

Riparian Zone Restoration (RZR) Upper Boggy Creek, the “*Willowbrook Reach*”



This document outlines restoration plans for the Willowbrook Reach.

Austin Streams Past, Present and Future

Every stream in the Austin area has been altered to accommodate development associated with roads, homes and businesses. In altering these streams many have been denuded of vegetation, covered over, piped, armored with concrete, gabions and stone, or merely diverted and channelized to facilitate the often grid-like pattern that occurs as a city grows. These severely altered streams are then subjected to further degradation from increased flow during storms and a disconnection with their natural riparian zone; the zone along the edges of a waterbody which impacts the health of the stream and amount of baseflow.

The stream systems that existed in this area before the development of the past century will never be seen again. What we have now are heavily urbanized streams that are often thought of as drainage ditches. If we continue to treat them as non-living stormwater features then we will not receive from them the full benefits that stream ecosystems offer, including increased plant and animal diversity, reduction of nutrients, relief from the heat island effect, air purification, stress relief, and education.

To improve conditions on these streams we need to change our perception and management practices. Through a collaborative effort between citizens and city departments the streams can begin to rediscover their heritage. Simple and cost effective measures such as removing or reducing mowing schedules, control of invasive and woody plants, strategic planting of native trees, shrubs, and grasses and the clearing of trash and debris will help bring about these benefits.

Restoring the Willowbrook Reach

The reach of Boggy Creek spanning from Cherrywood to 38 ½ St., known as Willowbrook to residents, is an amazing stretch of stream owned by the City of Austin's Watershed Protection Department (WPD). The maintenance of this parcel is coordinated by the Vegetation Control Program, whose primary method of maintenance has historically been to mow and trim everything on the property, including the stream channel. The goals of this new project are to increase tree cover, support plant and animal diversity, restore the Willowbrook greenbelt to a more natural and resilient riparian state, and reduce the frequency of required maintenance. The City is trying to make these water quality goals complement the goals of the local users of this greenbelt in providing access and recreational enjoyment of a valuable natural amenity.



Benefits

1. Improved water quality
2. Reduce money and fuel used for mowing riparian zones.
3. Lower heat island effect by providing more shade.
4. Increase riparian zone vegetation.
5. Improved water quality in streams.
6. Increase aquatic habitat for wildlife.
7. Increase terrestrial habitat for wildlife.
8. Reduce stream bank erosion.
9. Increase stream baseflow.

Steps to Restoration

1) *Initiate a new mowing and maintenance regime.* We propose mowing a 2'-3' edge around the outer border of the property along the streets, allowing space for parked cars and delineating a manicured edge near the streets. The area along the main two trails will also be mown (see No. 2 below).

2) *Relocate the trail, or footpath.* Healthy, more stable banks are critical for promoting a healthy stream. Human wear-and-tear near the fragile banks can increase rates of erosion. The trail is being moved approximately 10' back from the stream in most places to allow for growth of riparian trees, shrubs and forbs. These plants will help keep the stream shaded (benefit to stream wildlife), slow or prevent erosion with deep roots, lay down and cover the soil during high stream flows, and uptake nutrients.

People who use the trails will need to help maintain the new trail by using the new route, which will be initially denoted by a mown path via the American Youth Works crew. We will likely place some obstructions such as branches on the old trail to deter traffic and allow plants to grow. Due to the compaction of the soil along the old trail it would be helpful to break up the soil with digging forks and replant it with native grasses and forbs.

3) *Removal and maintenance of invasives.* We will begin by removing Johnson grass stands and eventually focus on removal of Ligustrum, Chinaberry, Chinese Tallow, etc., as dictated by interest and available resources.

4) *Revegetation.* We will be planting new native trees, shrubs, wildflowers and grasses that are site appropriate and beneficial. The scope and schedule of the revegetation process are still in the planning stages but we are hoping to begin some of the planting in the fall of 2010. The first part of planting process will begin in the upper 1/3 of the reach (Phase 1). This area was chosen because it is beyond the boundaries of the wastewater infrastructure project that will be taking place soon. The later parts of planting should coincide with the completion of the infrastructure relocation project (timeline unknown).

5) *Education and Access*. Steps will be made to enhance at least two low water crossings, so greenbelt users can access the stream and cross the property. There may also be an opportunity to install educational signs with information on species, stream ecology, etc.

Timeline

American Youth Works will begin the new mowing regime and invasive species removal in August 2010. Planting of plants could begin as soon as Fall 2010.

Funding

Funds for this project will come from the water main and wastewater modification project being planned for the surrounding area and a variety of other completed projects that might have small amounts of left over funds. The upcoming wastewater infrastructure project and the piece-meal funding will result in a project that is going to occur in phases. It will take more than a year for the entire project to reach completion. One advantage to this is that it will allow the citizens and WPD to make desired changes to the latter phases as the project proceeds.

How the Neighborhood can help

Neighbors may be called upon to help with planting, maintenance and trash clean up, as they have done in the past. If the old trail continues to be used the new trail will not become established and the ecological benefits of having the trail further from the stream will not be realized. Success of the trail relocation will largely be the responsibility of the users of the park.

Long Term Goals

Ultimately, WPD would like to see a climax riparian forest. This is a “legacy” project that will benefit from the patience and assistance of the neighborhood. When the plants first go in they will be small and require an irrigation system to help them survive the dry Texas summers. The first few years of growth for most of these plants will be slow as they are establishing their root systems. Nearing the third year, depending on climatic conditions, we should expect to see more established plant communities evolve and by the fifth year the landscape will really start to stabilize. During this stage the grasses and forbs (and “weeds”) that have been thriving in the sun and water should be less vigorous as the woody plants become taller and intercept more of the sunlight. The tenth year will show the upper canopy trees surpassing the understory plants and setting the structure for a multi-tiered climax forest. In twenty years the trees will really start to show their height, the understory trees and shrubs will thin out losing some branches and the groundcover will be considerably shorter. In fifty years, your children, grandchildren and great grandchildren will have a true Texas forest and stream to enjoy and play in.