Texas Sites and Coastal Sights

Historic Road Trip: South Texas Coastal Bend // FARAH MERCHANT

The Texas coast stretches 350 miles from South Padre Island to the Louisiana border, extending through a diverse array of towns, each with their own rich history. The southern portion of the coast—roughly 100 miles of shoreline between Rockport and South Padre Island—offers travelers a diverse range of heritage tourism opportunities. Here, we focus on exploring Port Aransas: the original island life destination.

Initially referred to as Star, The Pass, Ropesville, and Tarpon, Port Aransas was officially named in 1911. The town preserves its past by maintaining its 19th-century historic architecture. Visitors can partake in many natural excursions such as tarpon fishing, kayaking, and surfing. Along with its relaxed activities, Port Aransas offers historical experiences making it an ideal tourist destination.

Cultural Attractions

Just across Aransas Bay in Rockport-Fulton, the ornate Fulton Mansion State Historic Site, decorated with dark columns and trim, embodies the wealthy home life of the Fulton family. Luscious grass covers the perimeter of the house, and oak trees surround the sides. The house was filled with love, as well as interior gas lighting and flush toilets. George and Harriet Fulton bought their dream house in 1877 with profits from their ranching empire and spent their lives together in the mansion.

The La Salle Odyssey museums capture Robert Cavelier, Sieur de La Salle’s expedition to Texas, from its conception in France to the discovery of the remains of his ship La Belle. The Texas Historical Commission offers a La Salle Odyssey mobile tour with supplemental audio tracks and videos. But the infectious passion of the museum workers, details of the exhibits, and access to more knowledge from the displays and staff members make the visits worthwhile.

In the early 2000s, the Texas Maritime Museum in Rockport joined the La Salle Odyssey project to show the daily life aboard La Belle. The artifacts range from navigational devices to medical instruments and a large wooden model of the ship encased in glass. The museum also includes reimagined exhibits, allowing visitors to experience the life of the French sailors and their navigation skills.

Natural Heritage for a relaxing day, visit the Civilian Conservation Corps constructed Goose Island State Park. Although visitors cannot swim at the park, they can camp, fish, hike, boat, and observe the wildlife. The 1,620-foot-long fishing pier and boat, kayak, and canoe launch make fishing easily accessible.

Lodging For a memorable experience in a charming seaside village, book a room at the historic Tarpon Inn, listed in the National Register of Historic Places. Built in 1886 with surplus lumber from Civil War barracks, this Port Aransas icon is an “inn” in every sense of the term, offering a slice of life in the late 1800s. Its old-fashioned style means there is no TV in any room (Wi-Fi service is available). The rooms are small, but the vintage beds and furniture are charmingly refreshing.

Another historic lodge that resembles the late 1800s is the Angel Rose. Originally a Victorian home, the Angel Rose is now a bed and breakfast. Maintaining much of the house’s integrity, the lodge only has three rooms. Angel Rose is a six-minute walk from the Texas Maritime Museum, but guests can rent bicycles for a faster (and more-scenic) option.

To see the full south Texas coastal bend road trip itinerary, visit https://www.thc.texas.gov/historic-road-trips/historic-road-trip-south-texas-coastal-bend

Fulton Mansion State Historic Site allows visitors a rare glimpse into the life of an affluent family in the late 1800s. Fulton Mansion is a Recorded Texas Historic Landmark and listed in the National Register of Historic Places. Photo credit: Texas Historical Commission

Goose Island State Park is also home to “The Big Tree,” estimated to be nearly 2,000 years old with a circumference of more than 35 feet. It is possibly the largest and oldest live oak tree in Texas.
Natural Resource Damage Assessment Program

Major Milestone Completed with New Bird Rookery Island
// TARA WHITTLE

The Texas Trustee Implementation Group (TIG), in partnership with the Galveston Bay Foundation (GBF), successfully expanded important colonial bird nesting habitat in Galveston Bay through the completion of the construction phase of Dickinson Bay Island II. This island is one of the four rookery islands included in the Phase IV Early Restoration Texas Rookery Islands project: Dickinson Bay Bird Island II, Rollover Bay Island, and Smith Point Island in the Galveston Bay system, and Dressing Point Island in East Matagorda Bay. Construction of the approximately eight-acre Dickinson Bay Island II, will provide bird nesting and foraging habitat using earthen fill, an armored shoreline that includes a rock breakwater and rock reef, and scrub-shrub plants.

This project was challenging for many reasons including supply shortages and delivery and transportation issues but, thanks to the cooperation, flexibility, and diligent work of all project partners, the island was completed right in time for this year’s nesting season. TIG members expect many colonial bird species to flock to Dickinson Bay Island II. Great blue heron, little blue heron, snowy egret, roseate spoonbill, black-crowned night heron, white ibis, laughing gull, brown pelican, and Forster’s tern are some of the species expected.

GBF will oversee the next phase of the project that will include installation of native vegetation to promote nesting and foraging. Some of the native vegetation may be grown on site using locally sourced seeds. The project will then be monitored for five years by GBF and the TIG.

With Galveston Bay boasting some of the most diverse and abundant colonial bird populations along the Gulf of Mexico’s coast and in the Nation, GBF and the TIG look forward to starting construction of other islands in the Texas Rookery Island Project in 2023 and 2024. Visit the Texas Restoration Area webpage for more information about this project and many others.

Dickinson Bay Bird Island II

Construction Timeline

September 1, 2021
Construction contract executed by GLO.

September 7, 2021
NTP issued; The contractor (APOLLO Environmental Strategies) originally requested 170 calendar days to complete the work.

October 7, 2021
The contractor conducted the initial surveys for the breakwater starting; This took about 10 days for the survey, drafting and engineer’s review and approval. Gradation and testing work on the armor stone started shortly after the surveying.

October 13, 2021
Contractor mobilized to the site.

October 30, 2021
Geotextile fabric and armor stone (riprap) were delivered via barge (from Kentucky), breakwater construction commenced; They started building breakwaters working from SW corner, and kept moving in a counterclockwise fashion.

December 2, 2021
Sand deliveries started and stockpiling began.

January 15, 2022
APOLLO was working late at night to take advantage of high tides when the GLO received a call from a neighbor. They voiced their support of the project but said they couldn’t sleep with the late night noise. The specifications required the contractor to pound the rocks together, but they were able to instead use the bucket of the excavators to press the rocks into place, while still able to achieve the required contact and stability of the breakwater material. The operators also avoided scraping the bottom of the bins when picking up the rocks. This was possible due to operator experience and skill level. Due to the success and positive response, the site superintendent decided to implement the quiet practice during the day as well.

February 2, 2022
After completed interim surveys for quality control, the breakwater work concluded.

February 3, 2022
Sand fill commenced as soon as the breakwater was completed. Sand deliveries became irregular, so APOLLO received approval to find a secondary sand pit.

April 26, 2022
Topsoil fill commenced.

The approximately eight-acre Dickinson Bay Island II will provide bird nesting and foraging habitat. Construction was completed using earthen fill and an armored shoreline that includes a rock breakwater, rock reef, and scrub-shrub plants. Photo credit: Galveston Bay Foundation
New Tools and Tech

**TxSed Viewer Updates: Visualizing Seafloor Sediment Composition from Grab Samples // Blake Barber, Terrence Kiser, and April O'Donnell (GLO Geospatial Team Interns)**

The Texas General Land Office’s Geospatial Technology Services team hosts the Texas Sediment Geodatabase (TxSed). TxSed compiles geotechnical samples into an online mapping viewer for the lithological characterization of the seafloor and submerged sediments. Engineers, geologists, coastal planners, and other stakeholders can use TxSed to understand beach and offshore sediment conditions, and to develop borrow areas that may be used for coastal restoration projects. TxSed currently only shows the local geological conditions of the seafloor and submerged sediments as discrete points made up of grab samples.

Grab samples are sediment collected from the seabed surface that are separated into their lithological components of clay-, silt-, sand-, and gravel-sized sediments. The grab sample is recorded as an individual x,y point location and tagged with the lithological components, allowing GIS users to view and manipulate the grab samples in a spatial context. Because TxSed only displays the geographic location of a grab sample and a pie chart of grain size distribution, it is difficult for users to visualize which sediment type may dominate a given area. In the spring of 2022, Geospatial Team interns were tasked with updating the TxSed Viewer to display continuous sediment data for the Texas coast using grab sample data.

The Geospatial Team interns merged the most updated grab sample data compiled by the United States Geologic Survey (USGS) with the GLO’s existing TxSed data to complete this task. The USGS data comes from various sources and covers grab samples taken from 1976 to 2012. The resulting dataset contained over 3,000 points. To convert these isolated grab sample points into continuous raster surfaces, the Geospatial interns used two different interpolation methods: Inverse Distance Weighting and Natural Neighbor. Interpolation is a mathematical way to estimate the values between a set of known points and can be used to convert a set of points into a raster surface. The interns only interpolated data into raster surfaces from submerged lands, which includes data points in bays, channels, passes, nearshore, and offshore. The interpolated data includes percent sand, percent silt, percent clay, and percent gravel. The resulting raster surfaces allow a user to visualize seafloor sediment composition across broad geographic regions.

The interns then used the raster surfaces to isolate areas with high percentages of selected sediment types and then create contour polygons. A contour polygon is an area within which a set minimum or maximum value occurs. In this case, each contour polygon denotes areas of chosen maximum or minimum amounts of percent sand, clay, silt, or gravel that were determined to be important thresholds for coastal planning. Areas that did not meet the selected threshold for any identified sediment type were designated as mixed sediments. Finally, the interns combined all contour polygons into a single layer with each sediment type represented by a different color. Look for the new data to be uploaded to the TxSed Viewer soon!

To view TxSed, visit: https://cgis.glo.texas.gov/txsed/index.html

Geospatial Team interns used the raster surfaces to isolate areas with high percentages of selected sediment types and then create contour polygons. The yellow polygon shows the areas with 70% or greater sand concentration.
Texas has four pending deepwater port (DWP) license applications. All DWP applications are required to be consistent with the Texas Coastal Management Plan and the Texas Governor must approve or deny each Texas DWP application. The status for each DWP application is listed below.

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More information on the applications, including the license applications, can be found at [www.regulations.gov](http://www.regulations.gov) using the docket no in the table above.
Bayside Living Shoreline Protects Coastline in the Face of Hurricane Harvey // KRISTIN HAMES

Living shorelines are implemented across Texas coastlines as environmentally friendly ways to prevent erosion. Living shoreline projects protect residential areas, urban areas, parks, and rookery islands by keeping the shoreline intact through soil accumulation and plant growth. Look closely at these natural areas and you may see long-legged herons wading through the water, baby rail chicks scurrying through the undergrowth, and an explosion of small fish and crabs racing along the bay bottom.

An impressive characteristic of living shorelines is their longevity. The living component creates a self-sustaining ecosystem, or integration with the surrounding ecosystem, that alleviates the need for long term costly maintenance. The shoreline at Driscoll Rooke Covenant Park in Bayside, TX, is an excellent example of a hybrid living shoreline that has flourished over the past two decades. A sheet pile breakwater protects a marsh, whose origin was small plug plantings of saltmarsh cordgrass. From those plants a marsh complex has grown that includes low marsh and high marsh species such as saltwort, glasswort, sea oxeye daisy, saltgrass, and more. The upland slope is protected by an articulated mat that has been completely grown over by native upland vegetation, further enhancing the stability.

The town of Bayside was hit hard by Hurricane Harvey in 2017, causing extensive damage to homes and shorelines. The living shoreline was largely unaffected and is a testament to the capacity for a well-designed project’s resiliency. Despite storm associated effects and long-term erosive forces, the shoreline at the popular park and fishing pier continues to flourish and protect the shoreline while provide high quality habitat.

Let’s continue to make Texas coasts beautiful and strong by implementing living shorelines projects. For further information please refer to the GLO’s guidance manual, A Guide to Living Shorelines in Texas, which can be found at https://www.glo.texas.gov/coast/coastal-management/permitting/index.html.
Dipping your toes in the Gulf is a delightful way to cool off on a hot Texas day. Thanks to the GLO Coastal Resources Division, many more Texans are getting to enjoy this simple pleasure.

Over the last decade, the GLO’s Beach and Dune Protection Division has been using surplus Coastal Management Program (CMP) funds to purchase Mobi-chairs for coastal local governments. Since the initial round of purchases in 2010, the GLO received several notes from beachgoers expressing their appreciation. One beach visitor from San Antonio wrote:

“I want to express my deepest gratitude to this institution… This program, beach wheelchairs, literally changed my life. I hadn’t been ON the beach in several years because I walk exclusively in crutches, which sink in sand and create a fall risk. To be able to safely get back in the ocean is a real blessing for me. I cannot thank you enough.”

Another visitor, who used the Mobi-chairs in Nueces County, said:

“My mom who is 77 years old and walks with a cane, she is not too steady on her feet, loves the beach and has not had an opportunity to put her feet in ocean water for many years. We were setting up at one of your little covered tables where she could sit and be near the ocean (she did not feel comfortable walking out on the sand to get to the water) when [someone] told us about the chairs available to people that needed assistance getting around on the beach and to the water. I cannot begin to tell you how much it meant to my mom to be able to get down the beach and put her feet in the water. His act of kindness made my mom’s day and is a memory she will have forever. Thank you for providing these amazing chairs.”

Clearly the Mobi-chairs are making a big splash on the Texas coast. In addition to Mobi-chairs, the GLO’s Beach Dune team has also purchased Mobi-mats for some coastal cities and counties. Mobi-mats are portable and removable rollout beach access mats that allow things like wheelchairs and strollers to roll easily on the beach. The GLO plans to continue using surplus CMP funds to help local governments make Texas beaches more accessible.

In total, Beach Dune has purchased 30 Mobi-chairs. The following entities have at least one Mobi-chair: Brazoria County, Cameron County, City of Freeport, Galveston Park Board, Nueces County, Port Aransas, City of South Padre Island, and City of Surfside Beach.

If you’d like to learn more about Mobi-chair availability, please contact Natalie Bell, Beach Dune Manager, at Natalie.bell@glo.texas.gov.
Texas is home to seven barrier islands. The largest consisting of Padre Island has a reach of 113 miles. Nestled at the southern end of its barrier chain is South Padre Island (SPI). SPI hosts over 5.2 million national and international visitors annually. The City of South Padre Island (the City) manages, reports, and patrols water safety conditions daily along its five-mile beach.

In 2008, the SPI Fire Department started a pilot Beach Patrol Program. The goal of this program was to monitor beach activities and provide rescue services as needed on the City’s beaches. Fourteen years later, the City’s Beach Patrol is more active than ever. The City uses a mix of roaming and static teams to safeguard the public from coastal hazards. Roaming units are limited to two small pick-up trucks and three all-terrain vehicles at full staffing periods. Stationary units are a series of lifeguard towers placed along critical locations of the five-mile stretch. Over the years, Beach Patrol has taken advantage of typical pool-style lifeguard stands. Each stand offered a single seat for the occupant, minimum shade, and no operational gear storage. At best, these stands allowed for a high view of swimmer activity but provided little help for response time.

In 2021, the City was awarded funding through the Coastal Management Program (CMP) Cycle 24 to construct six new lifeguard observation towers. These towers were to replace the eight single stands used by Beach Patrol. With the help of Westar Construction and the Shoreline Operations crew, the towers were outfitted to hold at least two patrollers, response gear, educational safety signage, and provide a clear and well-marked vantage point for rescues. Each year, Beach Patrol responds to over 1,000 First Aid calls, performs 2,500 preventative actions, makes 150 swimmer assists, and conducts over 30 rescues. Thanks to the CMP, the City is looking forward to its 2022 summer season using its new and equipped lifeguard observation towers. Without programs like these, safety and public access to Texas beaches would be much more challenging to provide. The City is grateful for the opportunity and looks forward to continued collaboration throughout the program’s lifespan.

To learn more about this project, visit https://www.glo.texas.gov/coastal-grants/projects/20-314-lifeguard-observation-towers-coastal-hazards.html

The City of South Padre Island built six lifeguard observation towers along the five-mile beach the City patrols. The towers can hold at least two patrollers and safety response gear. Photo credit: SPI
Roughly 80% of the Texas coast is eroding, and some areas are eroding at rates exceeding 30 feet per year. This results in a dire need for effective and coordinated sediment management, as beach nourishment and coastal restoration projects are critical to minimize the impacts of coastal hazards and maintain important habitat and recreation areas on the coast. To meet this need, the CMP (with the help of many individuals across the GLO’s Coastal Resources and Coastal Field Operations Divisions) is continuing the current 309 Program Enhancement Strategy – the development of the Texas Sediment Management Plan (SMP).

Writing of the SMP document is currently underway, with an anticipated completion in late 2024. The SMP will serve as a comprehensive guide to ensure the most effective and efficient implementation of future coastal resiliency and restoration efforts on the Texas coast by providing guidance on:

- identification of sediment needs and available resources
- development of potential sediment borrow areas, spanning from upland areas to offshore federal waters
- permitting of borrow areas and placement areas
- inventorying sediment resources through the improvement of and use of tools available for sediment inventory and visualization
- allocation of sediment resources through a designed allocation matrix that incorporates both the prioritization of projects and matching of appropriate borrow sites with placement sites
- monitoring of shorelines, sediment budget, and sediment transport
- development or modification of policy to ensure effective sediment resource use and access.

Project efforts that are currently underway to support the SMP development include: coordination with USACE regarding regional general permits (RGP) to expedite beach nourishment; beach profile sediment grain size analysis and beach benthic macrofaunal surveys to support the RGP; long-shore sediment transport studies; improvement of the GLO’s Texas Sediment Geodatabase for use as a borrow area planning tool; geophysical surveys to search for offshore sediment resources in both state and federal waters; initial discussions with the GLO’s Energy Resources Division regarding balancing multiple-use conflict in state waters; and initial consideration of the development of a Geographic Location Description to extend the CMP’s federal consistency review authority into federal waters to safeguard sediment resources that we may rely on for future coastal restoration projects.

Contact Melissa McCutcheon (melissa.mccutcheon@glo.texas.gov) for more information on the SMP.
The GLO continues to work on implementing vital coastal protection and restoration projects proposed through the Coastal Texas Study and Sabine to Galveston planning studies, which are co-led with the USACE. The Coastal Texas Study (the Study) recommends a comprehensive approach to increase the resiliency of the Texas coast through storm surge, flood protection, and ecosystem restoration projects. These projects were identified and designed to be complementary to the GLO’s Texas Coastal Resiliency Master Plan. The Study was officially completed this past September with the signing of the Chief’s Report, and the recommended projects are currently awaiting Congressional approval. Once approved, these projects will enter the engineering and design phase. For more information on the projects recommended through the Coastal Texas Study, visit https://coastalstudy.texas.gov/.

The levee improvement projects proposed through the Sabine to Galveston study for the Orange County, Jefferson County, and Velasco Drainage Districts are now in the engineering and design phases, with the Jefferson County project moving into construction. All three drainage districts have local cooperation agreement contracts with the GLO with over $128 million transferred to these districts to date.

The GLO is also in the final year of necessary planning work for the issuance of the 2023 Texas Coastal Resiliency Master Plan (TCRMP). GLO staff will continue to engage Technical Advisory Committee (TAC) members through a series of actions workshops to allow for more transparency into the input process for the development of each specific action area and the data sources that will be used to form the recommendations. The next round of TAC meetings will allow the GLO to gather TAC member input on the evaluation of the next round of Tier 1 Projects for the 2023 TCRMP that will assist with setting GLO funding program priorities over the next few years. For more information on the TCRMP visit https://www.glo.texas.gov/tcrmp

The next round of the Technical Advisory Committee meetings will allow the GLO to gather input on the evaluation of the next round of Tier 1 Projects for the 2023 TCRMP. Tier 1 Projects are selected for each of the four regions of Texas.
**Clean Coast Texas Corner**

**The Clean Coast Texas Origin Story // JASON PINCHBACK**

In 1990, the U.S. Congress amended the Clean Water Act with a new initiative called Protecting Coastal Waters Act 16 U.S.C. §1455b, § 6217. This new law requires Coastal Management Programs to develop and implement measures for enhancing management of nonpoint source pollution to restore and protect coastal waters. The act also established a framework for improving coordination between coastal agencies and jurisdictions.

The nonpoint source pollution (NPS) requirements of the act are vast and reach into nearly every aspect of land use. NPS issues related to marinas, construction, wetlands, herbicide/pesticide applications, agriculture, stream channel alterations and other aspects are all addressed.

In the mid-1990s, the GLO asked other State agencies to work together to meet these new requirements. Each agency identified resources in existing programs, made adjustments to align these activities with act requirements, and developed new assets to support implementation. Texas then submitted the State’s program in 1998 to the federal review team comprised of the Environmental Protection Agency (EPA) and NOAA for approval. In 2003, Texas received conditional approval of its NPS program when 44 of 57 required management measures were approved. Since then, Texas has been working hard to gain full approval through dozens of iterative program submissions.

After several years of limited progress, the GLO reorganized and opened a new Water Resources program area in 2017. With fresh perspectives and staff leading this effort, Jason Pinchback built a multidisciplinary team of watershed practitioners, engineers, and water quality specialists. The group was initially perplexed by the EPA’s complex and archaic 1993 guidance document, but new strategies began to emerge.

The team realized early on that some of Texas’ attempts to gain approval were thwarted by information “getting lost in translation” and changed tactics by investing more resources into communicating with the various EPA and NOAA staff who were stationed in other parts of the country and had limited experience with Texas’ Coastal Zone.

In 2018, Texas started to gain traction with the federal review team and several program requirements were approved in 2018 and 2019. Meanwhile, the federal review team signaled that Texas must have a viable program that implements Coastal Nonpoint Source (CNPS) requirements.

While much of the CNPS program was already embedded in State agency programs, urban measure actions were not sufficient and new program resources were necessary. This led to the development of a new program, Clean Coast Texas. Clean Coast Texas launched in early 2021 through a collaborative partnership with Meadows Center for Water and Environment (Texas State University), Texas Sea Grant (Texas A&M), and Texas Community Watershed Partners (Texas AgriLife Extension).

With Clean Coast Texas up and running, the last piece was in place to request full approval of the NPS management measures from the federal review team. In May 2022, the GLO received word that the Texas Coastal Nonpoint Source Pollution Program was approved! Now, Texans can rest easy knowing that Texas has federally approved measures in place to enhance the management of nonpoint source pollution to restore and protect coastal waters.

Learn more about how Clean Coast Texas can help coastal communities by visiting cleancoast.texas.gov or by attending a monthly Lunch and Learn workshop.

**Acknowledgments:** The approval process would not have occurred without significant teamwork. Many staff and agencies invested countless hours of time and energy to develop the CNPS program. Special thanks to our networked agencies, staff, and contractors: Texas Commission on Environmental Quality, Texas State Soil and Water Conservation Board, Texas Parks and Wildlife, Railroad Commission of Texas, and Texas Department of Transportation, Melissa Porter, Kerry Neeiman, Cory Horan, Arthur Talley, Faith Humbleton, Cindy Loeffler, Michael Barrett, Tom Hegenmier, Mel Vargas, Gail Rohrle, Nicole Hall, and Sheri Land.

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**Beach Dune Digest**

**Building a Natural Line of Defense with Dune Restoration // KRISTIN HALLEY**

The Atlantic hurricane season begins June 1st and runs through November 30th, typically peaking in August and September in Texas. Property owners along the Texas Gulf Coast are encouraged to take steps now to help protect their property from flooding and damage due to storm surge and beach erosion. Sand dunes are not only vital habitat for numerous native plants and animals along the Texas coastline, but they are also the least expensive and most efficient defense against storm surge and beach erosion. Therefore, beach and dune protection are important along the Texas Gulf Coast, particularly in areas experiencing shoreline erosion and urban development. The GLO is responsible for protecting dunes and dune vegetation and for preserving and enhancing use of and access to public beaches as required by the Texas Dune Protection Act (DPA) and the Texas Open Beaches Act (OBA).

The natural defense dunes provide can be strengthened by increasing the height and stability of existing dunes and by building new ones. The GLO has developed a newly updated Dune Protection and Improvement Manual to help guide beachfront property owners through the best practices for dune restoration, including the recommended dune vegetation species and where in the dune system each species should be planted for better success.

A Beachfront Construction Certificate and Dune Protection Permit is required for property owners wishing to restore existing dunes or build new dunes. Dune restoration projects can be done through a variety of methods. In areas where there is sufficient sand supply, planting dune vegetation close to the existing line of vegetation should be the primary method for dune construction as the vegetation helps trap sand and naturally build bigger dunes. Where the sand supply is not sufficient, artificially creating dunes with imported, beach-quality sand is the best option.

Dune restoration projects must not extend more than 20 feet seaward of the existing line of vegetation to ensure public access to the beach. Artificially created dunes should be of similar height, slope, width, and shapes as natural dunes in the vicinity. Generally, the dune should be no less than 4 feet in height with a slope of no more than 45 degrees (a rise of one foot for every horizontal foot), although a slope of 18.5 degrees is recommended (a rise of one foot for every three horizontal feet). An initial dune base width should be at least 20 feet as a smaller base will not build to a height to be sufficient to provide storm protection. Artificially created dunes should be vegetated immediately to maintain stability.

Contact Kristin Halley (kristin.halley@glo.texas.gov) for more information on dune restoration.
Keeping up with CEPRA

**CEPRA Completes Breakwaters to Protect Coastal Habitat // KRISTIN HAMES**

**For The Birds!**

The Causeway Island Rookery is an island in Nueces Bay beside the HWY 181 causeway, just visible over the guard rail as you are driving over the water towards Corpus Christi. From February through September, you will see hundreds of birds camped out on the island’s beaches, shrubbery, and platforms. These herons, egrets, terns, and others are using the island to nest and raise their young. The island supports bird foraging, loafing, and roosting the remaining part of the year; however, the island has been severely eroding for decades. To protect this valuable habitat, the Coastal Bend Bays and Estuaries Program (CBBEP) and CEPRA funded and constructed a 3,415 linear feet rock rubble breakwater surrounding the island. The project was completed in mid-February, just in time for the 2022 nesting season. The breakwater will prevent erosion, keeping the island intact for future nesting seasons and allowing the island to continue to provide much needed habitat for birds in the coastal bend.

**Breakwaters, Bays, and Bayous**

The bay side of Galveston Island State Park supports a marsh complex that is home to residential and migratory birds, acts as a nursery ground for commercially important finfish and shellfish, and provides stunning vistas to the park’s many visitors. To protect the marsh from erosion, CEPRA constructed a system of three breakwaters, totaling 7,500 linear feet, funded through the National Fish and Wildlife Foundation (NFWF) and CEPRA dollars. The breakwaters were completed in October 2021 at the mouth of Butterowe Bayou, Oak Bayou, and Dana Cove. The breakwaters protect approximately 410 acres of marsh, seagrass, sand flats, and mud flats. The rock rubble used for construction will allow for oyster growth, further enhancing their value. If you visit the state park to enjoy the paddling trails or bay side camping, keep an eye out for brown pelicans lounging on the breakwaters, federally listed threatened piping plovers probing the tidal flats, or stingrays zooming along the seagrass beds. The protection offered by the breakwaters will allow this area to grow and flourish for many years to come.

To learn more about CEPRA, visit https://www.glo.texas.gov/coast/grant-projects/cepra/index.html

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**Andrea’s Advice**

**Can subrecipients purchase equipment using CMP funds?**

Yes, but the subrecipient must have included a detailed description of what the equipment is for and how it will benefit the project in the grant application. If the subrecipient needs to purchase a piece of equipment after the project has started, they must receive written approval from the GLO before purchasing.

**Expert tip:**

Does your project require the use of equipment that you already own? You can add that into your budget’s Subrecipient “Other” category! Subrecipients can report the use rate of equipment they already own as match on a project. Subrecipients should use the rate schedule established by the governing county commissioner’s court or city council for the project’s location. If the county or city does not have set rates, subrecipients should use rates established by FEMA at http://www.fema.gov/schedule-equipment-rates

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**Upcoming Meetings**

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