Central Region Update

Surface Water and Groundwater Management

Planning and Policy Developments

Carolyn Sufit, Central Region Manager
Bill Nashem, District 24 Watermaster
Joe Kemper, Basin Hydrogeologist
Angella Rinehold, Senior Water Advisor

Sept 11, 2025

Central Region Update: Surface Water Management

Region Overview

What's going on in the Central Region

Measuring

What are we measuring, and why?

Accounting

What are we tracking?

Conservation

The growing complexity of conservation investments

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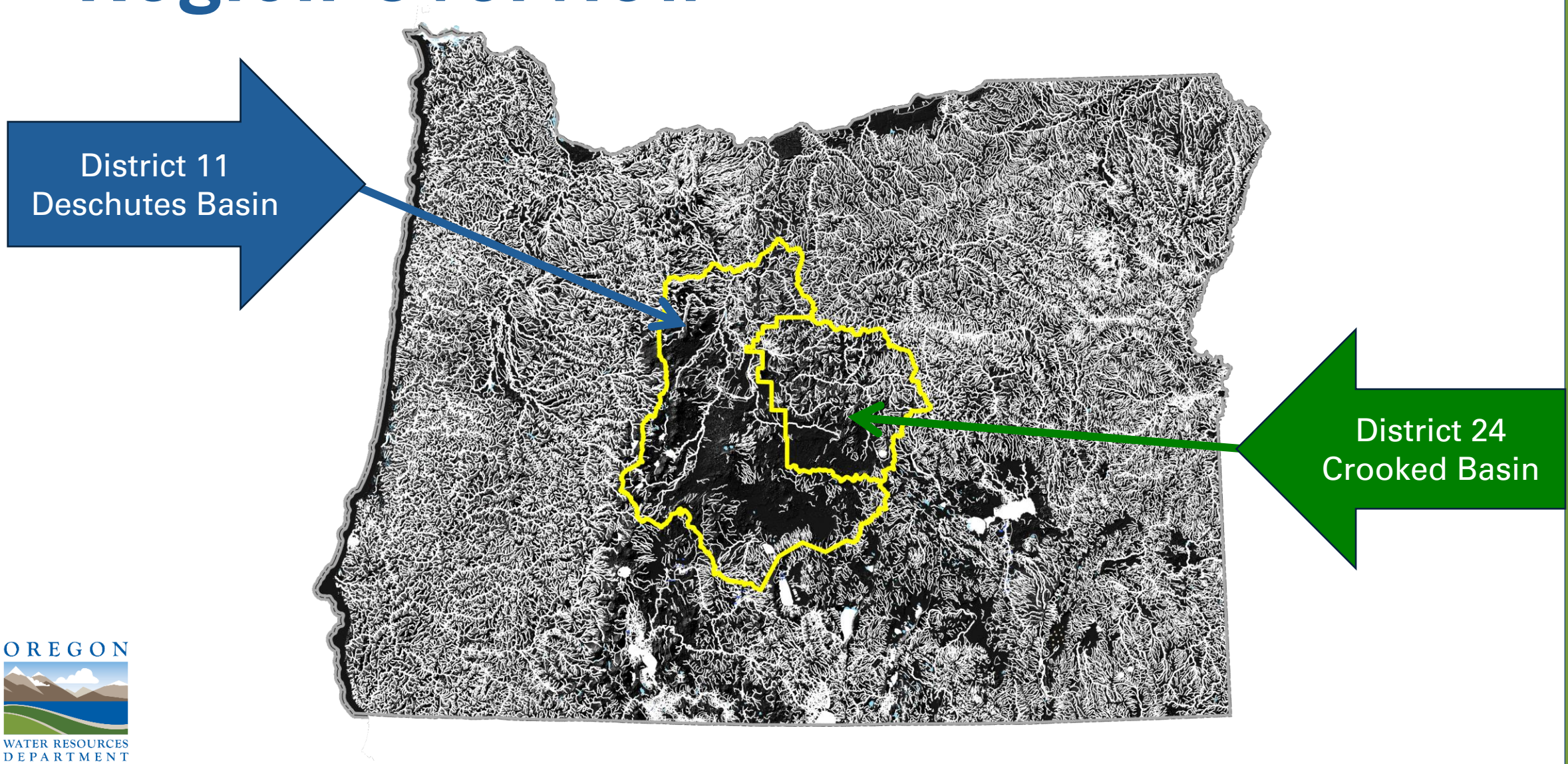
Region Overview



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Deschutes Basin Hydrogeology

- Groundwater and surface water are hydraulically connected
- Recharge of the aquifer occurs primarily at the crest of the Cascades
- Attenuated groundwater and spring flows

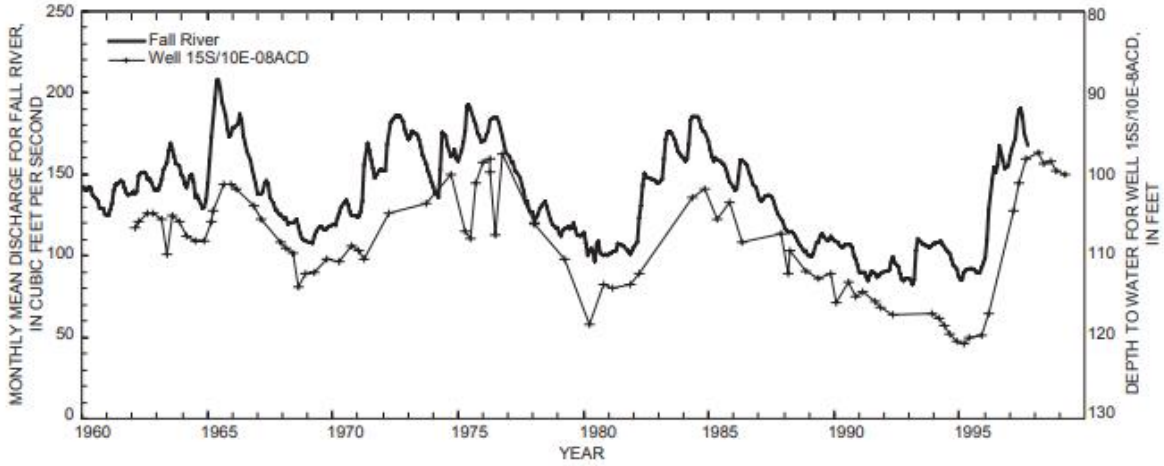
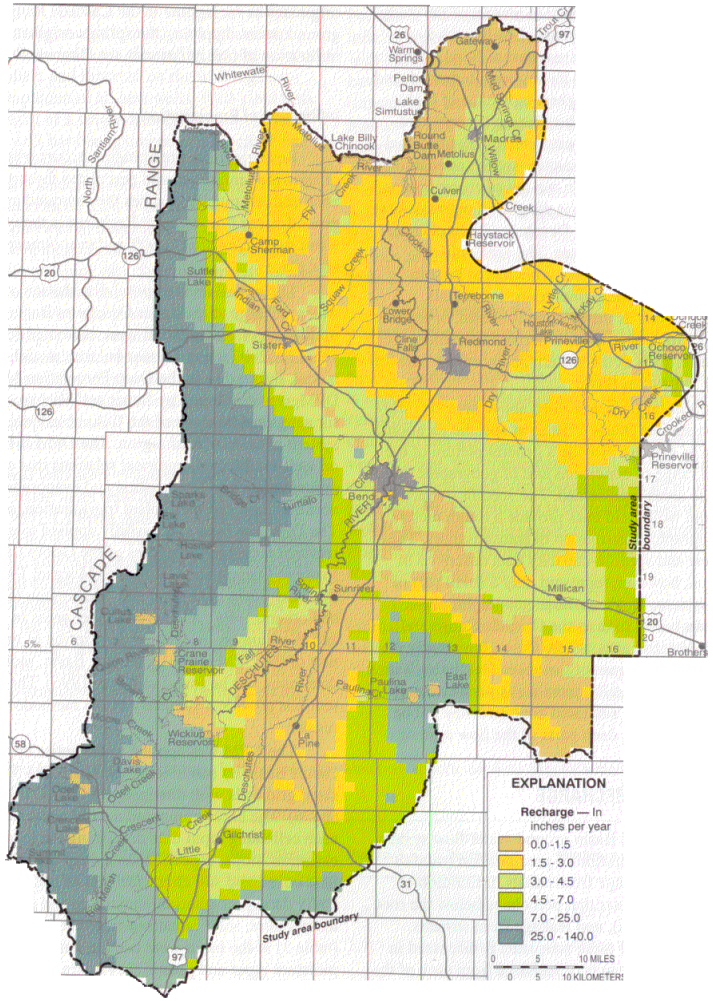


Figure 38. Relation between monthly mean discharge of Fall River and static water-level variation in a well near Sisters, Oregon, 1962–97.



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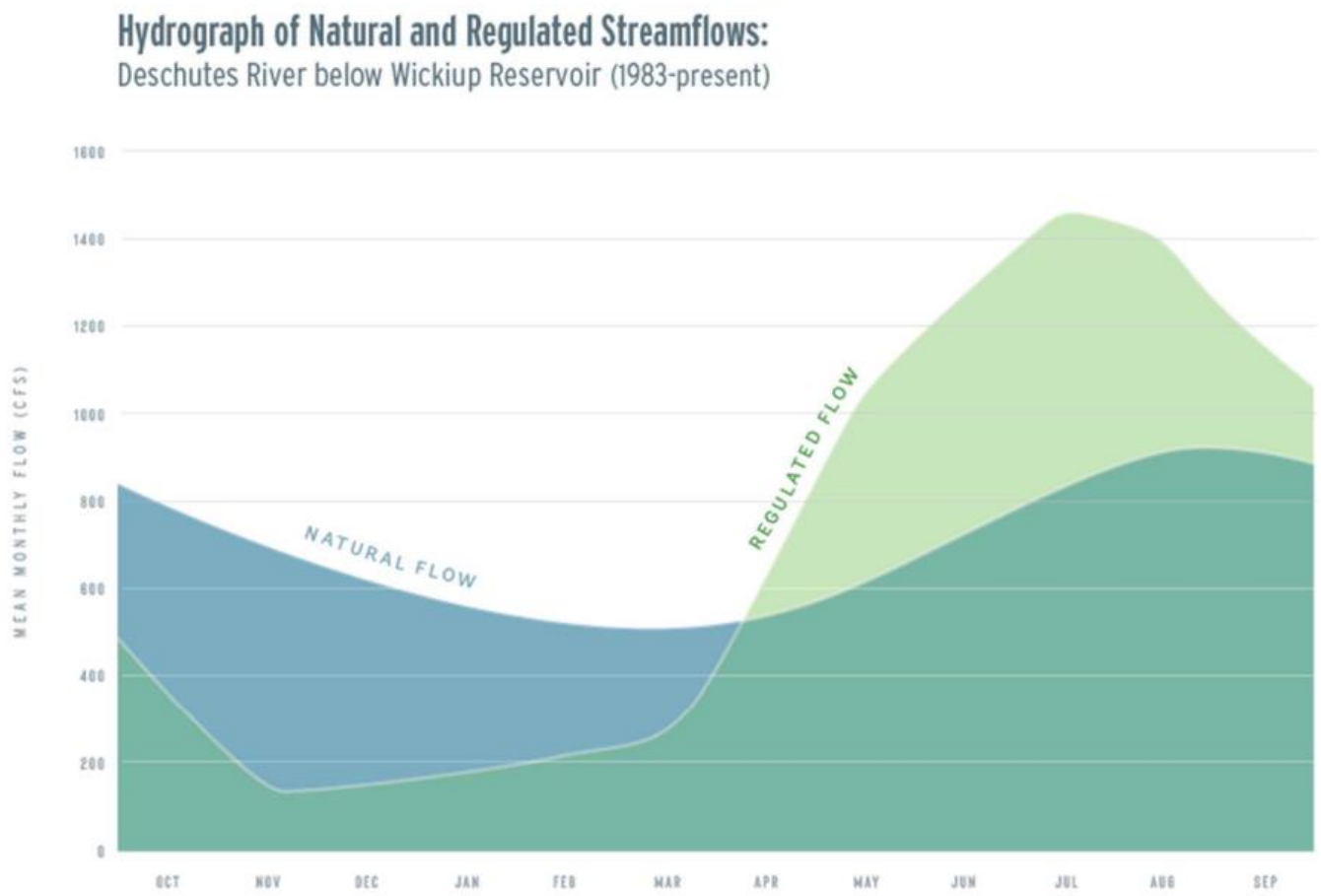
Deschutes River Hydrology

- Spring-fed baseflow
- Most stable U.S. river (pre-irrigation)
- ~260,000 acres of surface water rights
- Fully allocated surface water



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Crooked River Hydrogeology

- Much different from the Upper Deschutes
- Flows through John Day and Clarno Formations
- Much less permeable
- Very slow aquifer recharge
- Rapid runoff/flashy hydrologic system

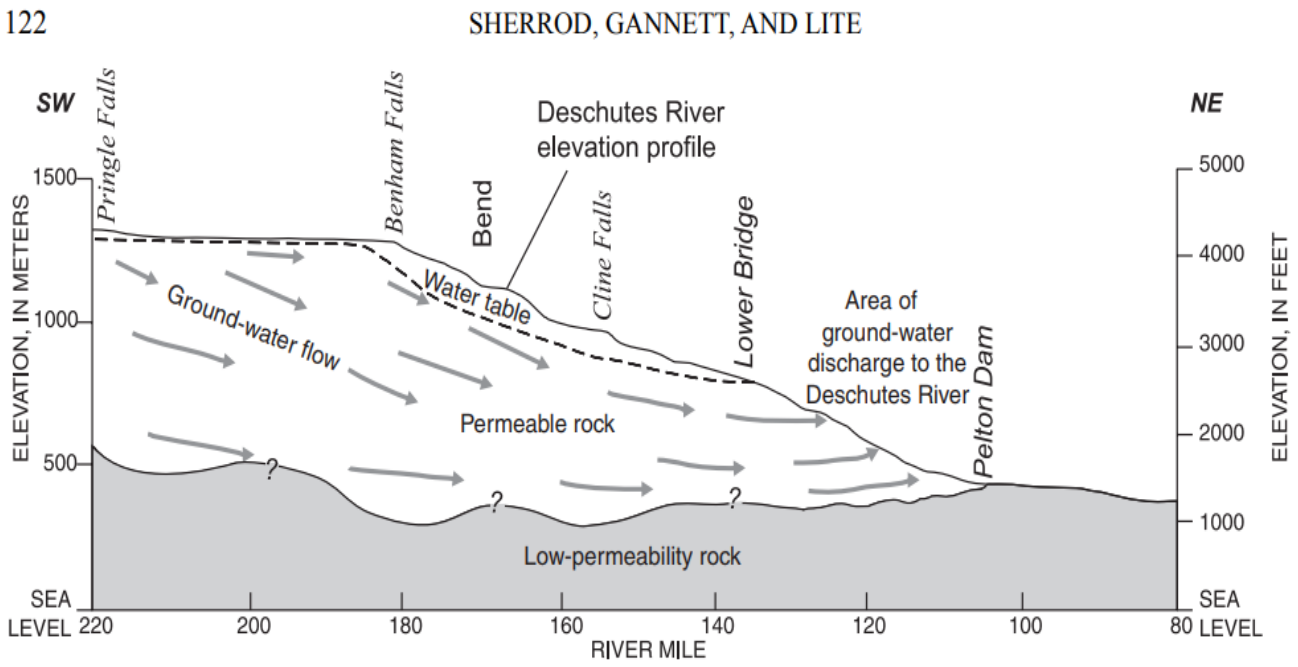

Figure 12. Diagrammatic section showing the effect of geology and topography on ground-water discharge along the Deschutes River from Benham Falls to Pelton Dam.

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Regional Efforts and Focus

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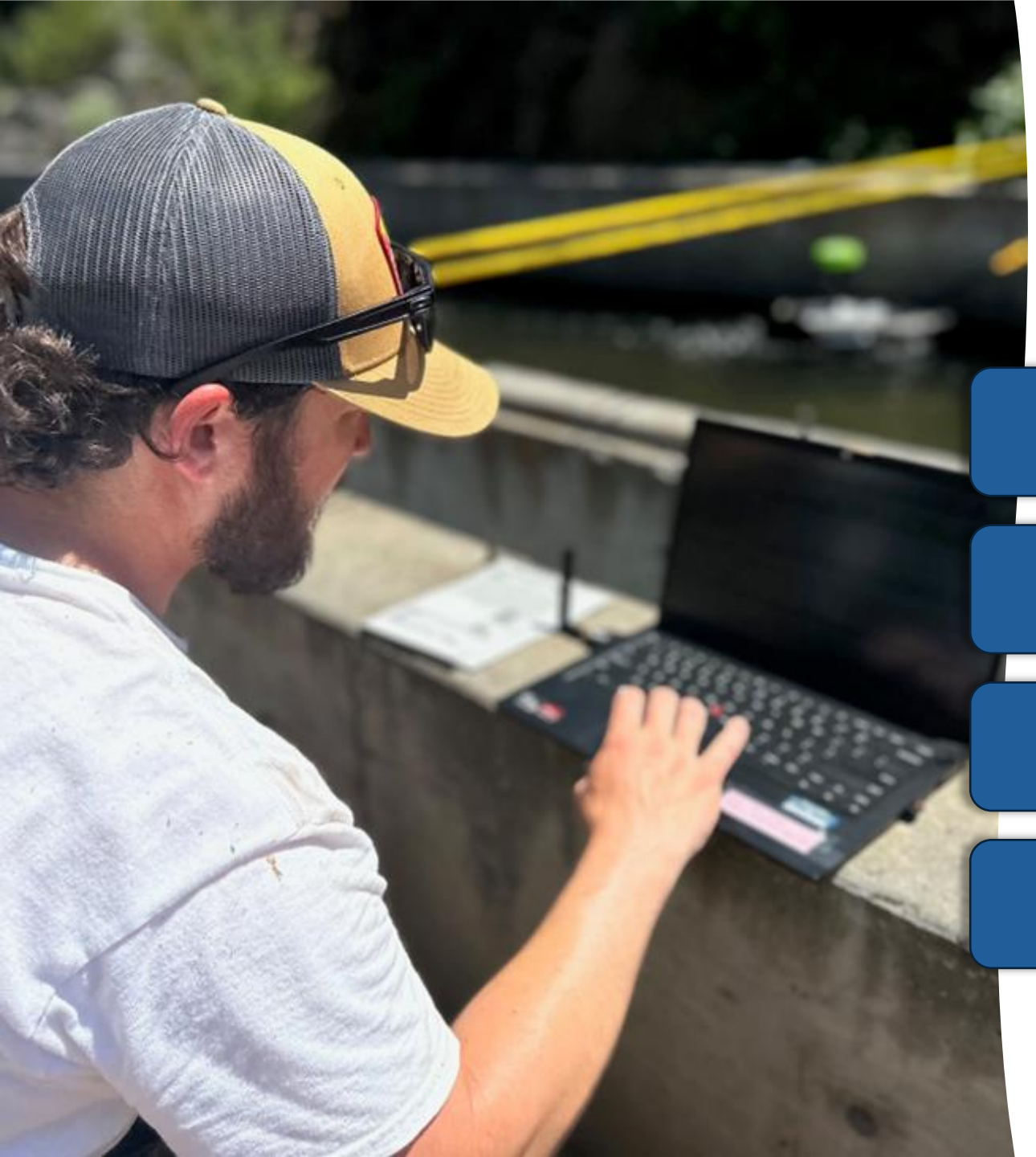

Streamflow Measuring

- ~60 active gaging stations
- Inflows, outflows, and district diversions
- Heavy measurement workload
- Engaged, educated water user community

New Gaging

- Rice Baldwin
- Peoples Canal
- Crooked River Central Canal
- Crooked River at O'Neil

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Water Accounting and Tracking

Raw Data

Inflows

Outflows

Diversions

Reservoir Contents

Calculations

Protected Water

Conserved Water

Evaporation Losses

Seepage Losses

Legal Considerations

Rates and Duties

Priority Dates

Storage Rights

Flow Requirements

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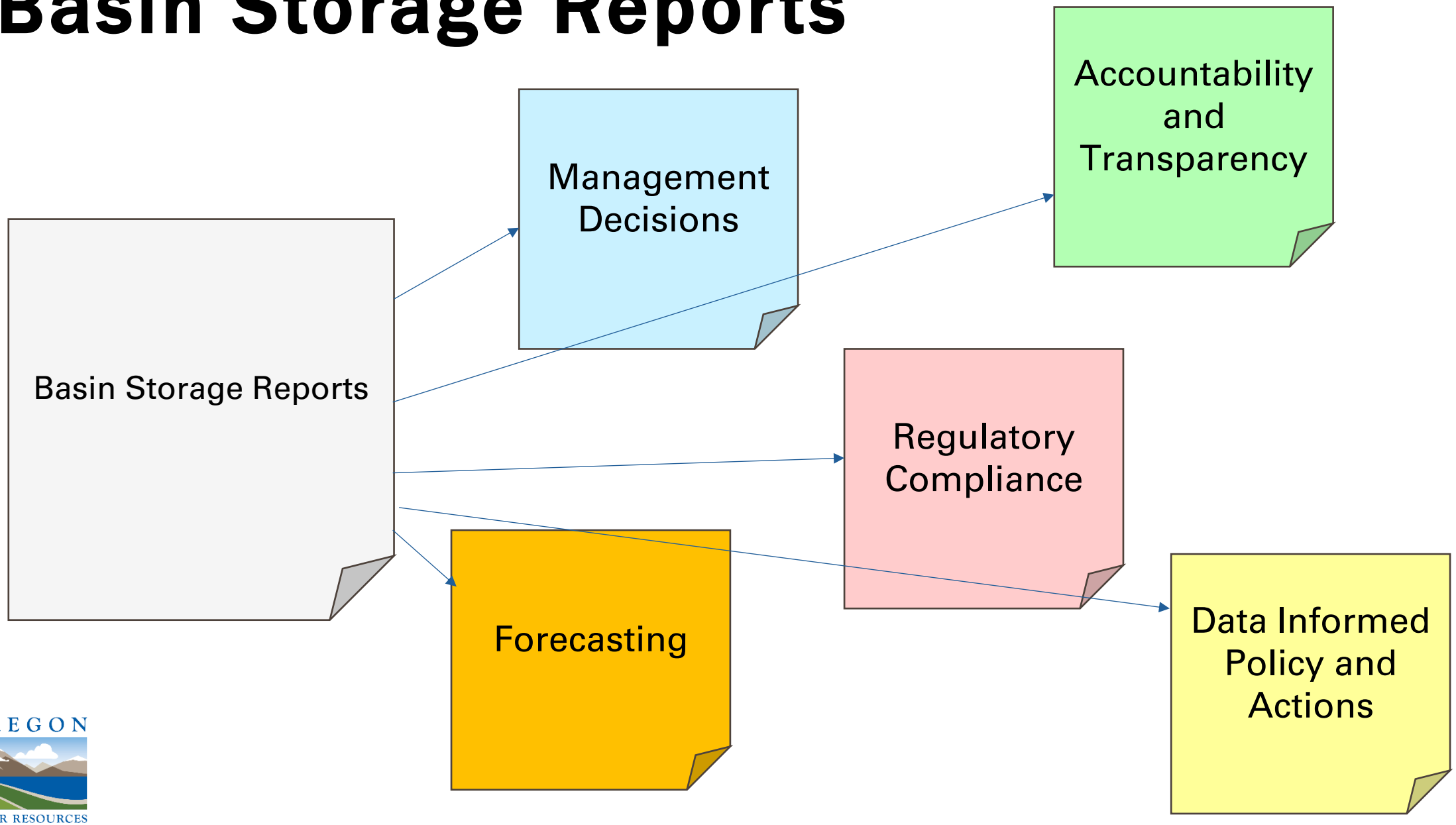
Basin Storage Reports



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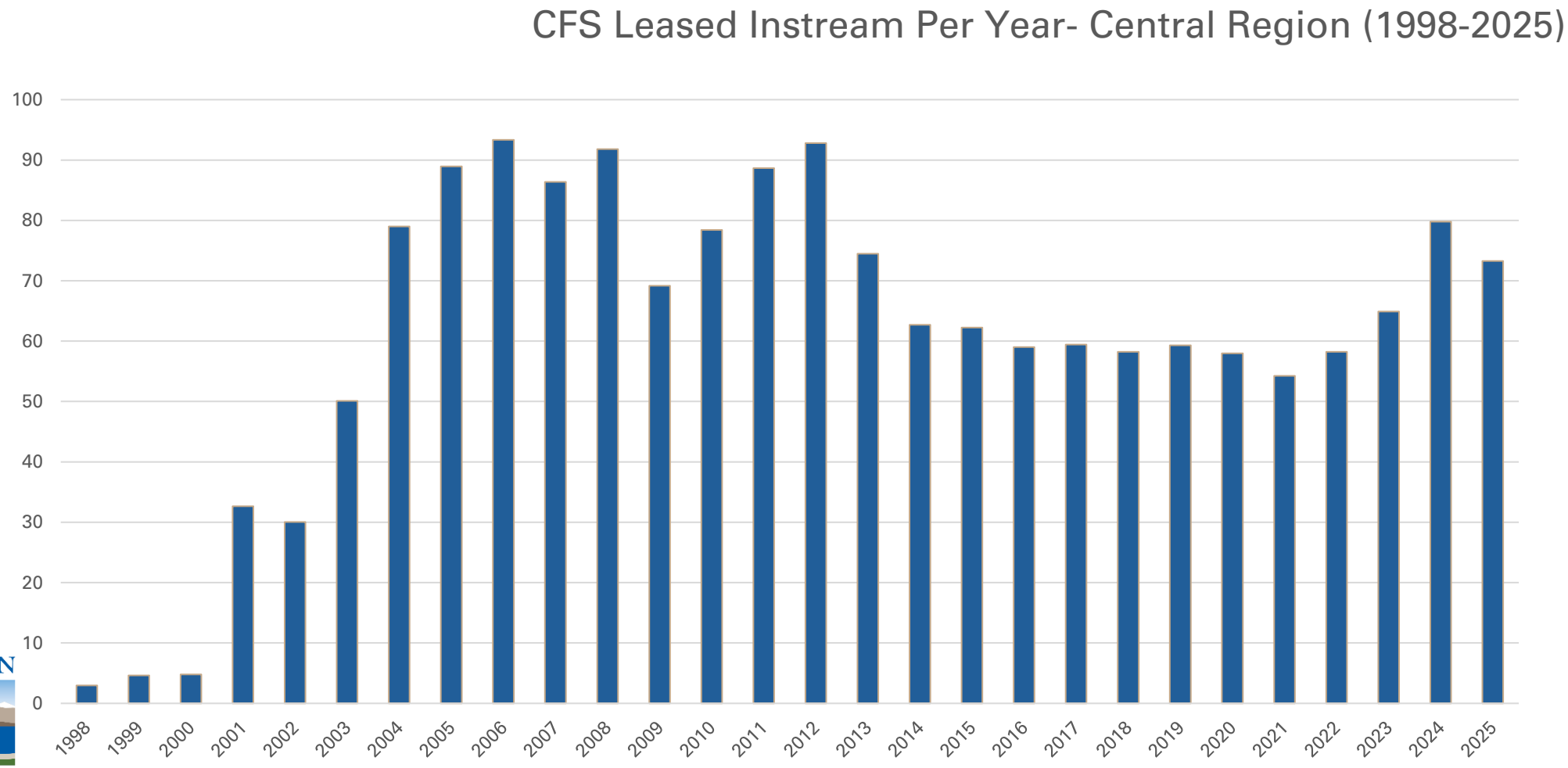
Conservation Efforts

Instream Leasing

DESCHUTES RIVER CONSERVANCY



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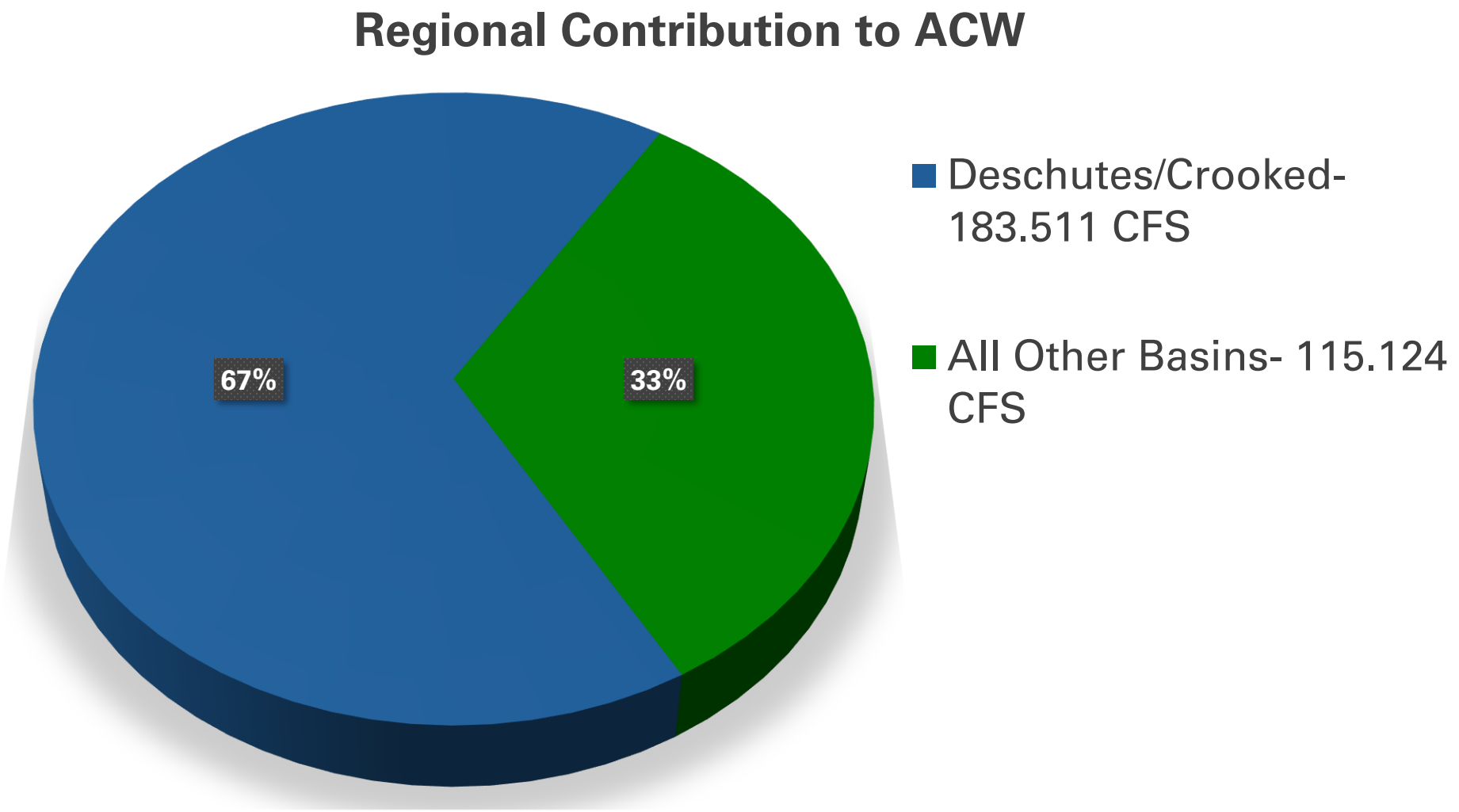
Conservation Efforts

Allocation of Conserved Water



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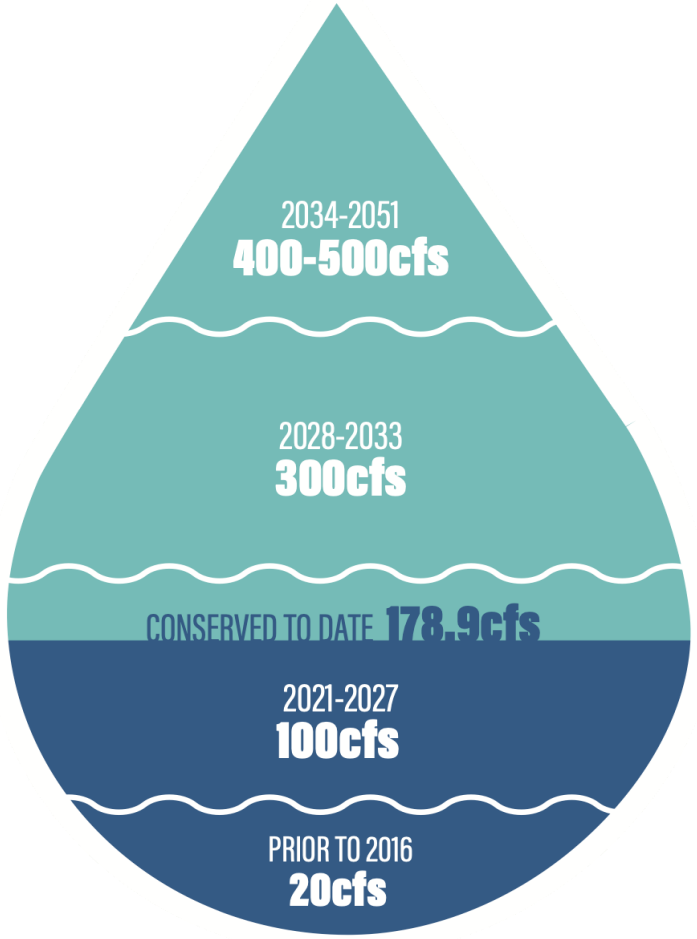
Conservation Efforts

Deschutes Basin Alternative Pathway



DBBC

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Voluntary pathway for conserved water projects in response to HCP requirements

Conserved live flow goes to NUID for irrigation

Equivalent Wickiup storage released by NUID in winter for flow augmentation

Legal protections ensure water stays instream

Conservation Funding

In Central Oregon, OWRD grants have:

- Provided **$55M** for piping projects
- Helped leverage an additional **$165M** from other funders
- Eliminated losses from **~82 miles** of open canals
- Restored **>100 cfs** of streamflow

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Conservation Accounting Complexity

Increased gaging and flow monitoring

Increased reporting and transparency

Legal requirements, basin agreements, and public benefit

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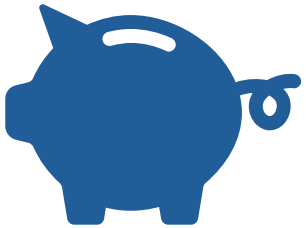
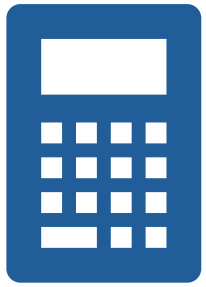
Conservation Challenges



Funding

Time

Process Flexibility



Accounting

Staffing

Climate

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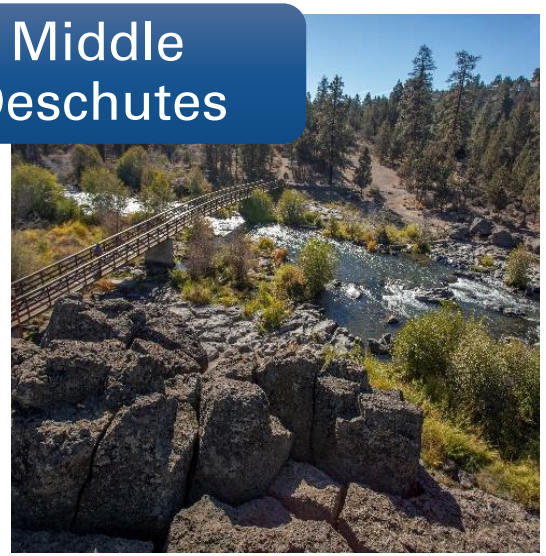
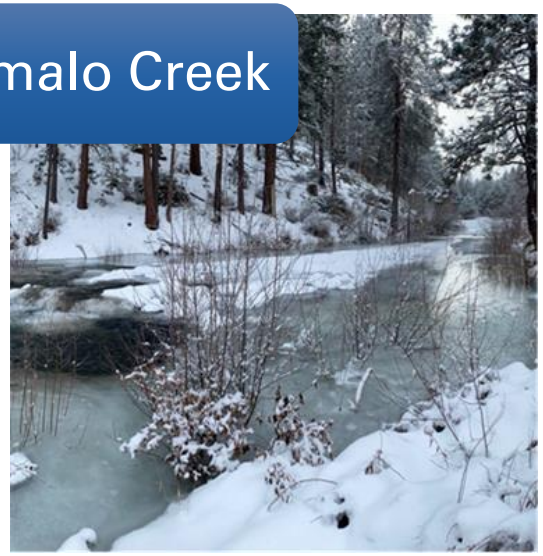
Conservation Successes

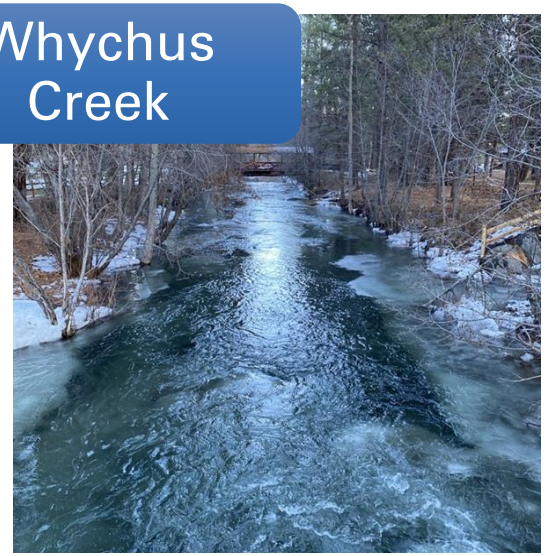
Middle Deschutes



Tumalo Creek



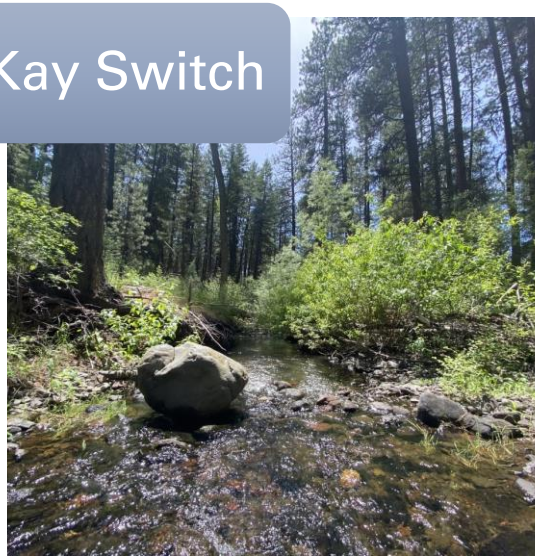
Whychus Creek



DBHCP

DBWC

McKay Switch



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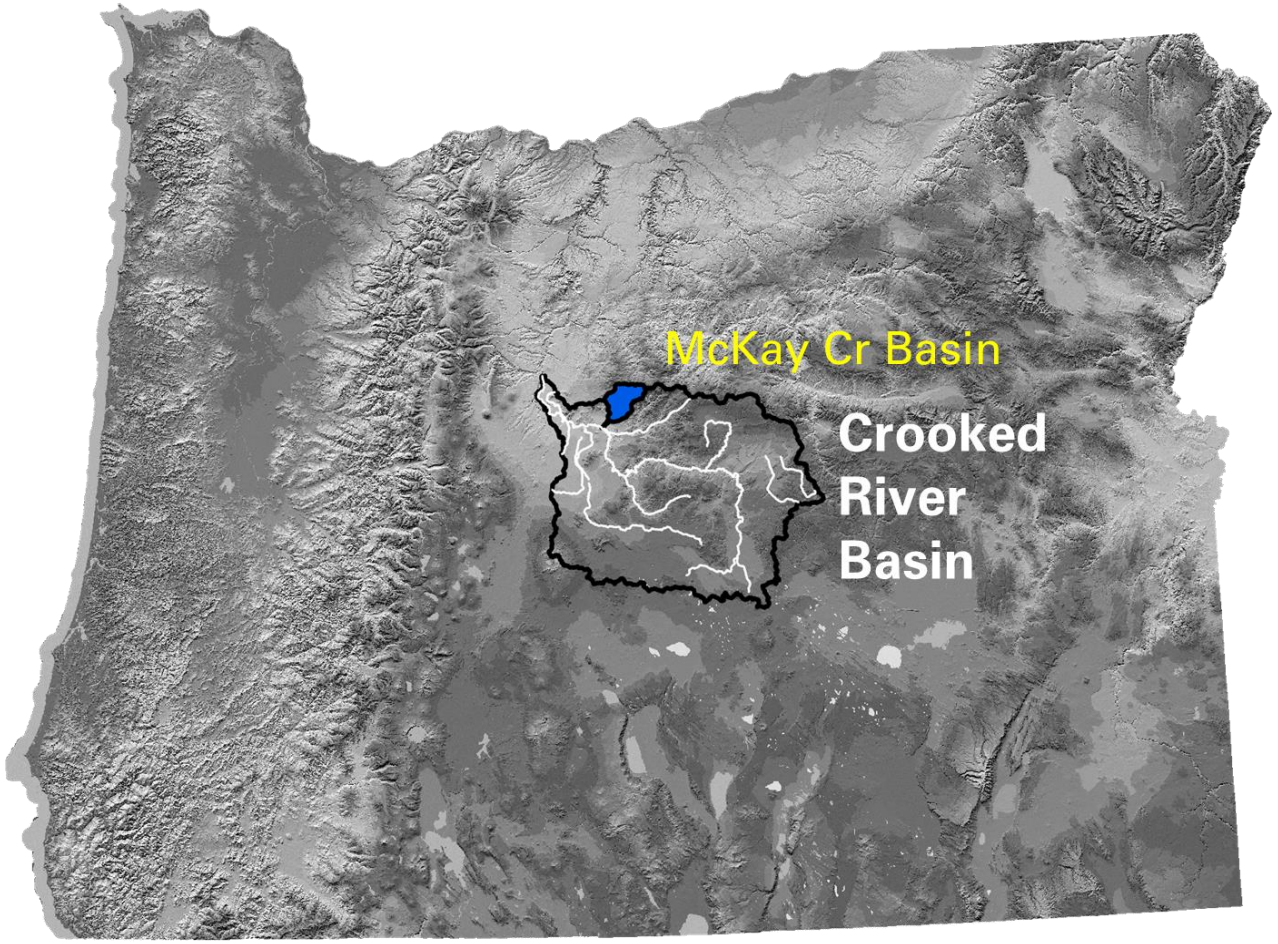
Conservation Efforts: The McKay Switch

- Partnership between Ochoco Irrigation District, The Deschutes River Conservancy, and water rights holders along McKay Creek
- Funding through OWRD and NRCS



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Conservation Efforts
The McKay Switch

Landowner benefit:

- Pressurized OID water
- Modernized on-farm infrastructure

Streamflow benefit:

- Up to 11.2 cfs of surface water rights permanently transferred instream
- Habitat restoration
- Natural hydrograph from above mile 6

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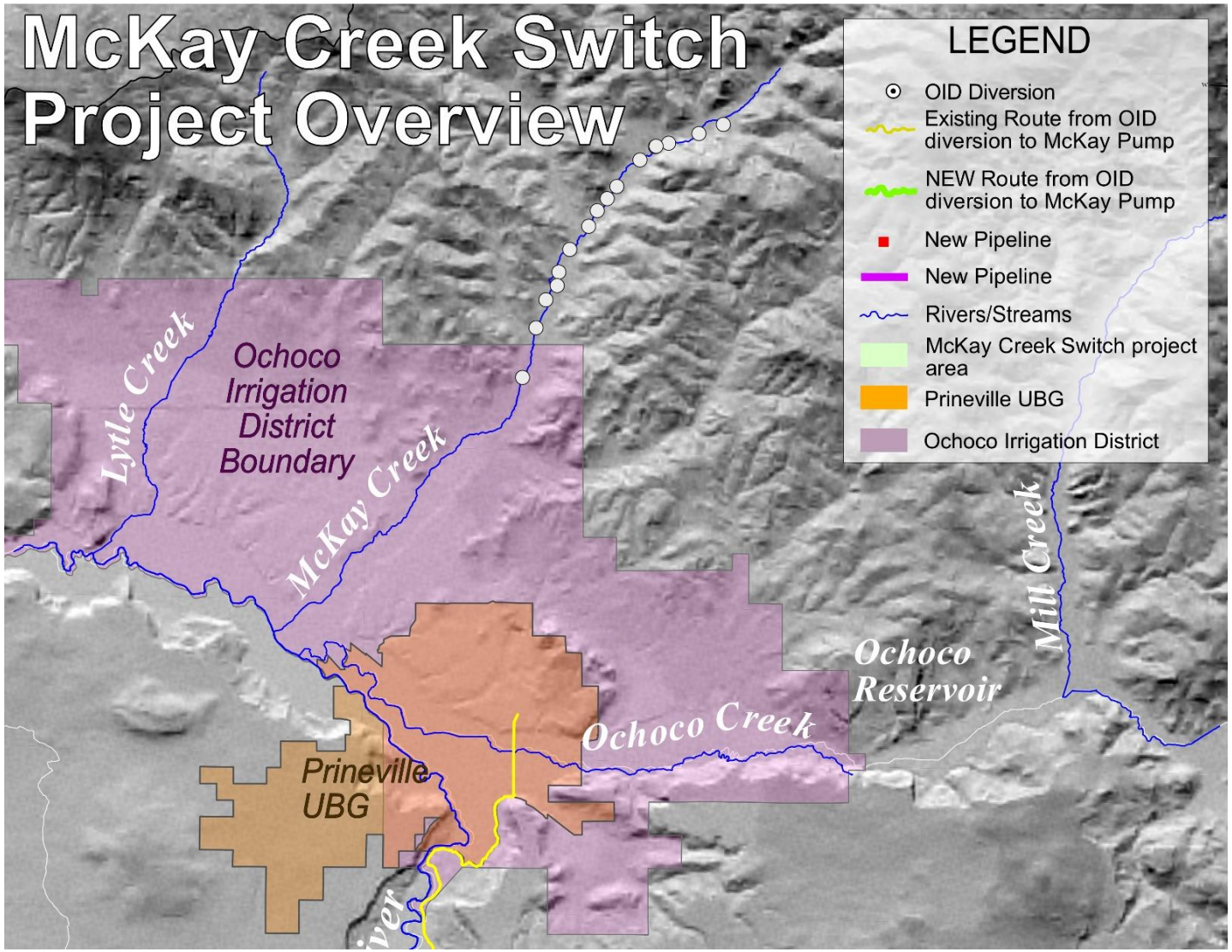
Conservation Efforts
The McKay Switch

- 100% Landowner Participation
- Existing McKay Creek PODs to be abandoned
- Water diverted from the Crooked River in Crooked River Feed Canal



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Conservation Efforts
The McKay Switch

Water conveyed via new pump station in Prineville and new McKay Creek pump station

Pressurized, reliable irrigation water

11.2 cfs of surface water rights permanently transferred instream

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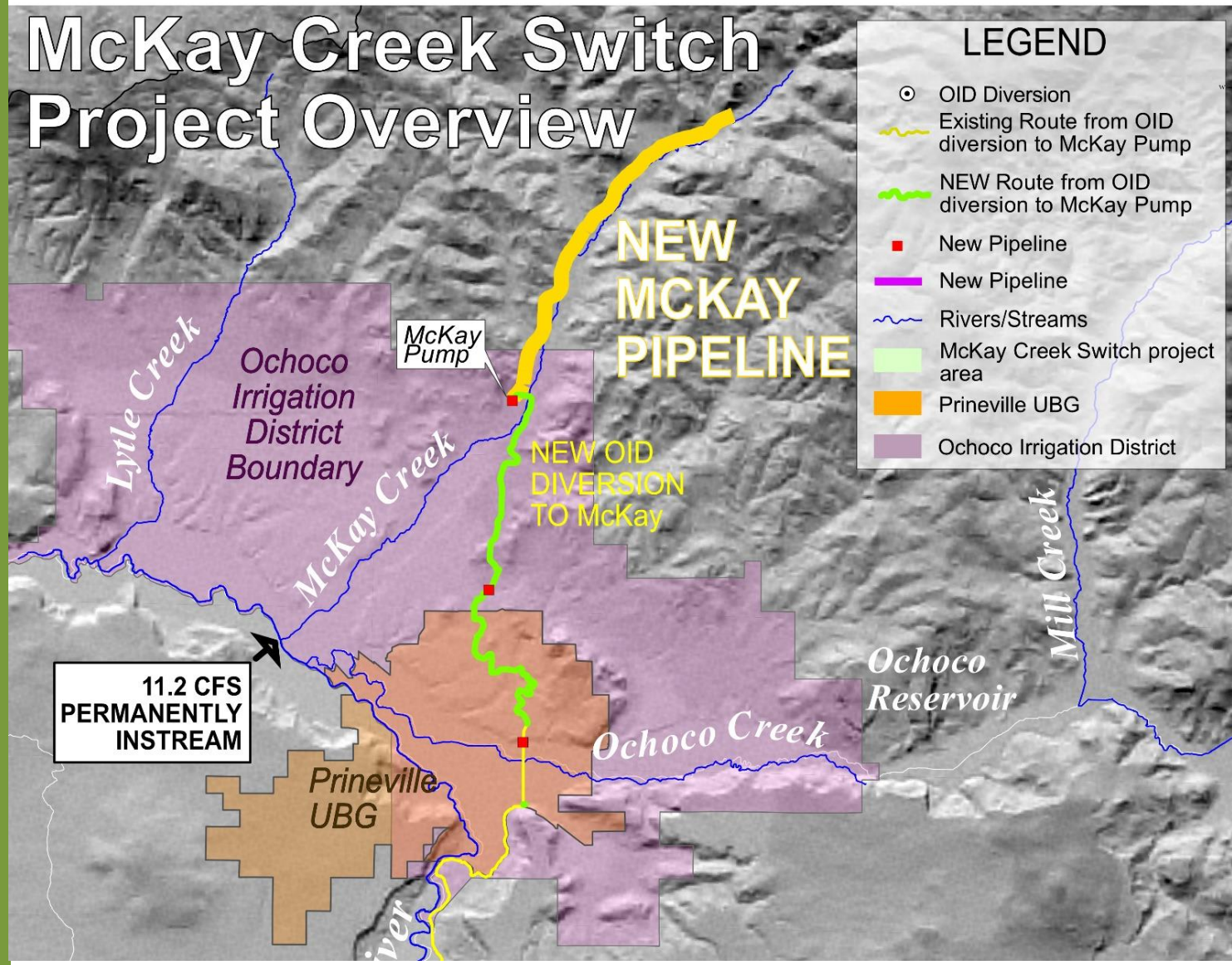
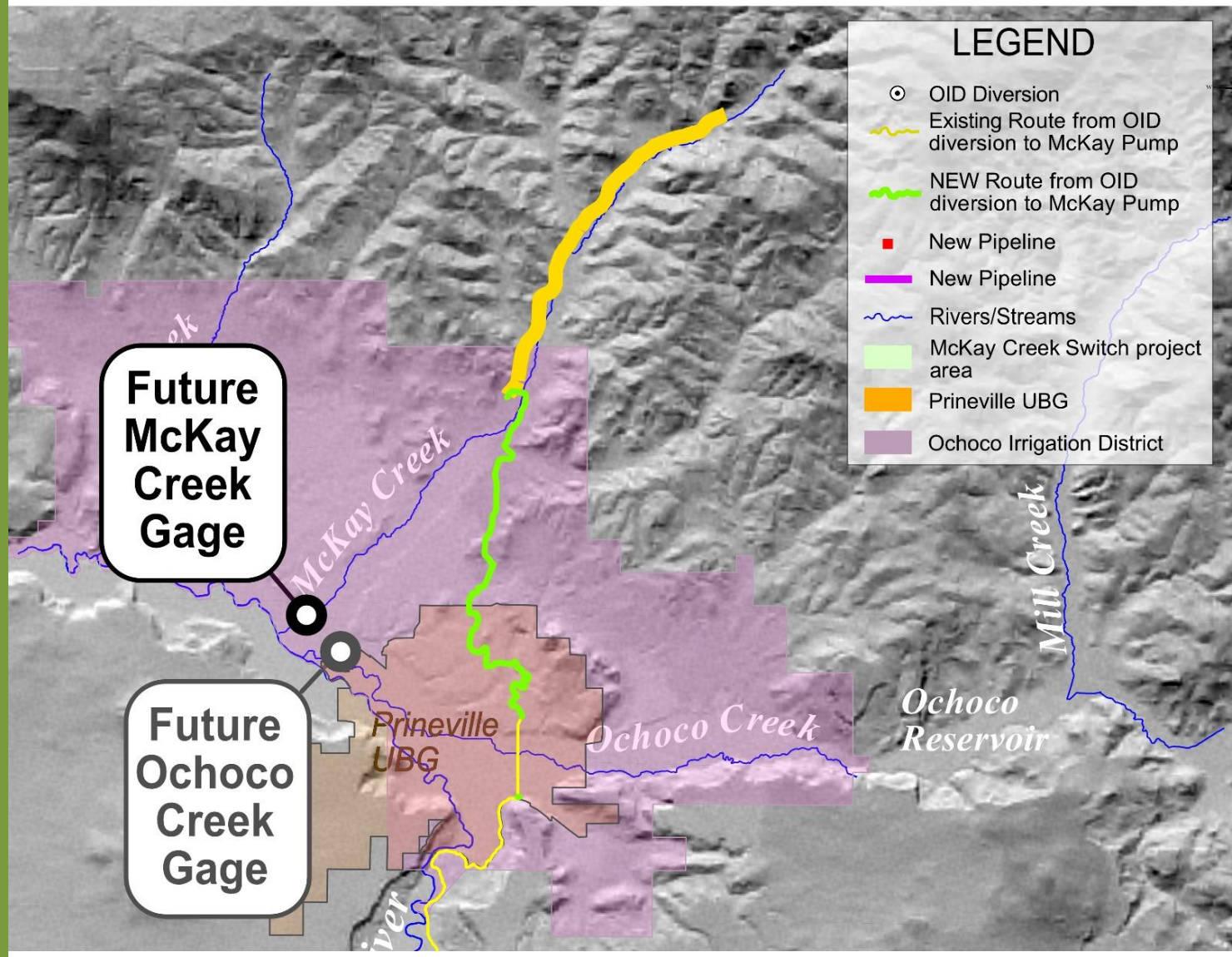


Conservation Efforts
The McKay Switch

- Future Gaging Needs
- DBHCP Crooked River conservation measures for Ochoco and McKay Creeks
- South Fork Crooked River site



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Central Region Update

Groundwater Trends and Assessments

Joe Kemper, Basin Hydrogeologist

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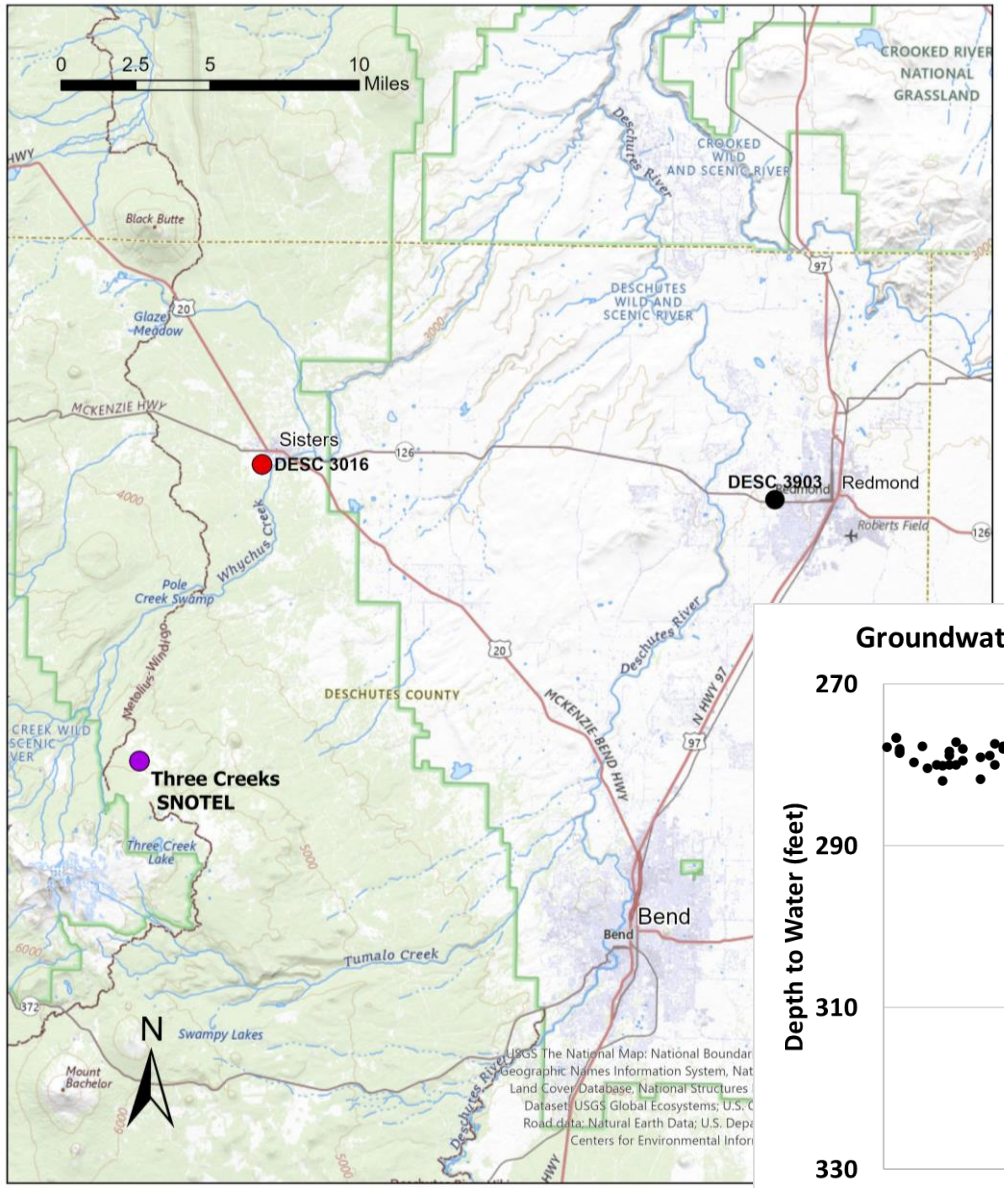
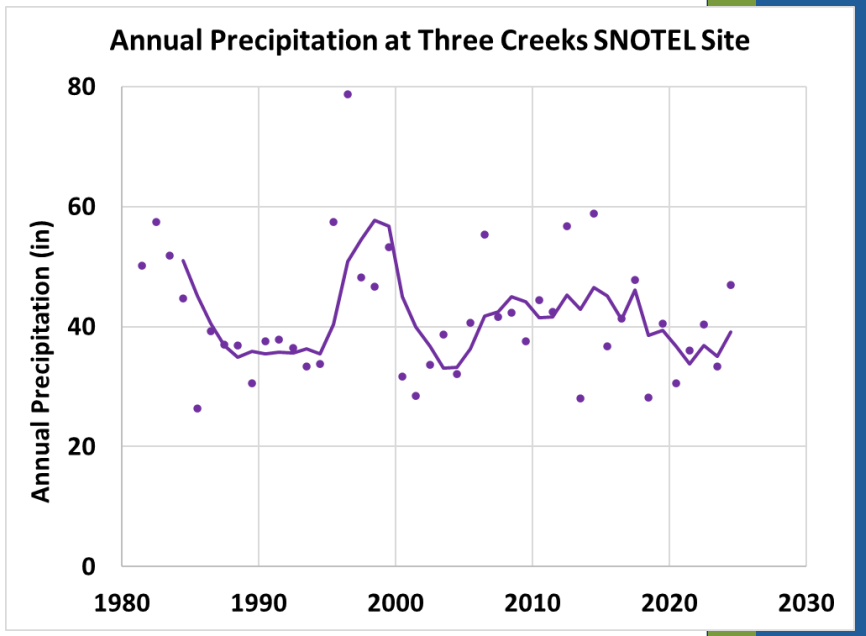
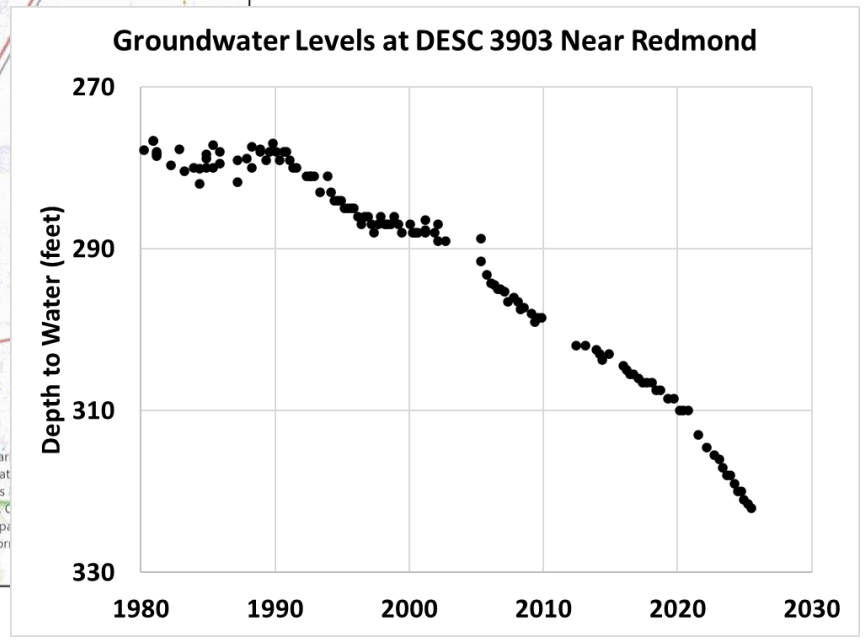
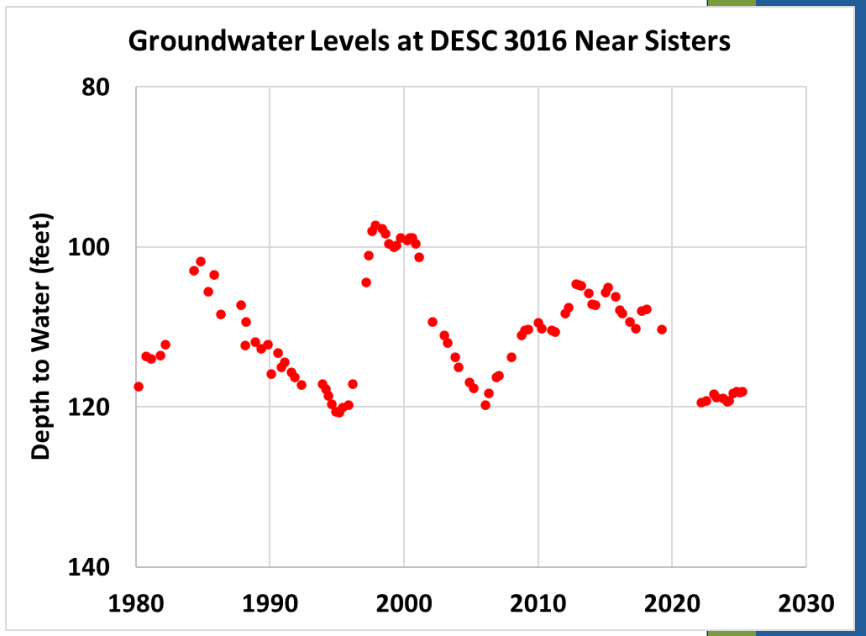
Groundwater Level Trends









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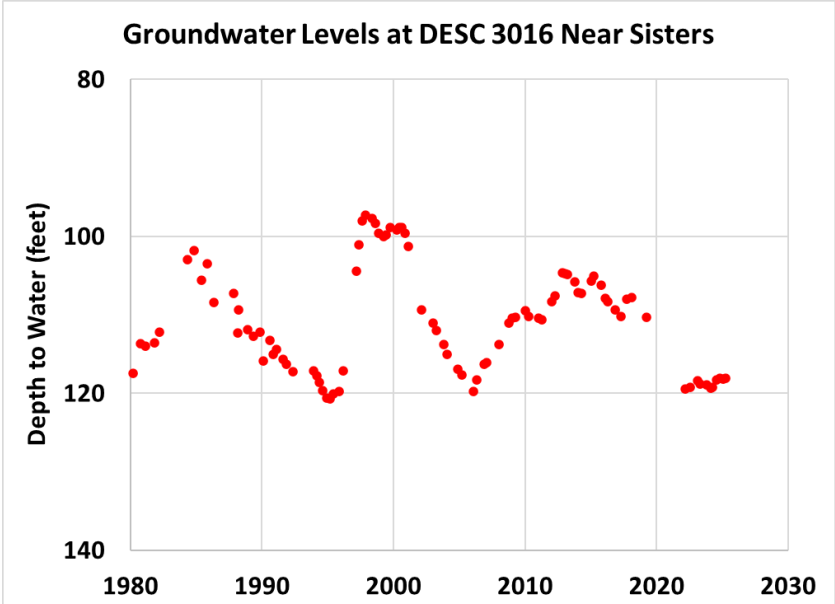
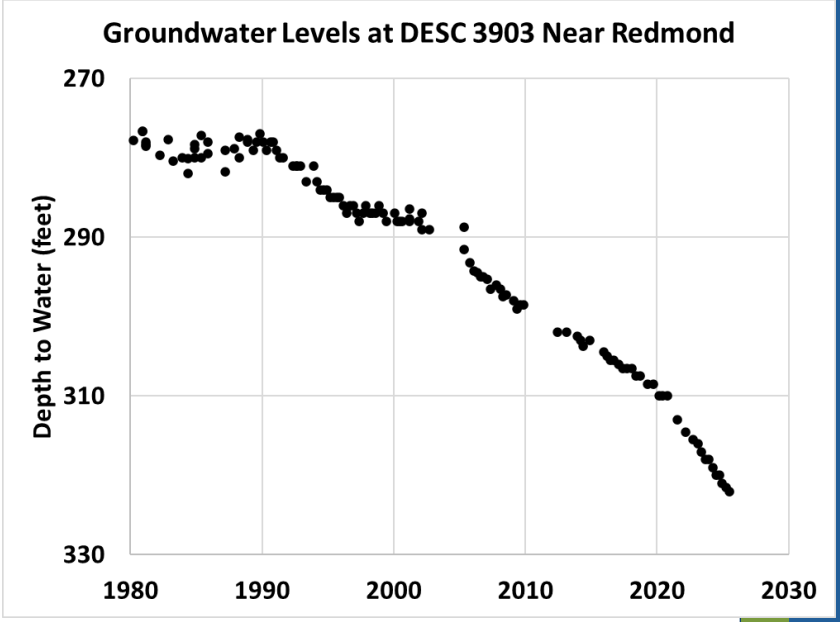
New Groundwater Allocation Rules

Reasonably Stable Groundwater Levels (OAR 690-008-(9):

- Average rate of decline less than **0.6 feet per year**.
- **25 feet of total decline** from highest known water level
- "…unless Annual High Water Levels have been measurably increased by human activity, in which case the Department may set a difference level using best available information





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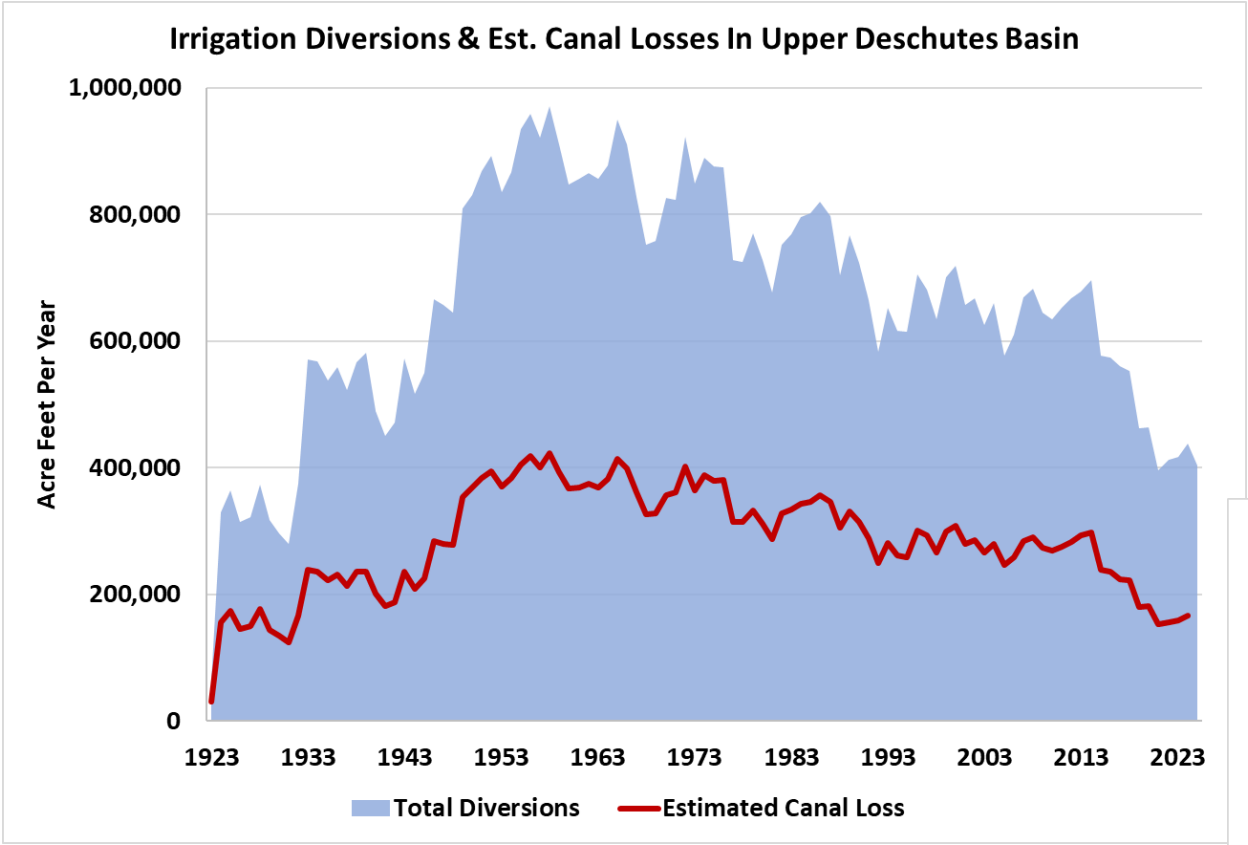
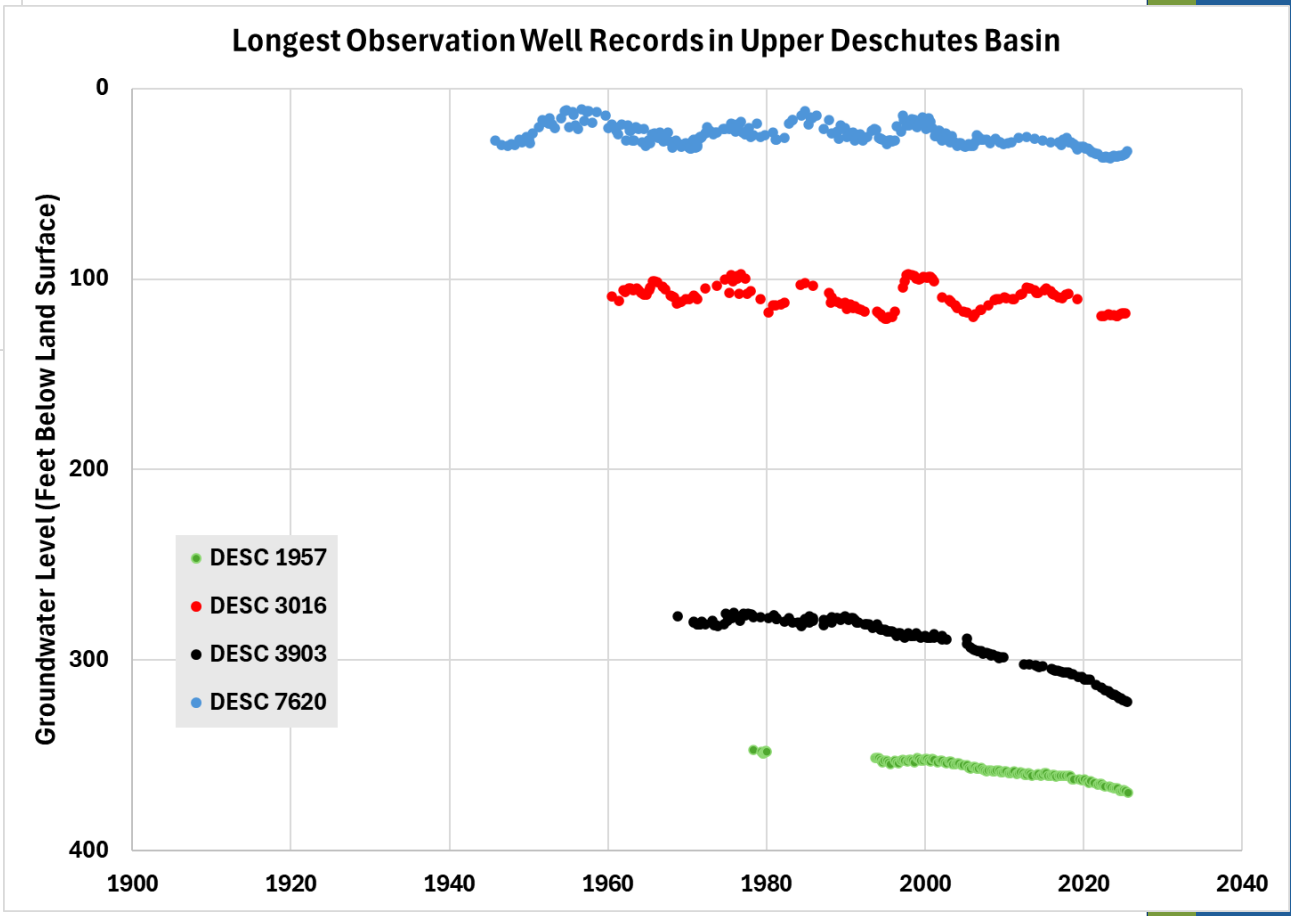
Canal Leakage Assessment



Note: this figure includes the following gages (14065500, 14066500, 14072500, 14068500, 14069500, 14069000, 14085200, 14070000, 14076000, 14073500) and assumes constant canal loss proportions reported in Table 4 in Gannett et al. (2001)



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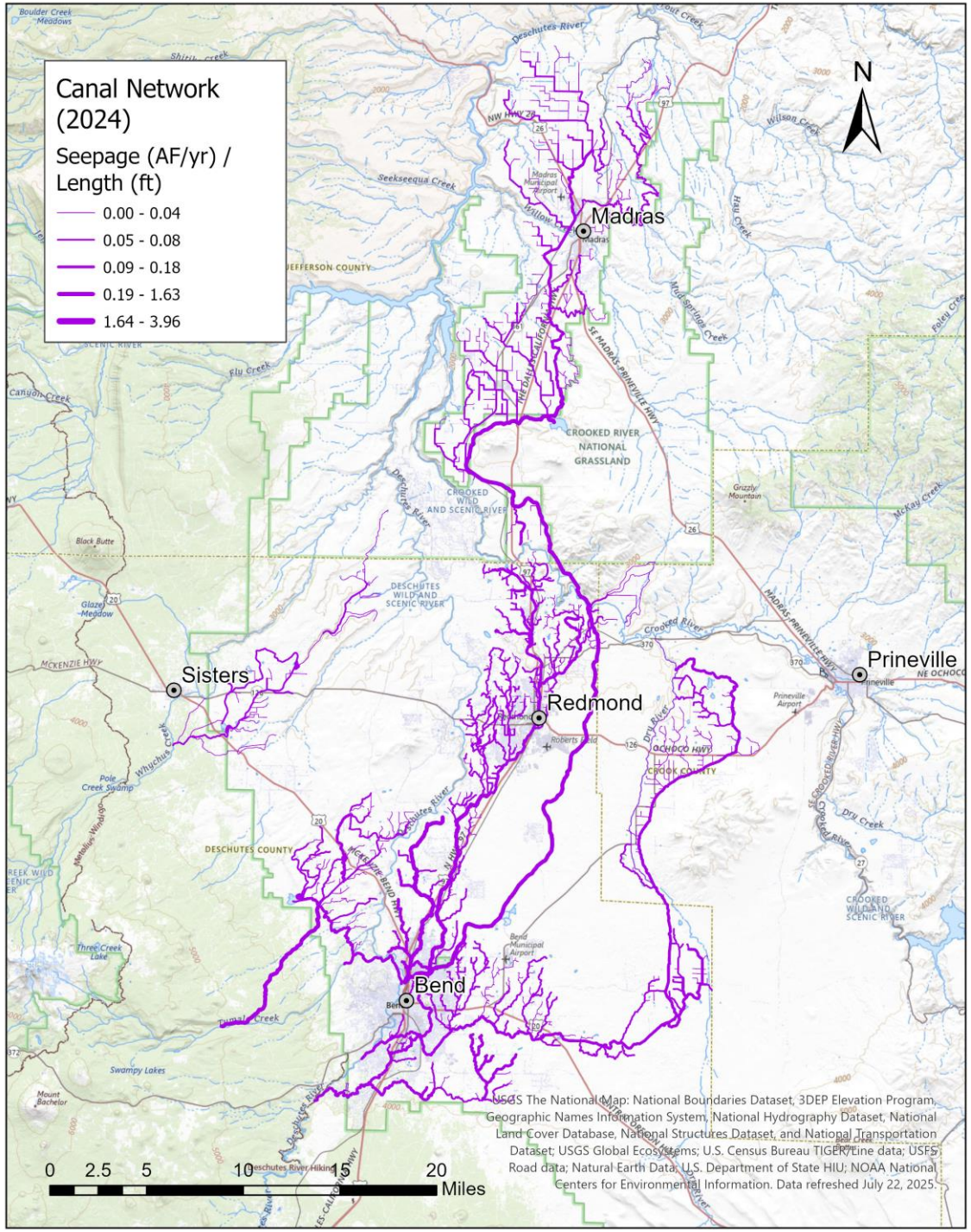

Canal Leakage Assessment

Technical Report in Progress

- Primary Goal: assess impact of canal leakage on historic groundwater levels to apply definition of Reasonably Stable Groundwater Levels
- Secondary Goals: provide updates or insights into other water budget changes.

Central Region Update

Deschutes Basin Water Collaborative and Water Bank Pilot

Angella Rinehold, Senior Water Advisor

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Deschutes Basin WATER COLLABORATIVE

Water for Rivers, Agriculture and Communities

A mechanism for various interests in the Deschutes Basin to collaborate on critical water allocation and management issues.

Members

~50 partners across basin interests

Mission

Work together for balanced water use

Geography

Upper + Middle Deschutes main stem

Activities

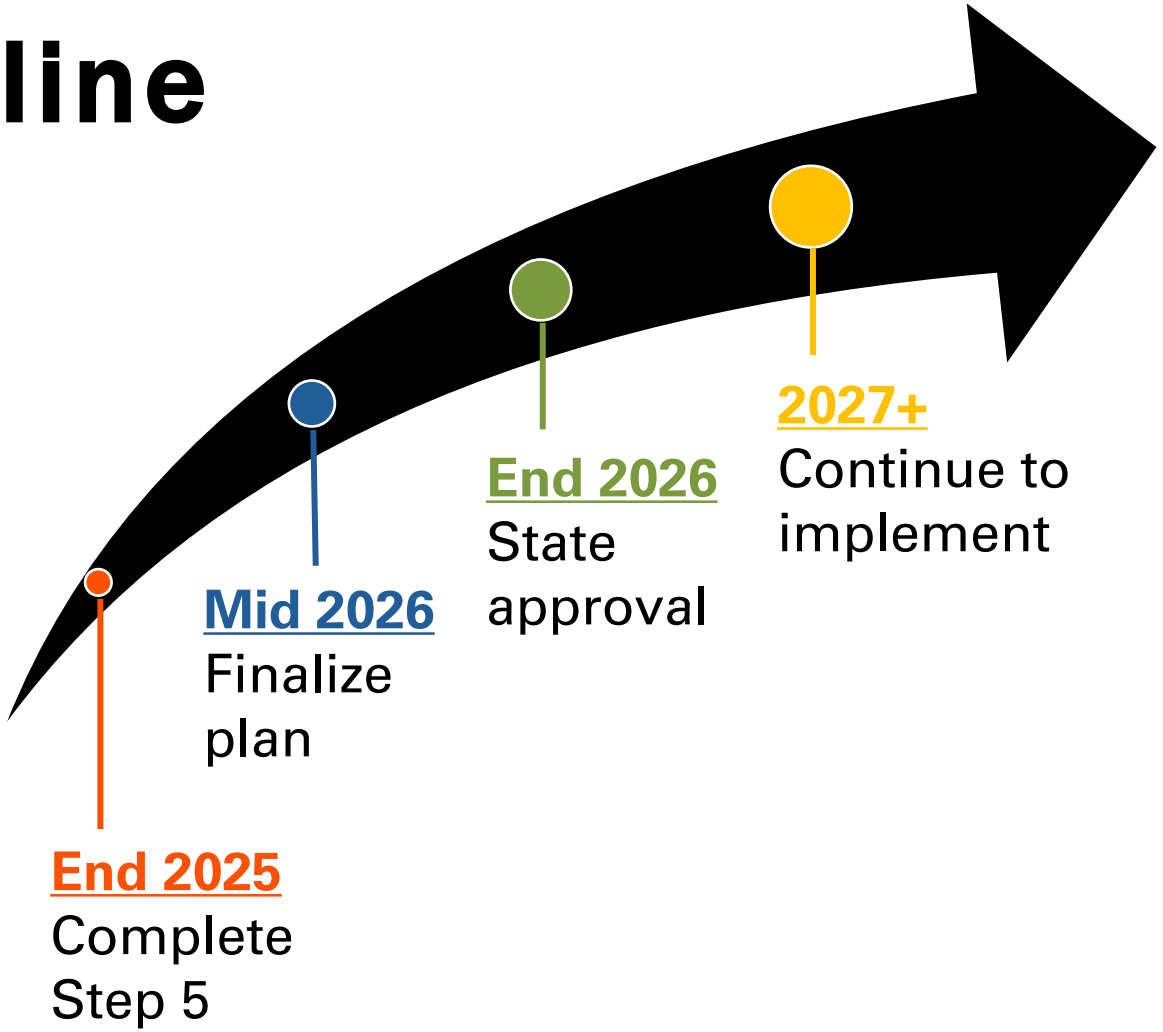
Coordination, projects, policies, planning

Image credit: DRC

Plan status + timeline

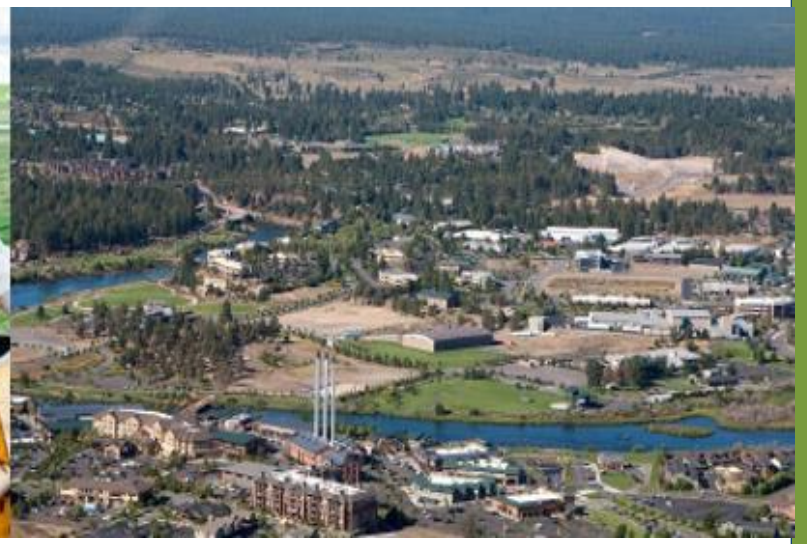
DBWC's planning steps (paraphrased):

- ❑ 1: Planning process
- ❑ 2: Characterize water resources
- ❑ 3: Characterize current + future needs
- ❑ 4: Develop integrated solutions
- ❑ **5: Plan implementation strategy**



OWRD supporting through staff team, planning team + working group; technical subcommittees; and ad hoc provision of data and information.

DBWC focus areas



Rivers

– Restore river flows

– Improve water quality + watershed health

Agriculture

– Shore up water supply for junior districts

– Meet HCP goals

Communities

– Meet long-term demand

– Understand + stabilize aquifer levels

Canal piping, mitigation program + water bank are key tools to address needs.

Mitigation program

A DBWC priority because:

- Essential for cities to secure water to meet demand
- Important for instream flow restoration

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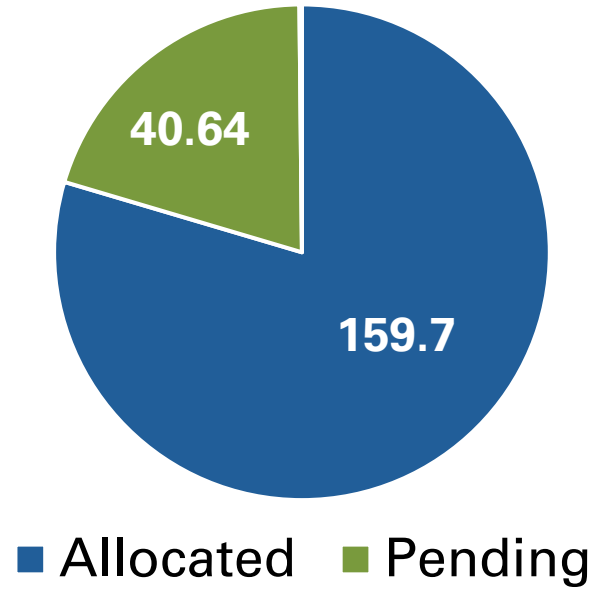
Mitigation program status

Allocation status



Current as of 9/5/25

–Total groundwater allocation cap of 200 cfs

–Allocated + pending applications reach cap

Sunsets Jan 2029
(per HB 3623)

- High priority for 2027 legislative session
- Evaluation of current program + exploration of future options ongoing
- Water Resources Commission briefings anticipated for near future

Water bank pilot

- **HB3806** signed into law July 2025
- **8-year** pilot (2026-2033)
- Encourages use of **existing pathways** to move water to meet needs
- Authorizes **new pathways**

Image credit: DRC

Let's look at existing + new pathways…

Local. Voluntary. Flexible.

Existing water bank pathways

Use of established banking mechanisms will continue.

Market-based tools already in use:

- Instream leasing
- Permanent instream transfers
- Mitigation program credits

Benefits:

- Summer flows in Middle Deschutes
- Water supplies for cities

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New water bank pathway (1 of 2)

After 1800 acres are leased:

1

Pooled fallowed acres:

– Fallowed acres transferred to bank for $

– 75% to NUID, 25% to M. Deschutes

– Bulk allocation for NUID use anywhere

Benefits:

- NUID supply + flexibility
- Summer flows in Middle Deschutes
- Water supplies for cities

Initial focus of new bank activity.

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New water bank pathway (2 of 2)

After 1800 acres are leased:

Precise measurement + accounting needed.

Limited readiness.

2

Split rate / split duty:

– On-farm duty reduced and remainder transferred to bank for $

– 100% to NUID during irrigation season + released from Wickiup in winter

Benefits:

- NUID supply
- Winter flows in Upper Deschutes (HCP goals)
- On-farm efficiency incentives

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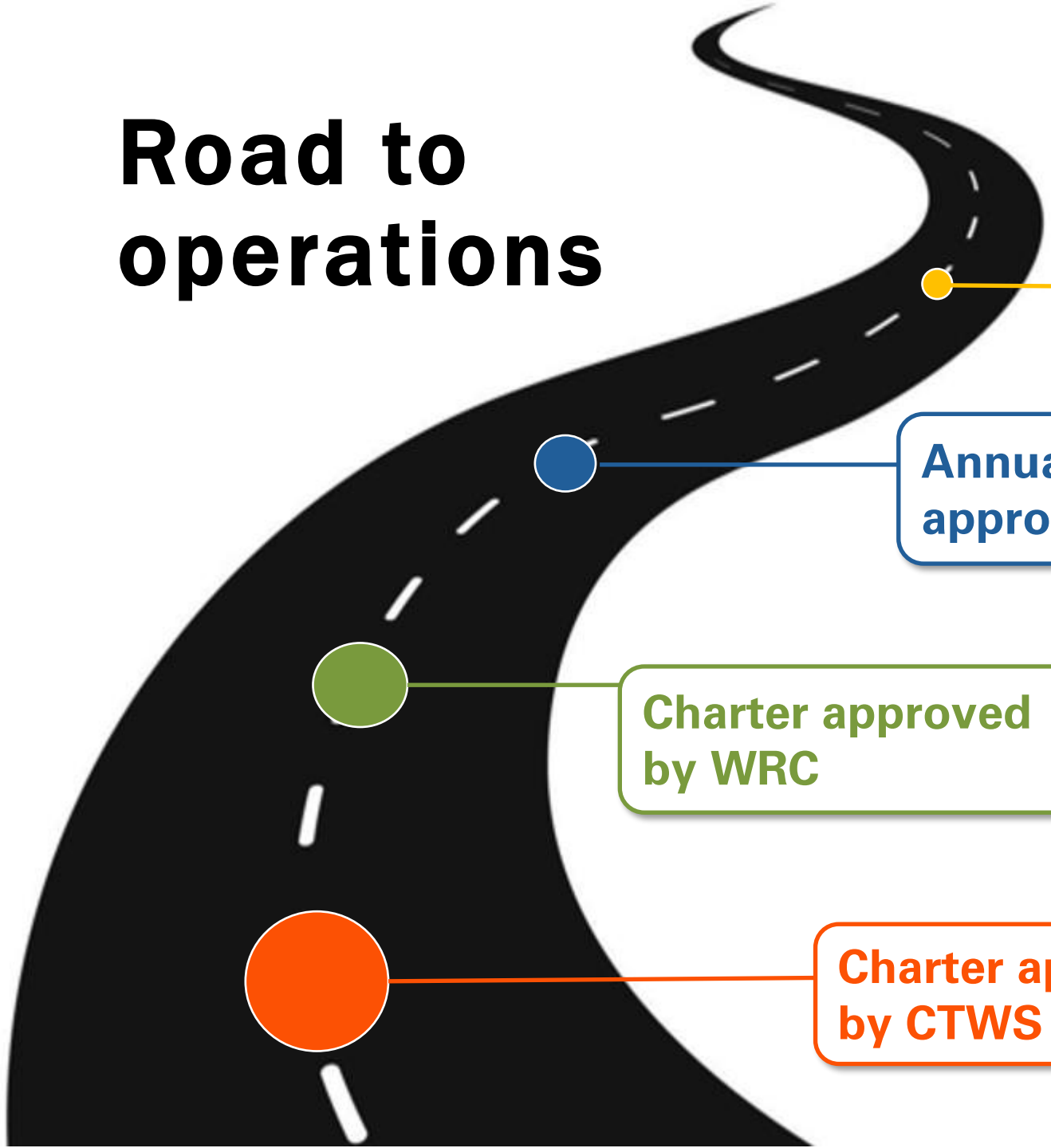
Road to operations



Bank operated by Deschutes River Conservancy in coordination with other participants as per annual plan

Annual operating plan approved by OWRD

Charter approved by WRC

Charter approved by CTWS

$

Operations contingent on resource availability

Fiscal impact

- New NRS3 for OWRD workload*
- 2025-27: $216.4k (for a 2026 start)
- 2027-29: $287.7k
- Other Funds needed for position

OWRD will review annual operating plans + post-season reports, process applications, distribute + legally protect water loaned through the bank.

Thank you!

Carolyn Sufit, Central Region Manager

Bill Nashem, District 24 Watermaster

Joe Kemper, Basin Hydrogeologist

Angella Rinehold, Senior Water Advisor