

BUCKTHORN REMOVAL

AT THE ANOKA NATURE PRESERVE



Project Summary

The Anoka Nature Preserve (ANP) is over 200 acres of land owned by the City of Anoka which is frequently used by area residents for walking, running, and cross country skiing. The ANP also holds some of the last remaining oak savanna, grassland, and meadow lands in the region. The City of Anoka donated a conservation easement to the Anoka Conservation District (ACD) in 2007. Since then, ACD and the City of Anoka have been working together to secure funding for ecological restoration on the property.

This partnership has secured grant awards totaling nearly \$175,000 from 2012-2014 which have established the restoration of oak woodland and savanna through the removal of buckthorn and other undesirable species in the preserve. The restoration plan included the application of herbicide to kill undesirable tree and shrub species, the mechanical removal of treated trees and shrubs, follow-up controlled burns, and additional herbicide application to kill missed and newly sprouted trees and shrubs. Target species for removal included common buckthorn, prickly ash, tartarian honeysuckle, Siberian elm, and eastern red cedar.

A breakdown of project areas, costs, and funding sources is listed in the table below. Additional project funding details and project partners are listed on the reverse side of this document.



Project Area

Easement Area	200 acres
Herbicide Treated Area	148 acres
Woodland Restoration.....	66 acres
Savanna Restoration.....	14 acres

Project Cost

Herbicide Treatment.....	\$83,209.91
Biomass Harvest.....	\$75,000.00
Control Burns	\$14,350.00
Promotion/Admin.....	\$7,481.47
Total Project Cost.....	\$180,041.38

Project Funding

City of Anoka	\$5,000.00
ENTRF (MN DNR).....	\$75,000.00
OHF (LSOHC)	\$99,400.00
ACD in-king dollars*	\$641.38
Total Project Funding.....	\$180,041.38

* Based on ACD fee schedule rates

Herbicide Treatment



In 2012, ACD staff, along with sentenced-to-serve (STS) crews applied herbicide to target species throughout 148 acres of the property (see map on reverse side). The herbicide soaks through the bark and travels down to the roots to kill the small trees and shrubs. The effort required nearly three weeks and \$30,000 in herbicide alone to complete, and thanks to the STS program, came in well under budget. Once the roots were killed it was possible to cut down the treated trees and shrubs without the risk of them resprouting.

Crew applying herbicide with backpack sprayers

Why Remove Buckthorn?

European (common) buckthorn roots are believed to secrete chemicals that inhibit the growth of many other plants. This, combined with its ability to leaf out earlier in the spring and hold leaves later into the fall than native species, enables buckthorn to displace native trees and shrubs that provide food and cover for local wildlife. It spreads rapidly because buckthorn berries, which are readily eaten by birds and small mammals, have a natural laxative. While this characteristic is optimal for seed dispersal, it has the unfortunate consequence of leaving those birds and small mammals dehydrated and malnourished.



Woody Biomass Harvest

Undesirable trees and shrubs killed with herbicide needed to be removed to open space in the preserve. This was accomplished first with skids to bring trees and shrub to a central location. Following this the trees and shrubs were ground to mulch to ease transport and loaded onto semi tractors to be moved offsite. Buckthorn had to be burned to ensure complete destruction, but other species were utilized for bioenergy and bio-based products.



Controlled Burn

Following the treatment and harvest of much of the invasive woody plants, the smaller seedlings that weren't practical to treat, as well as newly germinated seedlings, began flourishing. This was expected but needed to be combatted to prevent immediate re-infestation of the forest. The most cost-effective way to kill buckthorn seedlings is through the use of a controlled burn. Controlled burns are low to the ground and move slowly through the understory ridding the area of excess thatch and woody debris as well as killing small trees and seedlings. This was completed in the fall of 2014 in the area shown in the map below. Larger trees, particularly Bur Oak, are very resistant to fire and were not harmed during the process.



What to Look For in the New ANP

Removal of the dense infestation of invasive trees and shrubs gives the park a very different feel. It is much more open and better showcases the stately old trees that make up the woodland. The openness may make the park feel a bit smaller though, with sight-lines that extend beyond the park into neighboring yards and fields. It may take some getting used to, but in time, and with some effort to keep the buckthorn and cedar from coming back, desirable shrubs like raspberries, hazelnut, chokecherry, and dogwood will work their way into the woodland portions of the park. Savanna openings should fill in with native prairie grasses and wildflowers.

During



After

Project Partners

Restoration funds were provided by the Outdoor Heritage Fund (OHF) of the Clean Water, Land, and Legacy Amendment through the Anoka Sand Plain Partnership as recommended by the Lessard-Sams Outdoor Heritage Council (LSOHC) with matching funds from the City of Anoka. Biomass harvest funds are from the MN Environment and Natural Resources Trust Fund (ENRTF) as recommended by the Legislative-Citizen Commission on Minnesota Resources. The project concept was a joint effort by the City of Anoka and the Anoka Conservation District (ACD). Promotion, oversight, and project coordination was provided by the ACD.

