

The Green Seattle Partnership IPM Report

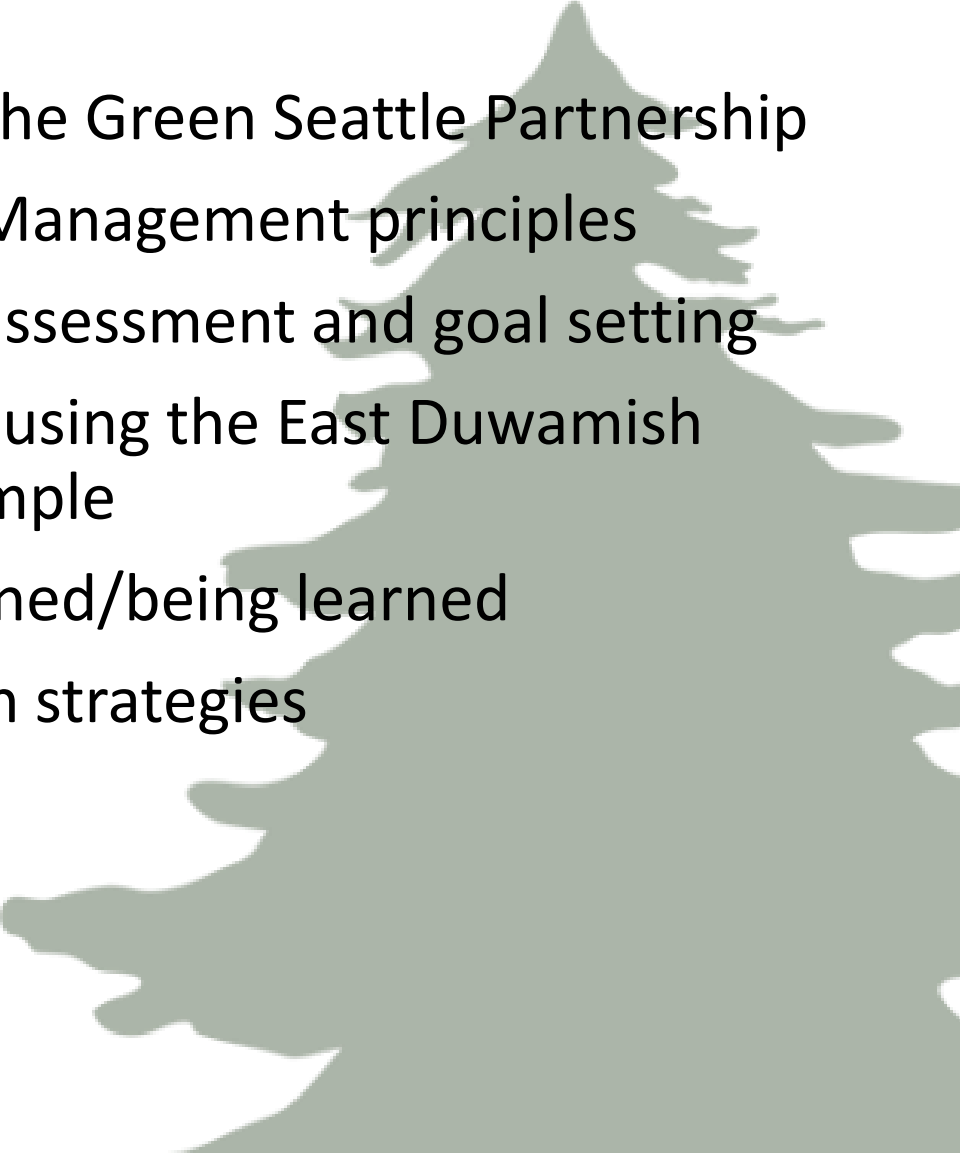
Lisa Ciecko
Seattle Parks and Recreation
October 24, 2017



Seattle
Parks & Recreation

healthy people healthy environment strong communities

Outline

- Provide an overview of the Green Seattle Partnership
 - Review Integrated Pest Management principles
 - Explain our process for assessment and goal setting
 - Discuss implementation using the East Duwamish Greenspace project example
 - Cover some lessons learned/being learned
 - Provide some prevention strategies
- 







REMAINS OF DENNY HILL

OT. FRASCH SEATTLE 62

land purchased

natural areas “take care of themselves”

urban pressures mount

limited maintenance funds

forest declines

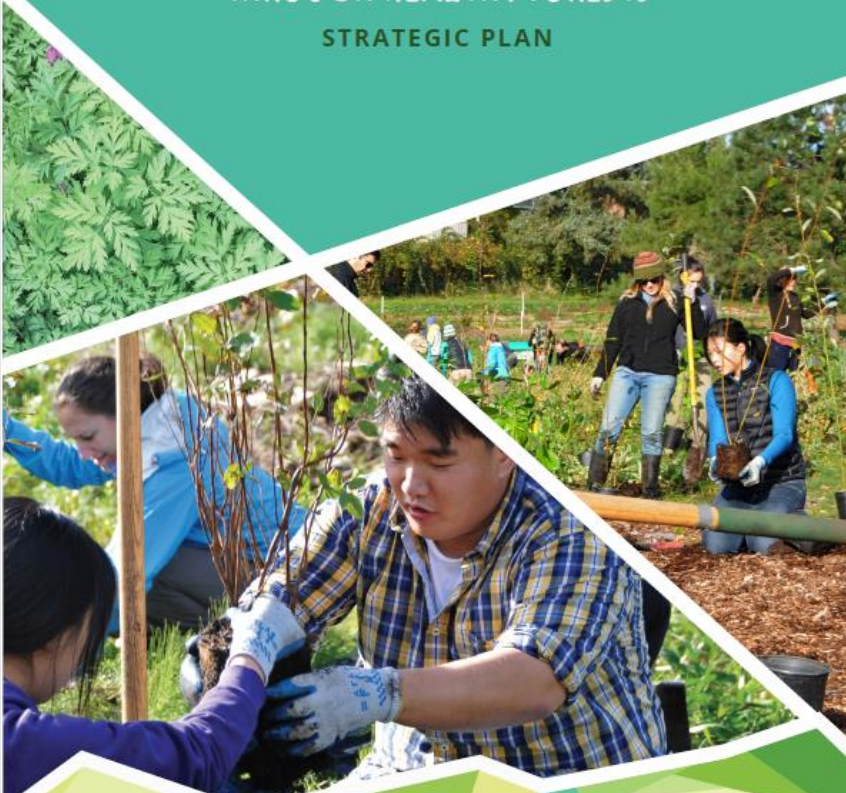






CREATING STRONG COMMUNITIES THROUGH HEALTHY FORESTS

STRATEGIC PLAN



funded by
**SEATTLE
PARK DISTRICT**
INVESTING IN PEOPLE & PARKS

 **Seattle
Parks & Recreation**
seattle.gov/parks

Goals

1

Restore and maintain the forested parklands and designated natural areas of Seattle.

2

Expand and galvanize an informed, involved, and active community around forest restoration and stewardship.



Seattle Parks & Recreation

6,410



acres acquired by Parks
(11% of City's land mass)

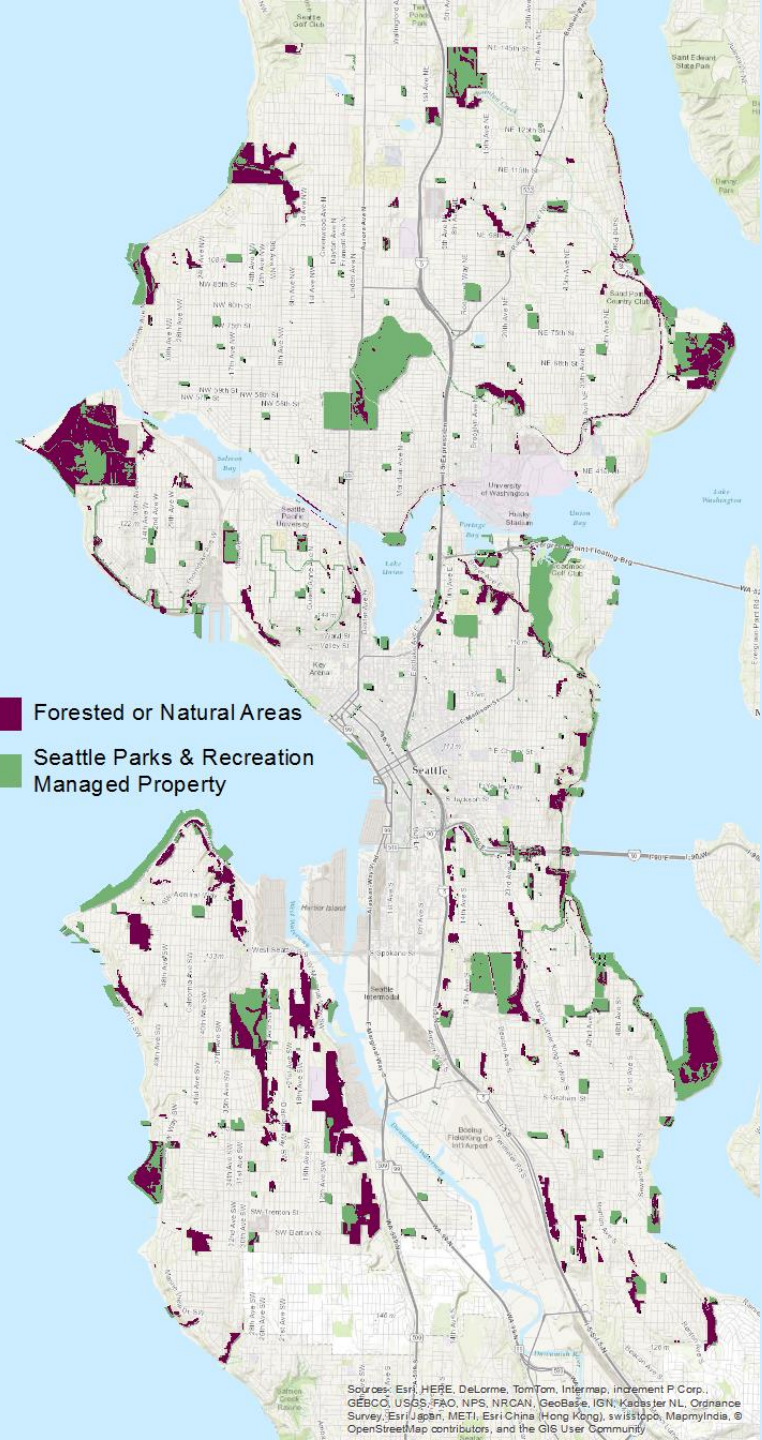
2,500

acres destined for restoration

**GREEN
SEATTLE**
PARTNERSHIP



 Forested or Natural Areas
 Seattle Parks & Recreation
Managed Property





SEATTLE NEEDS YOU
VOLUNTEER
GREENSEATTLE.ORG



SEATTLE NEEDS YOU
VOLUNTEER
GREENSEATTLE.ORG





Help!

Help!

Help!

Help!



Program Accomplishments

1,300+ acres in restoration

plants in the ground **792,481**

194 acres mulched

2,454 acres weeded

volunteer hours **935,504**

343,268 professional
crew hours



IPM Principles

“A system using multiple methods; A decision-making process; A risk reduction system; Information intensive; Cost-effective; Site specific.”

- U.S. Environmental Protection Agency's IPM for Turfgrass and Ornamentals

- **Assess**
- **Set Goals**
- **Implement**
- **Record, Learn and Adapt**
- **Prevent**

IPM Principles

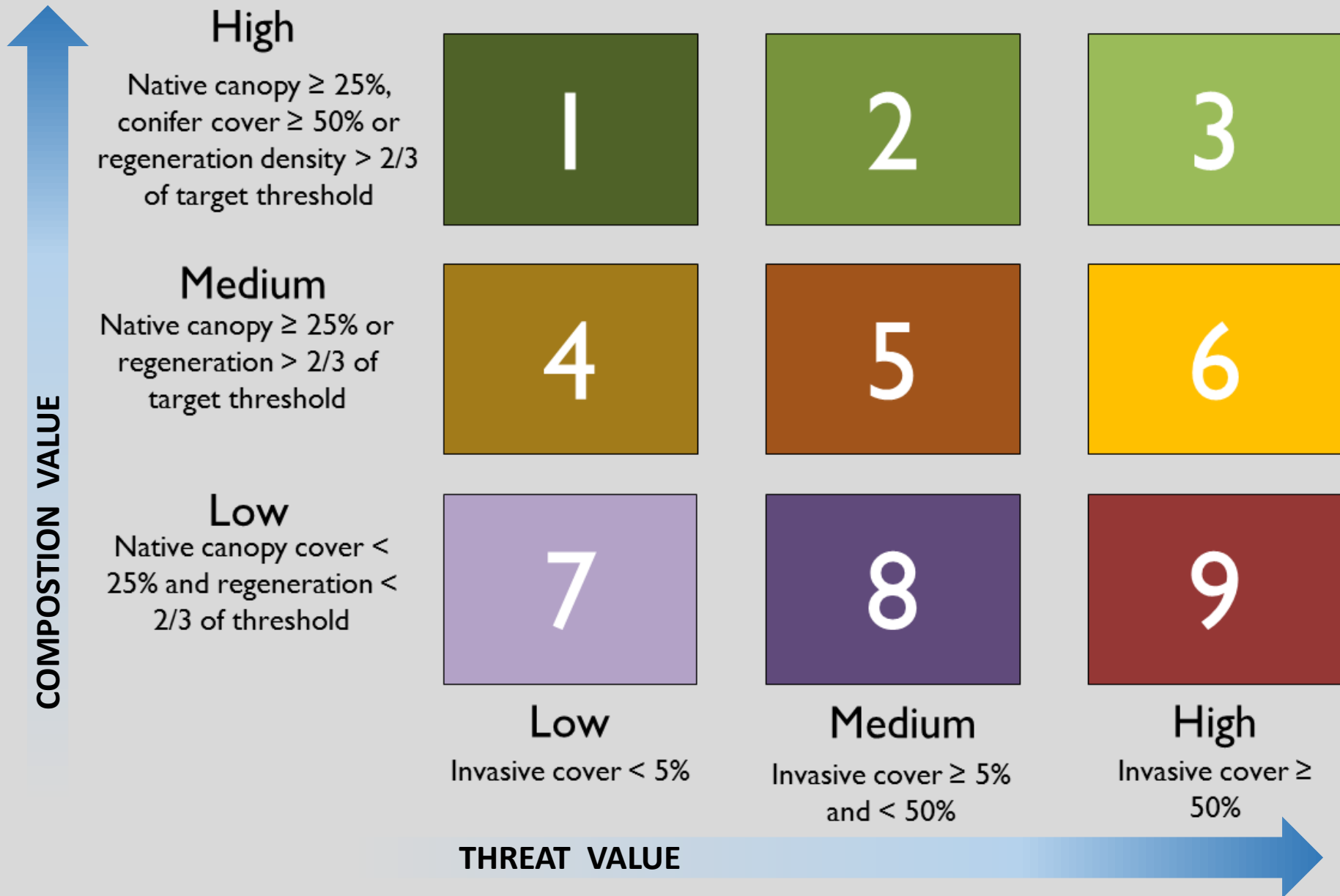
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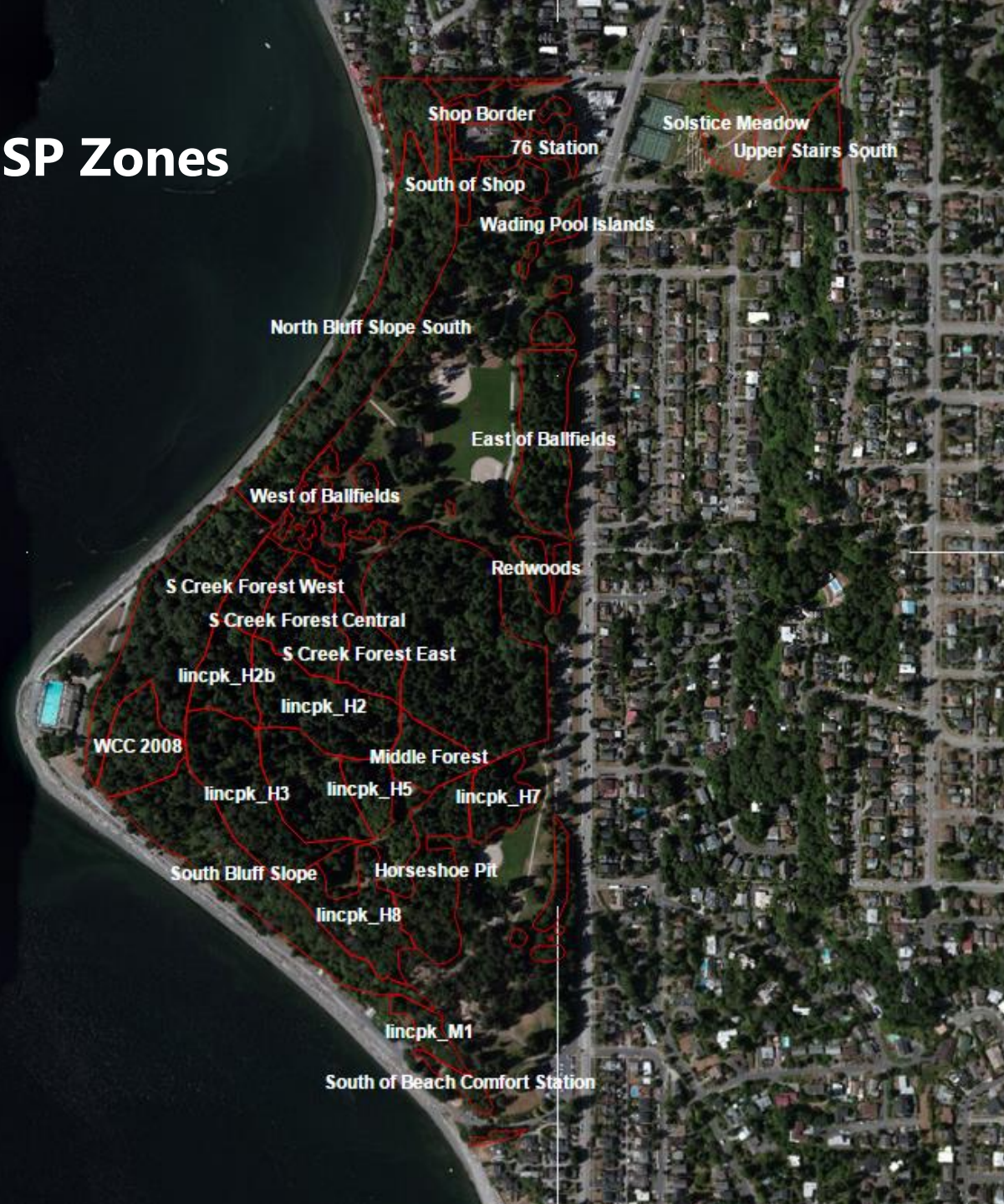
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Tree-iage 3.0



GSP Zones



Legend

Seattle Parks Natural Areas by Target Ecosystem - Zone Boundaries

-  Dry-Mesic Conifer and Conifer Deciduous Mixed Forest
-  Mesic-Moist Conifer and Conifer Deciduous Mixed Forest
-  Riparian Forest and Shrubland
-  Conifer Broadleaf Evergreen Mixed Forest
-  Oak Woodland
-  Scrub Shrub Wetland

Target Ecosystems



Thresholds

Target System Name	Regeneration (trees per acre)	Regeneration Diversity (# of species)	Understory Cover (%)	Understory Diversity (# of species)	Invasive Regeneration (trees per acre)
Conifer Broadleaf Evergreen Mixed Forest	125	3	110%	10	10
Dry-Mesic Conifer and Conifer Deciduous Forest	125	3	70%	10	10
Mesic-Moist Conifer and Conifer Deciduous Mixed Forest	200	4	50%	14	10
Oak Woodland	50	3	60%	12	10
Riparian Forest and Shrubland	125	2	150%	14	10
Scrub Shrub Wetland	25	2	120%	11	10
Bog & Fen	50	2	125%	13	10



native canopy
cover +
evergreen

lots of
baby trees
+ diversity

high native
understory cover
+ diversity

low
herbaceous +
woody
weed cover

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East Duwamish Greenspace: S. Chicago St.

Project Zone	Acres
EDSC Chicago	1.85
EDSC Cloverdale North	3.64
EDSC Cloverdale South	3.71
EDSC Kenyon	3.30
EDSC Monroe	2.43
EDSC Sullivan	4.66
EDSC Rose	2.0



Best Management Practices



CREW WORK SPECIFICATIONS

1. PROJECT IMPLEMENTATION	2
1.1. Project Management.....	2
1.2. Project Boundaries.....	2
1.3. Project Phasing.....	2
1.4. Project Access.....	4
1.5. Weather Conditions.....	4
2. TARGET WEED REMOVAL.....	4
2.1. Target Weed Species.....	4
2.2. Manual Target Weed Removal.....	5
2.3. Chemical Target Weed Treatment.....	6
2.4. Weed Hygiene.....	8
3. STORMWATER AND EROSION CONTROLS.....	10
3.1. Protect Waterways.....	10
3.2. Prevent Erosion and Sediment Transport from the Site.....	11
3.3. Prevent Erosion and Sediment Transport from the Site by Vehicles.....	12
3.4. Stabilize Soils.....	12
3.5. Protect Slopes.....	13
3.6. Protect Storm Drains.....	13
3.7. Control Pollutants.....	13
3.8. Maintain Erosion and Sediment Control BMPs.....	14
4. SHEET MULCHING.....	14
5. WEED COMPOST PILE CONSTRUCTION.....	14
6. LITTER REMOVAL.....	15
7. PLANT INSTALLATION.....	16
7.1. Wet Area Considerations.....	16
7.2. Plant Staging.....	16
7.3. Plant Spacing.....	18
7.4. Plant Installation Details.....	18
7.5. Plant Flagging.....	20
8. WOOD CHIP MULCH APPLICATION.....	20
9. IRRIGATION.....	21
9.2. Cistern Fill.....	21
10. REPORTING.....	21

Search: Green Seattle Partnership
Crew Specifications



Search: Green Seattle Partnership
Forest Steward Field Guide

Seasonality

STEWARDSHIP CALENDAR	1	2	3	4	5	6	7	8	9	10	11	12	NOTES
	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	Dec	
planting considerations:													
primary planting season	go	go	go	go	stop	stop	stop	stop	stop	stop	go	go	
wetland planting season	stop	stop	stop	go	go	stop	stop	stop	go	go	stop	stop	*soils dry out during part of year
wetland planting season	stop	stop	stop	stop	go	go	go	go	go	stop	stop	stop	*saturated soils year-round
wildlife considerations:													
primary bird nesting season	go	go	go	stop	stop	stop	stop	go	go	go	go	go	* majority of songbird species, some birds nest later into end of August
early bird nesting season	go	stop	stop	go	go	go	go	go	go	go	go	go	* larger speices such as herons, geese, raptors, and hummingbirds
duck nesting season	go	go	stop	stop	stop	stop	go	go	go	go	go	go	
amphibian reproduction	stop	stop	stop	stop	stop	stop	go	go	go	go	go	stop	*at sites with 10 cm standing open water, avoid 25 ft from waters edge
professional crew considerations:													
steep slope work	stop	stop	stop	stop	go	go	go	go	go	go	stop	stop	
knotweed herbicide treatment	stop	stop	stop	stop	stop	stop	stop	go	go	stop	stop	stop	
ivy herbicide treatment	stop	stop	stop	stop	stop	stop	stop	go	go	stop	stop	stop	
blackberry herbicide treatment	stop	stop	stop	stop	stop	stop	stop	go	go	stop	stop	stop	

Legend: ■ go
■ stop



Herbicide Use

- Need to limit soil disturbance?
- What are effective methods for managing species present at the site?
- What are the site conditions?
- Will using herbicide improve cost effectiveness?



Botanical name	Common Name
<i>Acer campestre</i>	Hedge Maple
<i>Acer platanoides</i>	Norway Maple
<i>Acer psuedoplatanus</i>	Sycamore Maple
<i>Aesculus hippocastanum</i>	Horse Chestnut
<i>Buddleia davidii</i>	Butterfly bush
<i>Clematis vitalba</i>	Traveler's Joy
<i>Cotoneaster spp.</i>	Cotoneaster
<i>Crataegus monogyna</i>	English Hawthorne
<i>Cytisus scoparius</i>	Scotch Broom
<i>Ilex aquifolium</i>	English Holly
<i>Laburnum anagyroides</i>	Golden Chain Tree
<i>Ligustrum sinense</i>	Chinese Privet
<i>Populus alba</i>	Silver Poplar
<i>Populus nigra</i>	Black Poplar, Lombardy Poplar
<i>Prunus domestica</i>	Domestic Cherry
<i>Prunus spinosa</i>	Sloe
<i>Prunus avium</i>	Wild Cherry
<i>Prunus cerasifera</i>	Thundercloud Plum
<i>Prunus laurocerasus</i>	Cherry Laurel, English Laurel
<i>Prunus lusitanica</i>	Portuguese Laurel
<i>Pyracantha spp.</i>	Firethorn
<i>Robinia pseudoacacia</i>	Black Locust
<i>Sorbus acuparia</i>	Mountain Ash
<i>Tamarix ramosissima</i>	Saltcedar





















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Data Collection Efforts

Work Logs & Volunteer Logs

- Collected by Contractors & Volunteers through CEDAR
- Give us an idea of program activities

Inventory & Phase Mapping

- Collected by professionals
- Provide an idea of conditions & initial outcomes
- General info on many areas

Forest Monitoring

- Collected by Forest Monitoring Team
- In-depth sampling shows ecological outcomes
- Precise info on a few areas

The background image shows a web application interface with a green header and a white content area. The header contains the text "Board Events Re". The content area features a table with a column labeled "Total # of Hours" and three rows, each with a "0" in a text input field. Below the table is a green bar with the text "Select park sites" and a search input field with a green search button.

Seattle Parks and Recreation Pesticide Application Record



Instructions: Please complete one block per application date *and* location. Type or print legibly in gray boxes. Record total quantity of each product applied in ounces per gallon for tank mixtures, in fluid ounces for straight product, or in number of shells for lance injections.

Name of Person for Whom Pesticide was Applied:	
Address of Person for Whom Pesticide was Applied:	1600 South Dakota St Seattle WA 98108
Applicator's Name:	
Applicator's Address:	
Applicator's Washington State License Number:	
Miscellaneous Information:	

Date	Start Time	Stop Time	Park Name	Wind Direction	Wind Speed	Temperature

Species	Method	Equipment	Application Area	Comments	
	<input type="checkbox"/> cut/treat <input type="checkbox"/> foliar	<input type="checkbox"/> injection	<input type="checkbox"/> backpack sprayer <input type="checkbox"/> injection gun	<input type="checkbox"/> lance <input type="checkbox"/> small bottle <input type="checkbox"/> spot: <input type="checkbox"/> sq. ft. <input type="checkbox"/> acres:	

Full Product Name	EPA Registration Number	Mix or Straight Product?	Mix Rate (in fluid oz/gallon)	Total Quantity of Each Product Applied	Percent Concentration of Each Product (%)

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RESTORATION DECONTAMINATION

Help Prevent the Spread of Invasive Plants and Animals

The seeds of troublesome weeds such as garlic mustard (far right) are traveling to different restoration sites on tools, boots, and clothing. To reduce the potential for moving weeds implement the following restoration decontamination methods:

CLEAN soil from tools while still on site using a stiff brush or gloves. Plan time into your work party schedule to accomplish this with volunteers.

REMOVE plants, animals, and mud from boot before leaving the site with a stiff brush and consider washing boots once water is available.

WASH clothing that is potentially carrying soil and seeds.

LIMIT access to designated noxious weed areas during volunteer events.







RESTORATION RESOURCES

STEP ONE

**PREPARE
FOR YOUR
EVENT**



FIELD GUIDE



GSP RESEARCH



REFERENCE

STEP TWO

**KNOW
YOUR
SITE**

SITE PLANNING

TRAILS

HABITAT

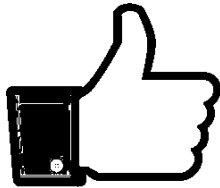
WETLANDS

GREEN SEATTLE

PARTNERSHIP



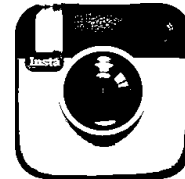
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[@seattleparksgsp](https://www.instagram.com/seattleparksgsp)

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COFFEE,
SNACKS,
TOOLS,
GLOVES,
PROVIDED



PLANT A
TREE! 9AM

GREEN SEATTLE DAY

VOLUNTEER SATURDAY
NOVEMBER 4TH



NO EXPERIENCE
NECESSARY!