FPL4 Program Descriptions

Protection and conservation of current wetland and future wetland migration corridors

To address concerns related to altered degraded or lost habitat, this program aims to conserve and protect current and future wetland habitat under changing environmental conditions. This program will protect existing fresh and saltwater wetlands, coastal prairie habitat, and adjacent buffer areas that may serve as wetland migration corridors.

Coastal wetlands are important habitats that support a variety of wildlife, recreational activity, and commercial fisheries in addition to providing flood control and improvements to water quality. In coastal Texas, a total of 58.27 sq. mi. of wetland were lost from 1996-2010 and 28.97 sq. mi. were lost from 2006-2010. Further, it is estimated under changing sea-level conditions an additional 1,214.5 sq. mi. of coastal wetlands are at risk. Strategies to enhance the adaptation of wetlands under changing environmental conditions are important for the conservation and future quantity, quality, and diversity of Texas wetlands.

Priority approaches to protect and conserve coastal, estuarine, and riparian habitat. Includes land acquisition and habitat management/ stewardship techniques.​ The program will prioritize projects with greatest need and with multiple benefits such as use of migration corridors as green infrastructure with additional benefit to flood mitigation or water quality.

**Locations:** Coastwide​: Cameron, Willacy, Kenedy, Kleberg, Nueces, San Patricio, Aransas, Refugio, Victoria, Jackson, Calhoun, Matagorda, Brazoria, Harris, Galveston, Chambers, Jefferson, Orange Counties.

Oyster reef restoration

To enhance ecological resources and restore the natural habitat of Texas estuarine waters and shorelines, this program supports the restoration of non-commercial oyster reef habitat.  This program will support the restoration and creation of oyster reef habitat to enhance ecosystem and habitat benefits of Texas bays and shorelines.

Oyster reefs can be found in intertidal and subtidal zones across Texas bays and estuaries. Oysters serve important ecological and economic functions, provide habitat for fin fish, crab, and shrimp and can serve as natural breakwaters. In Texas and across the Gulf, threats to oyster reef are from natural and anthropogenic sources and include saltwater intrusion, reduced freshwater inflow, disease, man-made disasters, habitat destruction (e.g., dredging and mechanical harvesting), coastal development, nutrient runoff and pollution and lack of shell replacement. It is estimated that the Gulf of Mexico has experienced a 50% loss in the oyster population in the last 20 years.

This program aims to address a loss in natural resources and associated ecosystem services using an Oyster Reef Restoration priority approach. Techniques for restoring oyster habitat include substrate placement, living shorelines, and enhancement to spawning and reserves.

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Enhancing coastal water quality by preserving and rehabilitating natural floodwater pathways

There is increasing concern about water quality impairments in streams and bays of the Texas Coast. This program will address this issue through protection and improvements to natural features that convey, store, and filter flood waters. Priority focus will be given to areas that are developing or expected to develop including areas with impact of agricultural lands. A secondary benefit of this program will be to reduce flood risk in neighboring communities and increase the use of green infrastructure to improve resilience and ecological benefits.

In Coastal Texas, particularly in the mid and northern coast, at least 40% of river segments are listed as impaired (TCEQ, 303d).  Water quality impacts can result from land use practices, wastewater runoff, erosion, and other non-point sources. Approaches to reduce pollution include conservation and restoration of vegetation communities such as coastal prairies and forested habitats.

Priority approaches considered in this program include those to protect and conserve coastal, estuarine, and riparian habitat (land acquisition & habitat management and stewardship); restore hydrology and natural processes (restore hydrologic connection, restore natural salinity regimes, controlled river diversions); reduce excess nutrients and other pollutants to watershed (agriculture and forest management, stormwater management, erosion and sediment control).  For this program, priority will be given to projects that consider multiple benefits such as flood mitigation, biodiversity enhancement and water quality improvement though use of natural features (i.e., green infrastructure). This program can apply to a variety of habitats including riparian areas, fresh and saline marshes, coastal prairies, forested habitat, and other undeveloped open land adjacent to streams and coastal waterbodies.

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Barrier-island ecosystem protection and enhancement

This program aims to enhance and protect barrier island habitat using a variety of priority approaches with the purpose of mitigating the effects of expanding development. To protect and enhance barrier island ecological integrity, this program may address a variety of barrier island issues related to increasing development.

Texas Barrier islands are crucial features in the natural coastal system and provide a range of economic and ecological benefits to coastal communities. Loss of barrier island habitat can be attributed to changing environmental conditions, shoreline erosion, reduced sediment to the coast, and anthropogenic disturbances.

Priority approaches of the program include those that create, restore, and enhance coastal wetlands, islands, shorelines, and headlands (sediment placement, protect natural shorelines); protect and conserve coastal, estuarine, and riparian habitats (land acquisition, and habitat management and stewardship); restore hydrology and natural processes (restore hydrologic connectivity and restore natural salinity regimes); restore oyster habitat (substrate placement, living shorelines, enhance spawning and reserve. ) Priority will be given to select barrier islands on the upper, middle, and lower coast that are subject to development and in projects that address issues related to development and anthropogenic modification of barrier island habitat.

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Protecting and restoring waterbird rookery habitat

To protect and enhance water bird habitat, this program will address habitat loss of rookery islands. Protecting and restoring bird habitat is essential for maintaining and supporting current and future waterbird populations. Restoration and protection of nesting island habitat (rookery islands) supports state, federal, and NGO efforts to protect various species of birds. The protection of rookeries may include shoreline erosion control and activities such as vegetation manipulations, predator abatement, mitigating human disturbance, and education. Projects may incorporate beneficial use of dredge material.

In Texas, over 600 bird colonies have been mapped, many of which are dredge-material islands. Yet, populations of water birds in Texas have been declining as a result of reduction of nesting and foraging ground. Loss of bird habitat can have negative physical effects on birds such as reduction in body condition, winter survival rates, and reproductive success. In addition to habitat loss, other conditions can affect rookery habitat such as changing water level, predation, human disturbance, and marine debris.

Priority approaches of the program include those that create, restore, and enhance coastal wetlands, islands, shorelines, and headlands (sediment placement and protect natural shorelines), protect and conserve coastal, estuarine, and riparian habitats (habitat management and stewardship)

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