Oregon Water Resources Monitoring Strategy

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Overview

- **Reasons for Development**
- **Monitoring Priorities**
- **Recommended Monitoring Actions**
- **Implementing the Monitoring Strategy**

Reasons for Development

- **Key Performance Measures (KPMs)**
- **Efficient and effective use of resources**
- **Interagency Coordination**
  - Federal, States, Tribes, Local groups
  - STREAM Team – Interactive Monitoring Strategies
- **Integrated Water Resources Strategy**
  - 2012 – Recommended Actions 1b and 1c
  - 2017 – Coming Pressures (Monitoring Priorities)

Monitoring Priorities

- **Climate Change**
- **Extreme Events**
- **Groundwater**
- **Water Management**
- **Instream Needs**
- **Water Supply**
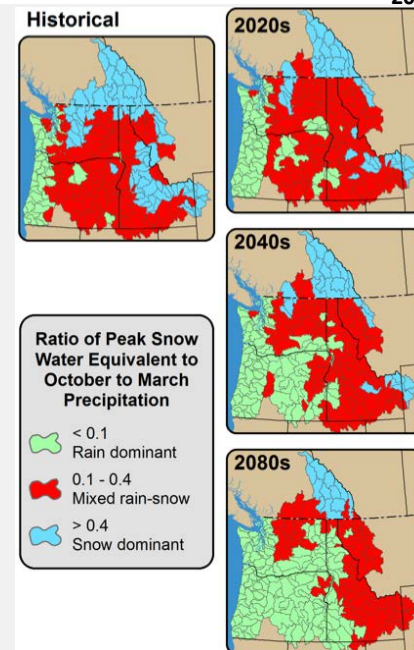- **Partnering with Other Agencies**

Climate Change

- **Alter hydrology of streams**
- **Rising temperatures**
- **Precipitation as rain instead of snow**
- **High flow events**

Recommended Monitoring **Actions**
- *Natural Streamflow*
- *Record is long-term, year round*
- *Located in areas of snow-rain transition*

Changes in snowpack over time (Hamlet, et al., 2013)

Extreme Events

- **Floods**
- **Drought**
- **Wildfire**

Stream gage on Fifteenmile Creek measuring 0.00 cfs. August 24, 2015

Christmas flood of 1964

Recommended Monitoring **Actions**

➢ *Early warning indicators*
➢ *Effective monitoring*
   ➢ *High flows*
   ➢ *Low flows*
➢ *Rapidly deploy gages in recently burned watersheds*

Groundwater

- **Groundwater Levels**
  - Inform conjunctive use management
  - Issuing new groundwater permits
- **Studies of Oregon's aquifers**
  - Capacity, location, extent
  - Assess groundwater availability
- **Surface water/Groundwater Interactions**

Recommended Monitoring **Actions**
- ➤ *Long-term data collection*
- ➤ *Hydraulic connection between aquifers*
- ➤ *Pair monitoring wells with stream gages*

Water Management

- **Distribution and Regulation**
- **Water Availability**
- **Water Use Data**

Watermaster Awbrey Perry measuring Tumalo Creek

Recommended Monitoring **Actions**

➢ *Flow meters on points of diversion*

➢ *Measures return flows*

➢ *Consumptive use*

Instream Needs

- **Recreation**
- **Pollution abatement**
- **Navigation**
- **Fish and wildlife populations**

Oregon Spotted Frog

Recommended Monitoring **Actions**
- *Sensitive, Threatened, Endangered Species*
- *Restoration and Conservation activities*
- *Scenic Waterways*

Coho Salmon

Water Supply

- **Population increases**
- **Changing climate**
- **Shifts in land use**

Recommended Monitoring **Actions**

➢ *Establish gages and wells in watersheds with predicted increased demand*

➢ *Measures snow-pack and runoff*

➢ *Measures actual water use*

Partnering with Other Agencies

- **Water Supply Development Projects**
- **Design Flow Prescriptions**
- **Monitor Water Quality**
- **Restore and Conserve Habitat**

Recommended Monitoring **Actions**
- ➢ *Partner with USGS, ODFW, DEQ, OWEB, tribes*
- ➢ *Develop monitoring protocols*
  - ➢ *Deploying instruments*
  - ➢ *Data collection, management, and sharing*

Implementing the Monitoring Strategy

OREGON WATER RESOURCES
MONITORING STRATEGY
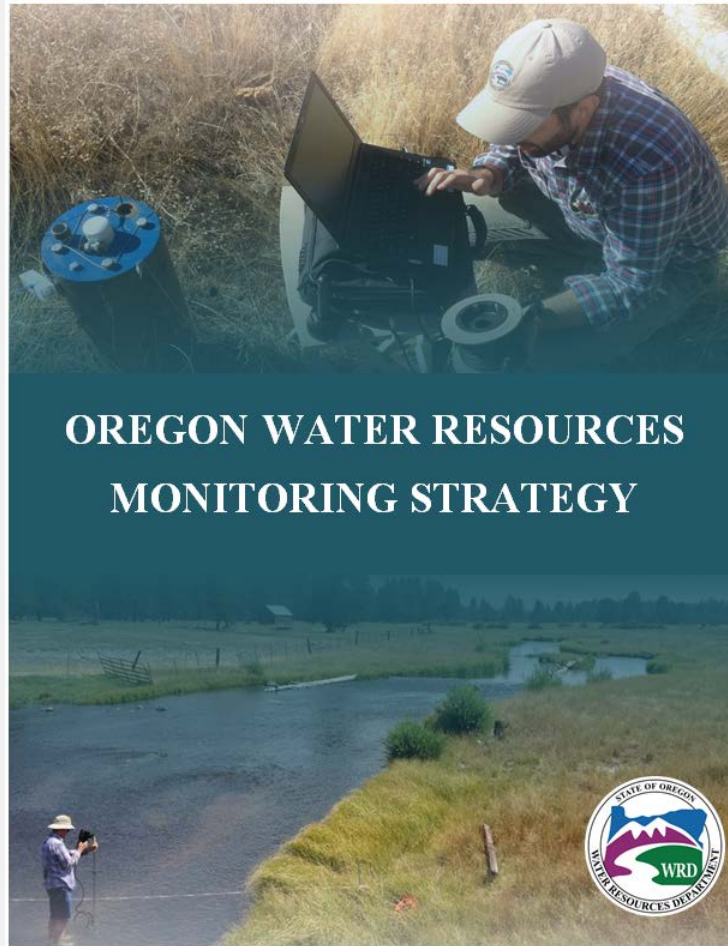
Next Steps

- **Database Enhancements**
  - ➢ Advanced querying capabilities
- **Coordinate with External Partners**
- **Network Evaluations**

Database Enhancements

- **Add new attributes**
  - ➢ Natural Streamflow
  - ➢ Regulation of Instream Water Rights
  - ➢ Extreme Events
  - ➢ Surface Water/Groundwater Interactions
- **Update/Verify current attributes**
  - ➢ Update Elevation
  - ➢ Verify Streamflow type
- **Flag problematic sites**
  - ➢ Data quality issues
  - ➢ Safety concerns
 - ➢ Difficult to access

Coordinate with External Partners

- **Solicit input on monitoring site locations**
  - ➢ Shared form with STREAM Team members
  - ➢ Received feedback from DEQ, ODF, ODA
- **Cooperative efforts with USGS**
- **Coordination with OWEB**
  - ➢ Local monitoring projects

Network Evaluations

- **Database enhancements**
- **Input from partners**
- **Meeting needs of Monitoring Priorities**
- **Determine future monitoring site locations**
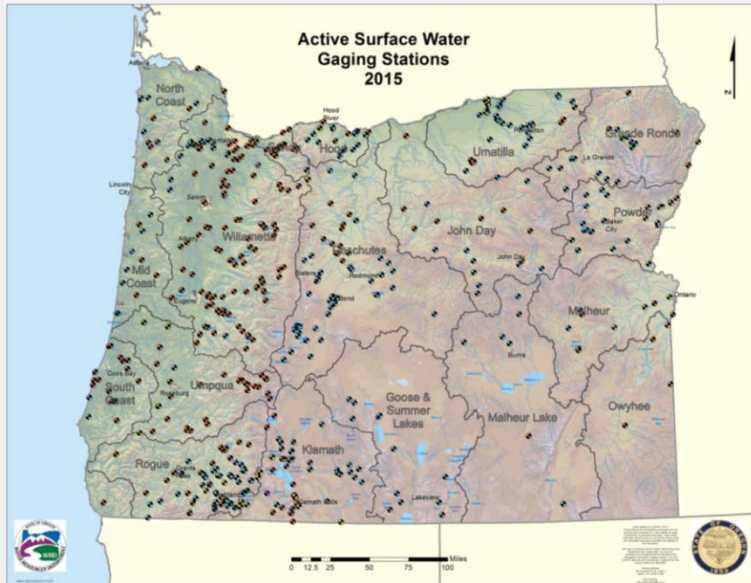
OWRD STREAM GAGING NETWORK EVALUATION FOR WATER DISTRIBUTION

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Water Resources Department

Open File Report SW 2011 – 01

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Acknowledgements

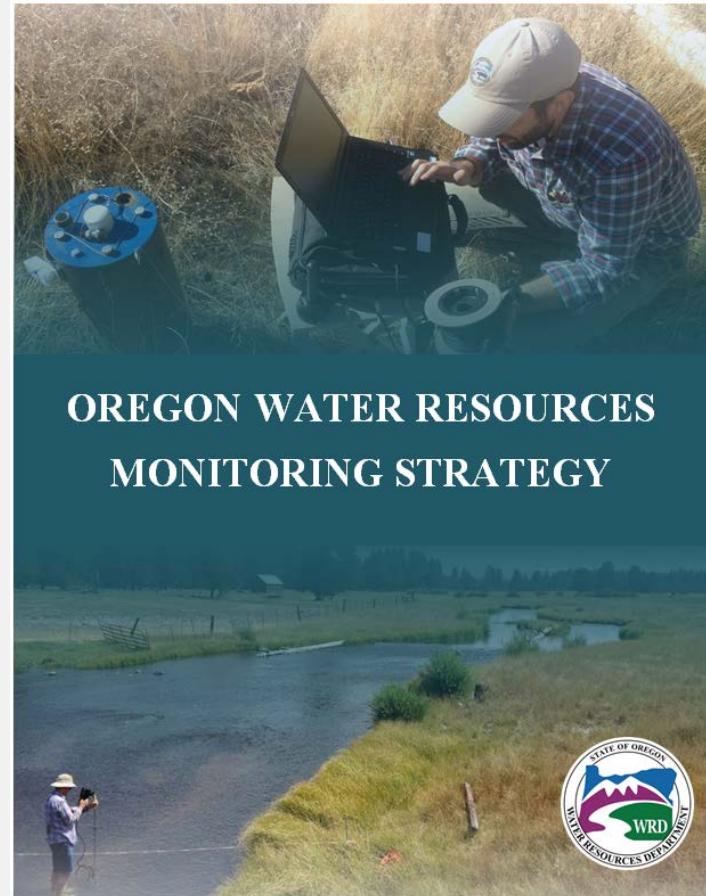*Brenda Bateman*
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Questions?

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