

## Welcome Dr. Robert Dickey, New Director of UTMSI

Dr. Robert Dickey is the new director of the University of Texas Marine Science Institute (UTMSI is the state partner and managing entity for the federally funded Reserve). "We are very pleased to have such a distinguished scientist and talented leader," said Sally Palmer, Reserve Manager. Prior to joining UTMSI, Dr. Dickey was director of the U.S. Food and Drug Administration Gulf Coast Seafood Laboratory and Division of Seafood Science and Technology in Dauphin Island, Alabama. In addition to overseeing the Mission-Aransas Reserve, Dickey will lead 14 UTMSI faculty. The Reserve staff is excited to have Dr. Dickey aboard.



The Reserve has also begun work with a design firm, Wilderness Graphics, Inc., to develop educational displays in the new *Bay Window*. The *Bay Window* will be located in the UTMSI Visitor Center and house approximately 950 square-feet of new exhibits. These exhibits will be designed to raise the awareness of the ecological and economic importance of estuaries. Mark your calendar for the target opening - World Oceans Day on June 8, 2014.

This summer has been busy! We've formed several new partnerships and are weathering the budget deficit. The Wetlands Education Center at the UTMSI sports a new bird blind and seating feature courtesy of an architecture class from The University of Texas at Austin. The new feature was designed and built by a group of creative and enthusiastic students, led by Professor Coleman Coker, the Ruth Carter Stevenson Regents Chair in the School of Architecture at The University of Texas at Austin. The design reflects the natural elements of the island. Within the blind, tall pre-treated lumber, interspersed with iron pipes, represent native grasses juxtaposed with the oil and gas industry. Seating within the blind also showcases the use of native plants and animals with a natural grass planter and oyster shell structural support. The students spent the semester designing the project and used ideas generated from trips to Port Aransas and visits to habitats within the area. The project also has unique seating among the shore grasses that invite visitors to relax and reflect upon nature. Each seat has a different design that represents an element of the marsh environment. Stop by and check it out for yourself!

The Reserve program is funded through a state (University of Texas) and federal (National Oceanic and Atmospheric Administration) partnership. As a program partially funded by federal resources, the Reserve is dealing with budget cuts resulting from the recent sequester. We have had to cut some programs and reduce activities, but this should not significantly affect the primary goals of the program. Due to our tremendous support from partners, the University, and grant opportunities, the Reserve will be able to maintain core staff and programs.

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# Measuring Currents in the Mission-Aransas Estuary

by Dr. Lindsay Scheef,  
Postdoctoral Fellow

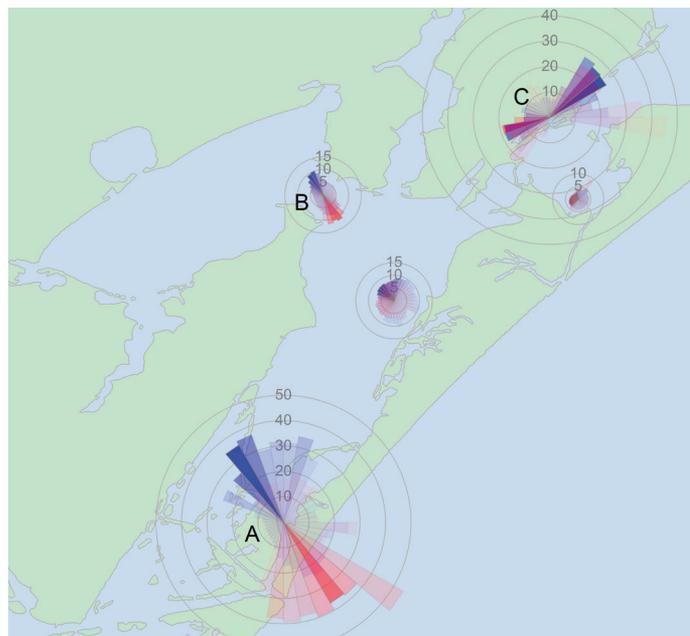
Those of us who regularly spend time on the bays of the Mission-Aransas Estuary have probably noticed how the water moves within and between them. However, up until now, no direct measurements of currents in the estuary have been made. The TxBLEND model developed by the Texas Water Development Board uses a computer to simulate water circulation and predict salinity patterns in the estuary under different conditions, but the model's accuracy could be improved with circulation data gathered from the field. As part of a larger project examining the potential magnitude and impact of reduced freshwater inflows to the estuary, we have deployed "tilt" current meters throughout the bays to gather the data needed to improve the model.

Tidal and wind-driven currents are responsible for carrying nutrients, sediment, algae, and the larvae of many species throughout the system. They also



Each tilt meter is a two foot rod with a tether on one end and a cap on the other. The tether attaches the meter to a stake anchored in the sediment, allowing the meter to float freely in the water above. A data logger under the cap records how far and in what direction the meter leans in a current. These values can be converted to current speeds and directions.

determine how seawater from the Aransas Ship Channel, estuarine water from neighboring bays, and freshwater from the Mission and Aransas rivers enter and affect different parts of the estuary. The mixing and transport of freshwater into the estuary by currents is particularly important because many ecologically and economically important species rely on the lower salinity conditions maintained by freshwater inputs.



This data summary for five of the sites shows very strong tidal currents in some areas, such as between the Lydia Ann Channel and Aransas Bay (A) and between Aransas Bay and Copano Bay (B). Blue = incoming tide and red = outgoing tide in cm/s; darker bars represent more measurements. The currents in other areas, such as the Intercoastal Waterway by the Aransas National Wildlife Refuge (C), are more influenced by the speed and direction of the wind.

In the face of climate change and the increasing water demands of a rapidly growing population, the Mission-Aransas Estuary may experience dramatic reductions in freshwater inflows. A better understanding of the water circulation and exchange patterns within the estuary could help us anticipate how various parts of the system might be affected by the changes in salinity associated with decreased freshwater inputs.

So far we have gathered nearly three months of data for 15 sites in Aransas, Copano, and Mesquite bays, but we would like to have measurements for as many different conditions and locations as possible. In addition to continuing measurements in Aransas, Copano, and Mesquite bays through the winter, we are collaborating with the Texas Water Development Board and the San Antonio Bay Foundation to deploy meters in San Antonio Bay.

# Reducing Bycatch of Diamondback Terrapins in Blue Crab Traps

by Katie Swanson,  
Stewardship Associate

Diamondback terrapins are the only type of turtle that lives exclusively in brackish water habitats such as estuaries, salt marshes, and tidal creeks. Their range extends all the way from Massachusetts to Texas. Habitat loss, boat strikes, and other human-induced stressors have all contributed to terrapin population declines, but one of the greatest threats to terrapin survival is drowning in crab traps. Terrapins are lured into the traps by the same bait that attracts blue crabs, and if they become stuck in the traps, the terrapins are unable to breathe and drown.

Bycatch reduction devices (or BRDs) installed on crab traps have been shown to reduce terrapin mortality. BRDs are simple, rectangular devices attached at each opening of the crab trap. These devices keep terrapins from entering the traps, while still allowing crabs to enter. Research along the Eastern and Gulf coasts have shown that these devices reduce the number of terrapins accidentally caught, while having little to no effect on the number or size of blue crabs caught.

The Mission-Aransas Reserve is completing a similar study in Port Bay, an area where both diamondback terrapin and blue crab populations are known to overlap. Two types of crab traps are placed in the water near the shoreline: traps with BRDs and traps without. All traps are also modified with a “chimney” that sticks out of the water. The chimney ensures that any terrapins caught during



Diamondback terrapins are named for the diamond-shaped growth rings on their top shell.

the study are able to surface and breathe. Traps were deployed and sampled daily for at least five continuous days a month from March to August. All terrapins and crabs that were captured were measured and weighed before being released. Only two terrapins were caught, but both were found in traps without BRDs. Results also show that the presence of BRDs did not affect the number or size of crabs caught.

Similar studies are being completed at other locations along the Texas coast. The data collected from these studies, along with our study in Port Bay, will provide important information for the conservation of Texas diamondback terrapin populations and could help guide future regulations.

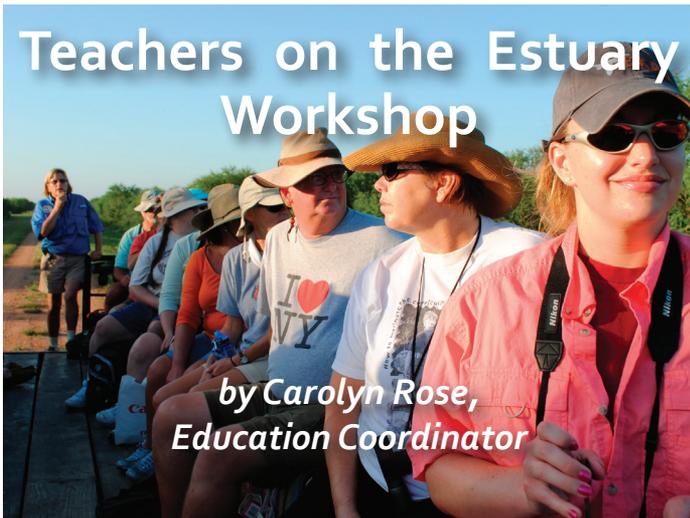


Bycatch Reduction Devices (or BRDs) placed at the openings of crab traps reduce the incidental capture of diamondback terrapins, while still allowing crabs to enter.

## 1st Place Excellence in Construction Eagle



The Estuarine Research Center and SpawGlass Contractors, Inc. received 1st Place Excellence in Construction Eagle from the Associated Builders and Contractors of South Texas. The project has also been submitted to the national competition. Image (left-right): Rene Capistran (Spaw Glass, President of South Texas Region), Kathleen Acock (ABC South Texas Chapter, Chair), James Shackelford (UT Office of Facilities Planning and Construction, Senior Project Manager), Sally Palmer (Reserve, Manager), and Joel Stone (Spaw Glass, Chief Executive Officer).



New science education frameworks and more rigorous standards have encouraged many teachers to search for instructional activities that help their students understand how science is practiced in the real world. A 2012 Mission-Aransas Reserve teacher needs assessment showed that teachers are interested in learning new, hands-on activities that focus on the interdependence between organisms and environments and human impact on environments. The Mission-Aransas Reserve will host a Teachers on the Estuary (TOTE) workshop during the summer of 2014 to help local middle school teachers learn how to access relevant scientific research and apply it in classroom, laboratory, or field investigations..

The TOTE workshop will introduce teachers to inquiry-driven activities that incorporate real scientific research and data. Teachers will interact with the scientists who conduct the research and learn effective methods of accessing and integrating scientific data in their teaching. Workshop instruction will focus on interactive, field-based, experiential learning approaches,



Teachers participating in a field investigation at a Teachers on the Estuary workshop in Alabama.

in which teachers will practice what they will later teach in the classroom, laboratory, or field. Field investigations of seagrass, oyster reef, salt marsh, and other critical habitats will be conducted by teachers as part of the workshop.

A holistic perspective of coastal environments, human impact on coastal resources, relevant research, and crosscutting scientific concepts will be incorporated into the workshop sessions through the introduction of activities from the NERRS Estuaries 101 Middle School Curriculum, NOAA’s Science on a Sphere®, and other relevant resources. The three-day 2014 summer workshop will be followed up by student field experiences during the academic year, allowing participating teachers to interact with workshop trainers and jointly teach the activities presented in the workshop.



Identifying birds at Fennessey Ranch during a Mission-Aransas Reserve teacher workshop.

Thanks to a generous grant from the Texas General Land Office Coastal Management Program, the workshop will be offered free to 24 teachers who teach in one of the 12 public independent school districts within the Texas Coastal Zone Boundary and the watershed of the Mission-Aransas Estuary. The follow-up student field experiences are also fully grant funded. Funding for field experiences will include substitute teacher wages, bus transportation to field sites, and program fees. Participating teachers will also receive a small stipend to purchase educational supplies for their students. For more information about the TOTE workshop or to inquire about eligibility for participation, please contact Carolyn Rose at carolyn.rose@utexas.edu or 361-749-3152.

# BP Deepwater Horizon Restoration & Recovery: Implementing the RESTORE Act in Texas

by Heather Wade,  
Coastal Planning Specialist,  
Texas Sea Grant  
&  
Kristin Hicks,  
CTP Coordinator,  
Mission-Aransas Reserve

The BP Deepwater Horizon oil spill in 2010 represented one of the most severe disasters to hit the Gulf Coast since Hurricane Katrina. The damage caused by the oil spill severely impacted the Gulf Coast and posed a significant threat to the Gulf's already degraded ecosystems. Following the oil spill, Congress passed legislation that was designed to hold the parties responsible for the oil spill accountable for restoring the Gulf Coast. Known as the RESTORE Act, the legislation was designed to use civil and criminal fines to restore the entire Gulf Coast from the effects of the oil spill, as well as years of continued degradation due to extensive use. Each state in the Gulf is responsible for developing a state plan for using the RESTORE Act funds, and Texas has just started the process for its plan.

Texas Sea Grant, in partnership with the Environmental Law Institute (ELI), the Mission-Aransas National Estuarine Research Reserve (the Reserve), and the University of Texas Marine Science Institute (UTMSI) hosted the "BP Deepwater Horizon Restoration and Recovery: Implementing the RESTORE Act" workshop on Tuesday, July 16, 2013, at the UTMSI Auditorium in Port Aransas, Texas. This workshop had two main goals: (1) to provide workshop participants with detailed information about the RESTORE Act, and (2) to provide participants with the opportunity to provide input to the state on how the Texas State Plan should be developed. The workshop was attended by 82 participants who represented a variety of audiences, including but not limited to: state agencies, non-governmental organizations, city and county governments, and local citizens.

Meeting sessions included: a comprehensive overview of current Gulf of Mexico restoration and recovery processes and an in-depth look at the history of the RESTORE Act and the processes created by the Act by ELI; a panel discussion on participating in the implementation of the RESTORE

Act in Texas with representatives from the National Wildlife Federation, City of Corpus Christi, and the Coastal Bend Bays & Estuaries Program; a presentation on the key priorities and challenges of ocean and coastal restoration by the Ocean Conservancy; and a feedback session facilitated by the Reserve to identify local and statewide restoration priorities and next steps. The public input gathered during the feedback sessions will be put together in a summary report and sent to Commissioner Toby Baker, who is Governor Rick Perry's appointee to the Gulf Ecosystem Restoration Council and the point of contact for the development of the Texas restoration plan. For more information about this workshop or the RESTORE Act, contact Heather Wade at [hbwade@tamu.edu](mailto:hbwade@tamu.edu) or at 361-749-3049.



Meeting participants use networking opportunities to discuss the RESTORE Act and restoration projects in the Gulf of Mexico.

The Coastal Training Program has a lot of great activities coming up in the next several months! Check out the Mission-Aransas event calendar for more information, or contact Kristin Hicks at [kristin.hicks@austin.utexas.edu](mailto:kristin.hicks@austin.utexas.edu) or at 361-749-3048.

## Green Tip:

Fall means it is time for football and tailgating. Here are some tips to make your tailgating parties a little more green . . .

1. Recycle your aluminum cans and plastic bottles
2. Keep trash cans near, and clean up after yourself
3. Use reusable dishes instead of plastic or Styrofoam
4. Carpool to the big game or party
5. Buy local/organic foods
6. Buy bulk products or items that use less packaging





## Animal Rehabilitation Keep News

by Anthony F. Amos,  
Animal Rehabilitation Keep Director

The Animal Rehabilitation Keep admitted 1,010 birds of more than 100 species by the end of August 2013 - that averages out at more than four per day. We also dealt with 262 sea turtles in 243 days: that's more turtles than days. Add to that the 31 other reptiles of 11 species and 64 small mammals of 10 species, and this year promises to be a record one.

Out of the thousand bird stories, I'll tell two here. A young brown pelican was found on the Padre Island National Seashore about 80% covered in thick black tar. Things looked pretty hopeless at first. We embarked on a cleaning program that is not over yet, but the bird is going to survive and will hopefully be released back to the wild. We opened up the Oiled Wildlife Facility and used everything from Dawn detergent, mineral oil, GoJo, lots of warm water and mayonnaise (yes, mayonnaise, which worked quite well on some of the thickly matted feathers). For this one bird we produced five 55-gallon barrels of oily water and used 10 disposable hazmat suits, numerous gloves, and umpteen bags of oiled towels and rags, all of which had to be disposed of through the University's Environmental Health and Safety department. We owe many thanks to Veril Barr,



*This juvenile Brown Pelican came in covered in thick oil. The initial cleaning sequence features "Oily" being bathed. Photo taken by Miguel Abecia. Two weeks later Oily is still looking rather dark but is well on the way to a full recovery. This is quite remarkable!*

UTMSI's Hazmat officer, Groundskeeper Miguel Abecia, and ARK workers Cheney Taylor, Andrew Orgill, and Guy Davis (the Mayonnaise King) for enduring the hard and less-than-pleasant work of dealing with oil, a struggling bird, and the heat of being in a Hazmat suit in South Texas in August.

Some species of birds prove to be very difficult to raise successfully from newly hatched chicks. This is especially true of ground birds like Killdeer and Nighthawks, which are often "kidnapped" by well-meaning people who think the baby birds have been abandoned. This year we have taken in 10 Nighthawks and Andrew Orgill came up with a method of feeding the babies that was simple in concept but has taken a lot of effort on Andrew's part (i.e., feed them at dusk, the time of day they get fed in nature). To do this Andrew takes his little colony of nighthawks home daily - he is a sub-permittee on the ARK's rehab permit and is allowed to do this. As a side benefit, Andrew noted that the majority of the birds seem to be the rarer Lesser rather than the usual Common Nighthawks. We are taking careful measurements to show this difference. This is an example of the ARK gleaning important scientific information from our efforts to rehabilitate our wards.

On September 2, 2013 we released six sea turtles from our "Gulf Turtle Release Station" at Marker 35 on Mustang Island Gulf Beach. The beach event was organized by Friends of the ARK, a non-profit group that raises a considerable portion of our yearly operating expense. They also organized the several hundred spectators to sing ARK Director Tony Amos the Birthday Song (how many people get hundreds of others to sing Happy Birthday to them!?). Six Greens, one Loggerhead, and one Ridley went to sea that day. One green was recaptured before it got very far because it did not seem to be using its rear limbs and the Ridley showed up in the Harbor Island Ferry slip the next day swimming erratically, sometimes upside-down. It was difficult to recapture in the swirling waters. Our veterinarian will examine this turtle to see why it is behaving so erratically. Erratic or not, It travelled 7.5 miles in just over a day.

Finally, we got some great news from the Valley. Although we don't rehabilitate dolphins these days (Tony Amos still deals with stranded dolphins as the local Texas Marine Mammal Stranding Network Coordinator) one of our successful efforts involved the release in Port Isabel in 2005 of Ranger, a male Bottlenose Dolphin. Ranger was spotted recently by South Padre Island dolphin whisperer Scarlet Colley who said [Ranger] is a strapping young man with his whole family around him.

## Meet the New Staff



**Katie Swanson** is working with the Reserve's Stewardship Program to promote appreciation and conservation of coastal resources through research and education. Her specific responsibilities will include working with the staff at Fennessey Ranch to monitor land management practices, coordinating marine debris

and clean-up programs, and helping to conduct research on the impacts of sea level rise on coastal wetlands.



**Abbie Sherwin** is the new TIDES intern at the Reserve she's a graduate student from the University of New Hampshire. Her primary responsibility is working on the collaborative project, Balancing Freshwater Needs in a Changing Environment. She is also assisting researchers at the Reserve and developing a

variety of science communication tools.



**Colbi Gemmill** is a new Education Specialist at the Reserve. Her primary focus will be on developing the new Reserve exhibit space in the UTMSI Visitor Center. Colbi will also be helping out with various educational programs within the Reserve.

### Fond Farewells

Dr. Zack Darnell took a professor position at Nichols State in Louisiana, where he plans to continue collaboration with the Reserve through this research on blue crabs. Shanna Madsen, our former Environmental Cooperative Science Center Coordinator, took a position as the Fisheries Science Coordinator at the Atlantic States Marine Fisheries Commission in Washington D.C. Master's student Aubrey Lashaway recently graduated and is teaching biology as a lecturer at Trine University. The Reserve's staff is very proud of all of them and wish them well.

## CALENDAR OF EVENTS

### SEPTEMBER

- 17 **BREAKING THROUGH BARRIERS WORKSHOP, CONTACT KRISTIN.HICKS@UTEXAS.EDU FOR DETAILS**
- 18 **CHARM SPEAKER SERIES: DR. SHANNON VAN ZANDT, BAY EDUCATION CENTER, 11A.M. - 12NOON**
- 28 **NATIONAL ESTUARIES DAY, TANGLED TURTLES AND GLOBE-TROTTERING TRASH & ARANSAS NATIONAL WILDLIFE CLEAN-UP, CONTACT COLLEEN.McCUE@UTEXAS.EDU FOR RESERVATIONS**

### OCTOBER

- 16 **CHARM SPEAKER SERIES: DR. EDWARD J. BUSKEY, BAY EDUCATION CENTER, 11A.M. - 12NOON**
- 30 **STAYING PRODUCTIVE ON THE GO: MOBILE TECHNOLOGY TRAINING CAFÉ COSTS AND BENEFITS OF RENEWABLE ENERGY IN TX, CONTACT KRISTIN.HICKS@UTEXAS.EDU FOR DETAILS**

### NOVEMBER

- 9 **EGERY FLATS CLEAN-UP 8:00A.M.-12NOON, CONTACT KATIE.SWANSON@UTEXAS.EDU FOR DETAILS**
- 11 **COASTAL PLANNING TOOLS WORKSHOP, CONTACT KRISTIN.HICKS@UTEXAS.EDU FOR DETAILS**

### DECEMBER

- 13 **ARANSAS COUNTY APPRECIATION HOLIDAY BRUNCH, BAY EDUCATION CENTER, 9A.M. - 10:30 A.M.**

### JANUARY

- 16 **UTMSI PUBLIC LECTURE SERIES STARTS RUNS THROUGH MARCH 13, 2014**

**TOURS OF THE WETLANDS EDUCATION CENTER EVERY TUES & THURS, AT 10A.M., UTMSI VISITOR CENTER IN PORT ARANSAS**

**AFTERNOON MOVIE EVERY MON - THURS, AT 3P.M., UTMSI VISITOR CENTER IN PORT ARANSAS**

**SCIENCE ON A SPHERE EVERY TUES - SAT, AT 2P.M. AND 3P.M., BAY EDUCATION CENTER IN ROCKPORT**



**MISSION ★ ARANSAS**  
**NATIONAL ESTUARINE**  
**RESEARCH RESERVE**  
University of Texas  
Marine Science Institute  
750 Channel View Drive  
Port Aransas, Texas 78373  
[www.missionaransas.org](http://www.missionaransas.org)



## MISSION ★ ARANSAS NATIONAL ESTUARINE RESEARCH RESERVE STAFF & PARTNERS

### ADMINISTRATIVE

Reserve Manager: *Sally Morehead Palmer*  
Administrative Associate: *Candace Peyton*

### COASTAL TRAINING PROGRAM

Coastal Training Program Coordinator: *Kristin Hicks*  
Sea Grant Coastal Planning Specialist: *Heather Wade*

### RESEARCH

Research Coordinator: *Dr. Ed Buskey*  
Research Assistants: *Cammie Hyatt, Joe Myers, & Rae Mooney*  
Cooperating Scientist: *Dr. Tracy Villareal*  
Graduate Research Fellows: *Kelly Darnell & Sara Wilson*  
Postdoctoral Fellows: *Dr. Jianhong Xue & Dr. Lindsay Scheef*

### EDUCATION

Education Coordinator: *Carolyn Rose*  
Marine Education Services Director: *Sara Pelleteri*  
Education Specialists: *Suzy Citek, Julie Findley, Colbi Gemmell, & Dana Sjostrom*  
Outreach & Volunteer Coordinator: *Colleen McCue*  
Road Scholar Coordinator: *Linda Fuiman*

Marine Science Institute  
THE UNIVERSITY OF TEXAS AT AUSTIN



### STEWARDSHIP

Stewardship Coordinator: *Dr. Kiersten Madden*  
Stewardship Associate: *Katie Swanson*  
Cooperating Scientist: *Dr. Ken Dunton*  
Animal Rehabilitation: *Amanda Terry & Guy Davis*



The Mission-Aransas National Estuarine Research Reserve includes 185,708 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, Nature Conservancy, Fennessey Ranch, and Aransas County / City of Rockport.