Data: The Foundation for Strategic Decision Making and Investment

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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 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 unadjudicated 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

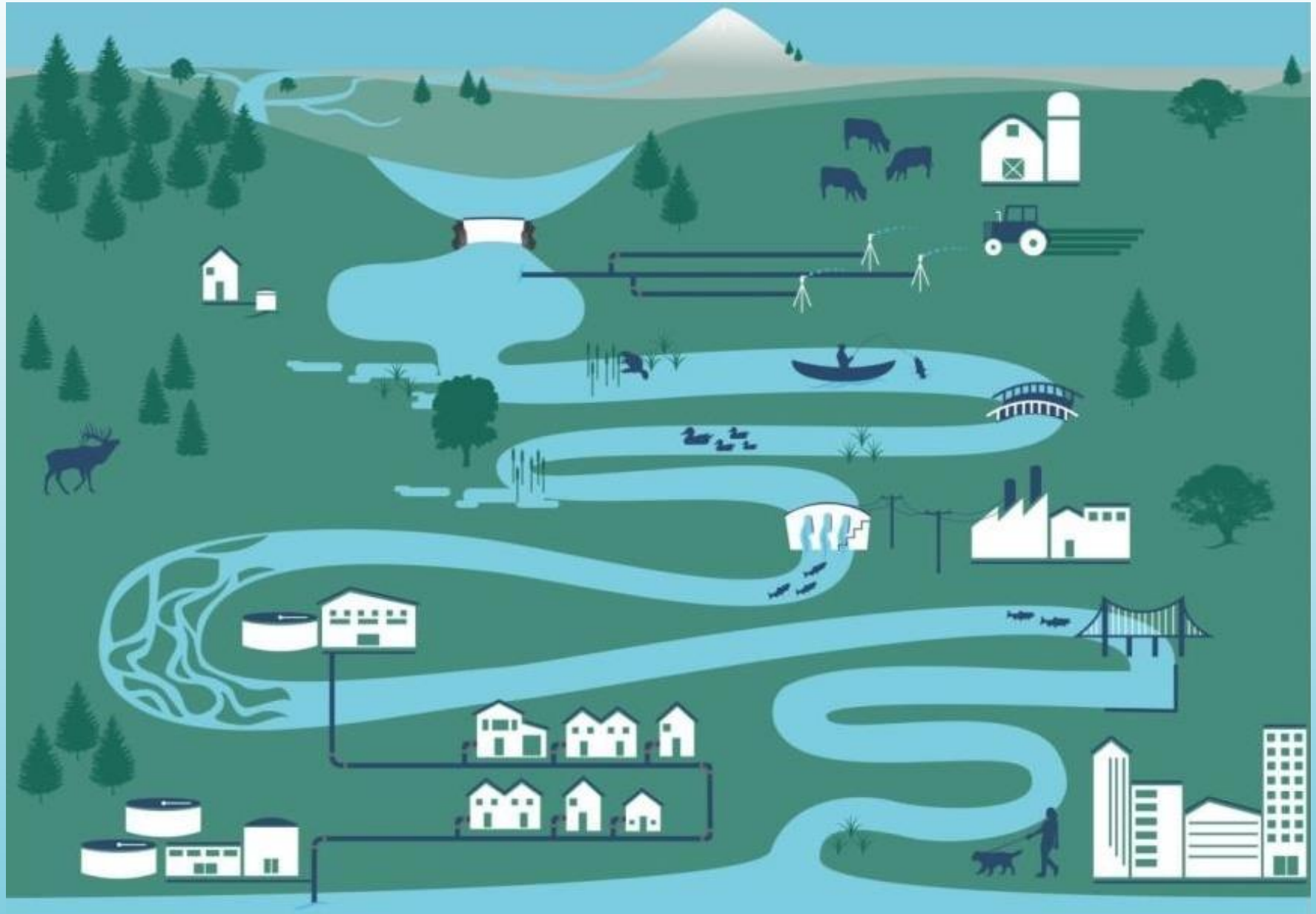
Public Health

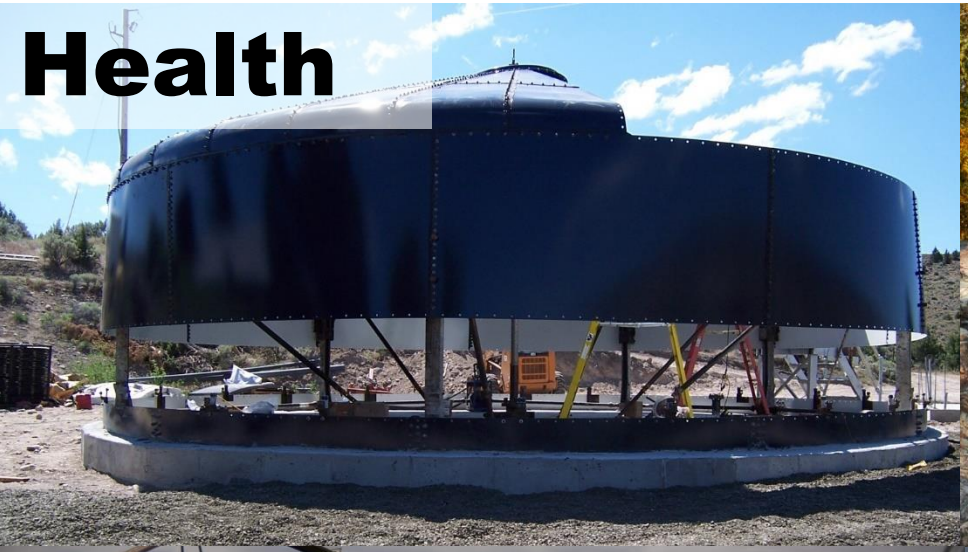
- 12.A Ensure the safety of Oregon's drinking water
- 12.B Reduce the use of and exposure to toxics and other pollutants
- 12.C Implement water quality pollution control plans

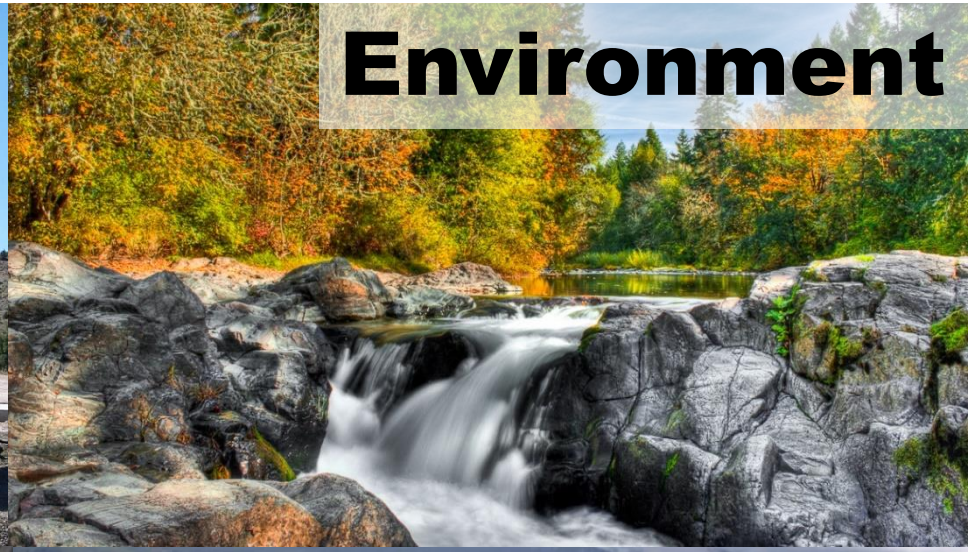
Funding

- 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

Oregon's 100-Year Water Vision




Health


Environment


Economy


Safety

Why Talk About Data?

Limited Resources = Data can inform prioritization and strategic investment

Foundation for identifying issues, weighing solutions, and taking action:

- What are the current conditions and what are the needs?
- How will these change in the future?
- What are the options? What are the tradeoffs?
- Evaluate outcomes and progress over time

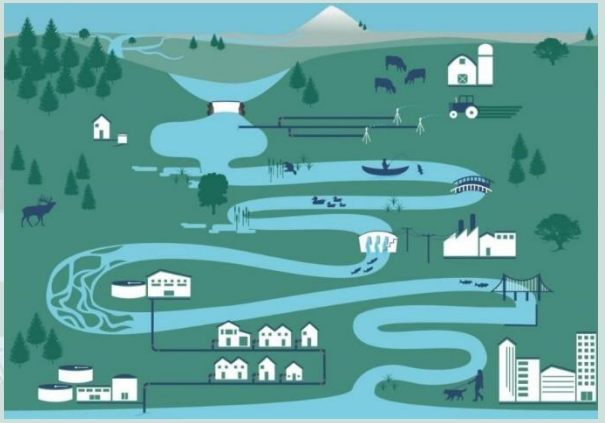
General Data Considerations

- Data coverage (scale, scope)
- Data quality
- Time
  - When was it collected?
  - Past, current, future?

- How will it be used?
  - Does the data collected address the question?
  - How can it be accessed?

Water Quantity

- How much water do we have?
- How will that change over time?
- What is the timing and location?



- Examples of types of data sources:
  - Groundwater: Studies, well logs, water level measurements, etc.
  - Surface water: stream gaging, individual measurements
  - Others: snowpack, precipitation, temperature

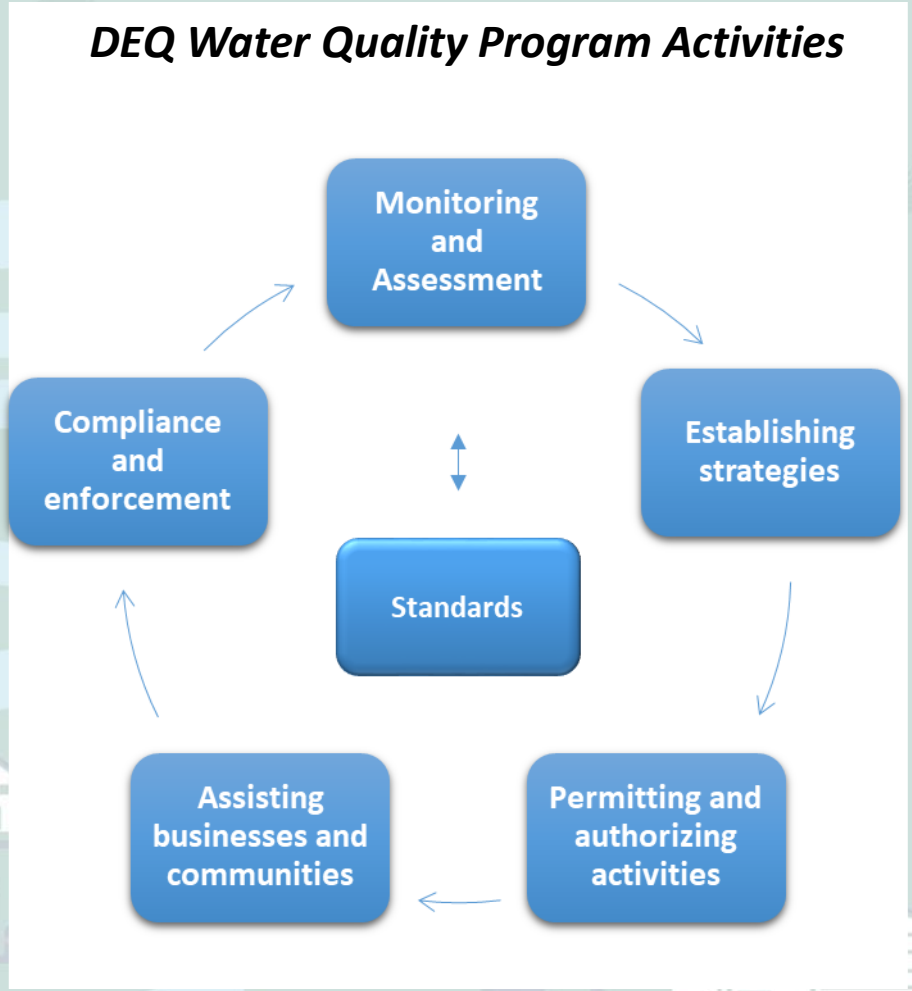
Water Quantity

- How much water do we use? Location, timing, quantity.
- How will the need for water change over time?
- How do we meet our water needs (health, safety, environment, and economy)?

- Types of data sources:
  - Water rights, water use reporting, evapotranspiration, flow studies
  - Wells, dams, and other infrastructure

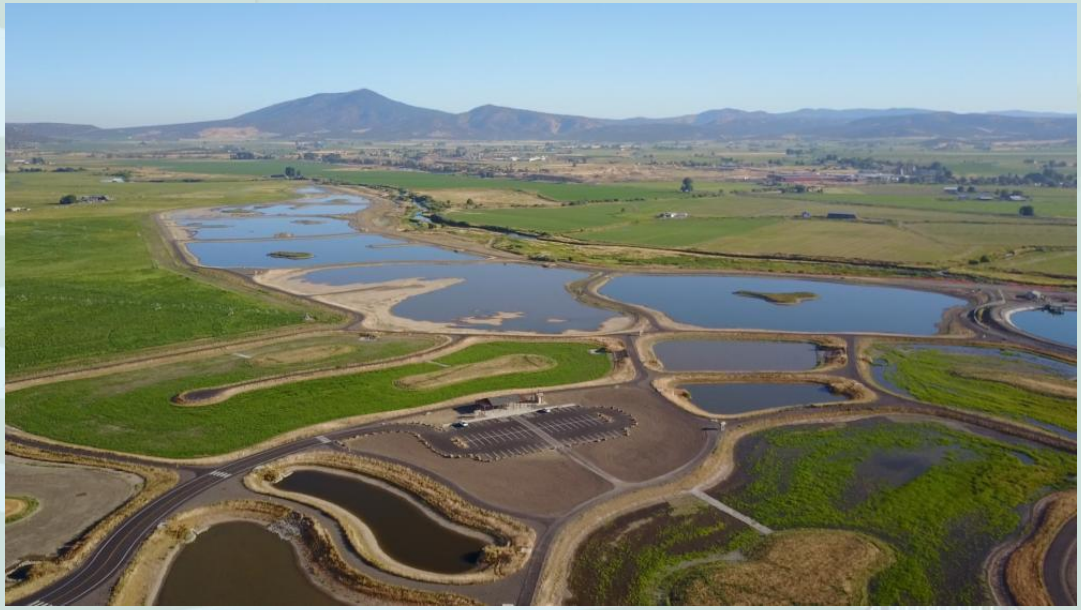
Water Quality

- Standards and Assessment
  - Beneficial Use Criteria
  - Numeric and Narrative Standards
  - Integrated Report
- TMDL (Clean Watershed Plans)
  - Allocations
  - Status & Trends
- Monitoring Data



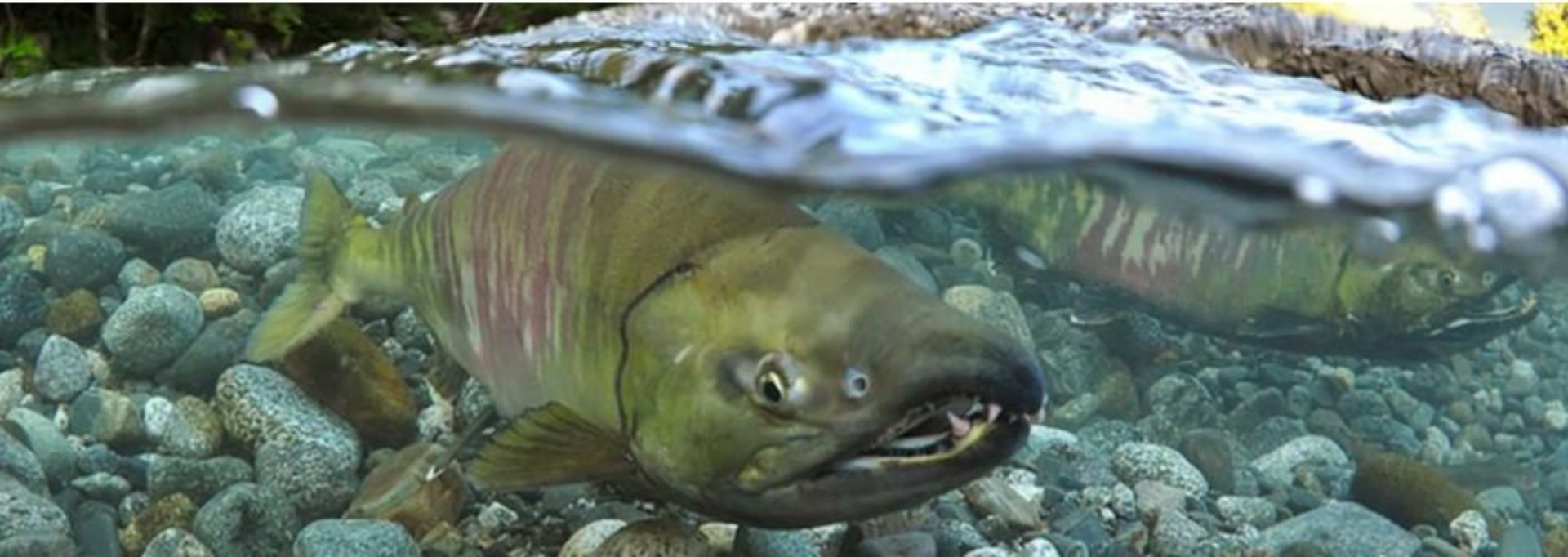
Water Quality

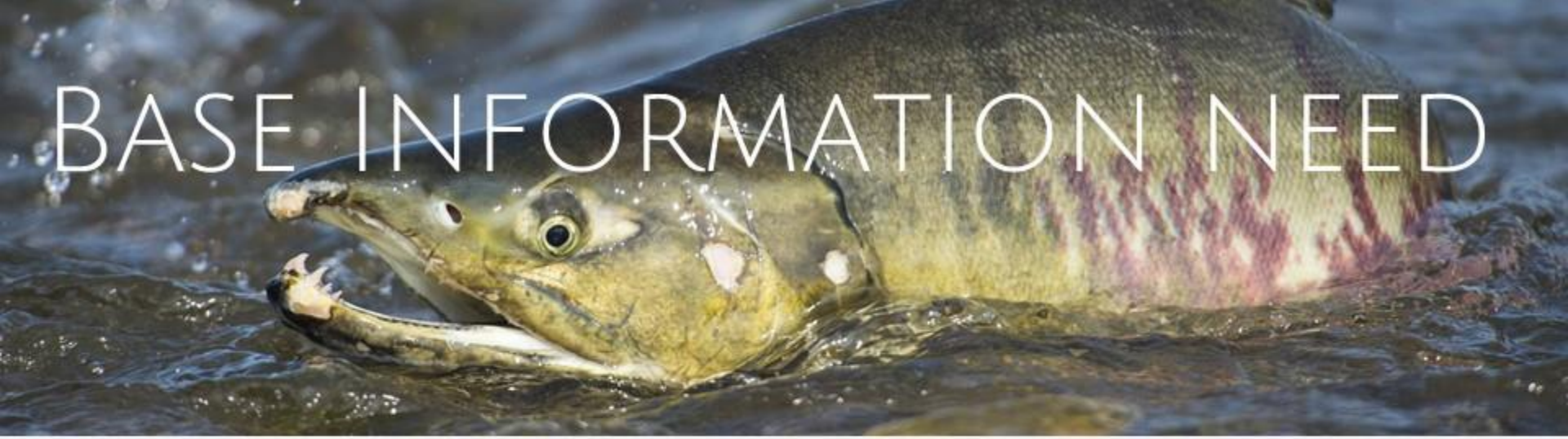
- Permitting
  - Wastewater
  - Stormwater
- Infrastructure
  - Built
  - Natural
- Funding
  - Needs
  - Availability



Environmental Flows

Data to help focus work in areas that are important to fish and resilient to climate change





Base Information Need

What seasonal flows and temperatures do our species need?

Establish flow targets for ISWR or flow restoration

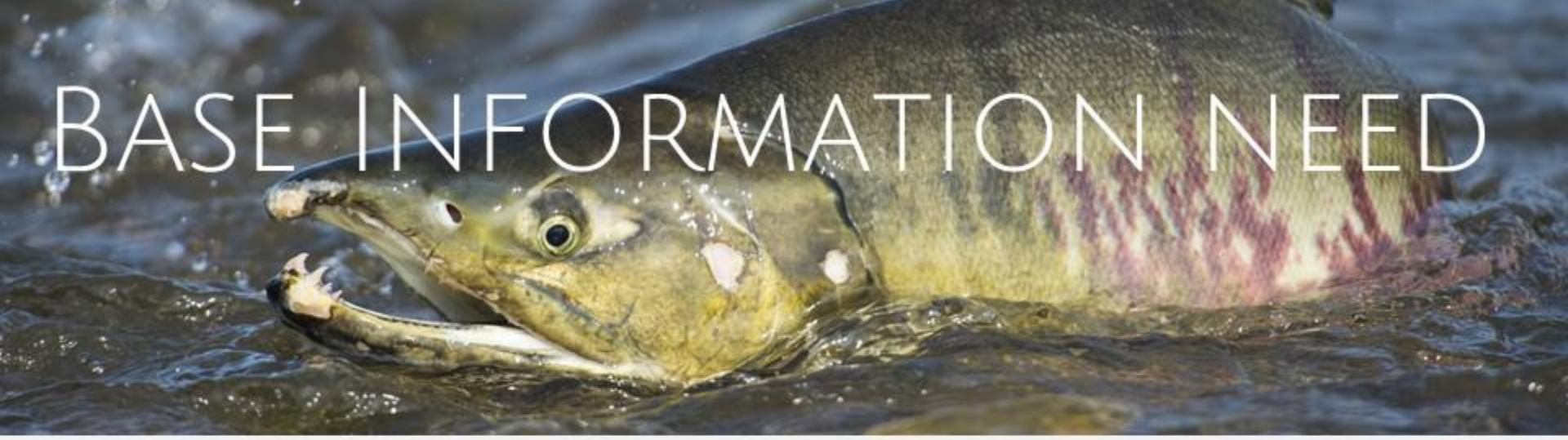
The Data Gaps

Knowing what we need for flow in rivers

Flow studies
2500
Needed

Number of Flow
10-15
Studies per Year

Increase capacity to do more flow studies



Base Information need

Now

Are we meeting flow & temperature targets?

Future

The Data Gaps

Knowing how we are doing

- Expanded flow monitoring

Named Streams without

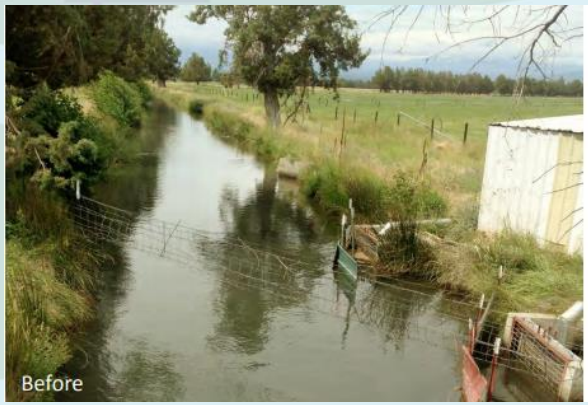
~97%

flow measurement

- Assessment of cold and groundwater resources
- Assessment of built infrastructure role
- Increased temperature monitoring network (with some real time capacity)

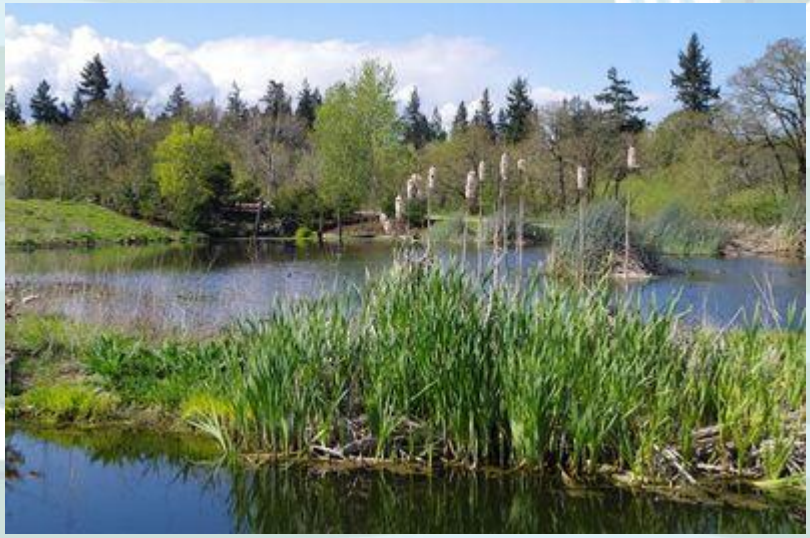
Funding

- 50 years of underinvestment = Massive need
- Many funding opportunities exist for a variety of water users
- However, data gaps lead to uncertainty about full funding need across the state
- Needs for planning AND implementation



Funding

- Resources for data development and sharing
- Investment in data integration platforms
  - Help identify and prioritize needs for investments
  - Strategically match needs with funding



Questions?

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