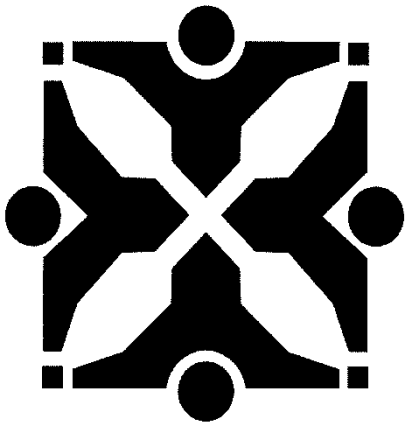

El Chaparral Riparian Restoration Project

A Hinkson Creek CAM Project

Annual Monitoring Report

Year 1

June 2018

El Chaparral Riparian Restoration Project
Annual Report
2018

Pre-Existing Site Conditions

The former BCRSD waste water lagoon site located on South Fork Grindstone Creek and adjacent to El Chaparral Sub-division was closed and seeded to fescue in 2008-2009. The 6.9 acre site was deeded to the City of Columbia in April 2010. The site is currently managed by Columbia Parks and Recreation.

The lagoon site is approximately 2.5 acres in size with approximately 550 feet of creek bank. The lagoon footprint is currently dominated by fescue turf with a few herbaceous forbs and sedges (see partial list). The site has been allowed to go fallow since Parks & Rec took over management. The existing riparian corridor at the site is an average of 50 feet in width and is dominated by Sycamore and the invasive shrub species, bush honeysuckle and autumn olive. There are other tree species, including black walnut, but are a small component and not significant. The entire reach associated with the lagoon site would benefit from some native tree and shrub diversity. Areas upstream and still on the property have older second growth timber with good diversity, including American basswood, swamp white oak, hickory sp, northern red oak, etc. The entire site has a typical problem with invasive shrubs. The lagoon site, likely due to the suppressive nature of fescue, does not have a worrisome component of invasives. However, it is surrounded by woods that have a heavy component of shrub honeysuckle, Japanese honeysuckle and some autumn olive.

Work Plan

The basic plan is to construct a stormwater treatment wetland, restore a broader riparian corridor and adjacent buffer areas. The riparian corridor will be restored by first establishing a vegetative ground cover that mimics a typical floodplain in the Grindstone watershed. This will be a mix of floodplain grasses and forbs e.g., Virginia wild rye, river oats, wingstem, cup plant, etc.

The tree and shrub component will likewise mimic nearby relatively undisturbed riparian habitat. There are areas downstream that are relatively undisturbed. The over story species are diverse, e.g. swamp white, northern red, white and chinkapin oaks, sycamore, black walnut, hackberry and basswood. The under story is still fairly interesting having a good mix of small trees and shrubs, e.g. ironwood, black haw, dogwood, buckbrush and buckeye. Although to a lesser extent than most, these areas do have a relatively troublesome presence of both bush honeysuckle and autumn olive.

The plan is to restore the El Chaparral site to a species mix that mimics riparian areas adjacent to the site. This will include some invasives control.

The site will be restored to native riparian, floodplain emergent marsh and savannah.

This will be accomplished using native seed mixes, containerized trees and shrubs and minor site grading. The project should create quality habitat as well as stormwater treatment.

Work to Date

The work plan was executed beginning in late spring 2017. The following actions were put into motion:

- Work began to eliminate the existing ground cover. This consisted primarily of fescue (Festuca arundinacea) and assorted forb and sedge species. The primary goal of this operation was to eliminate as much of the fescue ground cover as possible. It was anticipated that the presence of a native plant seed bank would persist and be helpful in the native reconstruction of the site. This action was carried out using glyphosate herbicide and was done in three treatments. This action was completed in October 2017.
- During November all of the grown out trees and shrubs were planted at the site. We were also fortunate to have a surplus of native forb (flowering plants) container grown plants to plant at the site. This was also completed in November.
- Seeding was done in two stage s during the mid and late winter. The prairie forb mix was seeded in early January and the native grass mix was seeded in early March.
- Stormwater facility construction was carried out during the second and third weeks of February and the first week of March. This consisted of building a new junction box within an existing stormwater pipe in order to divert water from direct flow into South Fork Grindstone Creek to a detention swale/level spreader for wider dispersion over the riparian floodplain. Rainfall in the watershed has been very low this year. As a result the swale has yet to perform in the way it was designed. Utility staff will continue to monitor the site and make adjustments as necessary.
- Invasives control has been an ongoing activity at the site. This has been carried out through volunteer events and utility staff spot spraying when time allows. This will continue at times when suitable for both volunteer comfort and staff availability. To date two volunteer days to remove bush honeysuckle have been carried out.

SUMMARY

In summary, the site is developing nicely. In retrospect an additional year of site prep (spray treatments) would have been better. However, at this particular site it might not have been beneficial. This site is by nature a wet site. The soil material that remains from the lagoon closure is very tight. Heavy in clay and largely hydric, meaning it is often saturated resulting in anaerobic conditions (low oxygen), and is therefore suitable to wet tolerant plants. The seed bank is proving to be just this. There is a good stand of typical flood plain species growing at the

site. These include but are not limited to, Wingstem, cup plant, marsh marigold (possibly two species) and native sedge species. As with all things growing in the Columbia area this year the site needs rain, even native species need water to thrive.

Aerial of site before spraying

Typical of ground cover prior to treatment

Typical of site post spray treatment

Tree and shrub planting day

Volunteer day, Bush honeysuckle removal

Stormwater swale during construction

Stormwater swale post construction after rainfall event

Shrubs and trees flagged for easy locate and early season growth