

Texas Shores

2023

TEXAS SEA GRANT COLLEGE PROGRAM

VOL. 46

CREATIVE COASTS:

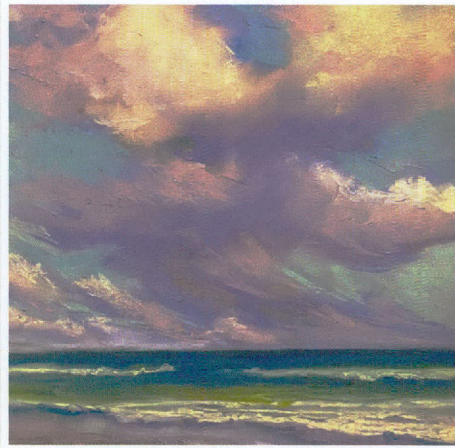
Connecting
Science and Art



TEXAS SEA GRANT COVER ART CONTEST HONORABLE MENTIONS



Sandra Strauss Jones (SSJ Art Design), "Endless Sunset"



Carolyn Killday, "Lavender Sky"



Alyssa Valdez, "Sea Turtle"



Strauss Sand, "Morning Glow"



LA Carroll, "Sunset Ferry"



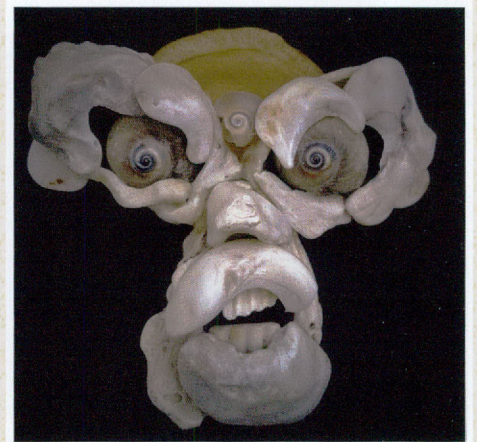
Brittany Nicole Dehlin, untitled



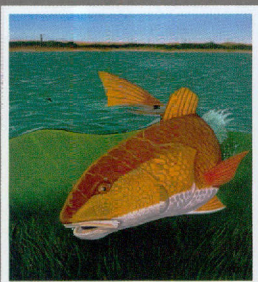
Jacob Benavides, untitled



Moses Ojo, untitled



Meadows Haven, untitled



Xandra Ann Mapp, "Lighthouse Cove"

About the art:

This piece was inspired by a cool, calm afternoon of wade fishing. My husband and I stumbled upon a group of tailing redfish...One of the most exciting sights to see while fishing. They were working their way down the shoreline away from us. After walking what seemed like forever, I was able to catch up to them and cast, finally landing one of these beautiful fish. It was released to fight another day, and I went home, inspired to paint the scene we were blessed with.

Facebook: The Texas Fin

Instagram: @the_texas_fin

FROM THE DIRECTOR

Serving our Coastal Communities



SELFLESS SERVICE IS ONE OF TEXAS SEA GRANT'S CORE VALUES, and it is at the heart of who we are and what we do. We serve the needs of our coastal communities in diverse and meaningful ways, from restoring habitat by removing discarded debris from our bay waters to teaching fishermen how to be safer at sea.

This new issue of *Texas Shores* illustrates well some of our recent acts of selfless service and it profiles one of my personal heroes, Kiwana Denson, our Coastal Icon. I first learned about Kiwana and her cause in 2020 and was impressed with her selfless service to educate Texans about the dangers of rip currents in our coastal waters. She founded the Je'Sani Smith Foundation, named after her late son who tragically lost his life to a rip current, for the sole purpose of increasing awareness of beach threats and saving lives. Since then, Kiwana's drive, dedication and passion to prevent others from suffering such tragedy, has been an inspiration to me, and to many others who have watched her make a difference for the coastal bend.

I hope that as you reflect on the past year and look toward the next, you feel empowered and motivated by Kiwana's story and her magnificent accomplishments.

Warm Regards,

Pamela T. Plotkin, Ph.D.

Director, Texas Sea Grant College Program

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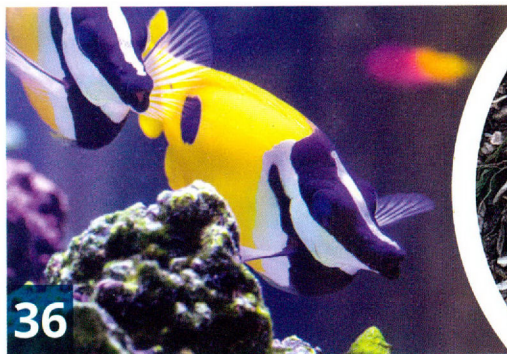
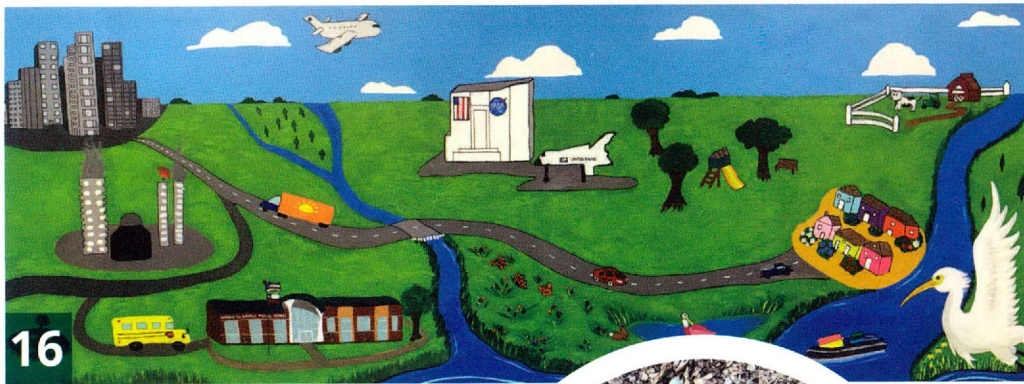
by Sara Carney

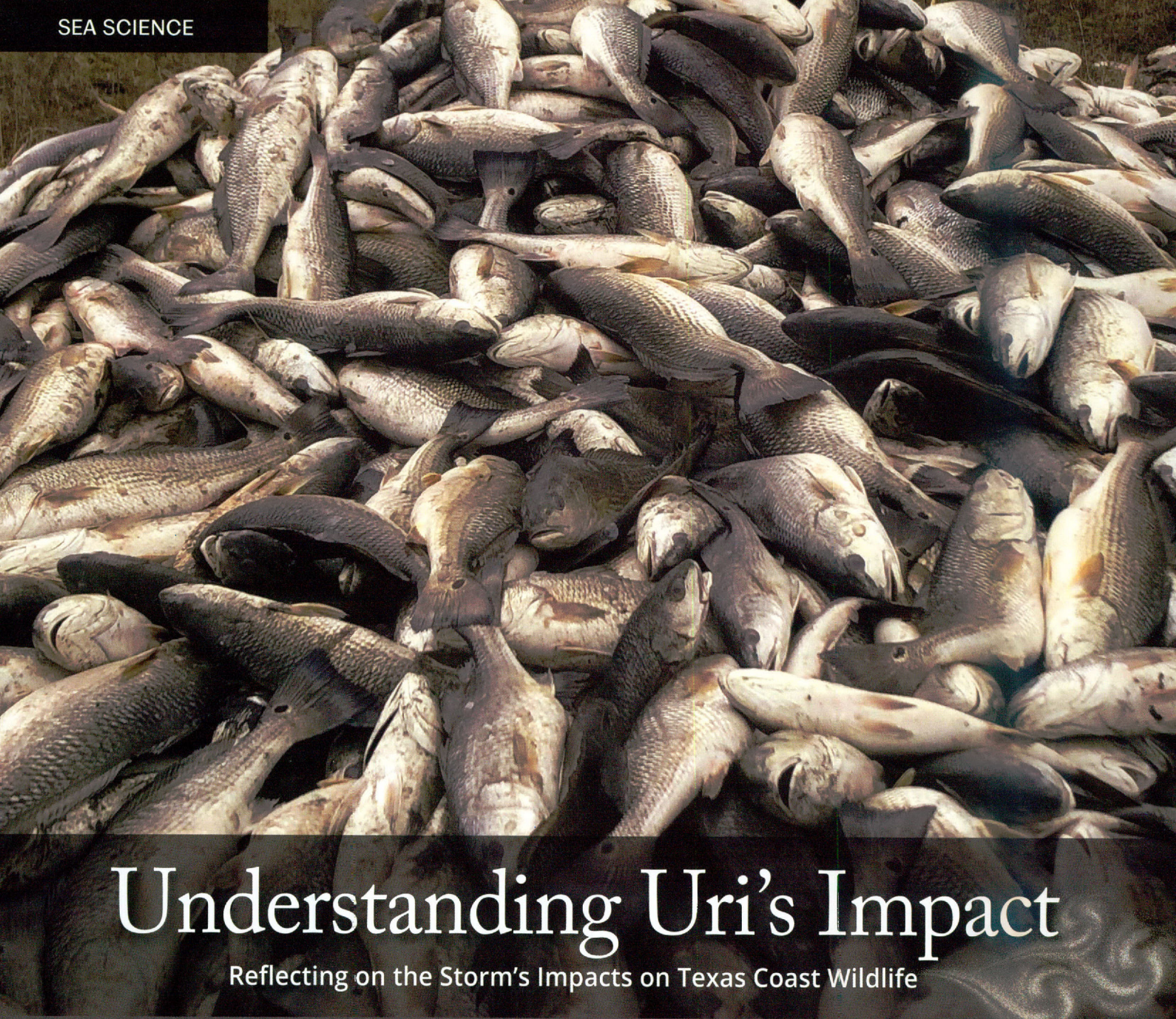
A First in Modern Times: Turtles Hatch on Magnolia Beach

by Sara Carney

New Staff

by Allison Dickey and Sara Carney





Understanding Uri's Impact

Reflecting on the Storm's Impacts on Texas Coast Wildlife

BY CORLEY-ANN PARKER

In February 2021, Winter Storm Uri swept through Texas, leaving a devastating impact across the state. All of Texas' 254 counties were under a winter storm warning at the same time, and many areas encountered record snowfall with sub-zero temperatures that lasted for days in some counties.

The Texas coastline was no exception to this record freeze, and coastal fish and wildlife were especially impacted. According to the Texas Parks and Wildlife Department, an estimated 3.8 million fish, consisting of at least 61 species, were killed on the Texas coast during the freeze event, while roughly 12,155 cold-stunned turtles were reported to the Sea Turtle Stranding and Salvage Network on the lower Texas coast alone, with many more being rescued farther along the coastline.

Non-recreational fish species contributed to most of the total mortality, including species like silver perch, hardhead catfish, pinfish, and striped mullet. While not sought after by most anglers, non-game fish are still ecologically important and provide food for

larger game fish while also adding to the overall diversity of Texas bays.

Recreational game species were also affected, including spotted seatrout, black drum, and red snapper, among others. Spotted Seatrout in the Lower Laguna Madre system had the highest mortality of the recreational species, with an estimated 104,000 fish killed according to Texas Parks and Wildlife data.

Texas Parks and Wildlife Coastal Fisheries Upper Coast Regional Director, Kelley Kowal, noted the lack of thermal refuges—areas considered deep enough for fish to swim to escape colder water temperatures at the surface—in some Texas bays as a contributing factor to the large fish kills. “In San Antonio Bay, for example, there’s only one area that is deep enough to be considered a thermal refuge,” says Kowal. “So, fish weren’t really able to find ways to successfully escape the cold-water temperatures.”

Some Texas aquaculture farms were also hit hard by the extended freeze. “There was complete devastation to some redfish farms in

the area,” says Matagorda County Extension Agent Nicole Pilson. “Millions of dollars were lost due to the freeze—harvest-ready fish, fingerlings, all of it was lost due to the prolonged freezing temperatures and loss of power.”

In addition, Sea turtles were heavily affected by the lower temperatures, and Texas saw massive numbers of cold stuns—a condition in which sea turtles become very weak and inactive from exposure to cold temperatures—along the entire coast.

Of the over 12,000 cold-stunned sea turtles recorded along the lower Texas coast, roughly 5,000 were rescued by Sea Turtle, Inc, a sea turtle rescue and rehabilitation facility located on South Padre Island. Volunteers rescued so many cold-stunned turtles that the local community convention center ended up opening their doors to house some of the recovering sea turtles.

“The freeze pushed Sea Turtle Inc. to its limits,” says Wendy Knight, CEO of Sea Turtle Inc. “Going from an average of a few hundred cold stun turtles in a year to 5,557 in eight days was challenging to say the least. However, the efforts made by our staff, volunteers, and community truly were astonishing.”

Farther up on the coastline, Texas Master Naturalist Brigid Berger noticed an excessive number of cold-stunned sea turtles along Matagorda Island shorelines during the winter storm.

“I walked two miles along the shoreline and documented 140 dead sea turtles just in that two-mile stretch,” says Berger. “I think when it was all said and done there were about 537 dead sea turtles just in our area right here.”

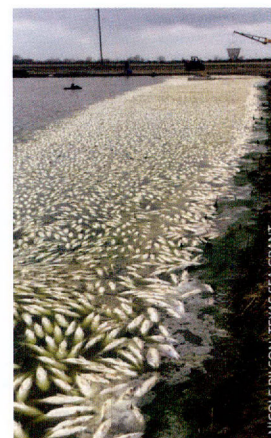
Deciding something needed to be done to address these large cold-stun events, Berger worked with Texas Parks and Wildlife’s Kelley Kowal to develop the volunteer-based Mid-Coast Cold Stunned Turtle Rescue Program in the Port O’Connor area that continues to grow. Berger also reached out to Texas Sea Grant Director Dr. Pamela Plotkin, who donated equipment from a past study on Matagorda Bay sea turtles.

A postdoctoral researcher of Plotkin’s, Dr. Natalie Wildermann, also played a key role in the area. On multiple occasions, Wildermann collected samples from stranded sea turtles in Matagorda Bay which are now being used in research projects aiming to better understand the unique Matagorda Bay ecosystem.

Wildermann’s work during the freeze, along with efforts from other Texas Sea Grant employees across the state, even earned national recognition from NOAA which was commemorated with a special plaque thanking those involved for their contributions to sea turtle conservation and recovery during the freeze.

One year after Winter Storm Uri hit the Texas coast, people are still recovering from the impacts to local fish and wildlife while also using this event as a learning experience for more preparation and better response plans in case of future freezes.

“The fish farms in my area are still recovering from last year’s event,” says Pilson. “Our response to events like these is mostly a



Left: Dr. Natalie Wildermann with cold-stunned turtles during Uri.

Right and on previous page: Red drum kills in Matagorda County during Uri.

Deciding something needed to be done to address these large cold-stun events, Berger worked with Texas Parks and Wildlife’s Kelley Kowal to develop the volunteer-based Mid-Coast Cold Stunned Turtle Rescue Program in the Port O’Connor area that continues to grow. Berger also reached out to Texas Sea Grant Director Dr. Pamela Plotkin, who donated equipment from a past study on Matagorda Bay sea turtles.

retroactive response—be more conservative when we’re fishing, change regulations, and increase rescue efforts for animals like sea turtles.”


Some changes to recreational and commercial fishing regulations have taken place since, including new fishing limits to spotted seatrout from the Northern Laguna Madre to East Matagorda Bay. Texas Parks and Wildlife is also actively working to increase training for volunteers and locals to improve fish kill assessments and responses. “Having each area be a little bit better prepared to go out and do the kind of assessments we need to get an accurate picture of the number of fish impacted will really improve things,” says Kowal.

As for recovery efforts for sea turtle populations along the coast, both Sea Turtle Inc. and the Mid-Coast Cold Stunned Turtle Rescue Team continue to actively monitor water temperatures for potential cold-stun events and work to train more volunteers to help with future cold-stun rescue operations.

In fact, in February 2022, the Port O’Connor area experienced another cold-stun event that called the Mid-Coast Rescue Team to action. “The past freeze [in February 2022] was our first true cold stun episode in the area since Uri, and there was just a wonderful outpouring of help,” says Berger. “We were able to train volunteers and ended up rescuing about 16 turtles.”

While Winter Storm Uri hit hard, Texans are showing their increased ability to move forward every day. Recovery efforts continue on all fronts, and coastal communities keep working to make a more resilient coastline against future extreme weather events.

“Looking forward, the 2021 freeze has prepared us with partnerships, stronger communication, and deeper community ties as we face the ever-changing weather and climate,” says Knight. “In another major freeze, I am confident Texans will continue to exemplify the Texas spirit of service to our neighbors and community.”



MANGROVE VS. MARSH: A HABITAT HEAD-TO-HEAD

BY ALLISON DICKEY • PHOTOS BY DR. ANNA ARMITAGE

Long-time coastal Texans may have noticed a shift along the shore. Mangroves are charging into the wetlands where marshes once ruled. Scientists put the two habitats to the test to determine which one is better for the Texas coast.

Dr. Anna Armitage, a professor of Marine Biology at Texas A&M University at Galveston, studies the switch from marshes to mangroves due to warming winters and rising sea levels, and what these changes mean for ecosystems.

Mangroves are a group of trees that can survive in the salty conditions where the land meets the sea. They're also known as the "first line of defense" against coastal erosion and flooding.

A marsh is a type of wetland that is adapted to flooding and typically remains waterlogged for long periods of time. Unlike swamps which have trees, marshes are full of herbaceous plants that slow the flow of water while absorbing extra nutrients.

Texas wetlands are a patchwork of mangroves and marshes. The Coastal Bend region of Texas is dominated by mangroves because of their affinity for a warmer climate. Along the northern coast, there are small stands of mangrove trees interspersed with marsh vegetation.

"If we have a cold snap, the mangroves will die back and then slowly regrow," she says. "This provides space for the marsh plants to keep growing and coexist with mangroves in this environment."

Now, mangroves are becoming more common across the Texas Gulf Coast, largely due to warming winter temperatures. It is projected that cold snaps will get less frequent and mangroves will continue to grow, reproduce, and displace marshes.

"Mangroves are getting larger, more reproductive, and more established in some places on the Texas coast," she says.

Armitage and her team of Dr. Steven Pennings from the University of Houston and Dr. John Kominoski from Florida International

University questioned whether this was a good thing. She started looking into what this would mean for coastal ecosystems and realized that the answer had not been discovered. So, she began multiple projects researching the different consequences of mangrove expansion.

Some of the projects were observational. Her team went to sites where mangroves were abundant and quantified what animals and plants used the habitat, the type of soil present, and the nutrients in the soil. Then, they compared that data to sites that had just marsh plants.

Building on these field studies, graduate students conducted lab experiments to investigate if herbivores could survive and thrive on diets of mangrove leaves.

Texas Sea Grant funded their largest experiment. In cooperation with the Mission Aransas National Estuarine Research Reserve, the team removed some mangroves to create a gradient of mangrove cover. They noted what animals used the habitat, how much erosion occurred, and how the soil chemistry changed.

The results? Mangroves and marshes are not interchangeable and have different ecosystem benefits.

"Which one is better? Which one is worse? It really depends on what you need from your wetland," Armitage says.

The team found that mangroves are better at preventing coastal erosion, but the carbon in mangrove leaves is not a good food source. Organisms at the bottom of the food web, such as snails and fiddler crabs, have lower fitness on diets of mangrove leaves. Mangroves are better for nesting birds, but they are worse for birds that forage in marshes. Predators, such as blue crabs, forage less effectively among mangroves.

For coastal protection, the team found that mangroves are better

at protecting shorelines from erosion, but they may not be tolerant of sea level rise.

Overall, Armitage says mangroves should not be introduced to areas where they would not naturally occur. She says managers should try to emulate the natural area when restoring wetlands. Restoring marshes and mangrove habitats to resemble nearby healthy wetlands will have the largest direct benefit to living marine resources.

“It is not just about plants,” she says. “The plants can change everything from the microbes in the soil to the invertebrates, fish, birds and even the mammals that use the habitat.”

Although she researched the difference between the two habitats, Armitage says the issue with disturbances on the coast is less about mangroves versus marsh and more about habitat loss.

“The real threat is habitat loss due to sea level rise and development,” she says. “That is when the habitat does not come back.”

She is working with groups like the Galveston Bay Foundation and Texas Parks and Wildlife Department to ensure restoration practices are effective and beneficial.

Armitage still has questions. In 2021, the experimental coastal bend area was thrown a curve ball that opened up a whole new study. Texas experienced a winter freeze that was cold enough to cause widespread mangrove mortality in their study site. Six months later, some mangroves resprouted, and many seedlings took root. Her team is now using the area to study the dynamics of mangrove recovery after a freeze event.

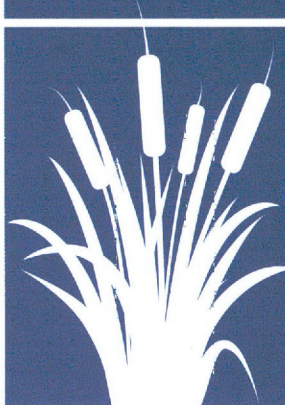
“These projects all tell us different things that are pieces of a much larger puzzle,” she says. “They help us understand the big picture.”

STATS



MANGROVES

- Survive in the “intertidal zone,” where the land meets the sea
- Known as the first line of defense against coastal erosion and flooding
- Seeds called “propagules” drop into the water and float to disperse to new places



MARSHES

- Adapted to tides and flooding
- Grass roots hold rich soil together
- Productive plants provide nursery habitat for fishery species
- Carbon sink



Dr. Anna Armitage conducting marsh surveys.



Dr. Anna Armitage in mangrove habitat.



Researchers studying mangrove habitat.



Researchers in marsh habitat



Marsh habitat

THE SECRETS *of the* SHRIMP

How This Researcher Discovered A New Species



BY ALLISON DICKEY • PHOTO BY DR. MARY WICKSTEN

In waters along the Texas coast live a group of crustaceans that are both ecologically important and severely understudied: the grass shrimp (*Palaemon* spp). Despite being a major food source to coastal birds, grass shrimp were overlooked and understudied in Texas for the last 70 years.

Dr. Mary Wicksten, a professor in the Department of Biology at Texas A&M University, wanted to change that. She collected new samples of grass shrimp and discovered that what we previously believed was one species, is actually two.

“We assumed that the species of shrimp was the same across the Atlantic and the Gulf of Mexico,” she says. “We found that they are quite distinct on the genetic level.”

Grass shrimp are tiny, delicate decapods with nearly translucent bodies. They feed on small crustaceans and algae and are eaten by wading birds and coastal fish.

They're important not only to the food web, but also as an indicator of ecosystem health. Researchers study shrimp to determine water's pollution, salinity, and bacterial content.

Originally, Wicksten wanted to collect new grass shrimp samples to study a parasite rumored to be among the shrimp. Her team thought the parasite might affect the shorebirds that depend on the shrimp as a food source. She worked with Dr. Anja Shulze from Texas A&M University at Galveston, Dr. Noushin Ghaffari of Prairie View A&M University, and her graduate student, Daniel Fanning.

“Texas is famous for its birds,” she says. “So the health of our birds is very important.”

The parasite starts its life cycle in a snail and then moves to its second intermediate host, the grass shrimp. It completes its life cycle when it is ingested by birds.

“We're still trying to determine the parasite's effects,” Wicksten says. “We've found snowy egrets will eat shrimp with the parasite because we collected a bucket of shrimp and a snowy egret stole and ate them.”

Her team used dip nets in freshwater all along the gulf coast from

South Padre Island to Florida. They surveyed in marshes and rivers, searched in ship channels, and night dived in springs.

The original species — the dagger blade shrimp (*Palaemon pugio*) — is commonly found in tidal marsh habitats throughout the western Atlantic Ocean and Gulf of Mexico. The new species had previously only been characterized by dead specimens. Wicksten says it may be more common than they thought because so little collecting has been done in western Louisiana.

For now, the species remains nameless. Wicksten refers to it as “*Palaemon* undescribed” because it is an unspoken rule to not name the species until after it is published and official.

The project opens up possibilities for further grass shrimp research. The last investigation on grass shrimp along the Texas coast was done in 1954. The research was so comprehensive and well done that researchers did not reopen the case for 70 years.

There is much literature on grass shrimp on the Atlantic coast. But, it was assumed that research on the northeast Atlantic coast would have the same results as research in the gulf. This project shows there is still lots to find in Texas alone.

Wicksten's team has already opened new investigations. They want to use the genetic data to determine how long ago the coastal species separated. They also want to examine the difference between those two species of grass shrimp, and a freshwater species that lives only at the headwaters of the Comal and San Marcos Rivers.

They are currently looking for ways to identify the different species visually. It is a difficult task, considering the shrimp are only an inch long.

“It is great that we can identify different species genetically,” she says. “But genetics are useless for scientists in the field trying to identify a species.”

Wicksten's work continues to shed light on an understudied animal and will help scientists and resource managers better understand and, ultimately, manage coastal ecosystems. It also involved a number of undergraduate students who were able to gain skills in the field and conduct their own research.

Wicksten said that in this career, it pays to question everything. “Look and be patient, but also skeptical,” she says. ✓



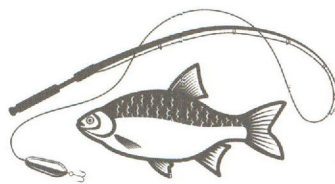
Weighmaster Program Relaunches

BY
MARK EVANS

The role of a weighmaster at a fishing tournament is not an easy one. Weighmasters must not only ensure accuracy of fish measurements but also be able to identify a wide variety of species, help ensure spectators and anglers have a good time, remain alert and able to recognize rule violations and do so in the middle of a loud and sometimes chaotic environment.

Texas Sea Grant's weighmaster training course teaches people how to master these skills as the program relaunches its four-hour course.

Whether freshwater or saltwater, fishing tournaments have become a popular pastime for many anglers and can pump much-needed revenue into the communities that host them. For example, tournaments like the Texas International Fishing Tournament (TIFT) in South Padre/Port Isabel may see more than 1,000 entrants and bring in anglers from around the world while other tournaments are smaller and more local in nature.



Texas Sea Grant's weighmaster training is designed to prepare people to be weighmasters at sportfishing tournaments, which have a big need for well-trained weighmasters.

"We are seeing more tournaments being held each year," says Alexis Sabine, Texas Sea Grant fisheries specialist. "Fishing tournaments have a lot of benefits for towns that host them because they bring in tourists and money. With that, comes the need to effectively manage the weigh-in process."

Texas Sea Grant's weighmaster training is designed to prepare people to be weighmasters at sportfishing tournaments, which have a big need for well-trained weighmasters. The four-hour course teaches participants how to tell if a fish has been altered by an angler, how to identify fish species, the roles and responsibilities of a weighmaster and the code of conduct for the weigh-in process to make sure objectivity is maintained.

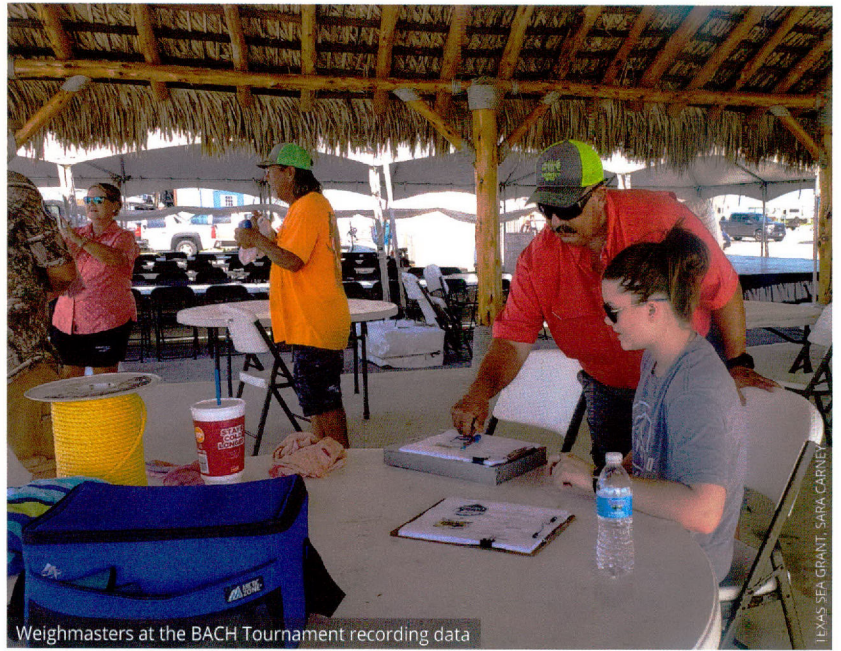
"We want to attract people to the program who will use the knowledge and skills they learn by serving as weighmasters in support of their local communities," Sabine says.

Above: An angler showing off his catch at the Texas International Fishing Tournament (TIFT)



A weighmaster placing a fish on a scale

SETH PATTERSON



Weighmasters at the BACH Tournament recording data

TEXAS SEA GRANT, SARA CARRNEY



Fisheries Specialist Alexis Sabine serving as a weighmaster

TEXAS SEA GRANT, ALEXIS SABINE



SETH PATTERSON

The inaugural weighmaster course of this revitalized program took place online via Zoom on Monday, May 23, 2022, and Tuesday, May 24, 2022, and consisted of 24 total students from all over Texas.

Participants spanned locations from Port Arthur to the Rio Grande Valley, representing areas including Port Arthur, Galveston, Houston, Freeport, Matagorda, San Antonio, Corpus Christi, Harlingen, and surrounding areas.

The class composition included recreational anglers and other fishing industry members; representatives from fishing tournaments' boards of directors; university students; and professionals who work in the fields of science, conservation, and natural resource management, including two of Texas Sea Grant's own staff.

The class costs \$75 and is open to anyone. Students are provided with:

- 📄 *A certificate of completion stating they completed the required training in the weighmaster's role, fish identification, fish freshness, the weigh-in process, and other related topics*
- 📄 *Supplies such as protective gloves and a tape measure to measure fish*
- 📄 *A logbook that can be used to keep a record of each tournament that they assist at*
- 📄 *Printed and electronic copies of Saltwater Fishes of Texas fish identification guide*
- 📄 *Copies of all training presentations and video demonstrations*

Initially, the program will be held online and include video demonstrations and presentations by Brazoria County Marine Extension Agent John O'Connell and Cameron County Marine Extension Agent Tony Reisinger. The course will include a final exam, and students will be encouraged to assist an experienced weighmaster at two tournaments. Once students send proof of this to Texas Sea Grant, they will be added to the program's list of trained weighmasters that is made available to tournament directors.

The weighmaster training program isn't new. Texas Sea Grant first offered the program in the 1980s, working with the Tournament Directors Foundation of Texas. Texas Sea Grant marine extension agents would organize the workshop in their counties, and portions of the training would be conducted by the agent or by a local speaker. The last course was held in 2017.

Like the earlier version, Sabine says, the new weighmaster training program uses materials developed by experts at Texas Sea Grant, its Marine Advisory Service and Texas A&M University.

O'Connell says the biggest changes to the training is that it will be offered online, so participants who are new weighmasters or veterans looking for a refresher course will be able to take the training at their leisure. He says the virtual portion of the course will be helpful to students.

The second biggest change is not having a hands-on portion for the fish identification, he says, which is part of the reason for requiring students to assist at a fishing tournament.

The most important aspect he hopes all participants take away from the training is the understanding of the importance of ethics and impartiality to tournaments.

"Texas Sea Grant is stepping up to respond to an unfilled need along the Texas coast," O'Connell says. "It's needed because there is no other training out there to train weighmasters in their role at the weigh station. Having a trained weighmaster or two brings credibility to the tournament."

Reisinger says he hopes people learn how to effectively identify fish, the ways in which fish can be altered to cheat, and the correct ways to measure and weigh fish because it all contributes to a well-run tournament.

The training remains as important now as when it was started 40 years ago because of the growth in the number of fishing tournaments and tournament rule violations because of people wanting to win a tournament for pride or the prize money, he says.

"There is a tremendous need for this kind of course," says

Reisinger, who is based in San Benito. "We have a fishing tournament at least every weekend down here in the Valley, especially in the summer and fall. We need weighmasters trained in fish identification and in determining whether a fish has been altered due to violating the rules because someone wants to win the tournament. I've seen weights added to fish, fish with smashed noses to fit size limits—you name it."

Dr. Tim Bonner, professor of biology at Texas State University, has worked as weighmaster for Port Mansfield Fishing Tournament for 25 years. Tournament fishing is a serious business, regardless of the amount of prize money, and having a knowledgeable weighmaster is critical, he says.

"Considering that a single angler-caught fish might be worth several thousands of dollars—if not tens of thousands of dollars—having a trained weighmaster gives confidence to the tournament organizers and legitimizes the tournament for the anglers," he says. "You don't want your weighmaster to be the weakest link in the tournament."

Taking accurate measurements of weight and length are easy, but keeping weights and lengths organized among hundreds of anglers and among various awards is the greatest challenge, he says. For example, one award might be the largest redfish per angler, which is relatively easy to determine. Another award might be the greatest combined weights of redfish over two days per boat, which involves some complex calculation and can be prone to errors.

"My biggest fear is awarding an angler a trophy or prize money that they did not win," he says.

A good weighmaster must be consistent in weighing and measuring lengths of fish, he says. The person also must be able to work in a loud and chaotic environment because weigh-in is a time for celebration with anglers coming off the water and proud of their catches.

"Friends and families are usually gathered around and everyone wants to see the weights," he says. "You must stay focused and not get too fussy with people. Plus, you want anglers to have a good time and fish in the next tournament."

Ultimately, he says, the tournament directors set the rules, and a well-trained weighmaster ensures that the rules are being followed as stated. An educated and well-trained weighmaster also provides peace of mind to tournament directors on tournament days.

Sabine says she has already been contacted both by tournament directors looking for trained weighmasters who are available to work, as well as by those with staff they want to take the training.

"The training gives people the opportunity to support Texas recreational fisheries, even if they do not fish themselves," Sabine says. "You don't have to be an experienced angler to participate in the program. We hope the training program gets more people involved in Texas fisheries. Also, the skills taught in the program have other practical uses, such as determining fish freshness at the market and identifying fish you catch."

While the first course was held in May, she says Texas Sea Grant will continue offering the class based on interest and demand. Also, now that the course has been updated and relaunched, she says the next step is to update the manual for which Texas Sea Grant will bring in other agencies and weighmasters to help.

Learn more about the weighmaster program and upcoming courses at tx.ag/WeighmasterProgram. ✓



On Safer Water

Texas Sea Grant puts on fishermen safety programs for Port Arthur shrimpers

BY MADISON SEMRO • PHOTOS BY NIKKI FITZGERALD, TEXAS SEA GRANT

If you ever find yourself in a dire emergency, you can call 911 and know that help—whether that be a police officer, firefighter, or paramedic—will be on the way within minutes.

But if you are—a fisherman out on the water, calling 911 will provide little help in an emergency. Out on your boat, miles from shore, it would take first responders too long to reach you. Emergencies become much more complicated and dangerous.

“If you think about a fisherman when they’re out on the water, there’s no police or EMS department; there’s nobody around them,” says Nikki Fitzgerald, Jefferson/Chambers County extension agent with Texas Sea Grant. “If there’s an emergency, these guys are the police department; they are the hospital. They have to save themselves and their crew members.”

Through Texas Sea Grant, Fitzgerald developed and helped administer several safety programs for fishermen in Port Arthur, Texas to give fishermen the tools to do just that. The program gave Port Arthur fishermen, most of whom are also shrimpers, the tools needed to handle emergencies on their own boats—at least until the US Coast Guard can arrive to help.

Texas Sea Grant first offered safety programs in Port Arthur in January 2021. Over five days, 48 fishermen received CPR and first aid training. In February 2021, the same 48 fishermen also received man overboard training, which sailors use if someone falls

overboard and into the water to rescue them, and a \$450 sling for their vessel from a partnership with Texas Sea Grant and Southwest Center for Agricultural Health, Injury Prevention and Education (Southwest Ag Center).

The program included a course in CPR and first aid taught by paramedic Christie Kasko. Kasko, who usually teaches this CPR course to doctors, nurses, and other healthcare professionals, showed the fishermen what to do if someone onboard needed CPR or other emergency medical attention.

“Almost everyone in the class had an experience where someone got sick or hurt to relate to where they were unsure of exactly what to do during the situation,” Kasko says. “I want to make sure that they walk out of there confident that if something happened, they would at least have some tools in their little bag of tricks to be able to deal with that while they were out there until some more help arrived.”

Throughout Kasko’s course, she showed the fishermen how to approach medical emergencies by simulating emergencies they might face. That way, if—and likely when—the shrimpers run into a situation that requires these skills, they know how to use them.

“Even though it’s a CPR class, we want to make the situations that they’re going to respond to kind of real in the class, and they did well,” Kasko says. “I’m teaching a class full where people are totally into it and wanting to learn and walked out of there saying

Port Arthur shrimpers at the Safety at Sea training practicing using the man overboard sling and learning CPR.



These 2021 safety programs proved extremely valuable—so much that attendance nearly doubled when Texas Sea Grant offered another safety program in January 2022. This time, 85 fishermen attended over four days.

“Thank you; I needed this.”

These 2021 safety programs proved extremely valuable—so much that attendance nearly doubled when Texas Sea Grant offered another safety program in January 2022. This time, 85 fishermen attended over four days. The Alaska Marine Safety Education Association (AMSEA) and Sabine Pilots funded the program, making it completely free to the fishermen.

The AMSEA course covered multiple safety topics, including cold-water survival skills, signal flares, man overboard recovery, firefighting, and life raft usage—in both English and Vietnamese. Many shrimpers enrolled in the course were immigrants who do not speak much English, so the program employed a translator to ensure any fisherman who wanted to attend the safety training could.

The 10-hour-long course met the US Coast Guard requirements for commercial fishermen, which prescribe those operating a commercial fishing boat to be trained in safety procedures. Each fisherman who participated earned a Drill Conductor Card to show their compliance with the federal requirements.

The shrimpers of Port Arthur have endured a rough few years on the water—fishermen have drowned and boats have capsized. Some of these accidents could have been avoided if the fishermen had had access to the information provided at the training.

“The last three years, they saw a lot of people have accidents, and some people, they lost their life,” says Kim Tran, who served as the course’s Vietnamese translator. “And we lost a lot of people. We really needed the course for these shrimpers.”

And the shrimpers were happy to take the course to gain more experience and learn the skills to prevent these things from happening. Tran helped many of them sign up for the program, personally calling many of them with the help of Father Sinclair and the Port Arthur Shrimpers Association.

One such shrimper is Tommy Nguyen, a fishing boat captain who attended the program. He says he attends similar courses every year to keep up-to-date on his certifications. Still, this program gave him new safety tools to keep in his toolbelt. He learned how to use the life raft and how to call “Mayday!”—the nautical equivalent of 911—if he ever needs to do so. Even though some of the skills were review for Nguyen, “I needed it,” he says.

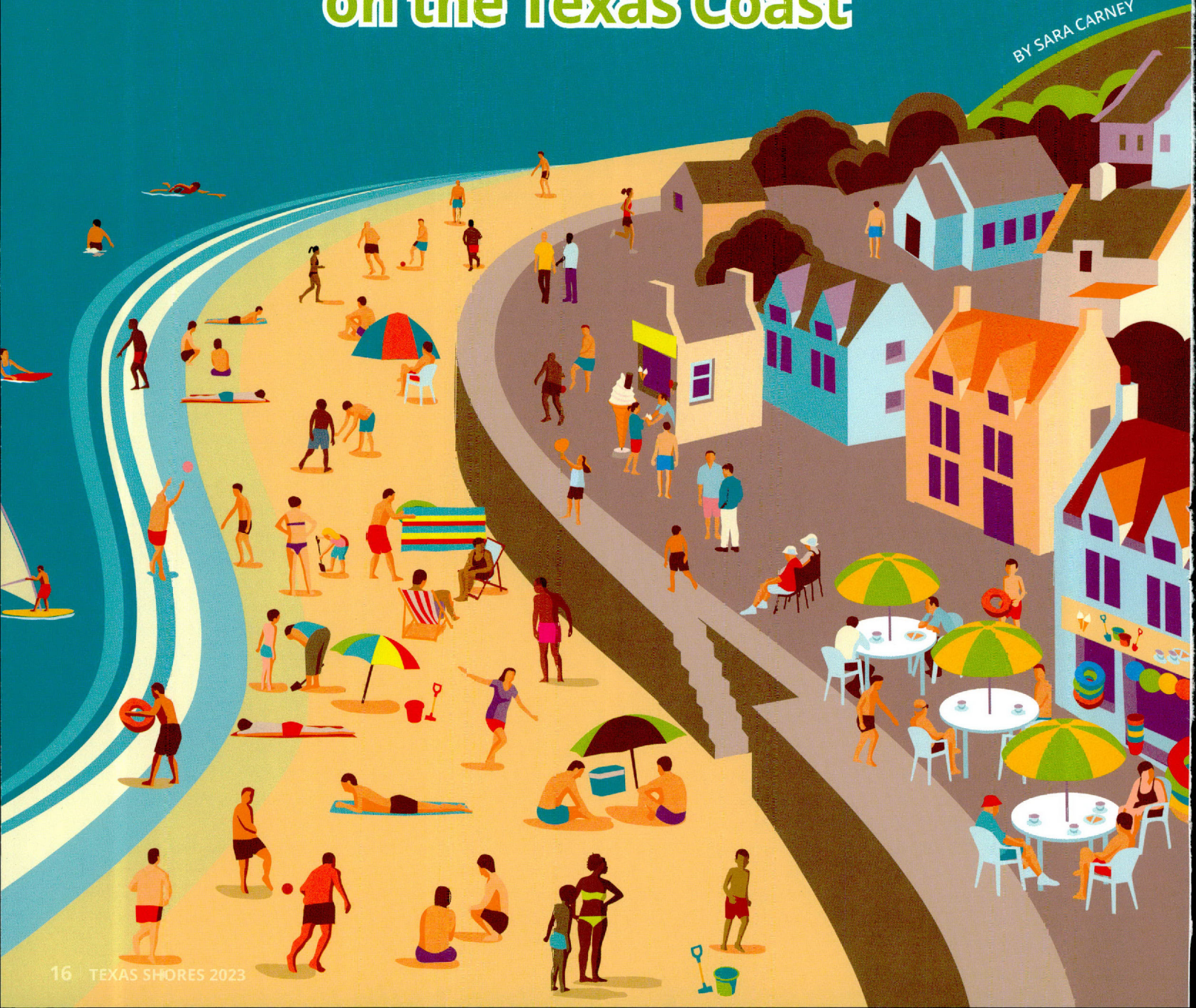
And Nguyen isn’t the only one who holds that sentiment. Tran, who fishes with her husband, says many shrimpers have told her how impactful they have found the program. “They enjoyed the lessons; they enjoyed the class. They talk and they’re excited and they practice and come to me,” she shares. “I see that they’re really learning and they’re willing to learn, and they want to know more about safety.”

Creative Coast



Integrating Art and Science on the Texas Coast

BY SARA CARNEY



Pop psychology has long told us there is a left brain and right brain. The left is for science, analytical thinking, and calculating; the right is for art, creativity, and expression. The two sides are disparate realms of thinking, too distant to ever overlap. Right?

Not necessarily. Science and art are more complementary than might be obvious.

Artists and educators of the Texas coast are using their talents to make connections between art and science in a way that engages, educates, and enriches audiences on the coast and beyond.

"We just think of art as very formal things in buildings, in museums, or done by people that are, quote unquote, artists. Nature is what inspired artists," says Karla Klay, executive director of Artist Boat, a non-profit in Galveston. "There's deep connections between art and science in nature."

DINAH BOWMAN, SCIENCE ILLUSTRATOR AND FISH PRINTER

The connections between art and science have long been evident to artist Dinah Bowman. Bowman owns an art gallery in Portland, TX, and has been an artist specializing in marine and coastal science illustration since the 1970s.

First a marine biologist, Bowman transitioned to art in graduate school, essentially designing a unique degree plan that encompassed both art and biology. At the time, most art programs focused on art education, with virtually no degree plans for scientific illustration.

"I feel very blessed. It was convoluted, but I arrived at what I always wanted to do," Bowman says.

After obtaining her degree from University of Corpus Christi (now Texas A&M University-Corpus Christi), Bowman became involved in creating watercolors of fish for the widely used field guide "Fishes of the Gulf of Mexico and Adjacent Waters" from Texas A&M University Press.

The book is a critically important resource for biologists because it provided photographs comprehensive and detailed paintings, many of which were of rarely seen species.

Even with modern cameras, scientists still rely on illustrators for visualization, which is especially helpful for use in identifying and studying marine life. While photography can provide useful, high-quality images for researchers, there are limitations. Illustrations can show aspects of marine life that may not be evident in a photo.

During this three-year project, Bowman worked closely with marine biologists to ensure the illustrations were biologically accurate. Most of the 130 renderings were completed from a specimen, but a few deep-water fishes were description only.

According to Bowman, it is critical to understand the larger family a fish species belongs to. This knowledge helps produce a more accurate illustration given only a description.

"You have a family of fishes, and you know that members of that family have basic characteristics," she says. "That's where I would start: in that family. Then, [I would] narrow it down to the species, and that may be some color pattern differentiation; it may be a change in the number of fin rays or lateral line scales... That's the intricacies [for which] I relied on the scientists."



Dinah Bowman at the exhibition "Dinah Bowman, Impressions of Nature. Retrospective" at Coastal Bend College.

TEXAS SEA GRANT, SARA CARNEY

"Of course, it was daunting, thinking 'Am I getting it right?' And, evidently it worked," she says. "It takes a village: with input from biologists, who have actually seen these species."

Bowman's illustrations have been commissioned by the U.S. Navy, Environmental Protection Agency, Texas Department of Transportation (TXDOT), and the Texas General Land Office, to name a few.

Bowman is also well-known for capturing marine life accurately and artistically through fish printing.

What is commonly known as "fish printing," actually comes from a Japanese practice known as Gyotaku, which translates to "fish" and "rubbing." In this process, the artist will apply ink or paint to the fish

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and use the fish like a wood block to achieve what is known as a “relief print” of the fish onto a material—usually a type of paper or cloth.

Since its earliest use in Japan in the mid-19th century—before photography—Gyotaku has been used by fishermen to record their catch. In some ways, it was a sort-of taxidermy alternative. And, it’s no different nowadays.

“This is to create a memory for the fishermen,” Bowman tells *Texas Monthly* in 2022.

Bowman was inspired to bring Gyotaku to Texas in 1969, after a trip to visit her parents who were stationed in Japan.

Traditionally, Gyotaku was created with sumi-e, a traditional Japanese black ink, on rice paper. The practice has expanded to include many colors, which is something Bowman considers biology heavily in her process. Color is a significant identifying factor for species, and is biologically significant and dependent on diet, mating season, environment, and more.

Bowman often showcases several species in her works—Sometimes showing several species of finfish along as shrimp, oysters, and seagrass. She places them carefully to depict how these species reside in their natural environment.

Her work has been popular among fishermen, naturalists, and art patrons alike. Bowman’s prints have been part of the Smithsonian Institute’s Traveling Exhibition Service (SITES). Her work has been exhibited around the globe, including in Canada, Australia, South Korea, Japan, and New Zealand. She has also printed fish for numerous fishing tournaments, such as the Texas International Fishing Tournament (TIFF) and Deep Sea Round Up.

Bowman has also trained numerous people of all ages to do Gyotaku. It is used by many educators as a unique way to engage and educate students on marine science.

Over the years, Bowman has continued to evolve her art, often employing more abstract and experimental elements. However, the scientific accuracy remains a high priority.

In 2010, Bowman had the chance to use her talents onboard the JOIDES Resolution, a scientific ocean drilling vessel operated by the International Ocean Drilling Program, where she was the first illustrator to be contracted to work onboard. There, she learned about the functions of the ship and people working on the ship. Her work documented much of the experiences onboard, including watercolor illustrations of the drilling process, the sediment cores obtained, and even rubbings of the seafood and vegetables eaten and parts of the ship.

“I felt my purpose was looking at all the possibilities that art can be involved with on the ship,” she says.

The ship was used as an educational facility when at port. Where, the ship would host tours. Bowman developed educational materials for guests, such as a passport for visitors complete with vital statistics about the ship and passport stamp pertaining to the different areas of the ship they visited. She said, “The idea is that you are taking an experience away. It’s not something that they will readily throw away.”

“I can’t tell you how excited I was, realizing that dream of work aboard an ocean drilling research vessel, serving in a capacity where I felt like I excelled,” Bowman says.



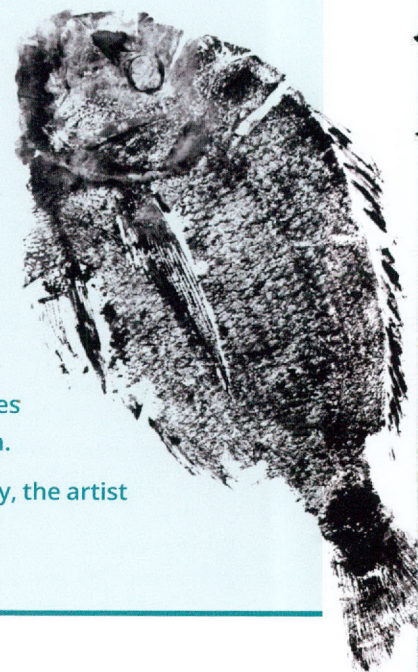
A red drum printed by Dinah Bowman



Piranha in the Amazon printed by Dinah Bowman

CREATE YOUR OWN FISH PRINT – GYOTAKU

- 1 The fish you want to print is fresh. If frozen, allow the fish to thaw. Gently wash the fish with liquid detergent to remove slime and pat dry.
- 2 Use pins to position your fish and hold it in place.
- 3 Apply a thin layer of paint or ink to the fish with a brush, using the colors you desire.
- 4 Place the paper or cloth over the fish and gently press onto the fish.
- 5 Rubbing the paper so that details, such as scales and fins, transfer.
- 6 Gently peel the paper away from the fish going head toward tail.
- 7 Fill in any details such as eyes on your print with a paintbrush.
- 8 Sign your work: Traditionally, the artist uses a stamp with their name.



SHELIA ROGERS MAKES ART FROM PLASTIC POLLUTION

Art can also promote awareness to pressing issues. Shelia Rogers uses art to draw attention to the issue of plastic pollution by creating sculptures from plastic she has collected from beaches.

An avid beachcomber, Rogers became aware of plastic pollution while looking for seashells along the beaches near Ocean Drive in her hometown, Corpus Christi. “I used to find a lot of seashells,” she says, “but now I am finding a lot of plastic. I started picking it up and was curious as to where it was coming from.”

That question became more than just a passing thought. Rogers alerted the City of Corpus Christi. At the time, there was little awareness of the issue. This lack of awareness wasn’t just in Corpus Christi; there was virtual silence on plastic pollution. “I wanted to find out more about it but I couldn’t find much information,” she says. “So, I thought, ‘I’ve got to find a way to get this information out there!’”

And so, she did.

Rogers’ first piece was a 36- by 36-inch acrylic box containing a collage of various red plastic pieces she found. This piece was art for her dining room. She recalls inviting friends to dinner and sparking a conversation about plastic pollution. “They had no clue about the issues.” Rogers crafted piece after piece, eventually creating enough art for her first exhibit at the Texas State Aquarium.

Rogers showed her art to Tom Schmidt, the director of the Texas State Aquarium. “I asked him if he would display my exhibit to educate people about the devastating effects of plastic pollution on the aquatic environment,” she says. “He agreed that we needed to educate the public about this problem and that the aquarium was the perfect place to reach a large number of people.”

With ample beach plastic present, Rogers continued to collect her unconventional art supplies. At her studio, where she cleans and stores her findings, she has amassed a trove of plastic pieces. Fortunately, Rogers is an avid organizer. There is a box for everything: doll shoes, straws, sunglasses, lighters, pens, and even bits of plastics so worn down that what it was is now indiscernible.

One of the appeals of plastic is its durability. A single plastic water bottle can take over 450 years to degrade. In the marine environment, this “asset” becomes an issue, in which the harm caused by plastic can last for potentially centuries. Rogers has seen firsthand the near permanence of plastic, finding toys and other items she suspects to be from as early as the 1980s.

Thanks to continued efforts to draw attention to plastic pollution from people like Rogers, the news is now out there. As people hear about Rodgers’ art, they send her plastic that they had collected. “I have a large green trash can outside my studio where people can deposit plastic items,” she says.

Luckily, volunteers have stepped in to help with cleaning as well. Rogers has hosted volunteers of all ages, such as Girl Scout troops and church groups, to help clean plastic.

Rogers’ art has been showcased in the Art Museum of South Texas, the Texas State Aquarium, the Texas Surf Museum, the Historic Brownsville Museum, as well as others. Her art has also travelled as far away as Paris and Berlin. Recently, her exhibit was on display in the George Bush Presidential Library and Museum in College Station alongside the Texas Sea Grant 50 years of Science and Stewardship exhibit. She also has a display of a water bottle chandelier created from 1,800 bottles in the Mary and Jeff Bell Library at Texas A&M



Shelia Rogers with her plastic art.

SHELIA ROGERS

University-Corpus Christi, which had also been displayed in the Corpus Christi International Airport.

Rogers’ most recent exhibit was at the South Texas Botanical Gardens & Nature Center in late 2022. Rogers created an 18-foot holiday tree out of green water bottles to bring attention to the importance of recycling plastic bottles. She used approximately 3,000 water bottles to complete the display.

Despite the ugliness of plastic pollution, Rogers strives to create beauty. “I want to draw people in, and then I have an audience to educate,” she says.

Green bottles with sea turtle bite marks. These plastic bottles are frequently mistaken for food by sea turtles.



SHELIA ROGERS

Ocean plastic has become a growing concern in recent years. In 2014, scientists estimated that 5 trillion pieces of plastic, weighing over 250,000 tons, were present in the world’s oceans. Much of this plastic includes single-use plastics, such as straws

and food wrappers.¹ Beyond being unsightly, plastic poses a serious, often life-threatening risk to sea life that ingest and become entangled in stray plastic.

1. Eriksen M, Lebreton LCM, Carson HS, Thiel M, Moore CJ, Borroro JC, et al. (2014) Plastic Pollution in the World’s Oceans: More than 5 Trillion Plastic Pieces Weighing over 250,000 Tons Afloat at Sea. *PLoS ONE* 9(12): e111913. <https://doi.org/10.1371/journal.pone.0111913>

ARTIST BOAT BRINGS ART AND SCIENCE TO YOUTH

Further north, in Galveston, the non-profit Artist Boat is using art as an educational tool to spark appreciation for the environment and create stewards. The organization hosts a variety of programs that integrate environmental sciences and art, most notably its Eco-Art Programs.

Staff at artist boat explain that the connection between science and art is a long-standing one. “It goes back to the early scientists and explorers, like Charles Darwin or John James Audubon,” says Karla Klay, Artist Boat executive director. “They saw something new and exciting — they didn’t have a camera to take a picture — The way they recorded what they saw was with pen and paper or paint.”

In 2022 alone, Artist Boat reached 5,449 youth through its Eco-Art Workshops and Adventures via kayak, each student creating a watercolor of a native species to Galveston Bay. The program has received support from the Moody Permanent Endowment Fund, National Oceanic and Atmospheric Administration (NOAA) Bay and Watershed Education Training (B-WET), and the Environmental Protection Agency (EPA) Gulf of Mexico Division.

Students who take part in the Eco-Art Adventures participate in kayaking, bird watching, walking, restoration events, and other activities designed to give them an up-close look at the coastal and marine environment. These adventures include hands-on science and art experiences, where students learn to create a landscape painting with watercolors.

Often the subject is a landscape or native species and is a tangible reminder of the students’ experience. “When students keep their

watercolor painting, they are able to look back at it and think of some of the things we taught them and the places they got to see,” says Kelsey Malan, an educator with Artist Boat.

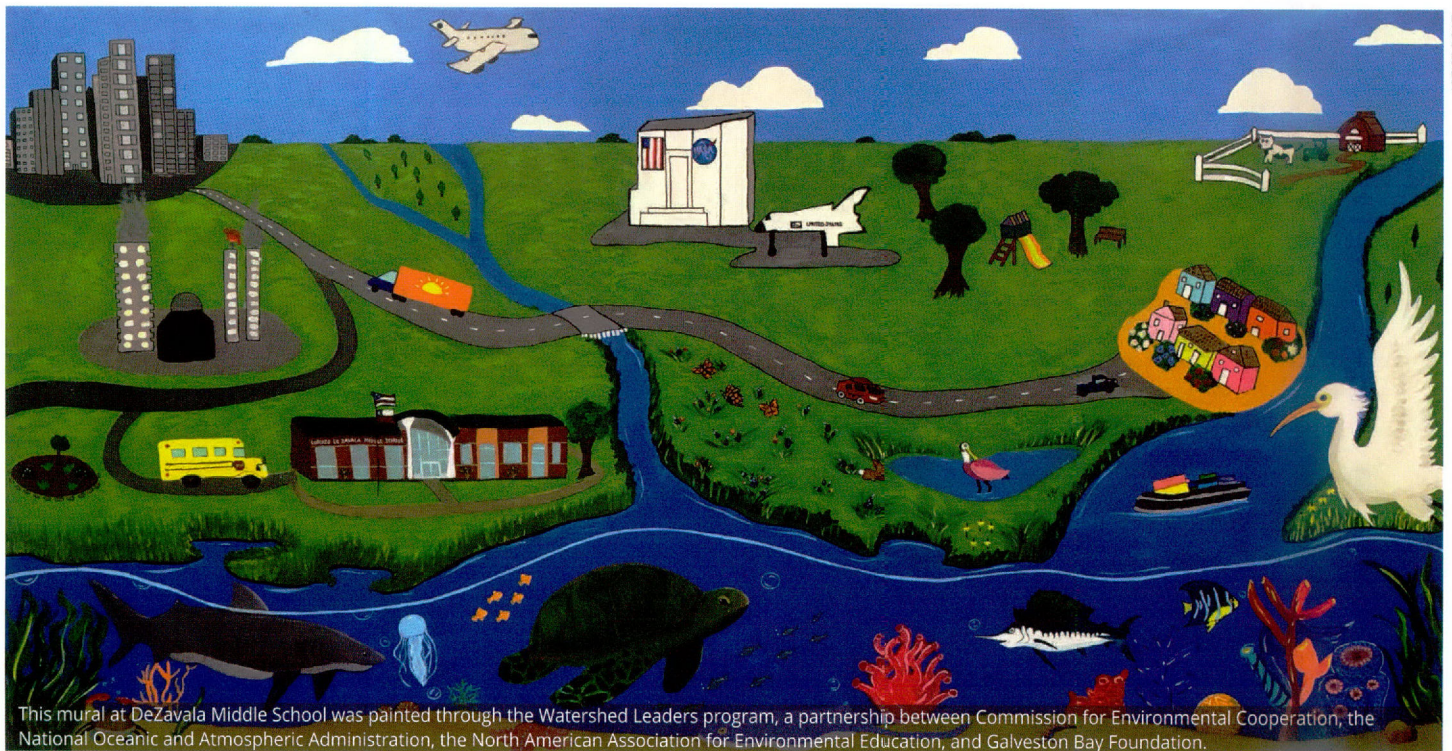
The painting is much more than a souvenir. It’s an integral part of the learning process, according to Klay. Providing time to create art is designed to allow students time to reflect on what they’ve learned. “It’s a way to show students how scientists think and how they observe,” says Malan.



Kendal Guidroz demonstrating painting technique.

TAYLOR GREENWALT

In 2022, the program provided 18 hours of enrichment and reached 2,917 students, who showed an increase in knowledge about the Galveston Bay ecosystem following participation in the program.



This mural at DeZavala Middle School was painted through the Watershed Leaders program, a partnership between Commission for Environmental Cooperation, the National Oceanic and Atmospheric Administration, the North American Association for Environmental Education, and Galveston Bay Foundation.

ARTIST BOAT

“I think they’re coming because it’s a dynamic hands-on, minds-on, wet program, and they love the art because it provides quiet time and solitude,” says Klay. “The piece is not the purpose. The process is really the thing that’s powerful.”

Additionally, Artist Boat offers a program known as “STEAM-Powered: Blue Carbon ART IQ,” which offers sixth- to eight-grade students STEAM (science, technology, engineering, art, and math) Eco-Art Workshops and Adventures. The program introduces complex topics, such as sea-level rise and ocean acidification, by engaging them with their personal conceptual art pieces designed to convey knowledge about climate science.

In 2022, the program provided 18 hours of enrichment and reached 2,917 students, who showed an increase in knowledge about the Galveston Bay ecosystem following participation in the program.

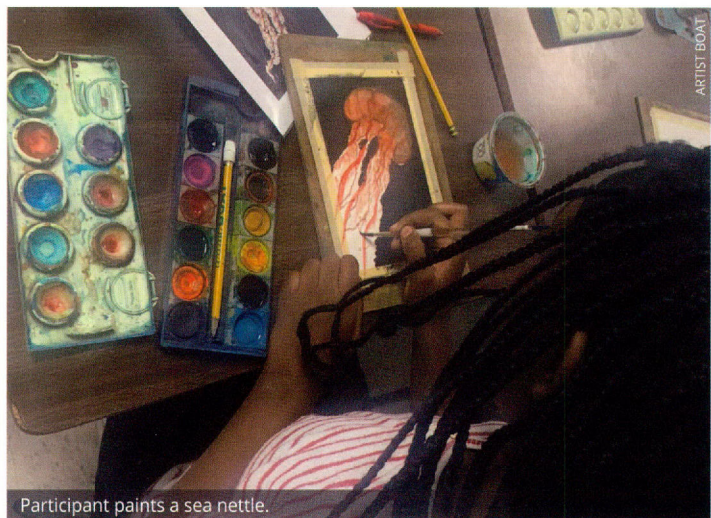
Artist Boat hosts several other Eco-Art educational efforts. One such effort includes 70 benches, which are painted by artists and students with a Gulf theme dawning the Galveston Island Seawall visited by 8.5 million annually. Notably the artwork for these benches is reviewed by scientists for accuracy. For example, scientists will provide feedback to ensure that all the species represented are Gulf species.

“Our mission is to promote awareness and preservation of coastal margins and the marine environment through the disciplines of science and art,” says Klay. “We provide inspiration through unique coastal experiences and creating art is pivotal to providing an easy way to attract people to science.”



A participant shows off a painting while kayaking.

DELANEY MCRITCHIE



Participant paints a sea nettle.

ARTIST BOAT



A camper painting on the stage of the Coastal Heritage Preserve Kayak Pavillion.

TAYLOR GREENWALT




To learn more about unique coastal adventures and experiences, visit artistboat.org



Texas Sea Grant: 50 Years of Science and Stewardship

How the Exhibit Came Together

BY JESSICA SCARFUTO



A tangled wad of monofilament fishing line hung over the entrance to the Texas Sea Grant: 50 Years of Science and Stewardship exhibit at the George Bush Presidential Library and Museum. A stark reminder of the human impact on the marine environment. Whether through helping coastal communities manage plastic pollution or funding research on the impact of pharmaceuticals on seafood safety, Texas Sea Grant has helped coastal communities manage the human impact on the environment since 1971.

Over the past 50 years, Texas Sea Grant has worked to support the Texas coast and its people by promoting awareness and understanding of the Texas marine environment through research and education programs. The exhibit at the Bush Library, which was on display until July 5, 2022, celebrates that history.

“TAKE THE BIG ROOM”

Established on September 17, 1971, Texas Sea Grant was one of the first four universities to achieve Sea Grant designation. In its early years, it focused on building undergraduate and graduate academic programs across Texas to develop teaching programs and support coastal research. Over the decades, this grew into a robust interdisciplinary collaboration that would become the instrumental to Sea Grant’s success: communicators, county agents, extension specialists, undergraduate and graduate students, faculty, and fellows across the State of Texas, all working in partnership to support coastal research and educate the community. Despite this impressive history, the exhibit celebrating its 50-year anniversary was originally going to be much smaller.

When Texas Sea Grant Director Dr. Pamela Plotkin requested to use exhibit space at the Bush Library, her request was for the considerably smaller of two exhibit spaces. “I thought we could have a nice party there...put some old newspaper clippings and photographs on the wall and maybe do one or two nice exhibits. A really low-key sort of thing,” says Plotkin.

But upon requesting the space, Plotkin was asked to come to the Bush Library to discuss the application. When she arrived, she found a conference room full of people ready to meet with her.

The team at the Bush Library, including Director Warren Finch, showed her the smaller space, which now hosts the Oceans of Plastic art exhibit along with some of George H. W. Bush’s environmental legislation, but they had other ideas for the anniversary exhibit.

“We suggested to them that actually we thought a larger exhibit space would be more appropriate for celebrating the 50th anniversary of the Sea Grant,” says Finch. It was a fitting collaboration for the Bush Library; President Bush was an avid outdoorsman who loved fishing, Texas seafood, and of course, Texas A&M University. “This exhibit talks about sustained agriculture products in the Gulf of Mexico like oysters, shrimp, red fish, drums, etc. So, I think it’s appropriate that the exhibit is here,” says Finch.

Though hesitant about taking on such a large exhibit, Plotkin saw it as a unique and exciting opportunity. “Our mission is to provide informal education, and I saw that as an opportunity to really provide some of that informal education in a very big way,” she says.

This, however, meant a much larger scope and with it, a big budget increase.

ASSEMBLING A TEAM

Realizing it was going to take some extra professional expertise to pull off the much larger-scale exhibit, Plotkin began assessing fundraising opportunities and assembling a team. “Filling all that space was going to require professional effort, not just in the coordination of materials and information, but also in the building of displays,” she says.

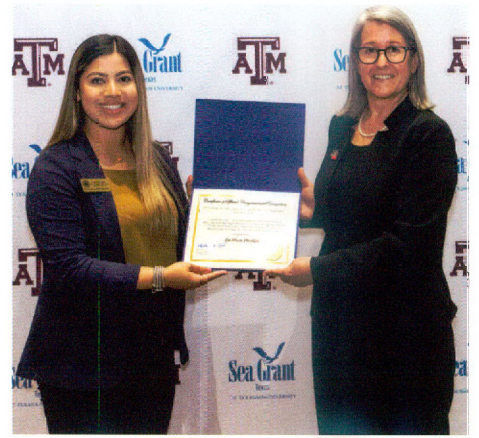
Texas Sea Grant hired Mary Anna Murphy of MAM Exhibit Design, a former middle school woodshop teacher who now specializes in research and design of museum exhibits, and Beth Remsburg of Brands That Leap, a graphic designer with experience in environmental graphic and exhibit design. Murphy designed the exhibit structures and most of the interactive features, while Remsburg designed and selected exhibit features such as the typefaces, colors, the 50th Anniversary exhibit logo, and other graphic and photographic elements.

To sort through 50 years of scientific research, Texas Sea Grant turned to environmental consulting scientist Dr. Wendy Gordon, who is based out of Austin. Gordon compiled a report that highlighted the most important findings over the years, selecting five or ten papers that were significant for inclusion on the L-shaped display walls covering each decade. This information was then turned over to Texas Sea Grant’s communications manager and in-house science writer Sara Carney, who combined it with her research into Texas Sea Grant’s 50-year history of outreach initiatives, and wrote the exhibit. By utilizing the scientific knowledge of Gordon and writing experience of Carney, the team was able



◀◀◀Texas Sea Grant received the Texas A&M AgriLife Extension Service Partnership Award and a Certification of Special Congressional Recognition at its 50th anniversary celebration on May 5, 2022. *From left:* Nikki Fitzgerald, Tony Reisinger, Dr. Pamela Plotkin, Dr. Rick Avery, Julie Massey, Nicole Pilson with the Texas A&M AgriLife Extension Partnership Award

▶▶▶Destinee Vargus from the Office of U.S. Congressman Michael McCaul (*left*) and Dr. Pamela Plotkin with the Certificate of Special Congressional Recognition



A TOTAL OF 68,915 TOURED THE EXHIBIT BETWEEN JULY 1, 2021, UNTIL JULY 5, 2022, ACCORDING TO THE BUSH LIBRARY STAFF.



to compile an exhibit both with scientific depth, but digestible for the general public.

Despite being strangers before the exhibit, and separated by COVID-19 for the entire design and implementation phase, the team grew very close and worked phenomenally well together. “It was very iterative,” says Carney.

Every Friday morning Carney, Murphy, and Remsburg would have a meeting to discuss their exhibit progress. “In the beginning they were just these really broad ideas...then we started tying those into the history and just let inspiration strike as it could,” says Carney.

A medicine cabinet feature of the exhibit had come out of one such meeting. While discussing a research paper about how medications can get into the ocean and can impact marine life, Murphy had the idea to use a medicine cabinet for the “Fish Pharma” display. “Sometimes inspiration just strikes and someone says ‘Hey, wouldn’t it be cool if we could do this’ and some of those things came to fruition,” Carney says.

UNIQUE CHALLENGES

In late 2019 when Plotkin agreed to a larger exhibit and began searching for fundraising opportunities, COVID-19 was only just on the distant horizon—affecting life in China, but not yet in the United States. “I was getting a little nervous but I decided to proceed anyway,” says Plotkin.

She got started on fundraising for the expanded exhibit, sending letters to dozens of people and organizations with established bronze, silver, gold, and platinum levels of sponsorship. Then COVID-19 hit. No one had responded to the letters, and she stopped fundraising for a while. “I love raising money...but I just didn’t feel like it was appropriate to ask people for money when people are really struggling and needing money for other things,” says Plotkin.

In the end, the exhibit received a small sponsorship from the Harte Research Institute and was able to use NOAA program funds to support the rest of the exhibit.

COVID-19 significantly disrupted every aspect of exhibit design and construction, not just the fundraising plan. Originally slated to open in February 2021, the Bush Library was closed for several months due to the pandemic, pushing the opening date for the exhibit back to July 1, 2021.

In many ways, this was a blessing in disguise for the Texas Sea Grant team, giving them more time to perfect the exhibit. “It might have been a very different exhibit, and I think some of the interactives for example, may not have made it in,” adds Remsburg. But a lingering fear remained: that after all this time, money, and hard work, the exhibit might not open at all.

Plotkin chose the Bush Library as a venue because they had a history of working with Texas A&M groups, get a lot of foot traffic in a typical year, and they have a lot of prestige as a result of being a presidential library. She also saw how effectively they had been with outreach and promotion of prior exhibits.

“I wanted to reach a lot of people...we frequently don’t have the ability to reach inland to non-coastal communities, so I saw this as an opportunity to reach people who might not ever think about the coast may never go visit the coast,” she says. She had also hoped that a lot of K-12 students would get to see the exhibit on field trips, as would typically happen during the school year.

A hiatus on school trips during the pandemic initially prevented school groups from attending the exhibit, but the museum is now

fully and school groups are returning and seeing the exhibit.

Throughout the unprecedented closures, the staff at the Bush Library worked hard to bring the public in to see this special tribute Texas Sea Grant’s history. After a second closure from August 8 and October 18, 2021 due to rising COVID-19 cases, they extended the exhibit to be open until July 5, 2022 in order to give it nine to 10 months of being open to the public.

Despite the extended closures and limited capacity still in place, a total of 68,915 toured the museum between July 1, 2021, until July 5, 2022, according to the Bush Library staff.

“We have loved having the exhibit along with the Oceans of Plastic exhibit...And as the director of the Presidential Library & Museum, I am so so so so so so so so so happy that we were open a 100 percent and people were able to come see it,” says Finch.

A PLACE FOR EVERYONE

Designing an interactive exhibit for such a broad audience was challenging, but of paramount importance to the staff at Texas Sea Grant. “With 50 years, as you can imagine, there is so much history and it’s really hard to pick and choose what to represent and what not to represent,” says Carney. Selecting what to include ultimately came down to what could be translated for a broad audience in an interesting and engaging way for both former Sea Grant researchers and non-scientists alike.

Upon entering the exhibit hall, visitors would see a timeline of Sea Grant research and outreach covering the entire wall on their right side, with L-shaped displays highlighting select projects for each decade on their left side. Scientists who have done Sea Grant-funded research can find the title of their research paper on the timeline wall, which lists every single paper published since Sea Grant was established.

Sea Grant’s outreach initiatives are also plotted along the timeline, along with events the public might recognize as causing potential deterioration of the Gulf such as Hurricane Harvey and the Deepwater Horizon oil spill. In a nod to President Bush’s legacy as a pioneer in offshore drilling, active wells are also plotted on the timeline.

Like the timeline wall, interactives throughout the rest of the exhibit provide educational opportunities, both for those who are very knowledgeable about the coast and those who have never been to the coast or are less familiar with coastal resources. There is a red drum with flaps visitors can lift to see the “fish guts”, two 8-foot-tall wooden shrimp of different species to examine, a recipe box with traditional Texas seafood dishes from throughout the decades, and a sea turtle excluder device replica for people to walk through as a way of understanding how turtles avoid getting captured in shrimping nets. On the way out, visitors are prompted to take action with the “Change I Will Make, Change I Will Take” wall, where users write down an action they will take to help preserve the Texas coast, and take a card with education on how to make positive changes.

Recognizing the collaborative effort necessary to preserve the Texas coast was critical for the exhibit team. “The thing I want people to walk away with after they see the exhibit is that there have been 50 years of people who have made the organization what it is...and so I hope that that everybody who has taken part in our program feels like they see themselves in the exhibit and are proud of what they have accomplished and what we have collectively accomplished together,” says Plotkin. ♡

CONNECTING, CORRECTING, AND PROTECTING:

TEXAS NATIVE TRIBES WORK TO HONOR THEIR PAST AND BUILD A NEW FUTURE

BY GEORGE HALE



Before the first Europeans arrived on Texas's shores, Texas was home to many indigenous tribes, nations, and bands. One stretch of the Texas Gulf Coast running between the modern-day Corpus Christi and Galveston bays was home to one of these indigenous groups: The Karankawas.

Historical accounts have long portrayed these people in an unflattering light and many books and historical monuments state that the Karankawas have been extinct since about the 1850s.

However, descendants of the Karankawas might say that reports of their disappearance have been greatly exaggerated. For the past decade or so, the descendants of the Karankawas, known as the Karankawas Kadla or mixed Karankawas, have been working to connect with one another and the culture of their ancestors, revitalize their culture and language, correct the historical record, honor the past and find new ways for the future.

The Karankawas and their ancestors have lived along the Texas coast for nearly 15,000 years. The tribe consisted of several smaller bands, or clans, centered on various bays and estuaries along the Texas coast such as Corpus Christi Bay, Matagorda Bay, and Galveston Bay.

During the past, the Karankawas lived a semi-nomadic lifestyle. They moved from one location to another throughout the year, depending on what food sources were available or in season. For example, familial bands of Karankawas would travel dozens of miles inland during the spring and summer to hunt game and gather plant-based foods. Once winter arrived, these groups would gravitate toward coastal settlements of about 500 people to fish and harvest other seafood like oysters.

This way of life continued for years until the first contact with European colonists in the 1500s. For the next few hundred years, the Karankawas lost access to their lands as more settlers moved into the Texas Coastal Bend. By the 1850s, many of the Karankawas had been killed or fled coastal Texas or had assimilated with either other native groups in Texas or with the Mexican population.

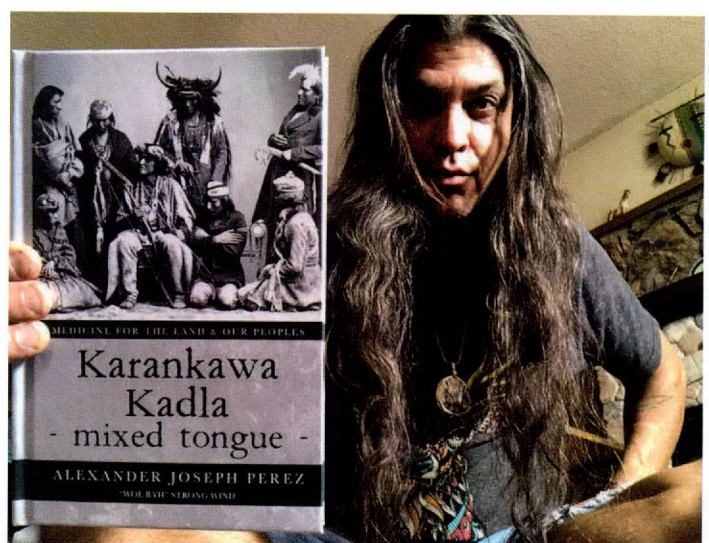
While they would deny being native out of fear of persecution, many of the Karankawas kept in touch with their cultural identity within their own family groups in secret, passing traditions down from generation to generation. However, living in secret meant that some cultural aspects fell by the wayside, especially language, and over time some families lost touch with their past. At the same time, settlers spread tales of terrifying and violent natives who were now extinct, stories that have persisted to the present day.

Opposite: "I am the Soil of the Earth" by Chiara Sunshine. She says, "This is art that I've made of an ancestor I see in a reoccurring dream I have, with me at the bottom."

Right: Alex Perez with the book he authored, Karankawa Kadla - mixed tongue - : Medicine for the Land & Our Peoples.

The accounts of missionaries and other settlers in coastal Texas are what have formed the bulk of the historical narrative around the Karankawas. And because the tribe went into hiding, there was nobody to tell the world the true story for years. Of course, having everyone believe the Karankawas were extinct was helpful for Anglo-American settlers. "If you tell everyone a group is extinct, there's less risk of people opposing you when you take the land," says Tim Seiter, a history Ph.D. candidate at Southern Methodist University who has long been studying the Karankawas and listening to the stories of their descendants.

For years, anyone who had native ancestry would likely have denied it. Many families were able to keep the stories of their ancestors alive, but some were not. "Many native people in Texas are completely out of touch with their roots," says Alex Perez, a member



"Many native people in Texas are completely out of touch with their roots...Now there's a growing need and desire to reconnect."

— ALEX PEREZ

of the Karankawa Kadla and author of a book on the Karankawan language. “Now there’s a growing need and desire to reconnect.”

REMEMBERING AND RECONNECTING

Reconnecting people who have lost touch with each other, and may have lost touch with their heritage, is no small feat. This is especially true considering how although most descendants of the Karankawa still live along the Texas coast, some have moved far away. For example, Perez lives near Joshua Tree National Park in California, but was born and raised in Galveston. But the internet has proven itself a powerful tool for reconnecting and revitalizing the Karankawa. For about the past decade, the Karankawa Kadla have been able to find each other through the internet and social media.

The Karankawa Kadla and other indigenous groups along the Texas coast have a large, growing and multi-faceted social media presence, with each page or account serving different, but related purposes. Facebook is one part of the social media ecosystem and is in many ways where the Karankawa Kadla’s online work began.

One Facebook group simply called Karankawa Kadla, which was started about 10 years ago, serves as a way for descendants of the Karankawas and those who suspect they might have Karankawan ancestry to come together and share their experiences. This group has a dozen or so active members and an overall membership of a few hundred, including extended families.

Another related Facebook group run by the Indigenous Peoples of the Coastal Bend, focuses more on activism and raising awareness. This group includes people from the Karankawa Kadla, Lipan Apache, Mexica, Comanche, and Coahuiltecan tribes. Some of the focus areas of this group and its page include raising awareness of environmental issues, organizing efforts to correct historical markers and notifying coastal Texas tribes and others about similar issues, such as their successful efforts to get the City of Corpus Christi to recognize Indigenous Peoples Day.

In addition to Facebook pages, the Indigenous Peoples of the Coastal Bend also has a presence on Instagram and TikTok, which tends to have younger users. Additionally, some members of the Karankawa Kadla also use social media to reach out and teach about their heritage. Using different social media platforms helps the Karankawa Kadla reach a wider audience. “The groups we meet are diverse! That’s the benefit of using social media, but the ones that listen are the younger generations,” says Chiara Sunshine, a member of the Karankawa Kadla who runs an active Instagram page (@karankawachicharra) that is a major source of news of interest for the Karankawa Kadla.

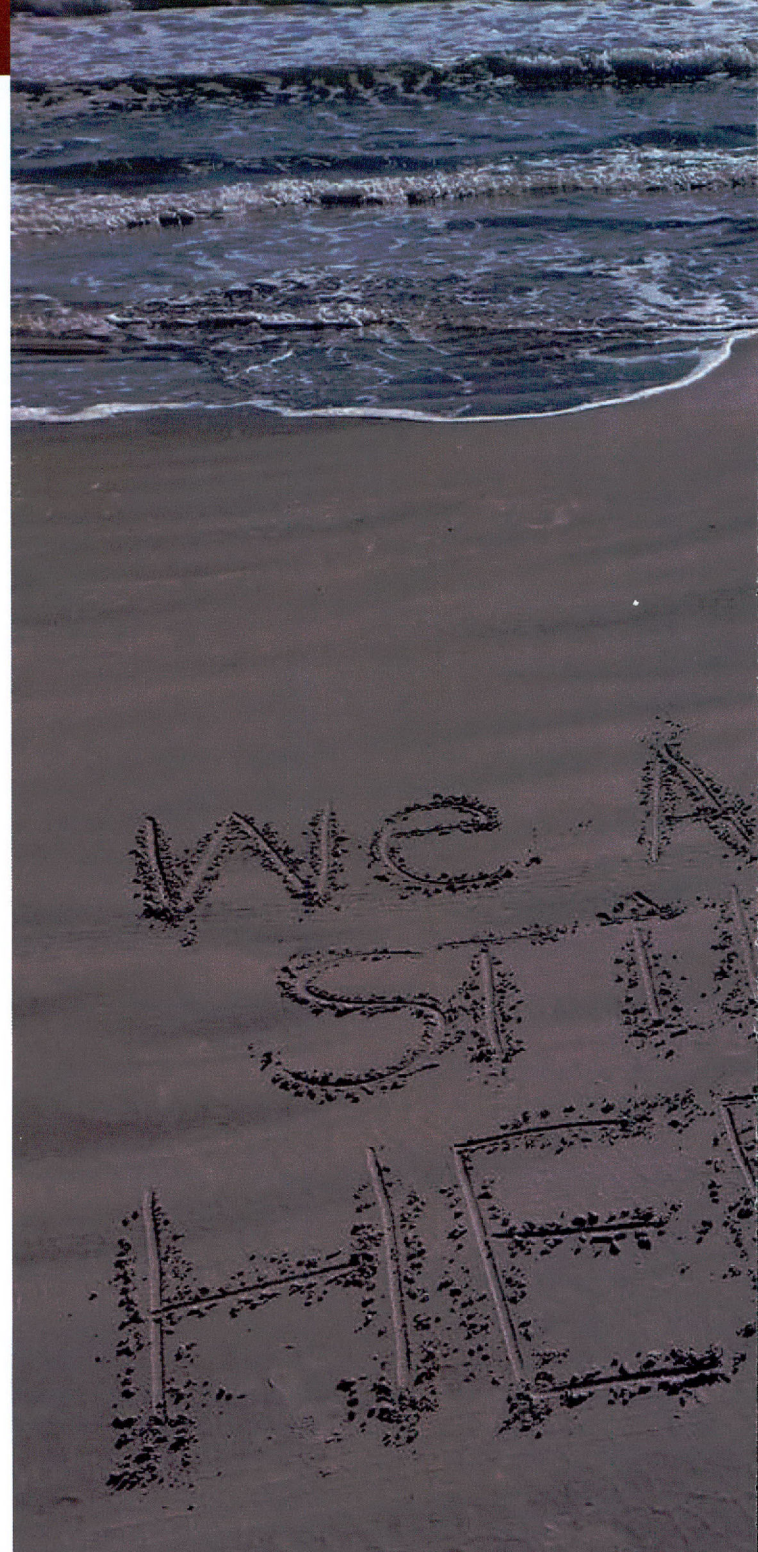
The various social media channels may reach

“If it wasn’t for a Facebook page I wouldn’t have found any of my relatives of the Coyote Clan,”

— CHIARA SUNSHINE.



CHIARA SUNSHINE



different audiences and have different aims, but their overall goal is the same: to support and grow the Karankawa Kadla community. “If it wasn’t for a Facebook page I wouldn’t have found any of my relatives of the Coyote Clan,” says Chiara Sunshine. “It has changed my life.”

Outside of social media, there is a growing presence on the web working to connect the Karankawa Kadla and educate the rest of the world about the Karankawas and their descendants. One website, karankawas.com, holds a wealth of information about the Karankawas, ranging from the traditional diet of the indigenous people to the history of the Karankawas to efforts to reconstruct their language, known as Karankawan, and includes news updates that have also been posted on Instagram.

Seiter started the website several years ago as a blog where he posted updates on his research of the Karankawas. Since then the site has grown and so has the involvement of the Karankawa Kadla. “With the revitalization of the Karankawas, I thought it was more important that they control the site,” says Seiter. He still writes updates for the site, but all posts are approved by the tribe before going public.

SETTING THE RECORD STRAIGHT

Educating the world and setting the historical record straight is no small order though. Changing people’s minds and correcting misunderstandings and misinformation can be challenging. Telling the correct story helps, but relaying accurate history on the web and social media isn’t enough as long as history books and historical markers continue to tell the wrong stories.

Until recently, the dominant narrative was that the Karankawas simply disappeared in the 1850s. On top of this, the portrayal of the Karankawas has been decidedly negative.

Many historical accounts have portrayed the Karankawas as a violent nation of seven-foot-tall giants. However, the truth is far different. Current researchers think the Karankawas were only slightly taller than Europeans at the time of first contact.

Additionally, more accurate accounts portray the Karankawas as being largely peaceful and tolerant, only choosing violence in response to theft, murder, or other criminal acts by settlers. However, accounts from this period were written largely by people more interested in portraying the Karankawas negatively than in historical accuracy.

History books have been written based on primary documents such as the accounts of priests and various settlers and these sources have proven to be unreliable in many cases. Seiter has been studying the history of the Karankawas and is working on a book that will portray the tribe in a more accurate light. However, reconstructing an accurate history is not something that happens overnight. “It is very difficult to reconstruct histories because we don’t have a lot of documents,” Seiter says. “So, we had to rely on oral histories.”

Changing a historical narrative can be like turning a giant ship: it’s possible, but it takes effort and time. One area where change is being made, if slowly, is correcting roadside historical markers throughout Texas.

Anyone who has taken a road trip through the state has no doubt driven past any number of markers set up by the Texas Historical Commission to educate the public and commemorate past people, places and events. However, some of these markers contain incorrect information on the Karankawas, such as stating that the tribe is extinct.

This photo was taken at Mustang Island in Corpus Christi by Love Sanchez, who organizes the Indigenous Peoples of the Coastal Bend Facebook group. She said, “This statement is seen a lot in social media... basically, what it means is reaffirming to people that we, [the indigenous community], are here still... We’re not history. We’re still here making history.”



Cleansing ceremony hosted alongside indigenous dancers known as "danzantes."

The Texas Historical Commission has procedures for changing historical markers, which involves sending a request form, a photograph of the incorrect marker and supporting evidence by email or postal mail. This is one place where the Karankawa Kadla's internet and social media presence is especially useful as they can notify tribe members and allies about incorrect markers and point them to the page describing how to request a correction.

Despite the clear procedures, the wheels of change turn slowly and updates to markers depend on the Texas Historical Commission having available funds for such corrections. Because of this, the Karankawa Kadla have only managed to have four or five roadside historical markers updated, though work continues on, correcting the others. "Changing historic monuments is proving to be much more difficult than anticipated," Seiter says.

REVITALIZING CULTURE AND LANGUAGE

If reconstructing an accurate history is hard, rebuilding a largely forgotten language has to be harder. When the Karankawas went into hiding, they stopped speaking Karankawan,

so all that remains is the writings of missionaries and settlers who documented parts of the language to varying degrees of accuracy.

Years ago, Perez felt a calling to revitalize Karankawan as a way to bring the Karankawa Kadla closer together and get back in touch with their heritage. "When you speak these words, you reconnect with your ancestors and the land," says Perez.

With only a handful of words in scattered sources, Perez had his work cut out for him. He consolidated words from the various sources and began filling in gaps in the language using words from the languages of other native groups.

The adoption of words from other languages is fairly common and English has adopted quite a few words from various native groups over the years. For example, the words "chocolate", "bayou", and "hurricane" all come from indigenous languages.

Currently there are about 700 words in Karankawan and Perez and his students are working to add more. However, choosing which words to include in revitalized Karankawan takes a lot of time and effort Perez says. One of the uses of these words

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LIZ MOSKOWITZ FOR THE TEXAS TRIBUNE

Chiara Sunshine in ceremonial attire

is in songs and ceremonies performed by the Karankawa Kadla. This means the words have to have a rhythm that matches existing Karankawan words.

The remixing of language to revitalize Karankawan parallels the inclusion of cultural practices from other tribes and nations. For example, the Karankawa Kadla have made use of medicine wheels, a type of monument more common among plains tribes, to honor ancestors.

However, the Karankawa Kadla are up front with the mixture of practices as they themselves had mixed with so many different

groups over the years to survive. In fact, the word Kadla itself means mixed. “We’re all related after all,” Perez says.

PRESERVING, PROTECTING, AND HONORING

The Karankawa Kadla are also making important decisions related to their heritage and history. The Karankawa Kadla tribal council meets regularly and honor the lives and struggles of past generations.

At the same time, they are working to remember the past and educate others on that past while finding new ways to move into the future that honor and respect those who came before them and their customs. “The move from extinction to revitalization is still in the early stages,” says Seiter.

Perez said he considers the overarching tradition of the Karankawas to be one of adaptation, much in the same way the natural world adapts to change. However, he stresses that all people should recognize the past, bring healing to those to need it now and keep the needs of future generations in mind when making decisions.

“It’s important to remember history,” says Perez. “It’s something to carry in our hearts and minds.”



Love Sanchez, co-founder of Indigenous Peoples of the Coastal Bend, at in a ceremony on McGee Beach

CHRIS STOKES FOR THE TEXAS TRIBUNE



COASTAL ICON

KIWANA DENSON



Mother, Educator, Beach Safety Champion

BY CORLEY-ANN PARKER

Je'Sani Smith was an outgoing, athletic young man who loved sports, especially basketball, being around friends, and nature. He also had a passion for restoring his Subaru he received as a gift from his mother, and even had goals to become an engineer with the National Subaru Team.

“Everyone says their child is perfect, but [Je'Sani] really was to me,” says Kiwana Denson, Je'Sani's mother. “He was a wonderful child, a great artist, and really loved being at the beach.”

Je'Sani would often be found hanging out with friends on Corpus Christi beaches, where he frequently enjoyed swimming out in the waves. He even worked as a beach attendant with the City of Corpus Christi.

Unfortunately, on April 11, 2019—eight days after his 18th birthday—Je'Sani Smith was tragically swept away by a rip current at Whitecap Beach in Corpus Christi, Texas.

“I couldn't believe it. [My son] was a great swimmer, but unfortunately, he didn't make it back,” says Denson. Je'Sani's unexpected and tragic passing affected the Denson family immensely and highlighted the dangers of rip currents in coastal waters.

In the time after Je'Sani's death, people in the community rallied around Denson for support, including her close friend Mary Afuso, who even decided to help get some of Denson's family from West Virginia to Texas for Je'Sani's memorial services.

Still, the general lack of awareness about rip currents amongst beachgoers bothered Denson. “I really thought my son's situation was unique at the time,” says Denson. “But I realized it was a recurring issue. It had been happening before my son, and it kept happening after my son.”

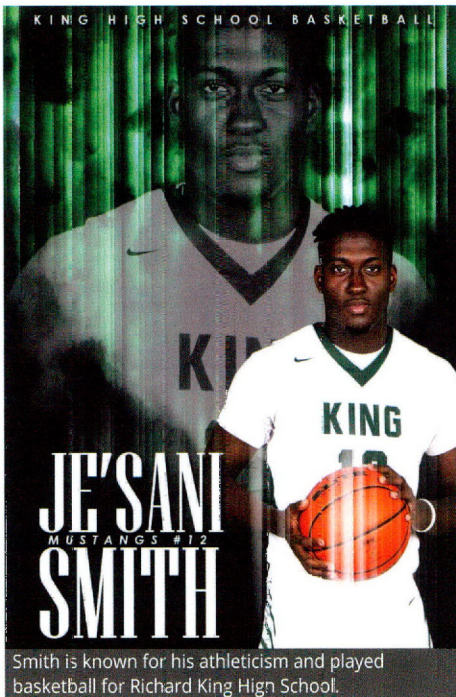


Je'Sani Smith at the beach.

KIWANA DENSON



SALAZAR PHOTOGRAPHY



SARA CARNEY, TEXAS SEA GRANT



STARTING THE JE'SANI SMITH FOUNDATION

Denson decided something had to change and became an advocate for rip current awareness, starting with inquiring about more signage along local beaches and increased beach safety education efforts in the community. Inquiries developed into conversations with leaders in other Texas counties, which then developed into relationships with other organizations and community leaders across the nation. Through these relationships, Denson realized that a lack of rip current awareness was much larger than a local issue.

“I recognized that not only was it happening [in Corpus Christi], but it was also happening all over the world,” says Denson. “It really was those strategic conversations where I started seeing the need for some kind of change to happen.”

In March 2020, through a joint effort between Representative Todd Hunter’s Office, the City of Corpus Christi, Nueces County, and Texas Department of Transportation, the Je’Sani Smith Beach Safety Alert was created. This alert consists of several digital signs placed along beaches in Corpus Christi which remind beachgoers to check local beach flags and other alerts for potential rip currents. They also created the Beach Safety Task Force with the help of Commissioner Brent Chesney, which consists of experts and interested locals who discuss current beach safety efforts and work to spread awareness in the community.

Soon after, Denson started the Je’Sani Smith Foundation in her late son’s name. The foundation provides education, awareness, and water skills training on beach safety and other coastal hazards.

KEEPING THE MOMENTUM GOING

By hosting community outreach events and creating educational materials, such as brochures, billboards, and posters, The

Je’Sani Smith Foundation has steadily gained more traction both along the Texas coast and nationwide. Denson has worked tirelessly along with volunteers to grow the foundation and has even successfully worked with Texas Representative Todd Hunter to advocate for legislation on increased beach safety measures.

In June of 2021, Governor Abbott passed the Texas House Bill 3807, also known as the Je’Sani Smith Act, authored by Rep. Hunter. The act requires more rip current signage and increases the number of active lifeguard stations on Texas beaches while also calling for a statewide public awareness campaign focused on beach safety. House Concurrent Resolution 46 was also passed, which designates April as beach safety and rip current awareness month.

“Never in a million years did I think I would be standing on the Senate floor pouring my heart out about losing my son to an open-water drowning and advocating for these big changes,” says Denson. “Yet, here I am, and I’m truly proud of the changes we’ve been making.”

The non-profit foundation has managed to grow and enact significant change in the two years since its start despite many obstacles and challenges. Timing proved especially challenging for the volunteer-based non-profit in the beginning since they gained traction just before the COVID-19 pandemic shut down much of the country.

“When COVID hit, I think it changed a lot of people’s priorities,” says Denson. “But my priorities stayed the same. Of course,

everything was changing and evolving, but if we stopped, so did the education and awareness growing in our communities.”

LOOKING FORWARD TO THE FUTURE

The fight for better beach safety doesn’t end there for the foundation or Denson. Currently, the Je’Sani Smith Foundation provides several educational materials on their website, as well as opportunities for coastal citizens to volunteer at both outreach events and as members of the beach safety task force.

Recently, in 2021, the foundation was selected to work with ONE DAY, a public service event presented by the American Advertising Federation—Corpus Christi Chapter (AAF-CC) and the graphic design program at Texas A&M University-Corpus Christi, on a rebranding campaign.

ONE DAY brings together professional and student designers, copywriters, media experts, and video experts to develop and implement marketing strategy and multimedia advertising campaigns all in one 12-hour day.

In that day, Texas A&M University-Corpus Christi graphic design student volunteers worked alongside professionals from AAF-CC to create a variety of multimedia assets. At the end of the day, the entire campaign is presented to representatives from the Je’Sani Smith Foundation.

After the event, Nancy Miller, the graphic design program coordinator and Board of Directors member for AAF-CC, worked with the foundation to refine the proposed brand and advertising touchpoints and build out a library of campaign assets for their implementation.

Miller continues to offer her support on the Je’Sani Smith Foundation’s Board of Directors as the Design Director. In this role, she maintains the brand’s creative standards and assists with any creative needs.

**ESCAPE THE GRIP OF THE RIP:
Rip Current Safety & Awareness Tips**

“I was so impressed by the dedication of the foundation’s founder, Kiwana Denson, that I agreed to expand the campaign by providing additional design assets and a website,” says Miller. “Elevating the brand and better positioning the foundation allows the organization to focus on its mission, beach safety education.”

The foundation also includes scholarship opportunities in Je’Sani’s memory. College-bound seniors at King High School, Je’Sani’s alma mater, have the chance to earn a scholarship by writing an essay on how they would educate others about water safety and rip currents, while the Je’Sani Memorial Scholarship offers to help students in the welding, art, and music programs at Del Mar College.

One of the past recipients of the Je’Sani Smith Water Scholarship, Angelina Tapia, sat on the foundation’s Board of Directors and credits the scholarship for helping her with college. “Once the pandemic hit, money for college became even more critical,” says Tapia, “I am so grateful to have received this scholarship and to get to work with the foundation.”

In April 2022, which is now officially beach safety and rip current awareness month in the State of Texas, the foundation hosted a Surviving the Rip 5K & 10K Run/Walk in Corpus Christi, and plans to have more regular community outreach events throughout the year.

For Denson, the goal will always be growth and keeping Je’Sani’s memory alive. “People are going to keep coming to our beaches, so we have to progress forward and focus on learning more ourselves, educating more, and finding more creative ways to increase awareness in both our own communities and for those who visit,” says Denson. “As a community, we have to at least give people the power of information so they can make the best choices and safely enjoy the beach.”

Thanks in part to the works of Denson and the Je’Sani Smith Foundation, there were zero rip current fatalities on Corpus Christi beaches in 2022. Denson hopes to keep it that way. ✓

Unlike a pool, the ocean has no boundaries and water conditions can be unpredictable from day to day. Rip currents are powerful, channeled currents of water that flow away from the shore. They typically extend from the shoreline through the surf zone and past the line of breaking waves. Rip currents can occur at any beach with breaking waves and commonly form around breaks in sandbars or near structures, such as jetties and piers.

Although estimates vary, rip currents are responsible for roughly 100 deaths every year in the United States and account for over 80 percent of rescues performed by surf beach lifeguards, according to the United States Lifesaving Association. There are several clues that can help with spotting a rip current from the beach, including:

- ★ *A narrow gap of darker colored water between breaking waves*
- ★ *A line of foam, seaweed, or debris moving out toward the sea*
- ★ *A channel of churning, choppy water present*

You can protect yourself and others from being caught in a rip current by always staying in an area protected by lifeguards, learning to identify potential areas for rip currents, and taking time to evaluate the water before entering.

If you were ever caught in a rip current, there are several steps you can take for survival, including:

- ★ *Don’t panic, and remember to float, don’t fight. Rip currents do not pull you under the water, so avoid fighting the current to save energy needed for escape.*
- ★ *Do not swim against the current. Instead, if able, swim in a direction along the shoreline or toward breaking waves to escape the current.*
- ★ *If you feel you are unable to reach the shore or escape the rip current, draw attention to yourself. If you need help, yell and wave for assistance.*

Learn more about rip currents and the steps you can take to beach safely at www.beachsafely.org or oceanoday.noaa.gov/every-full-moon/full-moon-wavesafe.

KIWANA DENSON



The Denson family awarding a scholarship to King High School graduate Vanessa Lane, second from right.

KIWANA DENSON



Students at King High School honor Smith's memory with shirts reading "King Sani."

Aglantis Aquarium Finds New Home at Texas A&M University at Galveston

BY SARA CARNEY • PHOTOS BY VADIM TROSHKIN, TEXAS A&M UNIVERSITY GALVESTON SEA LIFE CENTER

Texas A&M University at Galveston's Sea Life Facility welcomes the addition of Aglantis, the 300-gallon saltwater aquarium that has resided on the lower floor of the Texas A&M University Memorial Student Center (MSC) since 2013. Aglantis, and its residents, join a number of educational displays and aquaria at the Sea Life Facility that educate Texas A&M University-Galveston students and community members.

Aglantis originated as a gift from Texas Sea Grant to Texas A&M University and the Brazos Valley for Earth Day. The tank houses many species of fish and invertebrates from the Gulf of Mexico and connected waters, which serve as ambassadors promoting ocean awareness and preservation.

"We are thrilled to have Aglantis join the Sea Life Facility," says Katie St. Clair, Sea Life Facility manager. "This tank is a wonderful educational resource for visitors from the student body and Galveston community alike."

In Fall 2022, Aglantis was the focus for a Hullabaloo U course that helps Texas A&M's first-year students transition to the university and equip them with resources to achieve their professional and academic goals. According to St. Clair, the aquatic community found in Aglantis is a great metaphor for the dynamic and diverse community and experiences that students can find at Texas A&M.

The Sea Life Facility provides a range of services and infrastructure in support of research and education on the Galveston Campus. The student staff provides husbandry, water quality, and life support system services for faculty, graduate, and undergraduate student



engineer projects involving marine and aquatic organisms. Emphasis on practical skills, problem-solving, technical expertise, and leadership ensures students are well prepared to enter careers in research, aquaculture, and aquarium science.

Prior to gifting Aglantis to the Sea Life Facility, Texas Sea Grant provided regular maintenance to the tank and cared for its residents.

"I am so happy Aglantis found a new home at the Galveston Campus' Sea Life Facility!" says Chloe Dannenfeler, former Texas Sea Grant program assistant and caretaker of Aglantis. "Katie and her team were so great to work with, and I loved seeing how excited the students were to have the fish so close by. I can't wait for the incoming students and community to see their new aquarium!"



 **SEA LIFE FACILITY**



A First in Modern Times: Turtles Hatch on Magnolia Beach

BY SARA CARNEY

A conservation success hatched on the shores of the Magnolia Beach in Calhoun County, Texas. A sea turtle nest containing approximately 45 hatching Kemp's ridley eggs was discovered, and turtles successfully made their way to the water.

"This has never happened in modern times," says Dr. Pamela Plotkin, director of Texas Sea Grant and sea turtle biologist. "Sea turtles typically nest on barrier island beaches in Texas and so seeing a turtle nest on a beach inside any bay is rare. There are many miles of unpopulated bay shoreline along Texas' coast, so it is possible that sea turtle nesting on these shores is more frequent and undetected."

For sea turtles, the period after hatching is a fight for survival. In their first moments of life hatchlings must quickly race from their nests in the sand to the water, avoiding predators, poaching, pollution, and other hazards.

Eggs left on the beach only have a 45 percent chance of hatching, which is why intervention from conservationists can be critical.

Fortunately, the turtles hatching on Magnolia beach had help.

The turtles were found by maintenance workers with the Calhoun County Precinct 1 Commissioner's Office. While picking up trash on the beach, Zach Padron and Jason Gonzalez spotted approximately 25 hatching turtles and noticed that they were heading the wrong way.

Padron said he remembered learning from nature television shows that hatching sea turtles are at risk from predators like seagulls. He says, "I thought, 'We better help them because it's a good way to the water!'"

The workers and Commissioner David Hall notified Calhoun County Marine Extension Agent R.J. Shelly.

Upon arriving, Shelly began excavating the turtle nest, under the guidance of Plotkin. He found more sea turtles that needed help emerging from the nest. Approximately 20 more turtles were found.

"Sure enough, once we started excavating, we saw more and more dig their way out," says Shelly.

These turtles were within 10 feet of a roadway, making active monitoring necessary. Shelly and others supervised the hatching process, ensuring the turtles' safe release into Matagorda Bay.

"We let them imprint on the sand and then stood there while they made their run," Shelly says.

The Kemp's ridley is the official state sea turtle of Texas and is critically endangered. Decades of efforts from scientists, resource

managers, conservationists, and others have allowed the species to begin to recover.

These conservation efforts have been ongoing in Matagorda Bay, and include a recent assessment of Matagorda bay, sponsored by the Texas Office of the Comptroller. The assessment included acoustic tracking of turtles in the area by Plotkin and her team.

"Matagorda Bay is currently a vibrant healthy ecosystem with an abundance of sea turtles that live and feed there," says Plotkin. "In the late 1800s there was a commercial sea turtle fishery operating there that decimated the sea turtles in the bay by the early 1900s. Signs of sea turtle recovery in Matagorda Bay are visible now and illustrate how reduced fishing pressure in concert with habitat restoration can save threatened and endangered species." ✓



Above: A turtle hatchling at Magnolia Beach.

Bottom: R.J. Shelly, Calhoun County extension agent, at the turtle nest on Magnolia Beach.

R.J. SHELLEY, TEXAS SEA GRANT • TURTLE PHOTO: EMILEE DEFOREST, TEXAS A&M AGRILIFE EXTENSION SERVICE

New Staff

BY ALLISON DICKEY AND SARA CARNEY



SARA CARNEY, TEXAS SEA GRANT

Dr. Debalina Sengupta, Coastal Resilience Program Director

Dr. Debalina Sengupta has joined Texas Sea Grant as the coastal resilience program director. In this role, Sengupta plans, organizes, directs, and manages extension activities associated with the Resilient Communities and Economies (RCE) strategic focus area.

The goal of this focus area is to accommodate the increasing coastal population and activity while balancing demands on coastal resources. This includes supporting cutting-edge research in the areas of marine-related energy sources, energy efficiency, coastal waters, ocean plastics, hazards, and tourism.

As the coastal resilience program director, Sengupta aims to work collaboratively to implement more resilience and sustainability strategies in coastal communities.

“General resilience in coastal communities has been mostly regarded in the perspective of policies and planning, and I would like to go beyond [that] and look at best ways for implementation of some of these plans,” says Sengupta. “I am really interested in trying to bring in perspectives from science and technology on how to turn these plans into action.”

Sengupta has a Ph.D. in chemical engineering from Louisiana State University and worked as the associate director of the Texas A&M Engineering Experiment Station (TEES) Gas and Fuels Research Center. She has also been the food-energy-water nexus coordinator for the Texas A&M Energy Institute.



XIAOPING LI

Xiaoping Li, Senior Data Analyst

Texas Sea Grant welcomes Xiaoping Li as a Senior Data Analyst. Li will be responsible for gathering, analyzing, interpreting and reporting TXSG data.

Before joining the Texas Sea Grant team, Li worked as Data Analyst at Texas A&M University’s School of Veterinary Medicine and Biomedical Sciences for four years. She holds a Master of Science in Industrial Engineering from University of Arkansas. Her areas of expertise are data analysis and optimization.

“I am so excited to join Texas Sea Grant,” she says. “As a senior data analyst, I am looking forward to collaborating with each of you to envision the growth of our Sea Grant program.”



MADGELLEN CLEARY

Madgellen Cleary, Coastal Resilience Specialist

Madgellen Cleary joins Texas Sea Grant as a coastal resilience specialist, located in Galveston. In this role, she will work on a broad range of issues across many sectors, focusing on community resilience to disasters, such as hurricanes and floods. In particular, she will disseminate research-backed information to stakeholders and provide guidance to university and agency researchers related to coastal disasters and sustainability.

“What interests me in working for Texas Sea Grant is the opportunity to help make changes and protect our coastal lands and strengthen our resilience in our coastal environments and communities,” Cleary says.

Cleary has worked as an instructor for Sea Camp, a divemaster, a laboratory administrator for Viswa Lab, a protected species observer for RPS Group, and a Park Ranger for the Army Corp of Engineers. She holds a bachelor’s degree in marine biology from Texas A&M University at Galveston.

“I am excited about my position as a coastal resilience specialist,” she says. “I am ready to set sail and start my new adventure by the sea.”

Want to learn more about Texas Sea Grant’s mission, programs, fellowship opportunities, free publications, and more?



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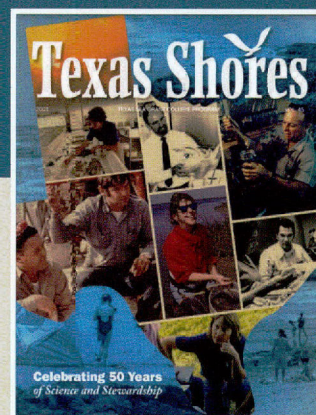
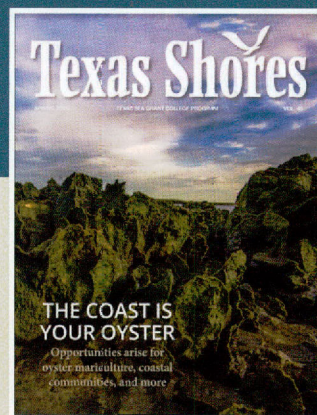
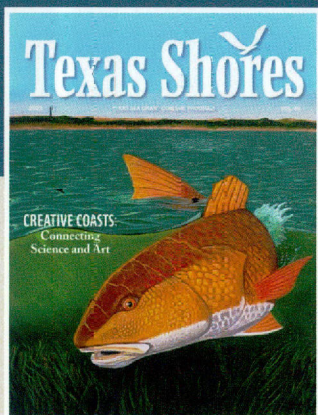
Since the recent legalization of oyster farming in Texas, the coast is open for business. You can join this new industry!

Texas Sea Grant's new oyster farming website provides information on:

- *Permitting*
- *Setting Up Farms*
- *Growing Large, Delicious Gulf Oysters*
- *And More!*



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Sue Bonnar, "Hope Soars"

About the art:

My submission for the magazine cover is an acrylic on canvas of a family of whooping cranes flying over the marshes on Aransas Bay near my home in Rockport. There is a pair of whoopers that have been visiting a marsh near my house for years and coincidentally returned to this year and had a baby or "colt" with them! I call the painting "Hope Soars" as the success story of the Whooping Cranes in Aransas County is a reflection of the perseverance and uniqueness of our beautiful, coastal environment.

bonnarart.com

Facebook: Sue Bonnar - Artist