Galveston Bay Coastal Habitat Management

TCEQ Contract No. 582-7-77831

PGA 15

FINAL REPORT

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Executive Summary

Galveston Bay Foundation (GBF) owns several conservation properties surrounding the Galveston Bay estuarine system, including two in Chambers County and five in Galveston County. GBF is responsible for implementing land management practices on these properties that will improve or restore degraded habitats and preserve the natural resources and environmental services these lands provide to Galveston Bay.

The funds associated with this grant will allow the conservation lands manager to assess each of these properties individually, prepare site specific restoration and/or management plans that identify priority conservation practices, and implement those plans to benefit native habitats.

Several conservation properties have completed or outlined management plans that identify projects that could be initiated immediately. Many of these actions are related to vegetation management with emphasis on controlling invasive, exotic plant species. Other projects will include boundary fencing, wetland creation, and prairie grass restoration.

Introduction

Many coastal habitats require active management in order to remain healthy and provide valuable ecosystem services to people and wildlife. Most of these actions are related to managing vegetation in order to manipulate the structure and composition of the natural plant community. Historically fire, high intensity, low frequency grazing, and other naturally recurring forces of nature controlled the coastal vegetation. Now that those natural forces have been suppressed, we must find other ways to prescribe management actions that provide similar results.

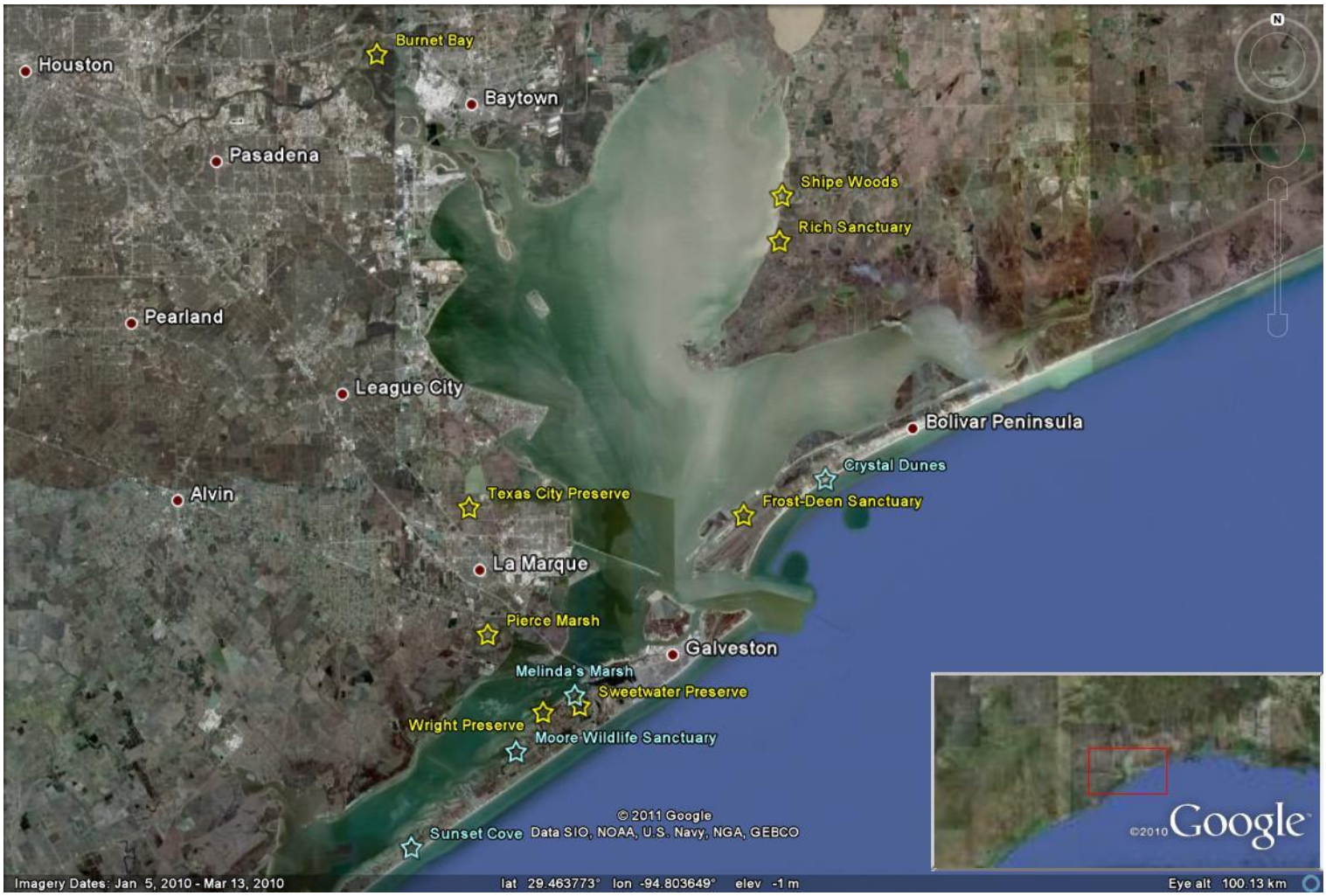
Another major issue is controlling the unauthorized use of these sensitive conservation properties. Without property boundary fencing and signage, some GBF properties have become popular off-roading sites. The local damages from a single event can take years to recover to pre-incident conditions.

This grant has allowed for the addition of staff to the Galveston Bay Foundation for the sole purpose of addressing these important needs. The implementation of proven land management practices based on sound wildlife management techniques will improve the Galveston Bay system for local and migratory wildlife as well as recreational users.

Map

Figure 1: Project site map

This map depicts the areas targeted with funding from this grant and the overall scope of the project treatment area.



Project Methodology

Invasive Species Control

Brazilian pepper and Chinese tallow are two invasive plant species GBF will work to control and eradicate from coastal preservers and sanctuaries. These plants have highly invasive characteristics and provide no significant benefit to native wildlife species. On sites that become infested, wildlife can be negatively impacted by the decreased plant diversity or even excluded due to the altered plant community structure.

Brazilian pepper is primarily isolated to the properties on Galveston Island while Chinese tallow is more widespread throughout the Gulf Coast plain. GBF will employ

proven control techniques in a coordinated approach to increase success. The conservation lands manager will continue to monitor all GBF sites to identify new infestations or prescribe follow up treatments for ongoing eradication projects.

Licensed contractors with experience applying selective herbicides in natural environments were selected to provide chemical applications for the control of invasive plant species on GBF preserves. Rich Sanctuary, Texas City Preserve, and Sweetwater Preserve were the focus of these efforts. Moist soil units harboring Chinese tallow forests were revitalized with water control structures to manipulate water levels and vegetation.

Prescribed Fire

Prescribed burning may be utilized in the future as a restoration and habitat management tool within upland prairie habitats on GBF properties. These habitats rely on frequent fire to maintain proper structure and composition in the plant community. Plants native to coastal prairies have evolved with fire and are tolerant of these events. A proper prescribed fire regime will increase plant diversity and improve wildlife habitat while reducing fuel loads and decreasing the risk of a damaging wildfire.

Given the proximity of our preserves to residential areas and major roadways, prescribed fire may not always be a viable option for restoration and management goals. GBF will coordinate with partners, including NRCS and The Nature Conservancy to plan future prescribed fire applications that have been incorporated into management plans. Preparation for these future burns will include installing fire breaks and managing rank vegetation.

Mowing

Mowing can be an effective way to control native vegetation when prescribed fire is not an available option. Biannual strip or block pattern mowing will be prescribed to areas with extreme industrial or residential interface. This practice will help reduce the risk of invasive or noxious plant species becoming established and promote native grasses prairie habitats. While not as effective as burning, mowing will also help to increase the plant diversity by resetting succession and allowing forbs to compete with taller grasses and shrubs. Repeated mowing can give preference to grass species so occasional roller chopping may be utilized in these areas to stimulate other beneficial plants.

Mowing was utilized on Sweetwater preserve and Rich Sanctuary for prairie restoration purposes. This mowing regime will need to be continued if restoration efforts are to be successful.

Fencing and Signage

Barbed wire fencing was constructed, repaired, and improved on GBF properties to restrict unauthorized access, control illicit cattle grazing, and provide hard boundaries that can be regulated by law enforcement officers. Signage was placed at target access points to indicate GBF ownership and site rules. If the public is to be entirely excluded from a site, “No Trespassing” signs were erected according local and state guidelines.

Fencing and gates were erected on Sweetwater Preserve to limit unauthorized vehicular traffic. Following the completion of the project, nearly all the trespassing and off-road activities have ceased.

Gates were also erected at Rich Sanctuary to keep neighboring cattle our of the preserve boundaries. This cost was split with the adjacent landowner.

Project Results

This project allowed GBF to expand organizational capacity and take a more active approach to conservation land stewardship. Given the high cost of some of the land and habitat management actions, not all management plans were able to be executed during the grant time frame. However, many key actions were completed and the natural habitats on GBF preserves are recovering to healthy conditions.

GBF has also displayed dedication to providing long term stewardship on conservation properties. This grant was the driving force in building the capacity to accomplish GBF's land conservation goals and mission.

Project Funding:

Partner	**Contribution**	**Contribution Type**
GBEP (TCEQ)	$65,000	State
Total	**$65,000**	

Of the $65,000.00 PGA, $23,872 was be used to hire qualified subcontractors to perform prioritized land management services, such as herbicide application, mowing, brush clearing, fence/gate installation/repair, and other services as identified by GBF staff and approved by the GBEP project manager. $29,141.73 was used to pay the GBF salaries of key personnel, including the project manager and others as determined necessary to complete this project. The remainder of funds were allocated among the fringe benefits (for GBF project personnel), travel (to/from meetings and local conservation properties), supplies (office and/or field), and other budget categories to support administration of this project and PGA. Mileage was based upon the rate set by the State of Texas Comptroller's office. The "other" budget category includes expenses such as printing, copying, postage, etc. Fringe benefits are charged at 15% of salary. Authorized indirect costs of $3,250.00 are calculated as 10% of salary.

Photos:
Sweetwater Preserve:

Tree planting – 30 mulberry trees

Brush Management – Mowing

Fencing –

Rich Sanctuary:

Fencing:

Native grass restoration:

Moist Soil Unit – Water Control Structures

Brush Management – Debris clearing / Tallow removal

Fire Lines –

Levy Repair –