SAFEGUARDING JACKSON: USACE'S COMMITMENT TO FLOOD RESILIENCE

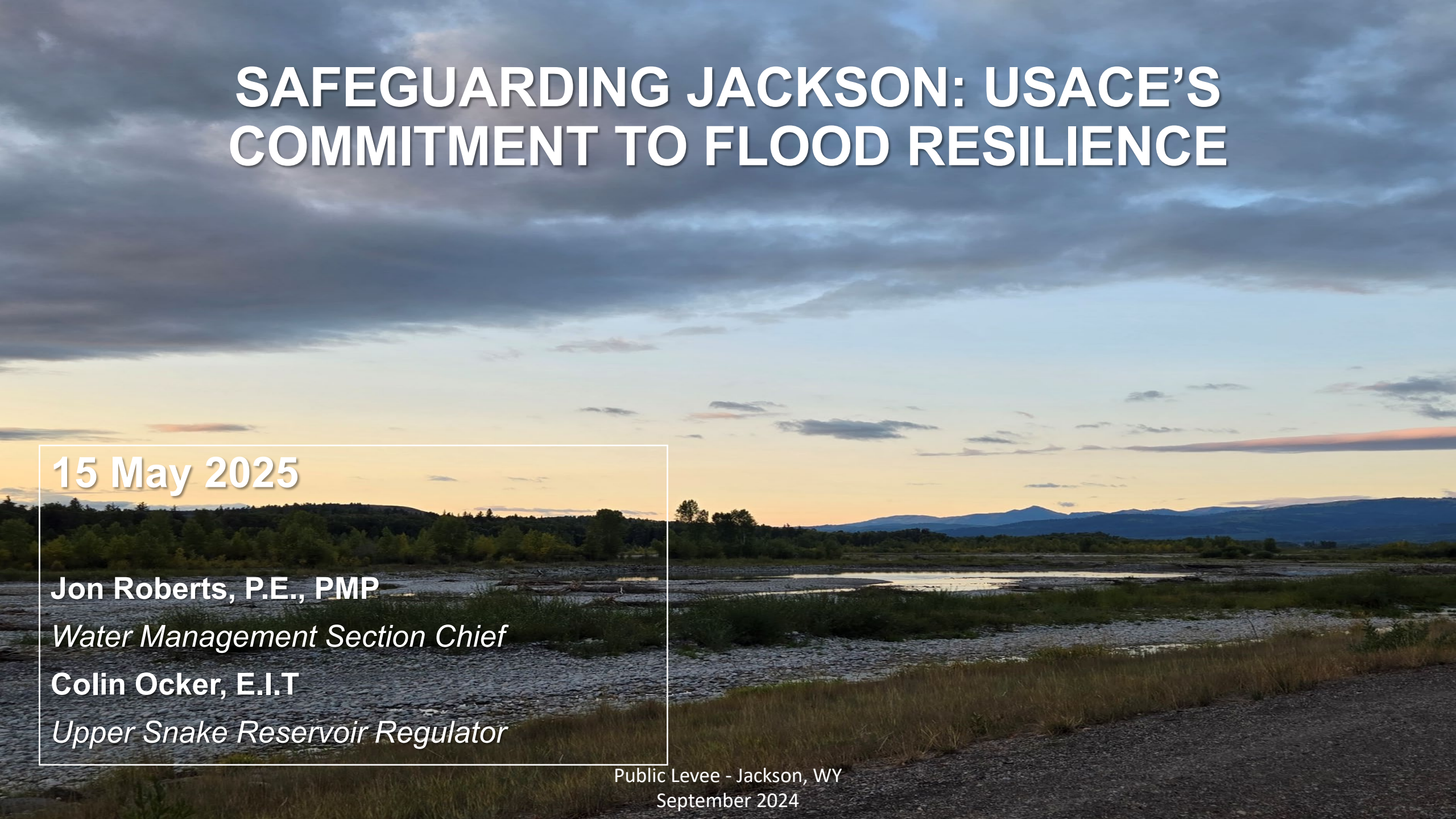
15 May 2025

Jon Roberts, P.E., PMP

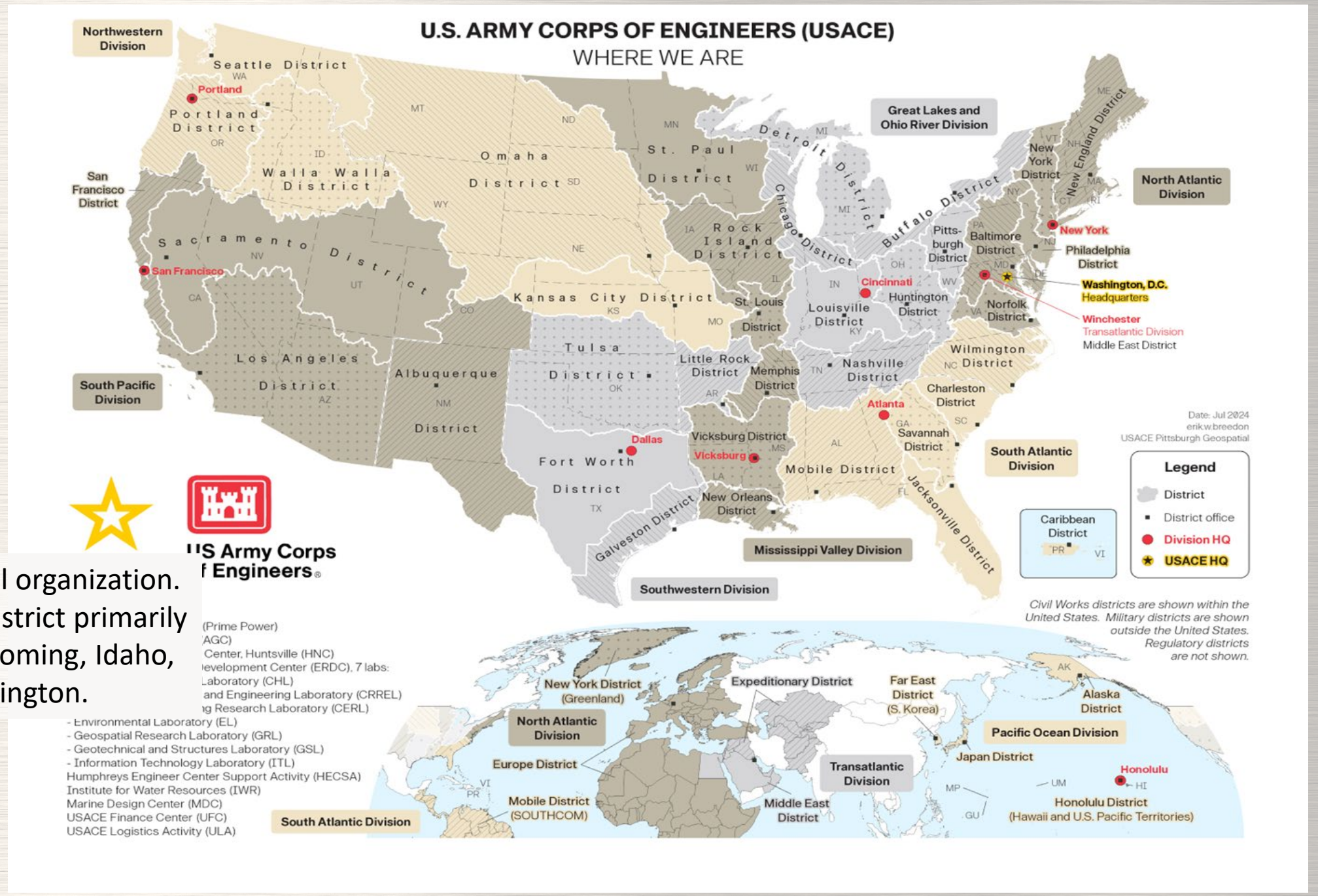
Water Management Section Chief

Colin Ocker, E.I.T

Upper Snake Reservoir Regulator



Public Levee - Jackson, WY
September 2024



USACE is a national organization. The Walla Walla District primarily covers parts of Wyoming, Idaho, Oregon, and Washington.

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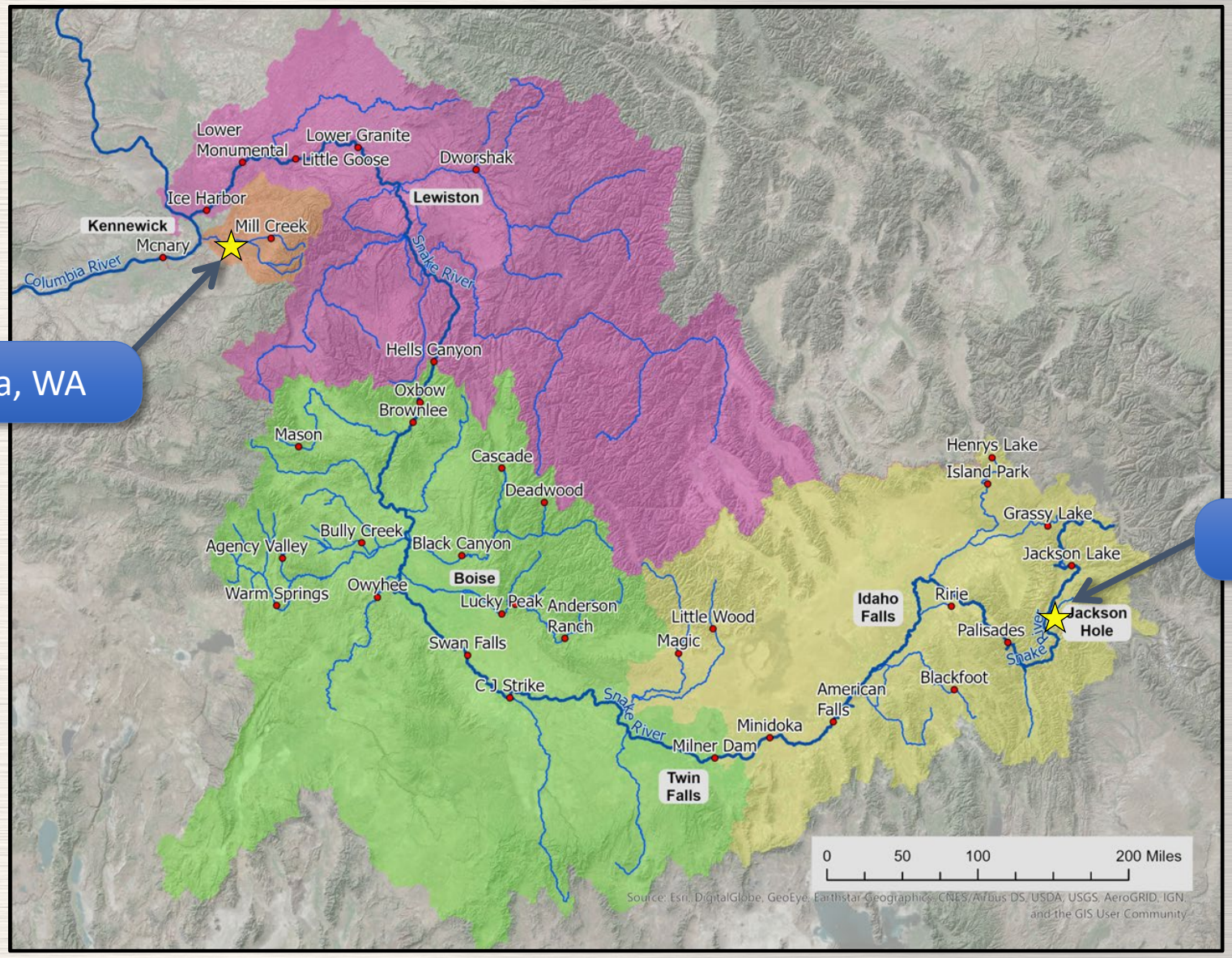
USACE – Walla Walla District



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USACE – Walla Walla District

- Walla Walla District Missions
  - Construct, operate, maintain, and secure multipurpose infrastructure to energize the economy, reduce flood risk, and serve as stewards of water resources for the Snake River Basin and Nation
  - Flood Risk Management (FRM)
    - Section 7 Authorization
  - Irrigation, fish and wildlife, recreation, hydropower generation, navigation
- <u>Water Management (WM) Missions</u>
  - Regulating and monitoring streamflow for the Walla Walla and Snake Rivers from the headwaters in Yellowstone National Park to the confluence at the Columbia River in Washington
  - Safety is paramount

VALUE TO THE NATION
★CIVIL WORKS★

The USACE Flood Risk Management Program works across the agency to focus the policies, programs and expertise of USACE toward reducing overall flood risk. This includes the appropriate use and resiliency of structures such as levees and floodwalls, as well as promoting alternatives when other approaches (e.g. land acquisition, flood proofing, etc.) reduce the risk of loss of life, reduce longer-term economic damages to the public and private sector, and improve the natural environment.

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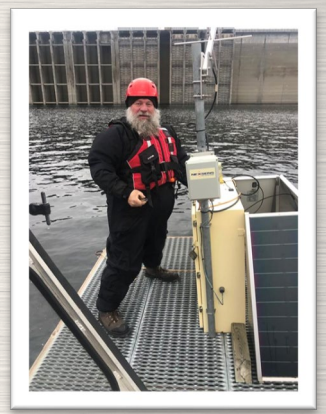
Meet the Water Management Section

Water Quality

David Towsley
Hydrologic Technician

Dustin Polach
Hydrologic Technician

Omar Lopez
Limnologist

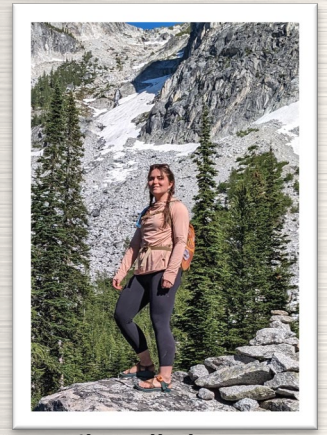


Russell Heaton
Senior Water Quality Specialist

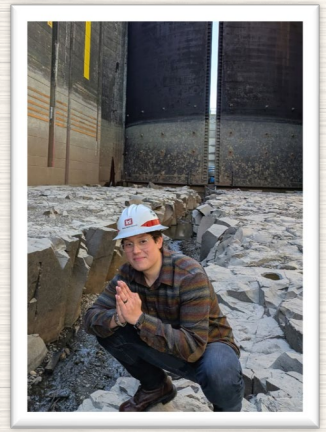
David Ries
Database Manager (Both Teams)

Jon Roberts, P.E., PMP
Water Management Section Chief

Reservoir Regulation



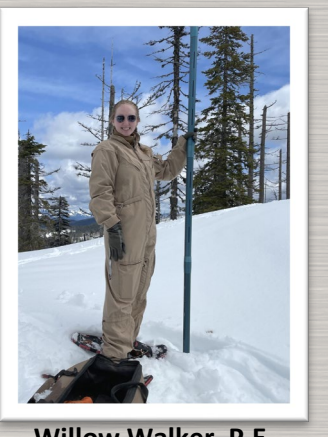
Jessika Solleder, E.I.T.
Lower Snake Reservoir Regulator



Oscar Espinoza, P.E.
Middle Snake
Reservoir Regulator

Grant Bell, P.E.
Middle Snake
Reservoir Regulator

Colin Ocker, E.I.T.
Upper Snake Reservoir
Regulator



Willow Walker, P.E.
Upper Snake Reservoir
Regulator

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What is Reservoir Regulation?

Managing the volume of water in a reservoir such that the intended water supply purposes are met while minimizing risk of damaging downstream flows

Yearly monitoring consists of:

1. Current conditions
   - Storage volume
   - Snowpack
   - Inflows
   - Downstream conditions
2. Forecast
   - Northwest River Forecast Center (NWRFC)
     - Weather and streamflow
   - Natural Resources Conservation Service (NRCS)
     - Snow and soil moisture
   - Internal methods – water supply, streamflow, reservoir modeling
3. Making Decisions
   - Balancing stakeholder needs, all authorized purposes, and Flood Risk Management (FRM)
   - Consider special circumstances, forecasts, engineering analysis
4. Communicate decisions
   - Transparent
   - Timely manner

Flood Risk Management, Not Flood Control

Floods are inevitable. Flood Risk Management can reduce the impact of an event, but cannot always stop all damages, nor prevent the flood from happening in the first place.

Snake River North of Moose, WY – June 2024
Raft Rescue from High Water
Photo Courtesy of Grand Teton National Park

The "100-Year Flood" Misconception

A "100-year flood" does **NOT** mean a big flood that happens once every 100 years.

It really means:

Each year, there is a **1 out of 100 chance** (or 1%) that a big flood like that will happen.

It **could happen this year**, or **again next year**, or **not for a long time**. It's about chance, like rolling dice — not a schedule.

For example, a "500-year flood" means there's a **1 out of 500 chance** (or 0.2%) it could happen in a given year.

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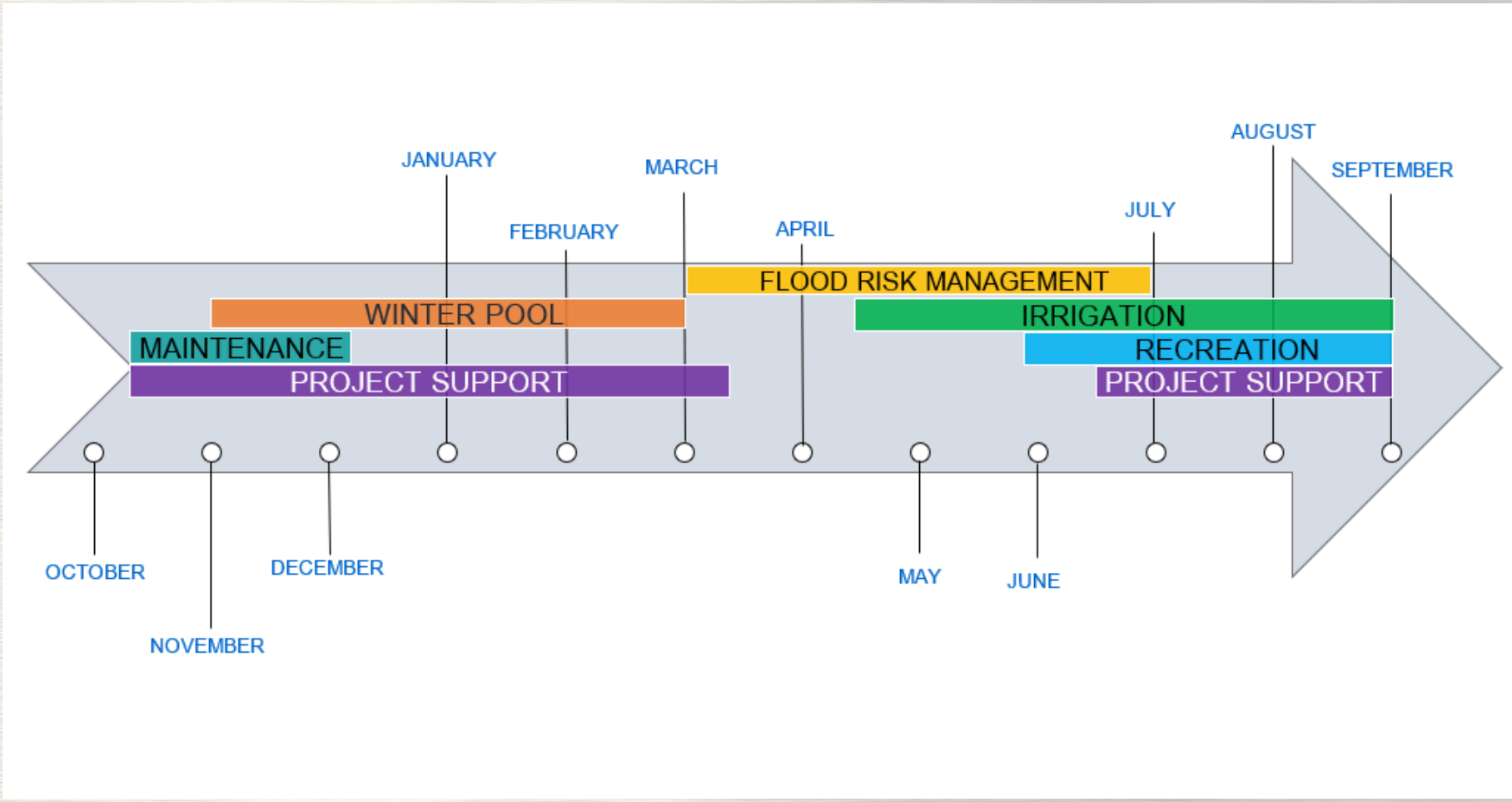
How Do We Serve in a Year?



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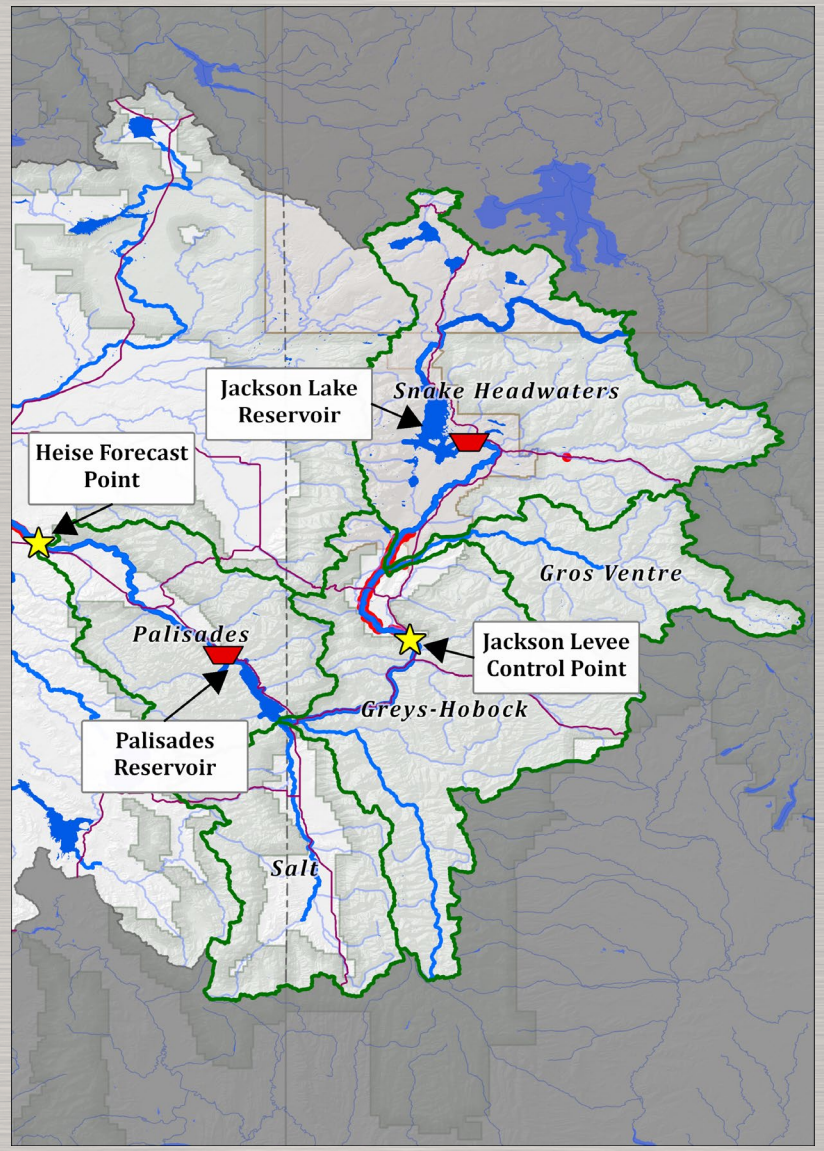
Palisades/Jackson System

Timeframe of Flood Risk
- Mid-December to late July

Palisades Reservoir – Swan Valley, ID
courtesy of USBR

Jackson Reservoir – Jackson Hole, WY
courtesy of USBR



Impacts of Operations
- Interconnected system
- Over 2 million acre-feet of storage use for Flood Risk Management & Irrigation
- 1 acre-foot = 1 acre of water, 1 foot tall

What Causes Concerns
- Large regional snowpack
- Rain on snow during final fill

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System Overview

IDAHO | WYOMING

807mi² basin drainage area

Snake River Near Jackson USGS Gage	
WM Flow Trigger	**Impact**
Up to 9,000 cfs	Minor Concerns
10,000-15,000 cfs	Braided River
15,000-18,000 cfs	Non-Federal Levee Concerns
Above 18,000 cfs	Major Concerns

Jackson Lake Dam
847,000 AF Active Storage

1,820mi² of natural flow between dam and levees

Pacific Creek

Buffalo Fork

Gros Ventre River

Jackson Levees

Jackson

Snake near Jackson gage control point

Snake River

5,752mi² upstream of Heise gage control point

Heise-Roberts Levees

Snake River

Palisades Dam
1,200,000 AF Active Storage

5,208mi² upstream

Greys River

Salt River

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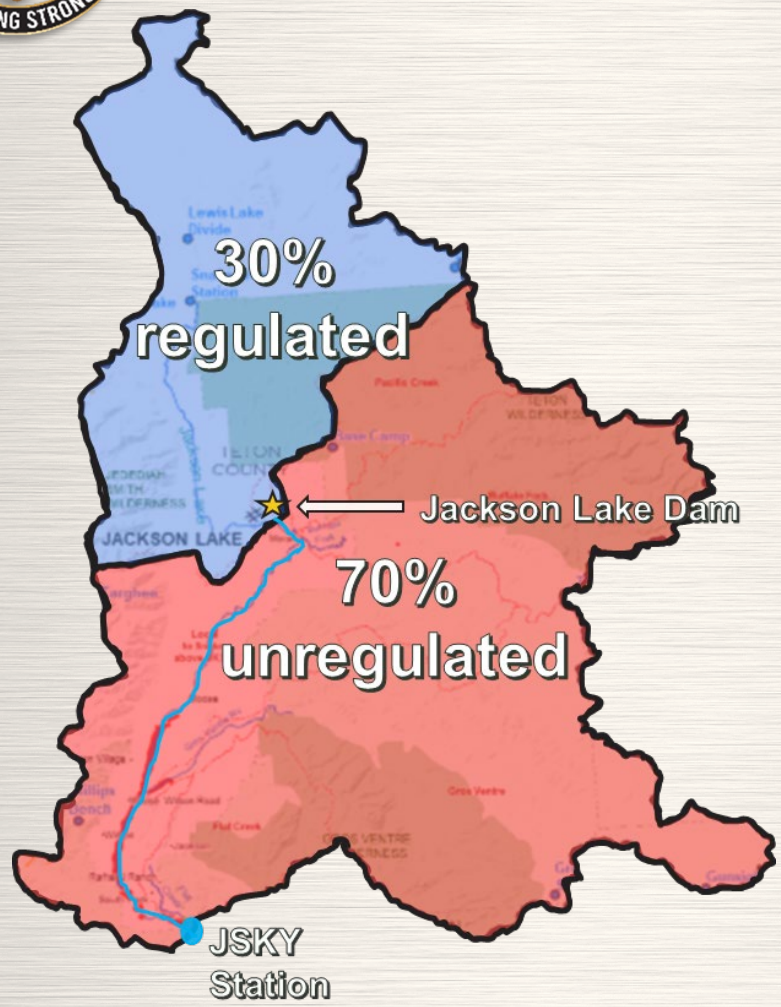
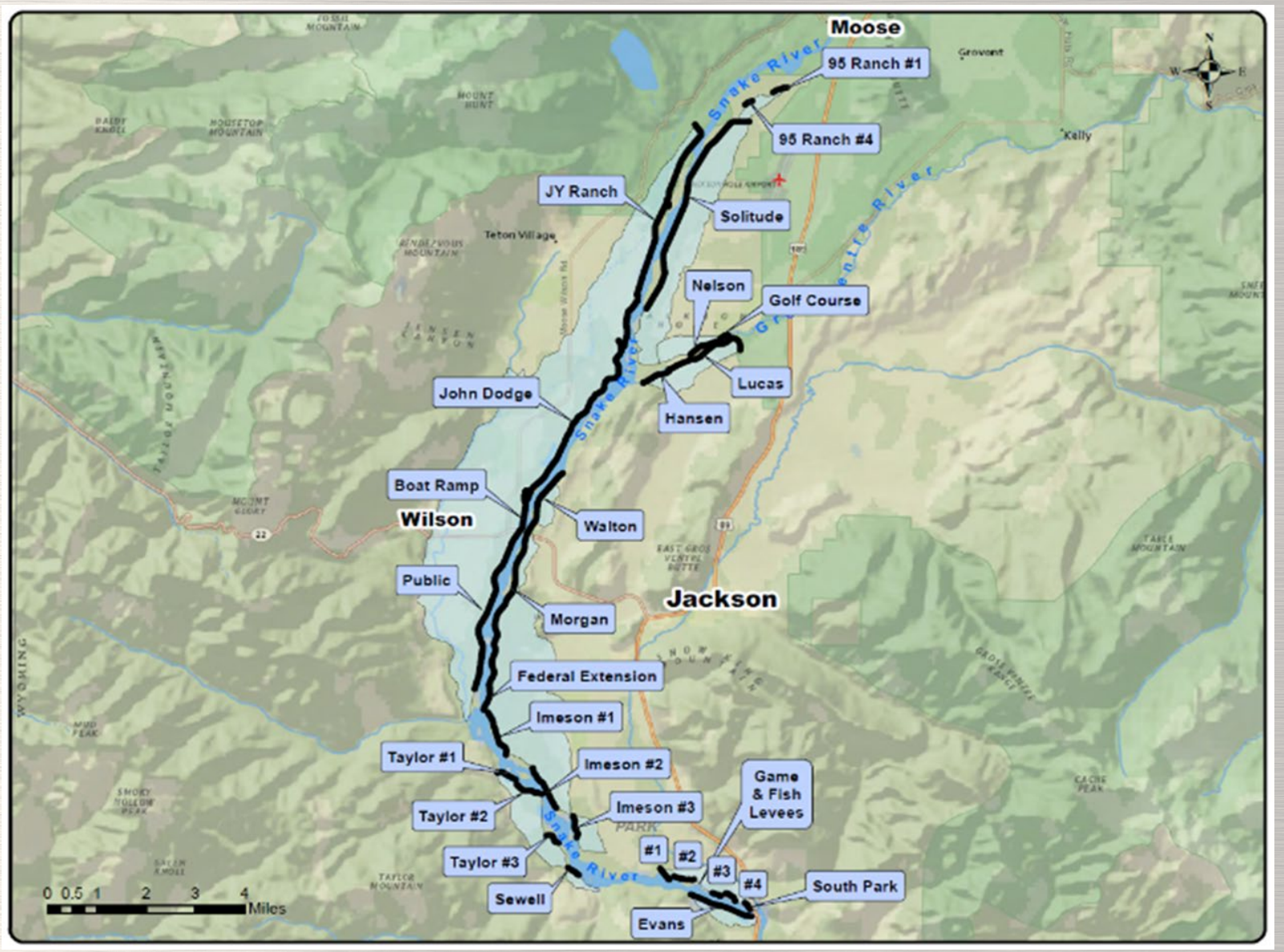
Jackson Levee System





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Basin Conditions 2025

Major FRM Factors

- Water in snowpack
- Space in reservoirs
- Spring rain

Jackson Lake

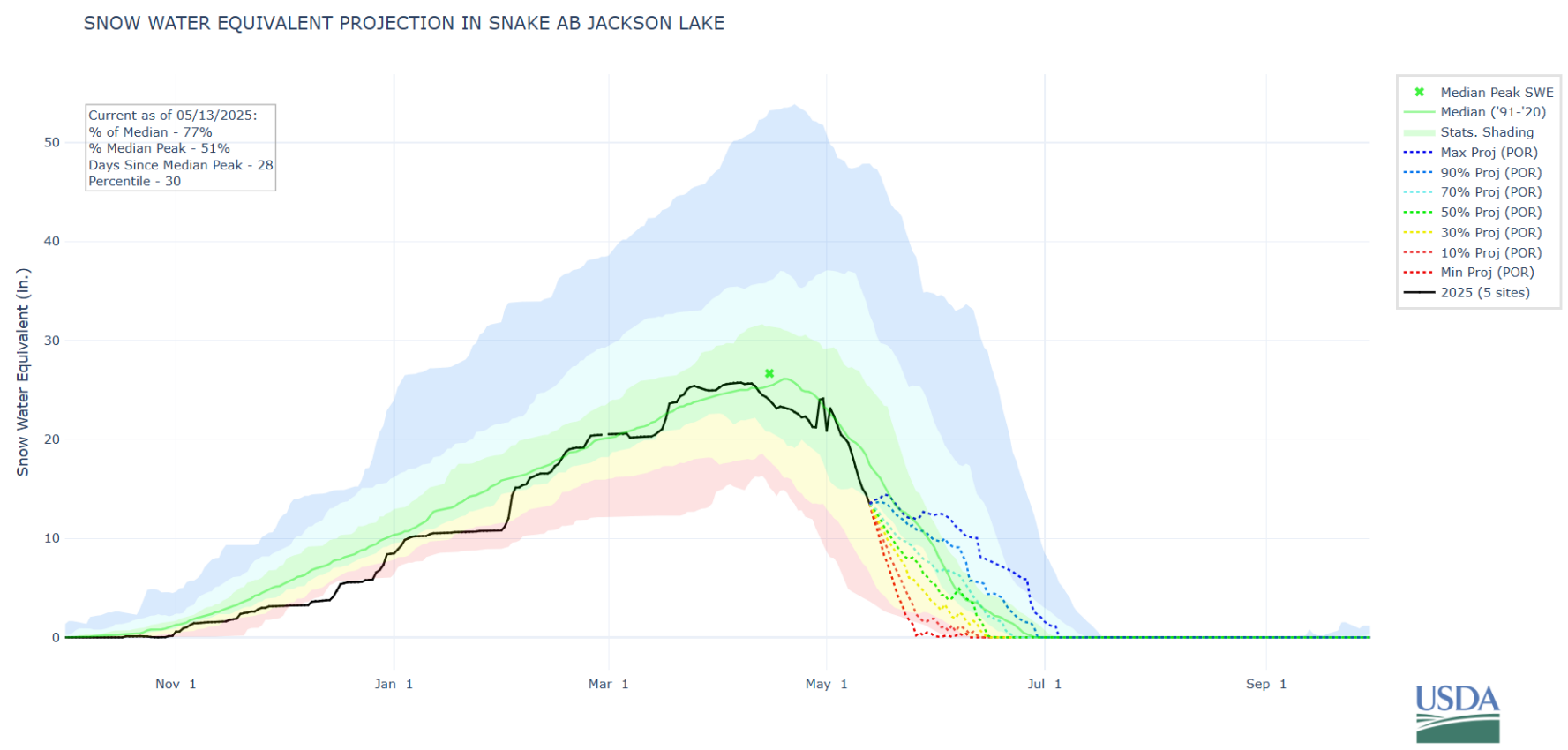
Full storage – 847KAF

Current space available ~110KAF

Palisades

Full storage – 1,200KAF

Current space available ~361KAF



NRCS Snow Water Equivalent (SWE) above Jackson Dam

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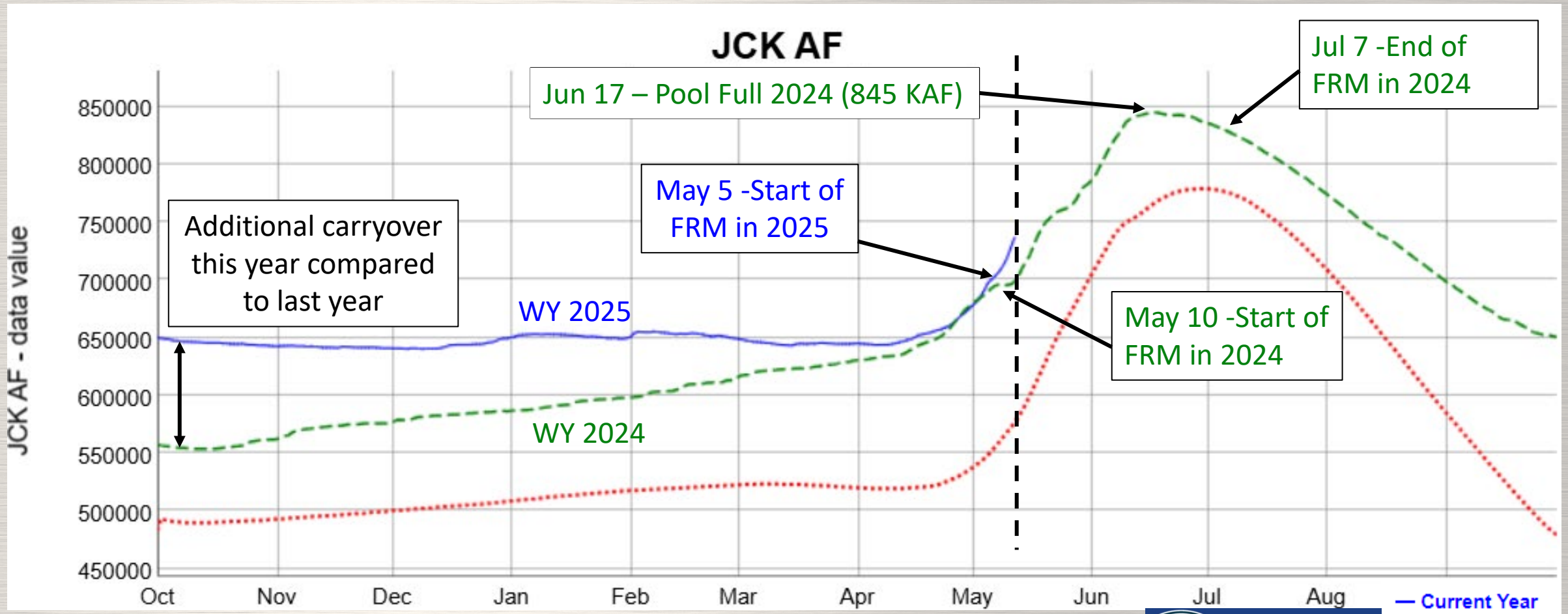
Values based on 5/13/2025

Current Basin Condition Impacts



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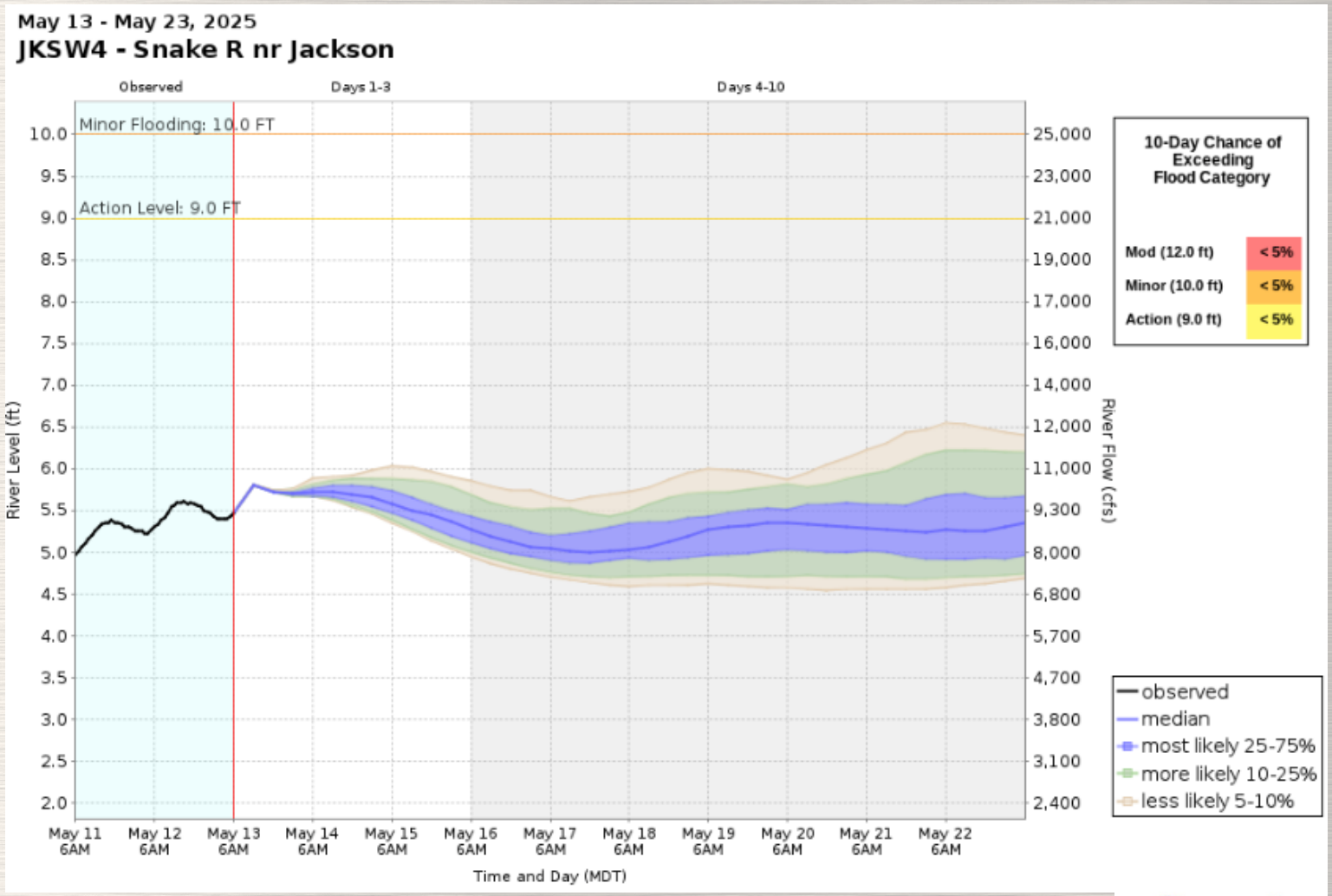
BUREAU OF RECLAMATION

Values based on 5/13/2025

Flood Risk for Remainder of Spring

- Jackson Dam currently targeting a release of 2,500cfs
  - Flows will be adjusted to safely control the rate of fill
  - Peak Inflow Expected >7,500cfs but <10,000cfs
- Palisades releasing for FRM to manage snowpack runoff until irrigation demand takes over
- Jackson levee system will continue to see flows around 9,000cfs for the coming weeks



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Collaboration

- USACE and USBR work with our regional partners to operate the dams to serve the public and congressionally authorized purposes
  - Flood Risk Management
  - Fish and Wildlife
  - Irrigation
  - Hydropower Generation
  - Navigation
  - Recreation

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BUREAU OF RECLAMATION

Wyoming Game & Fish Department

US Army Corps of Engineers Northwestern Division

U.S. Fish & Wildlife Service

Nez Perce Tribe Treaty of 1855

Wyoming State Engineer's Office

Bonneville Power Administration

NOAA National Weather Service

Idaho Fish & Game

Teton County Wyoming

Idaho Water District 1

USDA NRCS

Idaho Department of Environmental Quality

IDAHO POWER An IDACORP Company

Yakama Nez Perce Tribe Warm Springs Umatilla

DEQ Wyoming Department of Environmental Quality

National Park Service

Forest Service US Department of Agriculture

Teton Conservation District Est. 1946

DEQ State of Oregon Department of Environmental Quality

USGS science for a changing world

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Communicating with Stakeholders for the Jackson Levees

Many people interested in river conditions from multiple perspectives

- **If Flood Risk Management releases are required,** or there are flows that could have impacts on downstream locations, notifications are made by USACE water management to stakeholders
- Concerns, problems, or requests will always be considered by USACE, but may not always be accommodated due to conflict with other considerations
- USACE does not use an all or nothing approach to requests. Often some efficiencies can be found, or concerns can be lessened while still meeting Flood Risk Management requirements
- **Need feedback from stakeholders** both in non-flood years and during flood events

When will I see USACE Notifications?

- Monthly flood risk update emails are sent February-July.
  - 4 notifications have been sent so far this year
  - At least 2 more notifications remaining this year

- Additional notifications will be sent for each of the following water management trigger flows. Has not occurred yet this year.
  - 10,000 – 15,000cfs (braided river conditions)
  - 15,000 – 18,000cfs (non-federal levee concerns)
  - Above 18,000cfs (major concerns)
- Water management trigger flows are considered both for Flood Risk Management releases from Jackson Lake Dam and for natural flows

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Who Can I Contact?

We encourage questions and feedback! There are several ways to contact us.

1. Come talk to us after today's presentation and we will take your information
2. Call our reservoir regulation 24-hour line: (509) 527-7283
3. Use our team's email: reservoir.regulation@usace.army.mil
4. Media outlets can contact our Public Affairs Office (PAO) for interviews or questions
   - Phone: (509) 527-7020
   - Email: cenww-pa@usace.army.mil

PAO can always be contacted as an alternative to water management directly, or if your question is not specific to our water management group

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Summary

- USACE - Walla Walla District water management is responsible for stewarding water resources in the Snake River watershed and reducing flood risk
- We value the many partners it takes to succeed in our mission
- Above average carryover in the system paired with an average snowpack has led to the need for Flood Risk Management releases this year
- System remains **well positioned** to continue absorbing runoff with the remaining snowpack
- Due to current reservoir levels:
  - Jackson Dam – flood releases will continue through refill but are expected to remain just below levee trigger flows
  - Jackson Levee System – expected to continue to have flow near 9,000cfs for the next several weeks
  - Palisades – flood releases continue as reservoir refills, within downstream levee capacities until irrigation demand takes over

Questions?

SCAN ME

Walla Walla District Water Management

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