

Blackhawk Park

Coastal Prairie Restoration and Education Project

Final Report prepared by the Houston Parks and Recreation Department for the
Texas Commission on Environmental Quality, Galveston Bay Estuary Program

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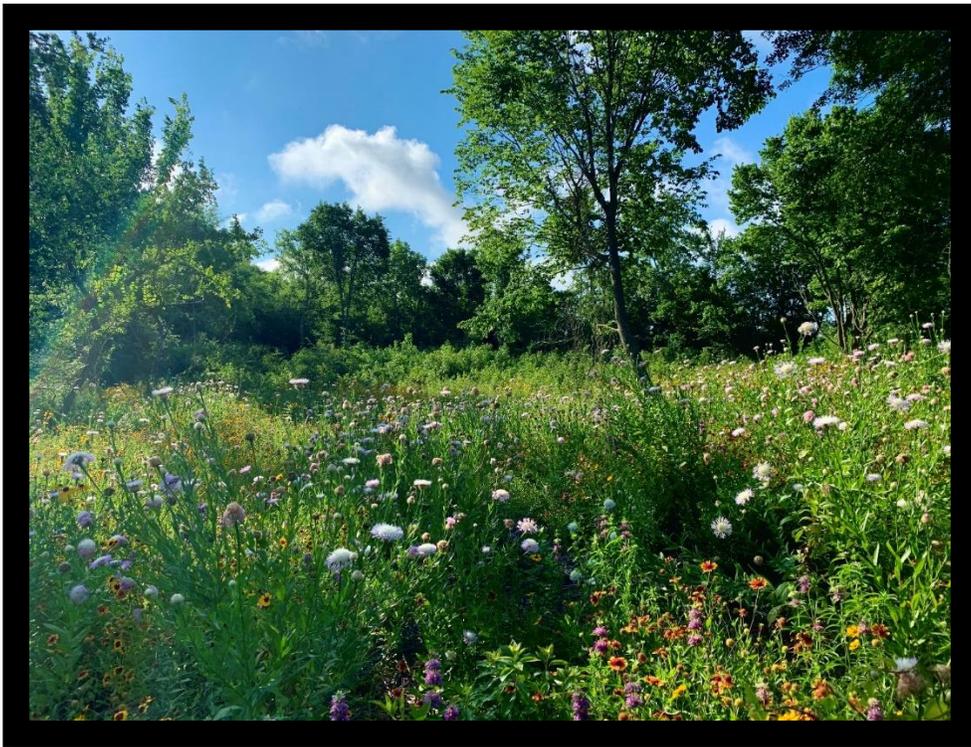


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Executive Summary

The Blackhawk Park Coastal Prairie Restoration and Education Project focused on the restoration of a 10-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 on the importance of native habitats and to increase community acceptance of natural areas. To achieve this goal, two interpretive signs were installed, and three community events were hosted by the Houston Parks and Recreation Department (HPARD) and the Student Conservation Association (SCA).

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 Blackhawk 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 the biodiversity of a habitat. 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 Blackhawk Park project was to involve the community in the restoration activities.

Project Significance and Background

Blackhawk Park was the first project converting invasive wooded land into coastal prairie habitat initiated by NRMP. The methods used at Blackhawk 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.

The Blackhawk Park Project had a strong focus on community engagement. HPARD, along with the SCA, held multiple community events at the site to remove invasive species, and install native grasses, forbs, and wetland vegetation back into the site. Community members were educated on the importance of native habitat, the harmful impacts of invasive species, and the significance of natural areas in parks for resident and migratory wildlife in the urban setting.

Methods

Habitat Restoration

HPARD subcontracted with an adult SCA crew to remove invasive species from the restoration area. The crew worked for six weeks on restoration activities at the site.

Following the clearing done by the crew, HPARD staff continued to clear more areas in the project site. Staff used a hydro-axe, a rotary cutter, and a timber-axe to complete the clearing of the 10 acres.

A contractor was hired to apply herbicide on invasive species within the restoration area, with a focus on Chinese Tallow and Privet species.

Through two volunteer planting events, the project site was planted with native grasses and forbs propagated from locally collected seed in the HPARD greenhouse.

All cleared areas were seeded with a native Coastal Prairie seed mix of grasses and forbs.

Education and Outreach

HPARD staff hosted one invasive species removal event and two prairie planting events in which the local community was given an opportunity to learn about the importance of native habitat while also participating in its restoration.

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.

Results and Observations

October 27, 2018	HPARD hosted an invasive species removal event for the community to train on identification of common invasive plant species and methods for removal. Twenty-two community volunteers attended and approximately 6 cubic yards of invasive tallow and privet were removed from the site
March 13, 2020	HPARD installed two interpretative signs to be installed at entry points in the park highlighting the importance of coastal prairie habitat and its impact on wildlife and benefits in flood reduction, erosion, and water quality.
April 8 – May 16, 2019	HPARD contracted services for a six-week adult crew to remove invasive species throughout 10 acres of the park.
April 27, 2019	HPARD hosted a prairie planting event for the community to install local, native grasses and forbs into the restoration area to start the establishment of prairie vegetation. Fifty-four volunteers participated in planting 600 one-gallon pots and were led by SCA crew members.
September 29, 2019	HPARD hosted another prairie planting event for the community to install local, native grasses and forbs into the restoration area to start the establishment of prairie vegetation. Twenty volunteers participated in planting 300 prairie plants into the site.

October 7, 2019	HPARD contracted services for herbicide spot treatment of invasive species throughout the 10-acre project area.
November 5, 2019	HPARD seeded 10 acres of Blackhawk Park with native prairie grasses and forbs.
July 28, 2020	HPARD contracted services for herbicide spot treatment of invasive species throughout the 10-acre project area.

Discussion

The Blackhawk Park Project was successful and informative for HPARD’s NRMP. The six-week crew was able to remove a large amount of invasive woody species but were not able to clear the amount of acreage that was needed. Therefore, HPARD staff worked at the site with heavier equipment such as timber axes and rotary cutters in order to clear space for the prairie restoration. The NRMP found that the use of heavy equipment was much more effective in this task.

Invasive species such as Vasey Grass (*Paspalum urvillei*) and Old-World Bluestems (various sp.) 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.

Summary

As a result of the Blackhawk Park Project, 10-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.