

Twin Pond's (North) Vegetative Management Plan



**Washington Native Plant Society
Master Stewardship Program**

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Overview and Current Conditions

Historical Context

In the “early years” before the settlement of the Shoreline area, native families came frequently to the Thornton Creek Drainage bogs to harvest cranberries. Sites now known as Cromwell Park, Ronald Bog and Twin Ponds were just “slow” spots in Thornton Creek filled with a millennia accumulation of peat and a fine habitat for cranberries. It’s been said, the only reason that Ronald Bog and Twin Ponds were available to become parks was the earlier commercial value as a peat source.

There is no record of Twin Pond being two squared ponds; nature doesn’t work that way. There is a record of purchase of five acres described as “North of 150th” by a Fred Anholt in the early 1940’s. Mr. Anholt was a nurseryman from Seattle. Mr. Anholt purchased the 5 acres to have his own source of peat, the pond bog north of 150th was a good investment. As the Gro-Mor Nursery grew along with the post war boom years, Mr. Anholt leased with option to buy, the 10 acres south and adjoining to his “pond” acres. By 1969, the ponds were “harvested” and his acreage was a storage site for various trees, shrubs and supplies for his successful nursery near the UW. In 1972, King County bought his “north of 150th” pond acreage and named it “South Central Park”.

“South Central Park” was King County’s responsibility through the 70’s and 80’s and, along with so many other responsibilities, the surviving nursery stock, a few native plant species, and some invasive species. In 1990, John Dixon asked King County if he could plant a few trees and do a little cleanup. Since then, along with the new city of Shoreline, there has been a steady effort by volunteers and the city to reshape and recapture a better -managed park for the future. Efforts by Habitat Restoration, Boy Scouts, Evergreen School, Audubon, Home Schooled and the Community Garden keep our goals and challenges in sight.

Site Inventory

The site is located on the northern border of Twin Ponds Park along NE 155th Street, Shoreline, Washington, just inside the fence bordering on the sidewalk. There is an entrance to the park and a path on the west side of the site. To the east of the site are Thornton Creek and a park parking lot. There are two large slash piles east/west of each other, which may indicate previous restoration efforts. Mature, non-native deciduous trees dominate the canopy. A few, young conifers trees are present. There is limited understory.

The Plot Characteristics of the sight are:

- The predominant direction of the site is north, bordered on the north by NE 155th Street, Shoreline, Washington.
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- The prevailing slope steeps to the northeast.

- The soil texture is sandy, the soil moisture is damp and the soil compaction is heavy.
- There is no visible erosion.
- The mulch layer on top of the soil is approximately one inch.
- The percent of coarse woody debris (CWD) coverage is 6-10%.
- The percentage range of bare ground is 0-20%

The initial visual inspection of the overstory canopy cover was done on April 1, 2017 when the leaves on the deciduous trees had not emerged; the percentage of cover was estimated to be 51-75%. Native trees, including Western hemlock, grand fir and Western red cedar, are present.

Appendix 1 contains the Site Assessment data. Figure 1 shows location of invasive species, trails and site boundaries.

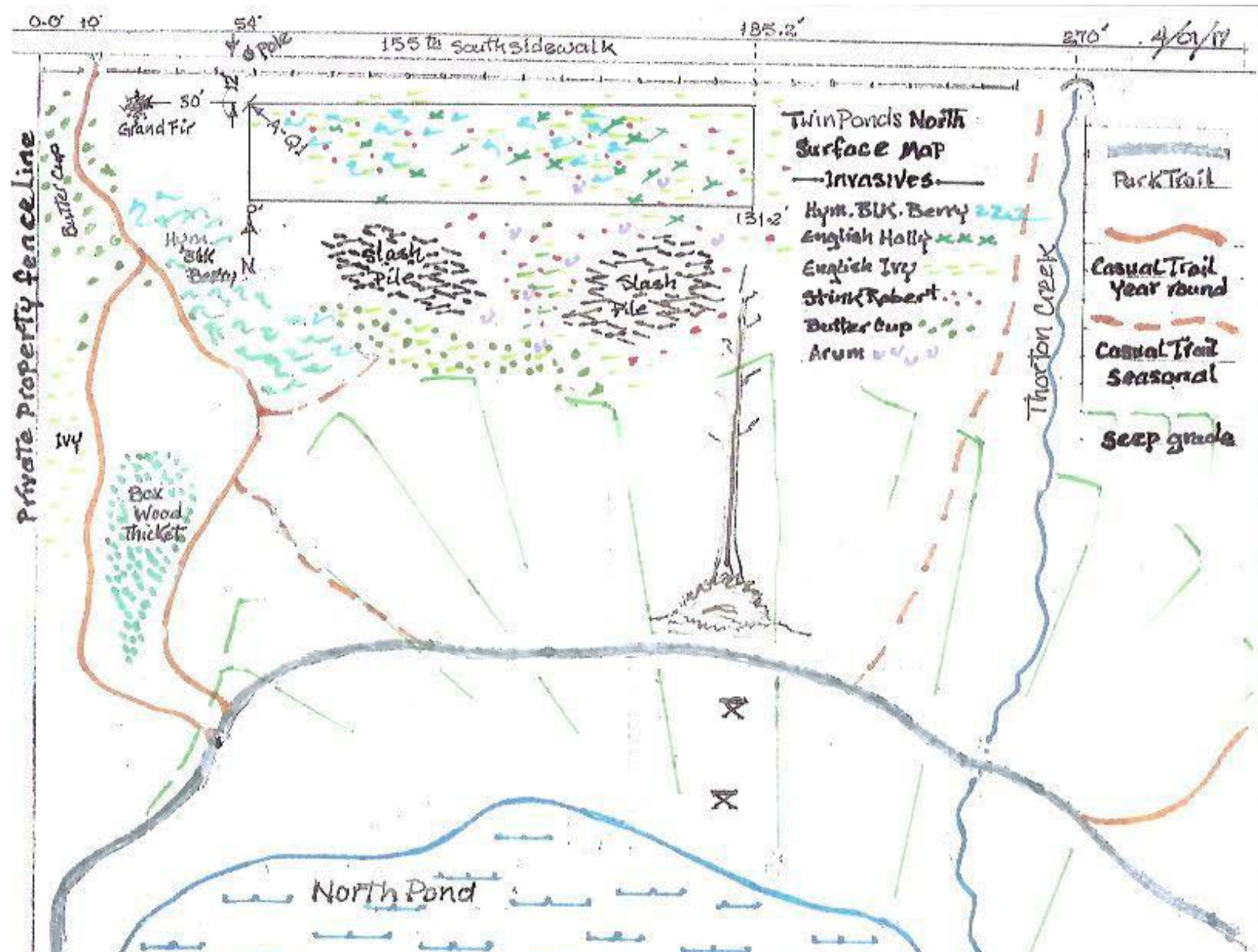


Figure 1 Map of Twin Ponds North, Zone 1 – highlighting non-native species

Management Priorities

In 2008, EarthCorps created a Vegetation Management Plan for Twin Ponds Park. This restoration plan specifically focuses on management units (MUs) 1-1, and 3. In addition, King Conservation District has identified these MUs as Zones 1 and 3 in the Forest Stewardship Strategies, also developed for the City of Shoreline. In this work proposal document and for ease of identification within our one-acre project, we have designated the following management zone correlations:

Vegetation Management Plan Designation	KCD Forest Stewardship Strategies	WNPS Master Steward Designation
Management Unit	Zone	Sub-Area
5-3	5	3
6-1	6	2
6-2	6	1

Furthermore, we followed plant number recommendations calculated by our stewardship coordinator as summarized below:

Twin Ponds North Planting Recommendations

Habit	Total Plant Space (ft ²)	Portion	Density (ft oc)	# Total
Potted Trees	10,890	5%	8	68
Potted Shrubs	10,890	10%	4	272
Live stake shrubs (if used)	10,890	15%	1.5	1089

Implementation Plan

Goals and Objectives Correlated with Management Priorities

Goal 1. Survey and clear the site of hazards, debris and dominant invasive species.

KCD Forest Stewardship Strategies specifically identify manual removal of ivy, blackberry, yellow archangel, and bindweed from Zones 1 and 3. Furthermore, KCD identifies the need to coordinate with the City of Shoreline and its contractors in chemical treatment to augment invasive tree removal such as English holly and laurel.

- Task 1. Bag and remove trash from site. To be placed near the parking lot for pick up.
- Task 2. Remove/remedy existing brush piles
 - There are two piles at the North end site. Fifty feet from 150th street. Each approx.. 60 sq ft and consisting of small to large branches. Sprouts of blackberry, English holly, and Herb Robert can be seen protruding. To clean up the view from 155th street and to

better ensure a safe site for volunteer crews and park visitors; the piles should be removed or redistributed. As a crew project; the brush piles may be moved to be managed as a mulch pile. Branches will be cut to a manageable size, and moved to a site further from the road. Large branches will be laid parallel as a base, followed by the smaller woody debris on top.

- Task 3. Remove English Laurel (Weed of Concern)
-Small plants to be uprooted by shovels or by hand. For larger more developed Laurel we will diminish the volume and limb-up branches. The city will be notified of their presence and when ready they can take appropriate measures in cutting and applying herbicides.
- Task 4. Remove English Holly (Weed of Concern)
-Small plants to be pulled or dug by hand. Larger trees will be limbed up until the city is prepared for herbicide treatment or otherwise removal.
- Task 5. Remove Himalayan Blackberry (Class C Noxious Weed)
-We will begin our removal of Himalayan Blackberry in the least infested areas, moving toward the more densely infested zones. Cuttings will be made appropriately for breakdown in compost piles. Root crowns will be uprooted, and then the area will be sheet mulched.
- Task 6. Remove English Ivy (Class C Noxious Weed)
-Removal of ivy, vines and roots to be pulled or uprooted, removing as much of the root as possible. Cuttings will be composted.
- Task 7. Remove Italian Arum (Class C Noxious Weed)
- Due to the toxicity of this plant all spots will be flagged as hazardous and avoided by all but the most experienced crews. We will request flags from the city for this notification. Apart from toxicity; digging tubers is possible, but may result in total area soil disturbance. Each large tuber is surrounded by hundreds of new growth tubers which break off when pulled. Total area soil screening is necessary. The method of sheet mulching appears safest for volunteer crews, followed by many years of monitoring and re-sheeting. Consult with WSU and King County Noxious Weed for latest update and removal techniques.
- Task 8. Remove Yellow Archangel (Class B Noxious Weed)
- Because this species spreads from the re-growth of small root fragments; sheet mulching by cardboard layers, followed by wood chips to secure sheets is likely the most effective method for volunteers. This method requires a measure of square footage, with an appropriate density of heavy cardboard anchored to the site with stakes, then chipped an additional 4-6 inches around edges. We have calculated that Zone 3, which is heavily dominated by yellow archangel measures 2,200ft². Therefore, in order to sheet mulch to a depth of six inches, we will need to request and install up to 500yd³ of wood chips from the City of Shoreline. The sites must be monitored monthly during growing season to ensure sheet mulch integrity and to contain new starts.
- Task 9. Create Compost Areas to put weedy, vegetative debris.
- Task 10. A compost site will need to be created away from the traffic areas, but

accessible for maintenance and community education. To elevate the base of the pile; logs or pallets can be laid first. This maintains airflow to dry out debris and removes contact with soil for the prevention of re-sprouting. Composting materials will be distributed on top. Signage at a compost site will inform casual visitors.

Goal 2. -Plant more understory species in both zones 1 and 2 to add diversity and increase the number of native species.

KCD Forest Stewardship Strategies identify the priority to restore with diverse native plants and trees in cleared areas.

-Consideration has been taken in the appropriate soil conditions, surrounding environments and the future of the already intact forest conditions, as well as the diverse need of plants between zones 1 and 2, and can be seen on the Plant Spreadsheet included here.

-As Zone 2 is almost exclusively dominated by a mature canopy of non-native Norway Spruce trees, creating an understory of young conifers along with various native shrubs would be of great benefit to the future diversity and health of this area.

Goal 3. Maintenance and Monitoring

KCD Forest Stewardship Strategies identify the priority to continue planting, maintaining, and monitoring the progress of restoration at Twin Ponds North.

-Brush piles and compost piles will be monitored for safety, and to remove any new growth of invasive species that may have spread from them.

-Ground sites recently cleared of invasive species will be monitored to check for re-growth.

- Task 1. Create a monitoring spreadsheet
- Task 2. Create an on-line medium to share our gathered information with one another.
- Task 3. Create monitoring timeline.

Goal 4. Create a Work Plan Calendar

Our Needs from the City of Shoreline

It will be important for this project to be a success to have good communication with the city. We will request tools and planting materials through the WNPS Coordinator using the forms and processes approved by the City of Shoreline. Following are additional needs:

- o Establish a location for mulch on the NW corner of the site.
- o Learn about the Cities' tool cleaning process, which they reference in the tool inventory.
- o Receive information pertaining to water sources.
- o Have the two, unmanageable, large piles of debris already on site removed from sight, dispersed, or placed into more manageable size.
- o Discuss a potential gravel path of the NW corner entrance trail into the park.

We have added more numbers and other tools to the tool inventory. Please see list below.

TOOL LIST	
TOOL NAME	QUANTITY
Buckets	10
Cultivator Mattock	10
Flagging rolls	10
Gloves for adults	20
Gloves for children	20
Loppers	5
Pin flags	30
Pitch forks	4
Pruners	10
Retractable pruning saws	5
Rakes - both hard and soft	5 each
Shovels/Spades	10
Tarps	10
Wheelbarrels	4
Hand Trowels	10
Knee Pads	5

Planting Plan

Habit	Species	Quantity	Zone(s)	Final # Plants
Trees	<i>Abies grandis</i>	5	1	50
	<i>Picea sitchensis</i>	10	1,3	
	<i>Pinus contorta</i>	5	1	
	<i>Pseudotsuga menziesii</i>	10	1	
	<i>Thuja plicata</i>	10	1,3	
	<i>Tsuga heterophylla</i>	10	1,3	
Understory (1 gal pots)	<i>Acer circinatum</i>	10	1	250
	<i>Athyrium filix-femina</i>	10	3	
	<i>Berberis aquifolium</i>	10	1	
	<i>Corylus cornuta</i>	15	3	
	<i>Gaultheria shallon</i>	30	1,3	
	<i>Holodiscus discolor</i>	25	1	
	<i>Oemleria cerasiformis</i>	45	3	
	<i>Physocarpus capitatum</i>	15	1	
	<i>Polystichum munitum</i>	30	1,3	
	<i>Pteridium aquilinum</i>	10	3	
	<i>Rosa gymnocarpa</i>	30	1,3	
	<i>Sambucus racemosa</i>	10	1,3	
	<i>Symphoricarpos albus</i>	10	1	
Live Stakes	<i>Cornus sericea</i>	250	1,3	1000
	<i>Physocarpus capitatum</i>	350	1	
	<i>Spiraea douglasii</i>	150	1,3	
	<i>Symphoricarpos albus</i>	250	1	

Community Engagement

Twin Ponds Park is located in the Parkwood Neighborhood of Shoreline, WA. It is a widely popular city park due to its soccer field, community garden, beautiful ponds and natural features.

There are many communities we will engage to help us in our stewardship project. We will partner with the Parkwood Neighborhood Association and existing Twin Ponds Stewards, who have and continue to do a great job rehabilitating Twin Ponds. We will invite the communities of faith who are within a few blocks from the park: Including churches; St. Barnabas Anglican, Shoreline Unitarian Universalist, and Phillippi Presbyterian Church of Seattle whom we hope will share in our excitement and values of community enhancement. We will also reach out to the boys and girls scouts.



There are also a few neighboring schools we will invite to help us steward at Twin Ponds: Parkwood Elementary, the Evergreen School, and Lakeside High School and Middle school. We will reach out to the community who reside at Aegis, just across the street from Twin Ponds. We will introduce ourselves to the neighbors to the west to inform them of what we are doing and extend an invitation to them to join us. Finally, we will reach out to the greater community who frequent the park to enjoy the playground, play fields, community garden, and forested areas.

We will start our outreach by making personal introductions in person or by phone. We will ask all the communities that we connect with to post our on-going community work parties on their websites and Facebook pages. We will place signage around that area we are stewarding to inform the community of what we are doing and let them know they can join us.

Work parties will be posted on Shoreline Area News, Next Door, Council of Neighborhood, WNPS and City of Shoreline websites to attract those who are outside of the Parkwood Neighborhood and surrounding Twin Ponds area. While at the park we will carry postcards to hand out with information about our project and the dates and times of our work parties to distribute to park users.

Appendix 1 – Site Assessment Raw Data

Plot Characteristics Twin Ponds North					
Date:					
Stewards:					
Plot #	1	2	3	4	5
Aspect	North	None	None	Northeast	None
Slope (% or °)	<5%	0	0	3-4 %	0
Soil Texture	Sandy	Sandy	Sandy	Sandy	Silty
Soil Moisture	Damp	Damp	Damp	Damp	Damp
Soil Compaction (Y/N)	Moderate	No-Light	No-Light	No-Light	Moderate
Litter Depth (inches)	1/2-1"	1/2-1"	1/2-1"	1/2-1"	0-1/2
Bare Ground (%)	0-20%	0-20%	0-20%	0-20%	80-100%
CWD (%)	0-5%	0-5%	0-5%	0-5%	6-10%
Canopy Cover (%)	51-75%	51-75%	76-100%	76-100%	75%

% Vegetative Cover - Subplot/ Quadrat						
Site:Twin Ponds			Date:Saturday, April 1, 2017			
Stewards: Rachel Hubbard, Ann Lynch, Bill Turner, and Meghan Peterka						
Species		Plot #				
Code	Name	Q1	Q2	Q3	Q4	Q5
	English Ivy			>70%	<1%	10%
	Yellow Dock	<1%			3-5%	
	Creeping Buttercup				25%	<1%
	Himalayan Blackberry			<1%	10%	<1%
	Italian Arum		7%		<1%	
	English Holly		<1%	7%	<1%	
	Herb Robert	<1%	<20%	4%	3%	50%
	Dandelion	<1%			<1%	
	Cherry				60%	
	Shore Pine				<1%	
	Hawthorn			<1%		
	Red Huckleberry			<1%		
	Bleeding Heart		80%			
	Western Red Cedar					
	Horsetail	<1%				<1%
	Night Shade				25%	
	Tall Oregon Grape					<1%

Trees (≥4.5ft tall) - Plot					
Site:Twin Ponds North			Date: April 1, 2017		
Stewards: Ann Lynch, Bill Turner, Meghan Peterka, Rachel Hubbard					
Plot	Species / Snag		Tree Size		
Plot #	Code	Name	DBH (inches)	Height	live crown %
1		Cedar	3 cm	10'	100%
1		Cedar	10.25 cm	20'	100%
1		Vine Maple	1 cm	12'	90%
1		Hawthorne	1.25 cm	12'	
1		Hawthorne	1.25 cm	10'	
1		Hawthorne	1.45 cm	7'	
2		Maple	13.5 cm	70'	60%
2		Locust	20.5 cm	100'	50%
2		Locust	10.5 cm	75'	50%
2		Cedar	1.25 cm	8'	100%
2		Maple	13.5 cm	90'	60%
2		Pine	16 cm	75'	20%
3		Maple	12.5 cm	100'	50%
3		Cedar	2.25 cm	10'	95%
3		Juniper	9.5 cm	60'	80%
3		Locust	12.25 cm	60'	50%
4		Oak	14 cm	40'	65%
4		Oak	10.5 cm	60'	50%
4		Maple	23 cm	90'	60%
4		?	9.5 cm	40'	25%
4		Cedar	1 cm	5'	95%
4		Oak	19.5 cm	100'	65%
4		Cherry	18.6 cm	50'	90%
5		Spruce	14 cm	90'	10%
5		Spruce	8.9 cm	90'	10%
5		Spruce		90'	10%
5		Spruce		90'	10%
5		Spruce	15 cm	90'	10%