio River Authority (River Authority), San Antonio River Foundation (River Foundation), and dedicated community partners came together to make a positive impact on our planet – aided by some friendly competition! In the spirit of celebrating Planet Earth, the River Authority and its partners were proud to host an Earth Month Litter Challenge as well as a series of events for the annual iNaturalist City Nature Challenge, encouraging community members and agencies alike to get involved.

Earth Month Litter Challenge

The River Authority and River Foundation have collaborated with the City of San Antonio's Parks and Recreation department to host the Earth Month Litter Challenge: a yearly initiative that brings the San Antonio community together to acknowledge the impact that humans have on the environment and take action for change. As part of the "Don't Let Litter Trash Your River" campaign, the challenge spanned the entire month of April to collect as much litter as possible at either River Authority or city-owned parks. The River Authority is delighted to have hosted partners such as Microsoft, Texas Master Naturalists, Boeing, JP Morgan Chase, Flatiron Corp, and our own River Warriors to participate in various clean-up events throughout the month. These partner groups worked at sites such as Six Mile Creek and Acequia Park to participate in this year's challenge. The results? Our volunteer teams collected nearly 9,000 lbs. of trash!

The Winning Teams

- **Corporate Category:** Allied Fire Protection: 30 FULL Bags, 10 Bulk Items
- **Large Non-Profit:** River Aid San Antonio: 200+ FULL Bags, 17 Bulk Items
- **Small Non-Profit:** Texas Master Naturalists, Alamo Area Chapter: 70 FULL Bags, 6 Bulk Items

Thank you to all our partners who joined us for this fun-filled challenge in support of our agency's commitment to safe, clean, and enjoyable creeks and rivers!



River Warrior volunteer
Robert Gonzales shows off
his air guitar skills!

A World Leader in the 2024 City Nature Challenge

The River Authority was excited to celebrate Earth Month by working alongside partners for widespread participation in the iNaturalist City Nature Challenge 2024. The City Nature Challenge, hosted locally by the Texas Parks and Wildlife Department, along with Alamo Area Master Naturalist community leaders, is a bioblitz that occurs annually. The Challenge empowers urban community members all over the world to become citizen scientists to observe and document the different plant and animal species in their area with the iNaturalist App. These groups face off to see which team members can make the most species observations. During last year's event, the San Antonio Metro Area contributed over 20,000 individual observations, an already impressive feat. This placed San Antonio third in the state, slightly surpassing Austin, Texas.

This year, the City Nature Challenge took place from April 26th through April 29th. In preparation for the big weekend, the River Authority and River Foundation provided free virtual trainings on using the iNaturalist app as well as guided nature walks from January through March. During this series of walks, coined the "Walking on the Wild Side" series, participants who had learned to use iNaturalist utilized their newly acquired skills at one of the River Authority parks.

If your organization is interested in participating in future challenges or clean-ups, email our Engagement Coordinator, Samantha Villanueva, at svillanueva@sariverauthority.org

The 2024 Results Are In...

Texas is incredibly competitive when it comes to local biodiversity, and this year the San Antonio Metropolitan Area pulled through to the top of the leaderboard, ranking in 1st Place in the USA (out of 134 Cities) and 3rd Place in the World (out of 690 Cities) for the number of observations with over 64,000 observations of almost 4000 species—more than triple the previous year's number! What a fantastic way to showcase the biodiversity of San Antonio and its surrounding areas. As we wait for the final numbers and rankings to be released, we are excited for the San Antonio Metropolitan Area to be currently on the podium across the state, national, and even global levels! Congratulations to all contributing citizen scientists!

This accomplishment would not have been possible if not for the dedication of our River Authority staff, dedicated River Warrior volunteers, and community members who attended the River Authority nature walks and joined our community and staff teams to contribute to this challenge. Our collective support helps raise awareness and contribute to stewardship and sustainability for our local creeks and the San Antonio River!

My River POV: Benjamin Janysek

BENJAMIN JANYSEK, PARKS & DAMS FOREMAN



How does your team contribute to the work of the River Authority?

Our responsibilities in Karnes County involve the upkeep of the 13 flood retardant dams, which includes fence maintenance, mowing, hay baling and shredding, and monitoring for any human or animal impacts. Many people are unaware

that dams play a crucial role in holding back floodwaters during storms. Their purpose is to ensure the safety of the City of Kenedy, which is situated at a lower elevation than its surrounding terrain.

My team also maintains the facilities and landscape of Escondido Creek Parkway (ECP) in Kenedy, TX and Branch River Nature Park in Goliad, TX. At ECP, a major task is to keep the popular splash pad up and running. Branch is a bit smaller and includes a small disc golf course and a birdwatching station. We have arranged our team schedule so that a member is assigned to monitor the parks every day of the week. Both parks are accessible to all, offering community spaces where public land is scarce in the Southern Basin.

What types of animals can you spot in the nature parks?

At ECP, there are quite a few deer, foxes, bobcats, raccoons, opossums, and coyotes, and we even saw javelinas this morning! Each spring there's a group of wild turkeys that walk through the park and of course there are all kinds of snakes: coral, Texas indigo, and bull. However, we've yet to encounter any rattlesnakes.

Has the community's attitude towards the creek shifted since the opening of ECP?

Back when I began working at the River Authority 25 years ago, people were afraid to eat fish from the creeks and San Antonio River due to the misconception that they were contaminated with sewer water. That perception changed about ten years ago when Kristen Hansen, other executive leadership, board members, and community representatives in Karnes County began to envision ECP

and what amenities we could build for the public along the creek. It's a great feeling to support the community and brings us joy to see people enjoying the space and showing their appreciation.

My family has participated in the River Authority's Bike Rodeo event at ECP the past few years, my daughter's cross-country team has used the trails for an event, and I have extended family that has used the park for birthday parties. On average, we have about 10-15 individuals who visit the park every morning for trail walking. It's encouraging to see more schools taking the opportunity to visit these parks as well and students benefiting from the experience. It's a wonderful sight to witness 80 kids making use of the splash pad and pavilion area at ECP in the summer. The overall quality of the local waterways has significantly improved and transformed, not just in Escondido Creek but also in Cibolo Creek, which runs between Panna Maria and Helena before joining the San Antonio River.

Is that your hometown?

Yes, I grew up in Panna Maria, which is a historic Polish community. Cibolo Creek was where my grandpa would take us fishing. Setting lines and catching yellow cats was our main activity, sometimes getting lucky with a bass. Those fish we caught in Cibolo Creek sustained us during Lent. The creek is also utilized for irrigation by some community members. The feeling of family is what makes living down here so great.

What are the future plans for the nature parks?

We're in talks with our team and leadership about adding new amenities to the park. We recently began a partnership with the Karnes County 4H team, where they take care of the pollinator garden near the splash pad. These partners are truly wonderful and take pleasure in helping with the garden's upkeep. We are lucky to have them and their forward-looking ideas in our community. In addition to the existing 2 miles of paved trails at Escondido Creek Parkway, we are also considering adding more trails to the park.

What actions can individuals take to ensure that these parks and waterways remain safe, clean, and enjoyable?

It is our wish for everyone to join us in keeping the parks clean and beautiful. For example, don't be afraid to bend down and pick a piece of trash up! Also remember, picking up after your dog and returning the small rocks to their proper place helps our maintenance team and keeps amenities like the splash pad accessible.



Scan to visit the new and improved ECP website.



South Texas Natives: Spotted Gar

EMILY REW, EDUCATION & ENGAGEMENT COORDINATOR

If you've been following news about the San Antonio River over the past few months, you may have heard of a resident fish species being observed for the first time in the Mission Reach: the Spotted Gar!

What's in the Name?

"*Lepisosteus*" is Greek for "bony scale" and "*oculatus*," which means "provided with eyes" in Latin, refers to their characteristic dark spots.

This primitive-looking fish is one of three native gar species found in the San Antonio River Basin along with the Longnose Gar (*Lepisosteus osseus*) and the Alligator Gar (*Atractosteus spatula*). Today we'll dive into the details of this ancient fish, one of the first true Texas native species around! Let's go!

Living Fossils

Gars have been around a very long time; scientists currently estimate they emerged during the Cretaceous period some 65 to 100 million years ago, which places them on planet earth at the same time as dinosaurs. And they haven't lasted this long on luck alone! Gars retain unique features that have helped them survive and thrive through the millennia including large, armored scales, a special swim bladder that allows them to breathe oxygen through both the water and the air (they can live in oxygen depleted environments), and corkscrew-shaped lower intestines — a primitive feature common in sharks that increases absorption of nutrients.

Identifying The Spotted Gar

The Spotted Gar is one of the smallest species of gar found in North America, growing to a length of 3 feet (0.9 m) and weighing an average of 8 pounds (3.6 kg). Like all gars, this species has a long, cylindrical shape with an elongated snout, although it differs from the wide alligator-like snout of the Alligator Gar, which they and other gar species are often confused for. Their upper body is brown to olive with silver-white sides. The feature that distinguishes the Spotted Gar most is their olive-brown to black spots

covering the head, body, and especially the pelvic and pectoral fins.

Where to Find Spotted Gar in the San Antonio River

River Authority aquatic biologists "spotted" this gar species in the Mission Reach section of the San Antonio River for the first time in December 2023. However, our biologists have seen Spotted Gar a total of 91 times since 2012 in different sections of the San Antonio River watershed, including Leon Creek, Salado Creek, Medio Creek, Cibolo Creek, Medina River, and the Upper and Lower San Antonio River (from the Mission Reach to the confluence with the Guadalupe River some 240 miles south). The Spotted Gar prefers clear, shallow, slow-moving, and vegetated waters of rivers, creeks, swamps and lakes—a reason why they developed an ability to gulp air to survive in these low-oxygen environments.

"Trash Fish" No More!

If you've spent some time fishing in Texas, you may have heard gars referred to as "trash fish." Some anglers believe it is because they can eat lots of fish and competing for catches, or that they are difficult to clean. However, this unfortunate nickname seems unwarranted when considering that Spotted Gar, like all native species, plays an important role in our local ecosystems. According to Texas Parks and Wildlife Department, the Alligator Gar is the only gar species currently afforded any protections in Texas. So, how we help protect the Spotted Gar? First and foremost, the River Authority recommends catch and release of all fish species (except for invasive species) in the San Antonio River Basin to help keep populations healthy. Second, taking part in keeping area creeks and rivers clean by disposing of litter properly and picking up trash when you see it on the ground is another excellent way to help protect native species.

Together, we can achieve healthy, litter-free waterways for the spotted gar and other native species to thrive in for years to come!



Environmental Scientist holding a spotted gar during the Mission Reach Fish Survey.

First-in-Texas Freshwater Mussel Conservation Effort

AUSTIN DAVIS, SENIOR AQUATIC BIOLOGIST

This summer, the San Antonio River Authority (River Authority) and U.S. Fish and Wildlife Service (USFWS) will reintroduce approximately five thousand freshwater mussels that will act as the “liver of the river” by keeping waterways free of harmful bacteria. The first conservation effort of its kind in Texas, this initiative marks a significant milestone in the River Authority’s mission to preserve and enhance the San Antonio River Basin.

“We have a number of different spots throughout the river that we know are healthy for these mussels to come into — or to live in,” said River Authority Environmental Sciences Manager Shaun Donovan. “The water quality in the river is so good that mussels can live here. And so, while mussels will improve water quality, we wouldn’t be here today if the water quality wasn’t already good.”

Special guests included Jim Campbell, Board Chair of the River Authority, USFWS, Inks Dam National Fish Hatchery (IDNFH), Utah State University, The Meadows Center for Water and the Environment, Texas Parks and Wildlife and our friends at Guadalupe Blanco River Authority.

Why were Mussels Reintroduced to the River?

According to the United States Geological Survey (USGS), freshwater mussels are the most at-risk group of animals in North America with over 66% of species facing decline. The River Authority began investigating the state of the freshwater mussel community within the San Antonio River basin around 2014. After several years of surveys, it was determined that there were no threatened or endangered freshwater mussel species in the San Antonio River Basin. This was good news; however, it did not curtail the River Authority’s drive to further understand and advocate for these animals. Improvement in other biological communities along the Mission Reach led River Authority biologists to begin pursuing the reintroduction of native freshwater mussels.

The first steps toward a reintroduction were taken in 2017 with the Mission Reach Mussel Survivability Study (pictured below), which showed that adult mussels were able to survive and thrive in the face of an urbanized environment. Subsequently, a variety of studies were initiated to investigate any potential impediments to mussel survival and reproduction. A partnership with a USFWS station at IDNFH was initiated to propagate juvenile mussels.

“As stewards of the San Antonio River Basin, we recognize the importance of conserving and restoring freshwater mussel populations for the benefit of both our environment and our communities,” said Jim Campbell, River Authority Board Chair. “Through collaboration with national organizations like the U.S. Fish and Wildlife Service we are able to pioneer scientific research and conservation efforts that will help safeguard the natural heritage of our region.”

Alongside these efforts, the River Authority’s aquatic biologists initiated the Mission Reach Intensive Nekton Survey to identify a multitude of host fish necessary for successful freshwater mussel reproduction. Researchers at Texas A&M University have been partners in furthering our understanding of mussel/fish interactions and will aid in informing future management of the reintroduction. The final study was the development of a habitat suitability model to assist in guiding where River Authority staff placed mussels within the river. This initial modeling effort was in collaboration with U.S. Army Corps of Engineers, Utah State University, Texas State University, and Texas Parks and Wildlife. Future modeling will be integral in the long-term success of the reintroduction.

What’s Next?

The job isn’t finished now that the mussels are in the water— River Authority biologists will be busy tracking the successes of this reintroduction through a mark-recapture study utilizing transponder tags glued to the outside of a mussel shell. These tagged mussels will be placed in the river and found again over time. The data gathered from this type of study will shed light on the survival and stability of these reintroduced populations. River Authority scientists have also started to investigate the impacts of stormwater runoff on juvenile mussels, as well as an investigation of the genetic makeup among local mussel communities.

The initial stocking will be of Yellow Sandshell (*Lampsilis teres*), however, staff is working with Inks Dam National Fish Hatchery to propagate three additional species in the near future. Additionally, continuous updating of the habitat suitability model is necessary for successful stocking of mussels and River Authority staff will be working on refining the model as conditions continue to change. This reintroduction event is a massive milestone that the River Authority is immensely proud of, and we look forward to contributing to the ongoing effort to conserve these animals and continue providing a healthy river for our community.



Mission Reach Fish Survey Shows Positive Trends

SUMMER
2024

GARRETT TUCKER, AQUATIC BIOLOGIST

Join our aquatic biologists as we explore fish survey data collected during the Mission Reach Intensive Nekton Survey (MRINS). You might be wondering—what is a “nekton! This bi-annual survey is conducted within the ecologically restored Mission Reach in the Upper San Antonio River (USAR). It was designed to help gauge restoration success by monitoring fish communities and observing their changes over time. Consider it the San Antonio River Authority’s underwater census, rigorously sampling habitats to track the abundance and diversity of the San Antonio River’s aquatic species. Results from the MRINS play a significant role in shaping management and restoration strategies for the future.

One objective of the MRINS is to assess the ongoing success of the ecological restoration efforts in fostering the return of native fish species to this urban stretch of the San Antonio River. Additionally, the MRINS can be used to evaluate the USAR recreational fishery by tracking popular sport fish, such as bass and catfish, monitoring their size and abundance, and assessing angling opportunities. The River Authority’s Freshwater Mussel Reintroduction Program also benefits from fish data collected.

More Fish in the Net

During the recent MRINS, a new species was discovered in the Mission Reach: Spotted Gar! The Spotted Gar (*Lepisosteus oculatus*) is one of three native gar species in Texas and the second to be found in the Mission Reach after the Longnose Gar (see page 9). The species is commonly found within slow-moving and relatively clear waters and has a unique elongated mouth with small needle-like teeth. No need to fear! These fish are not known to attack or pose a threat to humans. This discovery only adds to the diversity of species that reside within the USAR!

Additionally, there has been a steady increase in the number of fish being caught in the MRINS each year! The observed species richness, or the number of unique fish species captured during a survey period, has also been relatively stable, with a minor dip from 2021 to 2023. Minor fluctuations in species richness from year to year can be entirely normal. Reasons for this may include seasonal changes, natural increase or decrease in fish numbers, or changes in river temperature and flow.

Multiple fish species, including Texas Logperch (*Percina carbonaria*) were pulled in a seine net collected by River Authority biologists. Because Texas logperch are sensitive to pollution, this catch indicates great water quality south of downtown San Antonio!

Bass and Catfish are Bulking Up

Our data revealed some hefty bass and catfish! Our biggest Largemouth Bass weighed 4.2 lbs. with a length of 19.8 inches, the biggest Guadalupe Bass weighed 1.9 lbs. with a length of 13.3 inches, and the most sizable Channel Catfish weighed 3.7 lbs. with a length of 21.8 inches! These giant fish not only provide anglers with an excellent opportunity for that trophy catch but also signify a thriving ecosystem. The increase in size, particularly for Guadalupe Bass, the state fish of Texas, is a testament to the excellent restoration of the Mission Reach. This restoration has created conditions that allow for sizeable sport fishes to thrive, including good flow, water quality, and ample prey availability.



River Authority Aquatic Biologist Mitch Magruder holds two Channel Catfish collected during 2023 Survey.

Freshwater Mussel Host Species

The MRINS also benefits ongoing efforts to restore freshwater mussel populations within the Mission Reach. The Freshwater Mussel Reintroduction Program has entered its final stages and is that much closer to the inaugural reintroduction scheduled for Summer 2024! Freshwater mussels provide benefits to the river’s health, including stabilizing the riverbed and cleaning the water. Freshwater mussels rely on specific fish species to distribute larvae and grow their populations, which you can learn more about in one of our previous blogs. Multiple species of catfish, bass, sunfish, gar, and shiner that reside in the Mission Reach are common host species for freshwater mussels. Based on the data assessed during MRINS, we are seeing higher abundances of host fish species, which will help freshwater mussels grow their populations once reintroduced by the River Authority!

MRINS clearly reveals an encouraging snapshot of fish communities in the Mission Reach, ten years after restoration. The monitoring of ongoing and future initiatives in the watershed, like the Westside Creeks Restoration and Freshwater Mussel Reintroduction projects, will provide more insight into creating safe, clean, and enjoyable creeks and rivers.



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Message from the GM

DEREK BOESE, JD, PMP, GENERAL MANAGER



Recent blogs* have covered summer safety in Texas, including the San Antonio River. The blogs spoke broadly to kayak safety, knowing river conditions, and the potential of harmful bacteria and amoebas that can be found in Texas lakes and rivers in the hot summer months. Today, I want to focus on the much more prevalent issues of extreme heat,

sunburn and dehydration.

Here in San Antonio, we have already had multiple days with a heat index of over 100 degrees. Roughly two-thirds of San Antonio River Authority staff work outdoors in our Watershed Park and Operations and Utilities departments. Throughout the South Texas summer, we constantly talk about outdoor safety, and the importance of being careful. Once you get a heat injury, you are more susceptible to a heat injury the rest of your life! It's better to take precautions and not put yourself at risk.

If you are going to be outside in hot conditions, and particularly if you are going to be doing physical or strenuous activities outside, you need to HYDRATE.

Hydration starts before you go outside. If you start out dehydrated, you are already behind. And if you're working outside and thirsty, you are already dehydrated. The Centers for Disease Control and Prevention (CDC) recommends 1 cup (or 8 ounces) of water every 15 to 20 minutes when working in the heat. However, DON'T drink more than 1.5 quarts (or 48 ounces) per hour, and make sure you're eating too.

Not only do you need to properly hydrate when it's summer in South Texas, but you need to protect your skin too. Dermatologists recommend at least an SPF 30 and water-resistant sunscreen. Covering up is important! Wearing sunglasses, a hat, and long sleeves; there are plenty of options out there that protect you but also breathe. Take it from a skin cancer survivor at the age of 43, it's not worth the risk, and the dermatologist visits for the rest of your life!

There are so many great opportunities on the San Antonio River and elsewhere in the region to enjoy the outdoors this summer — just be smart about it when you do!

*sariverauthority.org/blog-news