I’m excited to be writing to you in my new role as director of the Mission-Aransas Reserve. While I have been in this position for only a few months, I have been involved in environmental issues in the area since the mid-1990s. During the years that the Reserve was getting started in the mid-2000s I had the opportunity to contribute to several focus areas, including seagrass in Little Bay, oyster reef restoration in Copano Bay, and water quality in the Mission and Aransas Rivers. Even so, the last few months I’ve learned an incredible amount about the great work being conducted here at the Reserve. Every day is a discovery of something new about what the Reserve staff and scientists have been doing. It has been an amazing, humbling, eye-opening experience that I am excited to be part of.

I come to the Reserve after more than 8 years with the Coastal Bend Bays & Estuaries Program where I held the position of Director of Research and Planning. It was a remarkable organization to be a part of and I gained invaluable experience about the processes of making things happen, working with partners to get great things accomplished, and that protection of our natural resources is the key to our next generation’s wellbeing.

What now? I see the Reserve making great contributions to estuarine science through sound research, transforming the information into something palatable and usable to policy and decision makers, creating stewardship opportunities to get the next generation outside and taking ownership of their natural spaces, and to educate our teachers with hands-on marine science so that they can relay that information back to the children they teach.

The Reserve has been doing such great things since its inception and I am so very pleased and honored to have this opportunity to lead the Mission-Aransas Reserve into a new era of stability and expanded science. I look forward to connecting with many of you to make these great things happen.

For more information on the Reserve email jace.tunnell@austin.utexas.edu.
The National Estuarine Research Reserve System (NERRS) consists of 28 coastal reserves located across the nation. A System-Wide Monitoring Program was established in 1995 to develop quantitative measurements of short-term variability and long-term changes in abiotic and biotic properties of estuarine ecosystems for the purpose of informing effective coastal management. The hallmarks of this program are its two decades of data collection, the use of common protocols and instrumentation across all observing platforms, and a centralized approach to data quality assurance/quality control (QA/QC). By using standardized procedures at all reserves, this monitoring program generates a national database on estuarine ecosystems, and creates a network of sentinel sites for detecting and understanding the effects of climate change. This monitoring program provides a base for additional research projects at each reserve that are designed to address coastal management issues of local importance at each reserve.

On a broader scale than the NERRS, the Integrated Ocean Observing System (IOOS) is a partnership among federal (NOAA), regional academic and private sector parties to provide information about our nation’s oceans, coasts and Great Lakes. This program is organized into eleven regional associations that focus on various sections of the U.S. coastline. The regional association for the Gulf of Mexico is referred to as GCOOS, the Gulf Coastal Ocean Observing System. The Mission-Aransas Reserve has a memorandum of understanding with GCOOS, and we have been active in working with GCOOS on their regional build-out plan. The NERRS provide IOOS and NOAA with the largest network of nationally coordinated estuarine observing and monitoring programs.

An indicator of the increasing interest in ocean observing systems is the soon-to-be published book entitled “Coastal Ocean Observing System: Advances and Syntheses”. In collaboration with six other colleagues from the NERRS, I have written a chapter for this book about the System-Wide Monitoring Program and how it addresses coastal management issues. We hope this will raise the profile of research efforts carried out at the NERRS on a national and international level.

I have also been participating in a program called Our Global Estuary as a member of the steering committee. We held a U.S. national workshop in the fall of 2013 at Harbor Branch Oceanographic Institute in Florida. The primary purpose of this workshop was to generate thinking on how knowledge produced in the study and care taking of individual estuaries could be collected and made available to support management of other estuaries and for all estuaries worldwide. The next steps in this process are the planning of an international meeting of Our Global Estuary in Chennai, India in February 2016, and the preparation of a proposal to the National Science Foundation’s “Partnerships for International Research and Education” program, where we seek funding for scientific partnerships and graduate student exchanges between estuarine scientists in the United States, Portugal, Brazil and China.
Recently, honey bees have grabbed national attention, but not because of their numerous medical and health benefits. According to the U.S. Department of Agriculture (USDA), the number of managed U.S. honey bee colonies has dropped from 6 million in 1947, to just 2.5 million today. The decline has been attributed to a number of reasons, including increased use of insecticides, environmental stresses, habitat loss, invasive parasitic mites, malnutrition, genetic factors, and changing beekeeper practices. Bees are facing many stressors at once, which is causing collapse in hives and decreasing populations.

Bees play a central, but little recognized, role in most terrestrial environments. This is because the production of seeds, nuts, berries, and fruits are highly dependent on cross pollination, and bees are the major pollinators among the pollinating insects. According to the USDA, honeybees and other pollinators pollinate 80 percent of our flowering crops, which constitute one-third of everything we eat. Decline in honeybee populations could affect not only dietary staples such as apples, broccoli, berries, nuts, asparagus, and cucumbers, but may also threaten our beef and dairy industries if alfalfa is not available for feed. A study completed by Cornell University, estimated that honeybees pollinate $14 billion worth of seeds and crops in the U.S. annually.

Local honey provides numerous health benefits. Local honey is made from pollen around the area, so if you suffer from allergies, eating it can boost your immune system by allowing your body to get accustomed to the varieties of pollen released during blooms. Also, it’s rarely processed, meaning it’s not heated or pasteurized, and doesn’t contain additives or preservatives. Honey is also an antiseptic, a digestive aid, has many vitamins and minerals, and is a great cough suppressant. Bee venom has also been found to have medical properties, used for treating arthritis, multiple sclerosis, fibromyalgia, cancer, epilepsy, and depression.

The first honeybee colonies at Fennessey Ranch were established 5-8 years ago, but they had a rough start. The original beekeeper on the Ranch established and abandoned the colonies for approximately 4 years. The current beekeepers and local Port Aransas residents, Pete Hartje and Paul Ruff, are trying to make the hives productive again. When they arrived on the Ranch three years ago, the existing hives were in horrible shape with broken stands, rotten boxes, and in general disrepair. Paul and Pete built new hive boxes and stands, and transferred the existing bees to their new homes. They also captured wild swarms from around the area and transferred them to boxes on the Ranch.

Currently there are 10 active hives on Fennessey Ranch. This spring the beekeepers are planning to increase that number by doing splits. A split is when a new queen is purchased or brought in. Brood frames and bees from a robust hive are then taken placed in a new hive box. This helps in two ways: first, it lowers the possibility of swarming and second, it starts a new hive. Swarming happens when a hive gets too big for the space they occupy and the queen flies off to find a new spot to start a hive, taking with her a sizeable portion of bees.

Honey is usually harvested twice a year, depending on the productivity of each hive. As time goes by, and the hives become established, harvests will increase. Since 2012, when Pete and Paul took over the hives, they have harvested about 15 gallons of honey. Though that may seem low, many of the hives are still getting established and acclimated. In order to increase production of the newly established wild swarm hives, those hives will be requeened. This is important because the queen is the most important bee in the entire colony. She lays the eggs and determines the overall health and productivity of the colony.

The honey bees at Fennessey Ranch have not yet produced enough honey to start selling it, and what honey they do produce is in great demand. At the moment the Ranch gives it away as presents and to volunteers. Let me tell you, it makes great cookies!
Great news for marine education! The Reserve’s education program has merged with the University of Texas Marine Science Institute’s successful Marine Education Services (MES) to form a new program called Marine Education and Outreach. The famed Dr. Rick Tinnin developed and directed the successful MES program for over three decades. The Reserve has been able to build off of those successes to expand the education program through our new facilities, constructed specifically for educating the next generation of marine scientists.

These facilities include the Bay Education Center located in Rockport, Texas, where we host the Science on a Sphere program. We also have our new Estuary Explorium located at the University of Texas Marine Science Institute visitor’s center, in Port Aransas, where we have hands on activities for children and adults to learn more about the importance of estuaries and about the research we are doing here at the University. We continue to educate by taking field trips out on the R/V Katy and having tours through our Wetlands Education Center on the campus of UTMSI. We are also continuing to take marine science into the classrooms by teaching the teachers hands-on marine science and by encouraging the students love for science outdoors.

Now that the two successful programs have been merged, we have the synergy, the network of educators, and the staff to work together toward the common mission of enhancing ocean, coastal, and estuarine literacy and stewardship among K-12 and public audiences.

The Reserve will host a Teachers on the Estuary workshop on July 14th – 16th, 2015, to help middle and high school science teachers increase their capacity to use Gulf of Mexico research and data in inquiry-driven, experiential instruction related to watersheds and estuaries. Eighteen middle and/or high school science teachers, who teach in Texas coastal watershed counties, are eligible to participate in this National Oceanic and Atmospheric Administration funded project. All participating teachers will receive stipends and free activity supplies.

For more information, please contact Carolyn Rose at 361-749-3152 or carolyn.rose@utexas.edu.
The City of Aransas Pass is a small coastal community of over 8,000 in Texas, located near Corpus Christi, Texas. The City’s proximity to vibrant coastal ecosystems makes it a tourist destination for fisherman and tourists alike. Unfortunately, that same proximity also poses a threat in the face of a potential storm or climate-related disaster. As a southern coastal community along the Gulf of Mexico, Aransas Pass is threatened by increasingly intense and frequent coastal storms, as well as severe and long-lasting droughts. The City is situated along the Gulf Intracoastal Waterway, putting it in jeopardy of experiencing a major oil spill. These factors all combine to threaten the ecosystems that drive the economy of Aransas Pass, and the property and livelihoods of Aransas Pass residents.

Over the past two years, the Reserve’s Coastal Training Program has been engaging Aransas Pass in working on issues of coastal resiliency. Coastal resilience means increasing the ability of a community to “bounce back” after a hazardous event, rather than simply reacting to impacts. In the spring of 2014, along with Texas Sea Grant, the Mission-Aransas Reserve Coastal Training Program conducted the Coastal Resilience Index (CRI) with the City of Aransas Pass. The CRI was developed by Mississippi-Alabama Sea Grant and has been utilized in numerous communities across the Gulf Coast.

The results from the CRI assessment allowed the City to identify areas within the community that need strengthening in order to increase resilience. As a response to the CRI results, the Reserve is working with the City to develop a comprehensive resilience plan that will improve areas of weakness within the community. Development of the resilience plan involves gathering input from valuable stakeholders as well as community members by attending stakeholder group meetings and community-wide forums. Community members have been asked to state their opinions about coastal resiliency either through a paper or digital survey. Additionally, local residents and community stakeholders are provided with educational materials on natural and man-made disasters in order to better prepare businesses and households in the event of a community disaster. All the appropriate information has been gathered from the community, and the City is currently in the process of drafting the plan. After the plan is complete, another city-wide forum will be held in Aransas Pass to present the plan and discuss how it will be implemented.

By working with Aransas Pass to develop a comprehensive resilience plan, the Reserve will help the community become better prepared in the face of a disaster. By having a solidified plan in place that the community agrees with and knows, lives, infrastructure, and valuable ecosystem services can be better protected in the event of a disaster.


The students pictured here completed the city’s resiliency survey while participating at the Science and Spanish Club’s Leadership Conference on February 21st, 2015. Photo credit: Richard Gonzales.

Participants at the Science and Spanish Club’s Youth Leadership Conference learn about the National Guard’s role in disaster recovery and response. Photo credit: Richard Gonzales.
The ARK is building a Pelican Enclosure. We get dozens to scores of Brown Pelicans annually. Many come in entangled in fishing gear; hooks, line, swivels, sinkers, and lures. In their struggle to free themselves, they do permanent damage to wings, bills, pouches, and legs. Young birds (all brown in their first year) suffer during their first winter from inexperience in catching fish and then taking handouts of often inappropriate food that fisher folk give them. They become bolder and tamper and ultimately go for bait that may be on the line or for discarded hardhead catfish that they would not normally eat but which may erect their spines and penetrate the delicate skin on the iconic pouch that defines these birds.

Last year we took in 174 Brown Pelicans and released 110 of them, but always there are a group of pelicans that survive their trauma of entanglement but do not heal enough to allow them to fly free and succeed in the wild. We have obtained permission from the state and federal agencies that issue our permits to keep some of these non-releasable birds. They have graced our fenced-in yard for years but feeding them has become quite difficult because of the dozens of healthy pelicans and gulls that fly in at feeding time to get free fish.

Thanks to an idea that long-time supporter of the ARK, Taddy McAllister of San Antonio and Port Aransas, the Pelican Enclosure is about to take shape. Taddy’s mother, Edith McAllister was instrumental in getting the ARK Turtle Building constructed in the late nineties and the ARK is named after Mrs. McAllister. Taddy’s friends and her Mom all contributed in the form of a birthday present that went directly to the pelicans and their soon to rise enclosure. Island Construction LC has removed the old tanks and Gazebo and prepped the ground. The next step is to set pilings, sculpt a pool, drape netting and ultimately introduce our “Permanent Pelicans” to their new digs. They will be joined by a Roseate Spoonbill, a couple of Redheads, and a Snow Goose.

It’s been a busy year to date at the ARK. Here are the numbers:

BIRDS: 228 birds of 63 different species.
29% have been released but 41 are still in rehab.
Topping the list are Brown Pelicans and Laughing Gulls. Recently we’ve got Common Loons, Masked Boobies, Cormorants and the usual Great Blue Herons. Baby bird season is upon us and the first of the baby Killdeer have come in from a construction site where eggs were removed. Three have hatched. UTMSI has its own Killdeer pair that nested again on the Main Lab roof. The young will have to get off the roof and we’re anxious to see this traumatic beginning to life succeed.

SEA TURTLES: We deal with both alive and dead stranded sea turtles. 291 sea turtles of three species (241 live). 206 of them have been released (85% success) while 22 remain in rehab.

OTHER REPTILES: 20 individuals of 4 species, 80% release success, mostly fresh water turtles and dry land tortoises, 4 remain in rehab.

SMALL MAMMALS: 31 individuals of 5 species, 52% released, mostly fox squirrels, cottontails, opossums. 7 remain in rehab.

We admitted two strange animals earlier this year: a pocket gopher was rescued from the surf zone on Mustang Island Gulf Beach. Despite its half-dead look when found, it recovered fully and was released the next day to dig up someone’s back yard or golf course.

A friendly coatamundi with an extraordinary nose turned out to be someone’s legal pet and was returned to the owner. But our “stock in trade” animals are those of the marine environment, sea turtles, pelicans and shorebirds. We have just started the Sea Turtle Nesting Patrols on Mustang and San Jose Islands looking for endangered Kemp’s Ridley nests. We will keep everyone updated on our findings in the next newsletter.
New Land Cover Report

A new NOAA report says 13 percent of the U.S. Gulf of Mexico region saw changes to its land cover: paved surfaces, trees, forests, grasses, and wetlands from 1996-2010. That figure represents 26,516 square miles, almost the equivalent of half the state of Louisiana.

Land cover reports and data can be found at www.coast.noaa.gov/digitalcoast/publications/regional-land-cover-change.

UTMSI Green Team’s Green Tip

What can you do to save the bees - and your avocado and broccoli as well?

• Buying organic is an easy way to support pollinators and the farmers who do not use pesticides.

• Solve pest problems at home without toxic and persistent pesticides. These treatments are damaging if applied while flowers are in bloom. They can get into the pollen and nectar and be taken back to the hive where they also get into the honey.

• Plant bee-friendly flowers and fruits. Bees are losing habitat world-wide. Just planting flowers in your garden, yard, or in a planter will help provide bees with forage.

• Buy local, raw honey. The honey you buy sends a message to beekeepers about how they should keep their bees. There are beekeepers at nearly every farmer’s market selling their honey and other products.

• Let your veggies bolt. Allow a few leafy vegetables in your garden to “bolt,” or go to seed. Seeding plants are a bee’s best chance to stock up on food before the colder months. Making sure their larder is stocked will help them snap back once the weather warms.

CALENDAR OF EVENTS

May
7 Wetlands Warrior Work Day, 3p.m. - 5p.m., Wetlands Education Center
9 Egery Flats Cleanup, 9a.m.-12p.m.
16 Oyster Recycling, 8:30a.m. - 11:30a.m., Goose Island State Park

June
8-12 UT Summer Science
13 Early Explorer Lab, 10a.m. - 11a.m.
15-19 UT Summer Science
22-26 UT Summer Science
27 Early Explorer Lab, 10a.m. - 11a.m.
6/29 -7/3 UT Summer Science

July
5 & 12 UTMSI Public Lecture, 7 p.m. in the Auditorium
11 Early Explorer Lab, 10a.m. - 11a.m.
14-16 Teachers on the Estuary Workshop
25 Early Explorer Lab, 10a.m. - 11a.m.

August
8 Early Explorer Lab, 10a.m. - 11a.m.
22 Early Explorer Lab, 10a.m. - 11a.m.

Tours of the Wetlands Education Center
Every Tuesday & Thursday, at 10 a.m., Wetlands Education Center in Port Aransas

Marine Science Film and Discussion Series
Every Tuesday and Thursday, June 8 - August 26, at 3p.m., UTMSI Auditorium in Port Aransas

Science on a Sphere
Call 361-749-3161 for program times
Bay Education Center in Rockport

For more information on our educational programs please visit www.missionaransas.org
Or email carolyn.rose@utexas.edu
The Mission-Aransas National Estuarine Research Reserve includes 186,708 acres of federal, state, and private land, on the south Texas Coast. A great diversity of habitats are contained within the Reserve, including tidal marsh, riverine, marine, prairie, mangrove and woodland. Protecting these habitats, encouraging resource conservation and providing opportunities for research and education are among the major goals of the Reserve. The Reserve is administered by the University of Texas Marine Science Institute and the National Oceanic and Atmospheric Administration, in partnership with governmental agencies and private organizations. Mission-Aransas Reserve partners include the United States Fish and Wildlife Service, Texas General Land Office, Texas Parks and Wildlife Department, Texas Department of Transportation, Coastal Bend Bays & Estuaries Program, Coastal Bend Land Trust, The Nature Conservancy, Fennessey Ranch, and Aransas County / City of Rockport.