



FY 2027 Annual Work Plan





*Protecting our bays
and estuaries*

FY 2027

Comprehensive Annual Work Plan

Approved by
CBBEP Board of Directors
August 27, 2026

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INTRODUCTION

The Coastal Bend Bays & Estuaries Program (CBBEP) was formed as a nonprofit to ensure that there is a thriving bay system in the Texas Coastal Bend that supports a high-quality life and is sustained for generations to come. For over twenty years, the organization has been driven and guided by local stakeholders whom recognize our interdependence on the bay system and place a high value on protecting and restoring our bays and estuaries. As part of the National Estuary Program, the CBBEP is a nonregulatory, voluntary partnership effort working with industry, environmental groups, bay users, governments, and resource managers to improve the health of the bay system. Public participation by individuals and organizations is encouraged. A mix of local governments, private industry, and state (Texas Commission on Environmental Quality, Texas General Land Office, and Texas Parks and Wildlife Department) and federal (United States Environmental Protection Agency and United States Fish and Wildlife Service) agencies provide program funding. The CBBEP also seeks private grants/donations and additional governmental funding.

The CBBEP project area encompasses the estuarine environment of 75 miles of the south central Texas coastline, and includes the 12 counties of the region known as the Coastal Bend. This 514 square mile area of water includes all bays, estuaries, and bayous in the Copano, Aransas, Corpus Christi, Nueces, Baffin, and upper Laguna Madre bay systems, which together represent three of the seven major Texas estuaries. The CBBEP's mission is to protect the bays and estuaries of the Coastal Bend, while supporting continued economic growth and public use of the bays. Major milestones for the CBBEP include:

- In 1994, the Corpus Christi Bay National Estuary Program is established and a multi-year, stakeholder-driven planning effort begins to develop the *Coastal Bend Bays Plan*;
- *Coastal Bend Bays Plan* is approved in 1998;
- In 1999, the CBBEP is established as a nonprofit organization, responsible for overseeing implementation of the *Coastal Bend Bays Plan*;
- CBBEP's Coastal Bird Program is established in 2000 to halt declines of heron, egret, pelican, tern, and other colonial waterbird populations;
- In 2003, CBBEP begins acquiring property in the Nueces River Delta to create the Nueces Delta Preserve;
- CBBEP's environmental education program, now called Delta Discovery, begins using the Nueces Delta Preserve in 2007 to educate students, teachers, and families about the importance of conserving our bays and estuaries;
- In 2016, CBBEP began working with stakeholders to develop the Coastal Bend Bays Plan, 2nd Edition, which received approval from EPA in January 2021;
- In November 2021, funds from the Infrastructure Investment and Jobs Act (IIJA) were designated for use by the National Estuary Programs; and
- In 2024, CBBEP celebrated it's 25 years of delivering innovative, non-regulatory, and locally-based solutions focused on resilient communities and economies, clean water, and healthy ecosystems.

HISTORY AND ACCOMPLISHMENTS

Efforts to improve the health and productivity of the Coastal Bend bays and estuaries began in the 1990's and resulted in the region being designated as an "estuary of national significance." This eventually led to the establishment of the Corpus Christi Bay National Estuary Program, which in turn initiated a multi-year, community-based planning effort to identify the problems facing the bay system and to develop a long-term "Comprehensive Conservation and Management Plan" (CCMP), locally referred to as *The Coastal Bend Bays Plan*, that outlined how to address the major priorities and issues. Federal and state agencies played an important role in the development of the CCMP. However, stakeholders wanted to localize and take ownership of the CCMP as it moved forward into the implementation phase. Therefore, the program was renamed and the Coastal Bend Bays & Estuaries Program was created in 1999 as a non-profit organization with the specific role of implementing *The Bays Plan*, which calls for the protection and restoration of the health and productivity of the bays and estuaries, while supporting continued economic growth and public use of the bays.

The Bays Plan identified specific actions that would benefit the bay system and the users of the bays. It was designed to complement and coordinate existing resource management programs and plans. The action plans were developed and refined through a series of workshops and committees that involved more than 300 individuals representing over one hundred organizations. The CBBEP recognizes that its action plans cannot remain static and must be modified to respond to the changing needs of communities, incorporate new programmatic, scientific, and technological advances, and address new environmental challenges. In 2016, the CBBEP initiated a new collaborative effort to revise *The Bays Plan* in order to incorporate developments that have occurred since the previous plan was drafted and to ensure that new priorities are being addressed. The *Coastal Bend Bays Plan, 2nd Edition* received EPA approval in January 2021. As part of this FY 2027 Work Plan, CBBEP will be including funds to work with a consultant to evaluate and update *The Bays Plan*.

The priority issues identified in *The Bays Plan, 2nd Edition* are: (1) alteration of freshwater inflow into bays and estuaries; (2) condition of living resources, (3) loss of wetlands and estuarine habitats, (4) degradation of water quality, (5) altered estuarine circulation, (6) increasing amounts of bay debris, (7) selected public health issues, (8) declining coastal bird populations, (9) resilient coastal ecosystems and human communities that can adapt to changing conditions, (10) implementation of effective adaptive management practices at CBBEP properties, and (11) well-educated public to be wise stewards of the environment. *The Bays Plan, 2nd Edition* addresses these priority issues under the following categories of action plans: (1) Human Uses, (2) Maritime Commerce and Dredging, (3) Habitat and Living Resources, (4) Coastal Birds, (5) Land Conservation and Stewardship, (6) Water and Sediment Quality, (7) Freshwater Resources, (8) Public Education and Outreach, (9) Delta Discovery, and (10) Coastal Resilience.

Since 1999, the CBBEP has been working to create a Texas Coastal Bend with cleaner water and sediment, healthier habitats and wildlife, greater public access, and a more aware and engaged public. With the help of numerous partners, the CBBEP has restored thousands of acres of marsh habitat, with projects stretching from Matagorda Island down to the Laguna Madre. We have also developed an education program that provides outdoor, hands-on learning experiences for thousands of students, teachers, and families every year. We have implemented projects that help provide better access to our bays for both residents and visitors, and we have partnered with local governments, agencies, and landowners to address water quality issues, such as harmful algal blooms, stormwater, and bacteria. We also started an important program to both study and address the issues associated with our declining coastal bird populations, and we of course cannot forget our land acquisition projects which have protected close to 14,000 acres of valuable coastal habitats. The sections below highlight some of the successes of the CBBEP during the previous fiscal year.

Habitat and Wildlife

Healthy bay and estuarine habitats provide the critical foundation for sustainable environments and thriving economies. These habitats help maintain wildlife and plant populations, improve water quality, support fishing activities, enhance local tourism, and reduce the impact of coastal hazards, such as flooding and storm surge. Coastal population growth, development, and rising sea levels threaten coastal habitats and wildlife, and this effect will continue unless projects are implemented to address these ongoing threats.

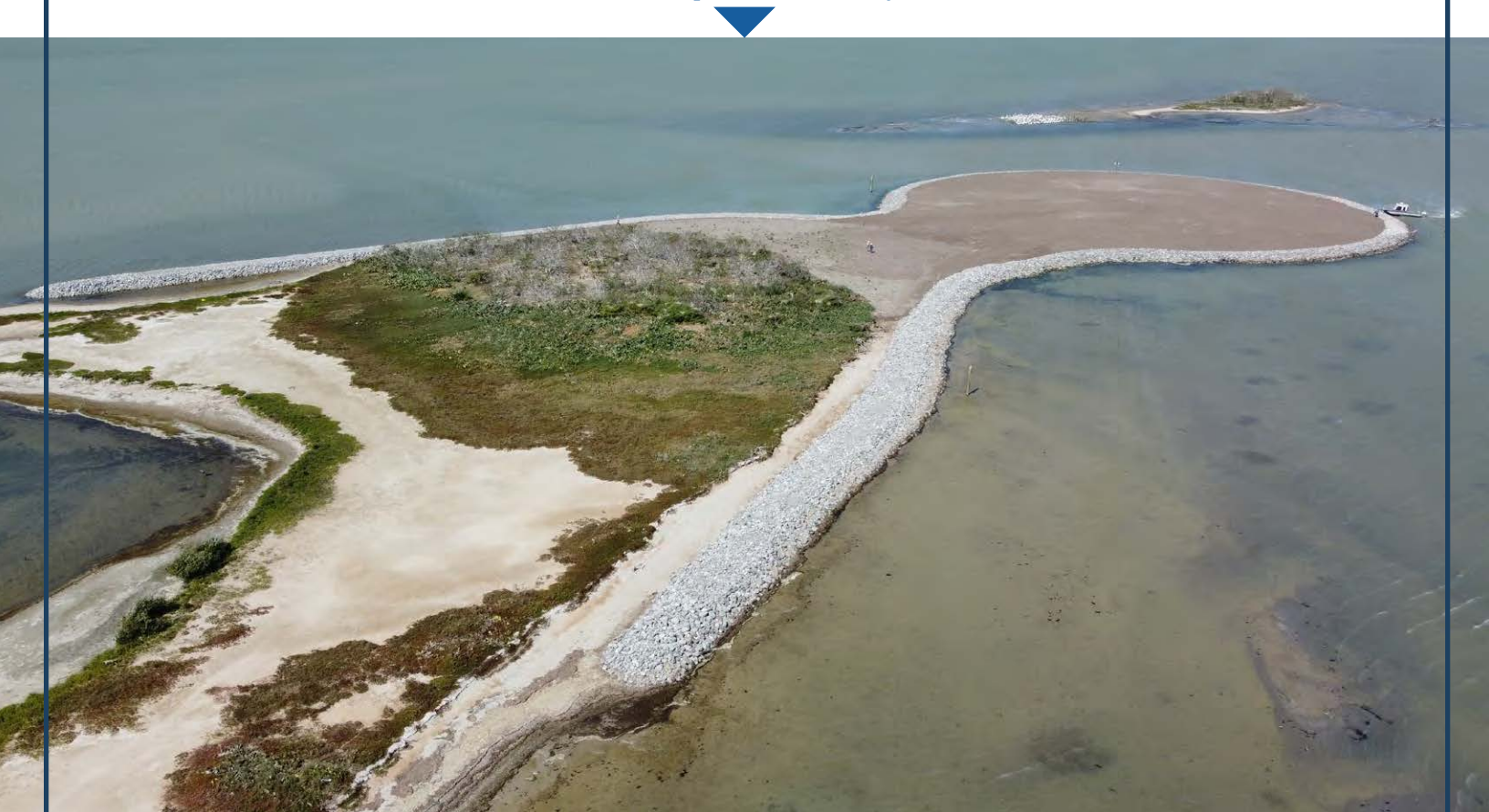
In recent years, CBBEP has increasingly prioritized shoreline protection projects that use nature-based solutions to reduce erosion, enhance habitat, and improve coastal resilience, including the Dagger Point Shoreline Protection and Restoration Project pictured below.



Dagger Point Shoreline Protection and Restoration: Since 2019, CBBEP has been leading a collaborative, multi-phase effort to restore and protect the rapidly eroding shoreline at Dagger Point within the Aransas National Wildlife Refuge, beginning with engineering and design work and advancing into large-scale construction of breakwaters and shoreline stabilization features. These efforts are aimed at reducing wave energy across San Antonio Bay, stabilizing collapsing bluffs, and protecting thousands of acres of coastal prairie, marsh, and critical wildlife habitat—much of which has been severely impacted by storms like Hurricane Harvey. Through strong partnerships with agencies such as the U.S. Fish and Wildlife Service and the Texas General Land Office, the project not only safeguards habitat and Refuge infrastructure but also supports long-term coastal resilience and the recovery of marsh and seagrass systems that have been lost over the years. The project reached an important milestone in FY 2026 with construction beginning in October 2025. Construction is still underway and is scheduled to be completed in the fall 2026.

Benny's Shack and Tern Island Protection and Restoration: In FY 2026, CBBEP implemented targeted restoration efforts at Benny's Shack and Tern Island to protect and enhance critical colonial waterbird nesting habitat. These projects focused on stabilizing island shorelines through the construction of rock breakwaters to reduce wave energy and erosion, as well as rebuilding island elevations and expanding island size with strategically placed sediments. Together, these efforts are part of a broader regional strategy to restore and sustain rookery islands across the Coastal Bend, improving habitat resilience and ensuring the continued viability of these important nesting areas within the Laguna Madre ecosystem. These major construction projects began in October 2025 and were both completed by April 2026.

The restoration of Benny Shack Rookery Island located just south of Port Mansfield in the Upper Laguna Madre was completed in February 2026.



Sunset Lake Park Invasive Species Removal: CBBEP supported habitat restoration efforts at the City of Portland's Sunset Lake Park through removal of invasive plant species that were degrading native coastal ecosystems. Efforts were focused on a 24-acre site heavily impacted by salt cedar and white lead tree. These invasive species had established dense stands, limiting native plant growth and altering habitat structure. Removal activities were completed in early fall 2025, opening the landscape for wildlife and allowing native plants the opportunity to re-establish. While the initial treatment marked a major milestone, there is still work to be done. The site is currently being monitored for re-sprouting, with the first round of follow-up treatments completed in March 2026 to ensure lasting results and prevent reinfestation. These actions contribute to improved water quality, enhanced shoreline stability, and a more resilient coastal landscape, while also supporting the Park's value as a resource for the surrounding community.



Contractors remove invasive salt cedars from Sunset Lake Park in the City of Portland.

Better Understanding Juvenile Tarpon Ecology: CBBEP provided funding to Texas A&M University–Corpus Christi to support research on juvenile tarpon in the Coastal Bend. This work is improving understanding of habitat use, distribution, and environmental conditions that support early life stages of this iconic sportfish. Preliminary results indicate that juvenile tarpon are utilizing low-salinity, sheltered habitats such as backwater marshes and tidal creeks, particularly in areas with limited predation pressure and abundant forage. The study also documented seasonal patterns in occurrence, providing new insight into when these habitats are most critical. Findings from the study will help inform future conservation and management efforts, contributing to the protection of nursery habitats and the long-term sustainability of tarpon populations in Texas coastal waters.

Ayres Point Oyster Reef Protection and Restoration: The primary outcome of the Ayres Point Oyster Reef Protection and Restoration project will be the restoration of 11.5 acres of oyster reef along Ayres Point in the Mesquite Bay complex that provides shoreline and marsh habitat protection, and supports a broad diversity of species. The restored oyster reef structure will be constructed in an area closed to commercial harvest, facilitating recruitment and growth of oysters and providing oyster larvae to surrounding oyster reefs in both open and closed waters. The restored oyster reef complex will have the added benefit of creating a complex habitat for numerous recreationally and commercially important fish and invertebrate species. During the past year, CBBEP continued to make significant progress on the project, securing a permit, completing final designs, and receiving additional funds for the construction phase which is expected to begin in the coming fiscal year.

Land Conservation and Stewardship

Despite their tremendous value, coastal habitats are threatened and at risk of being developed. The CBBEP Land Conservation Program has identified areas in need of protection within the Coastal Bend and is working with partners to conserve these valuable habitats. The Land Conservation Program has acquired either fee simple title or conservation easements for close to 14,000 acres of freshwater and saltwater marsh, forested wetlands, mudflats, riparian corridors, and native upland habitat. The CBBEP also works to manage these lands responsibly and sustainability for the long-term benefit of both wildlife and people.

Texas Coast Waterfowl Sanctuary Program - Year 3: The third year of the Texas Coast Waterfowl Sanctuary Program, implemented in partnership with Texas Parks & Wildlife Department, has become increasingly important as water and usable habitat continue to diminish across the Texas coastal plains. These sanctuary sites stand as deliberate acts of stewardship, where working lands momentarily set aside production in favor of renewal. Through the program, participating landowners agree to flood fallowed rice fields with six to eighteen inches of freshwater, transforming stubble and soil into shallow wetlands at precisely the moments when migrating waterfowl need them most. A

surrounding buffer zone, closed to hunting throughout the contract period, ensures these birds can feed and rest undisturbed by steel shot. At these sanctuary sites, the results of this stewardship are written plainly across the water's surface with thousands of ducks dotting the flooded fields. Among them, a diversity of shorebird species also work the shallows, probing and foraging in habitat that serves many migratory species. In these temporary wetlands, conservation needs and agriculture meet, and the land fulfills its steady obligation to the broader community of life that depends upon it.

Numerous ducks can be seen using utilizing a field that was flooded as part of CBBEP's Texas Coast Waterfowl Sanctuary Program.



Costa Grande Ranch Acquisition: In December 2025, The Conservation Fund acquired the 2,232-acre Costa Grande Ranch along the Texas mid-coast as part of a landmark effort to safeguard critical wintering habitat for endangered Whooping Crane populations. The property lies within one of the most important remaining coastal prairie and wetland landscapes for the Aransas-Wood Buffalo flock, the last self-sustaining wild population of Whooping Cranes in the world. The property is being strategically held by The Conservation Fund until CBBEP can finalize its purchase and assume permanent ownership, ensuring long-term stewardship and habitat restoration. This acquisition protects vital foraging and roosting grounds while preventing future development, advancing regional conservation efforts for Whooping Cranes and other sensitive coastal species.

Land Conservation Program Building: CBBEP has completed construction of a new facility to support its Land Conservation and Stewardship Program at the Nueces Delta Preserve, an 11,200-acre protected landscape central to the organization's mission. CBBEP's Land Conservation Program began with limited resources, but has grown in recent years into a robust, field-driven program supported by specialized equipment and a dedicated team. Their work spans prescribed burn management, invasive species removal, habitat restoration, and support for educational programming such as Delta Discovery field trips and teacher workshops. As the scope of conservation work has expanded, so too has the need for reliable infrastructure. The new facility addresses that need, providing a centralized, weather-protected hub for operations near the Preserve's Education Center. The new 2,100-square-foot Land Conservation Program Building includes enclosed workspace, covered equipment bays, office space, a kitchenette, restroom and shower facilities, and a large meeting area for trainings, workshops, and partner coordination. Constructed with high-efficiency insulation and modern modular materials, the building is designed to meet the demands of the South Texas environment while serving as a model for future conservation infrastructure. The new facility strengthens the long-term capacity of CBBEP's Land Conservation and Stewardship Program and reinforces its mission to protect and restore the health of the region's bays and estuaries, ensuring the Nueces Delta Preserve continues to benefit both people and wildlife for generations to come.



Aerial view of CBBEP's infrastructure at the Nueces Delta Preserve, including the newly constructed Land Conservation Program Building.

Water Quality and Freshwater Inflows

Water quality is important to estuarine productivity, wildlife habitats, and the economic vitality of the Coastal Bend. Maintaining water quality is challenging as populations increase and development continues, but it is possible through proper planning, pollution prevention programs, and other best management practices. CBBEP collaborates with partners to implement projects, programs, and planning efforts that seek to get ahead of water quality problems. We also work with partners on efforts to ensure that our bays and estuaries receive the optimal amount of freshwater inflows they need to maintain productive ecosystems.

Nueces River Tidal Segment Monitoring: After two years of intensive monitoring conducted at five stations along the Nueces River tidal segment, the Center for Coastal Studies at Texas A&M University - Corpus Christi has developed a strong data set. The monitoring tracked dissolved oxygen, chlorophyll, and bacteria levels, indicators critical to understanding ecosystem health. Results showed that conditions varied significantly in response to rainfall events, offering important clues about potential sources of impairment and highlighting the dynamic nature of the River's tidal segment. With funding secured for an additional year of sampling, this monitoring effort will continue to refine our understanding and inform future management actions. Complementing this monitoring work, CBBEP also funded a nutrient source tracking study in FY 2026 that is currently underway. By identifying both the symptoms and the underlying drivers of water quality challenges, partners will be better equipped to develop effective, science based solutions for improving water quality the Nueces River Tidal Segment.

Saenz Elementary School Rain Garden: CBBEP's green stormwater infrastructure projects are being implemented across the watershed and are proving their value in new and important ways. During extended drought seasons, rain gardens and native plant landscapes stand as reminders that every drop of water matters, and that thoughtful design can help communities handle both scarcity and runoff from sudden storms. When rain does arrive after long dry periods, it often falls quickly and intensely, rushing across rooftops, sidewalks, and parking lots before the ground has time to absorb it. This runoff can carry pollutants, sediment, and debris into nearby creeks, bays, and estuaries, making careful water management more important than ever. Green stormwater infrastructure helps slow and capture this precious water by filtering runoff through soil and vegetation. Rain gardens allow moisture to soak into the ground, replenishing local soils and filtering pollution before it can make it into the waterways. Built with regionally native plants, the rain garden installation at Saenz Elementary School is especially well suited to weather the south Texas climate. Even during dry spells, these plants remain resilient, continuing to provide habitat for

pollinators and birds while maintaining healthy soil systems that support future growth. Beyond their environmental benefits, this project also serves as an outdoor classroom and community learning space. Students and visitors can observe how native plants conserve water, reduce evaporation, and support pollinators in our local ecosystems. These living landscapes encourage curiosity, stewardship, and a deeper appreciation for natural solutions.



A rain garden was constructed at Saenz Elementary School in November 2025 - it was designed to reduce impacts of stormwater runoff and help address water quality concerns, but it will also help to beautify the campus and create an educational tool for teachers to use

Assistance to Wastewater Treatment Plants: Following studies that pointed to sewage from wastewater treatment plants as a contributor to nutrient issues in Baffin Bay, CBBEP partnered with the Nueces River Authority (NRA) to conduct outreach and offer assistance to the domestic wastewater treatment plants (WWTPs) that discharge into the tributaries of Baffin Bay. The goal was to help identify and address possible equipment, personnel, and capacity needs. NRA worked to form relationships with elected officials and WWTP operators to provide free assessments of WWTPs on a voluntary basis to identify and address infrastructure needs in both wastewater collection and treatment systems. In 2023, NRA and CBBEP expanded the program to include San Patricio and Refugio counties. In FY 2026, NRA and CBBEP expanded the program even further to Aransas County, which contains seven WWTPs. The ultimate goal is to provide guidance towards improving these facilities to reduce threats to water quality in local waterways. These outreach efforts provided an initial needs assessment of the WWTP facilities, and in FY 2026 CBBEP provided funds to the Coastal Bend Council of Governments (COG) to work with a consult to conduct formal engineering assessments at two communities and prepare funding applications to address the infrastructure needs. This effort is currently underway with an engineering firm hired to complete the assessments and draft funding applications. Once complete, the project will provide the support the communities need to improve the quality of the effluent discharge; thus, improving water quality in local creeks and bays.

Up2U Expansion: CBBEP's Up2U Litter Prevention Program continued to demonstrate measurable success by reducing litter and increasing public awareness across the Texas Coastal Bend. Originally developed as an empowering, behavior-based campaign, Up2U has distributed more than 188,000 litter bags through 29 distribution locations and 21 community partners, supporting cleanup efforts, outreach events, and education initiatives. Program accomplishments and partnerships were recognized with a CBBF Environmental Award, underscoring the program's regional impact. Building on this success, CBBEP is preparing to expand the Up2U program along the Texas coast through a three-year Texas General Land Office grant beginning in June 2026. The expansion will combine core elements of Up2U and Up2U+ to increase statewide litter bag distribution, install pet waste stations, offer mini-grants for dumpster events, and deploy customizable outreach tools. This expansion reflects CBBEP's commitment to scalable, community-driven solutions that prevent trash from entering bays and estuaries.



CBBEP's Up2U Litter Prevention Program was the recipient of the Coastal Community Group Award at the 2025 Coastal Bend Bays Foundation's Conservation and Stewardship Environmental Awards.

Coastal Birds

South Texas is the cradle and crossroads for an array of resident and migratory birds. A variety of coastal habitats support millions of shorebirds, waterfowl, and wading birds. CBBEP's Coastal Bird Program has worked to conserve coastal birds and their habitats, identifying and addressing conservation needs through on-the-ground management actions, research, and education and outreach. The Program has a strong track record of bringing innovative management, diversified partnerships, and science-based decision-making to bird conservation on the Texas coast.

Migratory Shorebird Habitat Initiative: In FY 2026, the Migratory Shorebird Habitat Initiative focused on strengthening the network of stopover habitat for migrating shorebirds by working directly with landowners across working landscapes. Through workshops, site visits, and ongoing outreach efforts, the program was able to expand relationships and shared practical guidance on how water depth, strategic timing, and vegetation management can make the difference between a field that is passed over and one that fills with birds. These efforts clearly translate into action on the ground with 12 landowners from across six different counties partnering with CBBEP to survey more than 2,000 acres of wetlands. In many cases, landowners adopted shorebird-friendly management practices voluntarily, reflecting a growing understanding of habitat needs and a shared commitment to conservation. Each monitored site added to an improving image of habitat conditions across the landscape, strengthening adaptive management and reinforcing the role of private lands in supporting migratory species.

Building on this foundation, 2025 marked an important step forward with the launch of the Shorebird Habitat Incentive Program, supported by the Texas Flows Fund through Texas Water Trade. Designed as a short-term, outcome-focused approach, the program compensated landowners for providing shallow-water habitat during peak migratory periods, when timing is especially critical. During a five-week pilot period, participating landowners shaped more than 160 acres of managed shorebird habitat, with fields prepared in advance and water maintained at optimal depths of one to four inches to support foraging birds. Weekly site visits and surveys confirmed that contracted habitat areas were functioning as intended. Vegetation was cleared prior to flooding, water levels were maintained within target ranges, and shorebirds responded quickly to the available foraging and loafing grounds. Over the course of the program period, monitoring documented more than 4,400 shorebirds using incentive-supported wetlands over five weekly surveys. These observations provided early confirmation that the program design could deliver real, on-the-ground benefits for migrating birds while offering landowners a flexible and practical conservation option.

Rookery Island Monitoring & Management: Each year, the Coastal Bird Program focuses on implementing successful waterbird management actions to reverse declines in colonial nesting waterbirds – this includes installing protective signs, removing exotic vegetation, planting native shrubs, and eliminating nest predators. Consistent, annual efforts are vital in properly managing rookery islands. It takes numerous seasons of intense management to improve island habitat. Staff have also focused on monitoring islands for nesting success, engaging with the community, and coordinating volunteers.

In recent years, Coastal Bird Program staff have focused extra management efforts on recently restored islands, including an island in the Bahia Grande area of the Lower Laguna Madre. Working in close collaboration with US Fish and Wildlife Service, management efforts began with prescribed burns and herbicide treatments to manage invasive grasses and prepare sites for planting native brush species. Native brush plantings began in November 2023, and what started as a small project has now become an annual event that many look forward to. To date, more than 3,000 native seedlings have been planted. At the latest planting event on April 2, 2026, more than 40 volunteers from local universities and organizations showed up to plant seedlings. Volunteers also installed protective tree tubes around each seedling, which help to increase the seedling's survival and growth. In under six hours, volunteers planted 980 seedlings representing 17 native species. Monitoring has shown approximately 90% seedling survival, with plants growing from initial heights of 10-20 inches to more than six feet. Restoration of this island is expected to be completed in spring 2027, and the site is anticipated to once again provide nesting habitat for many species of waterbirds, including reddish egrets, great egrets, snowy egrets, great blue herons, little blue herons, tricolored herons, and roseate spoonbills.

Volunteers recently participated in work day at a bird nesting island in the Bahia Grande - 40 volunteers helped plant close to 1,000 seedlings that will grow to support colonial nesting waterbirds.



Shorebird Monitoring and Stewardship: CBBEP participated in the second year of a large state-wide effort to monitor Texas' beach-nesting shorebirds, protect their habitat, and improve nesting success by providing stewardship during the nesting season. During site visits, seasonal technicians are monitoring Snowy and Wilson's Plover nests until they hatch or fail; catching adults and placing unique color bands on for resighting them later; and keeping track of any disturbances including humans and potential predators. As part of this initiative, CBBEP also organizes a statewide survey of in the fall of each year called OkPloverBlitz. This year CBBEP and partners were able to cover more than 90% of Texas' Gulf-side beaches. The survey is coordinated for October when Gulf tide levels are at their highest, forcing many birds to forage on the beach instead of their preferred habitats on flooded bayside mudflats. Target species for the survey include four plover species (Piping, Snowy, Wilson's, and Black-bellied), as well as Red Knot and American Oystercatcher. Distribution, counts, and resights of any banded individuals can be used to better understand population dynamics of these imperiled species here in Texas. It also provides invaluable resight data to the institutions who band these birds not just within Texas but outside of it as well. CBBEP is grateful to the 40+ participants who helped conduct this survey including many of our favorite partners in Texas. CBBEP could never perform a state-wide survey at this scale alone, relying on more than 40+ participants from partner organizations and the public to assist with the huge effort.



CBBEP's Coastal Bird Program hosted a landowner workshop focused on wetland management, habitat conservation, and the important connections between land stewardship, shorebirds, and waterfowl.

Environmental Education

CBBEP is committed to fostering the next generation of environmental stewards. To fulfill this commitment, the CBBEP has created the Delta Discovery Program which provides opportunities for students, teachers, and families to connect with the outdoors at the Nueces Delta Preserve. Delta Discovery strives to remove educational roadblocks by offering programs to local communities at no cost. In recent years, the pandemic has impacted CBBEP's ability to host many of our traditional educational programs, but our staff continue to adapt and find new ways to connect students, teachers, and families with nature.

Student Field Trips: Through March 2026, the Delta Discovery Program welcomed roughly 4,098 visitors to the Nueces Delta Preserve through our field trip program. Students and teachers participate in hands-on, discovery-based field trips that get them out in nature and help reinforce the concepts they learn in the classroom. Staff also reached an additional 1,628 students and teachers through classroom presentations at local schools and outreach booths at school science nights and festivals. These numbers will continue to grow as CBBEP completes FY 2026.

Training Educators: CBBEP's Delta Discovery Program facilitates multiple workshops each year that focus on equipping teachers and educators with the skills, curriculum, and materials they need to strengthen science teaching as it relates to the environmental resources of the Coastal Bend. No workshops have taken place yet in FY 2026, but three are currently scheduled for May, June, and July of 2026.

Community Programs: CBBEP's Delta Discovery Program provides families with the opportunity to participate in programs like Nature Story Times, Delta Discovery Days, and Home School Days. All programs are designed to create conservation-minded families that are connected to nature and have a desire to protect it. To date in FY 2026, five Nature Story Times have been hosted with 239 participants attending - themes have included Owls, Tracks and Feathers, Hearts in the Wild, Nature's Lunch Line, and Animal Meet & Greet events at the Hopkins Public Library and Ben F. McDonald Public Library. During that same time period, 8 Delta Discovery Picnics were hosted with 63 attendees, and two Homeschool Days with 59 attendees.

Delta Discovery staff and expert volunteers also focus on providing programs that bring the learning to the community. To date in FY 2026, CBBEP participated in four community outreach events at the Nueces Delta Preserve and reached around 67 participants. Additional events are scheduled to be completed in the summer of 2026, prior to the start of the next fiscal year.

Watershed Warriors Program: In FY 2026, CBBEP expanded its environmental education programming by launching the Watershed Warriors Program. Through interactive, standards-aligned lessons focused on watershed science, water quality, and environmental stewardship, the program brought large-scale watershed models directly into classrooms, helping students connect local science to real-world conservation. By the end of the experience, students agree to take action as "Watershed Warriors," pledging to protect and care for the natural resources that

make the Coastal Bend such a special place. To date, the Watershed Warriors Program has delivered 78 hands-on watershed education programs—nearly doubling its target of 40 classroom presentations—while engaging 1,676 students across the Coastal Bend’s 12-county service area. In addition to classroom success, the program expanded its reach through 13 community outreach events, collectively engaging more than 1,900 additional participants. These accomplishments demonstrate the program’s growing impact in fostering environmental awareness and inspiring the next generation of watershed stewards.

CBBEP launched a new environmental education program this year called Watershed Warriors - large-scale models allow people to visualize their place in the watershed and explore how water moves across the land, how everyday actions affect our bays, and what they can do to help protect the places we depend on.



Outdoor Classrooms: During FY 2026, CBBEP’s Outdoor Classroom Program expanded to work with more schools than ever before, supporting the creation of hands-on learning spaces at eight campuses. Participating schools and education programs planned outdoor classrooms that included raised beds, seating, shade structures, and other features designed to support outdoor learning. Schools were encouraged to gather student input during planning, integrate the spaces into their curriculum, and commit to long-term maintenance and use. By emphasizing student involvement, curriculum connections, and sustainability, the program helped schools develop outdoor classrooms that serve as lasting educational resources. The growing number of participating schools reflects strong interest in place-based learning and CBBEP’s continued commitment to expanding environmental education opportunities throughout the Coastal Bend. Several of the eight outdoor classrooms are already complete, with a few schools still putting the finishing touches on their projects that will be ready for the coming school year.

Tides of Tomorrow Art Contest: In 2025, CBBEP hosted its second Tides of Tomorrow Art Contest as part of the celebration of National Estuaries Week, engaging K–12 students across the Coastal Bend in conservation and education through creative expression. Centered on the theme “The Coast Through My Eyes,” the contest invited participants to reflect on what the coast means to them by showcasing nature scenes, native wildlife and plants, outdoor recreation, and conservation values. Submissions were judged across four grade-level categories, highlighting the diversity of perspectives and artistic talent throughout the region. The contest successfully fostered youth engagement, strengthened connections between art and environmental stewardship, and advanced awareness of the importance of protecting the Coastal Bend’s bays and estuaries.



Grand Prize for the 2025 Tides of Tomorrow Art Contest went to Sage Ilfrey, a 12th-grade homeschool student from Aransas Pass - her artwork was featured on the cover of the CBBEP's 2026 calendar.

Public Access & Nature Tourism

To ensure that people continue to benefit from a safe, clean bay system, it is important to promote stewardship of our bay resources and to plan for the increasing number of people who visit the Coastal Bend to enjoy its natural resources. Well-planned and well-managed access areas help curtail resource damage, while providing enough parks and facilities for the growing number of users. It is also important to inform the citizens of our community and the millions of visitors about how to enjoy the resources without degrading them. Ensuring that the waters are safe to swim in and that the fish, crabs, and shrimp are safe to eat are also extremely important goals.

City of Portland Park Enhancements: In FY 2026, CBBEP continued to advance two major public access projects in partnership with the City of Portland. For the Sunset Lake Hike and Bike Trail Project, efforts focused on professional engineering and planning, including environmental fieldwork, surveying, coordination with regulatory agencies, and completion of 60% design plans that incorporate boardwalk and parking components. The project is currently progressing through the design refinement and permitting phase. At Violet Andrews Park, CBBEP supported shoreline protection improvements by advancing pre-design and planning activities, conducting field investigations, coordinating with community stakeholders, and developing initial design concepts, with ongoing engineering and permitting efforts aimed at improving long-term shoreline stability while maintaining public recreation opportunities at this popular waterfront site.

City of Port Aransas Wetland Park Master Plan: CBBEP partnered with the City of Port Aransas to support development of a master plan for a proposed six-acre wetland park located within the city. The planning effort is the first step toward transforming the site into a nature-based public space that enhances wetland habitat, improves stormwater management, supports water quality, and provides opportunities for public access and outdoor enjoyment. The City has recently hired an engineering firm to assist with technical planning and design. This collaborative effort lays the groundwork for a new wetland park that will deliver both environmental and community benefits for Port Aransas residents and visitors.

Aransas Pass Aquatic Center Boardwalk Enhancements: CBBEP supported improvements to the wetland boardwalk at the City of Aransas Pass Aquatic Center. Enhancements focused on making the area safer, more accessible, and more enjoyable for visitors. The project included a complete rebuild of the boardwalk, with construction completed in May 2026. CBBEP is continuing to work with the City of Aransas Pass to install updated signs and other amenities that will make this popular waterfront location both fun and educational.



CBBEP recently collaborated with the City of Aransas Pass to reconstruct their Aquatic Center Boardwalk.

Ingleside on the Bay Dolphin View Park: CBBEP continued its partnership with the City of Ingleside on the Bay to advance Dolphin View Park, a community pocket park located on a 0.78-acre bayfront property along Bayshore Drive. Using GOMESA funding, CBBEP supported land acquisition and site access improvements, including bollards, fencing, completion of a wetland determination, and development of a park master plan. Community input gathered during a public brainstorming session in October 2025 helped shape the park's master plan, which includes features such as a boardwalk, shoreline viewing areas, kayak access, seating, and shoreline protection. Next steps include installation of shoreline protection using remaining GOMESA funds and development of a parking lot supported by a Texas General Land Office grant, with construction anticipated to begin in spring 2027.

Master plan for Dolphin View Park, a small, shoreline pocket park, in Ingleside on the Bay.



Public Outreach and Volunteer Opportunities

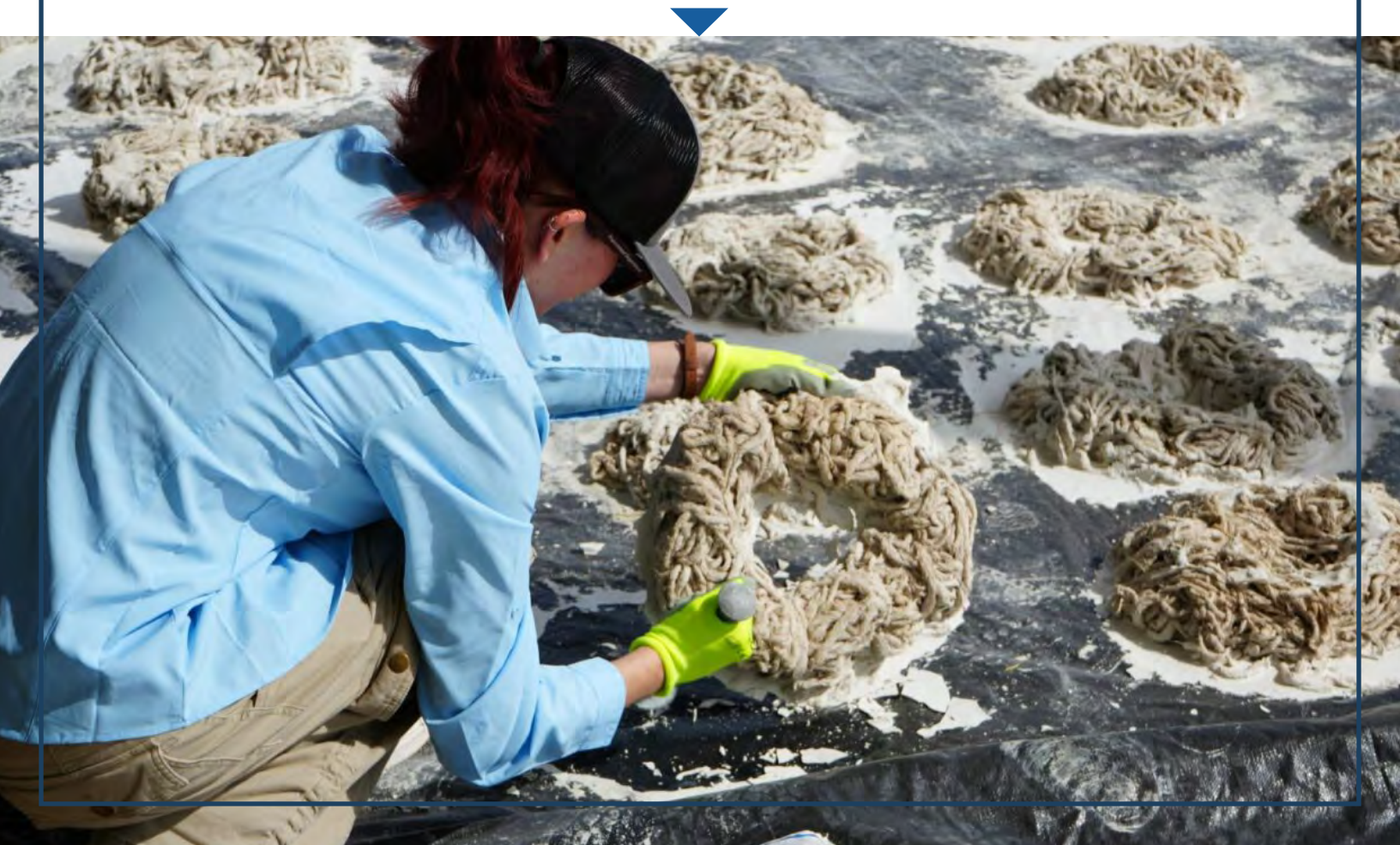
One of CBBEP's most important goals is to educate citizens about the ecology of the bay system, its many environmental and economic values, and how an individual can make a positive difference to ensure its longterm health. Helping residents and visitors to understand the complex issues concerning bay resource management is a priority. Enhancing understanding and stewardship of bay and estuarine resources is best accomplished by providing opportunities for the general public, including youth, to volunteer for stewardship-oriented activities like clean-up events and marsh grass planting days. Personal involvement with nature in the form of stewardship projects will not only benefit the environment but the individual as well.

Coastal Paddle Cleanup: On September 20, 2025, CBBEP hosted its 2nd Annual Coastal Paddle Cleanup. Volunteers hit the water at Texas A&M University-Corpus Christi with an amazing group of volunteers for our Coastal Kayak Cleanup, where we paddled through Oso Bay to remove trash and debris from the water. With more than 70 Up2U Litter Bags collected, our volunteers made a big difference in keeping the bay clean! It was a sunny, calm morning, and everyone enjoyed spotting birds and wildlife along the way.

Packery Flats Cleanup: In FY 2026, CBBEP continued its commitment to protecting sensitive coastal habitats through multiple cleanup efforts at Packery Flats, hosting both winter and summer cleanups in one of the region's most heavily used and ecologically important bay areas. Volunteers worked alongside CBBEP staff to remove trash and debris from the tidal flats and surrounding shoreline, helping reduce threats to wildlife and improve water quality. These cleanups supported ongoing stewardship of the area while engaging community members in hands-on conservation. CBBEP's continued presence at Packery Flats helped reinforce responsible use of this popular recreational site and demonstrated the importance of keeping Coastal Bend waters clean and accessible.

Oyster Jute Rings: CBBEP partnered with the Coastal Conservation and Restoration Ecology lab at the Harte Research Institute to work with volunteers from Poncho Outdoors to build cement-infused jute rings - a plastic-free, biodegradable alternative for small-scale oyster restoration projects. By swapping out traditional plastic mesh bags for natural materials like jute, we are keeping plastic out of bay and reducing marine debris. Their textured, natural surface creates a great surface for oyster recruitment, while also creating habitat for shrimp, crabs, fish, and other wildlife. Researchers will be placing the rings out in the bay and monitoring their ability to support a healthy oyster reef community.

CBBEP worked with staff from the Harte Research Institute and volunteers from Poncho Outdoors to create cement-infused jute rings for oyster restoration.



Gregory Portland High School Work Day: Gregory-Portland High School students joined our staff for a full day of hands-on conservation work in Nueces Bay. Their morning began with a boat ride out to Elbow Marsh, a restoration site built with nearly 1 million cubic yards of dredged material from the Inner Harbor channel. Native plants are beginning to take hold here, but staff recently identified patches of invasive saltcedar, which is an aggressive species that can outcompete native vegetation and impact wildlife habitat. The students jumped right in, removing saltcedar by digging out entire root systems or cutting back larger plants for treatment. In the afternoon, the group headed to Causeway Island, a busy rookery island that hosts thousands of nesting birds each spring. The group helped the CBBEP Coastal Bird Program by planting more than 150 native plants, including honey mesquite and spiny hackberry, to improve habitat quality for future nesting seasons.



Students from Gregory Portland High School help CBBEP staff remove invasive salt cedar from a recent restoration site that is beneficially using dredge material to rebuild habitat.

WORK PLAN DEVELOPMENT

The FY 2027 Comprehensive Annual Work Plan will allow the CBBEP to continue the implementation of the *Coastal Bend Bays Plan, 2nd Edition*. This Work Plan describes implementation projects and administrative support that will be undertaken pending approval and receipt of funds by the funding entities.

All data and information produced under the auspices of the CBBEP will adhere to standardized formats and be made publicly accessible. A public participation strategy, refined under the “The Bays Plan” chapter of the *Coastal Bend Bays Plan, 2nd Edition* will continue to guide public participation efforts regarding implementation of action plans. The list of “Priority Issues,” refined through public input and characterization projects will continue to serve as the focus for implementation.

STARTING DATE

The starting date for this FY 2027 Comprehensive Work Plan will be September 1, 2026.

PROGRAM COORDINATORS AND PROJECT OFFICERS

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ACCOMPLISHMENTS TO DATE

CBBEP regularly assesses administrative program activities in order to improve its success. CBBEP has continuously had favorable annual financial audits, as well as the quality system audits conducted by the TCEQ and program evaluations by EPA. The Program has identified the need for more project documentation in a timely manner. Specifically, project progress and accomplishments need to be well-documented in the CBBEP project database on a more regular basis – not just when reporting deadlines are due. In addition, CBBEP recognizes the need to make draw-downs on federal and state funds on a timely basis. CBBEP has recently expanded its administrative and project management staff capacity to help with these efforts.

The CBBEP achieved its primary project-related goal for FY 2026, which was to continue the successful initiation and completion of projects developed to implement the *Coastal Bend Bays Plan, 2nd Edition*. To date, CBBEP and its partners have achieved programmatic progress on well over 90 percent of *Bays Plan* actions. The Program's success in leveraging funds for CBBEP projects has also been noteworthy, implementing recent work plans with over 50 projects. Broad support for CBBEP's activities continues to be evidenced by the range of contributors, including local governments, industries, foundations, nonprofits, and state and federal agencies. All project deliverables identified prior to the CBBEP FY 2016 implementation years have been completed.

COMPETENCY STATEMENT

CBBEP is committed to the development and implementation of procedures and policies in order to assure that activities that acquire, generate, compile, or use environmental data and technology are of the appropriate type and quality for their intended use. CBBEP operates under and maintains an annually approved Quality Management Plan to continually assure that quality of the data generated is sufficient to meet the objectives of the project. To this end, CBBEP's activities meet all the requirements that have been set forth to receive and utilize funds from the EPA and TCEQ and can demonstrate this through the following commitment:

"Competency for generating environmental measurement data under US EPA (Agency) funded assistance is demonstrated at the Coastal Bend Bays & Estuaries Program through the maintenance of quality assurance project plans for data collection activities that involve Environmental Information Operations (EIO), and through the approved Quality Management Plan that provides descriptions of the quality policies, including all requirements described in EPA CIO 2105-S-01.0."

GOALS FOR FISCAL YEAR 2027

The overarching goal for the FY 2027 Work Plan is to continue the successful implementation of the *Coastal Bend Bays Plan, 2nd Edition*. The list of Priority Issues, refined through public input and characterization projects will continue to

serve as the focus for implementation. The CBBEP implementation teams, Coordination Team, and Bays Council will also continue to play a key role in identifying issues and supporting implementation of the priorities as listed in *The Bays Plan*. The implementation teams continue to identify, initiate and select project ideas for inclusion in the CBBEP work plans, and these teams will play a role in both the development and implementation of projects. The current teams are: Habitat & Living Resources Team; Human Uses Team; Maritime Commerce & Dredging Team; Water & Sediment Quality Team; and Environmental Education & Outreach Team. The Bays Plan Coordination Team, consisting of all the chairs of the Implementation Teams and key members of the Bays Council, coordinates the Annual Work Plan recommendations to the CBBEP Bays Council and Board of Directors.

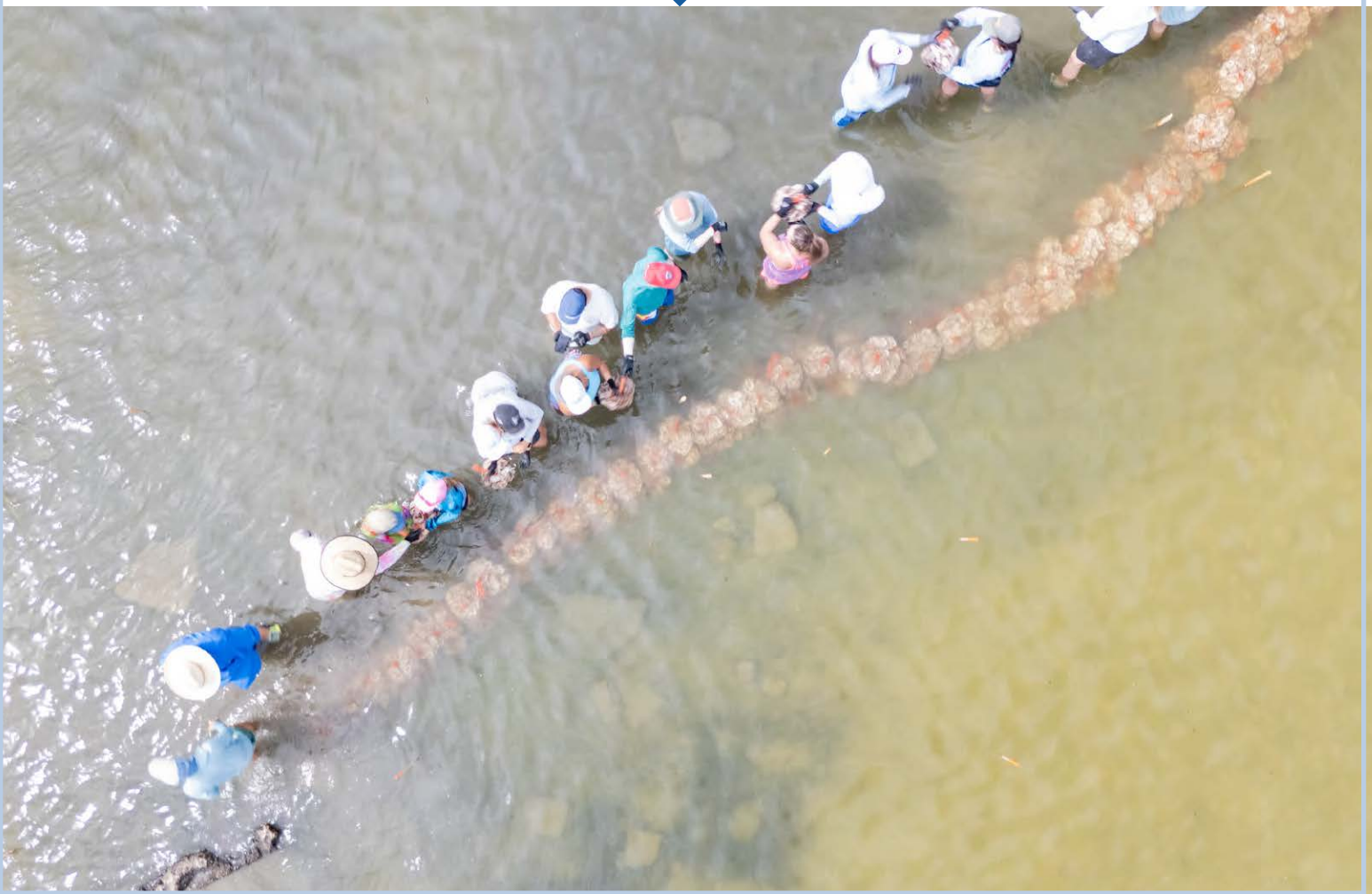
IMPLEMENTATION OF PROJECTS

Project activities for the FY 2027 Work Plan have been selected for their contribution towards implementation of the *Bays Plan*, with 51 new projects included in the Plan. A comprehensive list of projects outlining project numbers, titles, action items, performing party(s), and total project cost can be found in “Table 1: FY 2027 Comprehensive Annual Work Plan Project List.” This list represents the combined efforts of the many volunteers who have donated their time and expertise to help assure the successful implementation of the *Coastal Bend Bays Plan*.

PROJECT DELIVERABLES & SCHEDULE

Specific project deliverables and schedules for completion are to be negotiated with the sub-contractor of the project and will be included in the scope of work of the project contract. The project contract and any amendments will be subject to review by funding entities and are incorporated into this annual work plan by reference. The projects to be performed in FY 2027 are as listed on the following pages.

In 2026, CBBEP implemented its first-ever volunteer shell-bagging event in partnership with Sink Your Shucks at the Harte Research Institute. Volunteers bagged over 1,000 oyster bags that were deployed into the water to help build a living shoreline that will protect the Kate’s Hole Parking area in Packery Flats Coastal Habitat. More events like this are planned for FY 2027.



PROJECT #2701 CBBEP Coastal Bird Program

Performing Organization: Coastal Bend Bays & Estuaries Program

Total Project Cost: \$485,811

Bays Plan, 2nd Ed. Actions: CB 1.1, CB 2.1, HLR 1.1, HLR 1.2

Background:

Coastal birds are important components of estuarine ecosystems and serve as indicators of ecosystem health. In addition, recreational bird viewing is a significant and growing component of ecotourism, a major facet of the local economy. The 2010 Environmental Indicators Report prepared by CBBEP documented the declining populations of many colonial waterbird species in Texas, with some species experiencing a 90% reduction in breeding pairs since the 1960's. CBBEP recently released the 2020 Environmental Indicators Report, which pointed out that a few species of colonial waterbirds have shown nesting pair recovery levels but many are still declining. An ever-increasing body of research continually provides evidence of the importance of the Texas coast to many non-breeding coastal bird species, several of which are also experiencing population declines.

This project will build on the efforts of the CBBEP Colonial Waterbird projects from previous years through the continued implementation and improvement of specific management actions from the CBBEP Colonial Waterbird Rookery Island Management Plan. This plan outlines habitat management actions such as planting and establishing native shrubs, removing exotic/invasive vegetation, building artificial nest platforms, and removing nest predators as needed throughout the year. All habitat management actions such as planting native vegetation and removing exotic/invasive vegetation will be completed by February 1, as this is the beginning of the waterbird nesting season. Predator management will be conducted as-needed throughout the year.

Additionally, these efforts will extend to activities that support the conservation of non-breeding coastal bird species and their habitat. This project will provide assistance to other partners, where appropriate, in efforts to assess changes in populations, current wintering and migratory movements, and important areas of habitat for non-breeding coastal species. The timeline for these efforts will depend on the seasonality of the non-breeding species, but will begin September 1, and be completed by June 15.

Years of experience working with coastal bird species in the Coastal Bend makes the CBBEP uniquely qualified to provide expertise and assistance to partners and stakeholders working to conserve coastal birds. The CBBEP will assist resource agencies, universities, and other stakeholders in joint efforts to monitor changes in coastal bird populations at a large scale. These monitoring efforts will take place primarily in December and May and provide information that helps direct waterbird management priorities for CBBEP for the coming years. In addition, the CBBEP will meet with partners and stakeholders throughout the year to provide updated information on coastal bird species ecology and management in the Coastal Bend area.

Public outreach is also a key component of this project, with the objectives of minimizing anthropogenic impacts to rookeries, educating the public, and promoting stewardship of waterbird resources. This will be accomplished through on-site signage at rookery islands, public presentations and events, and other forms of public communications, such as the distribution of flyers, updates on social media, interviews with local news outlets, and regular engagement of volunteers. Public outreach efforts will take place throughout the year.

Project Objectives:

The objectives of this project include: (1) continue restoring waterbird populations through management of nesting sites, including habitat enhancement, protection, predator control, and reduction of anthropogenic impacts; (2) develop and implement public education and outreach programs that promote awareness and stewardship of coastal birds and their habitats, (3) assist partners in efforts to observe and monitor changes in coastal bird populations; and (4) provide resource agencies, researchers, and other stakeholders with expertise on coastal bird ecology, habitats, and conservation needs including assistance in tagging migratory birds for tracking.

PROJECT #2702 Delta Discovery

Performing Organization: Coastal Bend Bays & Estuaries Program

Total Project Cost: \$208,960

Bays Plan, 2nd Ed. Actions: DD 1.1, DD 1.2, DD 1.3, DD 2.1

Background:

Delta Discovery's mission is to connect Coastal Bend communities with opportunities and resources that plant the seeds of conservation for protecting our bays & estuaries. The educational program cost consists of the following: (1) field trips for students, (2) teacher workshops, and (3) community programs, such as Delta Discovery Days, Nature Story Times, and Home School Days.

Fieldtrips: Many of the students that are being exposed to scientific concepts for the first time have never spent much time outdoors. CBBEP Environmental Educators provide field trip opportunities for teachers and students to visit the Nueces Delta Preserve. The cross-curricular trip may be organized by the teacher, with assistance from the Environmental Educator, to create an educational TEKS-aligned agenda for outdoor education. This program sees thousands of students per school-year. The goal is to plant seeds of appreciation and passion for a new generation of naturalists, biologists, and nature lovers to protect and preserve the Coastal Bend through educating school children about preserving our environment and protecting our animal and plant life.

Teacher Workshops: CBBEP Environmental Educators will facilitate a minimum of four (4) workshops throughout the school year. These free workshops will address local environmental science topics and will align to the TEKS objectives, and participating teachers will receive SBEC credits. The workshops focus on equipping teachers with the skills, curriculum, support and materials to strengthen science teaching as it relates to the environment resources of the Coastal Bend. Hands-on learning in the field will be correlated to classroom instruction. The funding provides all fees for partnering, curriculum, and substitute teachers in order for these workshops to occur on weekdays.

Delta Discovery Days: The CBBEP will host a minimum of five (5) Delta Discovery Days. These hands-on "family picnic days" provide multi-generational audiences time and guidance to discover, connect, and learn about the estuary in their back yard. Families bring a sack lunch and the CBBEP Education Staff facilitate interactive learning activities that model nature-play strategies throughout half-day program. Delta Discovery Days serve two purposes: (1) encourage students attending Nueces Delta Preserve field trips to return with their families to demonstrate what they have learned and (2) welcome new audiences -- families and members of the community -- to the Nueces Delta Preserve for a day of nature-based learning.

Nature Story Time: The CBBEP will host a minimum of ten (10) Nature Story Times. These early learner programs introduce children, ages 2-5, to nature and the joys of reading through stories, crafts, and outdoor play. Children and their "grown-ups" will build a sense of place and connection as they explore the estuary and its inhabitants.

Home School Days: The CBBEP will host a minimum of two (2) Home School Days to meet the needs and interest of home school families seeking field experiences. Home School Day programming will provide home school families and their students an opportunity to connect their classroom science/environmental curriculum to the natural world of the Coastal Bend using both place-based and discovery education. CBBEP Education Staff and partners will facilitate a series of hands-on activities that support select program themes and the engagement of mixed age student audiences.

Nueces Delta Preserve Upkeep: Upkeep of the Nueces Delta Preserve consists of electricity, trash and water costs, phone and internet costs, temporary assistance for field trip days and staff mileage.

Project Objectives:

The objective of this project is to provide educational field trip opportunities for K-12 students and also to aid teachers in increasing their knowledge, skills, and resources available to effectively teach science to students in local schools.

PROJECT #2703 Coastal Bend Bays Plan Update

Performing Organization: Coastal Bend Bays & Estuaries Program

Total Project Cost: \$97,486

Bays Plan, 2nd Ed. Actions: WSQ 1.1, NPS 1.1

Background:

CBBEP's original "Comprehensive Conservation and Management Plan" (CCMP), locally referred to as The Coastal Bend Bays Plan, was approved by EPA in 1998. The Bays Plan identified specific actions that would benefit the bay system and the users of the bays. It was designed to complement and coordinate existing resource management programs and plans. The action plans were developed and refined through a series of workshops and committees that involved more than 300 individuals representing over one hundred organizations. Recognizing that its action plans cannot remain static and must be modified to respond to the changing needs of communities, incorporate new programmatic, scientific, and technological advances, and address new environmental challenges, CBBEP initiated a new collaborative effort in 2016 to revise The Bays Plan in order to incorporate developments that have occurred since the previous plan was drafted and to ensure that new priorities are being addressed. The Coastal Bend Bays Plan, 2nd Edition received EPA approval in January 2021.

Recognizing that it has been five years since The Bays Plan, 2nd Edition was approved by EPA, CBBEP is seeking to update and revise the Plan to reflect current science, emerging coastal challenges, and evolving community priorities, ensuring the plan remains a relevant and effective guiding document. CBBEP will work with a qualified consultant to lead a comprehensive update of the Coastal Bend Bays Plan. The consultant will be responsible for reviewing the existing plan, incorporating new scientific data, regulatory changes, and regional priorities, and working closely with CBBEP staff to ensure the updated document reflects current coastal and estuarine priority issues, as well priority issues identified by EPA. The contract will include a structured stakeholder engagement process, with the consultant planning and facilitating meetings and workshops to gather input from agency partners, local governments, industry representatives, conservation organizations, and the public. Feedback collected through these engagements will be documented and meaningfully incorporated into the revised plan.

In addition to updating the Plan's content, the consultant will transform the Bays Plan into a modern, accessible online format. This will include developing a web-based version that is searchable, visually engaging, and easy to navigate, allowing users to quickly find goals, action items, and progress indicators. The online format will be designed to improve transparency, encourage broader use of the plan, and support ongoing implementation and tracking. CBBEP staff will collaborate with the consultant throughout the process to ensure the final product aligns with organizational needs and can be maintained and updated over time.

Project Objectives:

The proposed project will conduct a thorough review of the Coastal Bend Bays Plan, 2nd Edition and revise the plan to reflect current science, emerging coastal challenges, and evolving community priorities, ensuring the plan remains a relevant and effective guiding document. The project will also seek to make the Bay Plan more accessible online through a modern, searchable, and user-friendly format - improved online access would also help partners, policymakers, and the public more easily understand priorities, track progress, and align restoration and conservation efforts across the region.

PROJECT #2704 Monitoring and Adaptive Management of Dredge Material Placement in Nueces Bay

Performing Organization: Coastal Bend Bays & Estuaries Program

Total Project Cost: \$100,000

Bays Plan, 2nd Ed. Actions: HLR 1.2, D 1.1, D 1.2

Background:

The Nueces Delta is located along the northwest shoreline of Nueces Bay approximately 11 miles northwest of downtown Corpus Christi, Texas, in Nueces and San Patricio counties. Since 2002, the Nueces Delta has receded hundreds of feet, and pockets of open water have expanded, causing the loss of high-value marsh habitats. Beginning in 2008, CBBEP completed feasibility studies to determine the best strategy for protecting this critical environment. Based on the result of the initial feasibility study and additional studies and design work, CBBEP completed construction of an approximately 3,600-foot rock breakwater system in 2023.

Following breakwater construction, CBBEP focused efforts toward replacing sediment that had been lost over the years. To address this need, CBBEP partnered with the U.S. Army Corps of Engineers (USACE) to expand the rock breakwater system by approximately 2,000 feet and to implement strategies for the beneficial use (BU) of dredged sediments from USACE's final phase of the Corpus Christi Ship Channel Improvement Project. Construction for expanding the rock breakwater system was completed in 2024, and activities associated with placement of dredged material within Nueces Delta were completed in 2025.

In 2024, CBBEP contracted with a consultant to provide construction monitoring services during the USACE placement and to complete post-construction monitoring of the site following the placement of the dredge material. The post-construction monitoring was completed in the fall 2025 and included collection of topographic data, vegetation composition and coverage data, and unmanned aerial system (UAS) photogrammetry. Post-construction monitoring results were then used to develop adaptive management strategies to assist CBBEP in our long-term efforts associated with the dredge placement project (e.g., supplemental grading/earthwork, live root planting or seeding, invasive species control).

The number one adaptive management recommendation was continued marsh monitoring on an annual basis until marsh restoration goals are met. Year-two monitoring will include the same components to the 2025 post-construction monitoring survey. CBBEP will utilize the funds requested to contract for the year-two post-monitoring which will include collection of topographic data, vegetation composition and coverage data, and unmanned aerial system (UAS) photogrammetry. Contractor will also be responsible for comparing the year-two data to the 2025 post-construction monitoring results and for making recommendations on additional adaptive management techniques to be implemented to achieve marsh restoration goals.

Monitoring the placement of dredged material after project completion is critical to confirm that restored marshes are developing as intended and providing the expected ecological benefits. Post-construction monitoring allows managers to evaluate elevation, vegetation establishment, and hydrologic function, and to adapt management actions if needed to ensure long-term marsh sustainability and resilience. The successful implementation of this large-scale marsh restoration project is important for helping CBBEP address its priority issues of (1) loss of wetlands and estuarine habitats, (2) resilient coastal ecosystems that can adapt to changing conditions, and (3) implementation of effective adaptive management practices at CBBEP properties.

Project Objectives:

The objective for this project is to conduct year-two post elevation and vegetation surveys related to a dredge placement project at the Nueces Delta Preserve completed in 2025 and to update an adaptive management plan based on monitoring results.

PROJECT #2705 Baffin Bay Water Quality Monitoring

Performing Organization: Harte Research Institute at Texas A&M University – Corpus Christi

Total Project Cost: TBD

Bays Plan, 2nd Ed. Actions: WSQ 2.1, WSQ 2.2

Background:

The purpose of this project is to help continue a water quality monitoring program in Baffin Bay that will gather water samples and identify potential sources of water quality degradation in the system. Baffin Bay is undergoing significant eutrophication, as exemplified by a long-term increase in nitrogen and phosphorus loads and chlorophyll-a concentrations that have exceeded state criteria for nearly the past decade. Additional symptoms include blooms of potential harmful algal species (*Aureoumbra lagunensis*, *Pyrodinium bahamense*), episodic hypoxia, and fish kills.

In response to concerns over water quality changes in Baffin Bay, Texas A&M University-Corpus Christi (TAMUCC) initiated a spatially-temporally intensive water quality monitoring program to: (1) generate data for construction of nutrient budgets and to identify potential sources of nutrient/organic matter loadings that are contributing to water quality degradation in the system, and (2) characterize the ecosystem response to fish kills and loading events, including from episodic storm events.

As part of the ongoing water quality monitoring program, samples will be collected monthly at six sites from Baffin Bay, as well as at higher frequencies in response to episodic storm events or fish kills. Two of the sites overlap with TCEQ quarterly monitoring stations, allowing for comparison with longer-term trends within Baffin Bay. At each site, vertical profiles will be performed and discrete surface samples collected. Additionally, a YSI Ecomapper Autonomous Underwater Vehicle (AUV), equipped with water quality sensors (temperature, salinity, DO, pH, chlorophyll fluorescence) may be deployed to identify water quality “hot spots” and to characterize environmental conditions pre- and post-storm.

Project Objectives:

The objective of this project is to support an ongoing water quality monitoring program through TAMUCC and collect monthly data, and rain event data, to identify nutrient concentrations and loading throughout the Baffin Bay system.

PROJECT #2706 Outdoor Classrooms

Performing Organization: Coastal Bend Bays & Estuaries Program

Total Project Cost: \$21,000

Bays Plan, 2nd Ed. Actions: DD 1.1., DD 1.2, DD 1.3, DD 2.1

Background:

Research suggests that children who play and learn in nature are healthier, happier, and perform better in school. However, children have become increasingly disconnected from nature. This disconnect has led to physical and emotional health problems and a sense of isolation. Additionally, there are not enough safe outdoor spaces close to home for most Texas children, especially those from disadvantaged families.

CBBEP created its environmental education program, called Delta Discovery, to help address this “nature-deficit” and connect classrooms and families to nature. Delta Discovery has an outstanding track record for environmental education in the Coastal Bend. Every year we provide field trips to thousands of students, train teachers on how to connect classrooms to outdoor experiences and provide opportunities for families to experience nature. Delta Discovery operates primarily at the Nueces Delta Preserve, a 10,500-acre property that is comprised of diverse habitats, including wetlands and prairies.

However, teachers and principals at local schools are finding it more and more difficult to move students off campus to outside learning opportunities (i.e., field trips) like those offered by CBBEP at the Nueces Delta Preserve. Buses are expensive and finding personnel to supervise, as well as scheduling, has become challenging. Field trips at the middle school and junior high level are almost non-existent.

One way to solve this problem is to bring learning opportunities to schools in the form of outdoor classrooms. An outdoor classroom is defined as an outdoor area on a school campus that is set aside for student investigation and learning. Outdoor classrooms are designed to connect students with the outdoors, restore wildlife habitat on urban school grounds, and inspire the next generation of environmental leaders.

Components of outdoor classrooms are varied but often include benches or picnic tables adjacent to a study or natural area where students can gain field experience and spend time outdoors. While every outdoor classroom contains its own unique design elements, CBBEP will strive to ensure that they all observe the following key elements: ecologically sound, benefit wildlife and people, integrated into curriculum, designed to encourage long-term stewardship. Outdoor classroom partners will be encouraged to follow the process described in the USFWS Schoolyard Habitat Project Guide for the development of outdoor classrooms, and CBBEP staff will be available to assist them with this process.

Project Objectives:

CBBEP will contract with local schools or other public learning venues (e.g., libraries, public parks) to install up to three (3) outdoor classrooms in the coming fiscal year.

PROJECT #2707 Up2U Litter Prevention on the Texas Coast

Performing Organization: Coastal Bend Bays & Estuaries Program

Total Project Cost: \$453,750

Bays Plan, 2nd Ed. Actions: BD 1.1, PEO 1.1, PEO 1.3

Background:

Up2U is the battle cry of an innovative debris prevention program that began in 2004 by the Nueces River Authority and partners to prevent trash from reaching waterways in the Upper Nueces Watershed by distributing recognizable yellow mesh litter bags. In 2020, the Coastal Bend Bays & Estuaries Program (CBBEP) expanded the program's geography to include the greater Coastal Bend and expanded it programmatically in 2022 to target illegal dumping by providing dumpsters in rural communities (Up2U PLUS). The goal of these campaigns is to curb litter along the waterways using a direct, empowering campaign message, while also providing the resources needed to properly dispose of debris and trash. The goal of this project is to expand CBBEP's successful Up2U and Up2U PLUS litter and bulk trash prevention programs from the greater Coastal Bend to the entire Texas coast. The empowering Up2U message, which can be found on the programs' recognizable yellow mesh litter bags and dumpsters, was designed to cultivate a sustainable change in behavior among coastal residents and visitors alike.

The expanded program will combine three key initiatives: the successful litter bag distribution program, community-based bulk waste and tire disposal efforts, and the addition of pet waste bag stations to help reduce pet waste pollution in parks, beaches, and other public spaces. Participating communities and partner organizations will be provided with litter bag distribution bins, Up2U litter bags, pet waste bag stations, and educational materials to support local outreach. In addition, the program will administer dumpster mini-grants that will enable communities to organize their own bulk waste and tire disposal events, helping prevent illegal dumping while empowering local partners to address their unique cleanup needs. CBBEP will partner with Clean Coast Texas to facilitate these partnerships and ensure that communities implementing Up2U programs have the resources they need to reduce the amount of trash reaching our bays and estuaries over the long-term. By providing these resources and fostering strong local partnerships, the expanded Up2U program will create a consistent, coastwide approach to reducing litter and protecting Texas's beaches, bays, and waterways.

Project Objectives:

The goal of this project is to expand the Up2U Litter Prevention Program along the entire Texas coast by providing resources that help reduce litter and harmful debris. Specific objectives include: (1) supplying Up2U litter bags and distribution boxes to coastal partners; (2) providing pet waste stations and compostable bags to reduce pet waste pollution; and (3) administering a dumpster mini-grant program to help coastal communities address bulk waste disposal and prevent illegal dumping.

PROJECT #2708 CBBEP Community Outreach Partnerships

Performing Organization: Coastal Bend Bays Foundation

Total Project Cost: \$40,000

Bays Plan, 2nd Ed. Actions: PEO 1.1, PEO 1.2, PEO 1.4, PEO 1.5

Background:

As stated in the Coastal Bend Bays Plan, 2nd Ed., CBBEP is constantly working to promote public and private partnerships to help achieve its educational goals. The CBBEP partnership with the Coastal Bend Bays Foundation (CBBF) addresses educational goals set forth in the Bays Plan, 2nd Ed. One of the benefits of the partnership between the CBBEP and CBBF is addressing the need for continued dialogue between competing user groups and the need for an engaging public forum to allow for individual input in the public policy debate. The Bays Plan, 2nd Ed. calls for continued involvement from CBBF, as the region prepares itself for the ever-increasing number of people wanting to make use of the bays and estuaries. Minimizing conflict through informed discussion will help achieve the overall objective of ensuring the public's safety, health, and enjoyment of our bays and estuaries. This project will increase the community's awareness of local environmental issues through Earth Day Bay Day, coastal issue forums, and an awards banquet. An estimated 12,000 people are expected to attend these events.

Project Objectives:

1. Organize, coordinate, and host turnkey operation of Earth Day Bay Day festival.
2. Organize, coordinate, and host CBBF Conservation and Environmental Stewardship Annual Awards Banquet.
3. Host Coastal Issues Forums to increase communication between resource managers, users, and the public.
4. Organize and coordinate bay-resource/related workshops with CBBEP's approval.
5. Continue to seek matching and/or leveraging funds.

PROJECT #2709 CBBEP Property Management

Performing Organization: Coastal Bend Bays & Estuaries Program

Total Project Cost: \$643,639

Bays Plan, 2nd Ed. Actions: LCS 1.1, LCS 1.2

Background:

CBBEP is owner and steward of conservation properties located across South Texas, primarily located within Aransas, Nueces, San Patricio, Refugio, and Cameron Counties. Included in the list of conserved properties is the CBBEP Nueces Delta Preserve which is located just outside of Odem, Texas and is the focal point of the CBBEP Land Conservation Program. The CBBEP Nueces Delta Preserve encompasses over 11,000 acres of the Nueces River Delta and is in both San Patricio and Nueces Counties. The Nueces Delta Preserve was purchased with the intent of preserving natural habitat, species, and function of the Nueces River Delta. This property is also home to the CBBEP Environmental Education Program known as “Delta Discovery.” CBBEP has taken the successful model of the Nueces Delta Preserve and has focused on preserving contiguous acres of habitat in Refugio County’s Mission River Delta, Aransas County’s Lamar Peninsula, and Nueces County’s Mustang Island.

The proposed project funds will be used to help support CBBEP’s land ownership obligations and some routine maintenance associated with land ownership. Maintenance activities include, but are not limited to, habitat management activities, road and culvert repairs, maintenance and operation of CBBEP facilities, equipment repairs purchases and maintenance, development and enhancement of public access sites, and the payment of property taxes. Past project accomplishments have included, perimeter fencing, mechanical and/or herbicide treatment of invasive woody plants for brush control, development and implementation of prescribed burn program, road reconstruction, installation of solar water wells, and wetland enhancement and creation.

Project Objectives:

The primary project goal is to promote the stewardship of coastal resources through the implementation of responsible and sustainable adaptive management techniques on CBBEP properties. Specific objectives include:

1. Provide ongoing maintenance and management of properties owned by CBBEP.
2. Implement prescribed burns, herbicide, and/or mechanical treatments to suppress woody vegetation encroachment on program owned lands.
3. Replace sections of perimeter fence.
4. Support and assist organizations in land conservation efforts

PROJECT #2710 Aguanitas Project - Planning and Design for Constructed Wetland

Performing Organization: Coastal Bend Bays & Estuaries Program

Total Project Cost: \$463,919

Bays Plan, 2nd Ed. Actions: NPS 1.1, WSQ 1.1

Background:

Baffin Bay, Texas, is an iconic Texas estuary, being part of the world's largest hypersaline lagoon and supporting uniquely productive and diverse habitats such as seagrass beds and serpulid worm reefs. Some of the highest landings of recreationally and commercially important species in Texas have historically come from Baffin Bay, providing world-class fishing opportunities and earning it the nickname "jewel of the Texas coast." Over the last four decades, however, there has been a decline in Baffin Bay water quality due to nutrient pollution. To find solutions to ongoing water quality degradation, the Baffin Bay Stakeholder Group (BBSG) was formed in 2018.

The "Aguanitas Project - Planning and Design for Constructed Wetland" project will support construction of a wetland complex adjacent to Petronila Creek that flows to Baffin Bay. Located just upstream of Baffin Bay, the wetland is strategically located to filter pollutants before they reach Baffin Bay. Runoff from the watershed along with water pumped from the Creek will be filtered through a series of treatment wetlands and sedimentation basins before returning the filtered water to the creek to flow downstream. The main outcome will be a significant reduction in sediment and nutrient loadings to Petronila Creek and Baffin Bay, as well as creation of new wildlife habitat in the wetland complex.

The Texas General Office is currently using funds allocated by the Texas Trustee Implementation Group of the Natural Resources Damage Assessment (NRDA) Program to complete pre-design studies, a feasibility study, and 30% design for the constructed wetland (estimated to be completed by August 2026). The engineer has evaluated the feasibility of implementing the wetland complex on the proposed parcel for water quality improvement, utilizing data collected from site characterization and modeling to report on existing conditions and investigate alternatives for wetland layouts with respect to hydrodynamic modeling and construction techniques. Additionally, regulatory considerations for necessary permits, leases, and/or acquisition/easements have been identified and recommendations developed for long-term management, monitoring, and maintenance. At the completion of the feasibility study, the engineer prepared 30% Preliminary Plans for the Project.

The proposed project will allow CBBEP to move the project forward into the next phase and complete final design/construction drawings and permitting for the wetland complex.

Project Objectives:

Utilize RESTORE funds to complete final design/construction designs and permitting for the wetland complex. Following the completion of this phase, the project will be ready for construction funding.

PROJECT #2711 Nueces Delta Environmental Monitoring

Performing Organization: Conrad Blucher Institute at Texas A&M University – Corpus Christi

Total Project Cost: \$48,891

Bays Plan, 2nd Ed. Actions: FW 1.1, FW 1.2, FW 1.3, FW 1.4

Background:

The City of Corpus Christi (City) is required to provide freshwater inflows into the Nueces Estuary based on the 1995 Agreed Order. Very simplistically, every month the City is required to “pass through” to the bays and estuaries an amount of water equal to the measured inflow into the Choke Canyon Reservoir / Lake Corpus Christi Reservoir System (Reservoir System), up to a target amount. The target amount varies by month and combined volume of the Reservoir System. The City may receive credits for excess flow from the previous month or from salinity relief credits based on the salinity in Nueces Bay.

The CBBEP has entered into a memorandum of agreement with the National Oceanic Atmospheric Administration (NOAA), National Ocean Service for quality control and dissemination of data for the Nueces Water Level Station. NOAA Physical Oceanographic Real-Time System (PORTS®) is a decision support tool that improves the safety and efficiency of maritime commerce and coastal resource management through the integration of real-time environmental observations, forecasts and other geospatial information. PORTS® measures and disseminates observations and predictions of water levels, currents, salinity, and meteorological.

The purpose of this project is to maintain monitoring equipment in and around the Nueces Delta to observe freshwater inflows downstream of the Rincon Bayou diversion pipeline so that spatial and temporal effects can be calculated, as well as the amount of freshwater needed to manage a healthier estuary. The project will be conducted by the Conrad Blucher Institute (CBI) at Texas A&M University-Corpus Christi. CBI will monitor and maintain one (1) real-time meteorological station (NUDEWX) in the Nueces Delta, one (1) permanent real-time salinity station (NUDE2) in the Nueces Delta, and one (1) water level station (NUDEBAY) in Nueces Bay once it is reinstalled. These stations will collect and report meteorological and water quality parameters downstream of a diversion pipeline that provides spatial and temporal resolution of environmental effects of freshwater inflows.

Funds will be used by CBI for the continued maintenance and operation of the three (3) data collection stations in and around the Nueces Delta. This work continues a long-standing dataset that provides critical data to evaluate freshwater needs and support effective management strategies for maintaining a healthier estuary.

Project Objectives:

The primary project objectives will be to monitor the freshwater inflows coming into the Nueces Delta via the pipeline by recording salinities within the water column at a strategic location along the Rincon Bayou and maintain a real-time weather station in the Nueces Delta.

PROJECT #2712 Nueces Bay Dredging and Beneficial Use Project, Phase II

Performing Organization: City of Portland

Total Project Cost: \$149,555

Bays Plan, 2nd Ed. Actions: D 1.1, TR 2.1, HLR 1.1, HLR 1.2

Background:

The project's shoreline has historically been a popular area for launching shallow draft bay boats and kayaks. This unrestricted access has resulted in impacts on undeveloped uplands, wetlands, tidal flats, and bay bottom. To provide responsible public access and mitigate further impacts on adjacent habitats, the City of Portland recently constructed a public boat ramp and parking lot facility. This facility and adjacent habitats will be complemented by this project by providing a designated boat channel, with navigation aids, to help boaters navigate to deeper waters without impacting the bay bottom and seagrass communities. Dredge material generated by the creation of the boat channel will be used beneficially to protect, restore, or create habitat.

This project represents Phase II of the Nueces Bay Boat Ramp Dredging and Beneficial Use Project, building on work funded by CBBEP in FY 2025. The initial phase established the foundation for project direction by balancing public access needs, technical design considerations, and sensitive habitat protection. The City of Portland stands firmly behind this project and is committing a 30% funding match to ensure successful implementation and long-term benefits for both the community and the environment.

Phase II will advance this effort by developing detailed engineering design, conducting environmental surveys, and securing regulatory permits necessary to construct the preferred alternative, a solution that provides a safe navigation channel while aiming to beneficially reusing dredged material for habitat restoration. Current shallow, irregular navigation routes impede safe boating access, and this project addresses that challenge while aligning with regional ecosystem priorities to restore colonial waterbird and marsh habitats.

Project Objectives:

1. Conduct environmental and hydrographic surveys to inform the preliminary design.
2. Produce 30% engineering design plans and cost estimates for dredging and beneficial use at the Causeway Bird Island.
3. Prepare and submit permitting applications for the preferred alternative determined during the Phase I study.
4. Advance the project toward construction readiness.

PROJECT #2713 Oso Creek Nature Trail Improvement Project

Performing Organization: City of Corpus Christi – Parks and Recreation Department

Total Project Cost: \$50,000

Bays Plan, 2nd Ed. Actions: TR 1.1, TR 2.1, TR 3.1

Background:

The Oso Creek Nature Trail is a rustic wilderness hiking trail located just west of the Terra Mar housing development in the Southside area of Corpus Christi, Texas. The project fulfills a critical need identified in the Corpus Christi 10-Year Parks and Recreation Master Plan, which prioritizes expanding trail networks to improve neighborhood connectivity and safe pedestrian routes. Currently, overgrowth on the Oso Creek Nature Trail hinders navigation and creates safety concerns that discourage use.

To improve connectivity with the existing Bear Creek Hike and Bike Trail and improve public use of the Oso Creek Nature Trail, City crews will use heavy equipment to clear encroaching vegetation and debris along the existing trail footprint to restore visibility and define a clear, 10-foot vertical and 8-foot horizontal safety corridor. The corridor restoration of this rustic wilderness hiking trail will also provide the necessary infrastructure for future integration with an internal trail planned for Bill Witt Park at the Oso Creek Nature Trail main entrance and trail head at Safety Steel Drive.

This initiative will also implement the management strategy of using signage to reduce recreational impacts, such as wildlife disturbance and habitat alteration, by clearly defining the intended path of use. Small directional signs will be installed at the key junction points of the trail as well as access requirements for public use signage, environmental education (i.e. bird species and ecology) and cultural significance signage. Project funds will go towards the development and installation of these signs.

Project Objectives:

The objective of the Oso Creek Nature Trail Improvement Project is to restore and enhance safe public access to the Oso Creek Nature Trail through corridor maintenance and the installation of signage.

PROJECT #2714 CBBEP Public Outreach Events and Activities

Performing Organization: Coastal Bend Bays & Estuaries Program

Total Project Cost: \$46,900

Bays Plan, 2nd Ed. Actions: PEO 1.1, PEO 1.2, PEO 1.3, PEO 1.4, PEO 1.5, TR 1.1

Background:

One of the most important goals of the Coastal Bend Bays Plan is to educate citizens about the ecology of the bay system, its many environmental and economic values, and how an individual can make a positive difference to ensure long-term health. To accomplish this, the Public Education and Outreach Action Plan is designed to raise the public's environmental awareness, foster community stewardship of bay resources; and increase individual involvement in bay resource management issues. Helping residents and visitors understand the complex issues concerning bay resource management is a priority. In addition to understanding how the bay system functions, it is important that citizens develop a sound appreciation for the significant value and economic impact derived from the renewable resources of the bays. CBBEP is constantly working to promote public/private partnerships as stated in the Coastal Bend Bays Plan to help achieve its educational goals.

Project Objectives:

CBBEP will raise awareness of environmental issues by connecting with the Coastal Bend public through our websites and social media channels, as well as at community events and festivals. We will spread the CBBEP brand through promotional and educational materials, such as posters, reusable bags, and other items. We expect to reach thousands of people at various community events.

To accomplish its public education and outreach goal, CBBEP will:

1. Participate in and host community outreach events and festivals,
2. Maintain a volunteer program that allows the public opportunities to participate in CBBEP projects and programs,
3. Host volunteer events that promote the stewardship of coastal resources and support CBBEP projects and programs,
4. Produce or purchase educational and promotional materials, and
5. Maintain a website(s) and active social media channels (i.e., Facebook, Instagram),
6. Develop and provide electronic updates (e.g., newsletters, videos).

PROJECT #2715 Violet Andrews Park - Coastal Resources Survey

Performing Organization: City of Portland

Total Project Cost: \$50,000

Bays Plan, 2nd Ed. Actions: TR 2.1, SM 1.1, BD 1.2, HLR 1.2, TR 3.1

Background:

The overall project goal is to develop a community space with resilient and sustainable water access and educational recreation opportunities for the local community and tourists at Violet Andrews Park in Portland, Texas. Currently, Violet Andrews Park is overgrown with invasive species, and the shoreline is riddled with hazardous concrete debris, restricting water access. The City of Portland is working with HDR Engineering Inc to develop a park design that promotes the bayfront location. The park will feature open lawn areas, two separate pocket beaches protected by groins, ADA access to beach features, a boardwalk and bird observation blind, and improved playgrounds. The design will also include plans to remove invasive species and spotlight native vegetation on nature trails and overlooks.

Current design contracts only extend through 60% design and permitting, and the overall opinion of probable project cost, including professional services, is approximately \$13M over three separate phases. The City of Portland will seek additional funding assistance through CEPRA/CMP, GOMESA, and others grant programs. The intent of the phasing is to break the project into modular components that are more feasible for funding.

As a part of the permitting process, an archaeological review will be required but was not included in the current phase due to budgetary constraints. The goal of this specific project is to engage a firm to perform a Coastal Resources Survey for Violet Andrews Park.

Project Objectives:

Project funds will be used to engage a professional services firm to perform an archaeological investigation (Cultural Resources Survey) at Violet Andrews Park, located in Portland, Texas, as a requirement of the permitting process.

PROJECT #2716 Padre Island National Seashore – Bird Island Boat Basin Dumpster

Performing Organization: Coastal Bend Bays & Estuaries Program

Total Project Cost: \$10,000

Bays Plan, 2nd Ed. Actions: BD 1.1

Background:

CBBEP will utilize the funds to work with the Padre Island National Seashore (PINS) resource managers to continue the placement of a roll off dumpster at the Bird Island Basin Boat Ramp. This service would be provided throughout the year and emptied as needed. CBBEP has provided a dumpster at this location for several years, and it is heavily utilized by the thousands of boaters that launch at the Bird Island Basin.

Project Objectives:

Project objective is to reduce litter and marine debris in the Upper Laguna Madre by providing a location at PINS where people can properly dispose of their trash and waste, including larger bulk items that may come from cabins.

PROJECT #2717 Return of the Prairie: Out with Invasives, In with Natives

Performing Organization: City of Port Aransas

Total Project Cost: \$40,300

Bays Plan, 2nd Ed. Actions: HLR 1.1, HLR 1.2, HLR 2.1, HLR 2.6

Background:

Rangelands worldwide are among the most threatened ecosystems. In Texas, coastal prairies—an integral component of the state's rangelands—are especially vulnerable to urbanization, agricultural conversion, and invasion by exotic plant species. Among the most significant threats are exotic grasses such as old-world bluestems and Guinea grass. For instance, more than four million acres in Texas now consist of nearly uniform stands of invasive old-world bluestem. These monocultures disrupt ecosystem function, alter nutrient cycling, and reduce biodiversity. Although they are strong candidates for diversity and restoration efforts, current management approaches often require costly, intensive practices involving frequent soil disturbance and/or repeated herbicide applications.

The project will establish four 0.5-acre research plots within both the old-world bluestem and Guinea grass monocultures. Each plot will receive one of the following treatments: (1) control (no treatment), (2) repeated summer prescribed burns, (3) groundcover applications using clean soil and/or natural biodegradable erosion-control blankets, and (4) a traditional bare-soil management approach using repeated disking and herbicide applications. Prior to implementing treatments, baseline data on (1) soil chemical and physical characteristics, (2) invasive grass cover, and (3) plant species richness will be collected. After treatment establishment, soil metrics will be collected annually, and the plant community will be assessed seasonally.

Project Objectives:

The goal of this project is to establish research demonstration sites that evaluate alternative methods for diversifying old-world bluestem and Guinea grass monocultures, while enhancing coastal community resiliency through educational workshops and training the next generation of land stewards.

PROJECT #2718 Integrating Tier 3 Sampling: A Step Toward a Hierarchical Strategy for Seagrass Monitoring in the Coastal Bend

Performing Organization: University of Texas Marine Science Institute

Total Project Cost: \$40,576

Bays Plan, 2nd Ed. Actions: HLR 1.1, HLR 1.3, HLR 2.4

Background:

The goal of this project will establish a baseline for seagrass condition to improve capacity for assessing and anticipating changes in seagrass habitats associated with declining water quality. Seagrasses can integrate fluctuations in environmental conditions over a range of temporal scales and can act as barometers of coastal change. Changes in plant abundance, composition, blade morphology and/or elemental constituents may signal a system that is responding to physical or environmental stressors that threaten ecological stability and resilience. Although stochastic events are unpredictable, indicators may provide an early warning of seagrass collapse. Therefore, the observations of declining seagrass habitat within the Coastal Bend (i.e., Redfish Bay) are concerning and merit further investigation.

Hierarchical monitoring provides an effective way to detect and predict shifts in seagrass ecosystems while supporting conservation goals across multiple scales. Tiers 1 and 2 are rapid assessments that provide information at the mapping and meadow scale, respectively (e.g., distribution and extent, broad-scale condition). Tier 3 monitoring typically focuses on assessing environmental drivers of change, with more frequent sampling intervals and/or metrics (e.g., shoot allometry or stable isotopic composition). While bay-wide mapping (tier 1) and field-scale habitat assessments (tier 2) provide essential spatial context, they cannot provide fine-scale data that improves understanding of causal relationships between seagrass condition and environmental drivers. Tier 3 helps fulfill this critical gap while complementing broader monitoring efforts. Consistent, long-term monitoring of seagrasses can help to identify trends and indicators of seagrass stress before loss, while threats are still potentially reversible.

The Texas Seagrass Monitoring Program (TSMP) has successfully implemented tier 2 for the Texas coast, and has applied a tier 3 approach in the Upper Laguna Madre. Tiers 1 and 3 continue to remain a challenge for many seagrass monitoring programs Gulf-wide due to logistical and cost restraints. Prior to the TSMP's current habitat mapping effort of this region, the last surveys were completed in 2004/2007 (NOAA) and 2015-2018 (TPWD). The execution of tiers 1 and 2 by 2026 is timely, creating a unique opportunity toward fully implementing a three-tiered approach and fulfilling a regional seagrass monitoring gap.

Project Objectives:

To establish tier 3 monitoring sites within the Coastal Bend at previously occupied tier 3 stations within the Mission-Aransas NERR at Hog, Mud, and Traylor Islands as well as other locations such as Redfish Bay – North and South, and East Flats. A suite of metrics will be measured including percent cover and shoot allometry by species, shoot density by species, sediment cores for sediment grain size, porewater nutrients, and total organic carbon. Cores will also provide data, by species, for above-and below-ground biomass, shoot allometry, reproductive capacity, stable isotope ratios, nutrient content, and epiphyte biomass.

PROJECT #2719 Microbial Source Tracking, Nitrogen Source Tracking and Human Health Risk Assessment in Redfish Bay

Performing Organization: Harte Research Institute

Total Project Cost: \$82,256

Bays Plan, 2nd Ed. Actions: WSQ 1.1, WSQ 2.1, WSQ 3.1, NPS 1.5, PH 1.1

Background:

Redfish Bay was identified as a “hotspot” of bacterial pollution in a recently published CBBEP report (project 2464; publication 194). This report included long-term trends in water quality based on twenty-five years of data from Texas Commission on Environmental Quality’s (TCEQ’s) Surface Water Quality Monitoring (SWQM) database. The recent and dramatic increase in enterococci in Redfish Bay is a cause for concern, as elevated levels of enterococci in the environment indicate the presence of fecal pollution. Enterococci are a valuable tool for identifying locations impaired by fecal pollution, but these bacteria are not host-specific and cannot inform on the origin of the fecal waste. Furthermore, while elevated levels indicate a health concern, enterococci are not an accurate predictor of human health risks in waterbodies impaired by non-point source pollution. To address this critical knowledge gap and develop effective management strategies, a combined MST-QMRA framework in conjunction with NST can be applied. MST identifies current fecal sources via the quantification of host-associated fecal markers; the MST results can then be used to inform a mathematical QMRA model to estimate human health risks and identify which fecal source(s) should be prioritized in management efforts. NST analyzes the nitrogen composition within seagrasses and provides information on the longer-term sources of nutrients, including whether they originated from human sewage.

Redfish Bay is surrounded by a mix of suburban land use and natural habitat, and is centrally located between Aransas Pass, Rockport, Port Aransas, and Ingleside. Potential sources of fecal pollution include wastewater treatment plant (WWTP) discharge, compromised/failing septic systems, and stormwater runoff. To accurately characterize water quality spatially throughout the bay, water samples will be collected from multiple sites that capture several points of potential fecal waste entry into the waterbody. For MST analysis, samples will be collected during eight events on an approximate bi-weekly schedule from May through August of 2027 (N = 72 samples). This sampling timeframe will allow for (1) capture of water quality conditions during summer months when the highest enterococci levels have been detected and (2) flexibility to capture rainfall events and dry periods to test if the fecal markers are significantly higher after rainfall. The MST data will inform a QMRA to estimate the health risks associated with children and adults swimming in Redfish Bay. For NST analysis, samples will be collected quarterly from 40 Tier-2 stations to capture seasonal variations in suspected runoff and groundwater inputs. The NST analysis will incorporate previous isotopic and stoichiometric data from seagrasses collected at Tier-2 rapid assessment stations in Redfish Bay since 2011.

Project Objectives:

The objectives of the project include (1) quantifying human, canine, and gull-associated fecal markers at multiple locations throughout Redfish Bay, (2) tracking seasonal nutrient loadings based on seagrass and drift macroalgal isotopic and stoichiometric indices, and (3) performing a human health risk assessment to estimate the overall risk based on the host-associated markers and identify which fecal source (i.e., human, canine, gull) contributes the largest risk to human health.

PROJECT #2720 Antibiotic Resistance and Human Health Risks in the Baffin Bay Watershed

Performing Organization: UT Health Houston School of Public Health

Total Project Cost: \$28,468

Bays Plan, 2nd Ed. Actions: WSQ 1.1, WSQ 2.1, WSQ 2.2, NPS 1.1, PH 1.1

Background:

This study will assess the potential human health risks associated with antibiotic resistance in the Baffin Bay watershed. Antibiotic resistance is one of the most significant public health concerns of the 21st century, given the widespread use of antibiotics to treat a range of bacterial infections, from minor to life-threatening. In environmental waters, these antibiotic resistant genes and bacteria can originate from a variety of sources, including wastewater, livestock feces, and naturally occurring bacteria. Specifically, the class 1 integron-integrase gene (*intI1*), characterizes the presence of integrons and serves as a proxy for antibiotic resistance stemming from environmental pollution. Consequently, *intI1* acts as an indicator for the presence of both pathogenic and non-pathogenic bacteria that may confer antibiotic resistance. Preliminary data previously collected in the Baffin Bay watershed has identified quantifiable concentrations of *intI1* across the bay and its three major tributaries (Los Olmos Creek, Petronila Creek, and San Fernando Creek). There is a critical need to understand what these *intI1* concentrations mean for recreators, including potential risks that may be present, and to provide information that can help inform risk-reduction activities.

Previous data collected has revealed the spatial and temporal characteristics of fecal indicator bacteria, host-specific fecal markers (human, gull, cattle, pig), *intI1*, and environmental metadata in the Baffin Bay watershed. The *intI1* marker was found to be significantly associated with enterococci and the human, cow, and pig fecal markers. To interpret this data in the context of public health risks for recreators, we aim to develop a modified quantitative microbial risk assessment (QMRA) to evaluate human health risks associated with environmental exposure to antibiotic resistance, as identified via the *intI1* marker. The adapted QMRA framework, which includes hazard identification, exposure assessment, dose response, and risk characterization, will evaluate the risk of ingestion for recreators in the watershed across a variety of recreational activities (i.e., swimming, fishing, boating). We will utilize both previously collected *intI1* marker data and co-occurring microbial source tracking (MST) marker concentrations, which inform of fecal sources potentially contributing to antibiotic resistance in the waterbody. Model inputs will include environmental data, as well as data from the peer-reviewed literature, including ingestion volumes per recreational activity, to estimate the risk of ingestion of the *intI1* marker and relative risk across different fecal sources that contribute *intI1* genes to the environment. Our proposed methodology will follow previously published work by Burch et al. (2024), further validating our approach, and we will compare our findings to Zhang et al. (2025), which also evaluated recreational health risks associated with antibiotic resistance. Additionally, this work will consider management strategies that may be useful for mitigating these sources of contamination.

Project Objectives:

The goal of this project is to characterize watershed-level human health risks associated with antibiotic resistance in Baffin Bay using the *intI1* marker.

PROJECT #2721 Relative Sea Level Rise and Habitat Assessment in the Nueces Delta

Performing Organization: University of Texas Marine Science Institute

Total Project Cost: \$9,300

Bays Plan, 2nd Ed. Actions: CR 1.1, HLR 1.1, HLR 1.3

Background:

The project will help determine the impacts of sea level rise on marsh habitats in the Nueces Delta Preserve by gathering data on both vegetative communities and elevation change. Information generated by the project will help CBBEP and resource agencies plan for and adapt to future sea level rise impacts at the Preserve. More specifically, the results of this project can be used to help answer questions related to the management and restoration of the Nueces Delta Preserve, which is owned by CBBEP.

This scope includes the monitoring of Surface Elevation Tables (SETs) and marker horizons (MH) at two sites within the CBBEP Nueces Delta Preserve (total of 6 SETs and 24 MH). Using the elevation data gathered from SETs and MHs, we can compile a more complete picture of habitat changes due to relative sea level rise within the Nueces Delta. This project builds upon other efforts along the Texas coast to maintain and monitor SETs and MHs. The Mission-Aransas NERR has worked with UTMSI researchers to install, maintain, and survey five groups of SETs and MHs since 2012. These existing Mission-Aransas NERR SETs and MHs are located in the NERR boundary, which are situated just north of Nueces Bay.

Over time SETs and MHs help researchers acquire the fundamental data and information needed to understand the effects of changing local sea level and inundation patterns on the response of vegetative communities. Knowledge about other factors such as changes in vegetative communities, precipitation, temperature, water chemistry, and invasive species is helpful in segregating the impacts of changing land and water levels from other environmental influences. Previous, on-going, and planned research projects at the Nueces Delta will be invaluable in identifying the key indicators that are environmentally important and will complement the data gathered through this proposed project.

In particular, the SET and MH data will greatly benefit a long-term vegetation monitoring program that has been maintained and monitored by the University of Texas Marine Science Institute (UTMSI) for many years at the Nueces Delta. Measurements at vegetation transects have been made continuously for over 20 years (since 1999) and have included: percent cover, species composition, sediment ammonium, pore water salinity, and sediment moisture. By placing SETs and MHs in close proximity to these transects, researchers will have a much more complete picture of habitat changes due to relative sea level rise and inundation changes. Since funding is no longer available for UTMSI to monitor these vegetation transects on a regular basis, the current project also includes funds to allow UTMSI to continue monitoring vegetation transects within the Nueces Delta.

Project Objectives:

Project objectives include: (1) continuation of a long-term marsh vegetation monitoring program at the Nueces Delta and (2) supplement the existing marsh monitoring program with elevation data by monitoring SETs and MHs.

PROJECT #2722 Operational Support for Imaging FlowCytobot at the Texas State Aquarium

Performing Organization: Harte Research Institute at Texas A&M University – Corpus Christi

Total Project Cost: \$53,098

Bays Plan, 2nd Ed. Actions: PH 1.1, HLR 2.5

Background:

A harmful algal bloom (HAB) is the proliferation of an algal species that has harmful effects on marine life and human health. While some HAB events are natural features of the environment and unavoidable, HAB events have been increasing in frequency and magnitude globally, in the Gulf, and on the Texas coast. Coastal watersheds in Texas are experiencing rapid population growth and urbanization; changes that can lead to increased nutrient loads that stimulate HAB growth. In addition, hydrologic changes are occurring in some Texas estuaries that favor HAB growth. Indeed, red tides that have occurred naturally in the Gulf for many centuries have increased in frequency on the Texas coast since the mid-1990s due to complex environmental and hydrologic changes. Likewise, “brown tide” algal blooms that have had significant negative impacts on Baffin Bay and the Laguna Madre first appeared in 1989 and have now been linked to growing nutrient inputs to the bay.

A growing network of Imaging FlowCytobot (IFCB), including the one located at the Texas State Aquarium (TSA), will provide sustained, proactive HAB monitoring data that can give early warning of an impending HAB event to resource managers and coastal communities. This, in turn, may reduce: 1) economic losses to the tourism and seafood sectors, 2) adverse human health impacts, and 3) negative publicity associated with HABs. In addition, the strategically placed TSA IFCB will provide an important baseline assessment of the ambient plankton community in a location where a seawater desalination plant is proposed to be built.

HRI currently operates the IFCB that the TSA purchased. That IFCB became operational in February 2025, with continuous operation since October 2025. It samples water from Corpus Christi Bay adjacent to the Port of Corpus Christi Wildlife Rescue Center, providing a relevant snapshot of HAB presence in upper Corpus Christi Bay near the Inner Harbor. Notification emails are sent to relevant agency and site partners upon detection of an HAB. Data and images are accessible online on a dedicated project webpage via account access, which will become publicly accessible as the project develops. For this funding request, support is requested to cover staff costs associated with the TSA IFCB maintenance and supply costs for replacement parts.

Project Objectives:

The primary objective of this project is to support the continued operation and maintenance of an Imaging FlowCytobot at the Texas State Aquarium, which detects the presence of harmful algal bloom-forming phytoplankton in near real-time.

PROJECT #2723 Blue Water Task Force (BWTF)

Performing Organization: Texas A&M University – Corpus Christi

Total Project Cost: \$26,521

Bays Plan, 2nd Ed. Actions: WSQ 2.1, PH 1.1, PEO 1.1, PEO 1.3

Background:

The Coastal Bend-Blue Water Task Force (CB-BWTF) was formed in 2022 in response to surfer concerns about water quality and surfing related illnesses, reported to the Coastal Bend Chapter of Surfrider. Surfer citizen scientists collect water samples weekly on Thursdays, deliver them to TAMU-CC for bacterial testing (IDEXX Enterolert Test), and results are made publicly available on Fridays on the BWTF website (<https://bwtf.surfrider.org/explore/74/8911>).

The purpose of the proposed project is the continuation of fecal bacteria water quality monitoring by the Coastal Bend Blue Water Task Force (CB-BWTF). The CB-BWTF is a collaboration between the Surfrider Foundation's National Blue Water Task Force (<https://bwtf.surfrider.org/>), the Coastal Bend Chapter of the Surfrider Foundation, and Texas A&M University - Corpus Christi (TAMU-CC). The secondary purpose is the planning/development of a state-wide BWTF coordinated with Beach Watch, Clean Coast Texas, and Surfrider's Galveston and South Texas Chapters.

Since 2022, the CB-BWTF has monitored water quality at three popular Coastal Bend beaches frequented by the surfing community and beachgoers in general: JP Luby Surf Park North, JP Luby Surf Park South, and Padre Balli Beach. The data provides the public with timely information on water quality. The proposed project addresses three priority issues identified by the Coastal Bend Bays Plan: 1) water and sediment quality (WSQ), 2) public health (PH), and 3) public education and outreach (PEO). Specifically, the proposed project will quantify bacterial loadings (WSQ Action Item 2.1), provide recreational users with water quality data (PH Action Item 1.1), raise public awareness of water quality through the BWTF website and social media (PEO Action Item 1.1), and increase individual involvement in water quality issues through engagement with volunteer surfer citizen scientists (PEO Action Item 1.3).

Project Objectives:

The proposed project will satisfy five objectives: 1) quantify bacterial loadings, 2) provide the public with water quality data, 3) raise public awareness of water quality through the BWTF website and social media, 4) increase individual involvement in water quality issues through engagement with volunteer surfer citizen scientists, and 5) lay the groundwork for a future state-wide BWTF.

PROJECT #2724 CBBEP Coastal Bird Program – Laguna Madre Initiative

Performing Organization: Coastal Bend Bays & Estuaries Program

Total Project Cost: \$100,000

Bays Plan, 2nd Ed. Actions: CB 1.1, CB 2.1, HLR 1.1, HLR 1.2

Background:

The Laguna Madre is one of the most important coastal wetland complexes for birds in the Western Hemisphere. Much of the value of this system for birds is based on the diversity of tidal flats and seagrass beds spread over a very large geography, extending from the Corpus Christi area down to Tamaulipas, Mexico.

Historically, the Coastal Bird Program has focused our management and monitoring efforts primarily on the mid-coast of Texas. However, bird populations span across program boundaries, and we recognized that expansion to the Lower Laguna Madre was needed to properly manage local waterbird populations. The Laguna Madre is used by the avian community as a contiguous ecological system and should be managed as such.

Thanks to the continued generosity of the Kleberg Foundation, the Coastal Bird Program has employed a full-time biologist in the Lower Laguna Madre who has, with the help of volunteers, implemented management actions at waterbird rookeries - installing protective signs, removing exotic vegetation, planting native shrubs, and eliminating nest predators. Staff has also focused on community engagement and coordinating volunteers. Consistent, annual efforts are vital in properly managing rookery islands. It takes several seasons of intense management to improve island habitat. Therefore, on-going investment in the Laguna Madre Initiative is needed to continue the habitat improvement and protection that is already underway.

In addition to rookery islands, other habitats found in the Laguna Madre support astounding numbers of migrating and wintering shorebirds. Millions of birds, many that migrate over 10,000 miles a year, make use of the beaches and tidal flats of the Laguna Madre. Advances in avian tracking systems are allowing us to learn more about these species and how important the Texas coast is to the migratory flyway. We have expanded our conservation and research efforts to include migratory shorebirds which depend on the Texas coast for portions of their life cycles.

Funding from the Kleberg Foundation and others has allowed us to effectively operate on the lower Texas coast and cultivate a network of local volunteers and partners. Continued investment in this program will allow us to build upon these partnerships, create new collaborative opportunities, and boost our volunteer and support base in the lower Laguna Madre, drawing us closer to our goal of a continuous, integrated, collaborative coastal bird conservation effort throughout the bi-national Laguna Madre system.

Project Objectives:

1. Improve colonial nesting waterbird populations in the Lower Laguna Madre by addressing proximate causes of nest failure such as predation, lack of suitable nesting substrate, and human disturbance.
2. Implement monitoring efforts on shorebird populations to identify potential conservation actions.
3. Engage volunteers and communities in coastal bird conservation efforts through the coastal portion of the Rio Grande Valley.

PROJECT #2725 Trophic Ecology and Contaminant Exposure of Southern Flounder in the Texas Coastal Bend

Performing Organization: Texas A&M University – Corpus Christi

Total Project Cost: \$32,962

Bays Plan, 2nd Ed. Actions: HLR 2.3, HLR 2.4

Background:

Southern flounder are estuarine-dependent flatfish that support economically important commercial and recreational fisheries along the U.S. southeast Atlantic and Gulf of Mexico (also known as the Gulf of America; hereafter, the Gulf) coasts. However, widespread stock declines have prompted increasingly strict management regulations to reduce harvest. From 2011 to 2020, the National Marine Fisheries Service reported that southern flounder experienced the largest decrease (-81%) in recreational harvest of any key species or species group in the Gulf Region. Southern flounder populations in Texas have declined by over 70% in recent decades and are designated by the Texas Parks and Wildlife Department as a Species of Greatest Conservation Need (SGCN), with conservation status rankings of S2-Imperiled to S3-Vulnerable, indicating elevated extinction risk, limited occurrences, persistent declines, and multiple compounding threats. Notably, southern flounder are the only SGCN harvested both commercially and recreationally, underscoring the need for informed management. Despite their conservation and fishery importance, no modern assessment has examined how feeding ecology, trophic structure, and contaminant exposure vary across demographic groups in South Texas estuaries; the most recent regional diet study is 50 years old. Without updated quantitative ecological data, managers lack the information needed to assess recovery constraints and develop effective ecosystem-based fisheries management strategies for this economically and culturally important species.

Project Objectives:

The objectives of this project are to (1) quantify the contemporary trophic ecology of southern flounder across size, age, sex, and location in the Texas Coastal Bend, and (2) evaluate how dietary pathways and demographics relate to mercury and microplastic exposure in this declining estuarine species.

PPROJECT #2726 Partners for Fish and Wildlife Program - Pollinator Habitat Project

Performing Organization: Coastal Bend Bays & Estuaries Program

Total Project Cost: \$75,000

Bays Plan, 2nd Ed. Actions: HLR 1.1

Background:

CBBEP and USFWS will enter into a Cooperative Agreement to broaden previous collaborative efforts in providing habitat along the monarch's migratory corridor along the Texas Coast. This funding will support habitat improvement for early successional habitat and will be accomplished by working with landowners using various treatment types (herbicide treatment, prescribed fire, etc.). It would support the ongoing work of CBBEP and other private landowners to promote floral resources, including milkweeds, needed by pollinators as they migrate through the coastal corridor.

Assisting with private landowner's wildlife habitat restoration efforts promotes a public benefit through implementing cost effective wildlife management practices, counteracts the effects of habitat loss and fragmentation, helps to prevent waste or depletion of wildlife resources, and provides increased opportunities for public recreation and enhance grazing resources.

CBBEP will work collaboratively with USFWS to enroll private landowners into the Partners for Fish and Wildlife (PFW) Program via Subrecipient Landowners Agreements. Through subrecipient agreements we work with CBBEP and private landowners to conserve key habitat types benefiting game and nongame species including rare and declining plants and animals. CBBEP and USFWS will work to restore 750 acres of privately owned habitat, improving ecological function and supporting long term landscape resilience.

Project Objectives:

The primary project objective is to restore and enhance 750 acres of privately owned early successional habitat along the Texas Coast by partnering with the USFWS and private landowners to implement cost-effective habitat management practices that increase native flowering plants and milkweed, support monarch butterflies and other pollinators, improve wildlife habitat, and strengthen the ecological resilience of the coastal migratory corridor.

PROJECT #2727 Ocean Acidification Monitoring in Port Aransas Ship Channel, Year 3

Performing Organization: University of Texas Marine Science Institute

Total Project Cost: \$38,988

Bays Plan, 2nd Ed. Actions: WSQ 3.1, WSQ 2.2

Background:

Ocean acidification is reflected by the decrease in pH caused by the uptake of atmospheric carbon dioxide (CO₂). Atmospheric CO₂ levels have been increasing steadily since the industrial revolution. As of now, ~30% of anthropogenically produced CO₂ since the industrial revolution has been absorbed by the world's oceans. As CO₂ dissolves into the ocean, carbonic acid is formed and leads to increase of hydrogen ion concentration (or a decline in pH). Changing the chemistry of the ocean has many adverse effects on marine organisms. Examples of organisms that can be negatively impacted are oysters, shrimps, corals, sea urchins, some plankton species, and even fish species. For many organisms, an environment with decreasing pH hinders them from producing and maintaining their carbonate shells/skeletons or causes developmental delays. This is an important issue because the decline of these organisms would have many cascading effects, such as changing marine food web structure, decreasing shellfish fishery production, and decreasing coral reef production.

Prior research revealed an overall decline in both pH and alkalinity (i.e., acidification) in almost all estuaries (including estuaries and coastal bays) in the State of Texas. This study is based on a long-term dataset that has been collected by the Texas Commission on Environmental Quality. Among these estuaries, the ones in the southern Texas that are subject to semi-arid conditions experiences the most decline in alkalinity and pH, including the Mission-Aransas Estuary (comprised of Copano, Aransas and Mesquite Bays). One of the reasons proposed is that long-term decrease in freshwater inflow, which is rich in alkalinity, causes declining alkalinity and pH. In addition, there is growing interest among both the industry and academic community to use the ocean to remove CO₂ on long time scales (hundred years or longer). One of the approaches involves injection of CO₂ under continental shelves offshore. Therefore, sustained monitoring of seawater carbonate chemistry will also provide a baseline against which increase in water pCO₂ level due to possible leakage can be detected.

Multi-decadal water chemistry data in Mission-Aransas Estuary exhibit a long-term reduction in alkalinity and pH, symptoms of freshwater inflow reduction and ocean acidification that may affect the calcifying organisms (e.g., shellfish). The southern-most commercial oyster harvesting in Texas is located in this region, sustained monitoring that provides up to date information on the water carbonate chemistry and suitability of estuarine water to this important calcifying organism is needed.

Project Objectives:

The goal of this project is to continue monitoring ocean acidification conditions in Aransas Ship Channel using high precision monitoring equipment to examine the effect of freshwater inflow and ocean acidification on the carbonate chemistry at this estuarine exchange location next to the semiarid Mission-Aransas Estuary.

PROJECT #2728 Community Structure and Function of Estuarine-Dependent Sportfish in Oso Bay: Establishing a Baseline Prior to Wastewater Diversions

Performing Organization: Center for Sportfish Science & Conservation at Texas A&M University – Corpus Christi

Total Project Cost: \$82,299

Days Plan, 2nd Ed. Actions: HLR 2.3, HLR 2.4

Background:

Oso Bay is an urban secondary bay connected to Corpus Christi Bay. Natural freshwater inflow from Oso Creek is limited, making treated wastewater from the Oso Wastewater Treatment Plant (OWTP) the primary source of freshwater. Current plans by the City of Corpus Christi will divert 11 to 16 million gallons of the plant's 24 million gallons of daily effluent for industrial reuse, greatly reducing freshwater discharge into the bay. This change is expected to alter salinity levels and habitat conditions throughout Oso Bay.

This project will establish a baseline of estuarine sportfish communities in Oso Bay before planned wastewater effluent diversions reduce the bay's primary freshwater source. Oso Bay currently relies heavily on discharge from the Oso Wastewater Treatment Plant (OWTP) because natural freshwater inflow is limited. Proposed diversions for industrial reuse could substantially reduce freshwater entering the bay, altering salinity patterns and habitat conditions.

These changes may affect important sportfish species, including red drum, spotted seatrout, black drum, Atlantic croaker, and spot, which depend on estuarine habitats for growth and recruitment. Understanding current fish populations and resource use is essential for evaluating future ecological impacts and supporting fisheries management.

Quarterly sampling will be conducted at five fixed sites representing different distances from the wastewater discharge point. Fish will be identified, counted, and collected for stable isotope analysis. Measurements of carbon ($\delta^{13}\text{C}$), nitrogen ($\delta^{15}\text{N}$), and sulfur ($\delta^{34}\text{S}$) isotopes will be used to evaluate feeding ecology and resource partitioning among species. Results will provide critical baseline data on fish community structure and ecosystem function, helping resource managers assess future impacts of wastewater diversions and balance water reuse with estuarine conservation.

Project Objectives:

The project has two objectives: (1) determine the presence and abundance of estuarine sportfish species in Oso Bay and (2) quantify resource use, niche breadth, and niche overlap among these species before freshwater inflow changes occur. The resulting data will provide a baseline for evaluating future ecological impacts.

PROJECT #2729 Establishing Baseline Levels of Microplastic Contamination in Oysters from the Coastal Bend

Performing Organization: University of Texas Marine Science Institute and Harte Research Institute

Total Project Cost: \$94,316

Bays Plan, 2nd Ed. Actions: HLR 1.3, HLR 2.3, WSQ 2.2, PEO 1.3

Background:

Oysters, mainly Eastern oysters or *Crassostrea virginica*, are a key economic generator in Texas, which includes harvests from public reefs, private leases, and a growing farming industry established in 2019. Texas aquaculture sales top \$120 million annually according to the 2025 report by Texas A&M AgriLife, with oyster mariculture (farming) making a significant contribution. Currently there are 11 permitted sites for oyster mariculture, together with numerical natural reefs in the Coastal Bend. Among the natural and anthropogenic impacts on oysters, microplastics (1µm-5mm) is a critical one, as their concentrations keep increasing owing to the accelerating production of plastics since the 1950s, with an accumulative amount of 9 billion metric tons to date. Oysters, as sedentary filter-feeders, are at high risk of being impacted by coastal pollution, so much so that they can be used as water quality indicators. Although the presence of microplastics in oysters has been well documented worldwide, the plastic quantification and source tracing are understudied, not to mention the impacts of microplastic on the growth of oysters including shell development and meat weight, and how that impacts the viability of mariculture.

Therefore, there is a critical need to produce solid scientific data that is critical to the public and decision makers to better understand the impact of plastics on oysters, together with education on plastic pollution and the related impacts on oyster habitats. Identifying and quantifying microplastics in oyster tissues, however, is not trivial and there is no established protocols for doing so. The typical instruments to quantify microplastics in tissues are Fourier transform infrared (FTIR) or Raman spectroscopy, but these can only offer the number of plastics and not throughput. The "go-to" technique for plastics quantification is pyrolysis gas chromatography mass spectrometry (Py-GC/MS) owing to its high sensitivity and superb quantitative capability. This technique has been recently applied to quantify nano- and microplastics in human tissues, but not widely utilized in finfish and shellfish due to cost and constrained instrument availability. However, this technique is destructive and does not offer any sort of visualization of plastics, meaning that there is no way of knowing the size and shape of plastics that have been accumulated in the oyster tissues. Such information may be critical to assess the source of plastic pollution. To overcome this issue, a state of art technique, optical photothermal infrared spectroscopy (OPTIR) will be used to identify and visualize plastics in oyster tissues for the first time. OPTIR takes advantage of the much higher sensitivity of visible wavelength than the IR band, thus offering at least one order of magnitude higher sensitivity than FTIR, particularly for submicron particles.

Project Objectives:

The goal of this project is to establish baseline levels of microplastic contamination in oysters from the Coastal Bend, in terms of the amount and type of microplastics as the first comprehensive database. Additionally, a Beachcombing video for PBS TV, a Beachcombing Report newspaper article, and an NPR radio segment, which will summarize key results and potential implications for coastal communities will be produced.

PROJECT #2730 Long-Term Assessment of Seagrass and Seed Bank Reserves

Performing Organization: University of Texas Marine Science Institute

Total Project Cost: \$27,000

Bays Plan, 2nd Ed. Actions: HLR 1.1, HLR 1.3, HLR 2.4, CR 1.1, PEO 1.1

Background:

The overarching goal of this work is to continue our landscape approach to long-term seagrass monitoring to evaluate status and trends in Texas coastal seagrass populations with particular focus on the Upper Laguna Madre (ULM), Corpus Christi Bay (CCB), and Baffin Bay (BAF). We will adopt the hierarchical strategy for seagrass monitoring outlined by Neckles et al. (2011) to establish the quantitative relationships between physical and biotic parameters that ultimately control seagrass condition, distribution, persistence, and overall health.

The FY27 effort also includes an assessment of seed reserves in the sediment, which provide an important source of genetic variation and regeneration potential in seagrass beds. Quantifying variation in seedbank density both spatially and over time will provide a better understanding of the potential for continuity and recovery in seagrass beds across the Coastal Bend. We will evaluate seedbank density in the sediment across Tier 2 sampling stations in two bays by quantifying seeds present in one sediment core per monitoring site across Corpus Christi Bay and Upper Laguna Madre, for a total of 250 core samples. Further, comparison with a previous sampling of seed density at the same monitoring stations in 2012 will provide an understanding of how the seedbanks across these sites may have changed over the intervening 15 years and whether such changes may correspond to vegetation or environmental characteristics monitored over this timeframe. These results will provide valuable insight into the preservation of functioning seagrass ecosystems in the Coastal Bend.

Project Objectives:

To monitor seagrass in the ULM, CCB, and BAF for species composition and percent cover, seagrass leaf tissue nutrient content, and physical parameters to establish the quantitative relationships between physical and biotic parameters that ultimately control seagrass condition, distribution, persistence, overall health, and sediment seedbank reserves.

PROJECT #2731 Wells and Water for Whoopers Cost Share Program Implementation

Performing Organization: International Crane Foundation

Total Project Cost: \$44,145

Bays Plan, 2nd Ed. Actions: HLR 1.2, HLR 2.1

Background:

This project will create or enhance three (3) freshwater wetlands important for Whooping Cranes and other waterbirds through the Wells and Water for Whoopers Cost Share Program. This program formalizes five-year landowner agreements between private landowners and ICF, requiring that sufficient amounts of water will be available during the winter season (November-April), and that wetland vegetation will be managed and maintained to be suitable for Whooping Cranes. The agreement will also include the required protection and maintenance of a 50-m herbaceous buffer around each wetland to protect against soil runoff into the wetlands and decrease predation risk to Whooping Cranes associated with dense shrubby cover. This cost share program will pay for a portion of the costs associated with installing new wells, fixing broken wells and pumps when necessary, and enhancing wetlands through restoration, or excavation as needed.

Since 2012, the San Antonio Bay Partnership, ICF, and various other organizations have worked to ensure that freshwater is available to Whooping Cranes and other wildlife. This "Water for Wildlife" Program has been successful in developing reliable wetlands on both Federal and private lands, and ICF has documented Whooping Crane use of these wetlands for over a decade. The Aransas-Wood Buffalo Population of Whooping Cranes has continued to grow and the winter range of this population has expanded into new areas. In 2023, ICF initiated the "Wells and Water for Whoopers" Cost Share Program to build upon the many years of successful collaboration on "Water for Wildlife" projects, to formalize the agreements with landowners, and to work in these expansion areas.

Project Objectives:

This project will provide drinking and foraging habitat for Whooping Cranes, shorebirds, and wintering waterfowl and provide Mottled Duck nesting habitat during the spring and summer.

PROJECT #2732 Public Access Master Plan for the Redfish Bay Causeway

Performing Organization: Coastal Bend Bays & Estuaries Program

Total Project Cost: \$91,280

Bays Plan, 2nd Ed. Actions: TR 2.1, TR 3.1, HLR 1.1, HLR 1.2

Background:

The Redfish Bay Causeway is located on Texas State Highway 361 between the Port Aransas ferry landing and the City of Aransas Pass. This heavily traveled road is bordered on both sides by the Redfish Bay State Scientific Area, which contains unique, sensitive biological communities including seagrass beds, oyster reefs, marshes and mangroves. These habitats provide valuable feeding and nursery habitat and critical refuge for shrimp, crabs and juvenile game fish. Seagrasses also provide food for sea turtles, shorebirds and waterfowl, and wading birds are frequently seen utilizing the mangroves and marshes along the road for roosting, feeding and nesting habitat.

The wetland areas adjacent to the Redfish Bay Causeway are also extremely popular with anglers, birders, paddlers, and coastal visitors wanting to relax and enjoy the calm and productive waters of Redfish Bay. However, with the Lighthouse Lakes Trail Park being the only managed public access site along the Causeway, many of these recreational activities are occurring in sensitive habitat areas, resulting in destruction of wetlands from vehicle traffic and impacts to habitat and wildlife from improper disposal of trash and illegal dumping. The area currently lacks a coordinated vision that balances public use with the protection of the sensitive estuarine habitats mentioned above.

The proposed project will develop a comprehensive Public Access Master Plan for the Redfish Bay Causeway to guide future improvements, investments, and conservation efforts. The Master Plan will evaluate existing conditions along the Causeway, including both designated (e.g., Lighthouse Lakes) and informal access points, parking pull-offs, boat and kayak launching areas, habitat features, safety considerations, and opportunities for educational signage. The project will also look at factors such as property ownership and permitting constraints.

CBBEP will hire a consultant to assist with the development of the comprehensive plan, and the effort will include stakeholder engagement with local governments, resource agencies, recreational users, and community organizations to identify priorities and challenges related to access, environmental impacts, and long-term maintenance.

Using these assessments, the project will develop conceptual designs and recommendations for designated public access sites, improved shoreline stabilization where appropriate, managed water access for fishing and paddling, enhanced parking, ADA-compliant features, and interpretive elements that highlight the ecological significance of Redfish Bay. The resulting Public Access Master Plan will serve as a strategic roadmap for partners, helping guide phased implementation of improvements that provide safe and sustainable access to Redfish Bay while protecting critical coastal habitats. This plan will position CBBEP and other partners to pursue future funding for construction, restoration, and public amenities that enhance recreational opportunities and support coastal resource stewardship.

Project Objectives:

The project will develop a Public Master Plan for Redfish Bay Causeway that includes conceptual designs and recommendations for designated public access sites, improved shoreline stabilization where appropriate, managed water access for fishing and paddling, enhanced parking, ADA-compliant features, and interpretive elements that highlight the ecological significance of Redfish Bay.

PROJECT #2733 Nutrient Sampling in Petronila Creek

Performing Organization: Nueces River Authority

Total Project Cost: \$53,000

Bays Plan, 2nd Ed. Actions: WSQ 1.1, WSQ 2.1, WSQ 3.1

Background:

Petronila Creek is a tributary to Baffin Bay. The health of Baffin Bay has been of great concern to scientists and concerned citizens due to fish kills, water quality problems, and food web changes in the bay. The Baffin Bay Stakeholder Group, formed in 2012, is composed of scientists from Harte Research Institute (HRI) at Texas A&M University-Corpus Christi, Coastal Bend Bays & Estuaries Program (CBBEP), USDA-NRCS, Texas State Soil & Water Conservation Board, Texas Water Resources Institute, Texas Commission on Environmental Quality (TCEQ), Texas Sea Grant, Texas General Land Office, Nueces River Authority (NRA), and a host of concerned citizens, including commercial and recreational fishermen, ranchers, and business owners. The scientists at HRI have determined that the primary causes of the water quality concerns are due to excessive nutrients in the bay. The 2019 Texas Coastal Waters: Nutrient Reduction Strategies Report recommended the Petronila watershed as a priority for the implementation of nutrient reduction strategies. The Stakeholder Group has begun an effort to develop a watershed protection plan (WPP) for Baffin Bay.

The purpose of the project is to continue conducting monthly water quality monitoring for nutrients in Petronila Creek and its tributaries. This is a continuation of current monitoring at 13 sites. Parameters to be collected include Ammonia, Total Kjeldahl Nitrogen, Dissolved Total Kjeldahl Nitrogen, Total Phosphorus, Nitrite Nitrogen, Nitrate Nitrogen, Total Suspended Solids, Chlorophyll-a, and Pheophytin. The nutrient data will be used to help fill the data gaps with respect to identifying all possible sources of the nutrient loading to Baffin Bay as well as by project partners to evaluate the effectiveness of agricultural best management practices and management measures implemented within Tier 1 HUCs under the USDA-NRCS "Petronila Creek Watershed Nutrient Reduction Initiative" project. This data collection project will also address two of the nine elements of a WPP: (1) identify causes and sources of pollution and (2) estimate pollution loading into the watershed and expected load reductions.

Project Objectives:

The objective of this project is to conduct monthly water quality monitoring of nutrients in Petronila Creek and its tributaries to identify sources of excess nutrient concentrations in Baffin Bay. The nutrient data from Petronila Creek and its tributaries will be utilized by the Baffin Bay Working Group and other project partners to help guide them in their watershed planning and restoration.

PROJECT #2734 Carlos Reef Oyster Restoration, Phase 2

Performing Organization: Coastal Bend Bays & Estuaries Program

Total Project Cost: \$2,325,000

Bays Plan, 2nd Ed. Actions: HLR 1.2

Background:

The Mesquite Bay Complex (Mesquite, Carlos, and Ayres Bays) was historically home to thriving and productive oyster reefs. These reefs played a critical role in local hydrodynamics, supported bird populations, helped mitigate the loss of marsh habitats along shorelines, and supported the economies of local communities. For many years, reefs within the Mesquite Bay Complex were facing intensified harvesting pressure, which exacerbated the negative impacts that Hurricane Harvey had in 2017. Recognizing the mounting concerns of coastal residents and stakeholders, the Texas Parks and Wildlife Department (TPWD) responded by enacting new regulations in November 2022 that prohibited oyster harvesting in the Mesquite Bay Complex. This move has garnered widespread support and enthusiasm for the restoration of the deteriorated oyster reefs in the region, and the Coastal Bend Bays & Estuaries Program (CBBEP) has been working with partners to identify and implement oyster restoration projects in this protected bay system.

In 2024, TPWD completed the first phase of the Carlos Reef Oyster Restoration Project, placing a relatively uniform layer of 1-2 inches of cultch material across 70 acres of Carlos Reef. However, TPWD's permit for this project allows for restoration of up to 300 acres of degraded oyster habitat, which means additional acres of oyster restoration is possible within this already permitted project footprint. Based on TPWD's knowledge of this area and recent field assessment, they believe there is around 60-70 acres of high priority restoration potential within the existing target areas. TPWD is currently working on obtaining a lease for these areas, which is now being called "Carlos Reef Oyster Restoration, Phase II." CBBEP has been working with TPWD to identify additional funding sources for this project.

Project Objectives:

The primary objective of this project is to utilize an existing TPWD permit to restore 60-70 acres of oyster reef habitat in the Carlos Reef area by placing a relatively uniform layer of 1-2 inches of cultch material.

PROJECT #2735 Coastal Bend Rain Gardens

Performing Organization: Coastal Bend Bays & Estuaries Program

Total Project Cost: \$50,000

Bays Plan, 2nd Ed. Actions: WSQ 1.1, NPS 1.1

Background:

Rain gardens are a powerful tool for reducing flooding, filtering out pollutants, and providing habitat for butterflies, birds, and other wildlife. Rain gardens are designed to collect rainwater from roofs, driveways, parking lots/streets, or other impervious surface and allow it time to soak into the ground. When planted with native grasses, shrubs, and perennials, rain gardens are a cost-effective and beautiful way to enhance upland habitats for birds and butterflies, and to restore downstream water quality in the bays for crabs, shrimp, and other estuary-dependent species. Over the last three years, CBBEP has installed five rain gardens in the Coastal Bend and there is momentum and desire within the community to install more. Funds would be used by CBBEP to collaborate with schools and other public entities to install rain gardens on their properties.

Project Objectives:

The primary objective of this project is to continue implementation of CBBEP's rain garden initiative by designing, constructing, and maintaining green stormwater infrastructure projects that reduce stormwater runoff, improve water quality, and increase public awareness of nature-based solutions for managing nonpoint source pollution throughout the Coastal Bend.

PROJECT #2736 Monitoring Water Quality in the Nueces River Tidal Segment

Performing Organization: Texas A&M University – Corpus Christi

Total Project Cost: \$36,470

Bays Plan, 2nd Ed. Actions: WSQ 1.1, WSQ 2.1, PEO 1.1

Background:

Fish kills within the tidal segment of the Nueces River have raised concerns about water quality degradation. These concerns led to the formation of the Nueces Tidal Stakeholder Group in 2022. Previous research to investigate these fish kills linked mortality to low dissolved oxygen events related to algal blooms, which were triggered by high nutrient loadings. These issues were noted in the 2022 TCEQ Texas Integrated Report. Possible sources of excess nutrient loadings include permitted point source discharges, runoff from urban and rural non-point sources, OSSF, groundwater discharges, and others. Additional stressors may include water management and engineered structures impeding flow and prolonging residence time of constituents in the tidal segment. Currently, TCEQ collects samples for chlorophyll-a analysis on a quarterly basis. However, little data regarding the nutrient loadings to this segment are available to decision makers and resource managers. The first year of higher resolution monitoring was funded in the FY2024 Annual Work Plan and monitoring will continue through August 2027 under the FY2027 Annual Work Plan.

The purpose of the study is to continue characterizing water quality for a third straight year at a higher spatial temporal resolution, especially for bacteria and nutrient concentrations, in an effort to develop management strategies to improve water quality in the tidal segment of the Nueces River System. The study area will consist of the TCEQ designated Nueces River Tidal Segment (2101), extending from the river's confluence with Nueces Bay in Nueces County, to the Calallen Dam, 1.1 mi upstream of US 77/IH 37, in Nueces/San Patricio County. To characterize water quality, water samples will be collected from five sites on a monthly basis. Nutrient content, chlorophyll-a, and bacteria levels will be compiled and summarized. Results from this work will aid in determining which nutrients to target for load reductions.

Characterizing the pollutant loadings and drivers of eutrophication is important for identifying solutions to improve water quality and tracking the success of future implementation efforts. This study is a continuation of previous work on the segment to provide nutrient and bacteria data. Long period datasets are critical in understanding the temporal and hydrological variables that affect water quality. This project will benefit the residents of communities near this segment of the Nueces River by leading to improved, local recreational opportunities and reduced health and safety risks associated with fishing and swimming in areas containing poor water quality.

Project Objectives:

Project objective is to collect surface water samples on a monthly basis for 5- months from the tidal segment of the Nueces River (Segment 2101) to be analyzed for nutrient, chlorophyll-a, and bacteria concentrations.

PROJECT #2737 CBBEP Watershed Warriors

Performing Organization: Coastal Bend Bays & Estuaries Program

Total Project Cost: \$78,761

Bays Plan, 2nd Ed. Actions: NPS 1.3, PEO 1.2, DD 1.1

Background:

The goal of this project is to support CBBEP's efforts to provide classroom education and outreach programs that cultivate personal responsibility for water quality and polluting behaviors in the Coastal Bend. This Project will utilize a CBBEP educator to deliver water quality programming to students in school districts throughout the Coastal Bend. The educator will use scaled relief models of the Baffin Bay, Oso Bay/Oso Creek, and/or the Nueces River watersheds with TEKS-aligned curriculum to provide hands-on activities that show students how pollutants enter and contaminate rivers, bays, and aquifers and how everyone can help protect water quality. This project will increase public understanding and stewardship of Coastal Bend resources, improve water quality, reduce debris reaching the bay, and improve the quality of stormwater runoff. The educator will also be responsible for utilizing the model at outreach events, such as school science nights and local festivals. These hands-on lessons help students and the public see where their water comes from and where it goes. Participants can identify where they live on the model and see how their activities impact the health of the water resources in their watershed and beyond. When not participating in classroom lessons, the educator will assist and support CBBEP's other hands-on discovery-based learning programs at the Nueces Delta Preserve.

Project Objectives:

To provide TEKS aligned water quality educational programming to Coastal Bend students and the general public. The programming is designed to show individuals how pollutants enter rivers, bays, and aquifers and how everyone can help protect and conserve water resources.

PROJECT #2738 Rain Barrel and Waterwise Landscaping Workshop

Performing Organization: Coastal Bend Bays & Estuaries Program and Mission-Aransas NERR

Total Project Cost: \$5,000

Bays Plan, 2nd Ed. Actions: FW 1.3, FW 1.4, NPS 1.5

Background:

The Coastal Bend Bays & Estuaries Program (CBBEP) will provide a community rain barrel giveaway program for the Coastal Bend. This program would help residents conserve water while reducing stormwater runoff entering local bays and estuaries. By collecting rainwater from rooftops, rain barrels provide a free supplemental water source for lawns, gardens, and landscaping, helping households lower water bills and reduce demand on municipal water supplies during drought conditions. Capturing runoff also decreases the amount of pollutants, sediment, fertilizers, and bacteria that flow into storm drains and ultimately into surrounding waterways and ultimately the bay. In addition to improving water quality, widespread use of rain barrels can help reduce localized flooding during heavy rain events by slowing the volume of runoff entering drainage systems. CBBEP will collaborate with the Mission-Aransas National Estuarine Research Reserve to host a training workshop that highlights waterwise gardens/yards and the use of rain barrels. Attendees at the workshop will each be provided with a free rain barrel to take home and implement what they learned at the workshop. The funds provided, we estimate that we will be able to provide the training and rain barrels to at least 35 individuals. If additional funds become available, the training opportunity could be opened up to more participants.

Project Objectives:

Provide Coastal Bend residents with rain barrel and waterwise landscaping training, along with a free rain barrel, to promote water conservation, reduce stormwater runoff and pollution, improve local water quality, and increase community resilience to drought and flooding.

PROJECT #2739 El Rincon Reef Shoreline Protection and Restoration, Phase III

Performing Organization: Coastal Bend Bays & Estuaries Program

Total Project Cost: \$10,950,000

Bays Plan, 2nd Ed. Actions: HLR 1.2, HLR 1.3, TR 2.1

Background:

North Beach was once protected by the historic Rincon Oyster Reef, but the reef was slowly destroyed through a combination of natural and anthropogenic causes. Since losing the protective oyster reef, the exposed shoreline has experienced significant erosion and is especially susceptible to further erosive damage during storm events. The highly erosive conditions have diminished natural habitats (e.g., seagrass and marsh) and have caused instability to upland infrastructure resulting in the need for five beach renourishment events since 1978. A multi-phase project consisting of a breakwater and multiple conservation islands, all of which will recruit oyster spat to rebuild the historical oyster reefs, is needed. These structures will in turn reduce erosion, eliminate the need for future beach renourishment, improve community resilience, and recreate conditions for multiple habitats to establish, including the creation of seagrass and marsh habitat while simultaneously creating conditions for the re-establishment of lost oyster reef habitat. Project planning has been ongoing for over six years with significant community involvement. The alternatives analysis, 30% engineering/design, and cultural resource survey are complete, the USACE is in hand, and final designs and bid package will be completed by the end of the calendar year (2026). For this phase, the goal is to construct the nature-based breakwater and one of the five conservation islands. The detached breakwater will consist of an armored rock structure approximately 950 feet long and 100 feet wide and the conservation island will consist of a partial perimeter armor stone breakwater revetment, a low-crested stone containment sill, and interior placement of BUDM sourced from nearby federal navigation projects. The island footprint is approximately 955 feet long by 460 feet wide.

Project Objectives:

Objectives for this project phase are as follows: (1) contract with the engineering firm for bidding and construction administration; (2) bid process; (3) contract with qualified construction contractor; (4) notice to proceed; (5) pre-construction meeting; (6) construction of the breakwater; (7) construction of one of the five conservation islands; (8) plant marsh and seagrass; and (9) completion and final inspection.

PROJECT #2740 Rabbit Island South Protection and Restoration, Phase I

Performing Organization: CBBEP

Total Project Cost: \$515,913

Bays Plan, 2nd Ed. Actions: D 1.1, HLR 1.2, CB 1.1

Background:

Texas colonial waterbirds typically nest in spring/summer in dense groups on small bay islands. Most waterbirds in Texas are declining, some as much as 60-70%, and suitable nesting habitat is the most limiting factor for most waterbird species. Rabbit Island South, located in the Upper Laguna Madre in Kenedy County, was identified during collaborative beneficial use planning efforts as a priority for rookery island restoration.

The proposed project will continue planning efforts for the creation of up to five acres of rookery habitat at Rabbit Island South, based on sediment availability, cost analysis, regulatory considerations, and stakeholder feedback. Target elevations will be achieved through placement of Gulf Intracoastal Waterway maintenance dredged material and will provide a variety of nesting habitat for a range of bird species, including both ground and shrub-nesting waterbirds. Fill elevations will be selected to promote natural recruitment of vegetation and designed to provide some protection from overtopping during high tide and storm events.

This phase of the project will complete the permitting and final design work as well as secure the GLO surface lease. The goal is to protect and restore bird nesting habitat, enhance long-term viability of coastal bird populations, establish sites for placement of dredged material, and improve overall resiliency of the environment.

Project Objectives:

Objectives are to complete the permitting and the final engineering and design as well as secure the GLO surface lease. At the end of this phase, the project will be ready to move to construction.

PROJECT #2741 Costa Grande Ranch Acquisition

Performing Organization: Coastal Bend Bays & Estuaries Program

Total Project Cost: \$2,826,158

Bays Plan, 2nd Ed. Actions: LCS 1.2

Background:

Costa Grande Ranch is a 2,232-acre property on Espiritu Santo Bay in Calhoun County, Texas with extensive freshwater and saltwater wetlands, tidal flats, and upland habitat. The CBBEP is working with a third-party land conservation entity (The Conservation Fund, TCF) to acquire this property for land protection. Through this acquisition, CBBEP can strengthen current easements, eliminate the opportunity for future development, maintain surface and ground water quality, and preserve high value waterbird habitats. The property is heavily used by the federally endangered Whooping Crane, and additional habitat protection is essential to its survival. The Costa Grande Ranch has high habitat value for other birds, including the endangered Black Rail and numerous declining species of waterfowl and shorebirds. The intertidal fringe habitat along the GIWW provides high-quality habitat for Lesser Yellowlegs, Short-billed Dowitcher, Long-billed Dowitcher, Semipalmated Sandpiper, and other shorebirds associated with marine/estuarine habitats. During breeding season, these habitats support nesting Wilson's Plovers, Eastern Willets, and Clapper Rails, as well as Seaside Sparrows. Protecting this property allows the habitat mosaic of tidal flats and marshes to migrate landward and maintain habitat for these species. CBBEP's goal in land ownership is to ensure high water quality and conservation values. We would maintain existing roadways and continue to maintain/enhance native habitats with a focus on balancing prairie and oak savannah.

CBBEP has been working with TCF, agencies, and other NGO land conservation entities to secure the property at or below fair market value. Due to funding timelines and the seller desire to close by December 2025, the project needed to be structured as an acquisition by TCF. TCF often works with NGO partners for a small fee to purchase properties temporarily while the NGO takes the needed time to build the capital for the purchase. Once all the funds are transferred to TCF, they sell the property to the NGO. TCF purchased the property in December 2025 at \$2,285/acre for a total purchase price of \$5,100,120 while CBBEP raises funds to permanently acquire the site.

Project Objectives:

The primary project objectives are to (1) to raise funds for the purchase of Costa Grande Ranch and (2) to purchase the property from the third-party land conservation entity (TCF) once all funding is secured.

PROJECT #2742 Costa Grande Ranch Invasive Species Management

Performing Organization: Coastal Bend Bays & Estuaries Program

Total Project Cost: \$67,000

Bays Plan, 2nd Ed. Actions: HLR 1.2, LCS 1.1

Background:

Costa Grande Ranch is a 2,232-acre property on Espiritu Santo Bay in Calhoun County, Texas with extensive freshwater and saltwater wetlands, tidal flats, and upland habitat. This project will support land management at the Costa Grande Ranch through invasive species removal. One of the largest impacts on upland habitats found on the Ranch is the encroachment of the invasive running live oak. This plant can dominate grassland habitats by creating dense impenetrable mattes which eventually make these acres void of other native plants and animals. Past applications of herbicide have shown very positive results as a restoration practice when managing running live oak. For this project, herbicide treatments will be used by CBBEP to control running live oak and restore the mosaic of habitats needed to support the important species on which they rely.

CBBEP will work with U.S. Fish and Wildlife Service (USFWS) to identify priority areas on the property impacted by the presence of running live oak and will cooperatively develop management units to support long-term conservation goals for the property. The USFWS will assist in recommending appropriate herbicides used and complete all environmental compliance documents for the brush control work carried out under scope of work.

Project Objectives:

The overall project goal is to protect and increase the abundance and quality of upland and estuarine habitats in the Texas Coastal Bend. The specific project objective is to restore 400 acres of coastal grassland habitat through invasive species removal at Costa Grande Ranch.

PROJECT #2743 Nueces Delta Preserve Native Plant Nursery Enhancements

Performing Organization: Coastal Bend Bays & Estuaries Program

Total Project Cost: \$48,000

Bays Plan, 2nd Ed. Actions: HLR 1.2, LCS 1.1, CB 1.1

Background:

The Nueces Delta Preserve native plant nursery is playing a growing role in habitat restoration efforts in the Texas Coastal Bend providing plant resources for coastal restoration projects. What started as a volunteer project with some of our partners almost a decade ago has assisted in the revegetation of several islands since the construction of the plant growing tables. CBBEP's nursery has contributed over 6,000 plants to restore almost three acres across dozens of rookery islands. At present, we have reached capacity with our current grow table setup and are looking to expand the operation as there is a much greater need for plants than our current capacity. CBBEP would like to increase its nursery plant footprint to grow more plants and ultimately contribute to more restoration projects. This project would expand CBBEP's current native plant nursery by constructing a larger grow-out facility (potentially a greenhouse) to protect plants during the grow-out phase. Having the structure will allow for better control during weather events as well as protect plants from insect and fungal damage.

This effort will expand CBBEP's current grow-out facilities to increase the number of plants provided for habitat restoration projects in the coming years. We also plan to expand the plant species beyond rookery island plants to serve a wider range of coastal restoration projects. CBBEP and the U.S. Fish and Wildlife Service Coastal Program (Service) will work with a nursery firm to help with the planning phase of the expansion effort and explore options related to layout, shade/lighting requirements, water supply/quality, irrigation, storage areas, potting and propagation areas, vehicle and trailer access, etc. The Service will assist CBBEP in reviewing recommendations and selecting the most cost-effective alternatives. Depending on recommendations made during the planning phase, CBBEP anticipates utilizing funding to contract with qualified contractors to construct a plant grow-out facility that incorporates needs for increased plant capacity, higher diversity of species, and requirements for water and light delivery. The Service will provide technical support throughout the scoping and development of the facility plan and operations. Additionally, CBBEP will hire a part-time contractor at the nursery to assist in the week-to-week maintenance and oversight required to run the facility efficiently.

Project Objectives:

The overall project goal is to increase production of native plants for bird rookery islands and other restoration projects to ultimately increase habitat quantity and quality that supports wildlife (particularly colonial nesting birds) on the Texas Coast. The specific objective is to expand CBBEP's current grow-out capabilities and establish a greenhouse to better protect our nursery and provide a safe space for plants during the grow out phase.

PROJECT #2744 Habitat Restoration Through the Installation of Living Shorelines in the Coastal Bend

Performing Organization: Coastal Bend Bays & Estuaries Program and Sink Your Shucks

Total Project Cost: \$12,000

Bays Plan, 2nd Ed. Actions: HLR 1.2

Background:

CBBEP has recently started collaborating with the Sink Your Shucks program to install small scale living shorelines at degraded sites. We are currently working on an installation at Hans & Pat Suter Wildlife Refuge in Corpus Christi, Texas and are exploring additional project sites with Sink Your Shucks staff. Several sites have been identified that are suffering from shoreline and loss of coastal marsh habitat, and it is believed that these sites (like the Hans & Pat Suter Wildlife Refuge) would benefit from installation of a living shoreline. It should be noted that projects will be designed to utilize volunteers for the installation of the identified oyster alternatives (e.g. bagged shell, jute rings, posh units). By including volunteers in these projects, CBBEP and Sink Your Shucks hope to create a direct connection between community members and the health of their local bays and estuaries. Volunteer participation builds public awareness, fosters stewardship, and helps generate long-term support for coastal conservation and shoreline protection efforts.

CBBEP is proposing to address ongoing erosion issues at several sites within the Texas Coastal Bend through living shoreline installations. The USFWS will work with CBBEP to carry out the living shoreline projects by reviewing and approving project plans, assisting with volunteer placement of the bagged oyster shell, and environmental compliance for the project.

Project Objectives:

The goal of this project is to enhance coastal resilience and biodiversity and protect public access infrastructure using sustainable shoreline stabilization techniques, while also heightening community awareness and engagement in coastal conservation efforts through hands-on involvement in habitat restoration.

PROJECT #2745 Ingleside on the Bay Pocket Park, Phase II

Performing Organization: Coastal Bend Bays & Estuaries Program

Total Project Cost: \$460,000

Bays Plan, 2nd Ed. Actions: TR 2.1, SM 1.1, HLR 1.1, HLR 1.2

Background:

In 2023, the City of Ingleside on the Bay (IOB) began working with the Coastal Bend Bays & Estuaries Program (CBBEP) to develop a pocket park that would provide the only free public access to the shoreline of Corpus Christi Bay in the IOB community. Since then, IOB and CBBEP have been able to complete Phase I of the project, which included (1) IOB's purchase of the pocket park property, (2) installation of bollards along the roadway to prevent vehicle access to wetlands, (3) installation of fencing to prevent trespassing, (4) development of a public access master plan, and (5) placement of rock riprap along the shoreline. However, the pocket park is difficult for visitors to access because there is currently no nearby parking available. Thus, Phase II of the pocket park development needs to be completed.

CBBEP will partner with IOB to use CMP Cycle 31 funds to (1) purchase property adjacent to the current pocket park, and (2) construct a parking lot, a small restroom facility, and adjacent bioretention area. The parking lot will have 12 spaces, and the Subrecipient will ensure that there is an ADA-complaint parking space. The bioretention area will control stormwater on the purchased property. The parking area and small restroom facility will support public access to the pocket park.

Project Objectives:

The objective of this project is to increase free public access to the shoreline in the IOB community. Once this Project is complete, residents and visitors will be able to find parking to easily access the pocket park and the proposed future amenities. The future amenities include a fishing pier, kayak launch pad, and a seating area with interpretative signage.

PROJECT #2746 Educational Programming at the Oso Bay Wetlands Preserve and Learning Center

Performing Organization: City of Corpus Christi – Oso Bay Wetlands Preserve and Learning Center

Total Project Cost: \$154,256

Bays Plan, 2nd Ed. Actions: PEO 1.1, PEO 1.2, DD 1.3, DD 2.1

Background:

In the early 2000's, the Coastal Bend Bays & Estuaries Program (CBBEP) along with the City of Corpus Christi set out to establish a nature preserve on the City's south side. Numerous partners have been involved over the last almost 20 years in the creation of what has evolved into the City of Corpus Christi Oso Bay Wetlands Preserve & Learning Center. The Preserve is approximately 160 acres in size and is nestled along the rapidly developing western shore of Oso Bay. The Preserve is dedicated to enhancing the knowledge of the flora and fauna of South Texas and to safeguarding our valuable coastal ecosystems. The public is welcomed on the property and encouraged to come out and explore nature on the over two miles of nature trails. The Preserve staff also hosts organized fieldtrips during the school year and several educational camps when area students are on summer break. The Preserve is a very popular attraction – from Jan-Jun 2025, there were 96,000 total visits to the Preserve, with 48,500 individual visits.

In 2024, due to budget shortfalls, the City of Corpus Christi reduced the FY25 funding level for the Oso Bay Wetland Preserve and Learning Center. These cuts caused significant concern from the community about potential impacts to this important resource and recognition by the City Council and staff about the popularity and benefits of the Preserve. To date, the City has been able to maintain its operations and some of the educational programming, but staffing was reduced and many positions remain unfilled. The City also expressed an interest in exploring options with third-party partners to assist with the long-term funding for the Preserve. However, during the FY25 budget year, no agreements could be reached with a third-party entity, and the City now faces additional budget shortfalls for upcoming year, which means there is a strong possibility for additional cuts to be made.

Recognizing the importance of the Oso Preserve and CBBEP's long history of working with the City of Corpus Christi, CBBEP will provide financial assistance to the City during FY26 to be utilized to support the education staff at the Oso Bay Wetlands Preserve and Learning Center. This would allow the City to avoid making additional education staff cuts during the upcoming fiscal year and maintain educational programming (i.e., field trips, summer camps, teacher trainings, etc.) at current levels. This partnership will also provide opportunities for CBBEP's own environmental education program to better coordinate with similar education programs being offered at the Oso Preserve, which will allow both educational programs to grow in their reach to the community.

Project Objectives:

The overall project objective is to support the educational programming at the Oso Bay Wetlands Preserve and Learning Center which provides residents and visitors with opportunities to explore nature and learn how to become better stewards of our coastal resources.

PROJECT #2747 Monitoring Texas Diamondback terrapin responses to marsh restoration at Goose Island State Park

Performing Organization: Texas A&M University – Corpus Christi

Total Project Cost: \$77,091

Bays Plan, 2nd Ed. Actions: HLR 1.2, HLR 1.3, HLR 2.1, HLR 2.4

Background:

Diamondback terrapins (*Malaclemys terrapin*) are the only brackish-water emydid turtle in North America, occurring from Cape Cod, Massachusetts to Corpus Christi, Texas. In Texas, terrapins inhabit marshes, tidal creeks/streams, and shell hash beach habitat for nesting, particularly in areas with freshwater inflow. Texas Diamondback terrapins (*Malaclemys terrapin littoralis*) are listed as a T3 Vulnerable subspecies on the IUCN Red List and S2 Imperiled by TPWD, reflecting their high risk of extirpation, limited and declining populations, and exposure to multiple ongoing threats. The population of terrapins in the Aransas and Copano Bay systems, including Goose Island State Park, are one of the most robust in the mid-coast region of Texas. As part of a current project, two terrapins are fitted with GPS transmitters that were captured at the Goose Island boat ramp and four more individuals will be tagged in spring 2026. This project will result in up to 14 terrapins being tracked using GPS transmitters.

During the upcoming Goose Island Marsh Restoration Project (GIMRP), shell hash beach and adjacent estuarine wetlands will undergo notable alteration, which may temporarily or permanently disrupt terrapin movement behavior and use of these areas. The GIMRP is scheduled to begin in Fall 2026 and will create 24 acres of marsh in existing levees plus two additional levees will be built to create an additional 16 acres of marsh. The level of disturbance to existing shell hash habitat is currently unknown. The restoration design of the GIMRP includes levee improvements, dredged material placement, and elevation increases intended to enhance marsh resilience and vegetation recovery. These activities present both temporary and long-term habitat disturbances and/or benefits.

Because terrapins exhibit strong site fidelity and sensitivity to habitat structure, targeted monitoring of the Goose Island population will provide critical insight into how restoration activities influence terrapin movement behavior and habitat use. Establishing a monitoring program within a restoration context will allow managers to anticipate terrapin response and subsequent use patterns, minimize unintended impacts during construction, and evaluate the ecological benefits of restored marsh habitat. This project will address key questions, including: (1) how does terrapin activity change during construction, (2) do individuals shift into adjacent habitat to avoid disturbance, (3) do terrapins reoccupy restored marsh, and (4) does restored elevation and vegetation structure support foraging and nesting behavior?

Construction progress will be recorded using game cameras set to time-lapse mode and documented with bi-weekly site visits. GPS location data will be used to calculate seasonal and overall core use, home range, area-restricted and transiting movement behavior, and site fidelity to potential nesting and foraging habitat. The movement data and calculations will be overlaid and compared with spatial construction extent and activity levels to identify alterations in terrapin movement behaviors.

Project Objectives:

The project will establish a monitoring program for the Texas Diamondback terrapin at Goose Island with three primary objectives: (1) extend and focus previous tracking studies to evaluate terrapin habitat use within and adjacent to the Goose Island Marsh Restoration Project footprint during and after construction, (2) use GPS telemetry to identify core-use areas and nesting habitat, and (3) generate applied recommendations for integrating terrapin conservation into future restoration design and adaptive management.

PROJECT #2748 Cultivation to Conservation Reef

Performing Organization: Coastal Bend Bays & Estuaries Program

Total Project Cost: \$100,000

Bays Plan, 2nd Ed. Actions: HLR 1.2

Background:

The Eastern Oyster (*Crassostrea virginica*) is one of Texas' most valuable coastal resources, providing critical habitat for fish and invertebrate species, shoreline stabilization, water quality enhancements, and numerous other ecological functions. The compounding effects of increased commercial oyster fishing pressure, hurricanes, droughts, and flood events have resulted in unprecedented destruction and loss of Texas' public oyster reefs. To address the degradation of oyster reef ecosystems in Texas, the Coastal Bend Bays & Estuaries Program will collaborate with the Gulf Trust, CCA, and oyster growers to implement a pilot project that repurposes unmarketable cultivated oysters and uses them for restoration. The cultivated oysters will be placed in a two-acre area in Mesquite Bay Complex in an area that is permitted for restoration by Texas Parks and Wildlife Department. If the pilot Cultivation to Conservation program proves successful, restoration programs on the Texas coast can turn to oyster growers for a new source of cultch material, preventing hundreds of thousands of oysters from ending up in the landfill and, instead, jumpstarting oyster reef restoration efforts.

Project Objectives:

Collaborate with the Gulf Trust, CCA, and oyster growers to pilot the "Cultivation to Conservation Program," which will repurpose unmarketable cultivated oysters from local growers as reef-building material—the first deployment of this kind on the Texas Coast.

PROJECT #2749 Respect the Rookeries

Performing Organization: Coastal Bend Bays & Estuaries Program

Total Project Cost: \$189,549

Bays Plan, 2nd Ed. Actions: HLR 1.3, HLR 2.4, CB 1.1, CB 2.1

Background:

In Texas, the sharp declines observed in almost all colonial waterbird species have raised concern among many state and federal resource agencies, including the Texas General Land Office (GLO), Texas Parks & Wildlife Department (TPWD), and the US Fish and Wildlife Service (USFWS). As they typically nest in dense groups on rookery islands in the bays during the spring/summer months, threats such as development, habitat loss, and human disturbance are taking their toll on herons, egrets, pelicans, skimmers, and other species. CBBEP's Coastal Bird Program (CBP) has a long history of rookery island management and monitoring and currently has received funding to complement these efforts with a public education campaign on the importance of these sites and the need to give birds space during the nesting season to support population recovery.

Our goal is to conserve colonial waterbirds and their nesting habitats through education focused on reducing human disturbance. Specifically, we will educate the public on nest disturbance issues through a comprehensive outreach campaign on a scale that can impact population recovery efforts for these declining species. As a difficult guild of species to manage in a high recreation area, waterbirds are prone to disturbance. Through outreach, these species can be conserved. CBBEP will hire a full-time educator to provide recreationists and the public with information on waterbird guidelines and regulations in various formats with the goal of promoting pro-bird behavior.

The full-time educator will focus on implementing results of a previous human dimension study and provide recreationists and K-12 students with information on waterbird guidelines and regulations through in-person and digital means. A travel trailer for public outreach and educational displays will be created and shown at festivals, events, and educational opportunities along the coast. CBBEP will work with agencies (e.g., TPWD) and possibly other partners to update their website messaging regarding ongoing habitat management, declines in bird populations, disturbance avoidance measures, and more.

The project will improve the health and function of rookery islands which should result in increased colonial waterbird population numbers. Waterbirds are widely recognized as key ecological indicators because their population trends and nesting success reflect changes in water quality, food availability, and overall habitat condition. As top predators and highly visible species, colonial waterbirds provide an early and measurable signal of ecosystem health that can guide effective coastal management and restoration efforts. Healthy coastal ecosystems, including rookery islands, drive the Texas tourism economy, contributing significantly through both direct sales and nature tourism. Nature tourism, in turn, provides incentives for coastal communities to conserve wildlife habitats upon which the industry depends. Improving the ecological value of important habitats, such as rookery islands, will have positive impacts on the local and State economy by directly supporting the nature tourism industry (e.g., bird watching, nature photography, etc.).

Project Objectives:

The goal of the project is to create a public education campaign focused on the importance of rookery islands and the need to give birds space during the nesting season to support population recovery.

PROJECT #2750 Enhanced Water Quality Monitoring in Petronila Creek

Performing Organization: Coastal Bend Bays & Estuaries Program

Total Project Cost: \$21,850

Bays Plan, 2nd Ed. Actions: WSQ 1.1, WSQ 2.1, NPS 1.1

Background:

Petronila Creek is a tributary to Baffin Bay. The health of Baffin Bay has been of great concern to stakeholders due to fish kills, water quality problems, and food web changes in the bay. The Baffin Bay Stakeholder Group, formed in 2012, is composed of scientists, resource agencies, conservation organizations, and a host of concerned citizens, including commercial and recreational fishermen, ranchers, and business owners. In FY 2026, in response to public concerns about water quality in specific segments of Petronila Creek, CBBEP began conducting enhanced sampling at several select sites. The purpose of this project is to continue enhanced water quality monitoring at three sites along Petronila Creek and its tributaries. Parameters to be collected include nutrients, metals, Lithium, Hexavalent Chromium, fats oils and grease, volatile organic compounds, and Total Organic Carbon. The additional data will be used to help fill local data gaps with respect to identifying all possible sources of both point and nonpoint source pollution to Baffin Bay as well as monitor impacts of watershed restoration efforts.

Project Objectives:

The primary project objective is continuing enhanced water quality sampling at three sites along Petronila Creek and its tributaries to characterize water quality within these water bodies and help identify point and nonpoint sources of pollution to Baffin Bay.

PROJECT #2755 Incentivizing Optimal Shorebird Habitat on the Gulf Coast

Performing Organization: Coastal Bend Bays & Estuaries Program

Total Project Cost: \$60,000

Bays Plan, 2nd Ed. Actions: HLR 1.2, CB 2.1

Background:

The Texas Mid-coast provides one of the most important stopover habitats for migratory shorebirds in the Western Hemisphere, yet the freshwater marshes and shallow wetlands these birds depend upon have declined dramatically due to land conversion, changing agricultural practices, urban development, and reduced water availability. As a result, the region consistently provides far less habitat than is needed to support migrating shorebirds during critical spring and fall migration periods, contributing to widespread population declines. Strategic, short-term management of shallow-water wetlands on working lands can provide high-quality habitat when and where it is needed most, helping migratory birds successfully complete their annual journeys while supporting the long-term conservation of these species.

Starting in fall 2025, CBBEP began a pilot habitat incentive program to encourage landowners and managers to provide shallow unvegetated habitat ideal for shorebirds early in their migration season. We continued this program in spring 2026 (with landowners holding water through late May) and again in late summer/fall 2026 (beginning in July). The program has been exceptionally well-received and has seen steady and substantial growth in project applicants, number of acres enrolled, and shorebird usage. Incentivized wetland habitats have supported at least five-times greater shorebird usage than non-incentivized habitats. The pilot phase has allowed us to refine landowner agreements and expand interest in the program, and we are looking for opportunities to continue and expand it at the scale necessary to provide all the acres migratory shorebirds need. Private landowners and lessees, including lessees on public lands able to provide desired habitat conditions, are eligible for the program.

Project Objectives:

The primary objective of this project is for CBBEP to continue implementing its successful Shorebird Habitat Incentive Program by providing financial incentives to private landowners and land managers who create and maintain high-quality shallow-water habitat for migratory shorebirds during peak spring and fall migration period. CBBEP and project partners will monitor enrolled sites throughout each five-week enrollment period to document habitat conditions, measure shorebird use, and evaluate project performance.

PROGRAM ADMINISTRATION

CBBEP administrative staff will provide organizational and logistical support for the Bays Council and implementation team meetings, and coordinate/communicate as necessary with appropriate groups, including stakeholder groups, state and federal agencies, local governments, and professional groups relevant to implementation. Staff will:

1. Acquire, manage, and disperse funds to implement the *Bays Plan*;
2. Monitor, track, and report on implementation performance by implementing partners, and work to maintain implementation commitments;
3. Develop a prioritized biennial work plan and budget for Bays Council review and approval;
4. Coordinate the periodic update of the *Bays Plan*, the State of the Bay report, the Implementation Strategy, and other key documents of the Program;
5. Provide logistical support for all meetings, workshops, symposia, and special events related to Program mission;
6. Provide outreach to the public through local and regional media;
7. Develop strategies for seeking funding sources;
8. Provide for overall Program coordination with EPA Region 6 and TCEQ.
9. Participate in regional, state, and national conferences and meetings relevant to estuarine management.
10. Develop and implement policies and procedures for an emergency contingency plan which will include: protecting financial records, office equipment, computers, and other vital records and equipment; employee responsibilities; backup and storage of data; and recovery actions.
11. Continued implementation of a management system to track and assess Quality Assurance Project Plans (QAPPs) and determine required corrective actions and follow-up to be completed on date determined by TCEQ.

PROJECT MANAGEMENT AND IMPLEMENTATION

CBBEP Project Management staff will coordinate/communicate as necessary with appropriate groups, including stakeholder groups, state and federal agencies, local governments, and professional groups relevant to *Bays Plan* implementation. Staff will:

1. Develop and implement partnership projects with local governments, state, and federal agencies, and private organizations;
2. Monitor, track, and report on implementation performance by implementing partners, and work to maintain implementation commitments;
3. Provide communication and coordination with the Texas Coastal Management Program and the Coastal Coordination Council, Gulf of Mexico Program, TCEQ, and other relevant coastal/watershed programs;
4. Coordinate the review of proposed actions of federal, state, and local projects in an open process for consistency with the *Bays Plan*;
5. Develop a prioritized biennial work plan and budget for Bays Council review and approval;
6. Provide for overall Program coordination, including quality control/quality assurance procedures with EPA Region 6 and TCEQ.
7. Participate in regional, state, and national conferences and meetings relevant to estuarine management.

PROGRAM EXPENSES

CBBEP funds will support continued Program implementation, evaluation, and reporting. Funds are also necessary to provide logistical support for the Bays Council and implementation team meetings. Expense categories are as follows:

1. Travel: Allows Program staff to attend state, regional and national meetings, workshops, and conferences.
2. Supplies: As needed, for the day-to-day operations of the Program.
3. Equipment: Purchase of items over \$1,000, i.e. computers.
4. Other: Copier rental, temporary staff, postage, communication services, accounting services, printing, etc.

OPERATIONAL RESERVE FUND

The CBBEP Board of Directors has established an Operational Reserve Policy on April 24, 2025. The purpose of the Policy is to ensure the stability of the mission, programs, employment, and ongoing operations of the organization. The Operating Reserve is intended to provide an internal source of funds for situations such as a sudden increase in expenses, one-time unbudgeted expenses, unanticipated loss in funding, or uninsured losses. The Reserve may also be used for one-time, nonrecurring expenses that will build long-term capacity, such as staff development, research and development, or investment in infrastructure.

The target minimum Operating Reserve Fund for CBBEP is equal to six months of average operating costs. The calculation of average monthly operating costs includes all recurring, predictable expenses such as salaries and benefits, office, utilities, insurance, and ongoing professional services. Depreciation, in-kind, and other non-cash expenses are not included in the calculation. The calculation of average monthly expenses also excludes some expenses, such as pass-through programs and one-time or unusual, capital purchases. The amount of the Operating Reserve Fund target minimum will be calculated each year after approval of the annual budget, reported to the Finance Committee and Board of Directors, and included in the regular financial reports.

The Reserve will be funded and available in cash, cash equivalents (such as money market funds), or a less than 12-month maturing U.S. government-backed treasury. Operating Reserves will be maintained in a CBBEP investment fund, specifically the Commitment Account as denominated by Oxbow Advisors LLC, the present Investment Manager, in accordance with investment policies.

SUMMARY

On September 1, 2026, the Coastal Bend Bays & Estuaries Program will begin Year 28 of implementing the *Bays Plan*. This FY 2027 Work Plan describes the proposed work to be initiated during FY 2027 (Sept 1, 2026 - Aug 31, 2027). Of the total funds identified in the Work Plan budget, \$22,991,558 are new funds from a combination of federal (\$16,897,914), state (\$1,356,504), local partners (\$446,295), foundations and corporations (\$3,772,616), the Bob Wallace Jr. Legacy Fund and CBBEP's Land Conservation Fund (\$503,429), and miscellaneous donations (\$14,800). The FY27 budget includes an additional \$478,823 in carryforward funds from previous grants. This brings the total budget for this FY 2027 Work Plan to \$23,470,381. Funds to support administration of the program total \$1,703,913, while funds to support project implementation total \$21,766,468.

Table 1. FY 2027 Annual Work Plan Project List

PROJECT #	PROJECT TITLE	ACTION ITEM(S)	PERFORMING PARTY	EPA FY27 320	TCEQ FY27, 604b, BIL & RESTORE	LOCAL, CBIA, BOB WALLACE LEGACY FUND & LAND FUND	TGLO	USFWS / NRCS	NERR / HRI / CCA	MISC DONATIONS	CARRY-FORWARD	TOTAL FUNDING
2701	CBBEP Coastal Bird Program	CB 1.1 CB 2.1 HLR 1.1 HLR 1.2	CBBEP	\$ 94,676	\$ -	\$ -	\$ 30,556	\$ -	\$ -	\$ 60,667	\$ 299,912	\$ 485,811
2702	Delta Discovery	DD 1.1 DD 1.2 DD 1.3 DD 2.1	CBBEP	\$ 162,969	\$ -	\$ 9,808	\$ -	\$ -	\$ -	\$ 36,183	\$ -	\$ 208,960
2703	Coastal Bend Bays Plan Update	WSQ 1.1 NPS 1.1	CBBEP	\$ 97,486	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 97,486
2704	Monitoring and Adaptive Management of Dredge Material Placement in Nueces Bay	HLR 1.2 D 1.1 D 1.2	CBBEP	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 100,000
2705	Baffin Bay Water Quality Monitoring	WSQ 2.1 WSQ 2.2	HRI	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2706	Outdoor Classrooms	DD 1.1 DD 1.2 DD 1.3 DD 2.1	CBBEP	\$ -	\$ -	\$ 3,000	\$ -	\$ 18,000	\$ -	\$ -	\$ -	\$ 21,000
2707	Up2U Anti-Litter Campaign	BD 1.1 PEO 1.1 PEO 1.3	CBBEP	\$ -	\$ -	\$ -	\$ 453,750	\$ -	\$ -	\$ -	\$ -	\$ 453,750
2708	CBBEP Community Outreach Partnerships	PEO 1.1 PEO 1.2 PEO 1.4 PEO 1.5	Coastal Bend Bays Foundation	\$ -	\$ 20,000	\$ 20,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 40,000
2709	Land Conservation and Stewardship	LCS 1.2 LCS 1.2	CBBEP	\$ 38,665	\$ -	\$ 453,155	\$ -	\$ -	\$ -	\$ 128,000	\$ 23,819	\$ 643,639
2710	Aguanitas Project - Planning and Design for Constructed Wetland	NPS 1.1 WSQ 1.1	CBBEP	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 463,919	\$ -	\$ -	\$ 463,919
2711	Nueces Delta Environmental Monitoring	FW 1.1 FW 1.2 FW 1.3 FW 1.4	Conrad Blucher Institute	\$ -	\$ 48,891	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 48,891

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2712	Nueces Bay Dredging and Beneficial Use Project, Phase II	D 1.1 TR 2.1 HLR 1.1 HLR 1.2	City of Portland	\$ -	\$ 104,555	\$ -	\$ -	\$ 45,000	\$ -	\$ -	\$ -	\$ 149,555
2713	Oso Creek Nature Trail Improvement Project	TR 1.1 TR 2.1 TR 3.1	City of Corpus Christi	\$ -	\$ 25,000	\$ 25,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 50,000
2714	CBBEP Public Outreach Events and Activities	PEO 1.1 PEO 1.2 PEO 1.3 PEO 1.4 PEO 1.5 TR 1.1	CBBEP	\$ -	\$ -	\$ 30,442	\$ -	\$ -	\$ -	\$ 16,458	\$ -	\$ 46,900
2715	Violet Andrews Park - Coastal Resources Survey	TR 2.1 SM 1.1 BC 1.2 HLR 1.2 TR 3.1	City of Portland	\$ -	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 50,000
2716	Padre Island National Seashore - Bird Island Boat Basin Dumpster	BD 1.1	CBBEP	\$ -	\$ -	\$ -	\$ 10,000	\$ -	\$ -	\$ -	\$ -	\$ 10,000
2717	Return of the Prairie: Out with Invasives, In with Natives	HLR 1.1 HLR 1.2 HLR 2.1 HLR 2.6	City of Port Aransas	\$ -	\$ 40,300	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 40,300
2718	Integrating Tier 3 Sampling: A Step Toward a Hierarchical Strategy for Seagrass Monitoring in the Coastal Bend	HLR 1.1 HLR 1.3 HLR 2.4	UTMSI	\$ -	\$ 40,576	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 40,576
2719	Microbial Source Tracking, Nitrogen Source Tracking and Human Health Risk Assessment in Redfish Bay	WSQ 1.1 WSQ 2.1 WSQ 3.1 NPS 1.5 PH 1.1	TAMUCC	\$ -	\$ 82,256	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 82,256

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2720	Antibiotic Resistance and Human Health Risks in the Baffin Bay Watershed	WSQ 1.1 WSQ 2.1 WSQ 2.2 PH 1.1 NPS 1.1	UT Health Houston School of Public Health	\$ -	\$ 28,468	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 28,468
2721	Relative Sea Level Rise and Habitat Assessment in the Nueces Delta	CR 1.1 HLR 1.1 HLR 1.3	UTMSI	\$ -	\$ -	\$ 9,300	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 9,300
2722	Operational Support for Imaging FlowCytobot at the Texas State Aquarium	PH 1.1 HLR 2.5	HRI	\$ -	\$ -	\$ 53,098	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 53,098
2723	Blue Water Task Force (BWTF)	WSQ 2.1 PH 1.1 PEO 1.1 PEO 1.3	TAMUCC	\$ -	\$ -	\$ 26,521	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 26,521
2724	CBBEP Coastal Bird Program - Laguna Madre Initiative	CB 1.1 CB 2.1 HLR 1.1 HLR 1.2	CBBEP	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 100,000	\$ -	\$ 100,000
2725	Trophic Ecology and Contaminant Exposure of Southern Flounder in the Texas Coastal Bend	HLR 2.3 HLR 2.4	TAMUCC	\$ -	\$ 32,962	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 32,962
2726	Partners for Fish and Wildlife Program - Pollinator Habitat Project	HLR 1.1	CBBEP	\$ -	\$ -	\$ -	\$ -	\$ 75,000	\$ -	\$ -	\$ -	\$ 75,000
2727	Ocean Acidification Monitoring in Port Aransas Ship Channel, Year 3	WSQ 3.1 WSQ 2.2	UTMSI	\$ -	\$ 38,988	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 38,988
2728	Community Structure and Function of Estuarine-Dependent Sportfish in Oso Bay: Establishing a Baseline Prior to Wastewater Diversions	HLR 2.3 HLR 2.4	TAMUCC	\$ -	\$ 82,299	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 82,299

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2729	Establishing Baseline Levels of Microplastic Contamination in Oysters from the Coastal Bend	HLR 1.3 HLR 2.3 WSQ 2.2 PEO 1.3	UTMSI/HRI	\$ -	\$ 94,316	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 94,316
2730	Long-Term Assessment of Seagrass and Seed Bank Reserves	HLR 1.1 HLR 1.3 HLR 2.4 CR 1.1 PEO 1.1	UTMSI	\$ -	\$ 27,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 27,000
2731	Wells and Water for Whoopers Cost Share Program Implementation	HLR 1.2 HLR 2.1	ICF	\$ -	\$ -	\$ 44,145	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 44,145
2732	Public Access Master Plan for the Redfish Bay Causeway	TR 2.1 TR 3.1 HLR 1.1 HLR 1.2	CBBEF	\$ -	\$ -	\$ 13,300	\$ -	\$ -	\$ 77,980	\$ -	\$ -	\$ 91,280
2733	Nutrient Sampling in Petronila Creek	WSQ 1.1 WSQ 2.1 WSQ 3.1	NRA	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 53,000	\$ -	\$ -	\$ 53,000
2734	Carlos Reef Oyster Restoration, Phase 2	HLR 1.2	CBBEF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,325,000	\$ 1,000,000	\$ -	\$ 2,325,000
2735	Coastal Bend Rain Gardens	WSQ 1.1 NPS 1.1	CBBEF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 50,000	\$ -	\$ 50,000
2736	Monitoring Water Quality in the Nueces River Tidal Segment	WSQ 1.1 WSQ 2.1 PEO 1.1	TAMUCC	\$ -	\$ 36,470	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 36,470
2737	CBBEF Watershed Warriors	NPS 1.3 PEO 1.2 DD 1.1	CBBEF	\$ -	\$ 78,761	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 78,761
2738	Rain Barrel and Waterwise Landscaping Workshop	FW 1.3 FW 1.4 NPS 1.5	CBBEF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,000	\$ -	\$ 5,000

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2739	El Rincon Reef Shoreline Protection and Restoration, Phase III	HLR 1.2 HLR 1.3 TR 2.1	CBBEP	\$ -	\$ 10,950,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 10,950,000
2740	Rabbit Island South Protection and Restoration, Phase I	D 1.1 HLHR 1.2 CB 1.1	CBBEP	\$ -	\$ 515,913	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 515,913
2741	Costa Grande Ranch Acquisition	LCS 1.2	CBBEP	\$ -	\$ -	\$ -	\$ -	\$ 2,000,000	\$ -	\$ 826,158	\$ -	\$ 2,826,158
2742	Costa Grande Ranch Invasive Species Management	HLR 1.2 LCS 1.1	CBBEP	\$ -	\$ -	\$ -	\$ -	\$ 45,000	\$ -	\$ 22,000	\$ -	\$ 67,000
2743	Nueces Delta Preserve Native Plant Nursery Enhancements	HLR 1.1 HLR 1.2	CBBEP	\$ -	\$ -	\$ -	\$ -	\$ 48,000	\$ -	\$ -	\$ -	\$ 48,000
2744	Habitat Restoration Through the Installation of Living Shorelines in the Coastal Bend	HLR 1.2	CBBEP	\$ -	\$ -	\$ -	\$ -	\$ 12,000	\$ -	\$ -	\$ -	\$ 12,000
2745	Ingleside on the Bay Pocket Park, Phase II	TR 1.2 SM 1.1 HLR 1.1 HLR 1.2	CBBEP	\$ -	\$ -	\$ -	\$ 360,000	\$ -	\$ -	\$ 100,000	\$ -	\$ 460,000
2746	Educational Programming at the Oso Bay Wetlands Preserve and Learning Center	PEO 1.1 PEO 1.2 DD 1.3 DD 2.1	City of Corpus Christi	\$ -	\$ 54,256	\$ -	\$ -	\$ -	\$ -	\$ 100,000	\$ -	\$ 154,256
2747	Monitoring Texas Diamondback terrapin responses to marsh restoration at Goose Island State Park	HLR 1.2 HLR 1.3 HLR 2.1 HLR 2.4	TAMUCC	\$ -	\$ 43,598	\$ 8,493	\$ -	\$ -	\$ -	\$ -	\$ 25,000	\$ 77,091
2748	Cultivation to Conservation Reef	HLR 1.2	CBBEP	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 100,000	\$ -	\$ -	\$ 100,000
2749	Respect the Rookeries	HLR 1.3 HLR 2.4 CB 1.1 CB 21	CBBEP	\$ -	\$ -	\$ -	\$ 189,549	\$ -	\$ -	\$ -	\$ -	\$ 189,549

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2750	Enhanced Water Quality Monitoring in Petronila Creek	WSQ 1.1 WSQ 2.1 NPS 1.1	CBBEP	\$ -	\$ -	\$ 21,850	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 21,850
2755	Incentivizing Optimal Shorebird Habitat on the Gulf Coast	HLR 1.2 CB 2.1	CBBEP	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 60,000	\$ -	\$ 60,000
TOTAL FUNDING				\$ 493,796	\$ 12,394,609	\$ 718,112	\$ 1,043,855	\$ 2,243,000	\$ 2,019,899	\$ 2,504,466	\$ 348,731	\$ 21,766,468
Administrative			CBBEP	\$ 356,204	\$ 982,188	\$ 231,612	\$ -	\$ -	\$ -	\$ 3,817	\$ 130,092	\$ 1,703,913
TOTAL FUNDING				\$ 850,000	\$ 13,376,797	\$ 949,724	\$ 1,043,855	\$ 2,243,000	\$ 2,019,899	\$ 2,508,283	\$ 478,823	\$ 23,470,381