



STEWARDSHIP & RIPARIAN RESTORATION

Watershed Basics

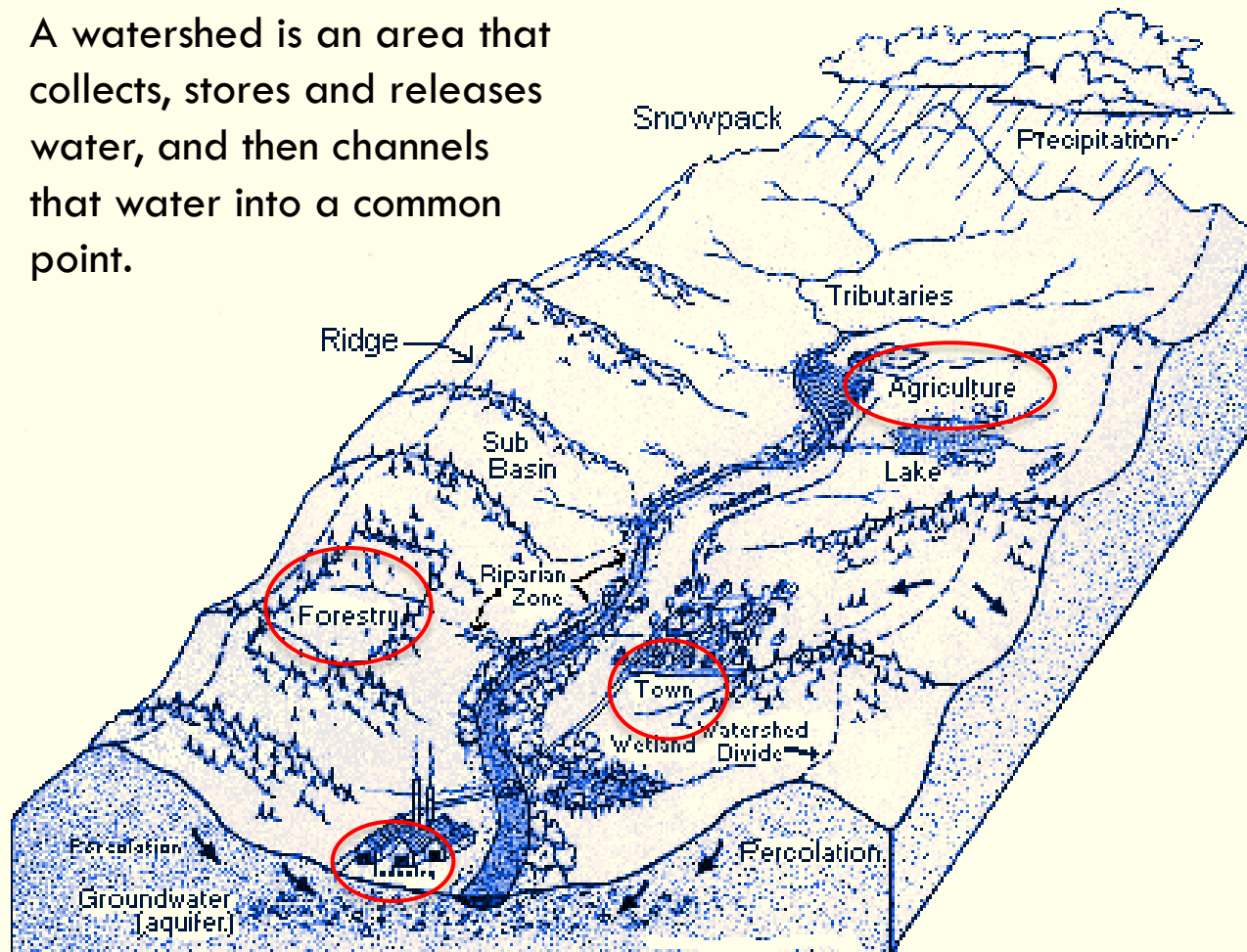
Overview

- What is a Watershed?
- Willamette Basin: Past & Present
- Stewardship
- Riparian Restoration



What is a Watershed?

A watershed is an area that collects, stores and releases water, and then channels that water into a common point.



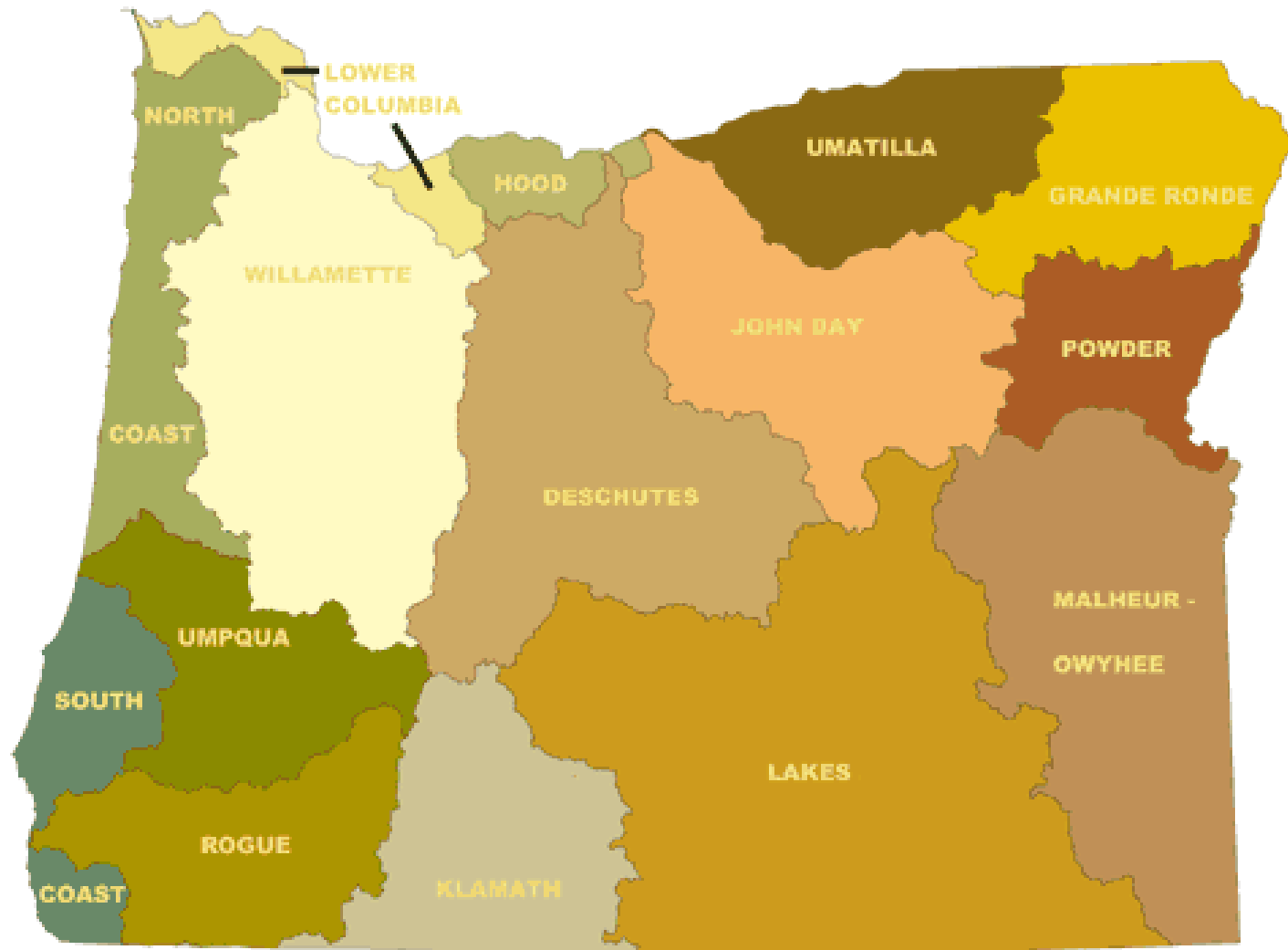
Produced by Lane Council of Government

Why is it important to understand the watershed?

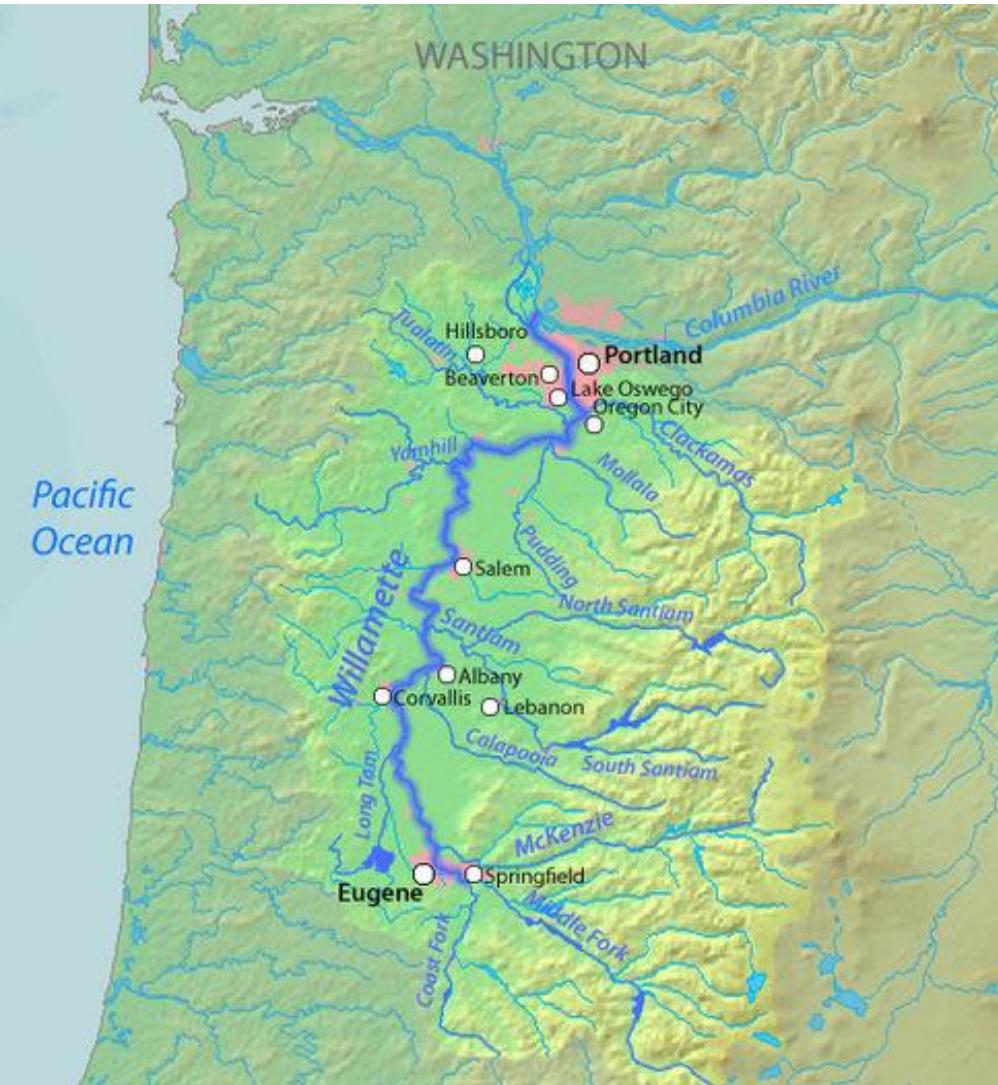
How do various land uses impact the watershed?

Why is the river that the watershed drains to a “report card” for the watershed?

Watersheds in Oregon



The Willamette Basin



Willamette Basin represents **12%** of Oregon's land area, but **70%** of Oregon's population



How can we find a balance between accommodating a growing population and protecting the environment?

What Does a Healthy **Riparian** Corridor Look Like?

6



- Supports Wildlife
 - ▣ Can connect wildlife corridors
 - ▣ Biodiversity
- Provides Shade
- Soil stabilization
- Toxin and sediment filtration from runoff
- Large Woody Debris
- Riparian Vegetation helps absorb energy during flood events.

Healthy Urban Streams

Contained urban development (A)



Tall native vegetation (D)



Curves (B)

Undisturbed side channels (C)

Stream complexities (E)

The Nature of Waterways



- Waterways are naturally dynamic
- Movement from flooding events constantly forms new habitats
- Waterways maintain dynamic equilibrium by adapting to change to maintain balance
- What happens if change is imposed on a waterway too quickly or too drastically?

Urban Streams Today - Impacts



Unhealthy Streams

Diverted off the road (A)



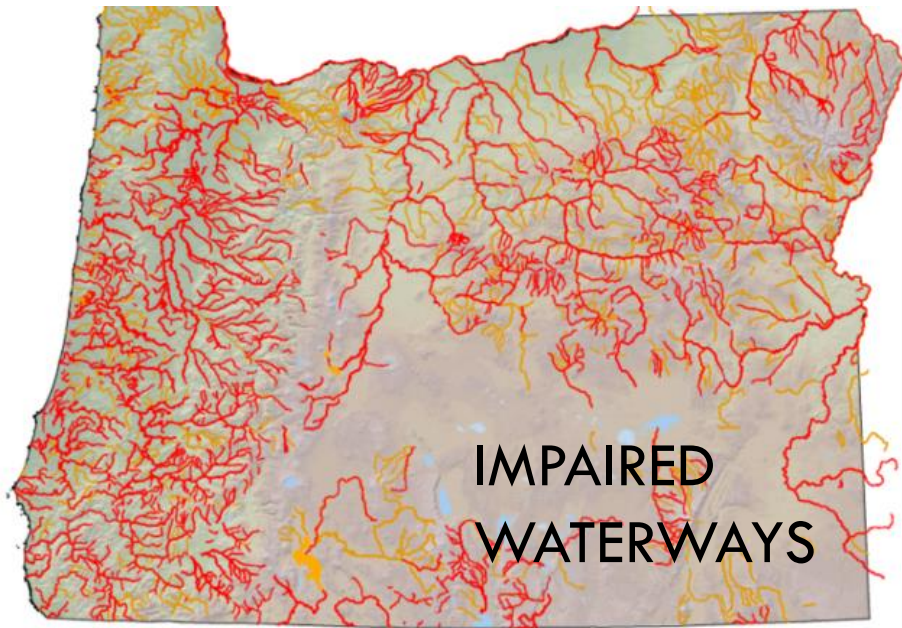
Eroded banks (C)



No stream complexity (D)

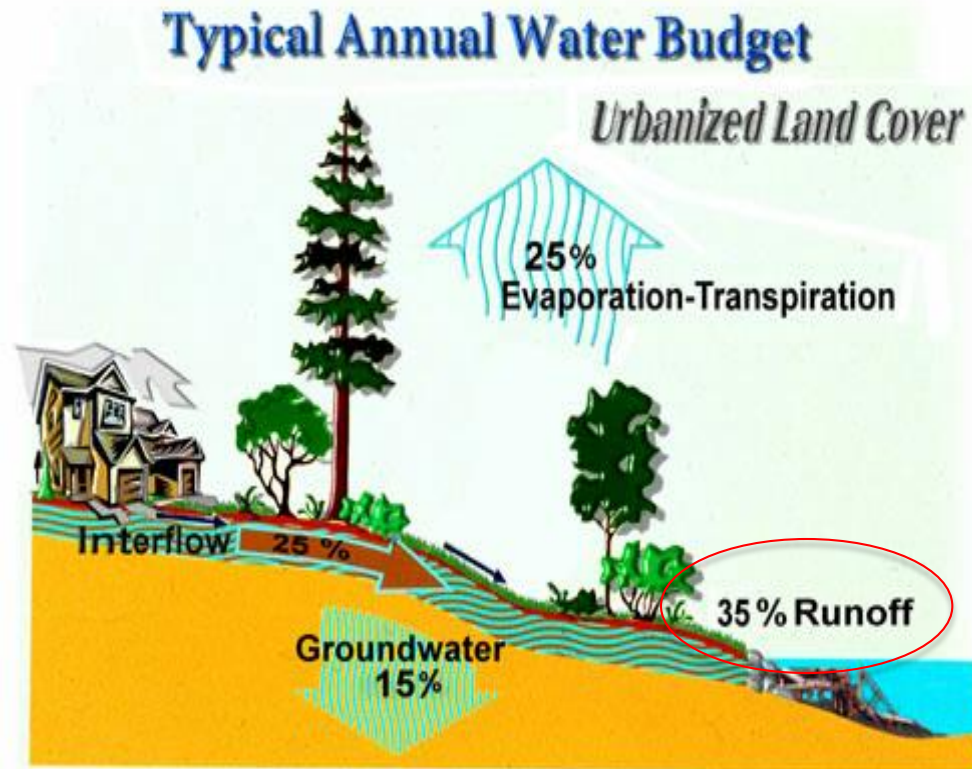
No native vegetation or tree cover (B)

Urban Streams Today - Results



2004/2006 Water Quality Limited Waters

Significant Pollutant:
Temperature!



Where Do We Go From Here?

The population of the Willamette Basin is estimated to be **4 million by the year 2050**

A complete halting of development is neither feasible nor realistic

Instead we can more fully take on our role as **citizens with rights and responsibilities**. We have the power to care for this place and **protect it for ourselves, our neighbors and our future generations**.

“We need a ‘democratic approach to land management...’ one in which those who live on, work on, and know the land, assume as much responsibility for the implementing of conservation personally.” (Aldo Leopold)

Stewardship

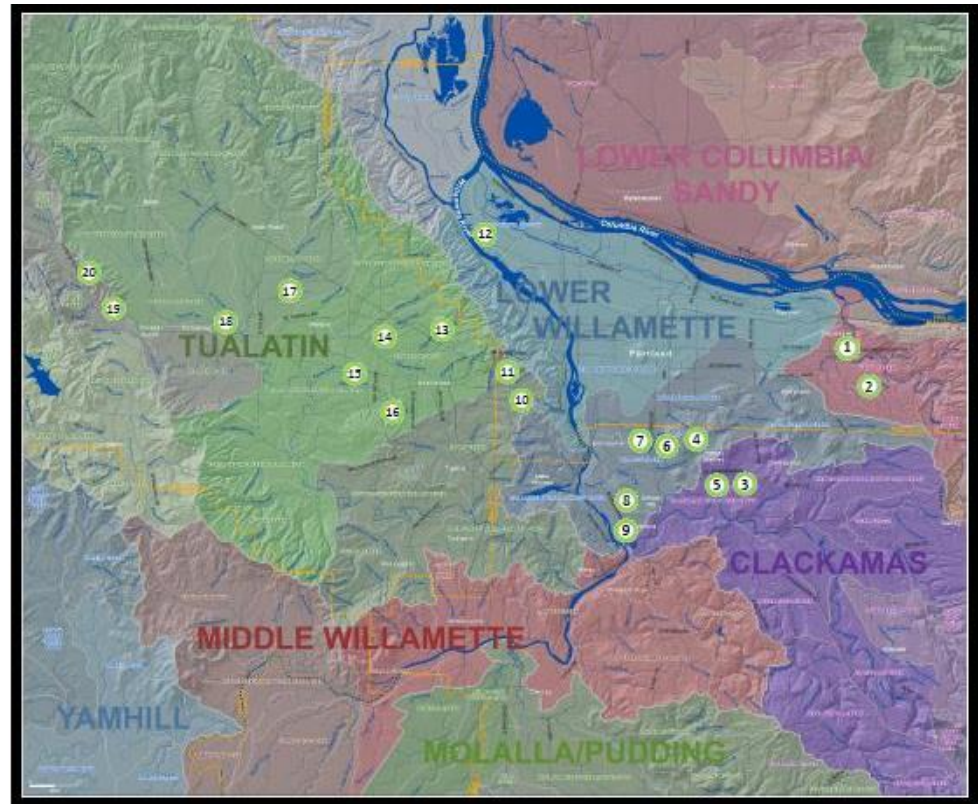
- The responsibility of every person to care for this place is fulfilled by **volunteering**
- Volunteering gives people a way to **become a part of the environment, to become invested in it, to know the positive impact they can have on it and to take pride in it**



<https://www.youtube.com/watch?v=vMalfLsfOc&feature=youtu.be>

Riparian Restoration

- Restoration sites adopted for five years – **Invasive removal, Native planting, Maintenance and Monitoring**
- Focus on education, outreach, partnerships, community ownership to **foster sense of stewardship**
- Projects and people involved are meant to be **sustained**



Dig In

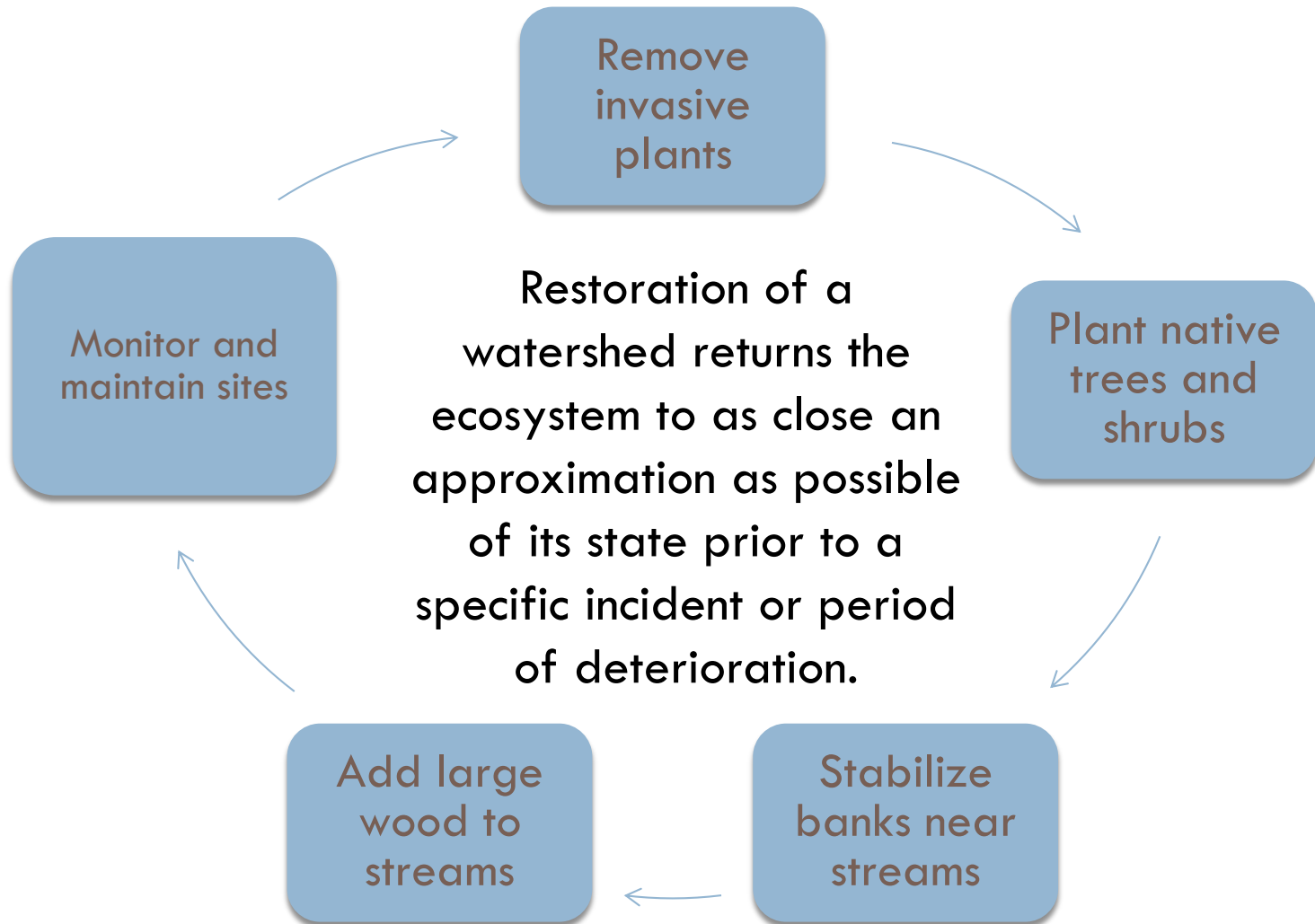
- Science classes adopt a restoration site near their school
- Students learn about restoration work and become stewards for their stream
- 15 schools participate throughout the Portland metro area



Our Site- Dahl Beach



Watershed Restoration



Invasive Removal

- An invasive species is a species not native to this area, that has no natural predators and negatively impacts the ecosystem.
- We remove invasive species **root-by-root**, in order to get our own hands dirty and to limit our use of herbicides and other chemical sprays



Native Planting

- Native trees and shrubs have natural predators that prevent them from creating a monoculture, and they provide many benefits to the environment and its wildlife



Bank Stabilization (Bioengineering)

- Bioengineering uses natural plant materials to engineer or stabilize erosion.



Maintenance/Monitoring

- There are a number of maintenance techniques we can use to **encourage survival and growth of our native trees and shrubs** and to **discourage the return of invasive species**
- We can monitor the vegetation, water quality and wildlife around a site in order to assess how restoration is progressing



Dahl Beach- 2014



Dahl Beach- end of 2015



Dahl Beach- Now





Thank you!