

Sylvan Rodriguez Park

Prairie Restoration Project

Final Report prepared by the Houston Parks and Recreation Department for the Texas General Land Office, Coastal Management Program



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Executive Summary

The Sylvan Rodriguez Prairie Restoration Project focused on the restoration of a 30-acre section of a park owned by the City of Houston to native coastal prairie. The restoration project included the removal of invasive woody species and the establishment of native grasses and forbs to create the prairie habitat. The community was actively engaged in the restoration process to educate them on the importance of native habitats and to increase community acceptance of natural areas. To achieve this goal, two interpretive signs were installed, and four community events were hosted by the Houston Parks and Recreation Department (HPARD).

Introduction

Much of the Houston area was part of the historic prairie pothole ecosystem and many city parks have slowly been converted to non-native forest or mowed park land. Historic aerial imagery dating back to 1944 shows Sylvan Rodriguez Park containing coastal prairie habitat, which is now a critically endangered ecosystem. Before the restoration project started, much of the proposed project area was overrun by invasive species such as Chinese Tallow (*Triadica sebifera*) and Privets (*Ligustrum sp.*). These invasive species alter ecosystem services and reduce habitat biodiversity. The project was designed to increase the resilience of the landscape to natural weather effects, improve the quality of water flowing into downstream sites, and retain floodwaters.

Community acceptance of habitat restoration projects has been a major obstacle for HPARD. The HPARD's Natural Resources Management Program (NRMP) has found that community involvement in the restoration process can increase the acceptance and understanding of natural areas in parks. A major focus of the Sylvan Rodriguez Park project was to involve the community in the restoration activities.

Project Significance and Background

Sylvan Rodriguez Park is HPARD's largest habitat restoration project. It includes converting invasive wooded land into coastal prairie habitat and utilizes contractors and community volunteers to help with the restoration. The methods used at Sylvan Rodriguez Park have informed the NRMP about best management practices that will be used in future restoration projects. The overall project will help the department reach a broader goal to increase nature-based infrastructure within parks to mitigate flooding, improve water quality, reduce erosion, create wildlife habitat, and establish areas for passive recreation.

Methods

Coastal Prairie Habitat Restoration

HPARD contracted specialized tree removal companies to remove invasive species from the restoration area. The contractor worked during the summer months when the site was dry and chipped the invasive species, leaving a fine mulch on the ground (Appendix A).

Staff and volunteers seeded and planted the entire area during monthly workdays and Saturday community events (Appendix B). Seed was purchased through Native American Seed, a company that collects from remnant prairies around the Houston area. The one-gallon pots planted throughout the site were grown in the HPARD greenhouse from hand-collected seed from prairies around Houston.

A contractor was hired to apply spot treatment of herbicide on invasive species within the restoration area once the species started to grow within the site. Staff provided spot-spraying of the highly invasive vasey grass seed that began to spread through the area.

Construction and Signage Installation

Two interpretive signs were created to detail the importance of the coastal prairie and allow visitors to learn about the project while recreating at the park (Appendix C).

The boardwalk design was completed. Unfortunately, HPARD could not meet the timeline to complete construction prior to the end of the grant. HPARD is still moving forward with boardwalk construction in the coming months through use of internal funds.

Habitat Management Plan

HPARD completed a Habitat Management Plan for Sylvan Rodriguez Park and will be utilizing and adapting the plan throughout the restoration project and beyond. Vegetation monitoring and bird monitoring activities will continue for a minimum of three more years at the site to track the changes of abundance and diversity as a result of the project. Phase III has been funded through other sources and will complete the final phase of the project.

Results and Observations

March 2019	Community Planting Event in Phase I. A total of 1,076 plants were installed.
July/October 2019	Hydroax contractor removed invasive trees from Phase I.
November 16, 2019	Community Planting Event Phase I. A total of 56 volunteers planted 1,031 one-gallon pots into the prairie and seeded 100 pounds of coastal prairie mix seed.
December 6, 2019	Staff planted 150 one-gallon pots into the prairie.
January 2020	Started monthly volunteer group at the park. Planting held on January 8, where 390 one-gallon plants were installed into Phase I.
February 2020	Planting Event was held on February 2, where volunteers installed 400 plants into Phase I.
March 2020	A total of 10 volunteers installed 250 one-gallon pots and 85 plugs of wetland plants into the prairie pothole in Phase I.
September 2020	Hydroax contractor cleared invasive trees from Phase II. Volunteers installed 450 one-gallon pots into Phase I.
October 2020	Volunteers installed 721 one-gallon pots into Phase I. Seeding of Phase II.
December 2020	Volunteers installed 209 one-gallon pots into Phase II.

January 2021	Community Planting Event Phase II. A total of 26 volunteers installed 1,600 plants. Monthly workday: volunteers and staff installed 740 one-gallon pots into Phase I.
February 2021	A total of 783 one-gallon pots were installed at the monthly workday by volunteers and staff.
March 2021	Community Planting Event. A total of 8 volunteers installed 450 plants into Phase II. A total of 800 plants were installed into Phase II by staff and volunteers during the monthly workday.
April 2021	Community Volunteer Planting Event, where 14 volunteers installed 1,000 plants into Phase II. Monthly workday: volunteers and staff installed 430 one-gallon and 4-inch pots into Phase II.
May 2021	Volunteers and staff installed 64, 4-inch native milkweeds into Phases I and II.

Discussion

The Sylvan Rodriguez Prairie Restoration Project was successful and informative for HPARD's NRMP. The NRMP found that the use of a hydroax was a cost-effective and efficient way to remove tallow forest with minimal impact to the ecosystem. The mulched trees provided a thin layer that supported the growth of the native vegetation and didn't impact the germination of seeds.

Invasive species such as Vasey Grass (*Paspalum urvillei*) and resprouting Chinese tallow quickly appeared at the site after clearing occurred. In addition to the hired herbicide contractor, NRMP staff spot-sprayed herbicide in the project site as new invasive species came in.

Because this site was already a natural area, some native herbaceous vegetation already existed in the park from the historical seed bank. This allowed for native prairie plants that were not in the purchased seed mix, such as Southern Sneezeweed (*Helenium flexuosum*), Meadow Pink (*Sabatia campestris*), and Grassleaf Rush (*Juncus marginatus*) to flourish at the site after clearing occurred. The NRMP has found this to be one advantage of restoring prairie in an existing natural area as opposed to a lawn.

The prairie restoration project successfully removed the invasive forest and established a prairie that contains a diverse mix of native plants (Appendix D).

Summary

As a result of the Sylvan Rodriguez Prairie Restoration Project, 30-acres of degraded habitat was restored to its historic condition. This improvement has increased habitat function, improved the ecosystem services provided by the site, and created habitat for the many grassland-dependent species that are native to the Houston area. The surrounding community was actively involved in

the restoration process and are now more likely to understand and appreciate the natural area of their community park.

Appendix A



Appendix B



Appendix C



Appendix D



Phase I Before



Phase I After



Phase II Before



Phase II After