LAWN CONVERSION TO NATIVE ALTERNATIVES
Overview

• Why?
• Site Planning
• Design Considerations
• Site Prep
• Native Groundcovers
• Native Turf Alternatives
• Meadowscaping
• 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 Tallamy, Professor
University of Delaware, 2015
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

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
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

*See Appendix B for more information on planting templates*
Don’t forget to test your soil...
Project Design

- Choose appropriate & available plants [https://wmswcd.org/types/native-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

<table>
<thead>
<tr>
<th>Flower Species - common name (scientific name)</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
</tr>
</thead>
<tbody>
<tr>
<td>western buttercup (Ranunculus occidentalis)</td>
<td></td>
<td></td>
<td></td>
<td>yellow</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>shooting star (Dodecatheon hendersonii)</td>
<td></td>
<td></td>
<td>pink</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>western trillium (Trillium ovatum)</td>
<td></td>
<td></td>
<td>white to purple</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>meadow checkerbloom (Sidalcea campestris)</td>
<td></td>
<td></td>
<td>light pink</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>woodland strawberry (Fragaria vesca ssp. Brachteata)</td>
<td></td>
<td></td>
<td>white to pink</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Oregon iris (Iris tenax)</td>
<td></td>
<td></td>
<td></td>
<td>purple</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>camas (Camassia leichtlinii or quash)</td>
<td></td>
<td></td>
<td></td>
<td>blue</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>western columbine (Aquilegia formosa)</td>
<td></td>
<td></td>
<td></td>
<td>red</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>fringe cup (Tellima grandiflora)</td>
<td></td>
<td></td>
<td></td>
<td>greenish-white to reddish</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>varileaf phacelia (Phacelia heterophylla)</td>
<td></td>
<td></td>
<td></td>
<td>white</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>lance selfheal (Prunella vulgaris)</td>
<td></td>
<td></td>
<td></td>
<td>purple</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>slender cinquefoil (Potentilla gracilis)</td>
<td></td>
<td></td>
<td></td>
<td>yellow</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>harvest brodiaea (Brodiea elegans)</td>
<td></td>
<td></td>
<td></td>
<td>purple</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>salebrosa goldenrod (Solidago canadensis var. salebrosa)</td>
<td></td>
<td></td>
<td></td>
<td>yellow</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bunchgrass Species - common name (scientific name)</th>
<th>Height at maturity (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>blue wildrye (Elymus glaucus)</td>
<td>3</td>
</tr>
<tr>
<td>California brome (Bromus carinatus)</td>
<td>3</td>
</tr>
<tr>
<td>tufted hairgrass (Deschampsia caespitosa)</td>
<td>3</td>
</tr>
<tr>
<td>Roemer’s fescue (Festuca roemeri)</td>
<td>2</td>
</tr>
<tr>
<td>California fescue (Festuca californica)</td>
<td>3</td>
</tr>
</tbody>
</table>
Aesthetic Considerations

Photo: mulysa.org

Photo Credit: Bob Hansen
Clumps & setbacks
Heavy Use Areas

• Photo: mulysa.org
Choose the right heights for sites...

Photo: Kammy Kern-Korot, Sidalcea 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:

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**Figure 3** Lawn or landscape garden, the same generalized cross section of loosened and amended soils apply.
FINALLY, THE PLANTS!
## Native Groundcovers

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

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

Photo: [http://tryonfarm.org/](http://tryonfarm.org/)

© Greg Rabourn
More Strawberries

Fragaria vesca (wood) & virginiana (wild)

Photo Credit: Dominic Maze, City of Portland, BES
Native Groundcovers

- © Greg Rabourn
- *Dicentra formosa*

© Greg Rabourn
*Tolmiea menziesii*
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

Photo: heritageseedlings.com
Turf alternatives

- Deschampsia cespitosa (D. caespitosa, tufted hairgrass)
Annual grass

- Be cautious of aggressive annuals!
- Only install if confident of ID
- Less aggressive species like Annual Hairgrass (Deschampsia danthonioides) 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
<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Moisture Regime</th>
<th>Exposure</th>
<th>Height x Width</th>
<th>Width</th>
<th>Time of Bloom</th>
</tr>
</thead>
<tbody>
<tr>
<td>common yarrow</td>
<td><em>Achillea millefolium</em></td>
<td>🌿</td>
<td>🌞</td>
<td>2.5'</td>
<td>2'</td>
<td>mid-April - June</td>
</tr>
<tr>
<td>western columbine</td>
<td><em>Aquilegia formosa</em></td>
<td>🌿</td>
<td>🌞</td>
<td>2'</td>
<td>2'</td>
<td>May - June</td>
</tr>
<tr>
<td>showy milkweed</td>
<td><em>Asclepias speciosa</em></td>
<td>🌿</td>
<td>🌞</td>
<td>2'</td>
<td>2'</td>
<td>June - July</td>
</tr>
<tr>
<td>great camas</td>
<td><em>Camassia leitchlinii</em></td>
<td>🌿</td>
<td>🌞</td>
<td>2'</td>
<td>12”</td>
<td>April - May</td>
</tr>
<tr>
<td>common camas</td>
<td><em>Camassia quamash</em></td>
<td>🌿</td>
<td>🌞</td>
<td>18”</td>
<td>12”</td>
<td>April - May</td>
</tr>
</tbody>
</table>

Photo Credits (Top to Bottom): Elaine Stewart, Metro; Matthew Shepard, Xerces Society; Lynda Boyer, Heritage Seedlings & Liners (last 3)
<table>
<thead>
<tr>
<th>Common Name</th>
<th>Moisture Regime</th>
<th>Exposure</th>
<th>Height x Width</th>
<th>Width</th>
<th>Time of Bloom</th>
</tr>
</thead>
<tbody>
<tr>
<td>farewell-to-spring <em>Clarkia amoena</em></td>
<td>![Rain]</td>
<td>![Sun]</td>
<td>2.5’</td>
<td>2’</td>
<td>June - July</td>
</tr>
<tr>
<td>grand collomia <em>Collomia grandiflora</em></td>
<td>![Rain]</td>
<td>![Sun]</td>
<td>18”</td>
<td>18”</td>
<td>May - July</td>
</tr>
<tr>
<td>Columbia ticks <em>Coreopsis tinctoria v. atkinsoniana</em></td>
<td>![Rain]</td>
<td>![Sun]</td>
<td>2’</td>
<td>12”</td>
<td>May - July</td>
</tr>
<tr>
<td>Oregon sunshine <em>Eriophyllum lanatum</em></td>
<td>![Rain]</td>
<td>![Sun]</td>
<td>2’</td>
<td>18”</td>
<td>June - August</td>
</tr>
<tr>
<td>western alpine strawberry <em>Fragaria virginiana v. platypetala</em></td>
<td>![Rain]</td>
<td>![Sun]</td>
<td>6”</td>
<td>12”</td>
<td>April - July</td>
</tr>
<tr>
<td>Common Name</td>
<td>Scientific Name</td>
<td>Moisture Regime</td>
<td>Exposure</td>
<td>Height x Width</td>
<td>Width</td>
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<tr>
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</tr>
<tr>
<td>large-leaved avens</td>
<td>Geum macrophyllum</td>
<td>🌡️</td>
<td>☀️</td>
<td>2’</td>
<td>12”</td>
</tr>
<tr>
<td>bluehead gilia</td>
<td>Gilia capitata</td>
<td>🌡️</td>
<td>☀️</td>
<td>2’</td>
<td>18”</td>
</tr>
<tr>
<td>Puget Sound gumweed</td>
<td>Grindelia integrifolia</td>
<td>🌡️</td>
<td>☀️</td>
<td>2’</td>
<td>2’</td>
</tr>
<tr>
<td>common sneezeweed</td>
<td>Helium autumnale</td>
<td>🌡️</td>
<td>☀️</td>
<td>3’</td>
<td>3’</td>
</tr>
<tr>
<td>Pacific waterleaf</td>
<td>Hydrophyllum tenuipes</td>
<td>🌡️</td>
<td>☀️</td>
<td>2’</td>
<td>5’</td>
</tr>
<tr>
<td><strong>Common Name</strong></td>
<td><strong>Scientific Name</strong></td>
<td><strong>Moisture Regime</strong></td>
<td><strong>Exposure</strong></td>
<td><strong>Height x Width</strong></td>
<td><strong>Width</strong></td>
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</tr>
<tr>
<td>slender cinquefoil</td>
<td><em>Potentilla gracilis</em></td>
<td><img src="image1.png" alt="image" /></td>
<td><img src="image2.png" alt="image" /></td>
<td>2.5'</td>
<td>2'</td>
</tr>
<tr>
<td>western buttercup</td>
<td><em>Ranunculus occidentalis</em></td>
<td><img src="image1.png" alt="image" /></td>
<td><img src="image2.png" alt="image" /></td>
<td>18”</td>
<td>10”</td>
</tr>
<tr>
<td>rose checker-mallow</td>
<td><em>Sidalcea virgata</em></td>
<td><img src="image1.png" alt="image" /></td>
<td><img src="image2.png" alt="image" /></td>
<td>3.5'</td>
<td>12”</td>
</tr>
<tr>
<td>Hall's aster</td>
<td><em>Symphyotrichum hallii</em></td>
<td><img src="image1.png" alt="image" /></td>
<td><img src="image2.png" alt="image" /></td>
<td>3’</td>
<td>2’</td>
</tr>
<tr>
<td>fringecup</td>
<td><em>Tellima grandiflora</em></td>
<td><img src="image1.png" alt="image" /></td>
<td><img src="image2.png" alt="image" /></td>
<td>3’</td>
<td>12”</td>
</tr>
<tr>
<td>Common Name / Scientific Name</td>
<td>Moisture Regime</td>
<td>Exposure</td>
<td>Height x Width</td>
<td>Width</td>
<td>Time of Bloom</td>
</tr>
<tr>
<td>-------------------------------</td>
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<td>---------------</td>
</tr>
<tr>
<td>Piggyback plant <em>Tolmiea menziesii</em></td>
<td><img src="image" alt="moisture" /></td>
<td><img src="image" alt="sun" /></td>
<td>12”</td>
<td>12”</td>
<td>April - May</td>
</tr>
<tr>
<td>Oregon grape <em>Mahonia repens</em></td>
<td><img src="image" alt="moisture" /></td>
<td><img src="image" alt="sun" /></td>
<td>18”</td>
<td>3’</td>
<td>April - May</td>
</tr>
<tr>
<td>sword fern <em>Polystichum munitum</em></td>
<td><img src="image" alt="moisture" /></td>
<td><img src="image" alt="sun" /></td>
<td>3’</td>
<td>3’</td>
<td>N/A</td>
</tr>
<tr>
<td>snowberry <em>Symphoricarpos albus</em></td>
<td><img src="image" alt="moisture" /></td>
<td><img src="image" alt="sun" /></td>
<td>4’</td>
<td>4’</td>
<td>May - June</td>
</tr>
</tbody>
</table>

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: Mark Wilson
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
Native Plant Resources

- West Multnomah SWCD [www.wmswcd.org](http://www.wmswcd.org)
- East Multnomah SWCD [www.emswcd.org](http://www.emswcd.org)
- The Oregon Flora Project [www.oregonflora.org](http://www.oregonflora.org)
- King County Native Plant Guide [https://green2.kingcounty.gov/gonative/index.aspx](https://green2.kingcounty.gov/gonative/index.aspx)
Native Planting Resources

- Native Plant Nurseries [www.plantnative.org/nd_or.htm](http://www.plantnative.org/nd_or.htm)
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!

Mary Logalbo, Urban Conservationist

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