Conceptual Land Management & Restoration Plan

Phase I

Natureland County Park, Walworth County, Wisconsin

2015

KETTLE MORAINE LAND TRUST

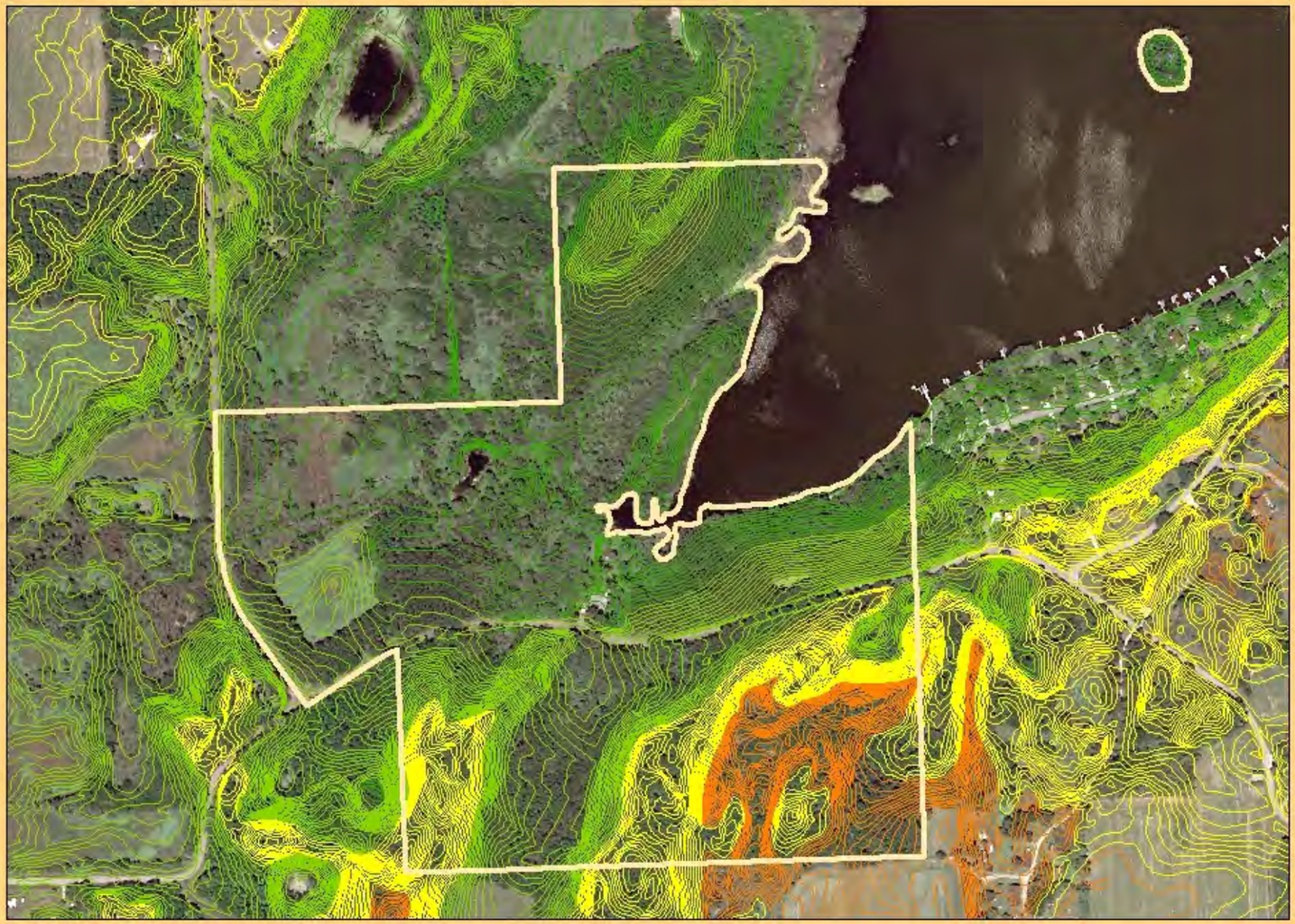
Serving the Southern Kettle Moraine lakes area in Walworth County, Wisconsin

Phase I Plan Introduction

Natural areas management plans are built on an inventory of information about the site. Understanding the natural conditions of the land in the past, and how land use has changed provides insight regarding ecosystems composition and health. Acknowledging how natural or human disturbances have changed an ecosystem provides a guide to repairing or improving the site. Once basic processes of change are understood and the property has been inventoried and it's natural features and systems evaluated, management units can be developed that reflect areas of the property that have similar ecological problems, habitat conditions and end goals

This conceptual natural area restoration plan is a start to developing more detailed project goals for individual management units. The plan is meant to germinate discussion and exchange of information between interested individuals, professionals, staff and potential volunteers. As conditions change in the park either due to restoration and management activities, or natural processes, the management plan should be adapted to capture specific management units, restoration and habitat goals and evaluation strategies to document progress. Remnant plant ecosystems are usually priority sites for management and restoration activities. Often high quality remnant communities are small and receive a great deal of attention to create conditions for the plants to increase in abundance. Sometimes with management, overlooked very small populations of conservative plants can regain their niche, or even seed of rare plants laying dormant can germinate in the improved growing conditions.

Natureland Topography - 2' Contours



Topography and Position

The Park is an important feature of northwestern Walworth County, and its natural shoreline is one of the few remaining expanses of undeveloped shoreline on Whitewater Lake. The Park's 166 acres also make up a significant portion of Whitewater Lake's direct drainage area. The terrain of the park is fundamentally a cradle titled towards the lake. The south side of the park has significant topographic relief. The highest point in the park is 1007 feet and located south of Territorial Rd. The lowest point is 872 feet down hill from the picnic shelter near the lake.

Natureland Park Soils

Soils

The high ridges and steep slopes in the park are comprised of gravelly, well drained soils. These soils are of the Casco-Rodman soil series and are classic kettle moraine soils found on ridges, eskers and in kettles. The majority of these soils are on slopes too steep for cultivation and are generally very dry. The soils found at the lower elevations of the park are organic muck soils and occupy the flat poorly drained areas in former glacial stream outwash valleys. The loam and silt loams in the valley are on the outwash plains and stream valleys.

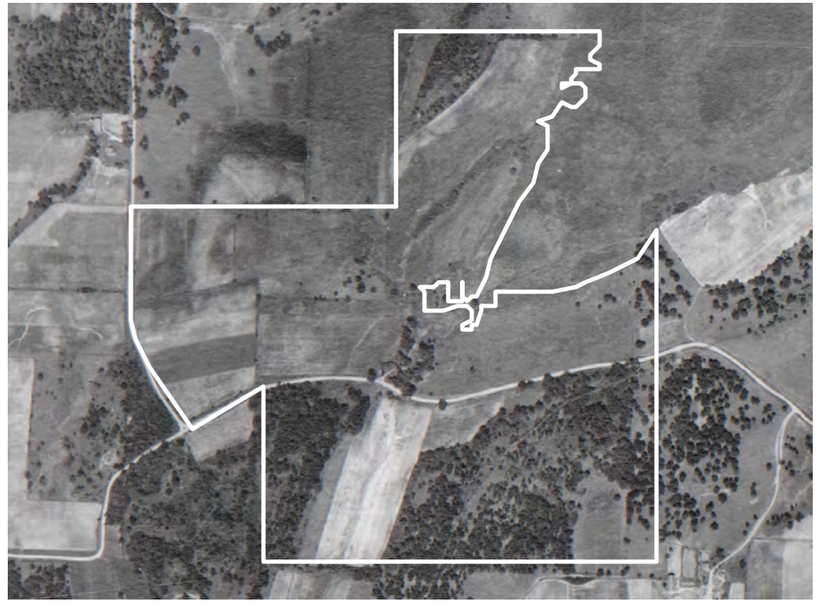
A The south bay of Whitewater Lake, Natureland Park

Natureland Park Historic Aerial Photo Comparison

The creation of Whitewater Lake had a significant affect on the lands in the park north of Territorial Road. The lake was first impounded in 1927 to raise the water level to connect three smaller lakes north of the property. It wasn't until 1947 that the now larger Whitewater Lake crested 12' above the original lake level where it remains today. In the 1937 aerial photo the area that becomes covered with water was marsh and the lands surrounding the marsh were being actively farmed. Most of the tillable land was farmed into the 1950's. In 1953 the Walworth County Board acquired the park lands and the plant communities changed through ecological succession to old fields, shrub thickets and small trees. Large scale manipulation of habitats was accomplished quickly when trees were planted north and south of Territorial Road in areas that were easily accessible and relatively flat. According to *A History of Greater Whitewater Lake & Rice Lakes*[1], 29,400 white pine, Norway pine, white spruce, white ash and white cedar were planted by 1959. South of Territorial Road on the steep slopes and ridges, oak and hickory woodlands still grow pretty much undisturbed except for past grazing, since European settlement.

2010

1937



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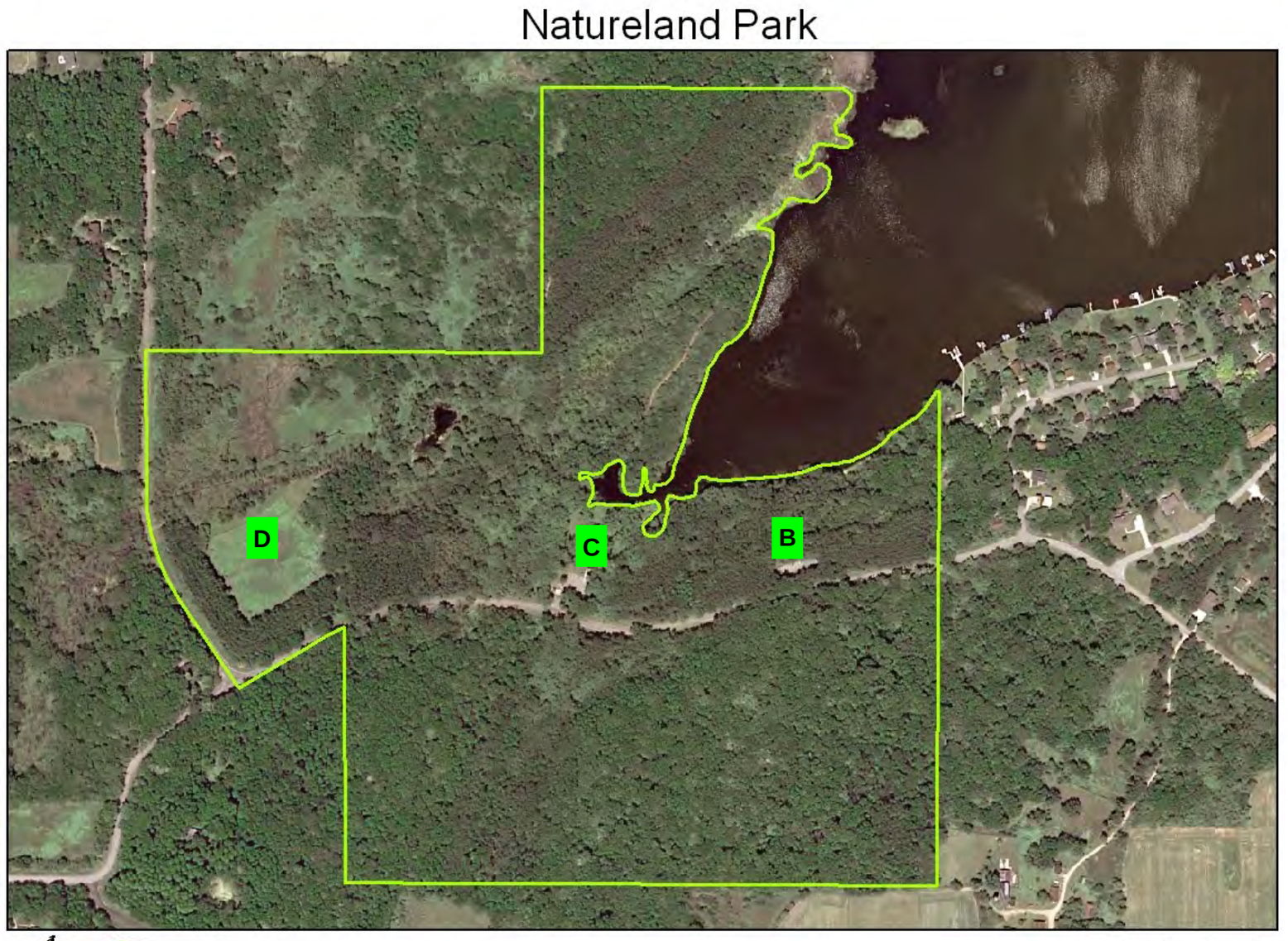
[1] History of Greater Whitewater & Rice Lakes, Greater Whitewater Lakes Property Owner Association, 1997

Natureland Photo Points

B Cedar Log Cabin picnic area

C Spring fed stream flowing into Whitewater Lake

D Prairie Trail



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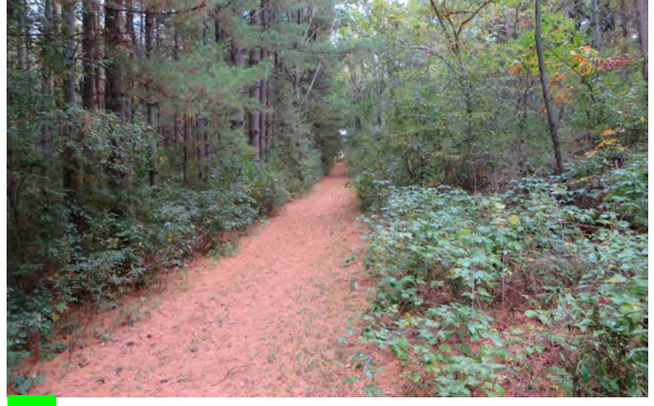
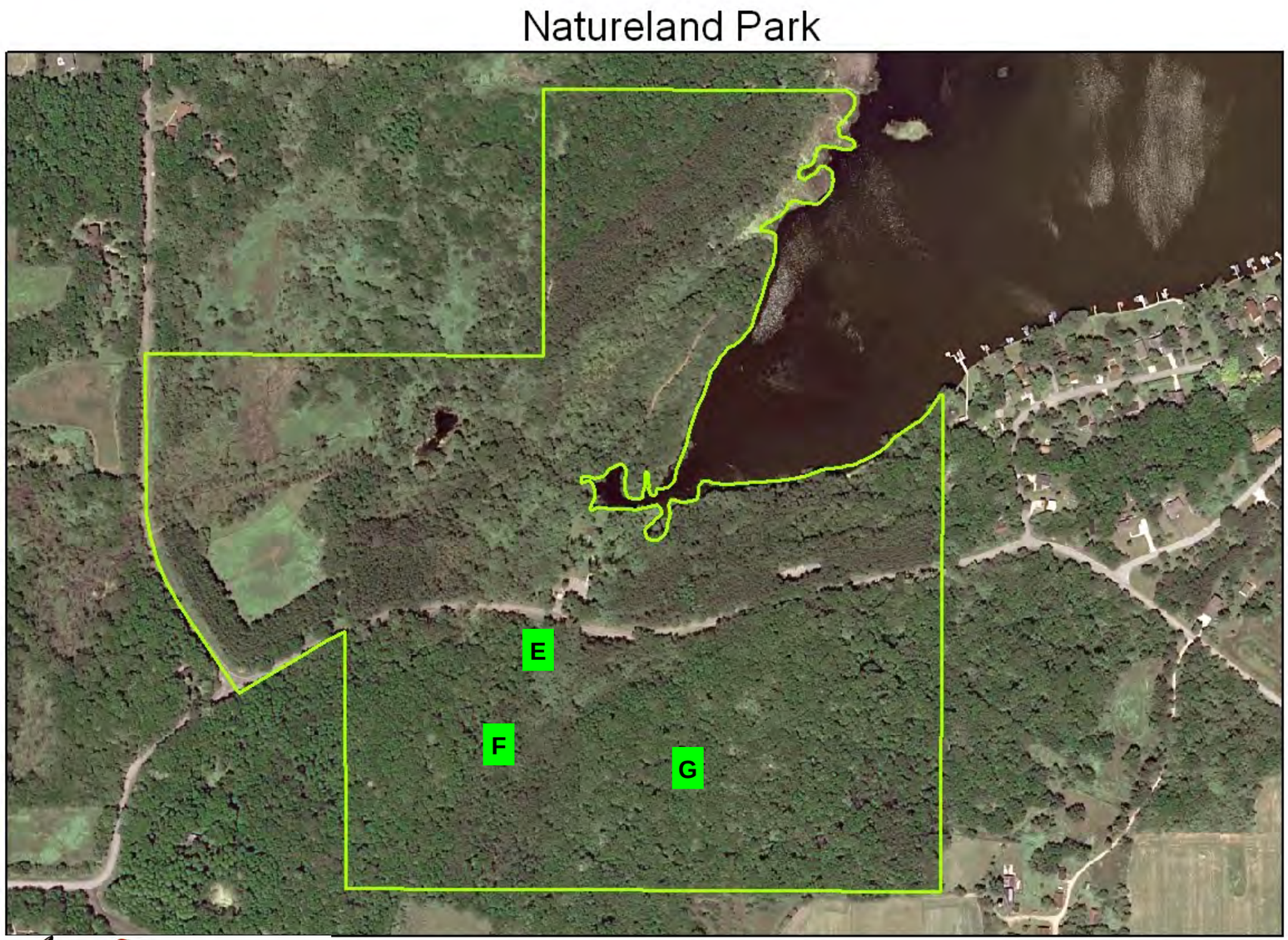
Natureland Park - Phase I Restoration

E Trail head kiosk south of Territorial Road.



F High Wilderness Trail looking south showing planted pines to the left of the trail, and successional woodlands to the right.



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Natureland Park - Phase I Restoration

Pine Plantings

Most of Natureland Park has been drastically manipulated in the past 150 years. The majority of the north side of the park was farmed until it was planted to pines or left fallow. The property south of Territorial Road had one farm field that was likely prairie prior to being farmed, and now is a pine planting.

Pine habitat occupies many distinct locations within the Park, and while pines can provide valuable habitat, the vigor of these trees is declining. Management of the pine habitat will require a detailed multi -year approach that should lead to goals for wildlife and recreation compatible with current and anticipated uses.

Insects, disease and weather events can damage a pine stand and depending on the age and condition of the trees, these stressors may have varying long term effects on stand health and structure. Fungal diseases, moths, weevils and other forest pests are common in pine plantings throughout the state. Determining the current condition of the various pine stands in the park, and developing a long term management plan should be done in consultation with County forestry professionals and regional forestry staff of the Wisconsin DNR to gain insight into the most current forest stand management technology and harvest guidance.

Pine understory

P Pine Plantings

Natureland Park - Phase I Restoration

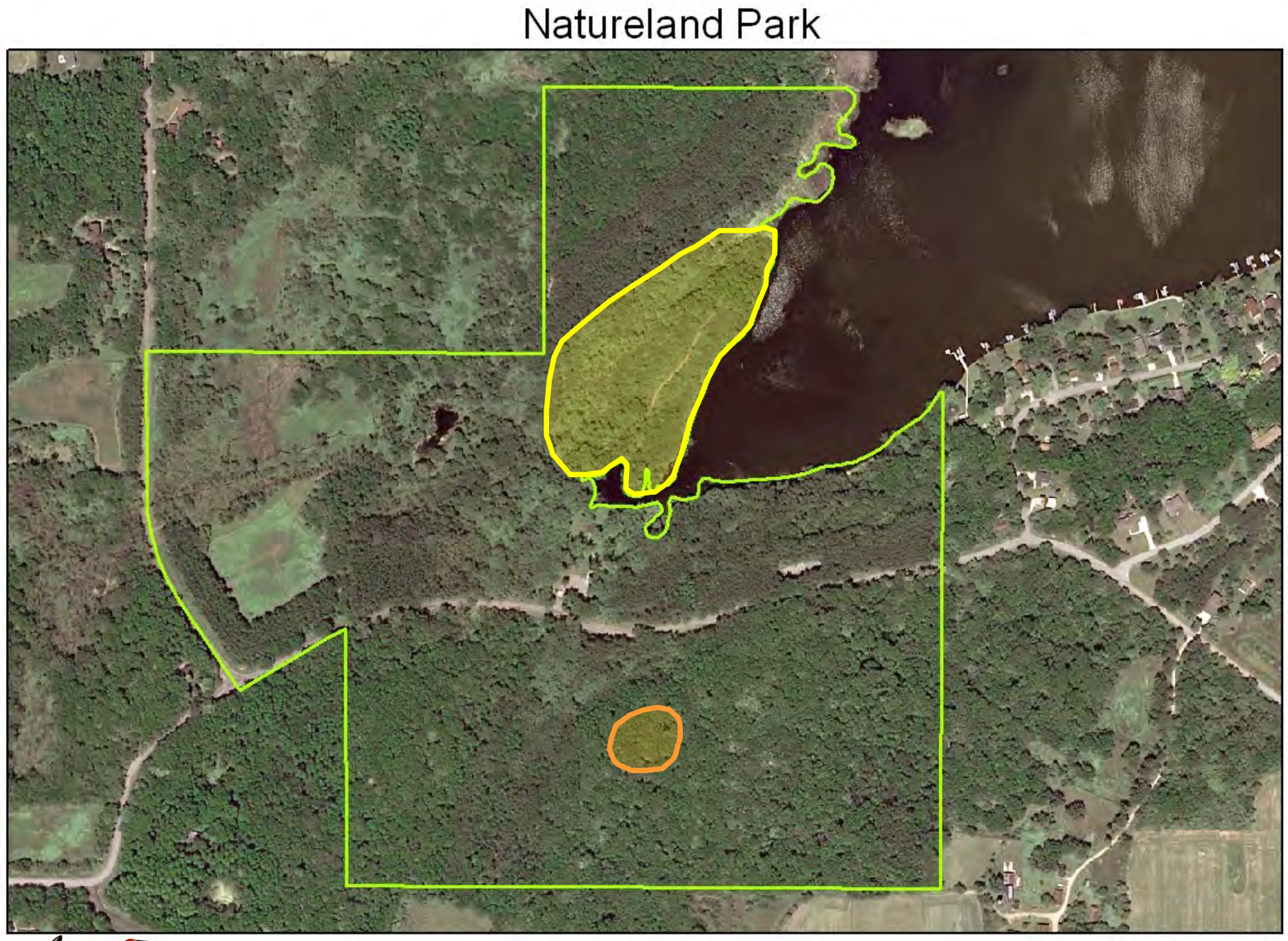
West Lakeshore Habitat

The area along the western shore of Whitewater Lake hosts a trail from the picnic area and parking lot that appears to be a favorite of hikers and walkers who use the park. Based on site visits and interviews with park users, the diversity of wildlife including birds, amphibians and reptiles seen using the habitat for feeding, resting and reproduction appears to be high. Many different types of invasive and native plants grow in this area. By removing invasive plants and planting native grasses, forbs and sedges, food resources available for wildlife will be improved. The quality of water running off the site will also be enhanced since currently little or no ground vegetation is trapping sediment or filtering surface water as it moves down slope to the lake and wetland. Consideration of turtle nesting requirements and other wildlife resource needs should factor into the specific clearing project goals and specifications developed for this important area. Clearing of vegetation within 1000 feet of a lake requires a permit from the Walworth County Land Use & Resource Management Department. Staff within this Department should be consulted for other conservation plan or zoning requirements.

Oriental Bittersweet Control

Current Wisconsin DNR invasive species rule regulates oriental bittersweet as a prohibited species that is required to be controlled. One large population of oriental bittersweet, a woody vine, was identified in the park and is estimated to cover approximately 4,000 square feet. It is highly likely that additional populations exist in the park that should be located and eliminated.

The populations of oriental bittersweet should be identified in the spring to ensure that no native American bittersweet is removed. Spring is the best time to verify the difference in these hard to distinguish plant species. Their emerging leaf buds provide the best identification traits. The leaves of oriental bittersweet are tightly folded against each other, while the leaf buds of the native American bittersweet are rolled like a scroll.



G A sprawling population of invasive oriental bittersweet alongside the High Wilderness Trail.

Seed cluster on a female oriental bittersweet vine.

Photo Credit: Minnesota Dept. of Agriculture

Oriental bittersweet vines climb by twining around other plants and trees and can grow to be 60’ long. Vines grow in sun or shade and can smother trees, alter the structure of a woodlands and eliminate entire plant communities.

Oriental bittersweet reproduces by seed and rhizome. The fruits are consumed then dispersed by birds and mammals and ingested seeds have a higher germination rate than seeds that fall to the ground.

Combining several methods to remove this plant results in the best success rates. Small seedlings can be pulled as long as all the roots are removed. Prescribed burning kills young plants and seedlings, but after burn conditions promote germination and spread of oriental bittersweet. Herbicide application can also be used on either cut stems of the vine or to its leaves at appropriate times of the year.

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Restoration Tasks - Woody Plant Removal

Undesirable or invasive woody vegetation threaten the health of native woodlands and grasslands. Brush clearing and chain saws can be used or if conditions allow, a tracked skid steer with a mower or grapple attachment is useful. The primary advantage is lower ground pressure and stable operation over uneven surfaces. Woody debris can be disposed of by chipping or piling and burning the brush. Brush pile locations are determined prior to cutting and located to avoid impacts to desirable trees and vegetation. Wildlife habitat can be created by piling brush along wetland edges or strategically near or along the lakeshore.

Basal Bark Application

Basal bark application can be done in the fall or winter after foliage is gone to avoid foliage brown-out in high visibility areas. Basal bark applications controls trees and brush that are less than six inches in diameter but too large for backpack foliar applications. This method also reduces the impact on surrounding desirable plants. Fall and winter applications provide the best access for treatment due to the lack of existing foliage.

Cut Surface Treatments

Cut surface treatments involve cutting the tree or shrub close to the ground and applying an appropriate herbicide. Cut surface treatments may be made any time of the year except spring, as long as the herbicide does not freeze when applied, and the tree is not frozen. Avoid cutting followed by herbicide application during heavy sap flow since this can interfere with translocation. Heavy sap flow can also carry the herbicide mixture off the stump resulting in poor control. Invasive honeysuckle should be treated with glyphosate and most other woody invasives are controlled with a triclopyr formulation. Carefully follow all label directions and avoid off target impacts

Fall Foliar Spray

After native vegetation has ceased photosynthesizing, buckthorn can be treated with a foliar application of glyphosate. A backpack sprayer is normally used to systematically canvas and treat an area.

Mechanical Removal

A track skid-steer and front-mounted grapple can be helpful to move brush into piles efficiently. Skid-steers should only be use when the ground is frozen to avoid ground disturbance.

Prescribed Burns and Woodland Seeding

After an area is cleared it a prescribed burn plan should be prepared and implemented by trained personnel. Seeding or planting with native species in select locations where follow-up and monitoring can be carried out, should soon follow. Continued vigilance of invasive species presence and control will always be an annual maintenance task.

Oriental Bittersweet Removal

Populations of oriental bittersweet should be identified and recorded with global positioning equipment in order to more easily locate, treat and evaluate the control effort in subsequent years. Public work staff, or trained contractors are best suited to eliminate this plant through a combination of cutting, herbicide application and possibly hand pulling.

Schedule and Project Costs

Utilizing available labor resources from the County Public Works department combined with volunteer groups will create a win-win situation for all. Woodland restoration work can proceed quite rapidly during winter months using crews of 3-6 people to systematically identify species, and cut and herbicide undesirable trees and shrubs. Disposal of woody debris is dependent on species, quantity and in certain conditions lakeshore habitat requirements.

Proper planning and execution of woodland clearing and seeding projects is dictated by timing, available labor and equipment, and desired future conditions. As these elements are determined in cooperation with the County Public Works staff, definitive timelines and project estimates can be created.

Funding Sources - Grants

WDNR: Healthy Lakes Grant

Heidi Bunk
141 NW Barstow St., Rm. 180,
Waukesha, WI 53188
262-574-2130 (ph) 262-574-2128 (fax)
Heidi.Bunk@wisconsin.gov

Grant award capped at $25,000 and requires a 75/25 state/sponsor match. Appropriate practices that could be funded under this grant include 350 square foot native planting plots and diversion practices to improve habitat and slow runoff along the lakeshore. Each practice is capped at $1,000 maximum. Grants run for a 2-year time period. Application deadline is February 1.

U.S. Fish & Wildlife: Partners for Fish and Wildlife

Grant amounts vary and projects are developed in partnership.

Kurt Waterstradt
U.S. Fish & Wildlife Service
4511 Helgensen Drive
Madison, WI 53718-6747
608-221-1206 (x14)
FAX: 608-221-1357
Email: Kurt_Waterstradt@fws.gov

WDNR: County Conservation Aid

Grant amounts yearly to each county, normally around $1,500 but must request. Unrequested funds get distributed within the southeast region.

Recreational Trails Act

Grant award up to $45,000, 50% match required, can be in-kind. Funding for improving existing trails and some near trail habitat improvements.

Jim Ritchie, WDNR
2300 N. Dr. Martin Luther King Jr. Drive,
Milwaukee, WI 53212-3128.
phone (414) 263-8610,
e-mail: Jim.Ritchie@Wisconsin.gov.

Potential Community Partners

Ice Age Trail Alliance

Walworth/Jefferson Chapter
Andy Whitney
262-949-0286
andywhitney1@yahoo.com
wwi.iceagetrail.org

Whitewater Community Foundation

Brienne Brown, Exec. Director
briennedieboldtbrown@gmail.com
512-297-8928

Lakeview Elementary School

Mr. David Brokopp, Principal
W8363 R&W Townline Road
Whitewater, WI 53190

Natureland Park Initial Natural Areas Management Plan 2015-2018

Task	Year 1 Spring	Year 1 Summer	Year 1 Fall	Year 1 Winter	Year 2 Spring	Year 2 Summer	Year 2 Fall	Year 2 Winter	Year 3 Spring	Year 3 Summer	Year 3 Fall	Year 3 Winter	Volunteer / Group Project	Partner Assistance	Management Unit Designation and Notes
Woody Plant Removal - Hand Clearing													Yes	FFA, Scout Groups	Western Lakeshore Habitat
Woody Plant Removal - Mechanical Clearing															Western Lakeshore Habitat
Fall Foliar Herbicide Treatment of Invasive Species															Western Lakeshore Habitat and oriental bittersweet populations.
Invasive Forb Removal - Hand Pulling or Hand Held Herbicide Applicators													Yes	FFA, Scout Groups	Throughout the park.
Oriental Bittersweet Identification & Control													Possibly	FFA, Scout Groups	Bittersweet locations could be marked by students, and identification of species verified by staff or consultants. Removal and treatment could be done by various groups depending on their capabilities and time of year.
Forb & Grass Plantings													Yes	Wild Ones, FFA	Western Lakeshore Habitat
Prescribed Burns					Prairie		Woodlands				Woodlands			Fire Depts., WDNR	Prairie
Pine Habitat-Restoration Plan Development & Implementation														WDNR	Develop a long term management plan in cooperation with forestry professionals.
Plant Inventory															
Bird Survey													Yes	Audubon	Citizen science program is Wisconsin Ebird, http://ebird.org/content/wi/
Amphibian & Toad Survey													Yes		North American Amphibian Monitoring Program, https://www.pwrc.usgs.gov/naamp/index.cfm?
Streambank & Shoreline Restorations													Yes	Trout Unlimited	Springs and seeps appear to be in fairly stable bank condition. The lake shoreline northwest of the picnic area should be assessed for lakeshore habitat plantings.

Natural areas management plans are updated periodically to reflect the changing conditions and improvements of the site. Additional information gained from plant and animal surveys will help set more specific goals for the park, and as new labor and financial resources become available the plan should be updated. Sustainable, healthy ecosystems are less costly to manage and provide greater benefit to the community. Initially costs to remove invasive species and restore an ecosystem to a more self-sustaining state are high, but these costs should decrease as less intensive efforts are required in future years. Although it's not noted in the above schedule, investing in education and outreach including park signs that explain the restoration activities, and informing county residents about the purpose of the plan are crucially important.

Program Manager

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