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## Northwest **Power** and **Conservation** Council

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September 4, 2024

### **MEMORANDUM**

**TO: Council Members**

**FROM: Patty O'Toole**

**SUBJECT: Report on Bureau of Reclamation Overview and Programs**

### **BACKGROUND:**

**Presenter:** Roland, Springer, Deputy Regional Director, Interior Region 9: Columbia-Pacific Northwest, Bureau of Reclamation

**Summary:** Roland Springer will present an overview of the Bureau of Reclamation's activities in the Columbia River Basin, including how the Bureau is organized and a summary of some of the key Bureau facilities, work and projects that occur in the basin.

**Relevance:** Under Section 4(h)(11)(A) of the Northwest Power Act, the Bureau of Reclamation, along with the Corps of Engineers, the Federal Energy Regulatory Commission and Bonneville Power Administration, is to take into account the Council's Columbia River Basin Fish and Wildlife Program "to the fullest extent practicable" at each relevant stage of the decision-making processes.

**Workplan:** Fish and Wildlife Division work plan 2024; Program planning & coordination.

**Background:** The Bureau of Reclamation operates hydroelectric dams in the region, most notably Grand Coulee. The Bureau also implements actions to

protect and mitigate those impacts to fish and wildlife, including fish protection operations at the dams as well as fish habitat restoration work in various subbasins. The Bureau's work complements and sometimes directly connects with Council-reviewed and recommended measures and projects implemented by the Bonneville Power Administration.

For example, the Bureau implements water conservation and habitat restoration work in the Yakama, John Day, Grand Ronde, Salmon and Upper Columbia basins, work that has simultaneously coordinated with and incorporated efforts by the Bureau, Council, Bonneville, and local implementation entities. This collaborative effort has been helpful in completing important on-the-ground projects for salmon. The work is often seen now as taking place within the ESA regulatory framework (see <https://www.usbr.gov/pn/fcrps/habitat/index.html>), but much of it originated in the 1990s in close connection to the Council's Fish and Wildlife Program. Other coordination between the Council and Bureau has led to work on invasive mussel prevention, climate change modeling, biological opinion implementation plans, and hydro operations.

The Council welcomes the Bureau to the September Council meeting to hear an overview of the agency's work and programs in the Columbia, with the hope to continue to strengthen this partnership in the future.

More Info:

[Columbia-Pacific Bureau of Reclamation website](#)



— BUREAU OF —  
RECLAMATION

# Bureau of Reclamation Overview and Programs

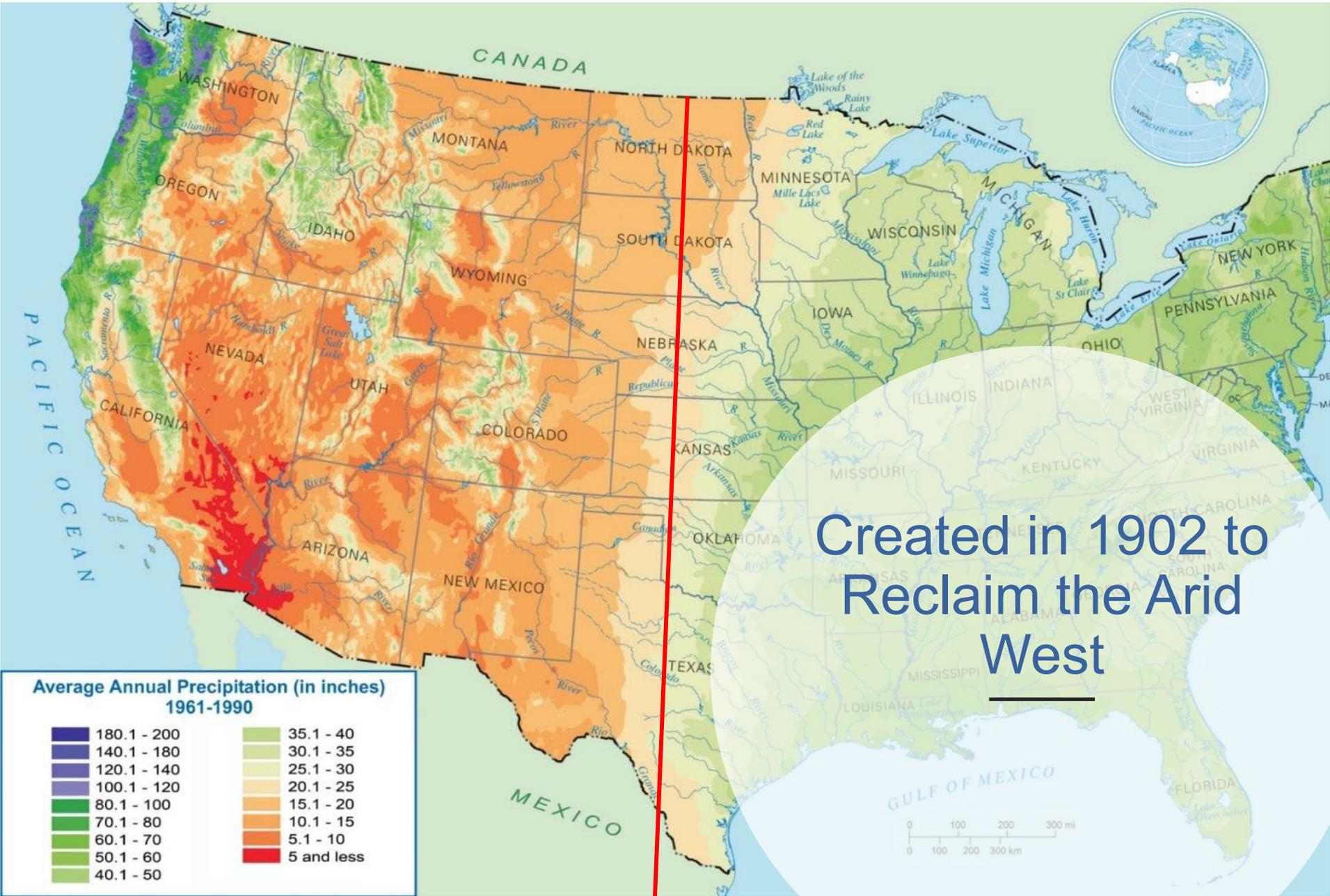
Northwest Power and Conservation Council

September 10, 2024

# Agenda

- Reclamation Overview
- CPN Region Overview
- Areas of Interest





Created in 1902 to  
Reclaim the Arid  
West



# Jurisdiction and Structure

Approximately 5,500 Employees

Old

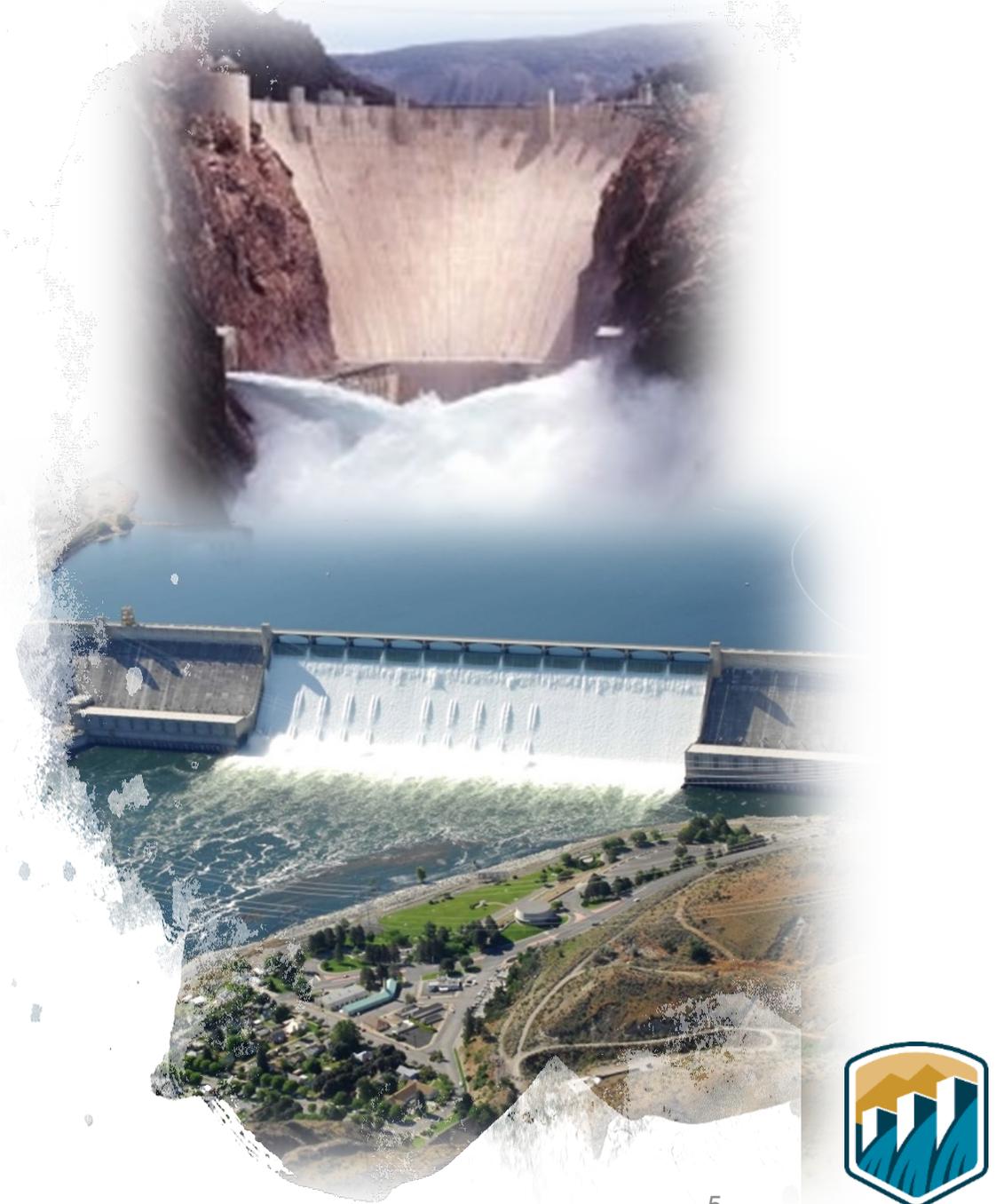


New



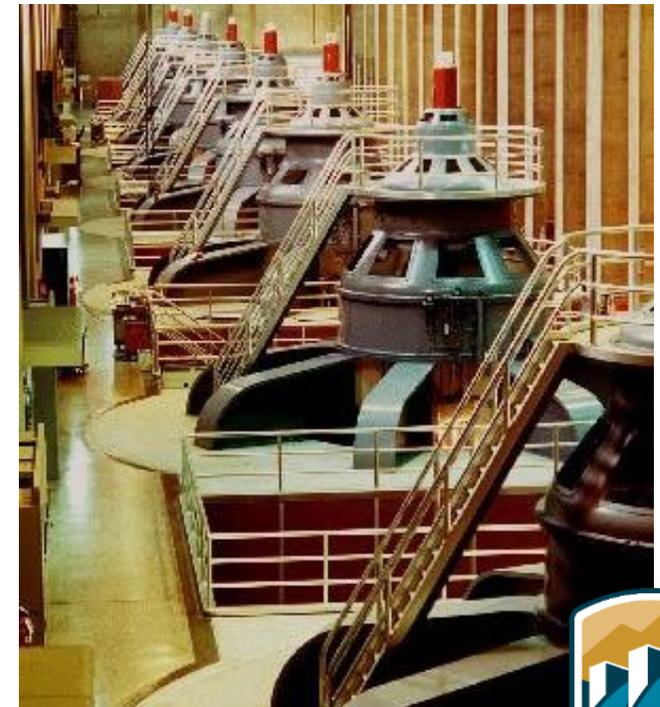
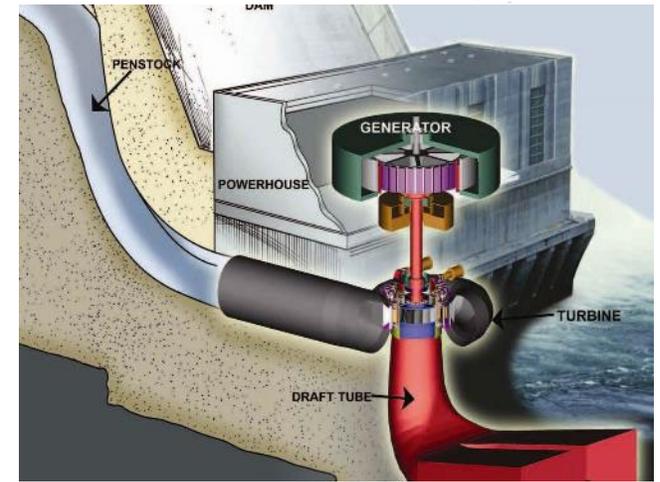
# 122 Years of Managing the Contemporary Water Needs of the West

- Reclamation Act signed June 17, 1902
  - U.S. Reclamation Service
  - 1923 – Bureau of Reclamation
- Began with “single purpose” projects designed primarily for irrigation development
- Additional benefits considered incidental to irrigation at the time



# Reclamation's Role in the West

- Largest water wholesaler in U.S.
  - Irrigates 10 million acres (20% of farmers in West)
    - 60 percent of the nation's vegetables
    - 25 percent of its fresh fruit and nut crops
  - Drinking water to 31 million people
- Second largest hydropower producer in U.S.
  - 14,000 megawatts & 40 billion kilowatt-hours/year
  - Enough to meet demand of 3.5 million U.S. homes
  - Generates \$700 million in revenue to the US Treasury





# Reclamation's Role in the West

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- Flood Control – Reduces risk to life and property
- Recreation – 289 recreation sites / 90 million visits annually
- Reclamation activities contribute \$46 billion in economic output, and support about 312,000 jobs



# Unique Aspects of Reclamation

## No single Organic Statute

- Some general authorities
- Hundreds of Project specific authorizations

## Must Comply with State Water Law

- Project water rights appropriated under state law
- Subject to State adjudication and administration
- Multi-state Compacts/Decrees/Treaties

## Business Practices are Different

- Water Supply and Power costs borne by beneficiaries
- Extensive cost accounting system

## Partnerships: Transferred Works



## Significant Contemporary Challenges

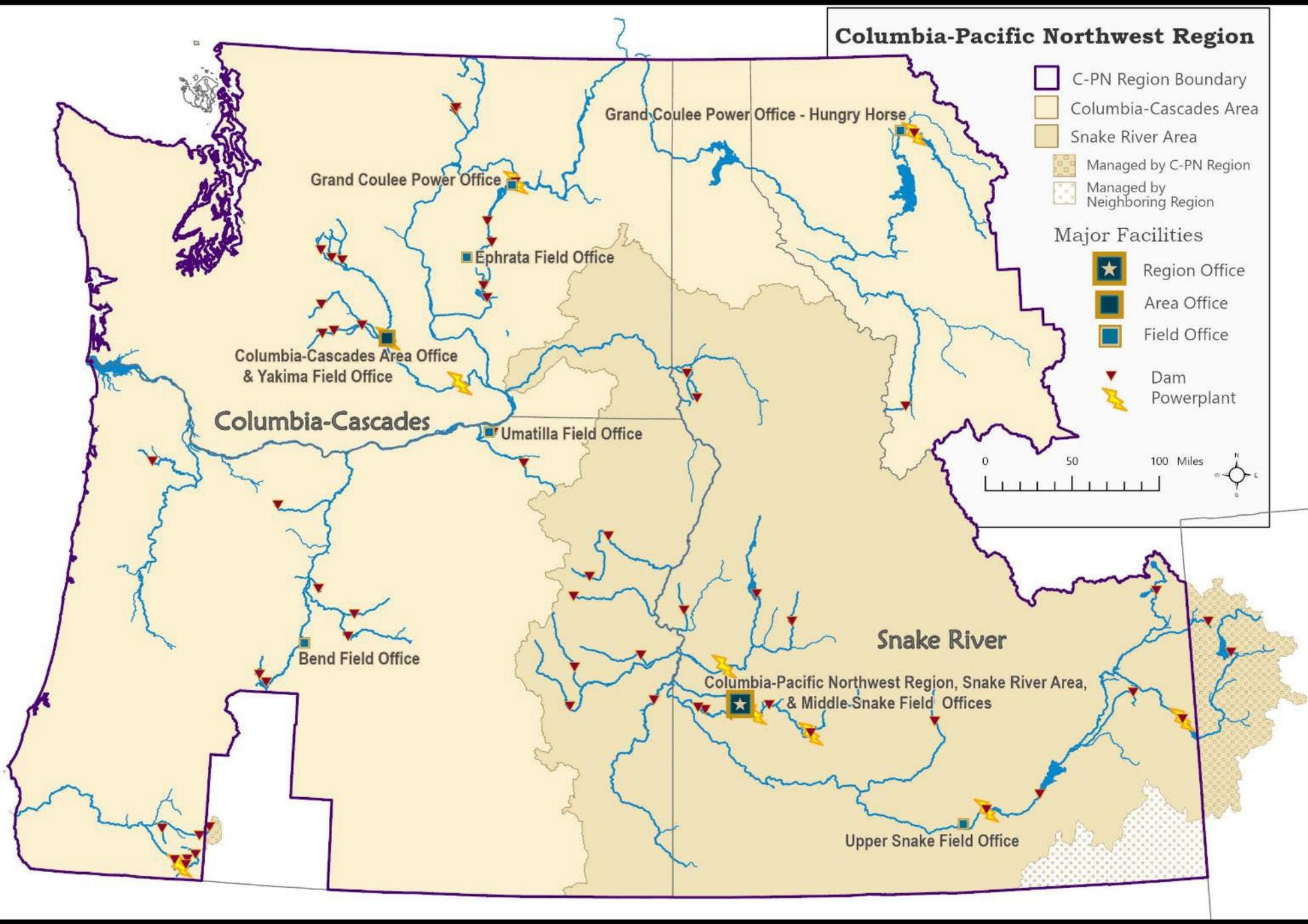
- 1) Water supply & demand imbalances
- 2) Managing competing water use demands
- 3) Western drought response
- 4) Colorado River Basin water
- 5) California's Central Valley water
- 6) Aquatic ecosystems
- 7) Infrastructure investment including aging infrastructure



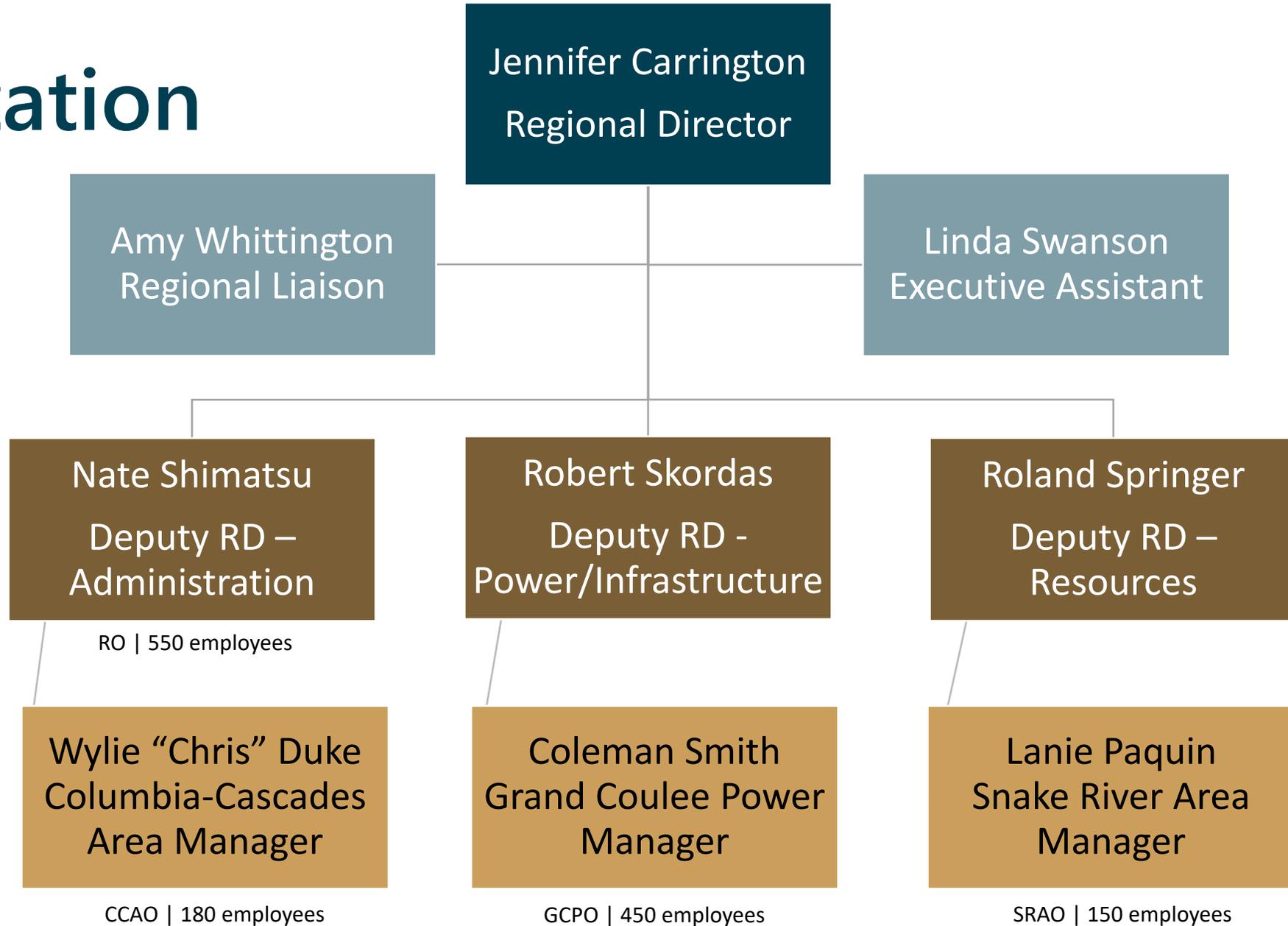
- Reclamation Overview
- **CPN Region Overview**
- Areas of Interest



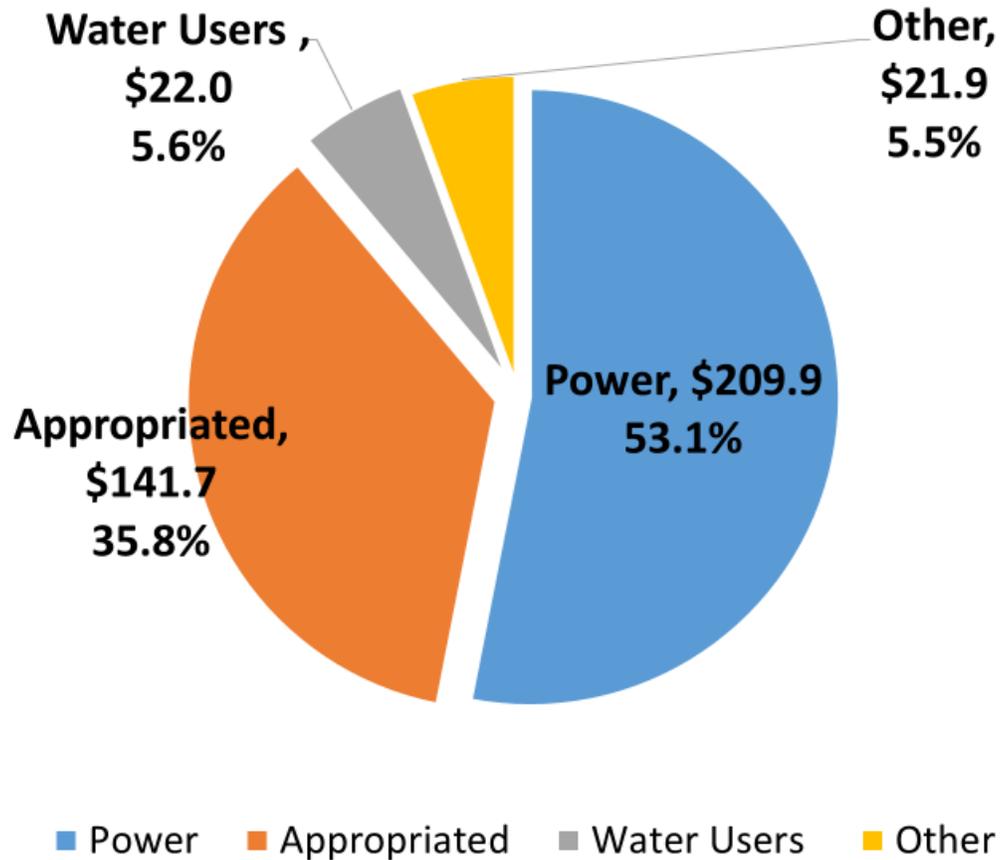
# Columbia-Pacific Northwest Region



# Organization



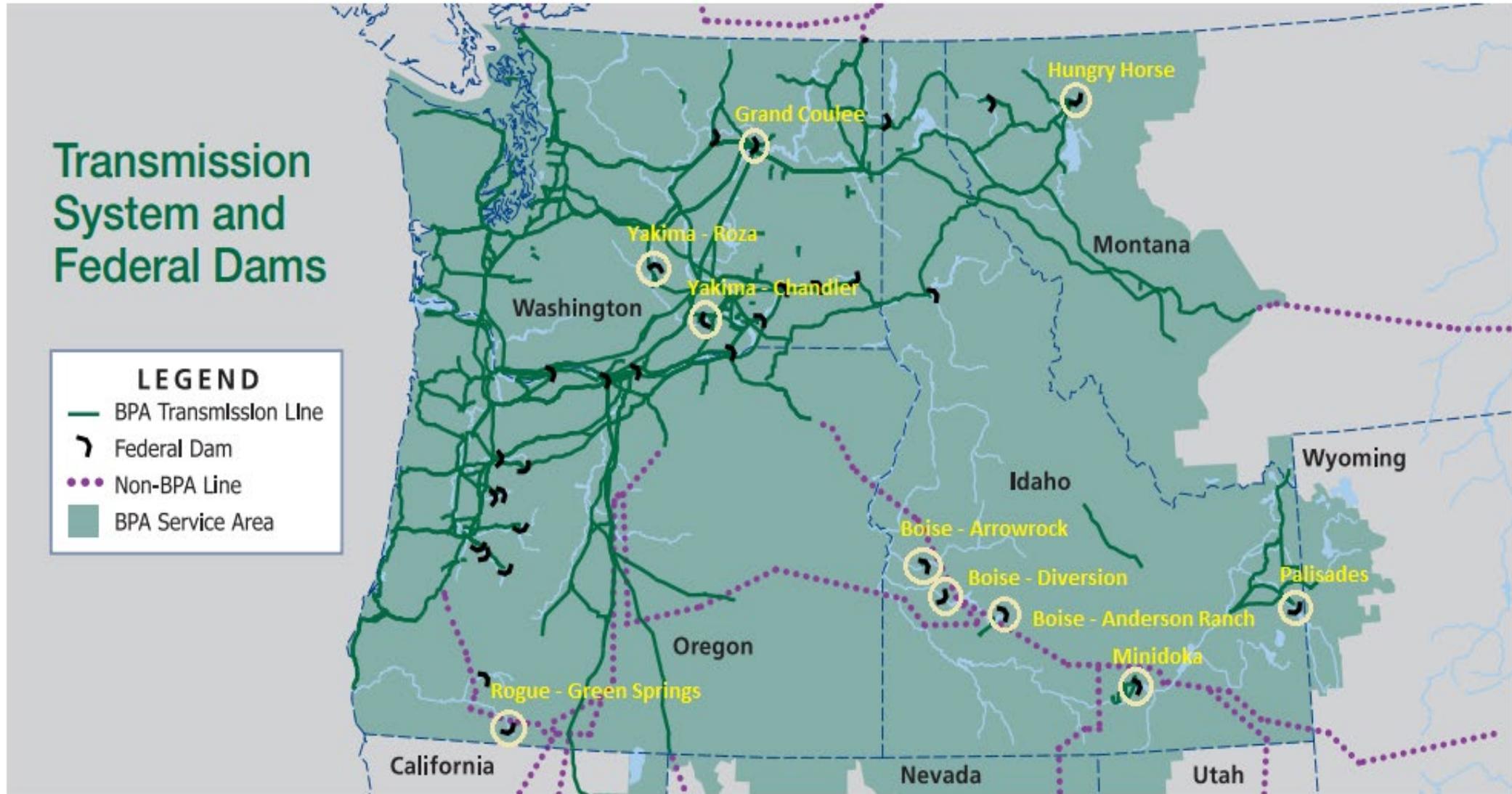
# Regional Budget- Total FY 2024 - \$395.5M



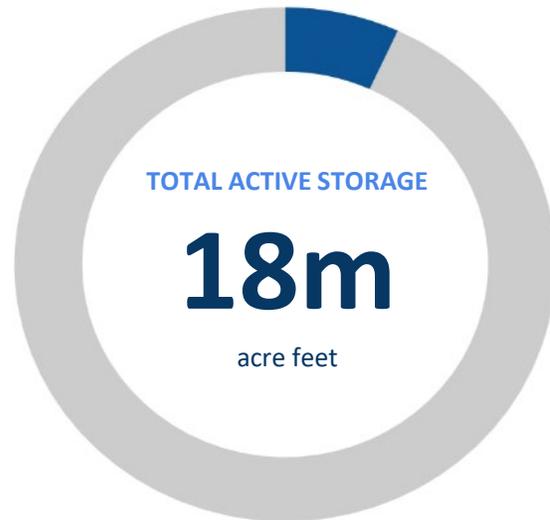
- BPA funding represents O&M, Transmission, Small and Large Capital work
- Water users consists of upfront funding for O&M
- Other represents general reimbursable work, other non-Federal



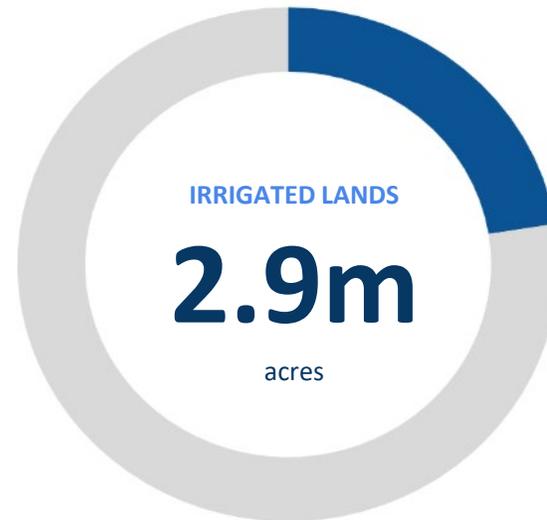
# Power Program



# Putting Water to Beneficial Use



● PN Region ● Rest of Reclamation



● PN Region ● Rest of Reclamation



● PN Region ● Rest of Reclamation



# Grand Coulee Power Office

- 1942 - dam completed
- 1975 - Nathaniel 'Nat' Washington Powerplant completed
- 33 generating units, 3 powerplants, 1 pump/generating plant
- Average annual generation – 21 billion kWh
- Largest storage reservoir on the Columbia River in the U.S.
  - active capacity of 5.2 million acre-feet
- Provides flood protection for Portland/Vancouver area
- Maximum flow of the Colorado River can fit in one unit Nat Powerplant



# Columbia-Cascades Area Office



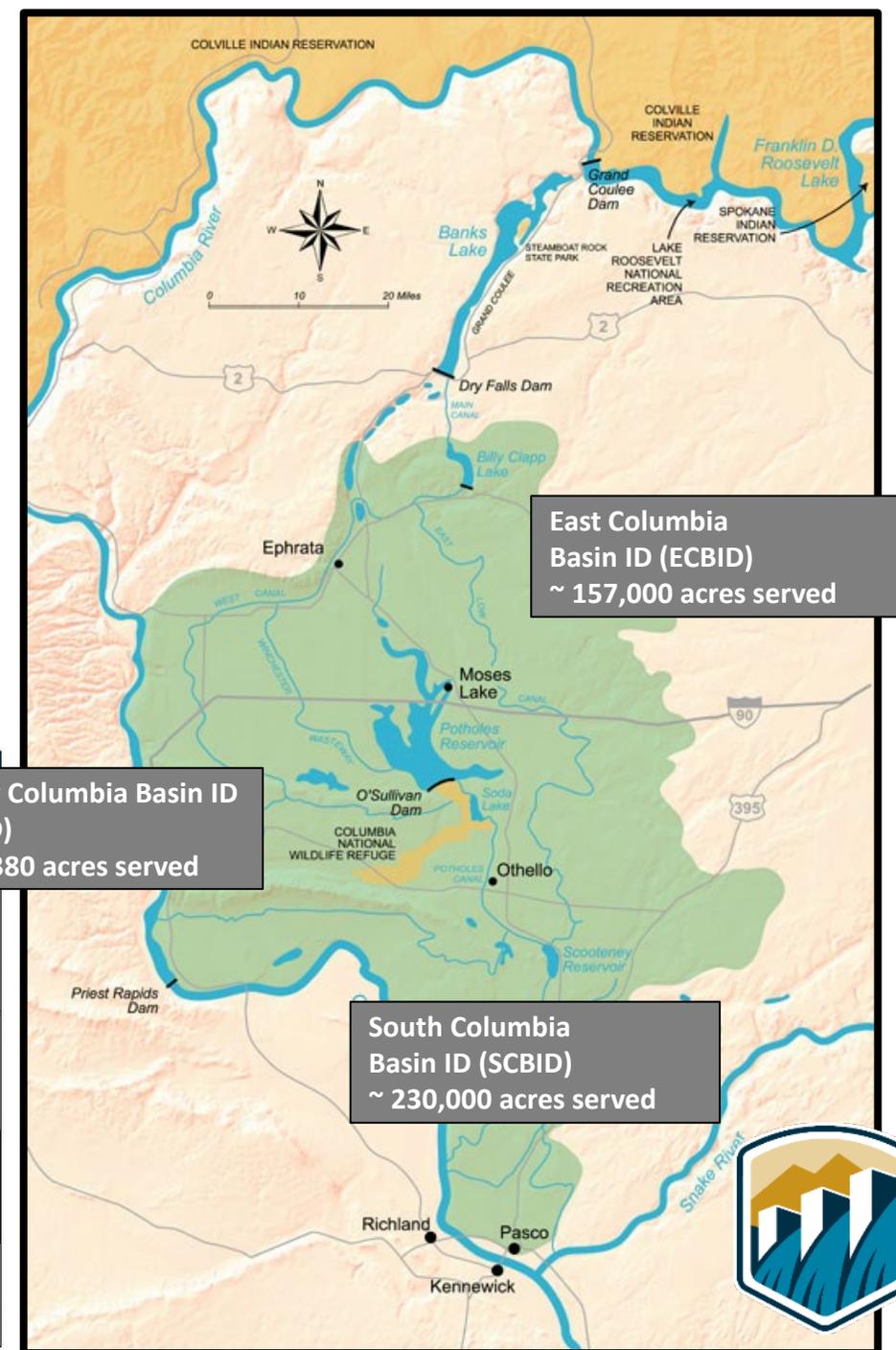
# Ephrata Field Office

- Key Projects

- Columbia Basin Project
- Odessa Groundwater Replacement Program
- Potholes Supplemental Feed Route
- Title Transfers
  - Hayden Lake



Quincy Columbia Basin ID (QCBID)  
~ 250,380 acres served



East Columbia Basin ID (ECBID)  
~ 157,000 acres served

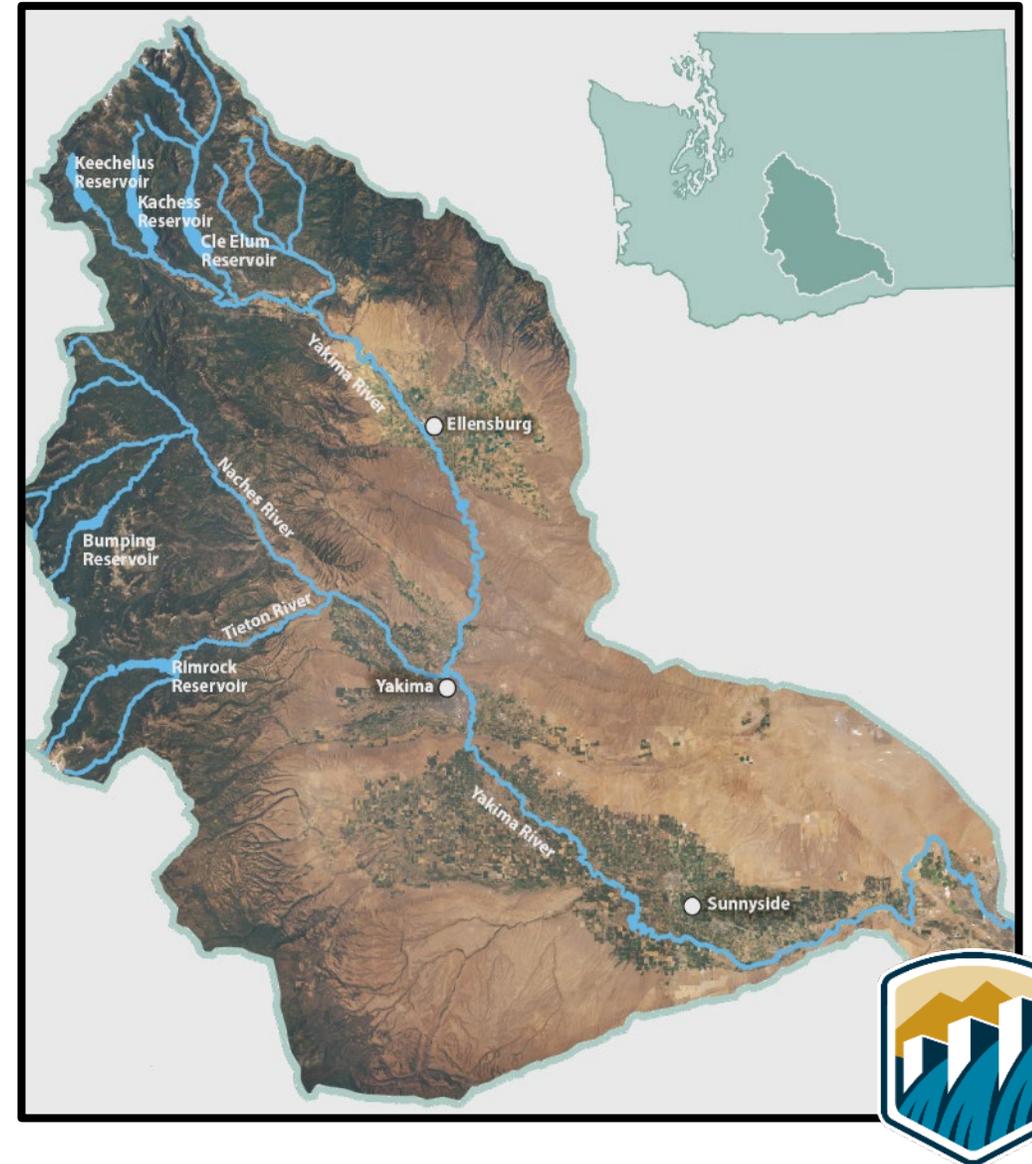
South Columbia Basin ID (SCBID)  
~ 230,000 acres served



# Yakima Field Office

- **Key Projects**

- **Yakima River Basin Water Enhancement Project (YRBWEP)**
  - Phase I – Fish Screens and Ladders
  - Phase II – Conservation and Instream Flows
  - Phase III – Yakima Basin Integrated Plan
- **Leavenworth National Fish Hatchery Surface Water Intake Fish Screens and Fish Passage (L-SWISP) Project**
- **Cle Elum Adult Collection Facility - groundbreaking July 2024**



# YAKIMA RIVER BASIN INTEGRATED WATER RESOURCE MANAGEMENT PLAN

## Structural & Operational Changes

1. Raise the Cle Elum Pool by three feet to add 14,600 ac-ft in storage capacity.
2. Modify Kittitas Reclamation District canals to provide efficiency savings.
3. Construct a pipeline from Lake Keechelus to Lake Kachess to reduce flows and improve habitat conditions during high flow releases below Keechelus and to provide more water storage in Lake Kachess for downstream needs.
4. Decrease power generation at Roza Dam and Chandler power plant to support outmigration of juvenile fish.
5. Make efficiency improvements to the Wapatox Canal.

## Reservoir Fish Passage

- Provide fish passage at:
1. Clear Lake
  2. Cle Elum
  3. Bumping
  4. Tieton (Rimrock)
  5. Keechelus
  6. Kachess

## Surface Water Storage

1. Build a 162,500 ac-ft off-channel surface storage facility at Wymer on Lmuma Creek.
2. Access an additional 200,000 ac-ft of water by tapping into inactive storage at Lake Kachess.
3. Construct a new dam at Bumping Reservoir to increase capacity to 190,000 ac-ft.
4. Begin appraisal of potential projects to transfer water from the Columbia River to the Yakima Basin.

## Enhanced Water Conservation

1. Implement an agricultural water conservation program designed to conserve up to 170,000 acre-feet of water in good water years.
2. Create a fund to promote water use efficiency basin-wide using voluntary, incentive-based programs. Focus on outdoor uses as top priority.

## Habitat/Watershed Protection & Enhancement

1. Protect ~70,000 acres of land by acquiring high elevation portions of the watershed and forest and shrub steppe habitat.
2. Evaluate potential Wilderness, Wild and Scenic River, and National Recreation Area designations to protect streams and habitat.
3. Create a habitat enhancement program to address reach-level floodplain restoration priorities and restore access to key tributaries.

## Market Reallocation

Employ a water market and/or a water bank to improve water supply in the Yakima River basin. Market reallocation would be conducted in two phases:

The near-term phase would continue existing water marketing and banking programs in the basin, but take additional steps to reduce barriers to water transfers.

The long-term program would focus on facilitating water transfers between irrigation districts. This would allow an irrigation district to fallow land within the district and lease water rights for that land outside the district.

## Groundwater Storage

1. Construct pilot projects to evaluate recharging shallow aquifers via groundwater infiltration. Full scale implementation may follow.
2. Build an aquifer storage and recovery facility allowing Yakima City to withdraw water from the Naches River during high flow periods and store it underground for use during low flow periods.

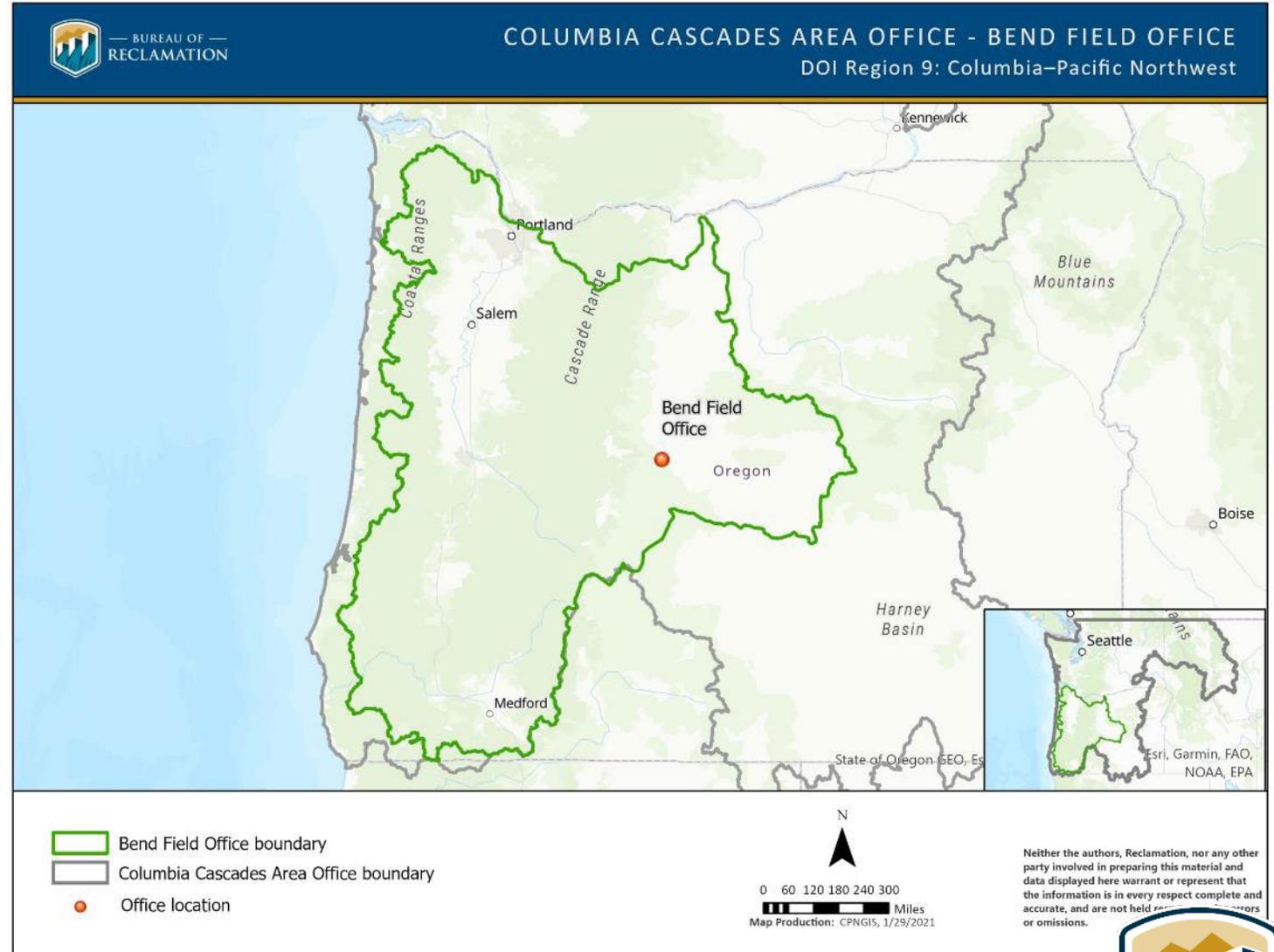


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# Bend Field Office

- Key Projects

- Scoggins Safety of Dams
- Ochoco Irrigation District Partial Title Transfer
- Deschutes Habitat Conservation Plan/Crooked River Act Implementation
- NUID Fish Screens
- Lake Billy Chinook Pumping Plant



# Umatilla Field Office

- Key Projects
  - Confederated Tribes of the Umatilla Indian Reservation Water Rights Settlement



# Snake River Area Office

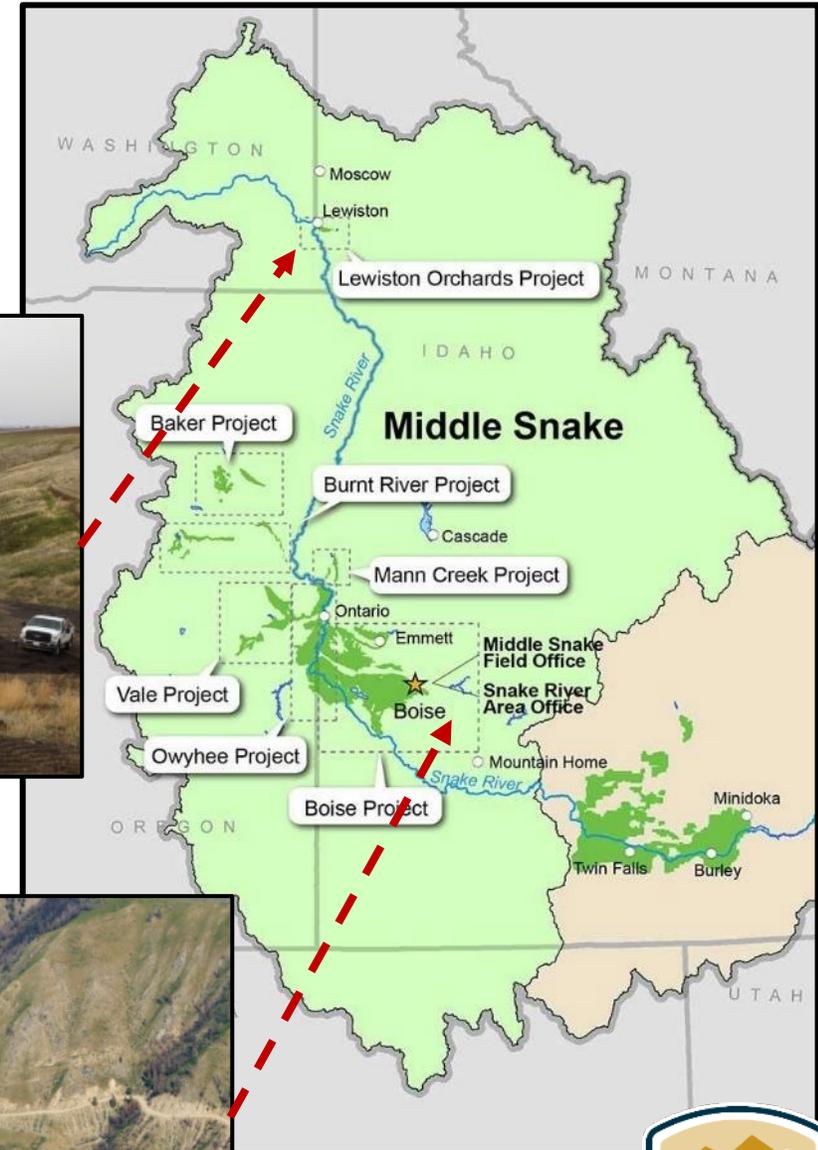
- 2 Field Offices
- 150 Employees
- 27 Dams
  - Active capacity approximately 6.8M acre-feet
- 5 Powerplants
  - Annual average of 822M kWh



# Middle Snake Field Office

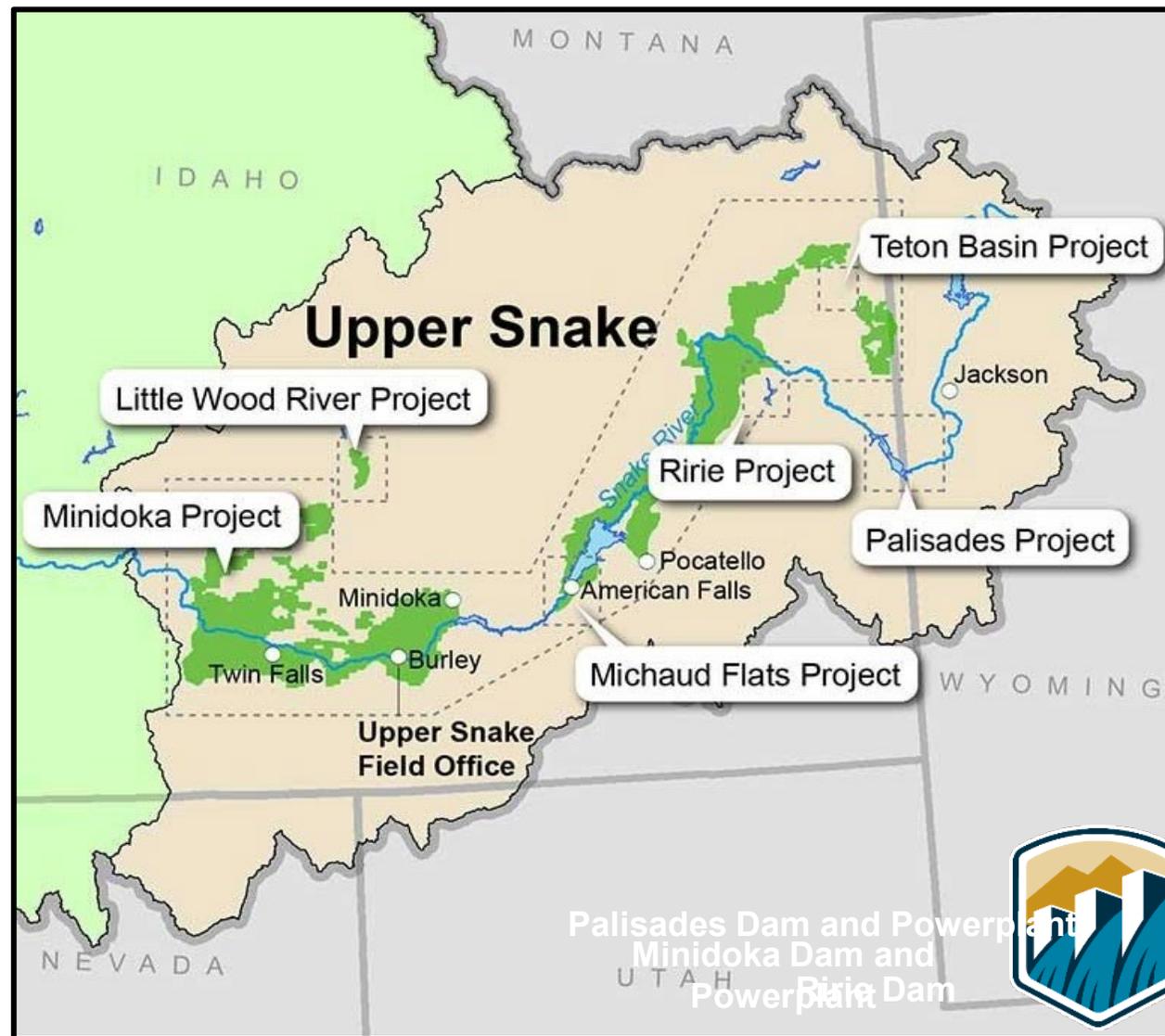
- Key Projects

- Boise River Basin Feasibility Study/Anderson Ranch Dam Raise
- Lewiston Orchards Water Exchange and Title Transfer
- Black Canyon Dam Safety Projects



# Upper Snake Field Office

- Key Projects
  - Ririe Water Supply Study
  - EACSS Security Project
  - SCADA upgrades
- Coordination with State of Wyoming on Jackson flows

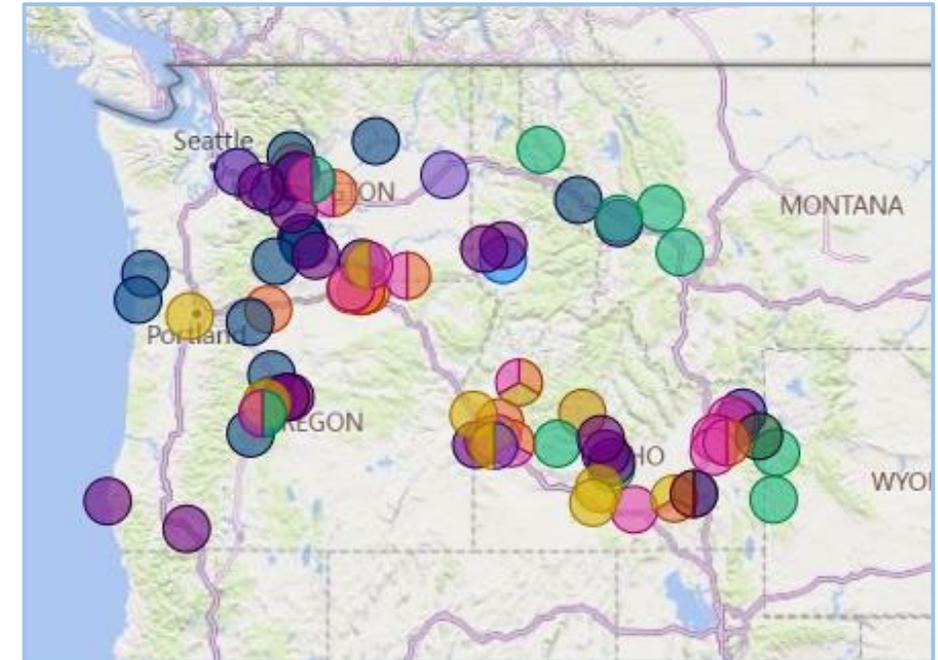


- Reclamation Overview
- CPN Region Overview
- **Areas of Interest**



# Bipartisan Infrastructure Law

- \$201M funding to date
  - \$107.4M - WaterSMART grants
  - \$64M - aging infrastructure
  - \$8.5M - water recycling
  - \$8M - water & groundwater storage and conveyance
- Aging Infrastructure Account highlights
  - \$16.4M – Roza fish screen modifications (WA)
  - \$5M – Oregon recreation facility upgrades
- WaterSMART highlights
  - \$6M – Salmon Reintroduction above Grand Coulee
  - \$4.2M – LSR Water Supply Replacement Study
  - \$7M - Cle Elum Pool Raise



# Inflation Reduction Act

- \$26M funding to date
  - \$18M - drought mitigation
  - \$5M – drought response
  - \$2.5M – solar over canals
  - \$843K – community and stakeholder engagement
    - Collection and transport plan to support Upper Snake River Chinook Salmon restoration
  - \$400K – project design grants



# Gov-Gov Relationships



# Columbia River

- Complex system, many stakeholders
  - Federal (BOR, Corps, BPA, NOAA, FWS)
  - State (WA, OR, ID, MT)
  - Tribes (12)
  - Stakeholders (irrigation, power, fish)
  - Canada
- Key Issues
  - Columbia River Treaty
  - Columbia River System Operations Litigation
- Collaboration Efforts
  - Columbia Basin Fish Accords
  - Columbia Basin Collaborative (or Four States Process)
  - Federal Caucus

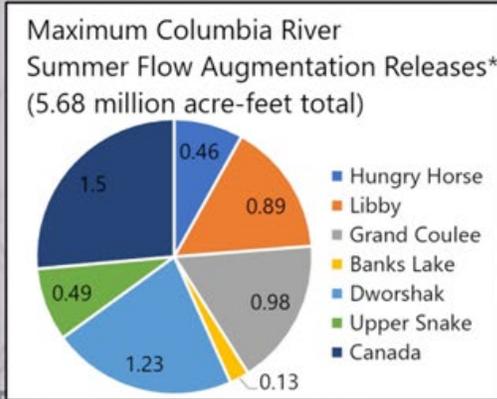
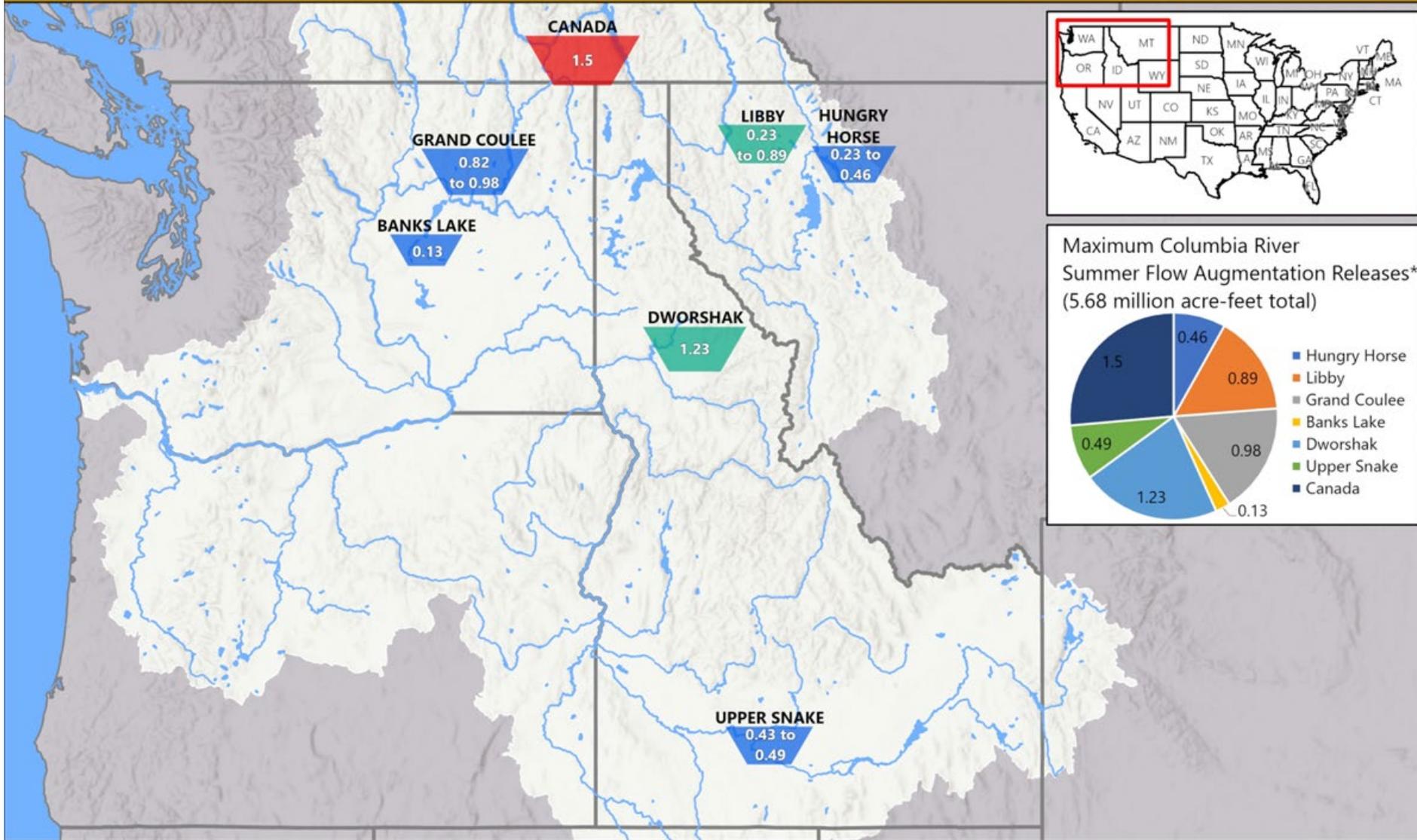


# Interagency Columbia River Team

- Resilient Columbia Basin Agreement (RCBA)
  - Lower Snake River Water Supply Replacement Study
  - NPDES Permit implementation
  - Tribal Circumstance Report (DOI)
- Phase 2 Implementation Plan (P2IP)
  - Reclamation leading Programmatic EA
- Columbia River Treaty
  - Reclamation focus on Grand Coulee, Lake Roosevelt

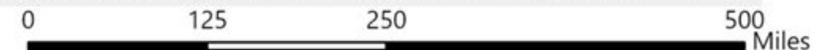


# Flow Augmentation



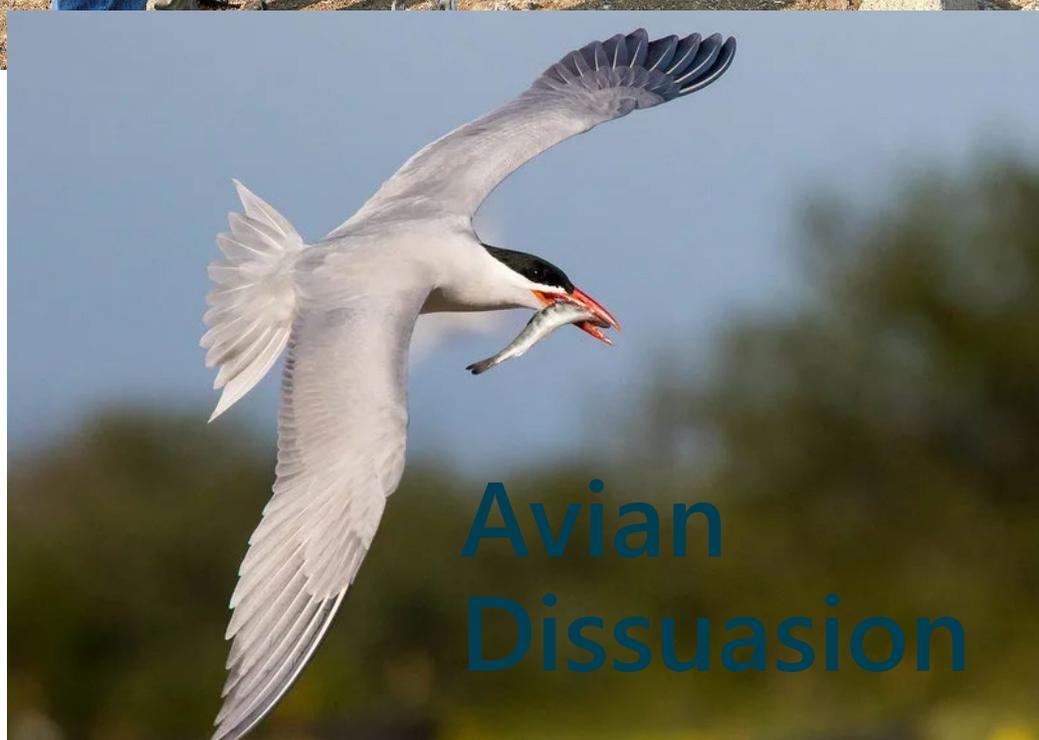
- Flow Augmentation Volumes (MAF)\***
-  Bureau of Reclamation
  -  Army Corps of Engineers
  -  Canada
  -  Major Water Bodies
  -  Columbia Basin
  -  States/Provinces
  -  Major Rivers

\* Flow augmentation volumes vary through their ranges depending on the water supply forecast. The timing of flow augmentation releases vary by project based on the geographic timing of run-off and local fish operating objectives.



# Hungry Horse Selective Withdrawal System





# Tributary Habitat Restoration

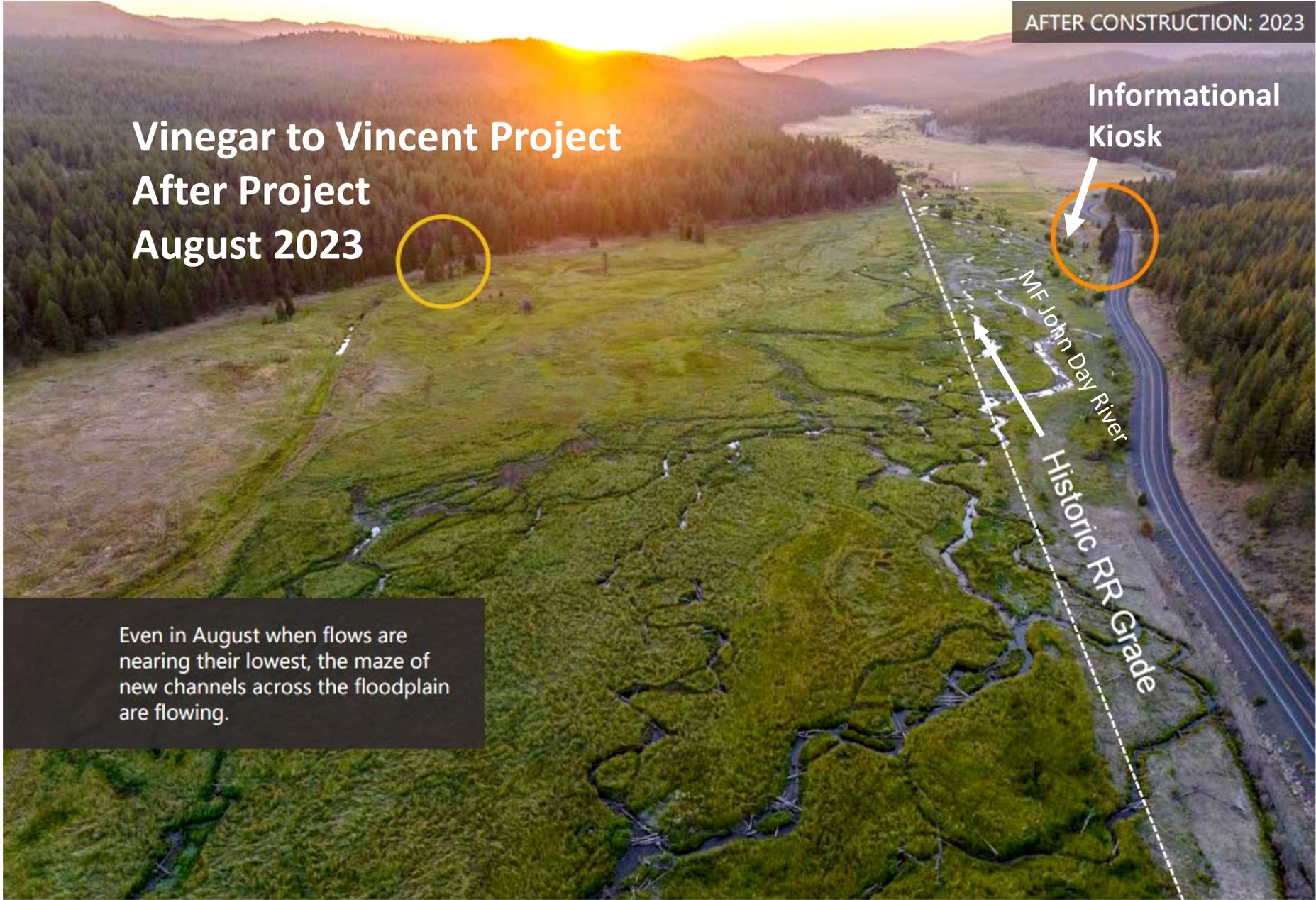


Pre-Project  
August 2020

BEFORE CONSTRUCTION: 2020



John Day  
River  
Spring  
to Vincent  
2022



AFTER CONSTRUCTION: 2023

# Vinegar to Vincent Project After Project August 2023

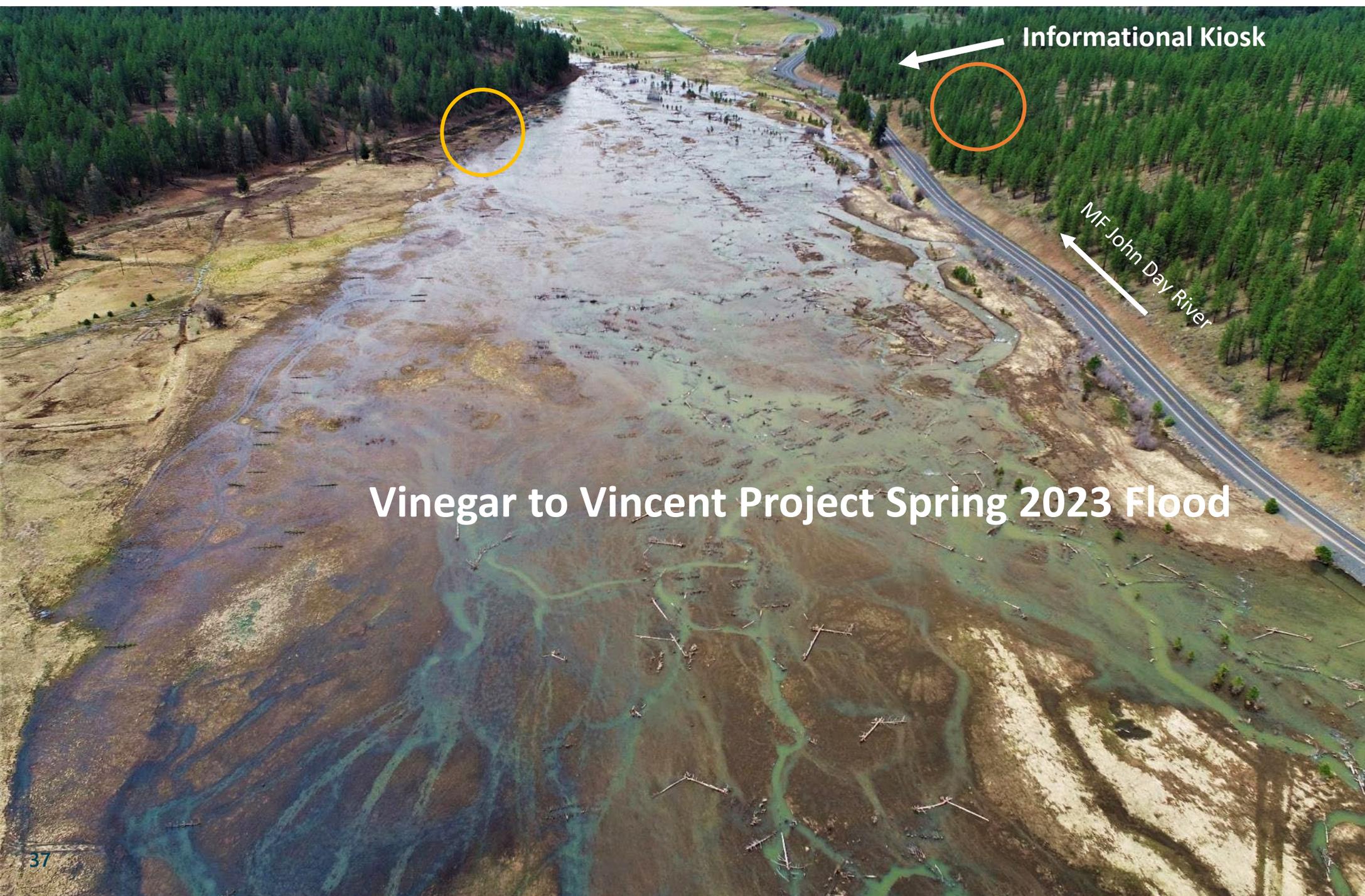
Informational  
Kiosk

MF John Day River

Historic RR Grade

Even in August when flows are nearing their lowest, the maze of new channels across the floodplain are flowing.





Informational Kiosk

MF John Day River

# Vinegar to Vincent Project Spring 2023 Flood



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— BUREAU OF —  
RECLAMATION