



The Life and Death of  
English Holly in  
Seattle's Forested Parklands

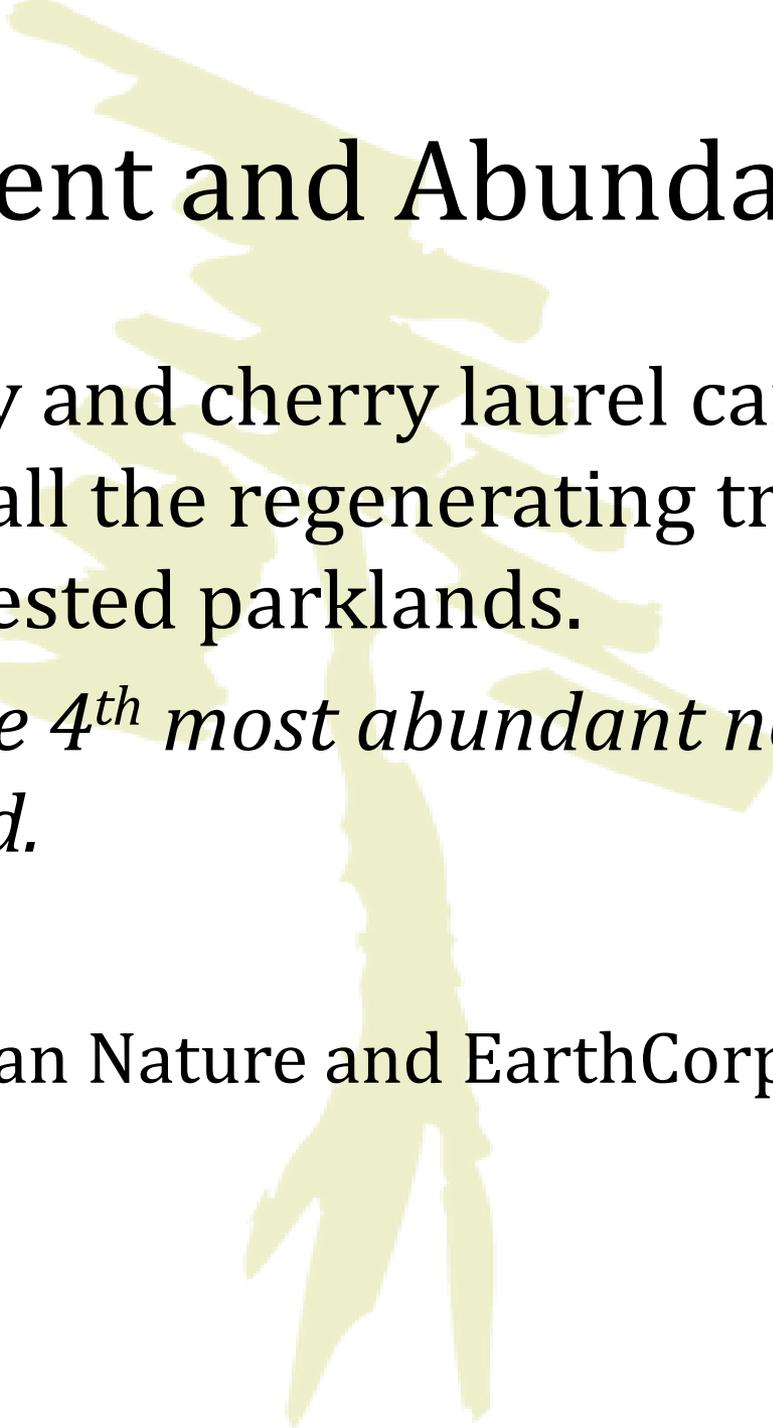
**GREEN SEATTLE**  
PARTNERSHIP



# Phase 4 Looks Like...



# Present and Abundant



- English holly and cherry laurel can comprise over half of all the regenerating trees in Seattle's forested parklands.
- *Holly was the 4<sup>th</sup> most abundant non-native species found.*
  - Seattle Urban Nature and EarthCorps Science

# Present and Abundant

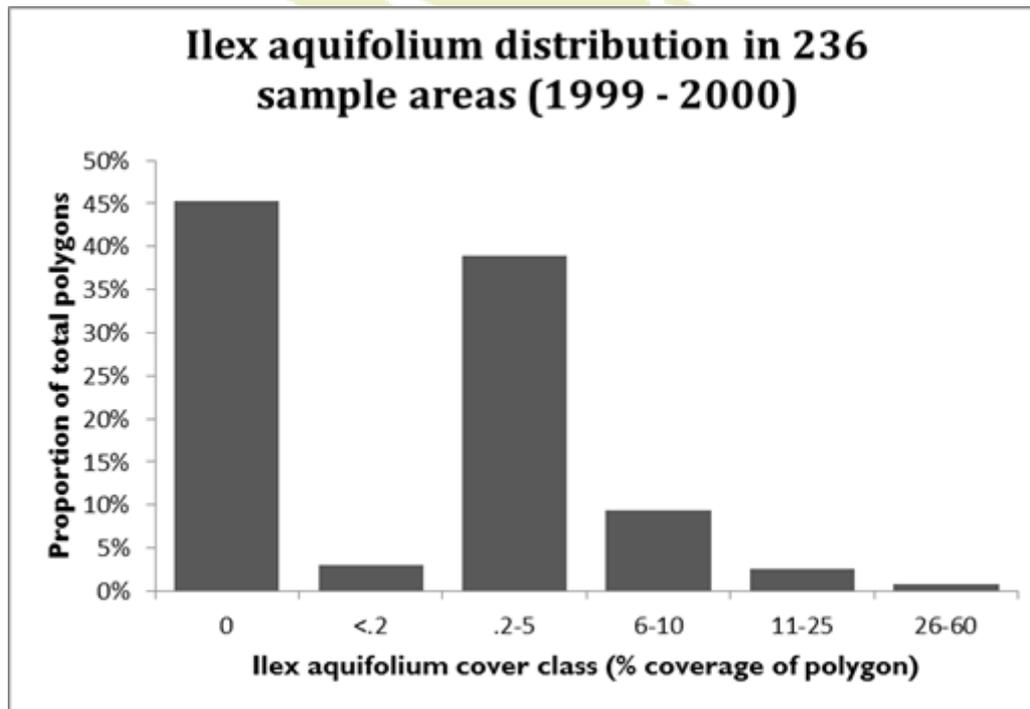
- Holly and laurel each make up 3% of the plant species in Seattle's urban forest

found equally abundant in residential, developed parks/boulevards and natural areas

- Green Cities Research Alliance

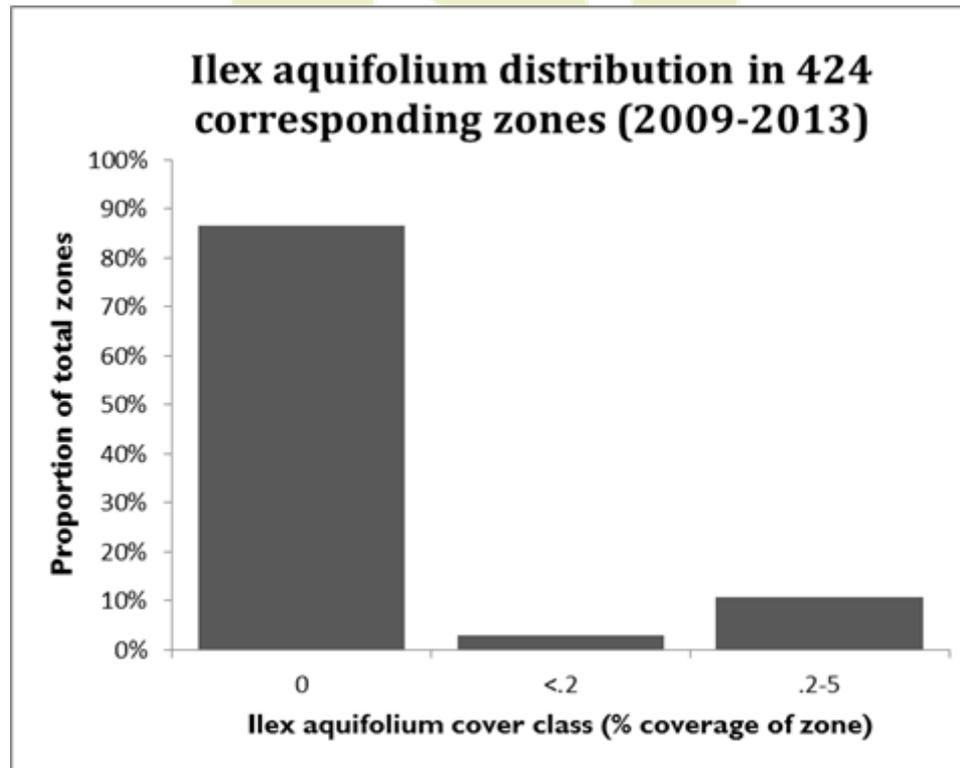


# Present and Abundant



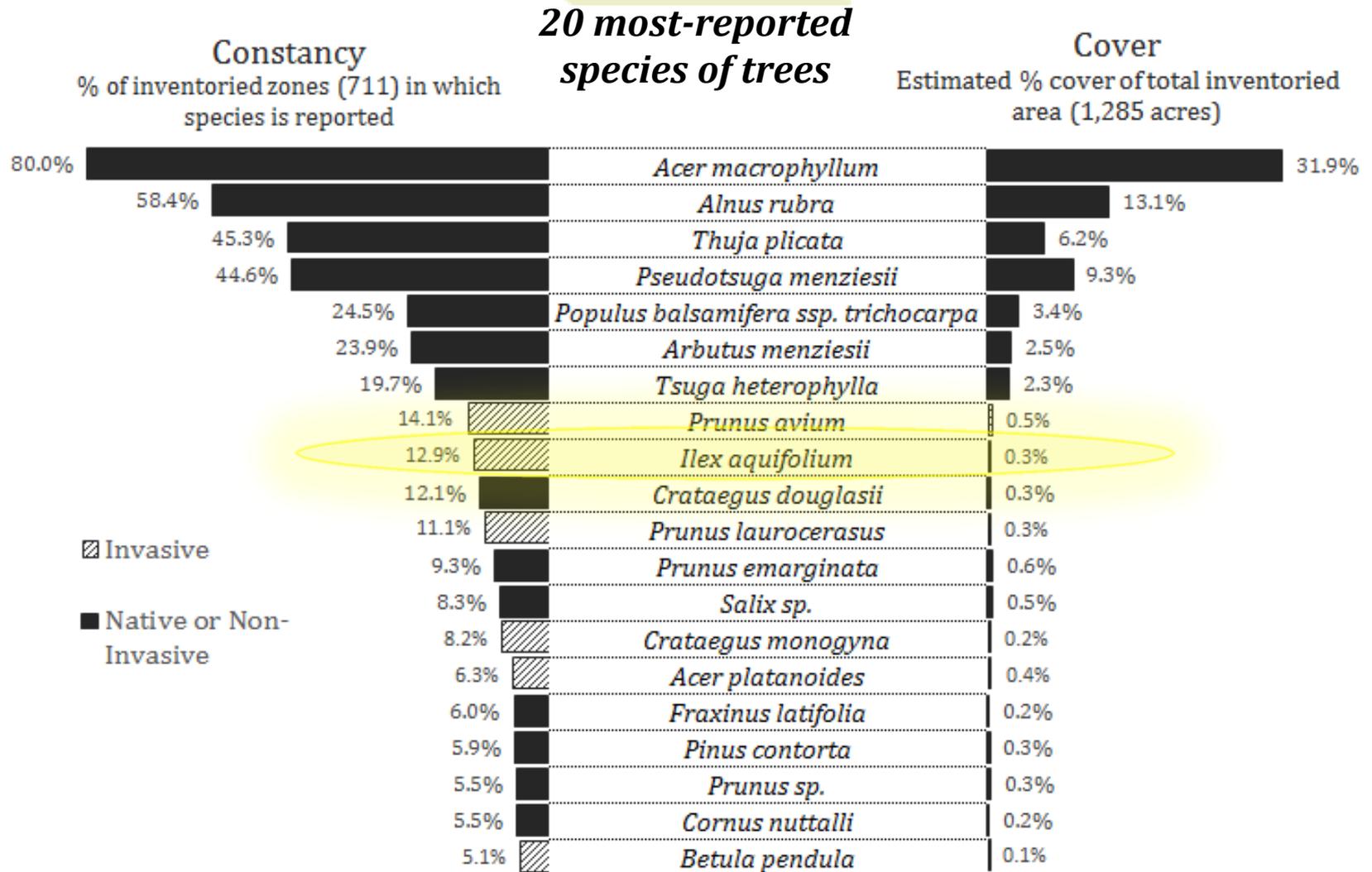
700 acres (424 zones) for which we have both SUNP and Inventory data

# Present and Abundant?



700 acres (424 zones) for which we have both SUNP and Inventory data

# Present and Abundant?



# Our Data Collection Efforts

## Work Logs & Volunteer Logs

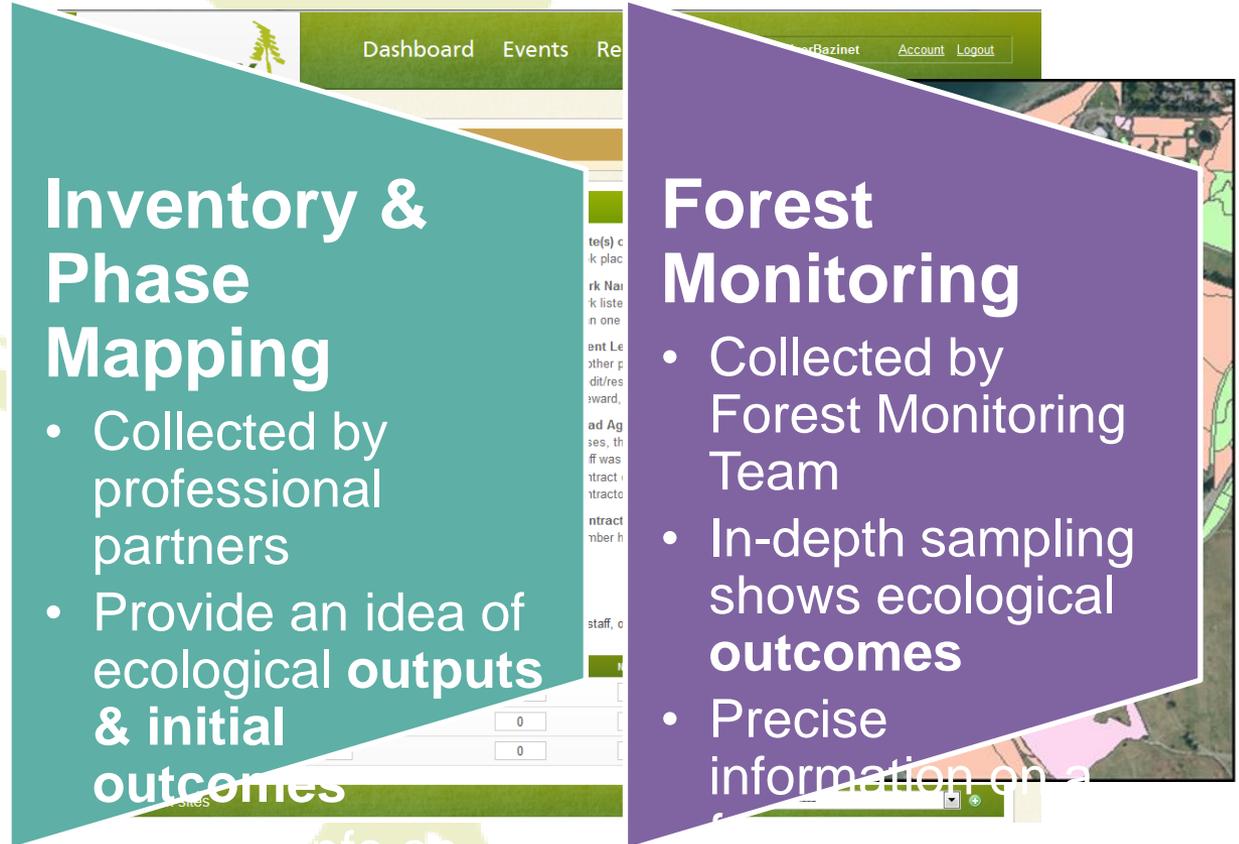
- Collected by Contractors & Volunteers through CEDAR
- Give us an idea of program **activities**

## Inventory & Phase Mapping

- Collected by professional partners
- Provide an idea of ecological **outputs & initial outcomes**

## Forest Monitoring

- Collected by Forest Monitoring Team
- In-depth sampling shows ecological **outcomes**
- Precise information on a



Need to Submit Worklog

## Restoration Work Log

Date of event\*

2013-09-12

 [Choose date](#)

Park Name\*

----- ▾

Event Lead\*

Bazinet, Oliver (Other) ▾

Lead Agency\*

Forest Stewards ▾

Contract #:

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**Date(s) of Event** is the date of the restoration work took place. If the work took place over multiple days, enter the final date of the restoration work.

**Park Name** is where the restoration work occurred. If you do not see your park listed here, please contact your program manager. If you worked in more than one park you will need to fill out a separate work log for each park.

**Event Lead** The lead for the event. If you are completing the work log for another person, make sure you select them here to give them credit/responsibility for the restoration work. The event lead is the Forest Steward, staff person or contracted lead that organized the event.

**Lead Agency** is the type of group that led or did the restoration work. In most cases, this is a Forest or Habitat Steward. For work where a contractor or staff was hired, the agency name should correspond with who paid for the contract or staff time. However, if a Forest of Habitat Steward hired a contractor with grant money, the agency would still be Forest Steward.

**Contract #** If there is a contract number associated with this work, enter the number here.

## Attendance Information

In the fields below, enter the number of paid staff (i.e., Parks staff, CLC staff, other agency staff, or paid contractor time), adult volunteers, and youth volunteers who were present at the event. Also, enter the name of the group if applicable.

	# Present	Total # of Hours	Name of group or individuals (if applicable)
Paid Staff	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text"/>
Adult Volunteers	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text"/>
Youth Volunteers	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text"/>

Select park sites

----- ▾ 

### Phase 3: Watering

# of plants contracted to be watered

**# of Plants contracted** If you were contracted to water a certain number of plants, enter that number here.

# of plants watered  **X** # of times watered  **=**

**# of Plants watered** Enter the total number of individual plants watered and the number of times those plants were watered.

### Other Restoration Activities

Cut Stump Treatment:  (square feet)  (estimate number of stumps) **Be sure to attach Pesticide Document below.**

Foliar Herbicide (square feet) **Be sure to attach Pesticide Document below.**

Erosion control fabric (square feet)

Trail maintained (linear feet)

**# of Trail Structures**

**# of Trail Structures** (Describe and quantify)

**Other Activity** (Describe and quantify)

### Other Restoration Activities

Please add any other notes or comments that do not fit into the work log format. If you upload any additional documentation to this work log, please add an explanation of the file's contents in this field.

This is also where you would describe any non-restoration work that you did for this park. For example, if you wrote a grant for the park, designed a plant palette, or took part in a site visit, we would still like to associate your volunteer time with a park and know what you did.

Please contact your program manager if you have questions about this field.

### Pesticide Documents

None

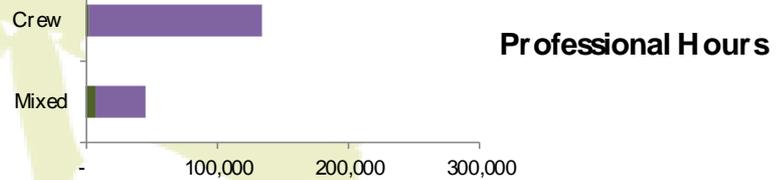
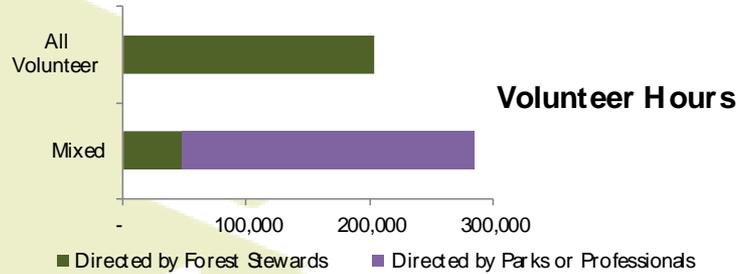
No file chosen

### Attached Files

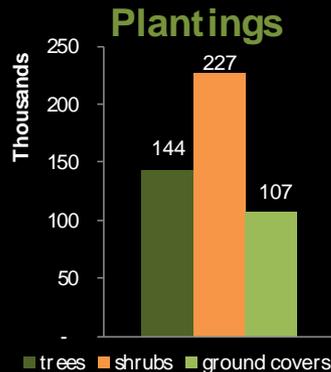
None

## Reported Hours in the Field

Event Types	Volunteer Hours	Professional Hours
<b>All Volunteer</b>	204,038	
<b>Mixed</b>		
Led by Professionals	237,755	37,919
Led by Forest Stewards	47,028	7,284
<b>Mixed Total</b>	284,783	45,203
<b>Crew</b>		
Hired by Parks or Other Partners		131,338
Hired by Forest Stewards		2,410
<b>Crew Total</b>		133,748
<b>Grand Total</b>	<b>488,821</b>	<b>178,951</b>



## Reported Tasks Accomplished

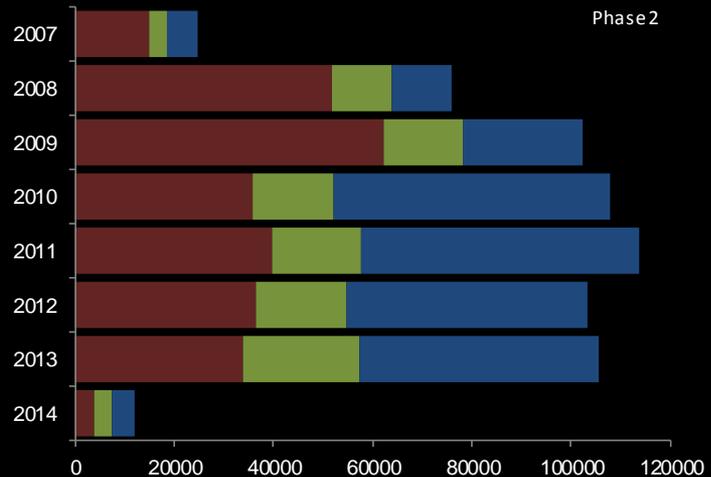


**Phase 1**  
 278,594 hours of phase 1 work  
 700.37 acres invasive species removed  
 8,354 survival rings cut

**Phase 2**  
 111,054 hours of phase 2 work  
 143,651 trees planted  
 226,894 shrubs planted  
 106,696 ground covers planted  
**477,241 Total Plants**

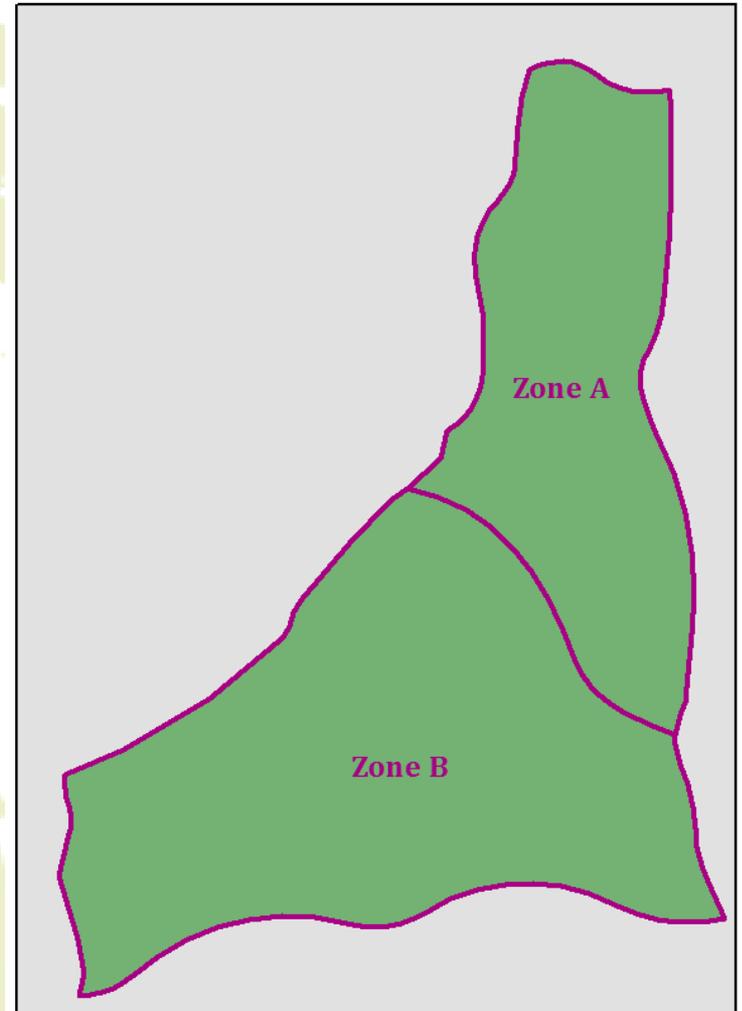
**Phase 3**  
 255,185 hours of phase 3 work  
 128 acres mulched  
 1,517 acres weeded  
 983,862 plants watered

## Total Hours Per Phase



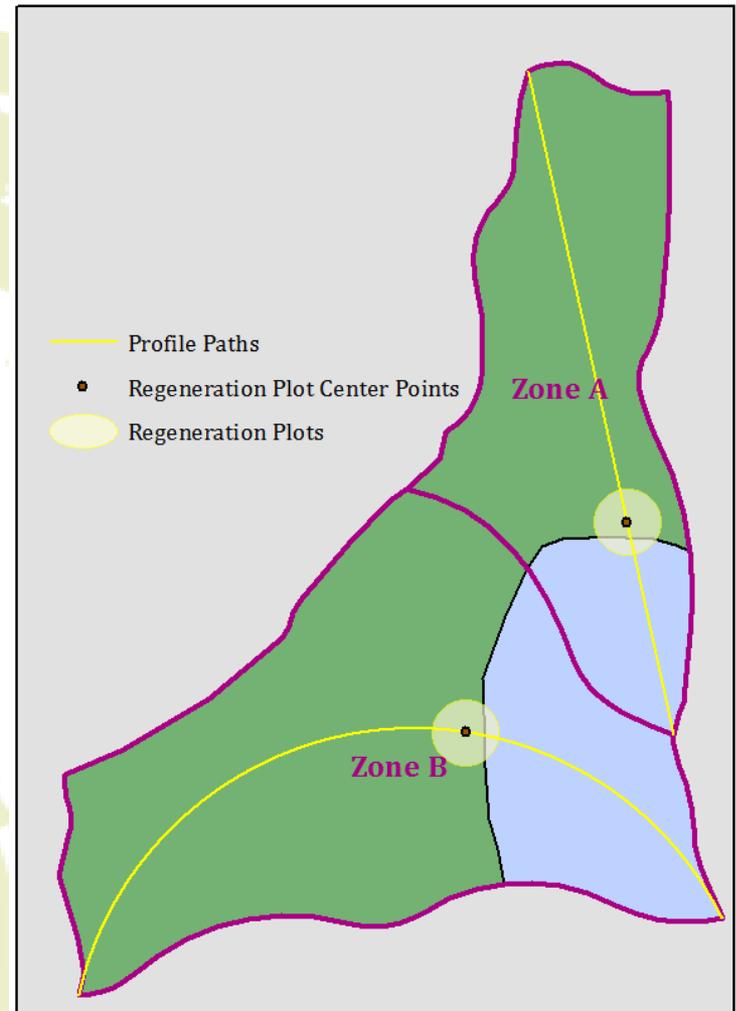
# Inventory

- Each year, we create a list of priority sites based on:
  - work logs
  - other considerations (new zone, lack of data, work priority, etc.)

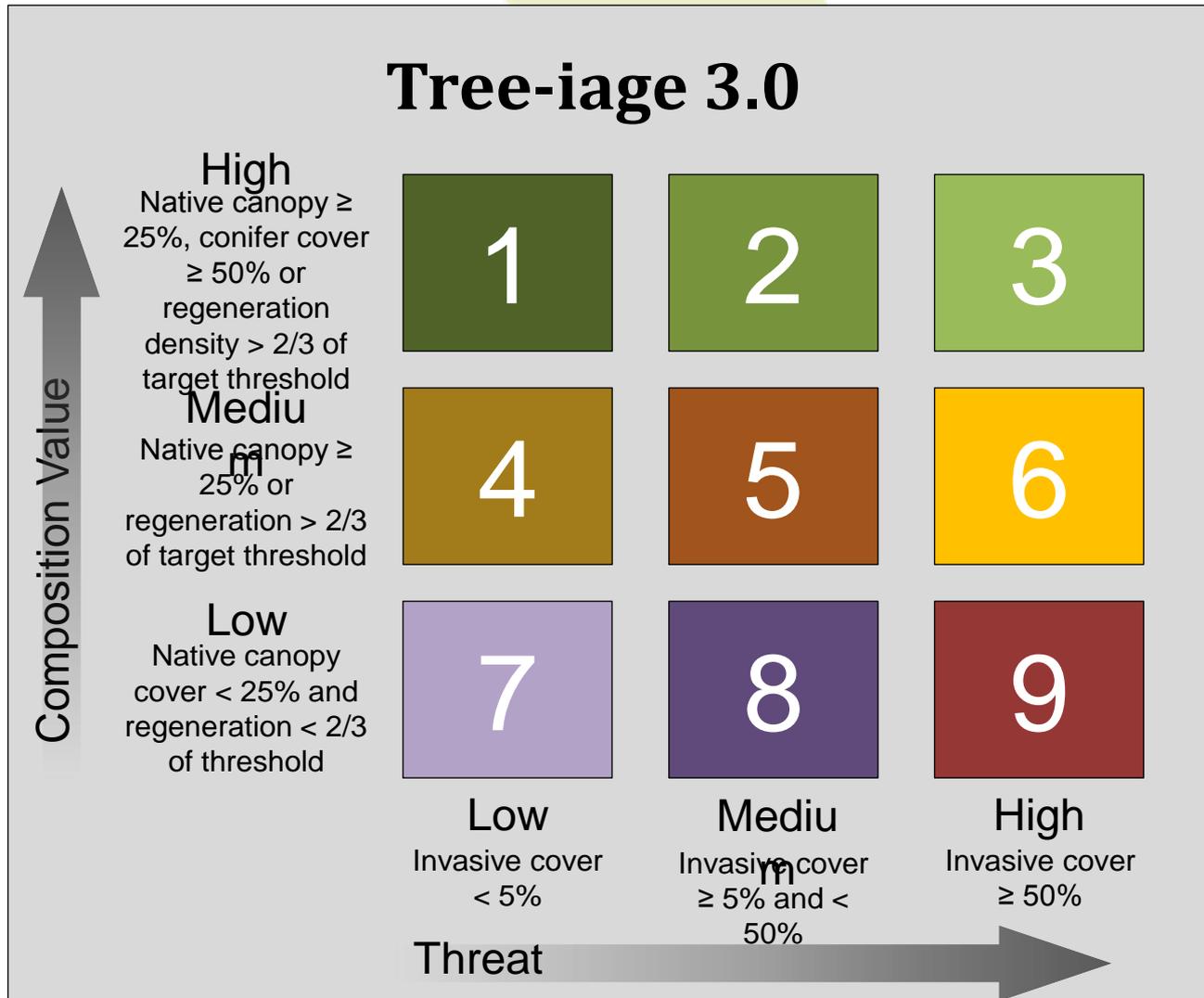


# Inventory

- Each year, we create a list of priority sites based on:
  - work logs
  - other considerations (new zone, lack of data, work priority, etc.)
- For each zone consists of:
  - walking a profile
  - sampling for regeneration
  - phase mapping
- Each year 200 – 300 acres (10% of forested parks)



# Inventory Reporting: Tree-age Calculations



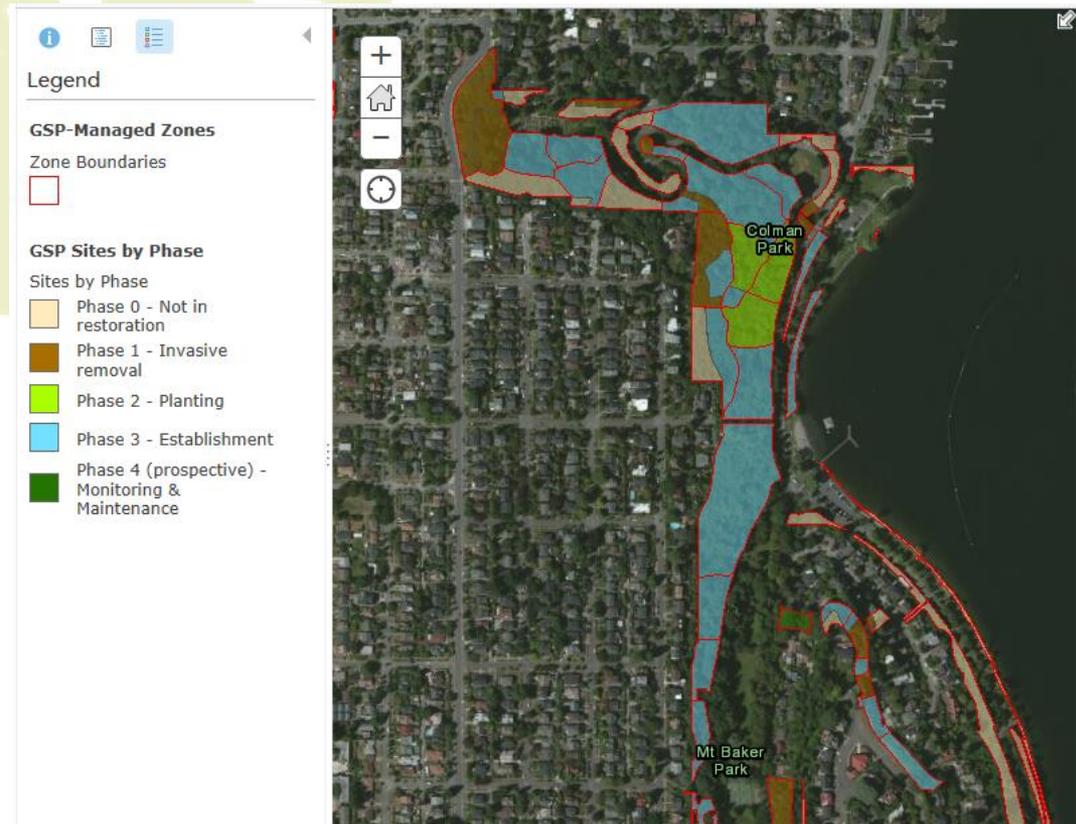
# Target System Thresholds

Target System ID #	Target System Name	NatureServe ID #	Regeneration Threshold (TPA)	Regeneration Diversity Threshold (# Species)	Understory Cover Threshold	Understory Diversity Threshold (#Species)	Invasive Regeneration Maximum (TPA)
1	Conifer Broadleaf Evergreen Mixed Forest	CES204.845	125	3	110%	10	10
2	Dry-Mesic Conifer and Conifer Deciduous Forest	CES204.001	125	3	70%	10	10
3	Mesic-Moist Conifer and Conifer Deciduous Mixed Forest	CES204.001	200	4	50%	14	10
4	Oak Woodland	CES204.852	50	3	60%	12	10
5	Riparian Forest and Shrubland	CES204.869	125	2	150%	14	10
6	Scrub Shrub Wetland	CES204.865	25	2	120%	11	10
7	Bog & Fen	CES204.063	50	2	125%	13	10

We only tolerate 0-10 stems/acre

# Examples of Other Questions Answered by Inventory

- Where are we seeing the most ecological improvement?
- What areas need additional work (and what type of work)?
- By combining with work log data: what (and who) is working well where?



# Working together

- Good Information
- Good Communication
- Good Access
- Perfect Timing



# The Process

1. Clear the ground of invasives
2. Submit “herbicide request” online
3. Treat during a contract or staff project
4. Report
5. Monitor
6. Re-treat when needed



# Cutting, Girdling, Injecting



- Know the site and the target
- Choose a method
- Decide who will do the work
- Perform the chosen method correctly and efficiently

# Record of Woody Treatment

- Since 2011, GSP (staff and contractor = 9 different entities) has
  - treated approximately  
21,000 invasives in 29 parks over 338 acres
  - injected approximately  
4,000 invasives in 21 different parks over 25 acres

# How it Works



- Gravity fed, spring-loaded head injects shells through bark with little physical effort.
- Direct injection of chemical is taken up into the tree, killing the roots, trunk, and foliage.

# Benefits to the EZ-Ject

- Direct injection through outer bark into living tissue
- Small amount of common chemicals in a shell
- Little exposure to the applicator
- Saves labor



# Benefits to the EZ-Ject



- Use in any weather
- No affect to non-target trees or sensitive areas
- Low impact
- Good for thinning
- Creates habitat trees
- Safe for aquatic use

# Maintenance and Storage



# Maintenance and Storage

- ***Do not*** store shells in the Lance
  - Always store with the injector nose upward.
  - Lance will jam if it gets “gunked up”
  - Soak injector head when necessary
- **Be careful** with using shells that have been compromised in hot conditions
- **Replace** unused, intact shells in original container and re-seal.

# Lessons Learned/To Learn

- Collect ubiquitous data, WITH
- Use in mind
  - Establish & maintain standards for collection and storage
  - Maintain and uphold linkages between data sets (clearly defined and identified management units: zones)
- Use the information to create workplans
- Report, Monitor and Evaluate, then Educate and Adapt Practices