# THE UPPER DESCHUTES BASIN STUDY

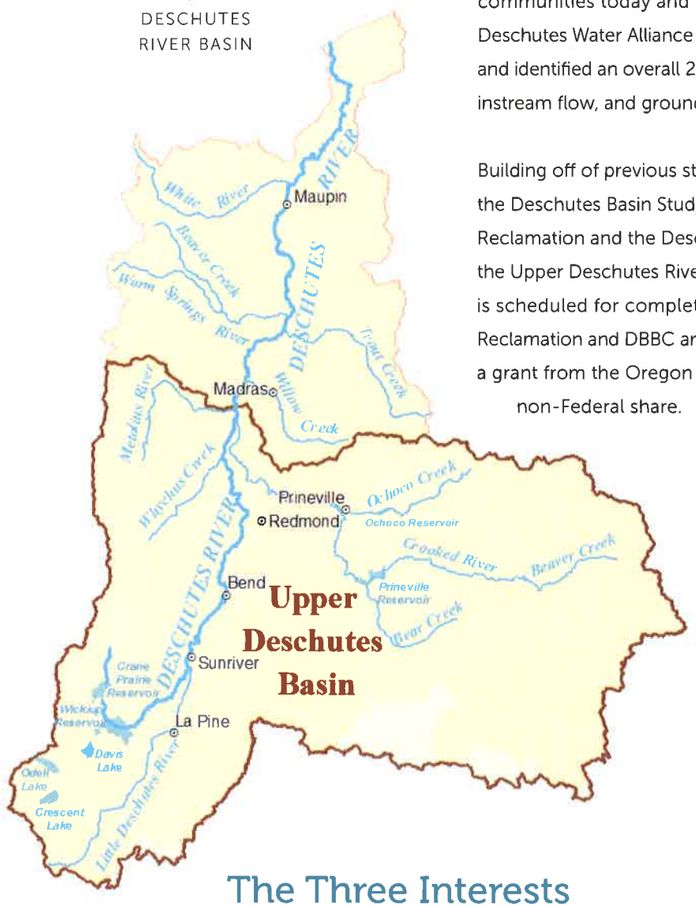
## Water for agriculture, rivers & cities

In the Deschutes Basin, we are focused on meeting water needs for rivers and communities today and into the future. Previous studies conducted by the Deschutes Water Alliance assessed projected future water supplies and demands and identified an overall 230,000 acre-foot annual shortfall to meet agricultural, instream flow, and groundwater (municipal) needs.

Building off of previous studies, the Bureau of Reclamation **(Reclamation)** and the Deschutes Basin Study Work Group **(BSWG)**, through an agreement between Reclamation and the Deschutes Basin Board of Control **(DBBC)**, will complete the Upper Deschutes River Basin Study. The Basin Study began in May 2015 and is scheduled for completion within 3 years at an estimated cost of $1.5 million. Reclamation and DBBC are each responsible for 50 percent of the study costs; a grant from the Oregon Water Resources Department (OWRD) is funding the non-Federal share.

LOCATOR MAP

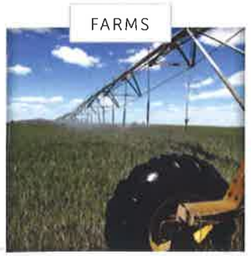
DESCHUTES RIVER BASIN

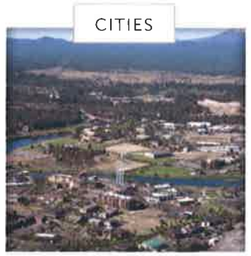


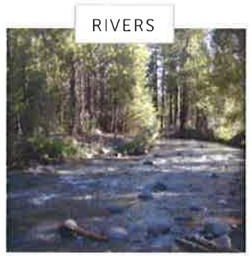

## The Study's Objectives

1. **BUILD UPON** the solid foundation of prior studies to develop a comprehensive analysis of water supply and demand, integrating and updating the analyses to include new information that accounts for climate change.
2. **ANALYZE** how existing operations and infrastructure will perform under the projected future water supply conditions and demands.
3. **IDENTIFY** and evaluate options for addressing identified water imbalances and provide a common understanding of the interconnected effects of options that may move water between uses and users.
4. **COMPLETE** a tradeoff analysis to compare relative cost, benefits, and environmental impact of identified options. While the study will not propose any specific project, program, or plan, it will provide a basis for future water management in the basin.

## The Three Interests



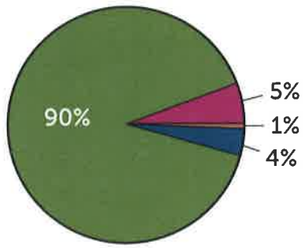

**The Basin Study Work Group** is a collaborative, consensus-based group with 37 representatives from irrigation, instream, and municipal interests, and from the Confederated Tribes of Warm Springs.

## Water Supply Goals

1. Secure and maintain stream flows and water quality in the Deschutes Basin for the benefit of fish, wildlife and people.
2. Secure and maintain a reliable and affordable supply of water to sustain agriculture.
3. Secure and maintain a safe, affordable and high quality water supply for urban communities.

BASIN WATER RIGHTS DISTRIBUTION

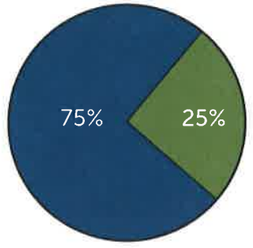
AS OF 2006 DESCHUTES WATER ALLIANCE STUDIES




- Agricultural
- Municipal & Industrial
- Resorts
- Instream

ESTIMATED SUPPLY SHORTFALLS

2006 DESCHUTES WATER ALLIANCE STUDIES (TO 2025)




- Agricultural, Municipal & Industrial and Resorts (combined)
- Rivers

## What comes after the Basin Study?

**Next Steps**

1. Basin Study information will inform a long-term water management plan.
2. Raise political and financial support to implement plan.
3. *Implement!*

For more information about this study, visit the Bureau of Reclamation's website at: http://www.usbr.gov/pn/studies/deschutes/
or email: bor-pnr-udbasinstudy@usbr.gov

## Basin Study Work Group Members

Arnold Irrigation District
Avion Water Company
Bend Paddle Trail Alliance
Central Oregon Cities Organization
Central Oregon Flyfishers
Central Oregon Irrigation District
City of Bend
City of La Pine
City of Madras
City of Redmond
Confederated Tribes of Warm Springs
Crooked River Watershed Council
Deschutes County
Deschutes River Conservancy
Deschutes Soil and Water Conservation District
Deschutes Water Alliance
Lone Pine Irrigation District
Native Reintroduction Network
Natural Resources Conservation Service
North Unit Irrigation District
Ochoco Irrigation District
Oregon Department of Agriculture
Oregon Dept. of Environmental Quality
Oregon Water Resources Department
Portland General Electric
Swalley Irrigation District
Three Sisters Irrigation District
Trout Unlimited
Tumalo Irrigation District
U.S. Bureau of Reclamation
U.S Fish and Wildlife Service
U.S. Forest Service
Upper Deschutes River Coalition
Upper Deschutes Watershed Council
Water for Life
WaterWatch of Oregon

City of Prineville

Coalition for the Deschutes

## Funding Sources

The Basin Study is funded by the Bureau of Reclamation's WaterSMART program and Oregon Water Resources Department. The Basin Study Work Group has received support from Oregon Water Resources Department, Lamb Foundation, Bella Vista Foundation, Collins Foundation, National Fish and Wildlife Foundation/Wells Fargo, Columbia Basin Water Transactions Program and Oregon Community Foundation.

# THE UPPER DESCHUTES Basin Study

Planning for sustainable water for our farms, rivers and cities.


Ongoing and emerging projects

## The Basin Study

- Project risks to water supply from climate change
- Assessment of future water supply and demand
- Find opportunities to increase efficiencies
- Create strategies to meet future water needs

**Desired Outcomes**

- Reliable water for agriculture
- Restore more natural flow to local rivers
- Secure water for cities

2014 | 2015 | 2016 | 2017 | 2018 | FUTURE

## THE BASIN STUDY Timeline

### 1 PHASE ONE Study Development ☑

- Collaboration
- Plan of Study Development
- Grant Secured
- Study Team Hired

Completed 8/2015 — 18 MOS.

### 2 PHASE TWO Building Blocks ☐

REFINE DEMAND

- Upper Deschutes Ecological Assessment
- Middle Deschutes, Whychus Creek & Crooked River Temperature Flow Assessments
- Municipal Groundwater Demand

EVALUATE WATER SUPPLY ALTERNATIVES

- Water Conservation Assessment
- Reservoir Optimization Assessment
- Assessment of New or Enhanced Storage
- Water Transactions (Leasing/Trading Water Rights)
- Legal, Policy, Economic Analyses

DEVELOP/UPDATE MODELS

- Incorporate Climate Projections
- Update Hydrology/Groundwater Models
- Refine Water Resources Models

1 YEAR

### 3 PHASE THREE Scenarios ☐

- Collaboratively Develop Water Resources Scenarios
- Model Water Resources Scenarios

1 YEAR

### 4 PHASE FOUR Conclusions ☐

- Evaluation of Scenarios
- Reporting

1 YEAR