



LAWN CONVERSION TO NATIVE ALTERNATIVES

GREENWORKS



Mary Logalbo, Urban
Conservationist

Overview

- Why?
- Site Planning
- Design Considerations
- Site Prep
- Native Groundcovers
- Native Turf Alternatives
- Meadowsclaping
- Maintenance






Why convert lawn?

- Wildlife & Biodiversity
- Water & Air Quality
- Water Conservation
- Natural Heritage
- Lower Maintenance Options



Andrena (Mining Bee) on Goldfields (Lasthenia californica).
Photo Credit: Mace Vaughn, Xerces Society



"We have to raise the bar on our landscapes. In the past, we have asked one thing of our gardens: that they be pretty. Now they have to support life, sequester carbon, feed pollinators and manage water."

Douglas Talamy, Professor
University of Delaware, 2015

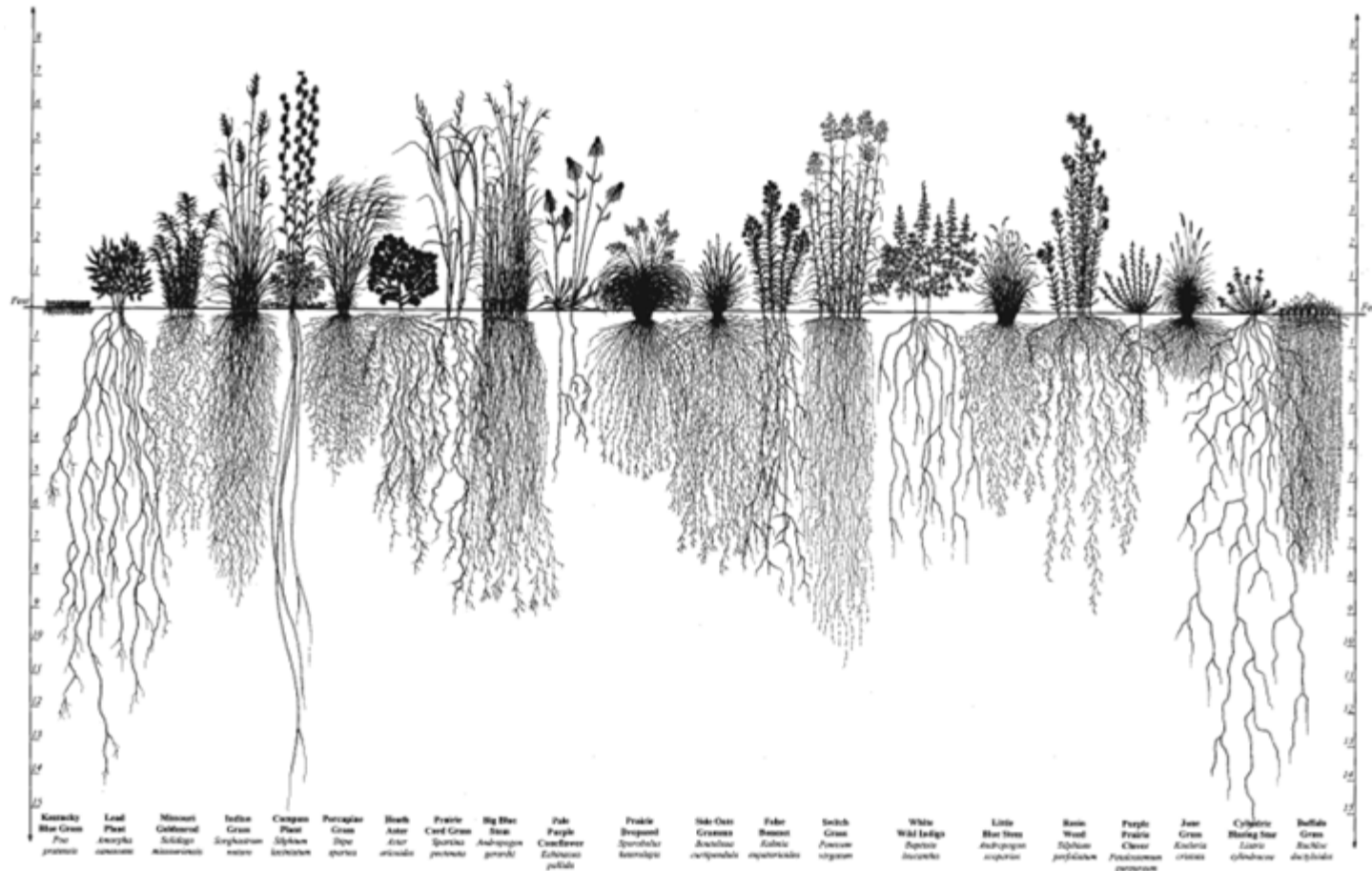
A lush green forest scene with large, moss-covered tree trunks and dense ferns in the foreground. Sunlight filters through the canopy, creating a dappled light effect. The text "Why go native?" is overlaid in white.

Why go native?

"Humanity, for its own sake, must attend to the forgotten pollinators and their countless dependent plant species."

-- E. O. Wilson, insect ecologist and author

Stormwater Management & Carbon Sequestration

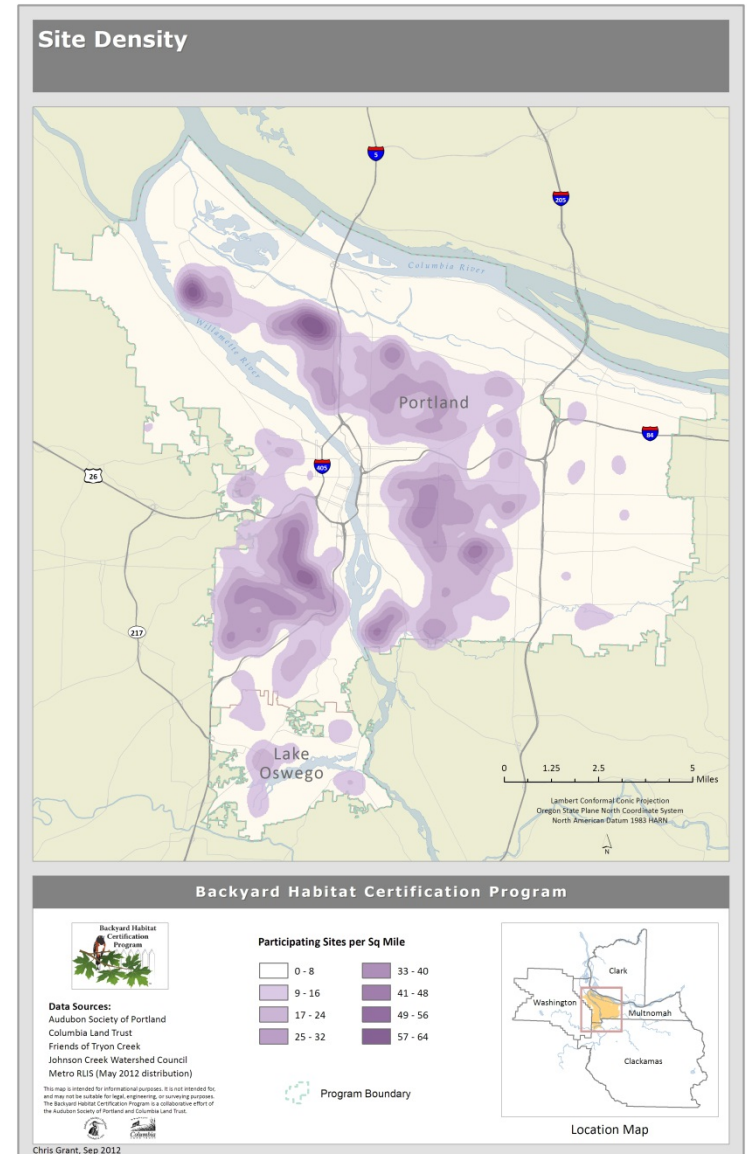


Credit: Natural Resources Conservation Service (NRCS) Illinois Native Plant Guide: Root Systems of Prairie Plants.

Habitat Connectivity



Photo Credit: Marissa Aurora Dorais
 Portland Parks & Recreation
 Willamette River Stewardship Coordinator | City Nature



Site Planning

- Project Goals
 - Aesthetics
 - Lower Maintenance
 - Wildlife Habitat
 - Stormwater Treatment
- Project Type
 - Low Lying Groundcover
 - Native Grass Alternative
 - Meadowscape



Photo Credit: Gaylen Beatty, Columbia Land Trust

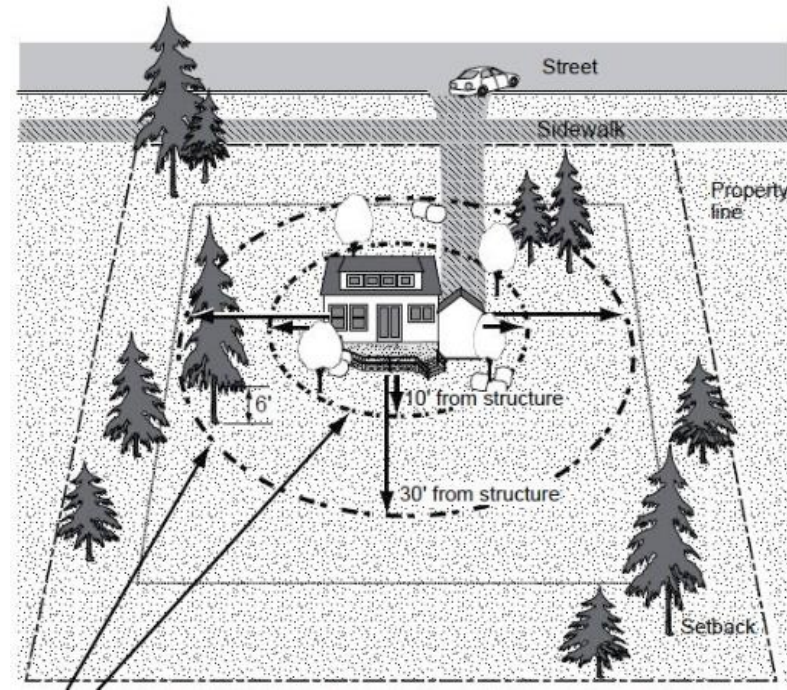
Site Planning

- Resources & Constraints
 - Labor
 - Tools
 - Materials
 - Budget
- Inventory & Analyze Site
 - Slope
 - Shade
 - Weeds
 - Pressures
 - Human Needs
 - Soil Type & Moisture



Fire resistance consideration

- Use plants with high moisture content (deciduous) nearest the home.
- Fire-resistant plants (from OSU, firefree.org):
 - Shrubs include: Oregon grape, serviceberry, salal, mock orange, rhododendron and nootka rose.
 - Perennial choices include yarrow, iris and geranium.
 - Groundcovers include stonecrop, strawberry and kinnikinnick.



<http://www.portlandoregon.gov/fire>

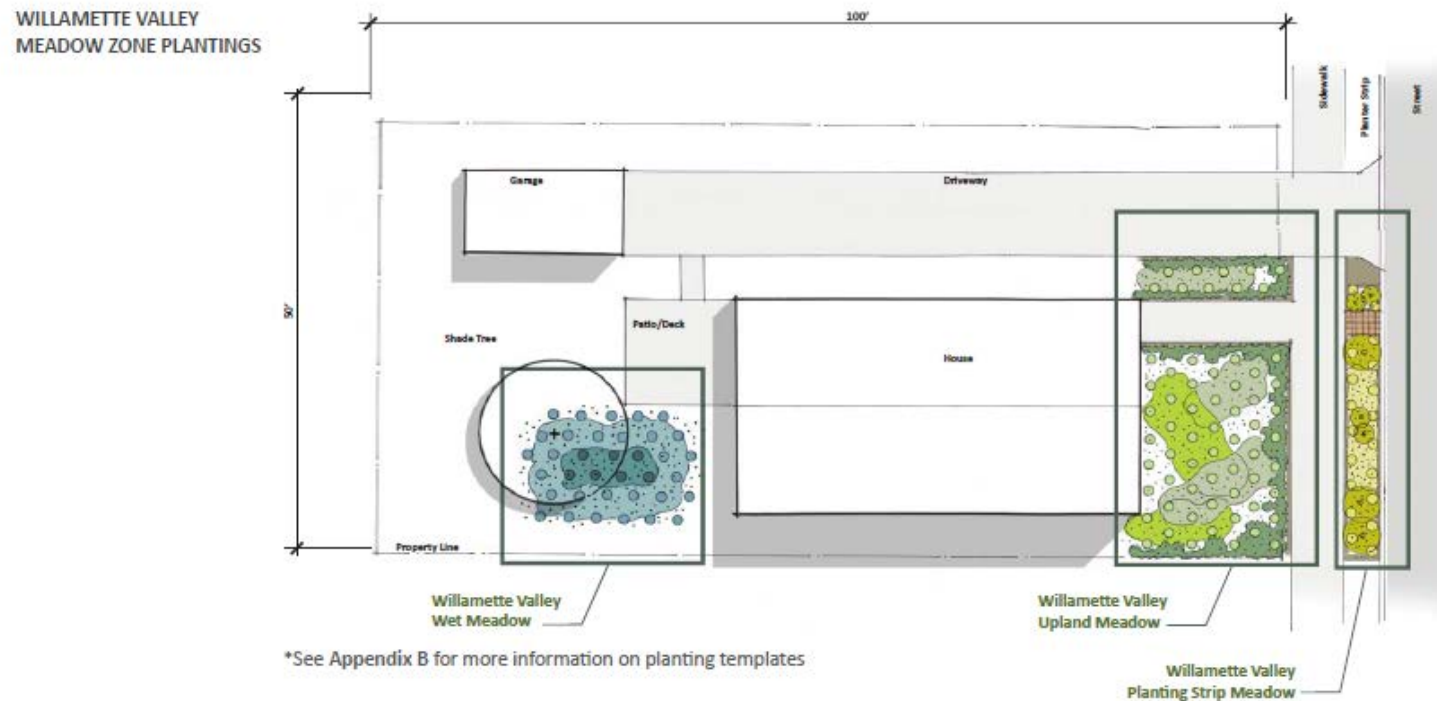
Consider unused space...



Photo Credit: Laura Taylor, WMSWCD

Map Opportunity Areas!

Photo credit: Bob Hansen, Corvallis



Graphic Credit: GreenWorks

Don't forget to test your soil...



Photo Credit: Gina Emanuel

Project Design

- Choose appropriate & available plants
<https://wmswcd.org/types/native-plants/>
- Small palate for small place
- Strategically locate “anchor plants”
- Late and early bloomers
- Clump species
- Careful of bullies!
- Consider clear dividers of plant groupings



3 Bloom Times for Pollinators

Flower Species - common name (<i>scientific name</i>)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
western buttercup (<i>Ranunculus occidentalis</i>)			yellow					
shooting star (<i>Dodecatheon hendersonii</i>)				pink				
western trillium (<i>Trillium ovatum</i>)				white to purple				
meadow checkerbloom (<i>Sidalcea campestris</i>)				light pink				
woodland strawberry (<i>Fragaria vesca</i> ssp. <i>Brachteata</i>)				white to pink				
Oregon iris (<i>Iris tenax</i>)				purple				
camas (<i>Camassia leichtlinii</i> or <i>quamash</i>)				blue				
western columbine (<i>Aquilegia formosa</i>)				red				
fringecup (<i>Tellima grandiflora</i>)				greenish-white to reddish				
varileaf phacelia (<i>Phacelia heterophylla</i>)					white			
lance selfheal (<i>Prunella vulgaris</i>)						purple		
slender cinquefoil (<i>Potentilla gracilis</i>)						yellow		
harvest brodiaea (<i>Brodiaea elegans</i>)						purple		
salebrosa goldenrod (<i>Solidago canadensis</i> var. <i>salebrosa</i>)						yellow		
Bunchgrass Species - common name (<i>scientific name</i>)	Height at maturity (ft)							
blue wildrye (<i>Elymus glaucus</i>)	3							
California brome (<i>Bromus carinatus</i>)	3							
tufted hairgrass (<i>Deschampsia caespitosa</i>)	3							
Roemer's fescue (<i>Festuca roemerii</i>)	2							
California fescue (<i>Festuca californica</i>)	3							

Aesthetic Considerations



Photo Credit: Bob Hansen



Photo: mulysa.org

Clumps & setbacks



Photo: mulya.org

Heavy Use Areas



• Photo: mulysa.org

Choose the right heights for sites...



Photo: Kammy Kern-Korot, *Sidelcea campestris*



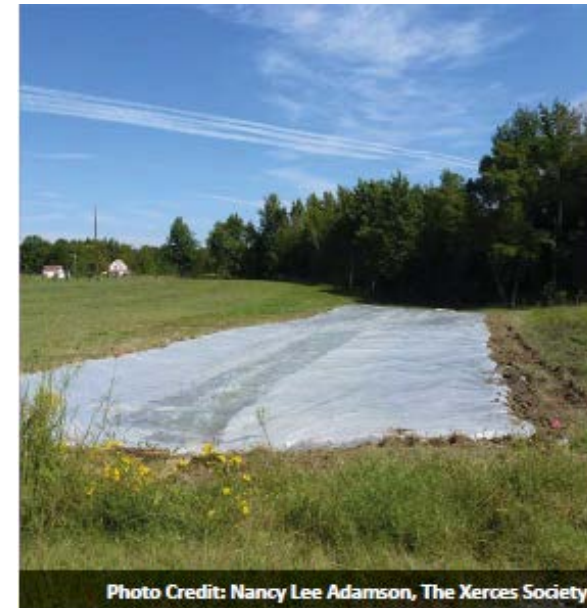
Photo: EMSWCD, *Aster subspicatus*

Source plants while preparing...



Site Preparation

- Minimum: spring – fall prep
- Organic:
 - Sod cutter + hand weeding + top dressing of “native” soil
 - Sheet mulching + hand weeding + top dressing of “native” soil
 - Solarizing + hand weeding + top dressing of “native” soil
 - ~~Scalping + hand weeding alone not enough~~
 - ~~Flaming and/or Organic Herbicides won't kill grass roots~~
- Spring spray + early fall spray + hand weeding



Soil Restoration



- What are you starting with?

- Soil Restoration:

<http://greengirlpdx.com/JOBBS/FHHOA/CS3RestoreDisturbedSoils.pdf>



Figure 3 Lawn or landscape garden, the same generalized cross section of loosened and amended soils apply.



FINALLY, THE PLANTS!



All Photo Credit: Gaylen Beatty, Columbia Land Trust

Native Groundcovers

GROUNDCOVER	GROWING CONDITIONS
beach strawberry (<i>Fragaria chiloensis</i>)	sun, part shade; dry to moderate moisture
bunchberry, Canadian dogwood (<i>Cornus canadensis</i>)	partial to full shade; humus-rich soil
coltsfoot (<i>Petasites palmatus</i>)	moist shade
false lily-of-the-valley (<i>Maianthemum dilatatum</i>)	full to partial shade; moist soil
fringe cup (<i>Tellima grandiflora</i>)	partial shade; moist soil
inside-out flower (<i>Vancouveria hexandra</i>)	sun to shade
kinnikinnick (<i>Arctostaphylos uva-ursi</i>)	sun, some shade; well drained soil
low Oregon grape (<i>Mahonia nervosa</i>)	prefers shade; can tolerate sun
Fern species (Sword hardiest) (<i>Polystichum munitum</i>)	partial shade to full shade dry - moist
slough sedge (<i>Carex obnupta</i>)	moist shade
twinflower (<i>Linnaea borealis</i>)	partial to full shade
vanilla leaf (<i>Achlys triphylla</i>)	partial sun; dry to moist soil
wood sorrel (<i>Oxalis oregana</i>)	wet or dry shade



Photo: <http://tryonfarm.org/>



Graphic adapted from King County's "Ivy Alternatives" & Beach Strawberry photo from King County.

© Greg Rabourn

More Strawberries

Fragaria vesca (wood) & *virginiana* (wild)



Photo Credit: Dominic Maze, City of Portland, BES

Native Groundcovers





Native turf alternatives

- *Danthonia californica* (California oatgrass)
 - Plant grass on mesic/xeric soils in full sun; self sowing after establishment



Photo: waterwisegardendesigns.com

Turf alternatives...

- *Carex tumulicola* (foothill sedge)
- Plant this deciduous (and rhizomatous) sedge on mesic soils in full sun

Turf alternatives

- *Deschampsia cespitosa* (*D. caespitosa*, tufted hairgrass)
 - A narrow leaved bunch grass mesic/xeric soils in sun – part shade. Self sowing after establishment



Plant form: Deschampsia
By Chip Elliot. Public Domain
contact: chinwukashi@gmail.com

Annual grass

- Be cautious of aggressive annuals!
- Only install if confident of ID
- Less aggressive species like Annual Hairgrass (*Deschampsia danthoniodes*) have a role
- Generally hard to source



Portland Urban Meadowscaping Pilot





Meadow Establishment Strategies

- Start w/ plugs (perennial forbs & bunchgrasses) – strategically seed in annuals
- Clump like species (3-5)
- ~2 foot spacing
- Scratch in seed in fall
- Fencing



PERSPECTIVE SKETCH OF URBAN MEADOW DESIGN TEMPLATE LOCATIONS



FORBS



Common Name <i>Scientific Name</i>	Moisture Regime	Exposure	Height x Width	Width	Time of Bloom
common yarrow <i>Achillea millefolium</i>			2.5'	2'	mid-April - June
western columbine <i>Aquilegia formosa</i>			2'	2'	May - June
showy milkweed <i>Asclepias speciosa</i>			2'	2'	June - July
great camas <i>Camassia leitchlinii</i>			2'	12"	April - May
common camas <i>Camassia quamash</i>			18"	12"	April - May

Photo Credits (Top to Bottom): Elaine Stewart, Metro; Matthew Shepard, Xerces Society; Lynda Boyer, Heritage Seedlings & Liners (last 3)
















		Common Name <i>Scientific Name</i>	Moisture Regime	Exposure	Height x Width	Width	Time of Bloom
FORBS		farewell-to-spring <i>Clarkia amoena</i>			2.5'	2'	June - July
		grand collomia <i>Collomia grandiflora</i>			18"	18"	May - July
		Columbia tickseed <i>Coreopsis tinctoria v. atkinsoniana</i>			2'	12"	May - July
		Oregon sunshine <i>Eriophyllum lanatum</i>			2'	18"	June - August
		western alpine strawberry <i>Fragaria virginiana v. platypetala</i>			6"	12"	April - July

Photo Credit (top to bottom): Mary Bushman, BES, Mary Bushman; Terry Glase; Mary Bushman; Thomas L Muller

FORBS
















	Common Name <i>Scientific Name</i>	Moisture Regime	Exposure	Height x Width	Width	Time of Bloom
	large-leaved avens <i>Geum macrophyllum</i>			2'	12"	May - August
	bluehead gilia <i>Gilia capitata</i>			2'	18"	June - August
	Puget Sound gumweed <i>Grindelia integrifolia</i>			2'	2'	August - September
	common sneezeweed <i>Helenium autumnale</i>			3'	3'	July - October
	Pacific waterleaf <i>Hydrophyllum tenuipes</i>			2'	5'	Mid-April - May

Photo Credit (Top to Bottom): Kammy Kern-Korot, WMSWCD; Mary Bushman, BES; Bransford and Dophia; Sally and Andy Wasowski; Michael Ahr, WMSWCD















FORBS		Common Name <i>Scientific Name</i>	Moisture Regime	Exposure	Height x Width	Width	Time of Bloom
		slender cinquefoil <i>Potentilla gracilis</i>			2.5'	2'	May - July
		western buttercup <i>Ranunculus occidentalis</i>			18"	10"	April
		rose checker-mallow <i>Sidalcea virgata</i>			3.5'	12"	July - August
		Hall's aster <i>Symphyotrichum hallii</i>			3'	2'	August - October
		fringecup <i>Tellima grandiflora</i>			3'	12"	April - July

Photo Credit (Top to Bottom): Lynda Boyer, Heritage Seedlings & Liners; Lynda Boyer, Kammy Kern-Korot, WMSWCD; Lynda Boyer; Laura Taylor, WMSWCD













		Common Name <i>Scientific Name</i>	Moisture Regime	Exposure	Height x Width	Width	Time of Bloom
FORBS		Piggyback plant <i>Tolmiea menziesii</i>			12"	12"	April - May
		Oregon grape <i>Mahonia repens</i>			18"	3'	April - May
SHRUBS		sword fern <i>Polystichum munitum</i>			3'	3'	N/A
		snowberry <i>Symphoricarpos albus</i>			4'	4'	May - June

Photo Credit (Top to Bottom): Toby Query, BES; Toby Query;Toby Query; Laura Taylor, WMSWCD

Maintenance

- Watering
- Disturbance for meadows
- Plan to weed “bullies”
- Many annuals will self sow
- Bare spots love weeds
- Avoid disturbance during primary nesting season:
April 15th – August 1st



Photo Credit: Jamie Stamberger

A Dynamic Landscape



Danthonia californica



Ranunculus occidentalis & Camassia

Native and non-natives co-mingled



Photo credit: Eric
Mader, Xerces
Society



Challenges & Resources

- Public perception
- Tall grass ordinance
- Maintenance
- Plant costs & availability
- Grass identification



Pollinator Habitat

This area has been planted with a range of flowering native plants to provide good quality habitat for native bees and other pollinators.

For information about creating habitat for pollinators, please visit:

www.xerces.org

www.wmswcd.org



THE XERCES SOCIETY
FOR INVERTEBRATE CONSERVATION



Native Plant Resources

- **West Multnomah SWCD** www.wmswcd.org
- **East Multnomah SWCD** www.emswcd.org
- **The Oregon Flora Project** www.oregonflora.org
- **Washington Flora**
www.washington.edu/burkemuseum/collections/herbarium/index.php
- **Urbanizing Flora of Portland**, Oregon, 1806-2008. NPSO Occasional Paper 3, John A. Christy, Angela Kimpo, Vernon Marttala, Philip K. Gaddis, and Nancy L. Christy (2009)
- **Portland Plant List**
<http://www.portlandonline.com/auditor/index.cfm?&a=322280&c=34460>
- **King County Native Plant Guide**
<https://green2.kingcounty.gov/gonative/index.aspx>
- **Metro Native Plant Information**
http://www.oregonmetro.gov/sites/default/files/native_plants_for_willamette_valley_yards_booklet.pdf

Native Planting Resources

- Native Plant Nurseries www.plantnative.org/nd_or.htm
- Kruckeberg, A.R. 1996. Gardening with native plants of the Pacific Northwest. Second edition, revised and enlarged. University of Washington Press, Seattle, WA, USA.
- Pater, D.E., S.A. Bryce, T.D. Thorson, J. Kagan, C. Chappel, J.M. Omernik, S.H. Azevedo, and A.J. Woods. 1998. Ecoregions of Western Washington and Oregon (2 sided color poster with map, descriptive text, summary tables, and photographs). Reston, VA, USA. U.S. Department of Interior, Geological Survey (map scale: 1:1,350,000. ISBN 0-607-89571-3.
- Rose, R., C.E. Chachulski, and D.L. Haase. 1998. Propagation of Pacific Northwest native plants. Oregon State University Press, Corvallis, OR, USA.
- Wilson, M.V, D.E. Hibbs, and E.R. Alverson. 1991. Native plants, native ecosystems, and native landscapes: an ecological definition of native will promote effective conservation and restoration. Kalmiopsis:13-17.
- ORBIC http://orbic.pdx.edu/documents/pclist_2004.pdf
- <http://www.nps.gov/plants/restore/pubs/intronatplant/intronatplant.pdf>

Native Plant Identification Guides

- Plants of the Pacific Northwest Coast: Washington, Oregon, British Columbia & Alaska (Pojar & Mackinnon)
- Flora of the Pacific Northwest (Hitchcock & Cronquist)
- Handbook of Northwestern Plants (Gilkey & Dennis)
- Northwest Trees: Identifying and Understanding the Region's Native Trees (Arno & Hammerly)



Thank You!



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