



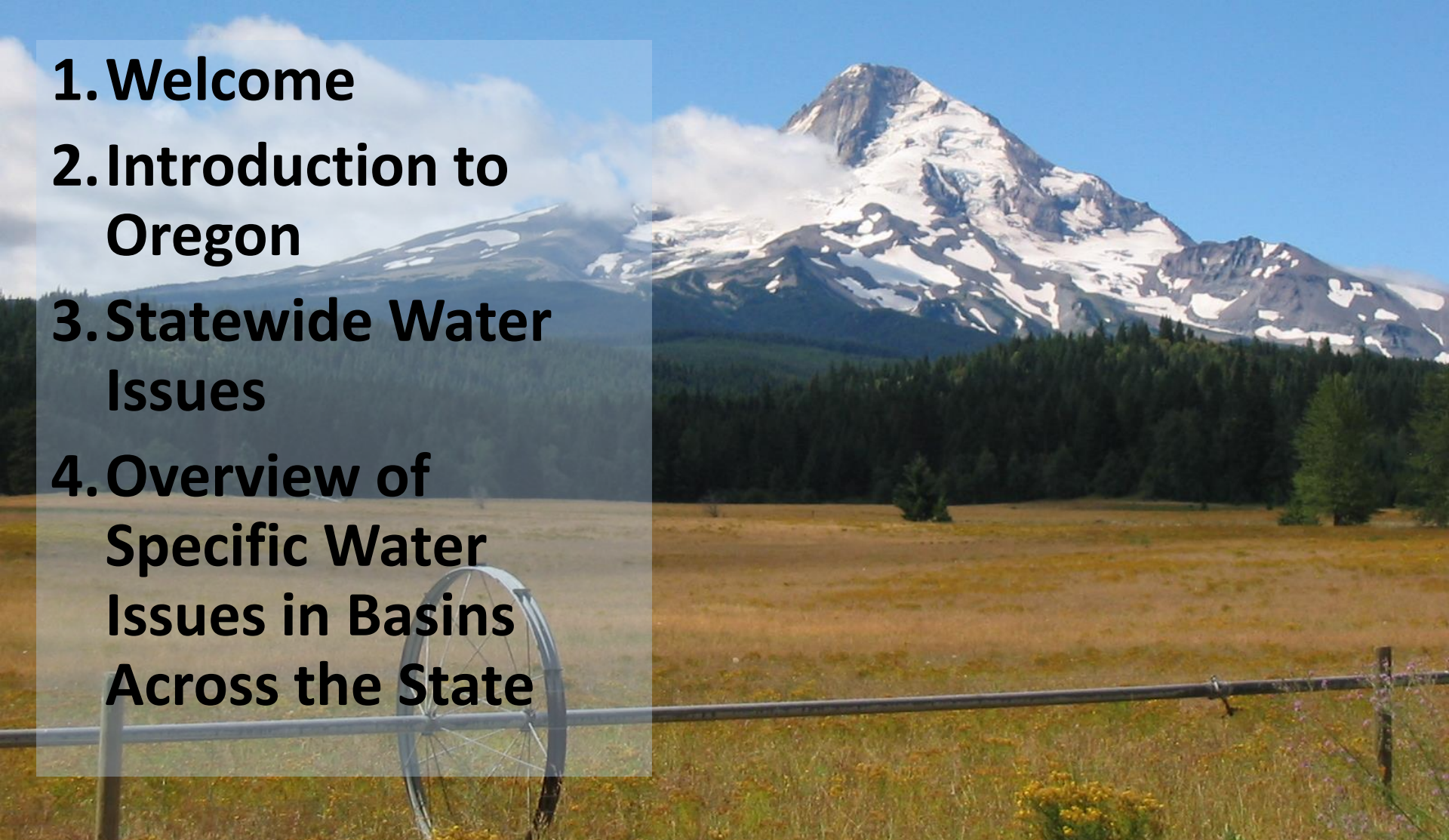
Water Management in Oregon



Western States Water Council - August 2018 Meeting

Agenda

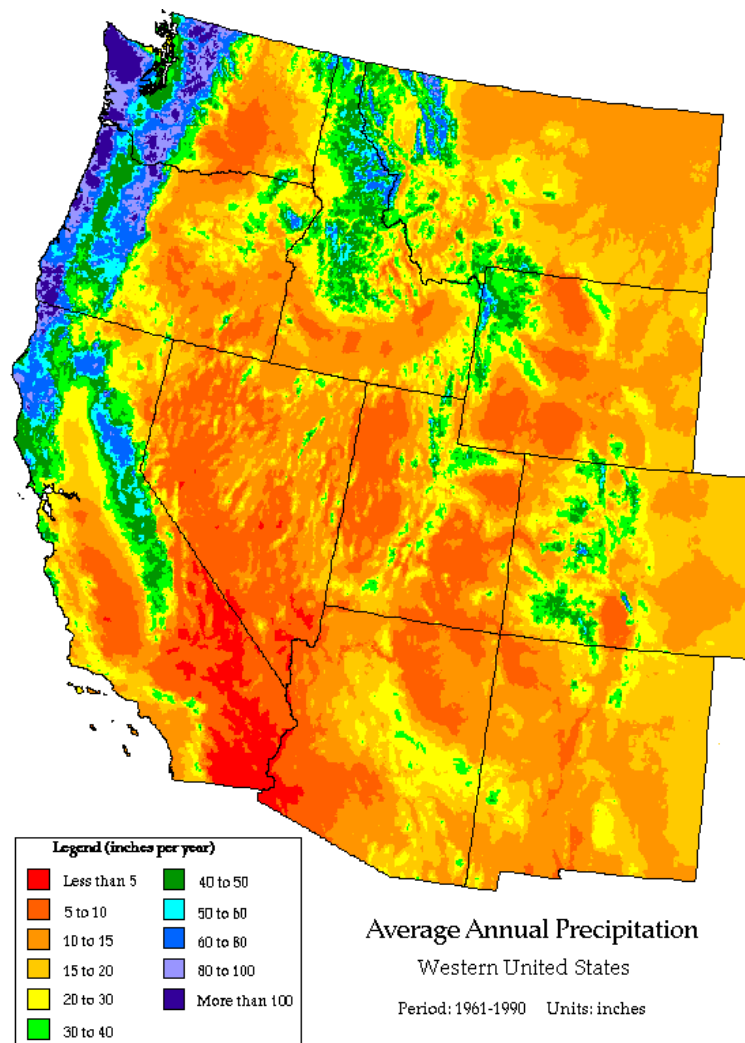
- 1. Welcome**
- 2. Introduction to Oregon**
- 3. Statewide Water Issues**
- 4. Overview of Specific Water Issues in Basins Across the State**



Introduction to Oregon



Oregon is not just a wet state!



Diverse Growing Regions



Top Crops



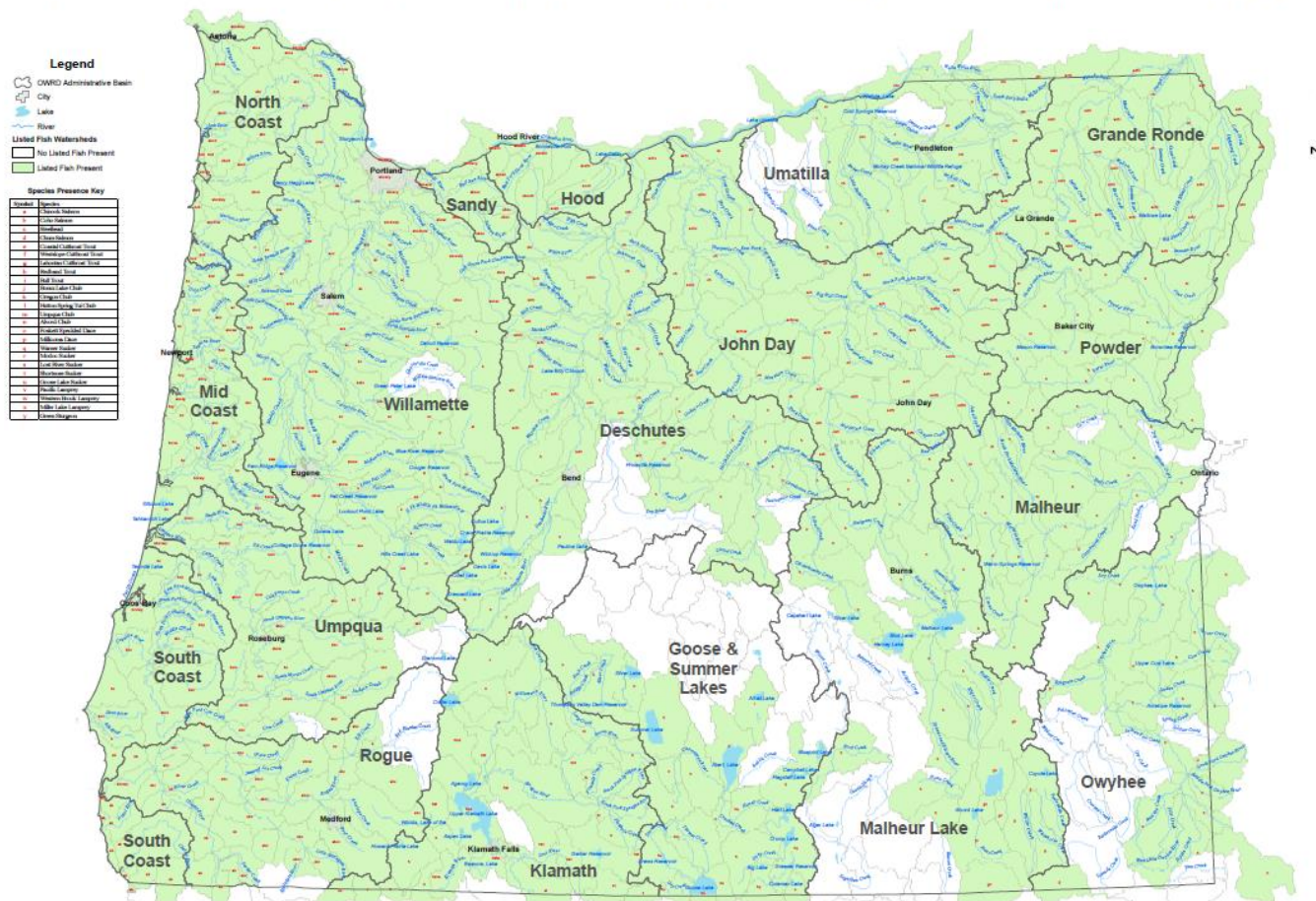
- 11. Hazelnuts
- 12. Blueberries
- 13. Christmas trees

- 14. Cherries
- 15. Hops



Sensitive, Threatened and Endangered Species

Federal or State Listed Sensitive, Threatened or Endangered Fish Species in Oregon



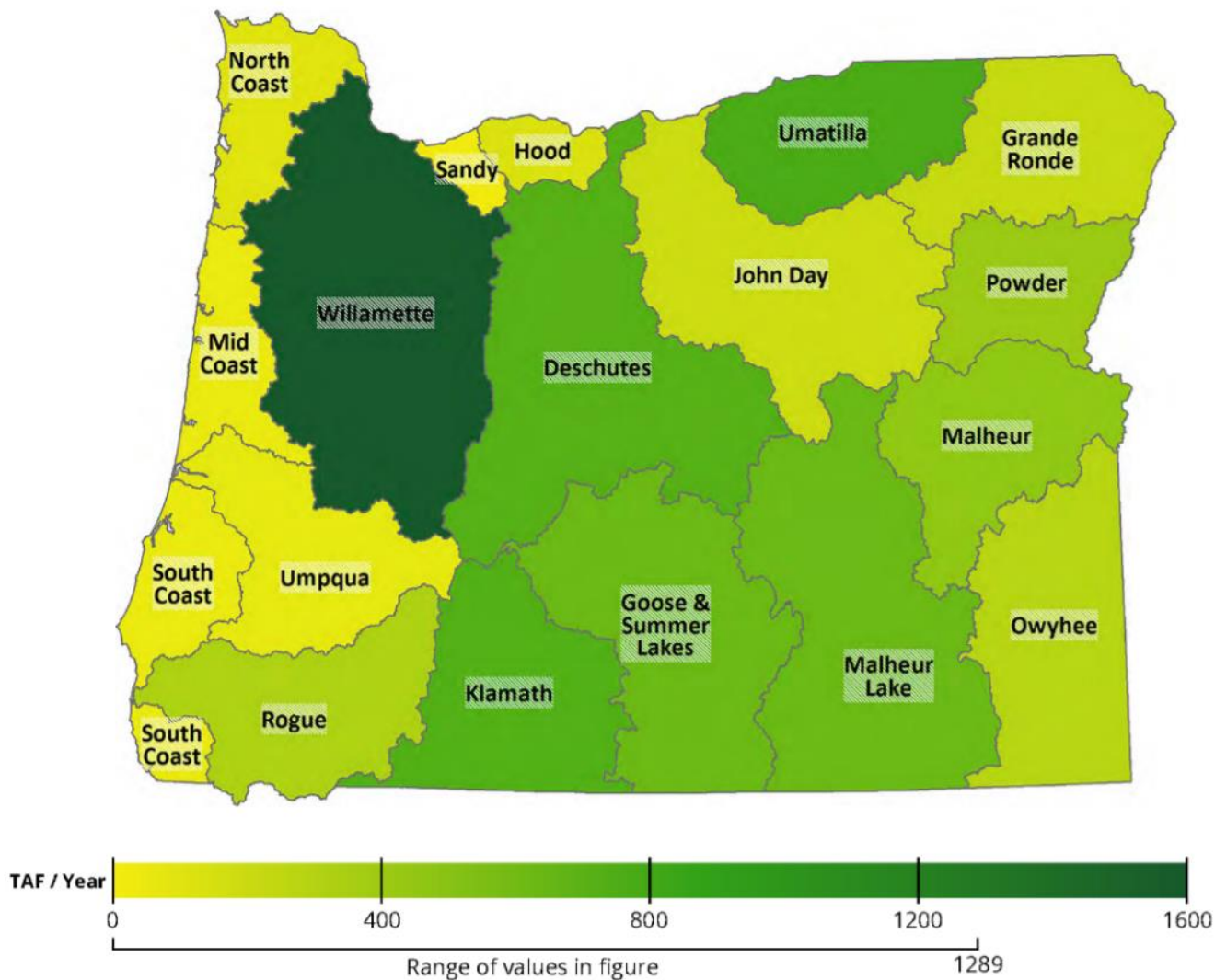
This map is intended to provide information to the public regarding the presence of sensitive, threatened, or endangered fish species in Oregon. It is not intended to provide a comprehensive list of all species or to provide a detailed description of the species or their habitat. The map is based on the best available information and is subject to change as more information becomes available.

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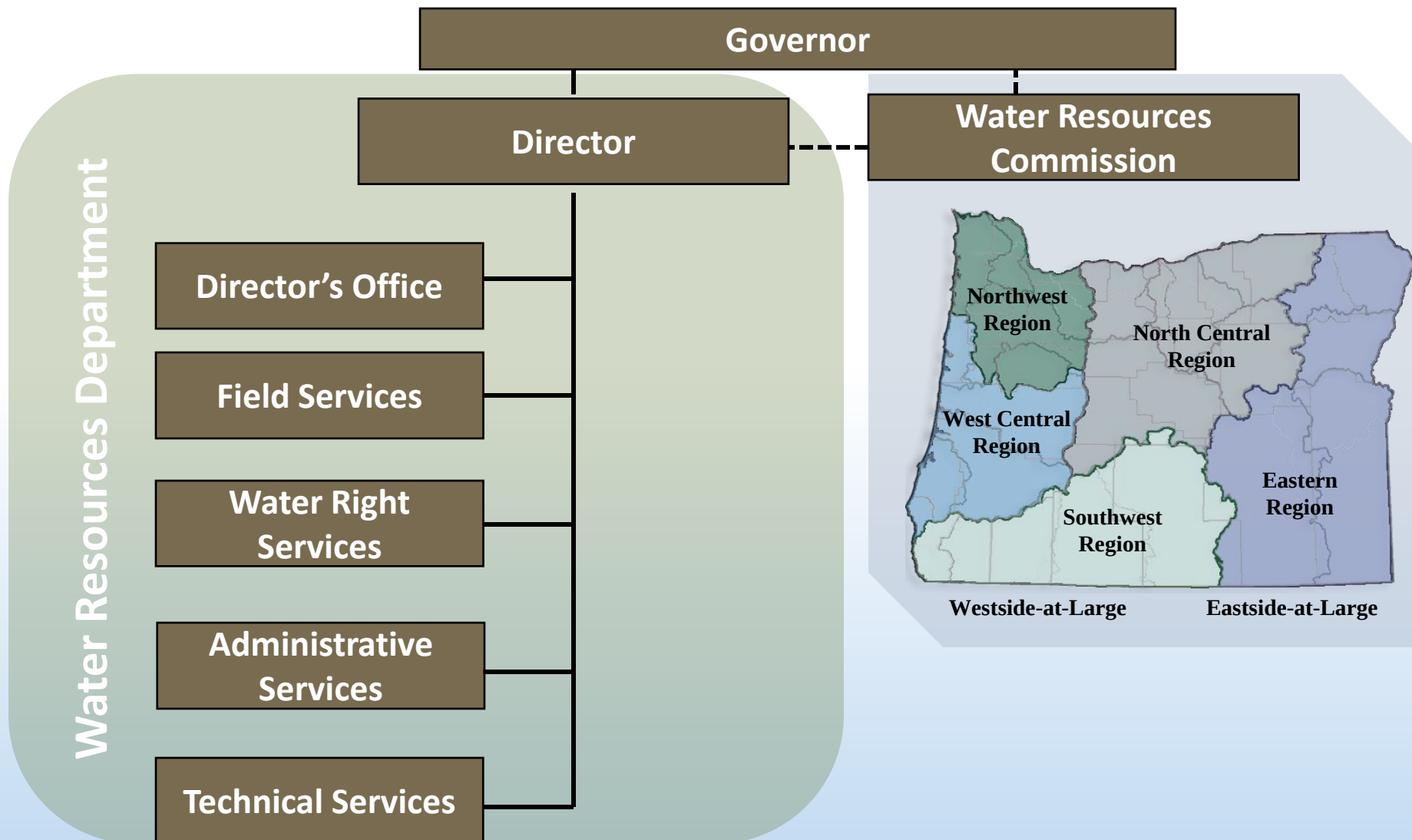
0 10 20 40 60 80 Miles



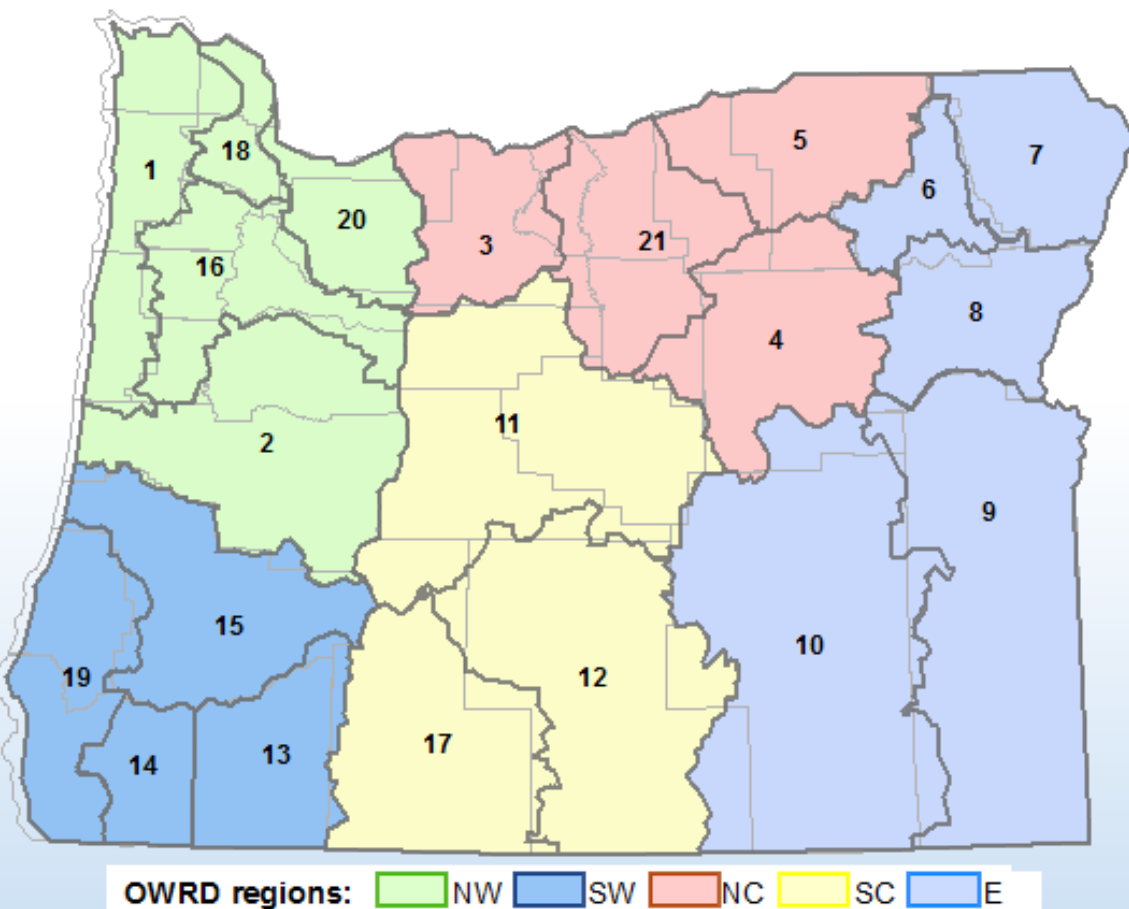
2015 Water Diversion Demand



Commission and Department



Watermaster Districts



NOTICE of REGULATION of WATER USE

NOTICE IS HEREBY GIVEN to the responsible party, that I have regulated and posted this WATER USE CONTROL on _____, 20____, at _____ hrs., and the same is under my control. This order is posted according to ORS 540.045 and is legal notice to anyone interested in the diversion or use of water from _____. You may not lawfully change or interfere with this water use control. A violation of this regulation is punishable by a fine and/or imprisonment. This order expires on _____ at _____ hrs., unless otherwise notified by the Watermaster.

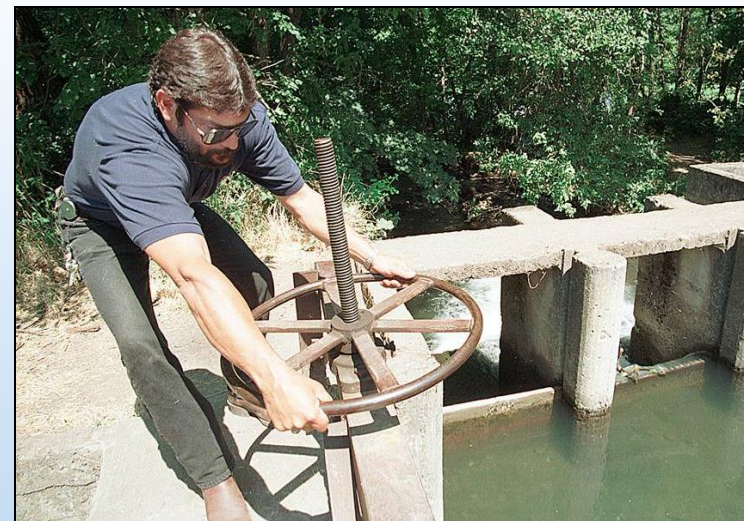
REASON FOR REGULATION

- ☐ Use of water without a valid water right.
- ☐ Violation of permit condition.
- ☐ Violation of ORS 540.310 and 540.320 (headgate/measuring device).
- ☐ Water supply insufficient to satisfy senior rights.
- ☐ Other _____



WATERMASTER, DISTRICT NO. _____ Phone: (____) _____

This is a FINAL ORDER in other than a contested case, subject to judicial review under ORS 183.484. Any petition for judicial review of the order must be filed within the time specified by ORS 183.484(2). Pursuant to ORS 536.075 and OAR 137-004-0080 you may either petition for judicial review or petition the Director for reconsideration of this order. A petition for reconsideration may be granted or denied by the Director, and if no action is taken within 60 days following the date the petition was filed, the petition shall be deemed denied.



Statewide Issues



Statewide Issues



- **Limited Surface Water and Groundwater Supplies**
- **Droughts and Climate Change**
- **Limited Staff Resources to Address Complex Issues**

Challenge: Surface Water for New Projects

Water availability for live flow allocation in August



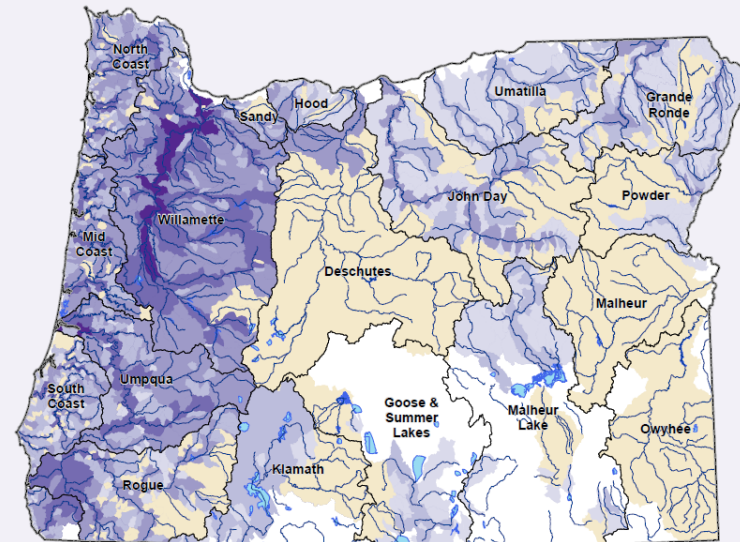
**August Available Streamflow
Calculated at 80% Exceedance**

OWRD Hydrographic Unit, 10/2013, Project: Oregon Land Use
This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or planning purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

Surface Water Bodies
Lakes
Streams
Administrative Boundaries
OWRD Basins

Available Streamflow (CFS)
No Data
No Water Available
0.1 - 10
10.1 - 100
100.1 - 1000
1000.1 - 10000
>10000

Water availability for storage in January



**January Available Streamflow
Calculated at 50% Exceedance**

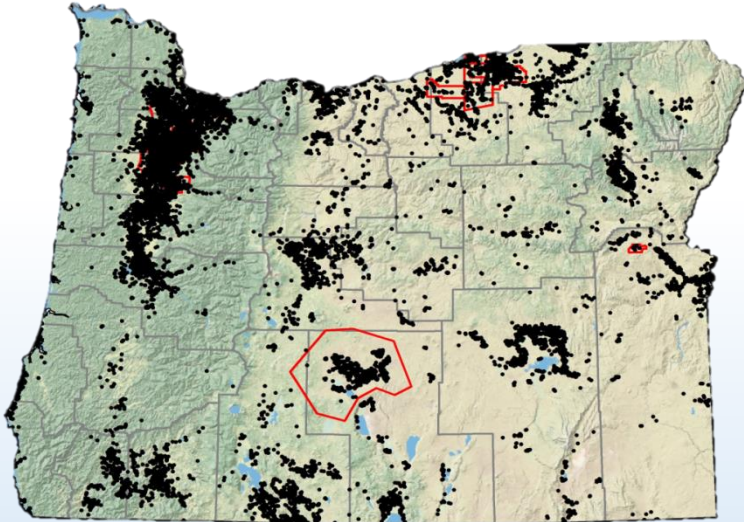
OWRD Hydrographic Unit, 10/2013, Project: Oregon Land Use
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Surface Water Bodies
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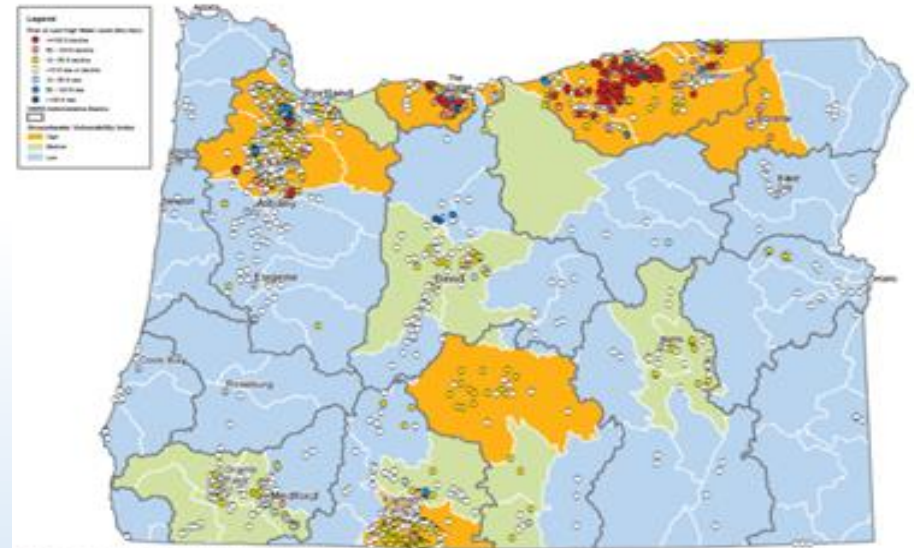
Available Streamflow (CFS)
No Data
No Water Available
0.1 - 10
10.1 - 100
100.1 - 1000
1000.1 - 10000
>10000

Challenge: Status of Groundwater

Groundwater Permitted Water Right Wells



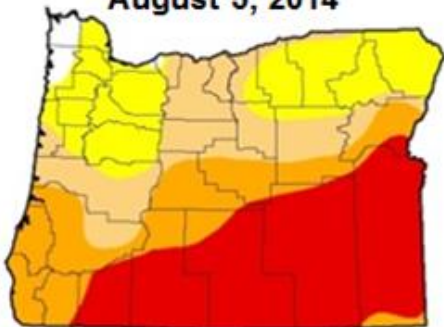
Groundwater Areas of Concern



Challenge: Droughts

July 26, 2018

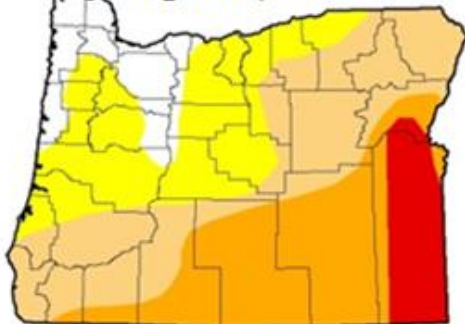
August 5, 2014



August 9, 2016



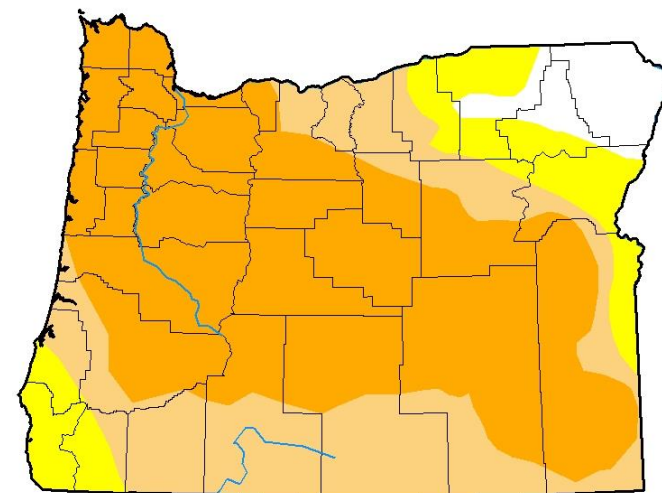
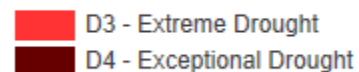
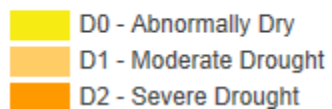
August 6, 2013



August 25, 2015

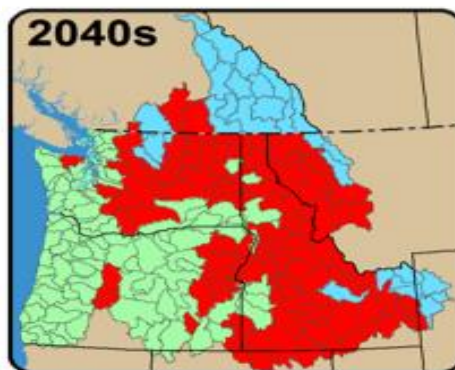
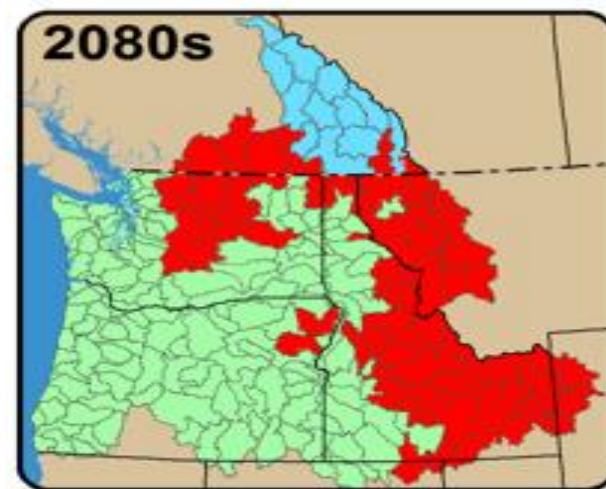
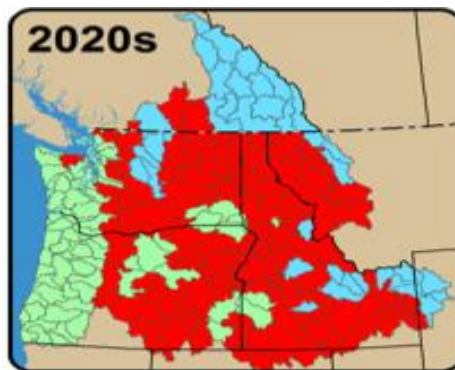
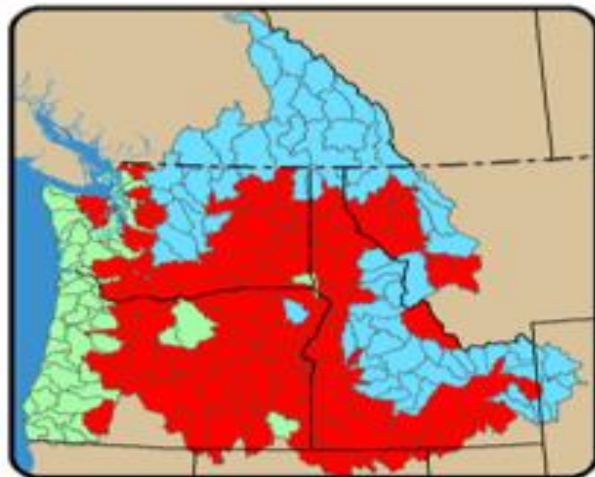


Intensity:



Challenge: Climate and Loss of Snowpack

Historical



Ratio of Peak Snow Water Equivalent to October to March Precipitation



Hamlet et al. 2013, as cited in Dalton, M.M., P.W. Mote, and A.K. Snover [Eds.]. 2013. *Climate Change in the Northwest: Implications for Our Landscapes, Waters, and Communities*. Washington, DC: Island Press.

Challenges: Resources

Limited Budget and Increased Workloads

- More work than can be accomplished
- Creative solutions
- Increased complexity
- Need for more data
- Increased litigation
- Statewide: Cost containment / Revenue



Strategies: 2017 IWRS

Oregon's 2017 Integrated Water Resources Strategy

A framework for improving our understanding of Oregon's water resources and meeting our instream and out-of-stream needs, including water quantity, water quality, and ecosystem needs



(1) Understand Water Resources Today

Further Understand Limited Water Supplies & Systems
(groundwater, surface water, and their interaction)

Improve Water Quality &
Quantity Information

Further Understand Our
Water Management Institutions

Understanding Water Resources / Supplies / Institutions

- 1.A Conduct additional groundwater investigations
- 1.B Improve water resource data collection & monitoring
- 1.C Coordinate inter-agency data collection, processing, and use in decision-making

← OBJECTIVES →

← CRITICAL
ISSUES →

← RECOMMENDED
ACTIONS →

(2) Understand Instream and Out-of-Stream Needs

Further Define Out-of-Stream Needs / Demands
(i.e., diverted water)

Further Define Instream Needs / Demands
(i.e., left-in-place water)

Understanding Oregon's Out-of-Stream Needs/Demands

- 2.A Regularly update long-term water demand forecasts
- 2.B Improve water-use measurement & reporting
- 2.C Determine adjudicated water right claims
- 2.D Authorize the update of water right records with contact information
- 2.E Regularly update Oregon's water-related permitting guide

Understanding Oregon's Instream Needs/Demands

- 3.A Determine flows needed (quality & quantity) to support instream needs
- 3.B Determine needs of groundwater dependent ecosystems

(3) Understand the Coming Pressures That Affect Our Needs and Supplies

Economic Development

Water & Energy

Climate Change

Extreme Events

Population Growth

Water & Land Use

Water-Related Infrastructure

Education & Outreach

Water & Energy

- 4.A Analyze the effects on water from energy development projects & policies
- 4.B Take advantage of existing infrastructure to develop non-traditional hydroelectric power
- 4.C Promote strategies that increase/integrate energy & water savings

Climate Change

- 5.A Support continued basin-scale climate change research efforts
- 5.B Assist with climate change adaptation & resiliency strategies

Extreme Events

- 5.5A Plan and prepare for drought resiliency
- 5.5B Plan and prepare for flood events
- 5.5C Plan and prepare for a Cascadia subduction earthquake event

Economic Development & Population Growth
(See Actions 2A and 3A)

Water & Land Use

- 6.A Improve integration of water information into land use planning (and vice versa)
- 6.B Improve state agency coordination
- 6.C Encourage low-impact development practices and green infrastructure

Water-Related Infrastructure

- 7.A Develop and upgrade water and wastewater infrastructure
- 7.B Encourage regional (sub-basin) approaches to water and wastewater systems
- 7.C Ensure public safety/dam safety

Education and Outreach

- 8.A Support Oregon's K-12 environmental literacy plan
- 8.B Provide education and training for Oregon's next generation of water experts
- 8.C Promote community education and training opportunities
- 8.D Identify ongoing water-related research needs

← OBJECTIVES →

← CRITICAL
ISSUES →

← RECOMMENDED
ACTIONS →

(4) Meet Oregon's Instream and Out-of-Stream Needs

Place-Based Efforts

Water Management & Development

Healthy Ecosystems

Public Health

Funding

Place-Based Efforts

- 9.A Continue to undertake place-based integrated, water resources planning
- 9.B Coordinate implementation of existing natural resource plans
- 9.C Partner with federal agencies, tribes, and neighboring states in long-term water resources management

Water Management & Development

- 10.A Improve water-use efficiency and water conservation
- 10.B Improve access to built storage
- 10.C Encourage additional water reuse projects
- 10.D Reach environmental outcomes with non-regulatory alternatives
- 10.E Continue the water resources development program
- 10.F Provide an adequate presence in the field
- 10.G Strengthen water quantity & water quality permitting programs

Healthy Ecosystems

- 11.A Improve watershed health, resiliency, and capacity for natural storage
- 11.B Develop additional instream protections
- 11.C Prevent and eradicate invasive species
- 11.D Protect and restore instream habitat and habitat access for fish and wildlife
- 11.E Develop additional groundwater protections

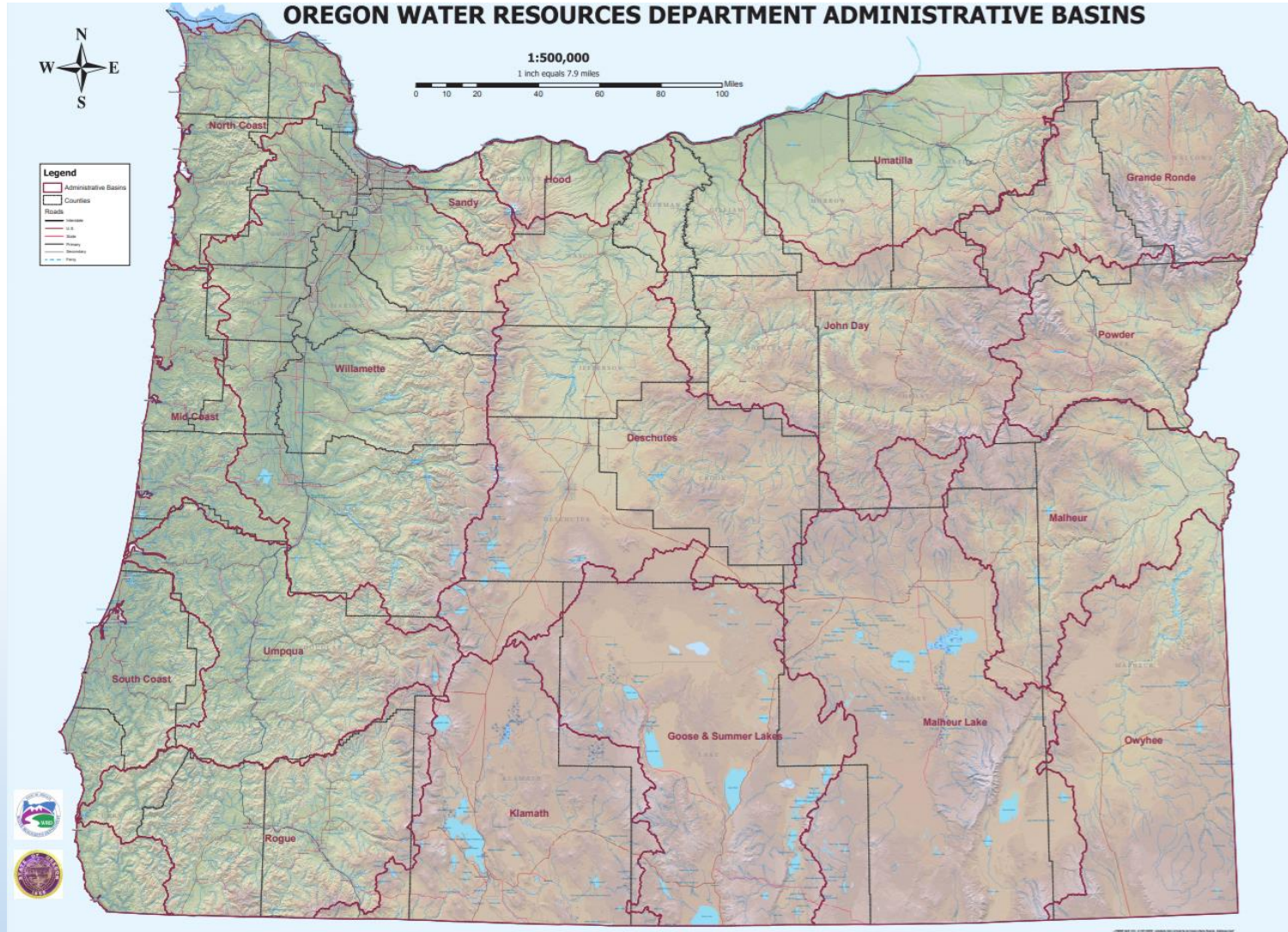
Public Health

- 12.A Ensure the safety of Oregon's drinking water
- 12.B Reduce the use of and exposure to toxics and other pollutants
- 12.C Implement water quality pollution control plans

Funding

- 13.A Fund development and implementation of Oregon's IWRS
- 13.B Fund water resources management activities at state agencies
- 13.C Invest in local or regional water planning efforts
- 13.D Invest in feasibility studies for water resources projects
- 13.E Invest in implementation of water resources projects

Basin Specific Issues and Strategies

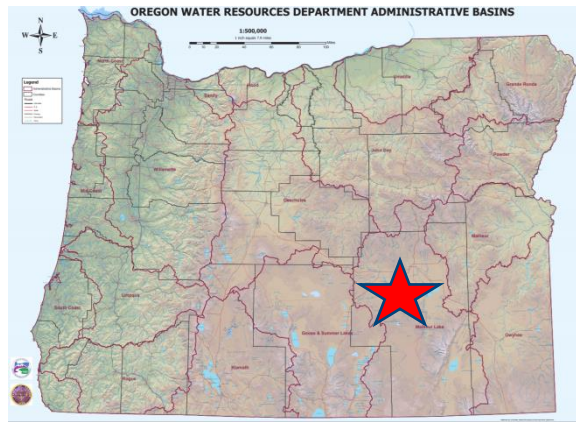




Willamette Basin

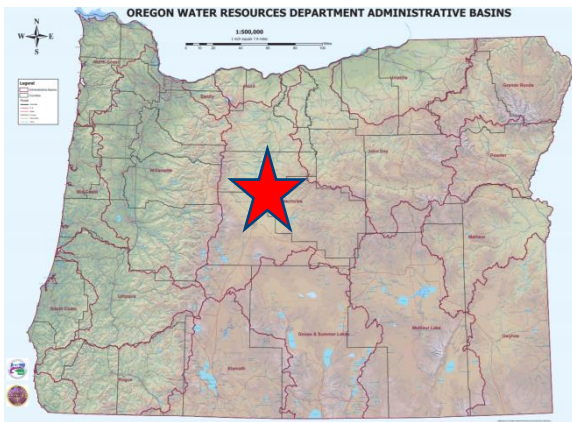


Malheur Lake Basin – Harney Groundwater





Deschutes Basin



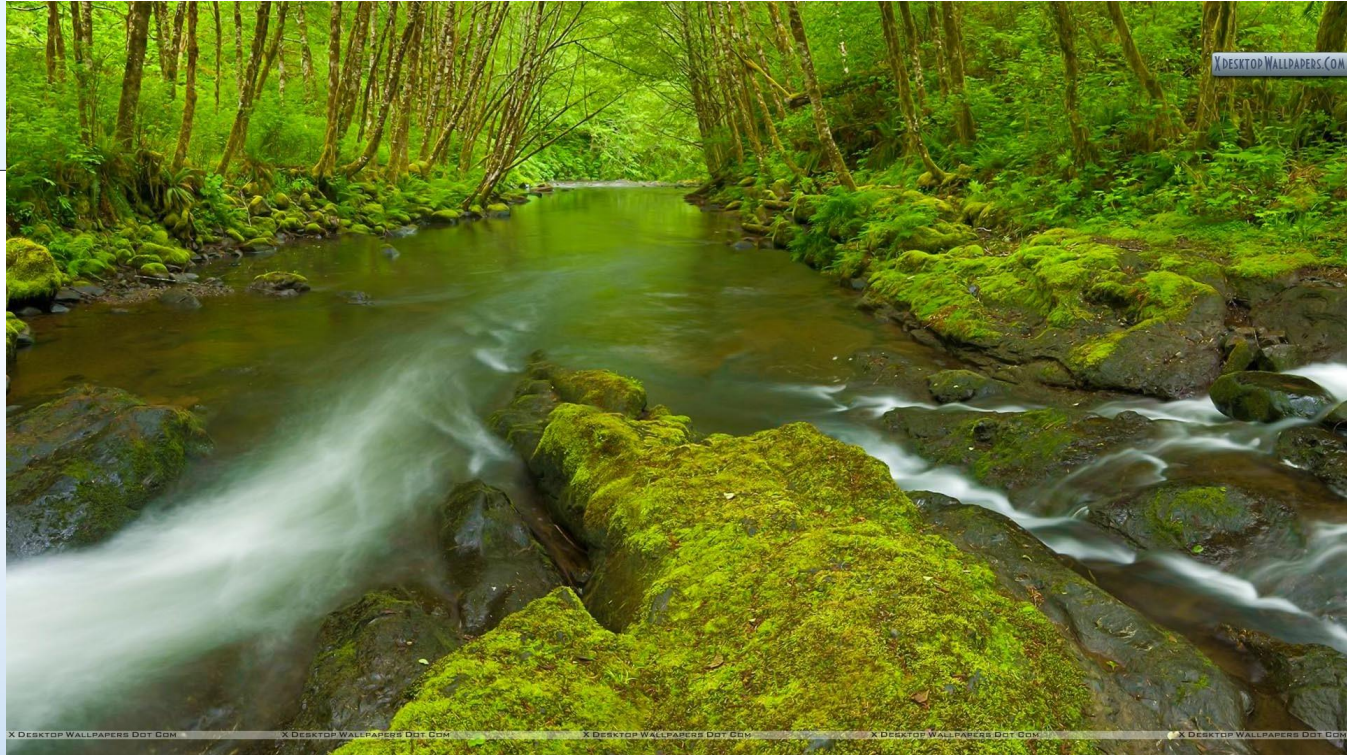
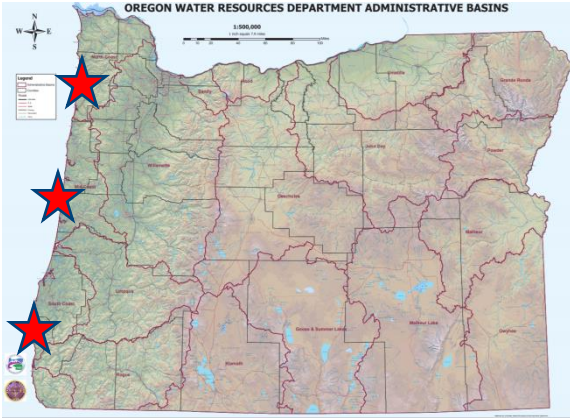


Klamath Basin





Oregon Coast



Questions?

