Fanno Creek Enhancement Project
2001-2005

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Project Overview

• Location
• Land Ownership - BES
• Schedule
  – Design & Construction
• Budget
• Monitoring
Fanno Creek Watershed

Project Area
Project Reach

Construction Summary

September – October 2001
750 lineal feet of stream

$179,000 Contractor
$20,000 PDOT Surveyors
$40,000 In-Stream Specialist
$239,000

/design and land acquisition costs not include/
Background

• 1988 – Phosphorus TMDL established for Tualatin River
• 1990 – BES established Water Quality Management Plan
  – Recommended control measures to meet TMDLs
• 1994 – Natural resource/channel assessment conducted
  – Section of Fanno identified as one of the problem areas
• 1998 – Fanno Creek Resource Management Plan developed
  – Projects recommended to reduce runoff and phosphorus
    loading in uplands, repair eroding banks, restore riparian
    function, and enhance habitat quality

Project Background

• 1998 – Pre-design
• 2000 – Design
• Sept – Oct 2001 – Construction
• Monitoring 2001 – Current
Project Objectives

- Water quality Improvement
- Streambank stabilization
- Habitat enhancement

Project Assessment

- Channel stability improved, source of TSS arrested as erosion processes slowed
- Widening channel increased flood storage but may increase temps at shallow depths
- Vegetative canopy growth limited by compacted soils, impacting expected shading ability
- Unanticipated scour causing anchored logs to move in channel
- Beaver activity influencing project performance
- Overall, met expectations and is a success
Lessons Learned

• Better to work on a longer reach
• Evaluate effect of design method on other objectives/priorities
• Complete construction well before the close of in-water work window
• Monitor and correct problems
• Apply lesson to other projects
Channel Design

1996  100-year event
1997  25-year event

Design Challenges - 1

Overbank flows (Flood Stage)
Flood storage (Trees)
Design Challenges - 2

Channel incision
Bank stability
Channel migration

Design Challenges - 3

Cover
Pool-riffle habitat
Gravel replenishment
Design Elements - 1

Grade control riffles placed in natural pool-riffle sequences

Design Elements - 2

Bioengineered banks that are stable upon construction yet allow gradual lateral channel migration
Riffles and banks that armor naturally while slowly releasing spawning gravels to replenish the stream.

Before

After
What’s happened since?

<table>
<thead>
<tr>
<th>Year</th>
<th>Flow Duration</th>
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</thead>
<tbody>
<tr>
<td>2002</td>
<td>5 year</td>
</tr>
<tr>
<td>2003</td>
<td>2 year</td>
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</tbody>
</table>

Beavers

2000

2005
February 2003
After 2 & 5 year events

2005
2002 ... later
Revegetation
## Final Allocation

### Site: Fanno Powerhouse

**Site #**: 1345  
**Acres**: 2.5  
**Sale?**: No  
**Year**: 2002  
**Month**: February

### Planting

<table>
<thead>
<tr>
<th>Tree Species</th>
<th>Nursery</th>
<th>Seed Zone</th>
<th>Elev</th>
<th>Stock Type</th>
<th>Total #</th>
<th>+/</th>
<th>Rev'd #</th>
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</thead>
<tbody>
<tr>
<td>Abies grandis</td>
<td>Willamette Seedling</td>
<td>251</td>
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<td>350</td>
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<td>355</td>
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<td>Crataegus oxo</td>
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<td>Malus fusca</td>
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<td>Populus balsamifera</td>
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<td>100</td>
<td>50</td>
<td>150</td>
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<tr>
<td>Rhododendron</td>
<td>Mineral Springs</td>
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<td>1-0</td>
<td>50</td>
<td>50</td>
<td>100</td>
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<tr>
<td>Sambucus racemosa</td>
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<td>200</td>
<td>600</td>
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**Tree Total**: 2655

<table>
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<th>Shrub Species</th>
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<th>Seed Zone</th>
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<th>+/</th>
<th>Rev'd #</th>
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<tbody>
<tr>
<td>Cornus sericea</td>
<td>Hansen</td>
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<td>Physocarpus capitatus</td>
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<td>Rosa gymnocarpa</td>
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<tr>
<td>Spiraea douglasii</td>
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</table>

**Shrub Total**: 1297

### Cutting Species

<table>
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<th>Site Collected</th>
<th>Total #</th>
<th>+/</th>
<th>Rev'd #</th>
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</thead>
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<td>Cornus sericea</td>
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<td>2400</td>
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<td>Physocarpus</td>
<td>Hwy 6</td>
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<td>900</td>
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<td>Salix lasiandra</td>
<td>Ramsey</td>
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**Cuts Total**: 6450

### Materials

<table>
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<th>+/</th>
<th>Rev'd</th>
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