

RESTORE Council Activity Description

General Information

Sponsor:

Texas Commission on Environmental Quality

Title:

Texas Land Acquisition Program for Coastal Conservation

Project Abstract:

The RESTORE Council has approved \$24.3M in planning and implementation activities as FPL Category 1 Council-Selected Restoration Component funding for the Texas Land Acquisition Program for Coastal Conservation sponsored by Texas, through the Texas Commission on Environmental Quality (TCEQ). The program supports the primary RESTORE Comprehensive Plan goal to restore and conserve habitat through activities to acquire large, high-quality coastal zone properties in Texas. Locations will be selected on the basis of greatest value to the coastal environment now and in the future considering the pressures of environmental change and development. Targeted habitats will include urban green corridors, riparian, prairie and other upland, wooded wetlands, or bay and chenier wetlands. Potential partners for the program may include The Nature Conservancy, Texas Parks and Wildlife Department, Galveston Bay Foundation, Coastal Bend Bays & Estuaries Program, as well as other possible state and local governments. The program will utilize specified criteria for selecting projects that were identified earlier through public meetings and as part of a stakeholder process.

This program will conserve valuable land as habitat and provide natural buffers to flooding and erosion, decreasing the need for habitat destroying hard engineering projects while providing valuable ecosystem services. Program duration is expected to be 4 years.

FPL Category: Cat1: Planning/Cat1: Implementation

Activity Type: Program

Program: Texas Land Acquisition Program for Coastal Conservation

Co-sponsoring Agency(ies): N/A

Is this a construction project?: No

RESTORE Act Priority Criteria:

- (I) Projects that are projected to make the greatest contribution to restoring and protecting the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast region, without regard to geographic location within the Gulf Coast region.
- (II) Large-scale projects and programs that are projected to substantially contribute to restoring and protecting the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast ecosystem.
- (III) Projects contained in existing Gulf Coast State comprehensive plans for the restoration and protection of natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast region.

Priority Criteria Justification:

This program meets three of the RESTORE Act Priority Criteria:

1. Projected to make the greatest contribution to restoring and protecting natural resources. Through large-scale and strategic land acquisitions, this program will not only conserve present habitat, but very importantly, will preserve space for future buffers and habitat as the natural systems evolve and adjacent human pressures continue to increase.

2. Large-scale projects and programs. This is a large-scale program with individual land acquisition projects ranging in size from 100's to 1,000's of acres. The combined benefits of the projects within the program will increase the resiliency and environmental quality of the Texas coast by accommodating natural buffers to erosion, storm surge, flooding, and sea level rise while providing habitat for the future.

3. Contained in existing Gulf Coast State Comprehensive Plans. The prospective projects in this program were evaluated by the Texas FPL3b preproposal selection process and most were sourced from the 2019 Texas Coastal Resiliency Master Plan (TCRMP) (TGLO, 2019), the state comprehensive coastal plan for Texas. In general, land acquisition projects were scored highly by the TCRMP Technical Advisory Committee (TAC) for addressing issues of concern along the coast. The TAC was comprised of coastal experts from state and federal agencies, nongovernmental organizations (NGOs), local governments, academics, and engineering firms (TGLO, 2019).

Project Duration (in years): 4

Goals

Primary Comprehensive Plan Goal:

Restore and Conserve Habitat

Primary Comprehensive Plan Objective:

Restore, Enhance, and Protect Habitats

Secondary Comprehensive Plan Objectives:

N/A

Secondary Comprehensive Plan Goals:

N/A

PF Restoration Technique(s):

Protect and conserve coastal, estuarine, and riparian habitats: Land acquisition

Location

Location:

Texas Coastal Zone locations selected for quality of habitat, habitat vulnerability, critical location, and potential for acquisition. While acquisitions may take place under this program within any of the 18 RESTORE eligible Texas counties as opportunities arise, based on earlier public meetings and public comments, TCEQ intends to seek acquisitions primarily from within 10 counties (Aransas, Brazoria, Calhoun, Cameron, Chambers, Galveston, Harris, Jefferson, Matagorda, and Refugio).

HUC8 Watershed(s):

Texas-Gulf Region(Neches) - Neches(Lower Neches)
Texas-Gulf Region(Neches) - Neches(Pine Island Bayou)
Texas-Gulf Region(Trinity) - Lower Trinity(Lower Trinity)
Texas-Gulf Region(Galveston Bay-San Jacinto) - San Jacinto(West Fork San Jacinto)
Texas-Gulf Region(Galveston Bay-San Jacinto) - San Jacinto(Spring)
Texas-Gulf Region(Galveston Bay-San Jacinto) - San Jacinto(East Fork San Jacinto)
Texas-Gulf Region(Galveston Bay-San Jacinto) - San Jacinto(Buffalo-San Jacinto)
Texas-Gulf Region(Galveston Bay-San Jacinto) - Galveston Bay-Sabine Lake(East Galveston Bay)
Texas-Gulf Region(Galveston Bay-San Jacinto) - Galveston Bay-Sabine Lake(North Galveston Bay)
Texas-Gulf Region(Galveston Bay-San Jacinto) - Galveston Bay-Sabine Lake(West Galveston Bay)
Texas-Gulf Region(Galveston Bay-San Jacinto) - Galveston Bay-Sabine Lake(Austin-Oyster)
Texas-Gulf Region(Lower Brazos) - Lower Brazos(Lower Brazos)
Texas-Gulf Region(Lower Colorado-San Bernard Coastal) - Lower Colorado(Lower Colorado)
Texas-Gulf Region(Lower Colorado-San Bernard Coastal) - San Bernard Coastal(San Bernard)
Texas-Gulf Region(Lower Colorado-San Bernard Coastal) - San Bernard Coastal(East Matagorda Bay)
Texas-Gulf Region(Central Texas Coastal) - Lavaca(Navidad)
Texas-Gulf Region(Central Texas Coastal) - Guadalupe(Lower Guadalupe)
Texas-Gulf Region(Central Texas Coastal) - San Antonio(Lower San Antonio)
Texas-Gulf Region(Central Texas Coastal) - Central Texas Coastal(East Matagorda Bay)
Texas-Gulf Region(Central Texas Coastal) - Central Texas Coastal(West Matagorda Bay)
Texas-Gulf Region(Central Texas Coastal) - Central Texas Coastal(East San Antonio Bay)
Texas-Gulf Region(Central Texas Coastal) - Central Texas Coastal(West San Antonio Bay)
Texas-Gulf Region(Central Texas Coastal) - Central Texas Coastal(Aransas Bay)
Texas-Gulf Region(Central Texas Coastal) - Central Texas Coastal(Mission)
Texas-Gulf Region(Central Texas Coastal) - Central Texas Coastal(Aransas)
Texas-Gulf Region(Nueces-Southwestern Texas Coastal) - Nueces(Lower Nueces)
Texas-Gulf Region(Nueces-Southwestern Texas Coastal) - Southwestern Texas Coastal(North Corpus Christi Bay)
Texas-Gulf Region(Nueces-Southwestern Texas Coastal) - Southwestern Texas Coastal(South Corpus Christi Bay)
Texas-Gulf Region(Nueces-Southwestern Texas Coastal) - Southwestern Texas Coastal(Palo Blanco)
Texas-Gulf Region(Nueces-Southwestern Texas Coastal) - Southwestern Texas Coastal(South Laguna Madre)
Texas-Gulf Region(Galveston Bay-San Jacinto) - Galveston Bay-Sabine Lake(Sabine Lake)
Texas-Gulf Region(Central Texas Coastal) - Lavaca(Lavaca)
Texas-Gulf Region(Sabine) - Sabine(Lower Sabine)
Texas-Gulf Region(Nueces-Southwestern Texas Coastal) - Southwestern Texas Coastal(North Laguna Madre)
Texas-Gulf Region(Nueces-Southwestern Texas Coastal) - Southwestern Texas Coastal(San Fernando)
Texas-Gulf Region(Nueces-Southwestern Texas Coastal) - Southwestern Texas Coastal(Baffin Bay)

Texas-Gulf Region(Nueces-Southwestern Texas Coastal) - Southwestern Texas Coastal(Central Laguna Madre)

State(s):

Texas

County/Parish(es):

TX - Aransas
TX - Brazoria
TX - Calhoun
TX - Cameron
TX - Chambers
TX - Galveston
TX - Harris
TX - Jackson
TX - Jefferson
TX - Kenedy
TX - Kleberg
TX - Matagorda
TX - Nueces
TX - Orange
TX - Refugio
TX - San Patricio
TX - Victoria
TX - Willacy

Congressional District(s):

TX - 2
TX - 18
TX - 10
TX - 22
TX - 27
TX - 14
TX - 29
TX - 36
TX - 34
TX - 7
TX - 9

Narratives

Introduction and Overview:

This program aims to acquire large coastal zone properties or easement purchases to promote long-term habitat management and high-quality coastal habitat along the Texas coast. Project selection will be based on environmental data and expert stakeholder input for areas that will provide valuable long-term environmental benefits for the Texas coast. Ownership of the acquired land may be held by a government or a non-governmental organization depending on the greatest advantage for acquisition, leveraging, and conservation. This program conforms to the RESTORE Council's FPL 3 Planning Framework by adhering to the priority to restore and conserve habitat, while protecting and conserving coastal, estuarine, and riparian habitats. This program will also advance the commitments set forth in the 2016 Comprehensive Plan Update by using the best available science for land acquisition, developing a monitoring and data management framework, and defining metrics of success of the land acquisition projects. The total budget for this program is \$24.3 million over 4 years. The actual cost of individual acquisitions will vary based on property location, size, and many other factors. Potential partners for this program include The Nature Conservancy (TNC), Texas Parks and Wildlife Department (TPWD), Galveston Bay Foundation (GBF), Coastal Bend Bays Estuary Program (CBBEP), as well as other federal, state and local governments.

The Texas coast is dynamic and constantly changing via natural processes and human activity. The coast supports a wide variety of critical habitat, such as nurseries for fish, birds, oysters, and other wildlife. It is also responsible for a large proportion of the Texas economy and population and continues to grow at a higher rate than inland areas. This makes the Texas coast vulnerable to many stressors. As development continues to increase, the critical habitats and ecosystems are being diminished which adds to the vulnerability of natural and human environments. Habitat types that are found along the coast (marshes, flats, seagrasses, prairies, etc.) not only provide valuable resources, they also serve as protection from processes such as sea level rise, hurricanes, and flooding (Ruckelshaus et al., 2016). Losing these natural buffers to coastal development increases the exposure of communities to extreme events. Conservation of coastal land will protect key areas from expanding development and allow the environment to adjust to long-term changes. Acquisition of these lands will also have indirect benefits that include protection of adjacent estuaries, improved water quality, and enhanced coastal resiliency. The long-term conservation of land may also help facilitate the future restoration of degraded areas. However, funding made available through this program will be utilized for initial acquisition of coastal land and immediate short-term management and maintenance not for land modifications.

Types of coastal land acquisitions being considered as part of a larger list of potential properties that have been vetted include Armand Bayou, Lower Laguna Madre, Texas Point National Wildlife Refuge (NWR), and Columbia Bottomlands. These locations along the Texas coast provide valuable habitats and resources of coastal lands, and they support a diverse and abundant array of plants and animals. Acquisition of the undeveloped riparian forest floodplains of Armand Bayou would prevent development in high risk areas and protect riparian habitat and ecosystem functions. The pressures facing this ecosystem include subsidence, changes in wetland vegetation, and drainage, largely due to human disturbances (McFarlane, 1991). These issues have also resulted in degraded water quality in the area as the mostly rural area has transitioned into residential development. Lower Laguna Madre includes tidal wetlands, uplands, resacas, saline coastal prairies, thorn scrub, and barrier islands that add significant value to the conservation landscape. The Lower Laguna Madre system is an especially critical habitat for nesting waterfowl including Snowy and Wilson's plovers, which are threatened by development (Hood and Dinsmore, 2007). The conservation of Texas Point NWR is important to migratory and wintering waterfowl and would continue to provide a storm buffer for neighboring communities, thereby preserving coastal resiliency. The Columbia Bottomlands holds a forest that has been identified as a

priority habitat for hundreds of species of migratory birds, as well as marsh and coastal wetland habitat. Once spanning over 283,000 hectares, the Columbia Bottomlands has been reduced by more than 25% (Rosen et al., 2008). Acquiring this land would protect the remaining acreage and the habitats they encompass. The scope of this program is not limited to these locations, and other properties along the Texas coast will be considered in the project selection phase. This program aims to acquire the most beneficial land, both in acreage and in resources provided.

Years of ecological degradation from human activity and degradation from events such as the 2010 Deepwater Horizon oil spill have increased the vulnerability of the environment and the resources provided by the region (Samiappan et al., 2019). Development is an added stressor to the coastal zone, and by purchasing these lands, that potential degradation can be avoided. Conserving this land will protect the valuable resources within the habitats encompassed. In general, the environmental benefits provided by this program span from protecting habitats and conserving biodiversity to improving water quality and storm buffering. The direct benefits to coastal communities by preserving land include reducing erosion and flooding, as well as providing additional economic benefits and recreation. It is important to be proactive when considering habitat loss, and this program aims to preserve the existing environment rather than attempt to replace the resources once they are lost, both in terms of costs and feasibility.

Methods:

Funds will be used to acquire land, and some funds may be set aside for immediate short-term management and maintenance to protect resources. This program will not alter the landscape or the environment of the land purchased, instead it will protect the land from future negative alterations due to development. In addition, acquisition of the valuable coastal properties may provide areas for possible future restoration or other beneficial activities that can increase the conservation benefit of the RESTORE program.

This program will develop a process for selecting properties for acquisition that builds on Texas' stakeholder-driven process for developing the Planning Framework and selecting preliminary projects for FPL 3b consideration. During this earlier work, county governments, non-governmental organizations (NGO), and a workgroup made up of Texas Natural Resource Damage Assessment (NRDA) staff and Texas Coastal Resiliency Master Plan (TCRMP) representatives submitted 38 projects for FPL 3b consideration. Coastal experts, Harte Research Institute (HRI) staff, and TCEQ staff reviewed the projects and selected 23 for public comment. Among these 23 projects, there were 10 projects that included land acquisition, which this program will consider for implementation. Land acquisitions may be in different types of settings and habitats including urban green corridors, riparian, prairie and other upland, wooded wetlands, or bay and chenier wetlands. The selection process will consider what provides the greatest value to the coastal environment now and in the future as the human and natural landscapes continue to evolve. This program will explore the use of the previously funded RESTORE Council FPL 1 Strategic Conservation Assessment for Gulf Lands (SCA) tool (<https://scanatureserve.hub.arcgis.com/>) as a valuable resource to augment the process of land selection. Additional natural and human environmental data and analyses will be required and continued input from our stakeholders will be crucial to make this program a success. To ensure success of this program, the TCEQ, as the program sponsor, will reach out to the state, federal, and NGO groups who have collaborated on developing Texas' FPL3b program to this point. The combined expertise and experience of this group in coastal land conservation (including experience gained from FPL 1 land acquisitions) will be a significant resource to the program.

Once an area has been targeted for acquisition, the following general steps will be required: (1) Complete due diligence including appraisal, environmental assessment, survey and title search to ensure that the purchase costs are consistent with market values, that the property is not contaminated, property boundaries are known, and that the tracts' titles are free and clear of objectionable encumbrances; (2) Secure the land or easement with a purchase contract; and (3) Convey the property for long-term management. Determining if a property is conveyed to a public or a private non-profit entity will entail consideration of any potential advantages of private land conservation and the objectives of the acquisition (Drescher and Brenner, 2018). Given documented success of previous land acquisition projects in Texas and subsequent transfer of those tracts to the project partners, this program has a high likelihood of success.

Environmental Benefits:

Industry and population growth along the Texas coast continue to place pressures on remaining open spaces and directly impact ecosystems through channelization, subsidence, saltwater intrusion, and erosion of critical estuarine shore environments. These impacts increase the level of storm surge vulnerability of economically important industries. Conservation of tracts in these areas would not only directly ensure long-term ecological benefits, it would also indirectly protect industries and coastal communities increasing their resiliency (Czech, 2004). A wide array of ecosystem services would be preserved as recognized by Texas coastal stakeholders in an earlier study (Hutchison et al., 2015). The cost to acquire properties for the purpose of habitat conservation is significantly less than what the cost would be to attempt to restore or replace the functions of the environments once they are degraded or lost completely (Calnan, 1995).

The 2019 TCRMP Technical Advisory Committee (Texas General Land Office, 2019) consistently scored land acquisition projects highly for addressing a variety of environmental issues of concern including (1) altered degraded or lost habitat, (2) existing and future coastal storm damage, (3) coastal flood damage, (4) impact on water quality and quantity, and (5) impact on coastal resources. The low-lying, gently sloping, subsiding, and hurricane prone Texas coastal plain continues to attract more people and economic activity, which is converting natural environments to built environments and taking the space for natural buffers and future environmental transitions. From 1996 To 2010, NOAA C-CAP satellite data shows an increase in the amount of developed land in the Texas coastal zone of 42,334 acres (66 square miles) (National Oceanic and Atmospheric Administration, 1996; National Oceanic and Atmospheric Administration, 2010). Furthermore, projections of future urban expansion show an increase of urban land cover of 256,625 acres (401 square miles) from 2010 to 2050 just in the Galveston Bay region (Sohl et al., 2018). The strategic acquisition of land in the coastal zone of Texas will provide long-term conservation of environments, which impart ecosystem services with market and non-market value (Barbier et al., 2011). Furthermore, secondary benefits may be realized in better water quality and protection of adjacent areas. Some land acquisitions may also serve to provide areas where the transition of coastal environments can occur as sea level rises, thus offsetting the loss of intertidal environments (Texas General Land Office, 2019).

Metrics:

Metric Title: HC001: Conservation easements - Acres protected under easement

Target: TBD

Narrative: This program will purchase large conservation easements along the Texas coast to preserve the natural environment. Long-term success will be measured by ensuring the

acquisition of the most valuable land while also considering the quantity of acres protected under long-term conservation easement. Monitoring of the acquired acres will provide consistent measures of success.

Metric Title: HC003: Land acquisition - Acres acquired in fee

Target: TBD

Narrative: The goal of this program is to acquire large coastal zone properties to secure ownership of the land by federal, state, or local government or a NGO for conservation purposes. A measure of success for the program will be to maximize the acres acquired with the funds granted. The value of the land in consideration will also be examined to ensure the resources provided by the properties are maximized. More valuable acreage acquired through this program would result in more conservation of the Texas coast.

Risk and Uncertainties:

Because no physical alterations will be performed on acquired land under this program, risks associated with construction or alterations are low. A primary risk and uncertainty, however, involves finding willing sellers of land that meets program objectives. Land prices are an uncertainty as well and may cause the program to find other properties if environmental objectives are not achievable with smaller purchases. Some large conservation purchases have been made in recent years, however, and this may help bring other willing sellers to the table.

While changing real estate prices are a risk, Texas will draw on its experience with successful acquisitions from the Matagorda Bay System Priority Landscape Conservation project from the initial FPL to find willing sellers and tracts that are cost effective. Land prices along the Texas coast are impacted by economic growth and nearby development. It is expected that price per acre will vary greatly for the acquisitions in this program depending on the specific conservation goals they are designed to achieve (Czech, 2002). The program will address this uncertainty through a stakeholder and data-enriched selection process to weigh cost and conservation benefits.

Tropical storms and sea level rise present a threat to the acquisition of land, however the proven record of success of similar strategies and techniques with a significant duration shows that these risks can be overcome in the long term (Samiappan et al., 2019). While there are properties being considered for acquisition that have a relatively high risk of erosion and land loss, they do offer critical habitats and areas of environmental significance. These factors will be taken into consideration when finalizing locations, and when acquisition sites are selected, a detailed risk mitigation strategy will be included. Taking steps to prevent future development of the acquired tracts will help mitigate the risks associated with sea level rise, subsidence, and storms (Ferreira et al., 2014). Monitoring will take place and if substantial negative changes occur in the acquired properties, restoration practices may be enacted.

Long-term environmental risks will vary based on individual land acquisition sites, but all Texas coastal lands are vulnerable to coastal flooding, storms, and relative sea level rise. The potential impacts of relative sea level rise on acquired land include increased erosion and inundation, migration and submergence of coastal environments, alterations in freshwater inflows, and increased frequency, duration and elevation of storm surge flooding (Cahoon et al., 2006; Church et al., 2013). Factors that influence how a landscape responds to sea level rise and flooding are regionally variable, including upland slope, local rates of subsidence, sediment supply, tide range, and the density of development in low-lying areas potentially restricting the upland migration of wetland habitats (White et al., 2002; Morton, 2003; White and Tremblay, 1995). Land cover change modeling completed for the TCRMP

shows that wetland habitat survival and potential transitions due to relative sea level rise vary along the coast due to regional differences in the above-mentioned factors affecting vulnerability (TGLO, 2019). Storm surge modeling also shows regional variability in the extent and duration of flooding both on the present-day landscape and due to relative sea level rise. These regional variations will be considered when analyzing risks for each acquired property.

This program focuses on “preventative projects” that aim to prevent habitat and ecosystem losses from the above-mentioned risks, limiting the need for future restoration actions. These types of projects can provide high quality benefits in a cost-effective and timely manner (Chapman and Julius, 2005). Potential long-term risks still may arise due to a variety of factors. For example, a growing economy in areas surrounding the acquired land could lead to fragmentation of the vulnerable habitat, along with indirect pollution from adjacent locations (Czech, 2002). External risks such as those will also be considered when selecting land for acquisition.

Monitoring and Adaptive Management:

Project monitoring for this program will involve observations for providing information on (1) baseline environmental characterization, (2) environmental trends, and (3) to support adaptive management (NAS, 2017). Type of monitoring data will include biophysical and ecological observations of the conserved land and of adjacent areas to serve as reference sites (DWH-NRDA, 2017). Monitoring will occur on semiannual or annual bases for a minimum of two years following acquisition.

The land acquisition program will require long term monitoring to ensure the natural habitats of the acquired properties are being conserved and protected. Monitoring the area over the program duration will help determine if the areas are providing the expected benefits. Once the targeted tracts of land are purchased, ownership will be transferred to a government or non-government organization to help monitor the conservation of the environments. Methods of monitoring may include vegetation sampling, water quality testing, and land cover surveys (Calnan, 1995). Changes in habitat type, vegetation, and biodiversity will be monitored, as this program aims to conserve the current landscape and promote natural healthy changes. Over time, steps may be taken to promote further environmental conservation by removing invasive species or planting more native vegetation, however those actions are not within the scope of this program.

Data Management:

Data management for this program will make data publicly available thereby enhancing outcomes and future restoration efforts.

Planning data: During program planning, a variety of existing and newly acquired data will be gathered. Data in this category includes mostly geospatial data on land ownership, shoreline change rates, land cover, land use, infrastructure, elevation, and ecological data describing past and current environmental conditions and development.

Project implementation data: These data are needed for determining baseline conditions and are similar as planning data for specific properties. Detailed land survey data and photography may be included.

Post-project implementation data: These data are needed for monitoring ecological conditions and informing adaptive management actions. They include time series of biophysical observations similar to the planning and implementation data for understanding trends.

Program activities will identify data used. TCEQ and GRIIDC (Gibeaut, 2016) will work with data users to ensure pertinent data are shared when key activities end. GRIIDC is a well-known data repository designed to receive data from a variety of sources and from various scientific and engineering disciplines. GRIIDC will track, curate, and archive data in the GRIIDC repository and make it publicly discoverable and available. Metadata will follow the ISO 19115-2 standard and datasets will be reviewed for completeness and organization to enable reuse.

Collaboration:

Two Texas workgroups were established to provide input on coastal priorities: State & Federal Representatives and Non-Governmental Organizations. On-line and in-person meetings were held to discuss plans to develop Texas coastal priorities and to ensure the public's involvement. A survey was developed that asked for individual's coastal priorities. These surveys were available to the public and were also completed by members of the two work groups. Public meetings were conducted in three coastal cities for the public to present their issues and concerns. Information received from workgroup meetings, discussions with elected officials, public meetings and the surveys were used to develop a list of priorities to be included in the RESTORE Council's Planning Framework document. These efforts of collaboration will continue throughout the process to develop programs and projects. Work will continue with Texas representatives for NRDA/NFWF to consider leveraging opportunities.

Public Engagement, Outreach, and Education:

The decision to submit this program was based on many months of discussions with work groups and participation by the public. It began with discussions with the Texas representatives for NRDA & NFWF to identify programs/projects for FPL 3b. This identified list was shared with the two workgroups (State & Federal and NGOs) established for Bucket 2 planning purposes, for their review and comment. County judges in the coastal area also were given the opportunity to identify potential programs/projects for their areas. Using the information compiled as part of this process, a list of 23 projects was posted for public comment on the Texas RESTORE website. In addition, two public hearings were held in coastal cities. In reviewing the comments received, the timing to move forward with proposals, and in discussions with the Texas Governor's staff, it was determined that the program rather than project specific proposals would be submitted. The development of the program proposals was done to ensure that projects posted for public comment could be considered in at least one of the program submissions. Much of the work has already been done to identify projects that could be funded within this program. The process to select FPL 3b grant subrecipients will include the requirement that projects will have to already be vetted by this process or through other public processes such as the GLO's Coastal Resiliency Master Plan, NRDA or NFWF related activities. The criteria to select the specific projects will include, but are not limited to, the following: addresses issues presented in the program activity description; amount of funds available for the program; readiness; leveraging opportunities; scalability; risk/benefit ratio; and distribution of funds across the Texas coastline. Notification of the projects selected to receive grant funds will be posted on the Texas RESTORE website. This overall process, including parts already completed and others to be completed during program planning and implementation, will ensure that the ultimate selection of projects for this program are not only consistent with the RESTORE Planning Framework document, but also reflect the ideas that were discussed by the work groups, the elected officials, the public and the Office of the Governor.

Leveraging:

Funds: TBD

Type: TBD

Status: TBD

Source Type: TBD

Description: The expectation is that programs and/or projects that are ultimately selected for funding in Texas could likely include partnerships leveraging various funds, including RESTORE, NRDA and NFWF monies. In continuing discussions with NRDA, NFWF, county judges and NGOs, all parties have emphasized the need to leverage all DWH Oil spill associated funds, as well as other funds, and it is Texas' intent to consider leveraging as a criteria in selecting projects, including the recognition of previous projects and the potential for a new project to add to the cumulative benefits. NRDA, NFWF, NGOs and RESTORE Texas have a successful history of acquiring land for conservation purposes, and we expect for that to continue.

Environmental Compliance:

The planning component of this program is covered by the Council's National Environmental Policy Act Categorical Exclusion for planning and related activities. USDA has advised the Council that the implementation component of this program is covered by a USDA Categorical Exclusion (CE). The Council is using this CE and the associated environmental compliance documentation to support the funding approval of this program component, consistent with Section 4(d)(4) of the Council's National Environmental Policy Act (NEPA) Procedures, which enables the Council to use member CEs, where appropriate. In making this decision, the Council considered potential extraordinary circumstances, including potential negative effects to threatened and endangered species, essential fish habitat, tribal interests and historic properties, where applicable.

Bibliography:

- Barbier, E.B., Hacker, S.D., Kennedy, C., Koch, E.W., Stier, A.C. and Silliman, B.R., 2011. The value of estuarine and coastal ecosystem services. *Ecological Monographs*, 81: 169-193. doi:10.1890/10-1510.1
- Calnan, T. R., 1995. Coastal Division Texas General Land Office. A Coastal Wetlands Acquisition Plan For Texas. <https://tamug-ir.tdl.org/bitstream/handle/1969.3/25768/8709-Coastal%20Wetlands%20Acquisition%20Plan%20for%20Texas.pdf?sequence=1&isAllowed=y>
- Cahoon, D.R., Hensel, P.F., Spencer, T., Reed, D.J., McKee, K.L., Saintilan, N., 2006. Coastal Wetland Vulnerability to Relative Sea-Level Rise: Wetland Elevation Trends and Process Controls, in: Verhoeven, P.D.J.T.A., Beltman, D.B., Bobbink, D.R., Whigham, D.D.F. (Eds.), *Wetlands and Natural Resource Management, Ecological Studies*. Springer Berlin Heidelberg, pp. 271–292.
- Chapman, D.J. and Julius, B.E. (2005). The Use of Preventative Projects as Compensatory Restoration. *Journal of Coastal Resources* 40, 120-131.
- Church, J.A., Clark, P.U., Cazenave, A., Gregory, J.M., Jevrejeva, S., Levermann, A., Merrifield, M.A., Milne, G.A., Nerem, R.S., Nunn, P.D., Payne, A.J., Pfeffer, W.T., Stammer, D., Unnikrishnan, A.S., 2013. Sea Level Change, in: Stocker, T.F., Qin, D., Plattner, G.-K., Tignor, M., Allen, S.K., Boschung, J., Nauels, A., Xia, Y., Bex, V., Midgley, P.M. (Eds.), *Climate Change, 2013. The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press, Cambridge, UK/ New York, USA.
- Czech, Brian., 2002. A Transdisciplinary Approach to Conservation Land Acquisition. *Conservation Biology* 16(6) 1488-1497.
- Czech, B., 2004. Urbanization as a Threat to Biodiversity: Trophic Theory, Economic Geography and Implications for Conservation Land Acquisition. Proceedings, Bengston, David N., tech. ed. 2005. Policies for managing urban growth and landscape change: a key to conservation in the 21st Century. Gen. Tech. Rep. NC-265. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Research Station. 51 p. https://www.nrs.fs.fed.us/pubs/gtr/gtr_nc265/gtr_nc265_008.pdf
- Drescher, M. and Brenner, J.C., 2018. The practice and promise of private land conservation. *Ecology and Society* 23(2). <https://doi.org/10.5751/ES-10020-230203>
- DWH-NRDA, 2017. Deepwater Horizon (DWH) Natural Resource Damage Assessment Trustees. Monitoring and Adaptive Management Procedures and Guidelines Manual Version 1.0. Appendix to the Trustee Council Standard Operating Procedures for Implementation of the Natural Resource Restoration for the DWH Oil Spill. December. Available: <http://www.gulfspillrestoration.noaa.gov/>.
- Ferreira, C.M., Irish, J.L., and Olivera, F., 2014. Quantifying the potential impact of land cover changes due to sea-level rise on storm surge on lower Texas coast bays. *Coastal Engineering* 94: 102-111. <https://www.sciencedirect.com/science/article/pii/S037838391400163X>.
- Gibeaut, J., 2016. Enabling data sharing through the Gulf of Mexico Research Initiative Information and Data Cooperative (GRIIDC). *Oceanography* 29(3):33–37, <https://doi.org/10.5670/oceanog.2016.59>.
- Hood, Sharyn L. and Dinsmore, Stephen J. 2007. The Influence of Habitat on Nest Survival of Snowy and Wilson's Plovers in the Lower Laguna Madre Region of Texas. *Studies in Avian Biology*, 34: 124-135.

Hutchison, L., P. Montagna, D.W. Yoskowitz, D. Scholz, and J. Tunnell. 2015. Stakeholder Perceptions of Coastal Habitat Ecosystem Services. *Estuaries and Coasts*. 38 S1: 67-80. DOI: 10.1007/s12237-013-9647-7

McFarlane, R.W., 1991. An Environmental Inventory of the Armand Bayou Coastal Preserve. Galveston Bay National Estuary Program. file:///C:/Users/lilbr/Downloads/4253-Environmental%20Inventory%20of%20the%20Armand%20Bayou%20Coastal%20Preserve.pdf

Morton, R.A., 2003. An overview of coastal land loss: with emphasis on the southeastern United States (Open-file Report). U.S. Geological Survey.

National Academies of Sciences, Engineering, and Medicine (NAS), 2017. Effective Monitoring to Evaluate Ecological Restoration in the Gulf of Mexico. Washington, DC: The National Academies Press. doi: 10.17226/23476.

National Oceanic and Atmospheric Administration, Office for Coastal Management. 2010. "2010 C-CAP Regional Land Cover and Change." Coastal Change Analysis Program (C-CAP) Regional Land Cover. Charleston, SC: NOAA Office for Coastal Management. <https://coast.noaa.gov/digitalcoast/data/ccapregional.html>

National Oceanic and Atmospheric Administration, Office for Coastal Management. 1996. "1996 C-CAP Regional Land Cover and Change." Coastal Change Analysis Program (C-CAP) Regional Land Cover. Charleston, SC: NOAA Office for Coastal Management. [About: C-CAP Regional Land Cover and Change](#)

Rosen, D.J., De Steven, D. and Lange, M.L., 2008. Conservation Strategies and Vegetation Characterization in the Columbia Bottomlands, and Under-recognized Southern Floodplain Forest Formation. *Natural Areas Journal* 28(1), 74-82. [https://doi.org/10.3375/0885-8608\(2008\)28\[74:CSAVCI\]2.0.CO;2](https://doi.org/10.3375/0885-8608(2008)28[74:CSAVCI]2.0.CO;2)

Ruckelshaus, M.H., Guannel, G., Arkema, K. Verutes, G., Griffin, R., Guerry, A., Silver, J., Faries, J., Brenner, J. and Rosenthal, A., 2016. Evaluating the Benefits of Green Infrastructure for Coastal Areas: Location, Location, Location. *Coastal Management*, 44(5), 504-516. DOI. <https://doi.org/10.1080/08920753.2016.1208882>

Samiappan, S., Shamaskin, A., Liu, J., Roberts, J., Linhoss, A., and Evans, K., 2019. Land Conservation in the Gulf of Mexico Region: A Comprehensive Review of Plans, Priorities, and Efforts. *Land* 8(5) 84. <https://doi.org/10.3390/land8050084>.

Sohl, T.L., Sayler, K.L., Bouchard, M.A., Reker, R.R., Freisz, A.M., Bennett, S.L., Sleeter, B.M., Sleeter, R.R., Wilson, T., Souldard, C., Knuppe, M., and Van Hofwegen, T. 2018. Conterminous United States Land Cover Projections - 1992 to 2100: U.S. Geological Survey data release, <https://doi.org/10.5066/P95AK9HP>.

GLO, 2019. Texas General Land Office (TGLO), 2019. Texas Coastal Resiliency Master Plan. Austin, Texas. <https://coastalstudy.texas.gov/resources/files/2019-coastal-master-plan.pdf>.

White, W.A., Morton, R.A., Holmes, C.W., 2002. A comparison of factors controlling sedimentation rates and wetland loss in fluvial-deltaic systems, Texas Gulf coast. *Geomorphology* 44, 47–66.

White, W.A., Tremblay, T.A., 1995. Submergence of wetlands as a result of human-induced subsidence and faulting along the upper Texas Gulf coast. *J. Coast. Res.* 11, 788–807.

Budget

Project Budget Narrative:

The total budget for this program is \$24.3 million. Of that amount, approximately \$22,963,500 will be provided to sub-recipients to implement projects selected for this program. TCEQ estimates that it will require approximately \$1,336,500 million to support the following: administrative expenses (salary, indirect, travel, fringe, supplies, etc.); hosting & maintenance costs for the Texas RESTORE web site; and for a contract to provide technical assistance to TCEQ staff.

Category 1: \$24,300,000

Planning (1%) = \$243,000

Implementation (93.5%) = \$22,720,500

Project Management (5.5%) = \$1,336,500

Data management and monitoring & adaptive management costs are included in the implementation costs.

Total FPL 3 Project/Program Budget:
\$24,300,000

Estimated Percent Monitoring and Adaptive Management: 0 %

Estimated Percent Planning: 1 %

Estimated Percent Implementation: 93.5 %

Estimated Percent Project Management: 5.5 %

Estimated Percent Data Management: 0 %

Estimated Percent Contingency: 0 %

Environmental Compliance

| Environmental Requirement | Has the Requirement Been Addressed? | Compliance Notes (e.g., title and date of document, permit number, weblink etc.) |
|--|--|---|
| National Environmental Policy Act | Yes | USDA Categorical Exclusion (CE) |
| Endangered Species Act | Yes | See USDA CE |
| National Historic Preservation Act | Yes | See USDA CE |
| Magnuson-Stevens Act | N/A | |
| Fish and Wildlife Conservation Act | N/A | |
| Coastal Zone Management Act | N/A | |
| Coastal Barrier Resources Act | N/A | |
| Farmland Protection Policy Act | N/A | |
| Clean Water Act (Section 404) | N/A | |
| River and Harbors Act (Section 10) | N/A | |
| Marine Protection, Research and Sanctuaries Act | N/A | |
| Marine Mammal Protection Act | N/A | |
| National Marine Sanctuaries Act | N/A | |
| Migratory Bird Treaty Act | N/A | |
| Bald and Golden Eagle Protection Act | N/A | |
| Clean Air Act | N/A | |
| Other Applicable Environmental Compliance Laws or Regulations | N/A | |

Maps, Charts, Figures

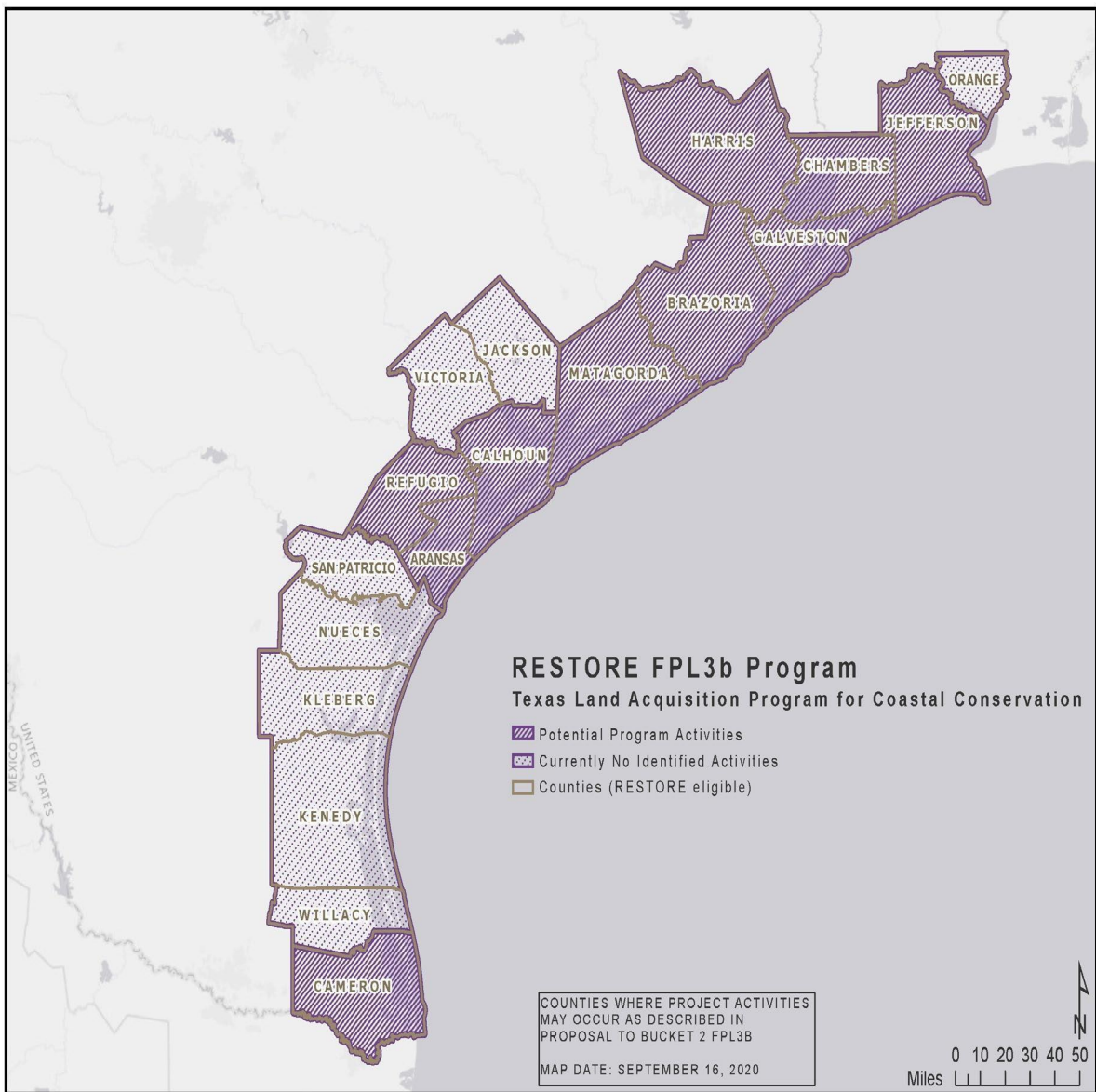


Figure 1: Approximate locations of potential land acquisitions.