



Spring Flooding Webinar

Idaho Office of Emergency Management

03/19/2025

1300-1530 MST

The webinar will start soon



**Idaho Office of
Emergency Management**



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**Idaho Office of
Emergency Management**

Call to Order

- Participants will be muted upon entry
- Please hold questions until the end of each presentation section- Use the 'raise a hand' feature
- Slides will be shared out after the webinar
- Any questions about the webinar or materials please contact IOEM Training and Exercise
 - Levi Orr- lorr@imd.idaho.gov



Agenda

- Greetings from IOEM Senior Leadership
- National Weather Service – Spring Weather Brief
- IDWR- NFIP and Understanding Flood Risk
- USGS- Stream Gauges and Drone Flood Surveys
- USACE- Flood Fight Operations and Sandbagging
- IOEM- Private Dams and County Interactions
- IOEM- Reviewing the Disaster Declaration Process
- Addressing Concerns for Federal Manual Review of Grants



Idaho Office of Emergency Management

- Ben Roeber – Bureau Chief of the Idaho Office of Emergency Management





Spring Flooding Webinar

03/19/2025

National Weather Service

1300-1530 MST

Jay Breidenbach & Troy Lindquist



Idaho Office of
Emergency Management



Spring Flood Outlook

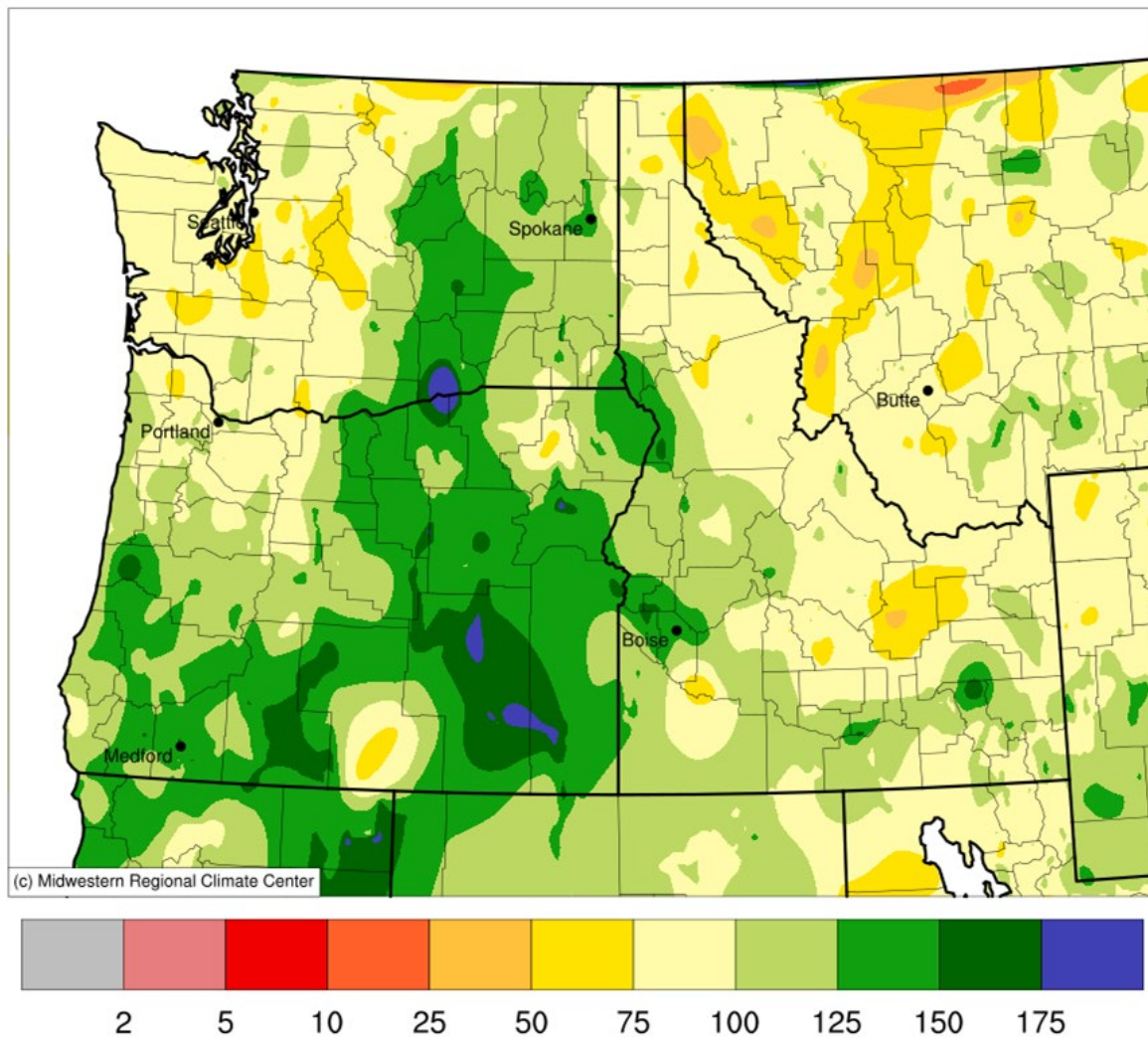
Weather Forecast Office
Boise

Wednesday, March 19

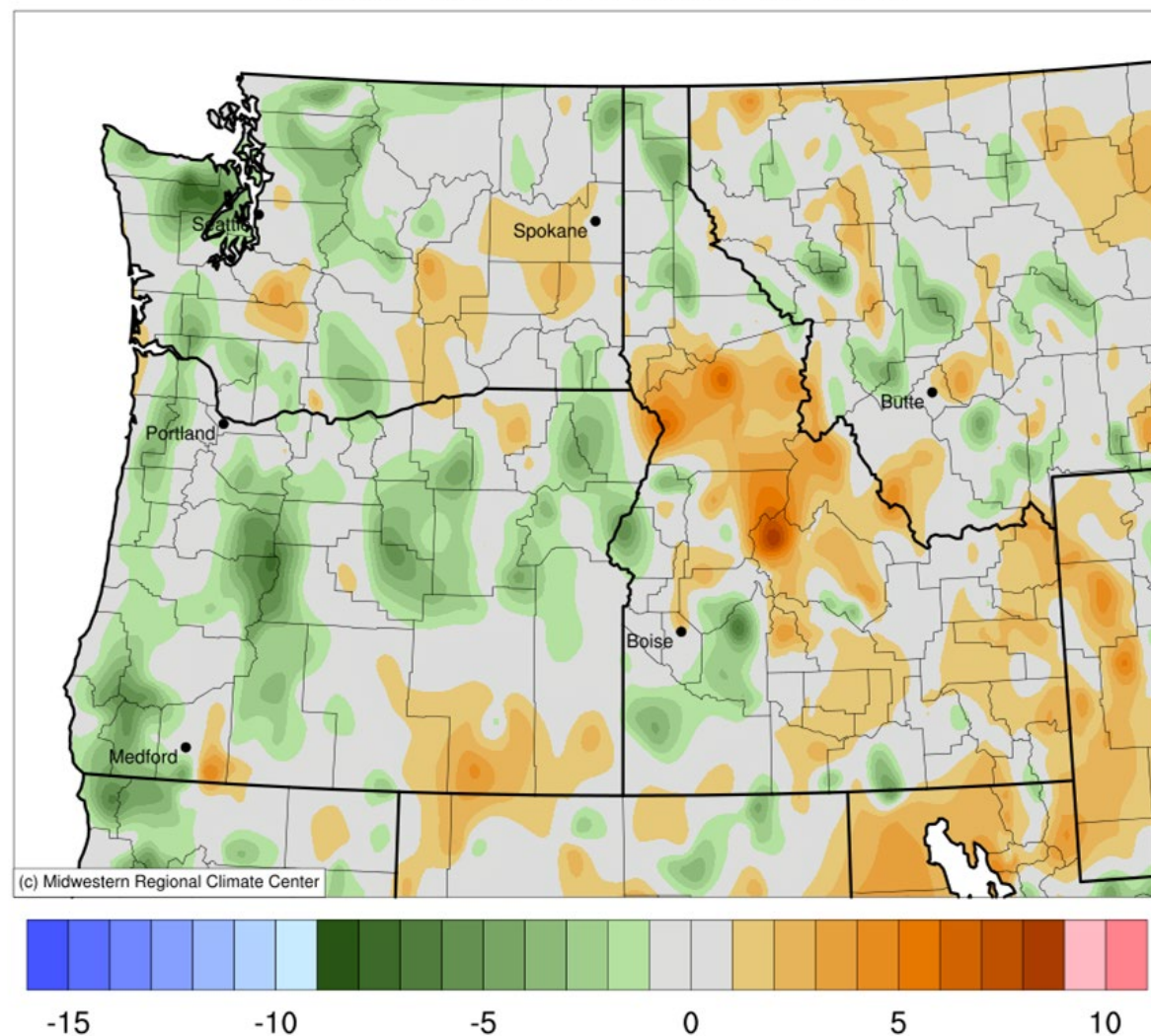
Presenter: Troy Lindquist & Jay Breidenbach

- Summary of recent weather & hydrologic conditions
- Spring Flood Risk
- Forecast and Seasonal Outlook

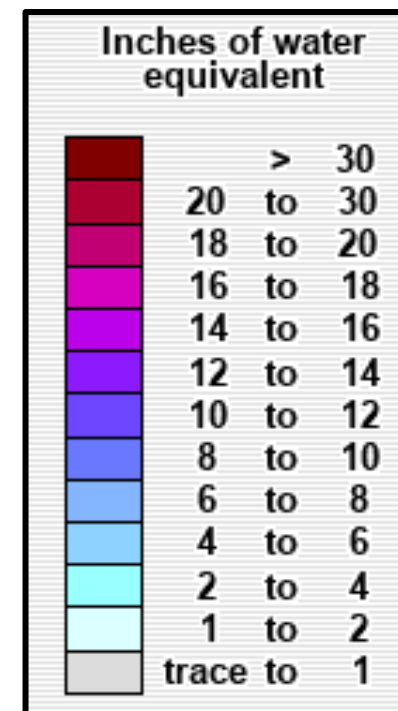
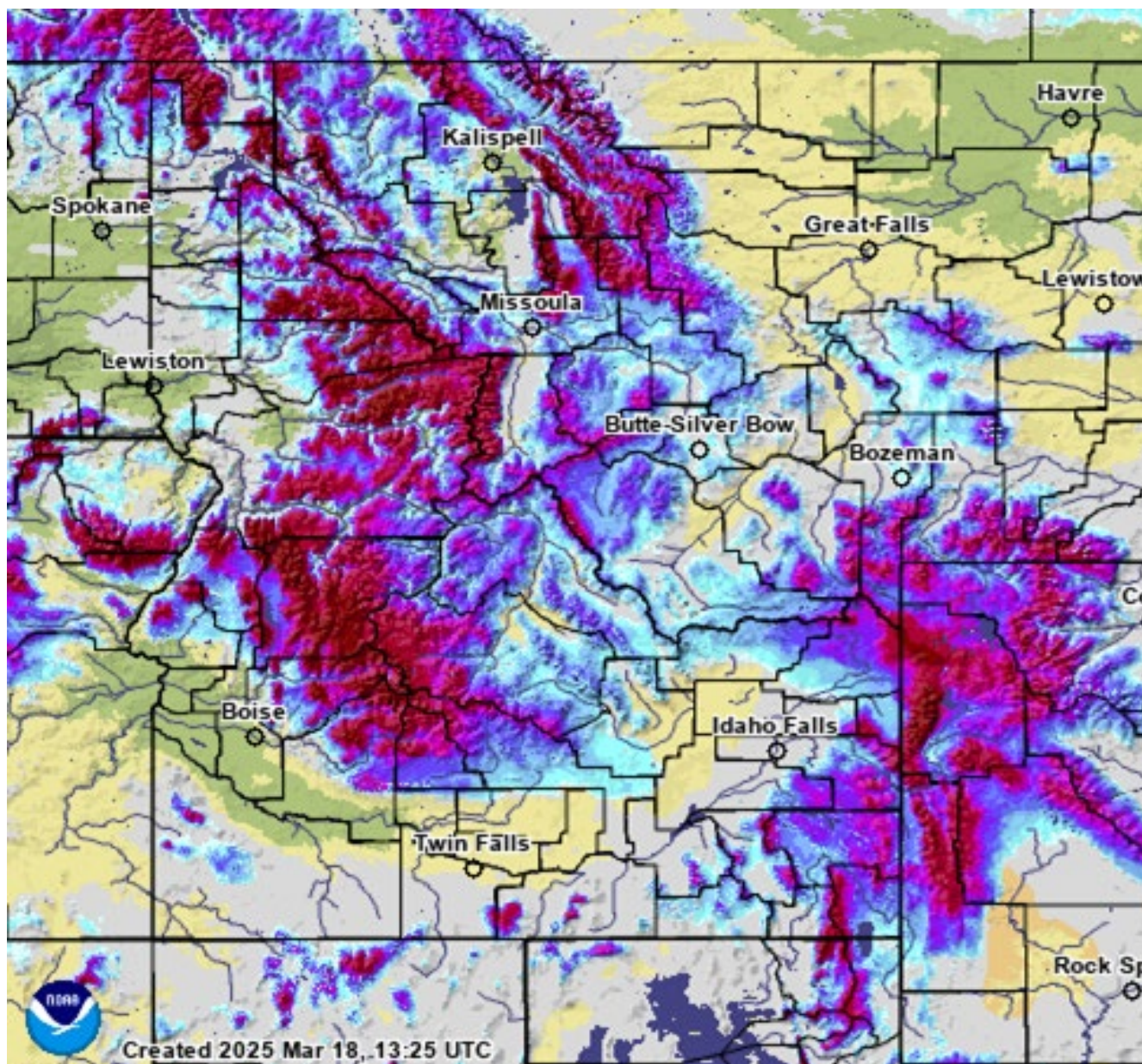
Accumulated Precipitation (in): Percent of 1991-2020 Normals
October 01, 2024 to March 19, 2025



Average Temperature (°F): Departure from 1991-2020 Normals
October 01, 2024 to March 19, 2025



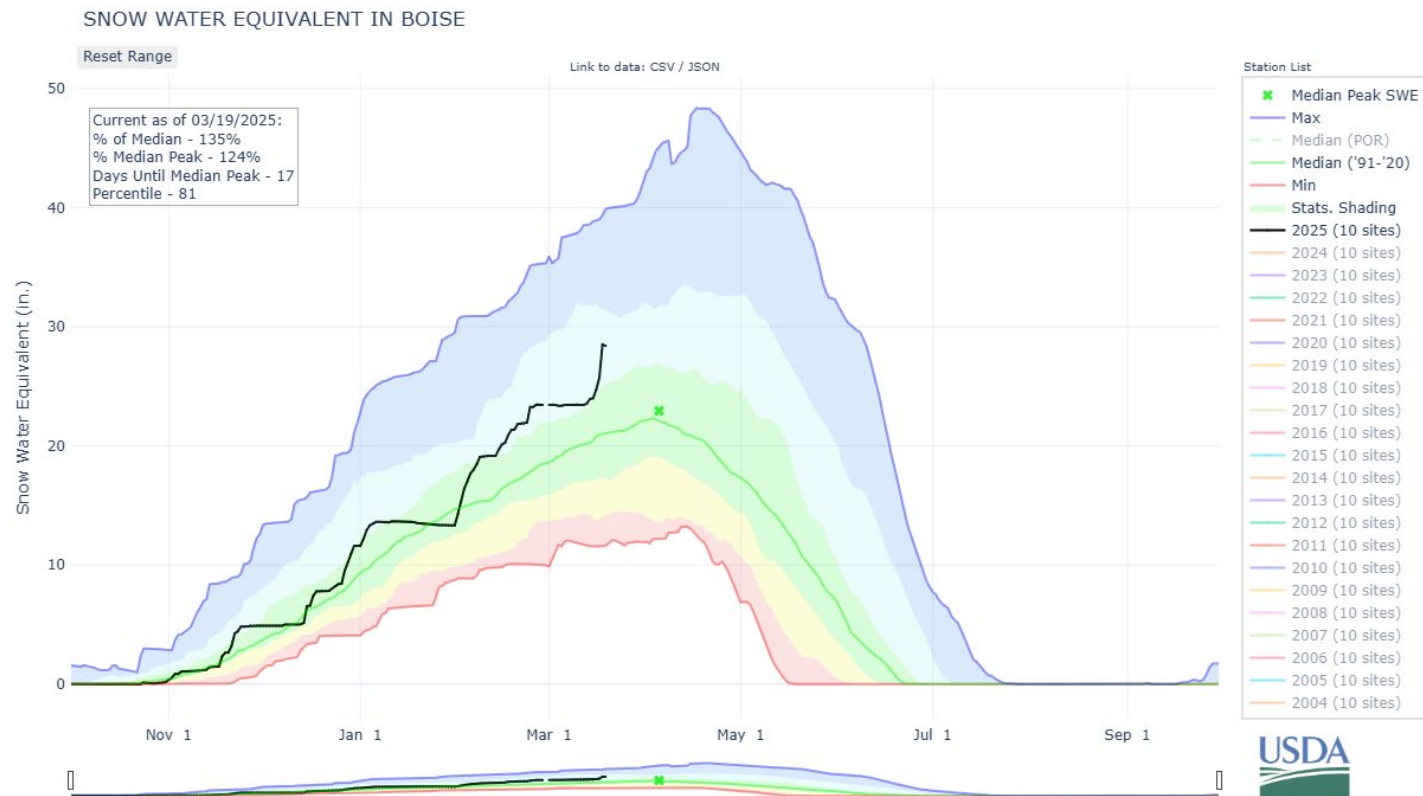
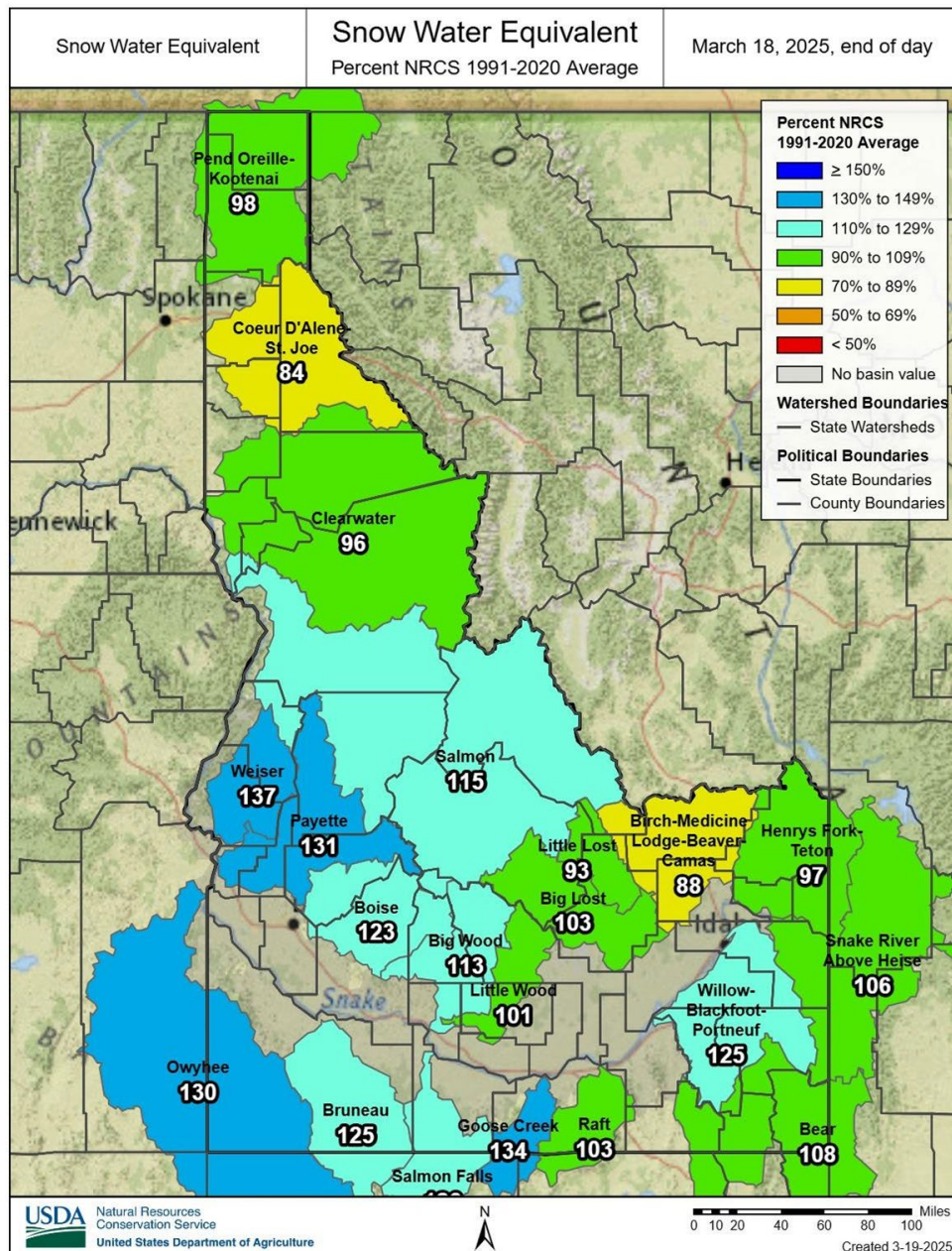
Snowpack - March 18



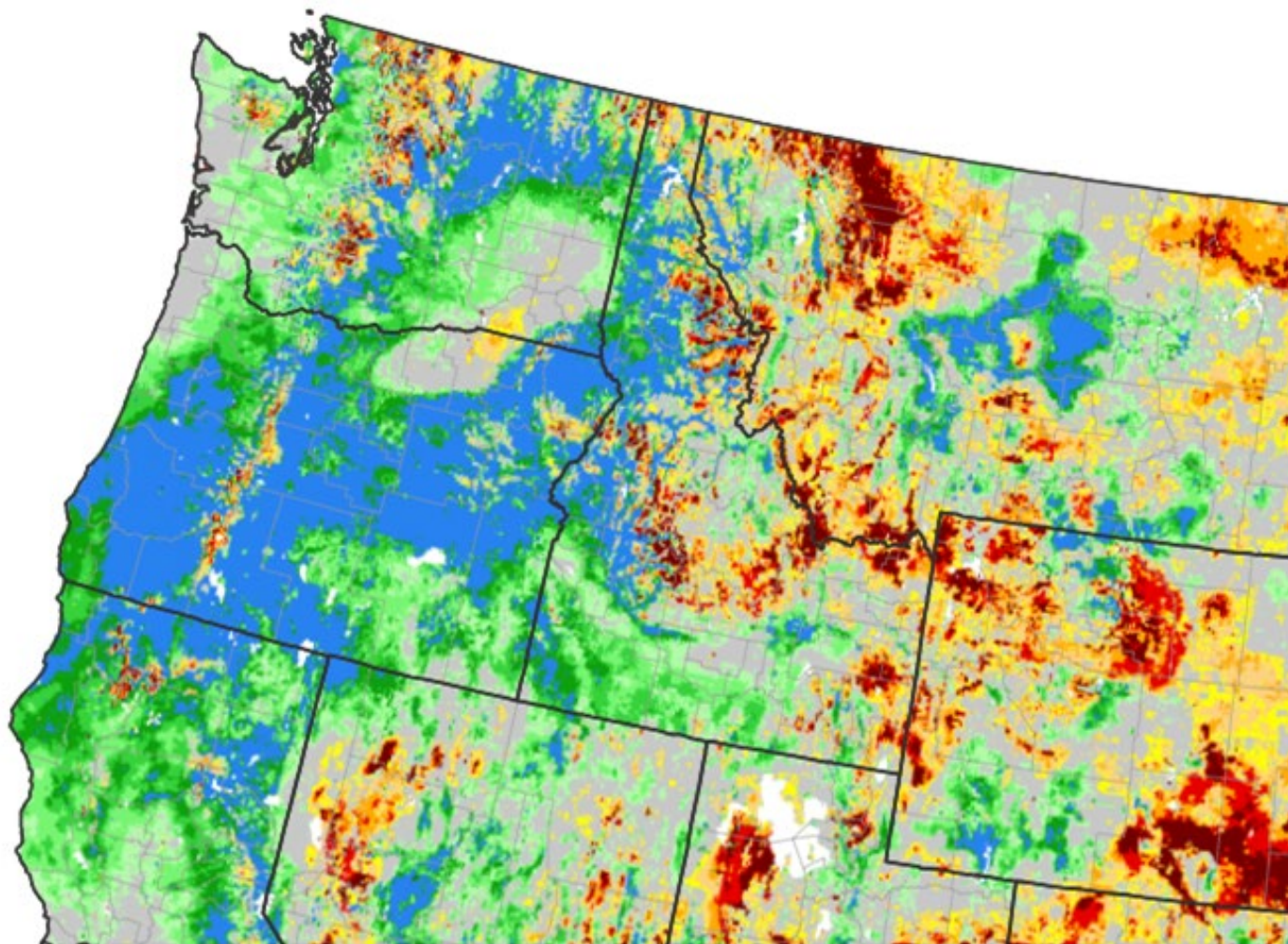


Current Snowpack

Weather Forecast Office
Boise
Wednesday, March 19



NASA SPoRT-LIS 0-100 cm Soil Moisture Percentile



0-100 cm Soil Moisture Percentile



Source(s): NASA
Data Valid: 03/18/25

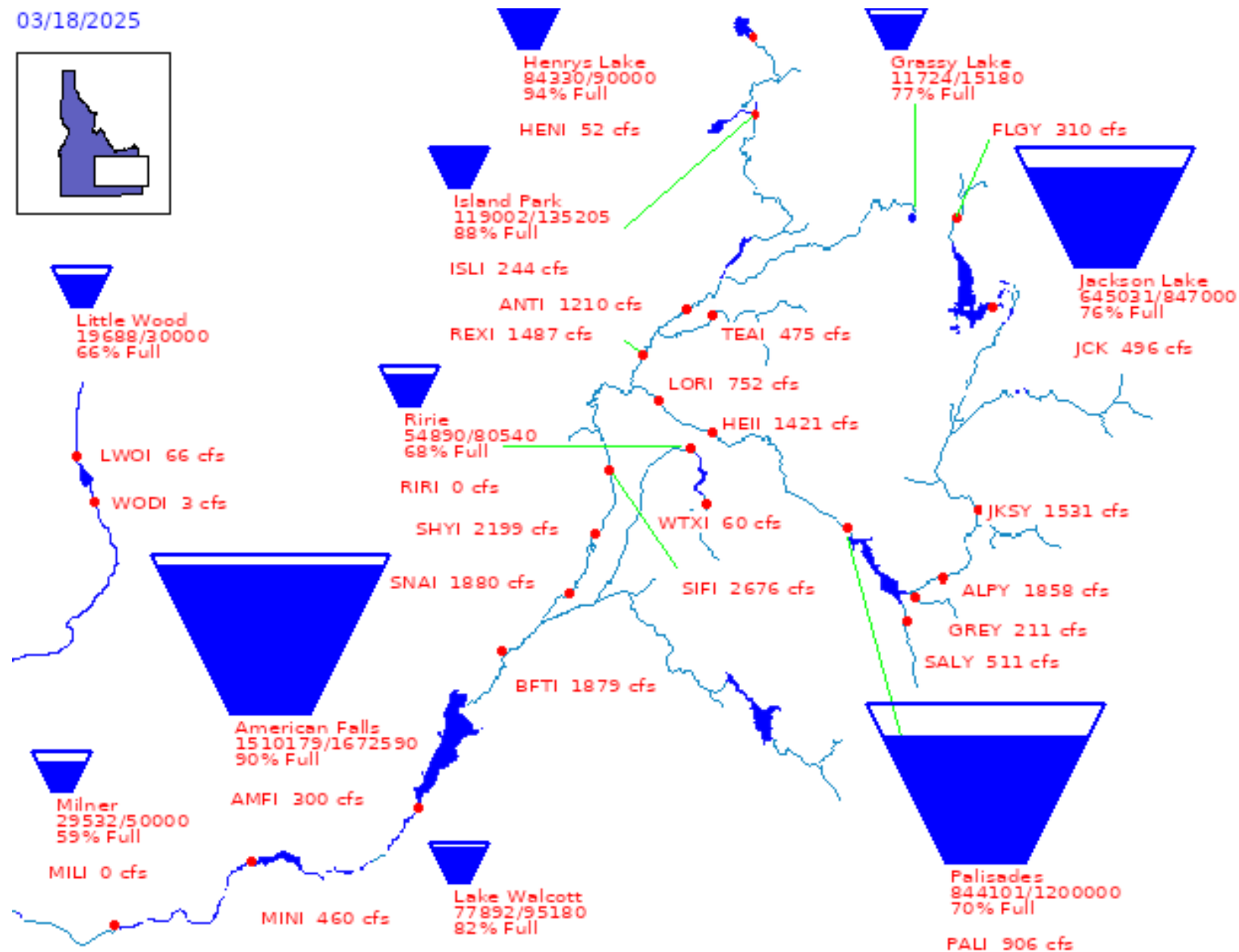
Drought.gov

Upper Snake Reservoirs

Upper Snake River system is at
81 % of capacity.

(Jackson Lake, Palisades, Grassy
Lake, Island Park, Ririe,
American Falls, Lake Walcott)

03/18/2025



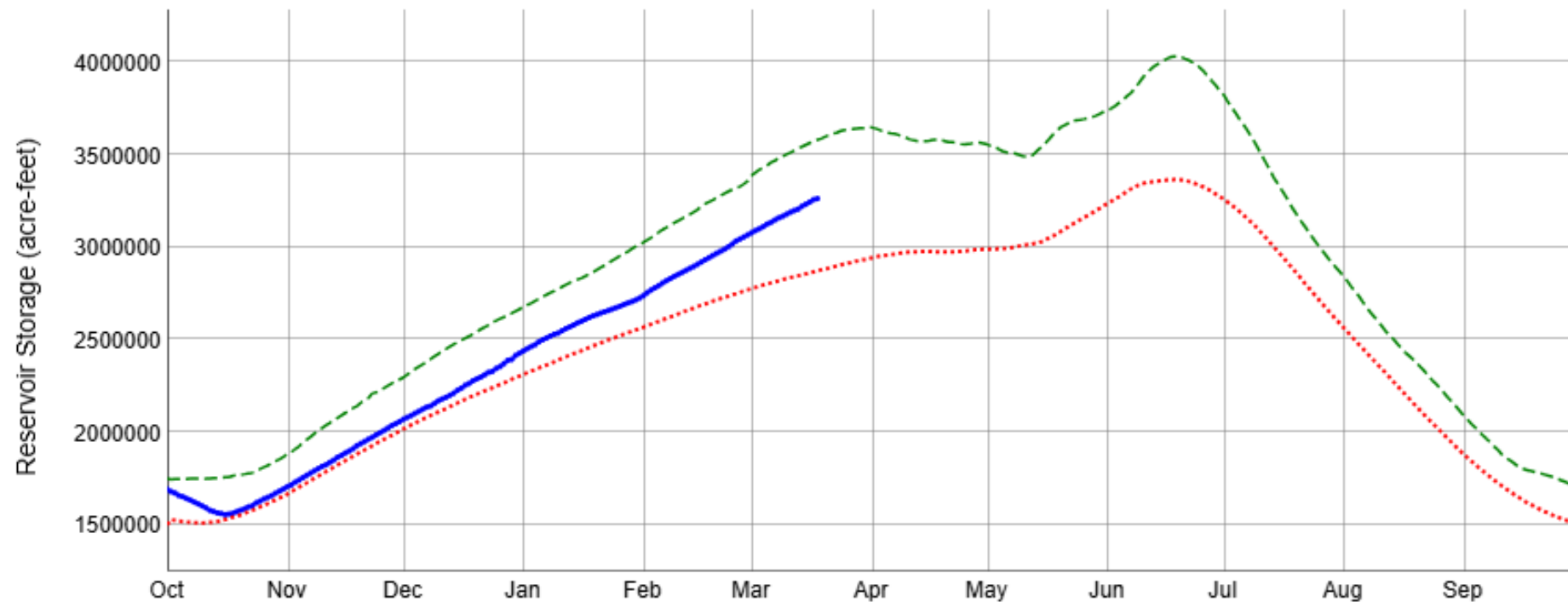


Upper Snake Reservoirs

Weather Forecast Office
Boise
Wednesday, March 19

Water Year Graph

— Current Year
-- Previous Year
... Average



PROVISIONAL DATA - Subject to change

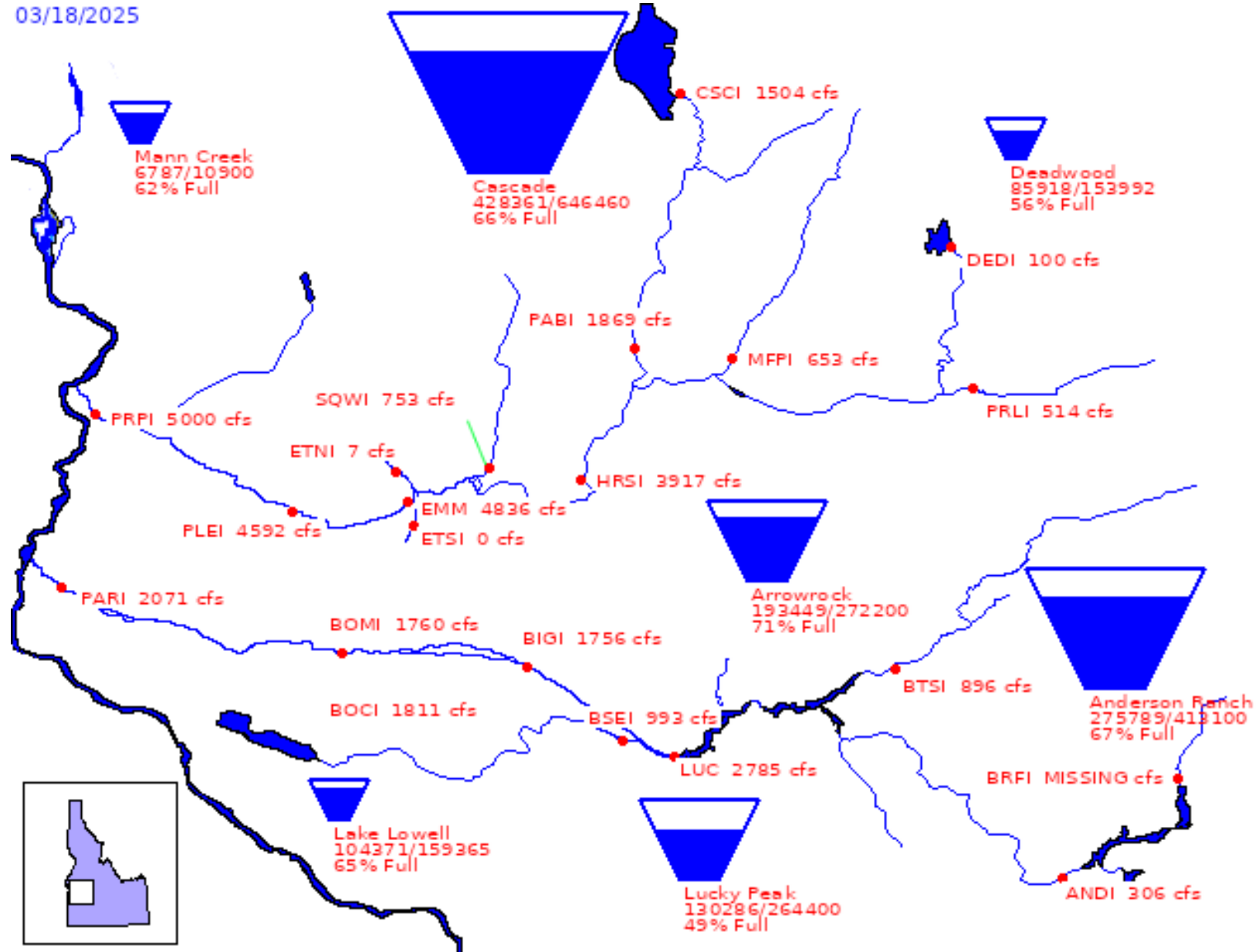
● Upper Snake

81 % of capacity

Boise & Payette Reservoirs

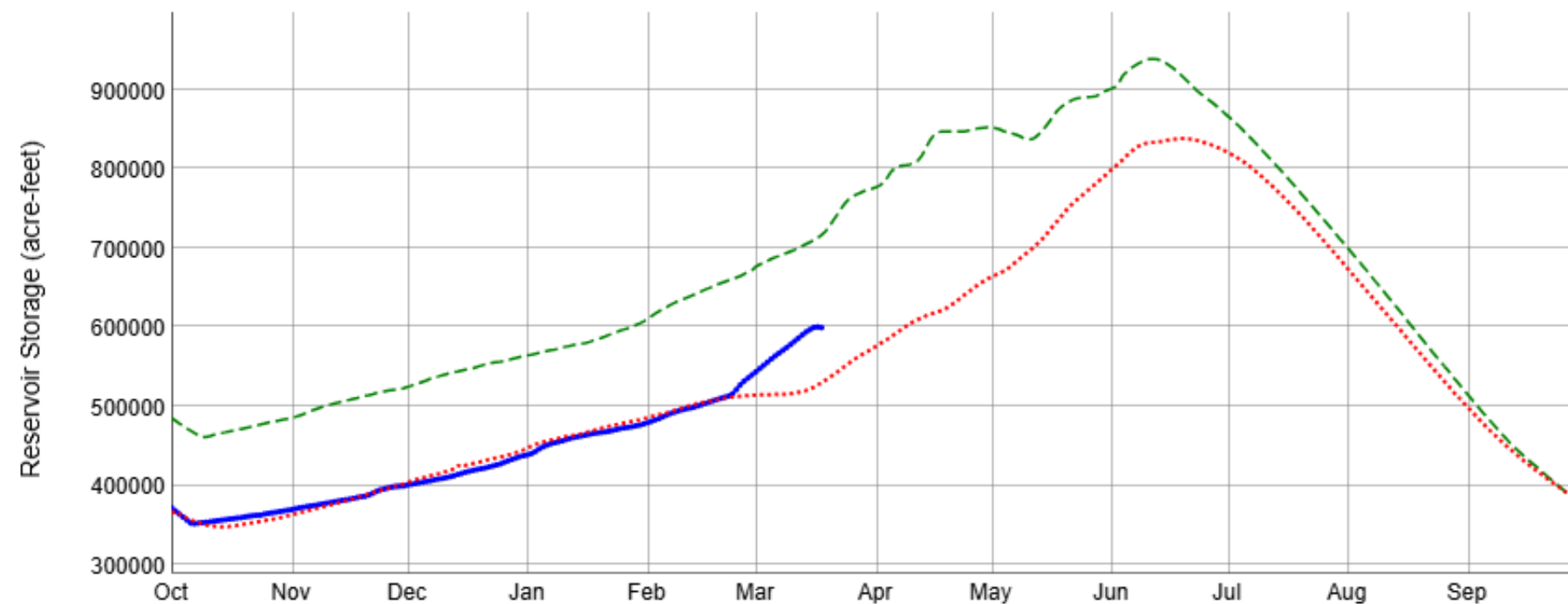
03/18/2025

- Payette River system
(Cascade, Deadwood) is at
64 % of capacity
- Boise River system
(Anderson Ranch,
Arrowrock, Lucky Peak) is at
63 % of capacity



Water Year Graph

— Current Year
- - Previous Year
... Average

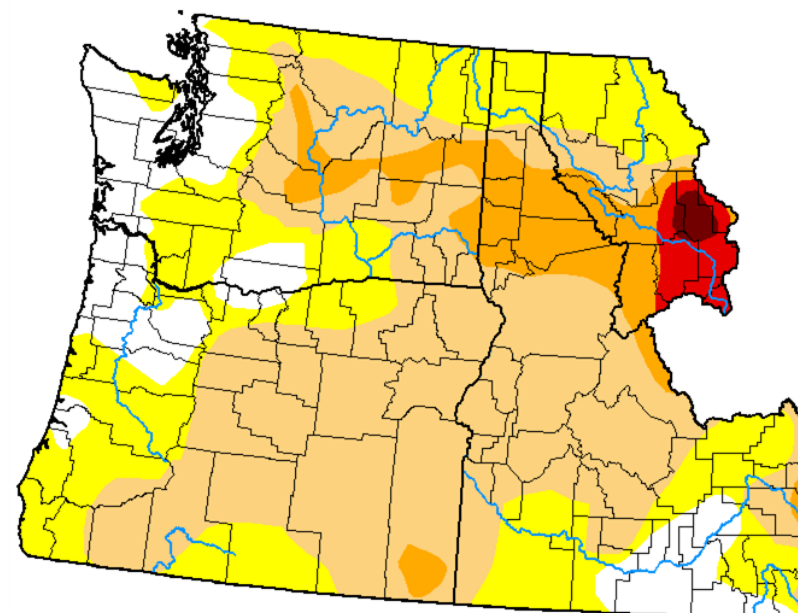


PROVISIONAL DATA - Subject to change

- Boise River system
(Anderson Ranch,
Arrowrock, Lucky Peak)
is at 63 % of capacity

U.S. Drought Monitor Pacific Northwest DEWS

October 1, 2024
(Released Thursday, Oct. 3, 2024)
Valid 8 a.m. EDT



Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

Author:

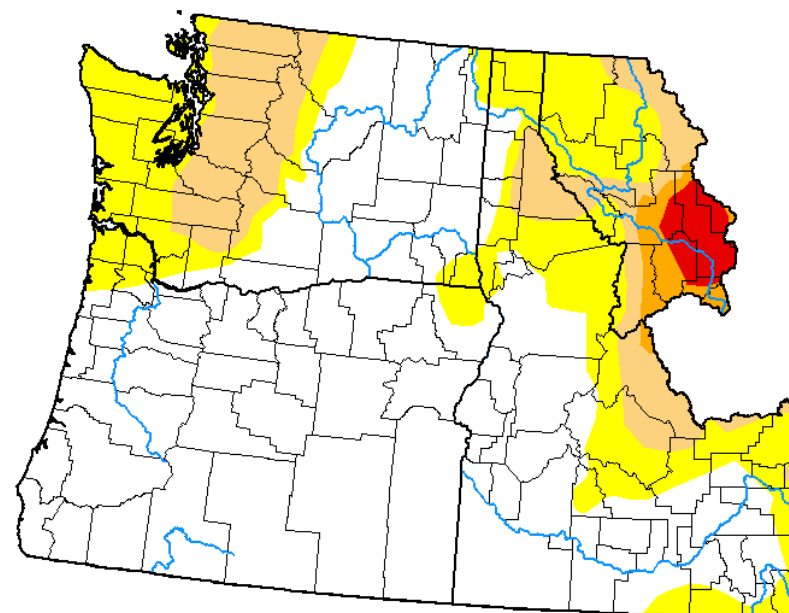
Richard Tinker
CPC/NOAA/NWS/NCEP



droughtmonitor.unl.edu

U.S. Drought Monitor Pacific Northwest DEWS

March 11, 2025
(Released Thursday, Mar. 13, 2025)
Valid 8 a.m. EDT



Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

Author:

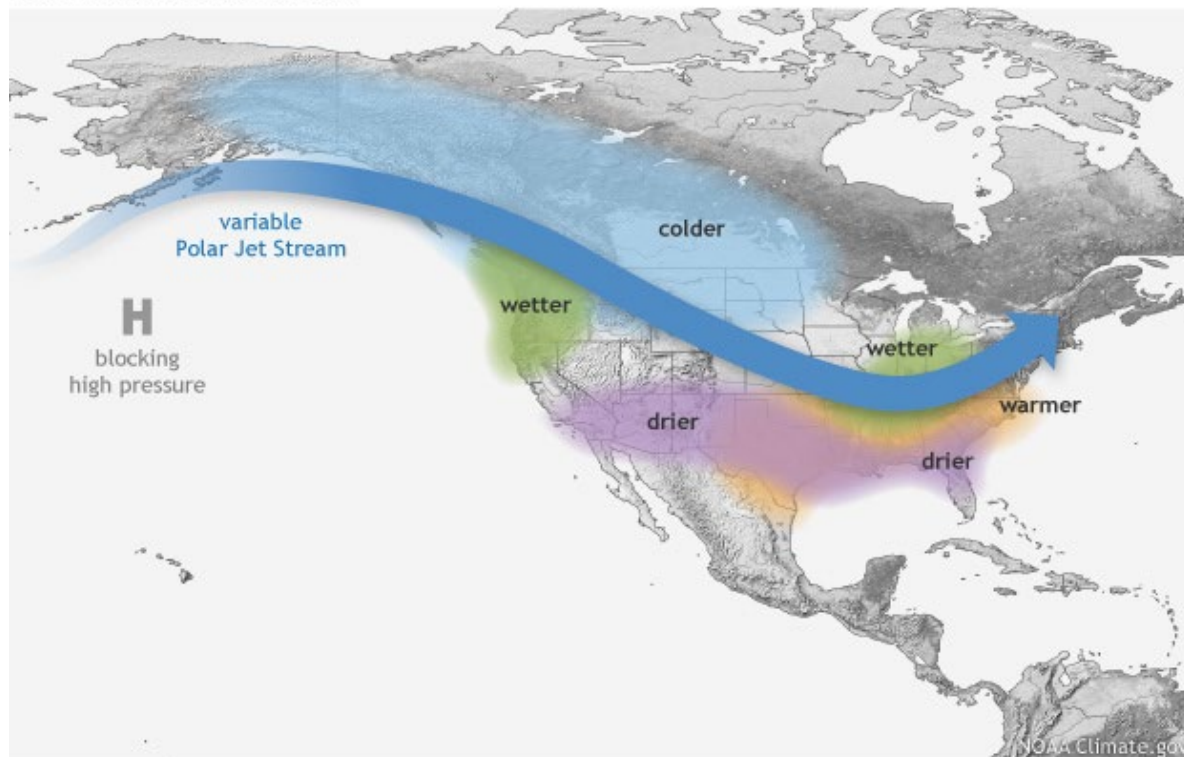
Richard Tinker
CPC/NOAA/NWS/NCEP



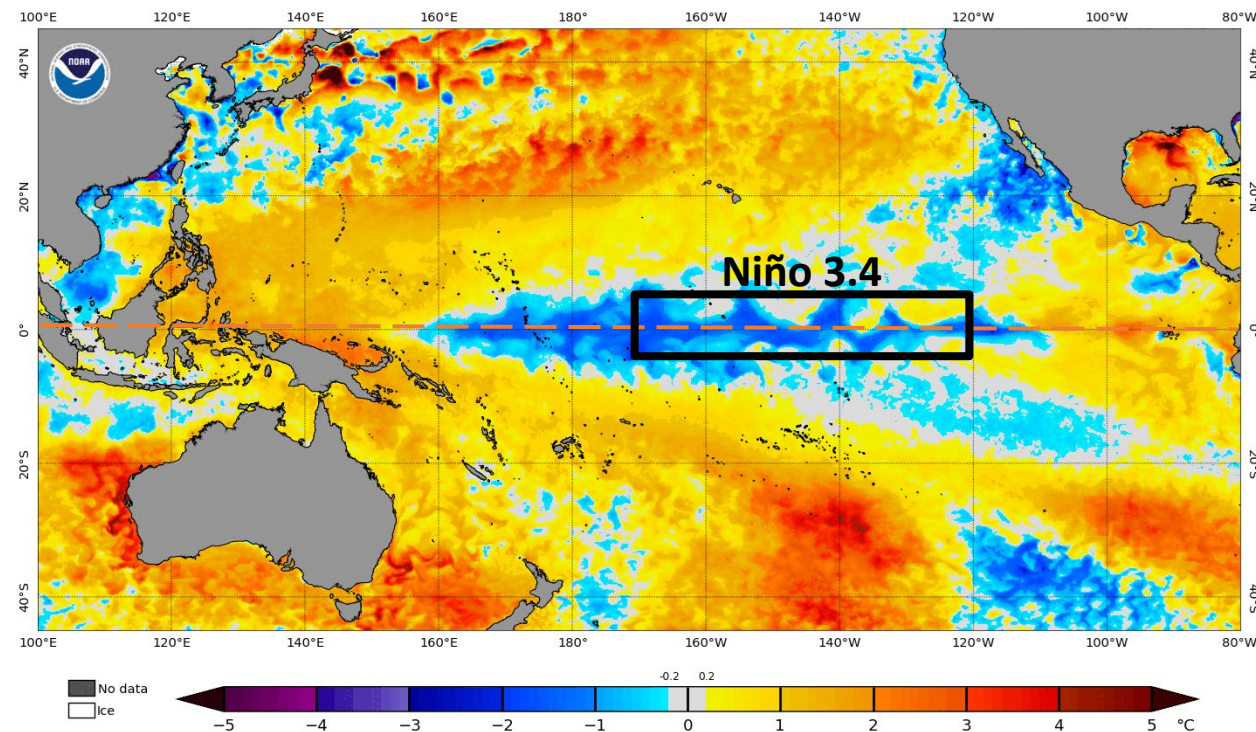
droughtmonitor.unl.edu

30-day Sea Surface Temperature (SST) Anomalies Mar 9, 2025

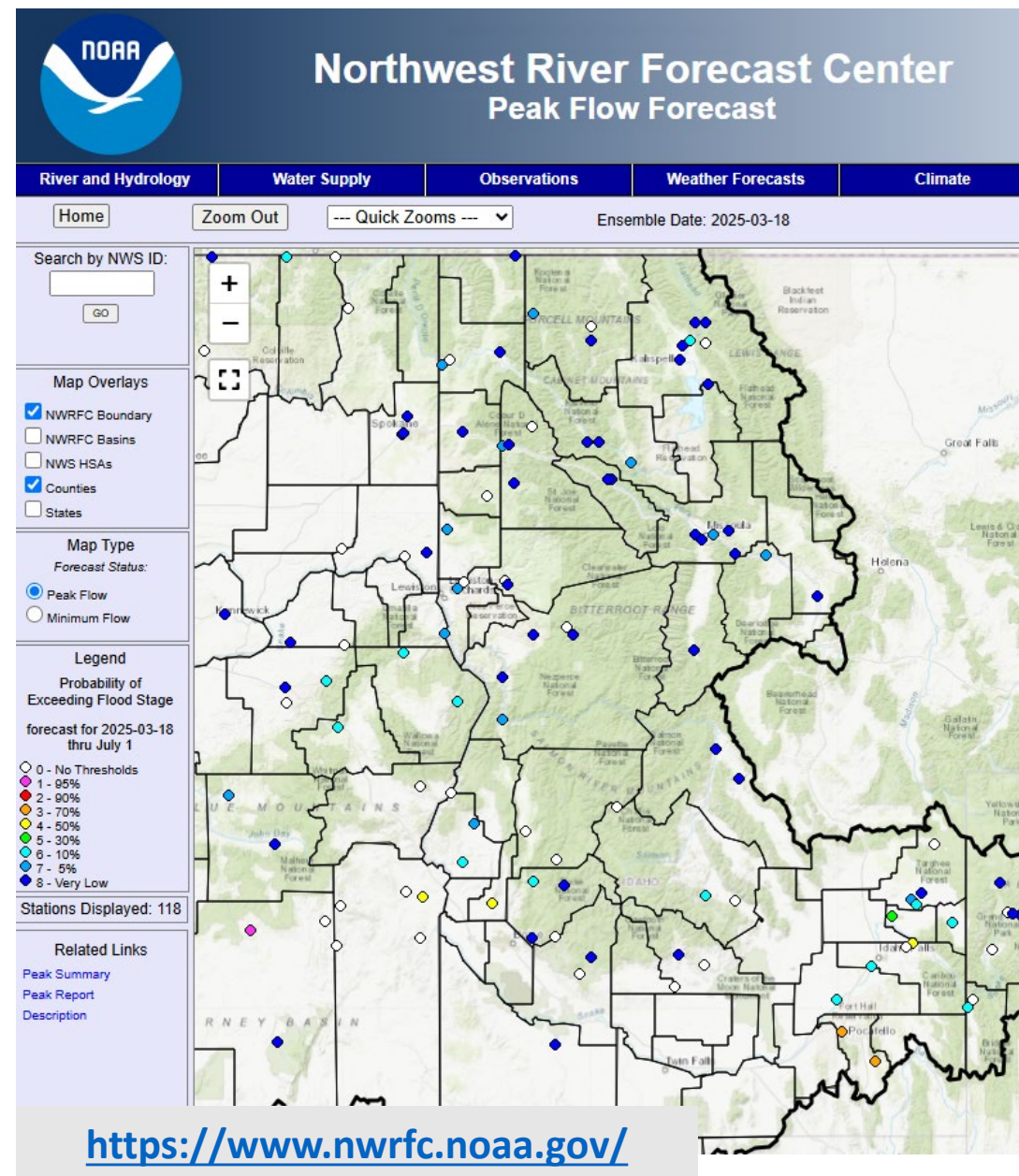
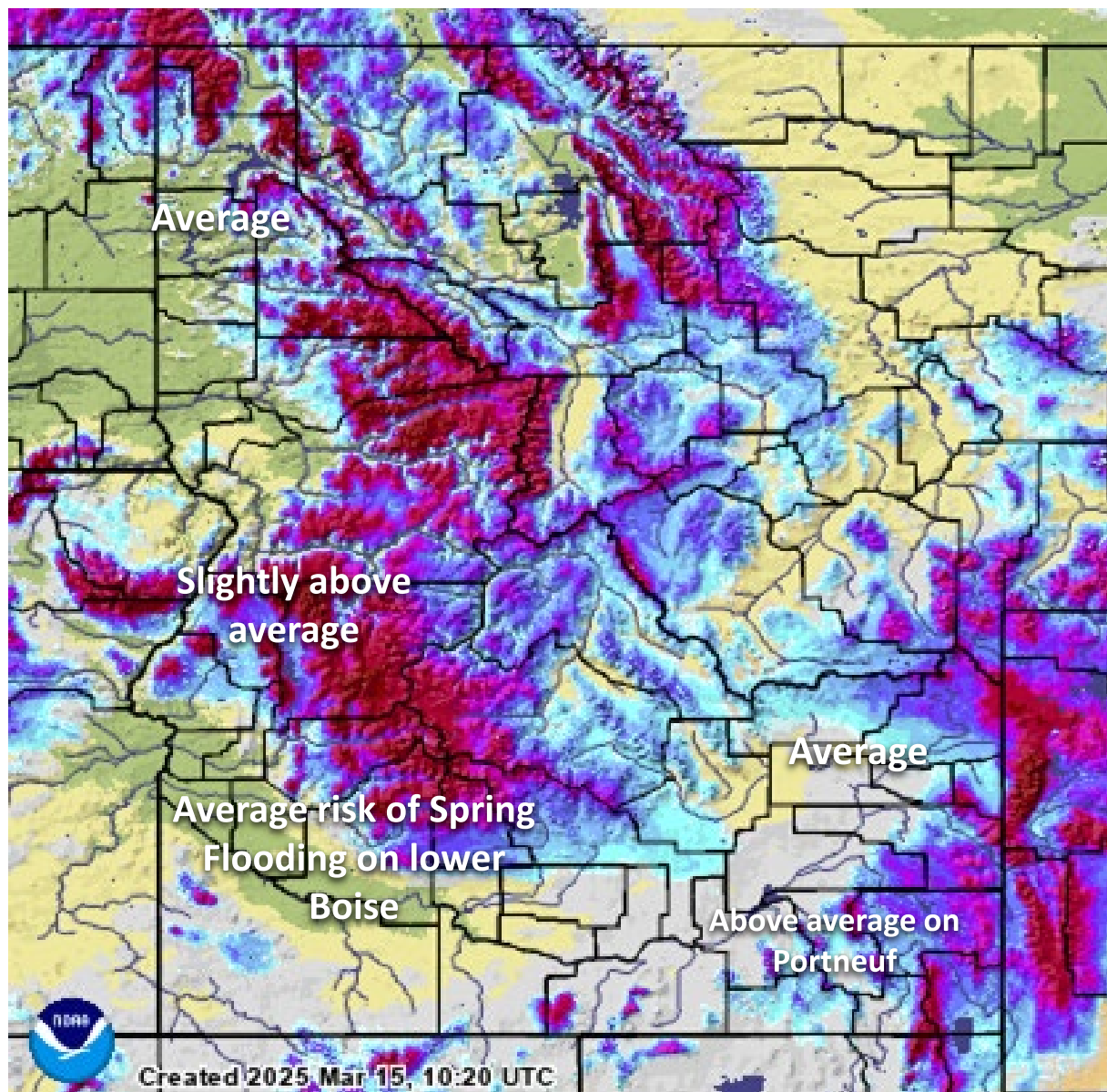
WINTER LA NIÑA PATTERN



NOAA Coral Reef Watch Daily 5km SST Anomalies (v3.1) 8 Feb 2025



www.coralreefwatch.noaa.gov









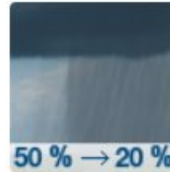




Forecast - 5 Days

Weather Forecast Office
Boise
Wednesday, March 19










Extended Forecast for Boise ID

(Elev. 2723 ft)

Today	Tonight	Thursday	Thursday Night	Friday	Friday Night	Saturday	Saturday Night	Sunday
								
High: 53 °F	Low: 36 °F	High: 51 °F	Low: 37 °F	High: 54 °F	Low: 42 °F	High: 54 °F	Low: 38 °F	High: 61 °F
Mostly Sunny	Cloudy then Showers Likely	Chance Rain/Snow then Slight Chance Showers	Mostly Cloudy then Chance Rain/Snow	Chance Showers	Showers Likely	Chance Showers then Slight Chance Showers	Mostly Cloudy	Partly Sunny

Extended Forecast for 16 Miles WNW Stanley ID

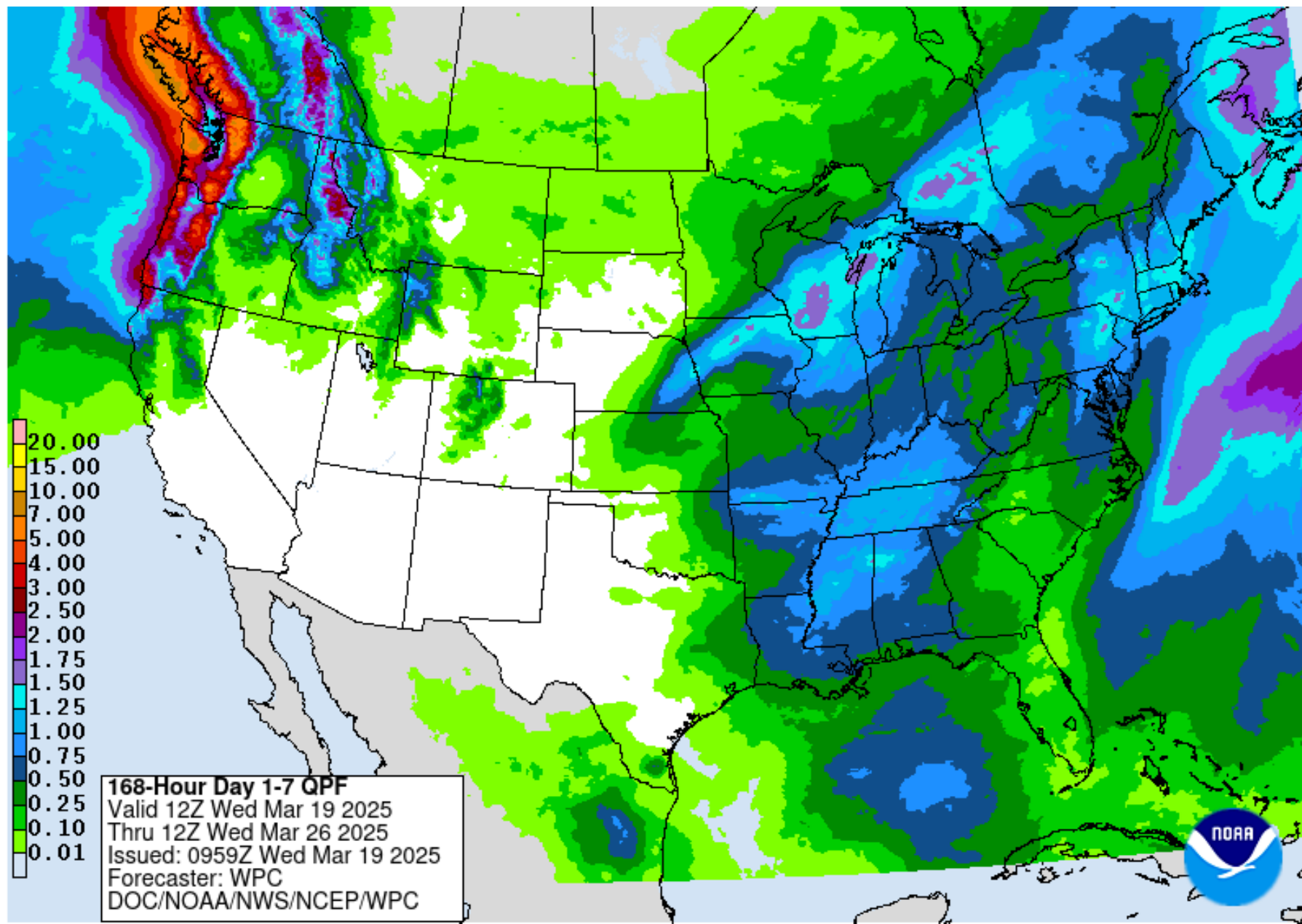
Banner Summit, ID (Elev. 6998 ft)

Today	Tonight	Thursday	Thursday Night	Friday	Friday Night	Saturday	Saturday Night	Sunday
								
High: 34 °F	Low: 16 °F	High: 27 °F	Low: 17 °F	High: 32 °F	Low: 22 °F	High: 32 °F	Low: 17 °F	High: 38 °F
Sunny	Mostly Cloudy then Heavy Snow	Snow	Snow Likely	Snow	Heavy Snow	Snow then Snow Likely	Chance Snow	Chance Snow



Precipitation Forecast - Next 7 Days

Weather Forecast Office
Boise
Wednesday, March 19





6-10 Day Outlook

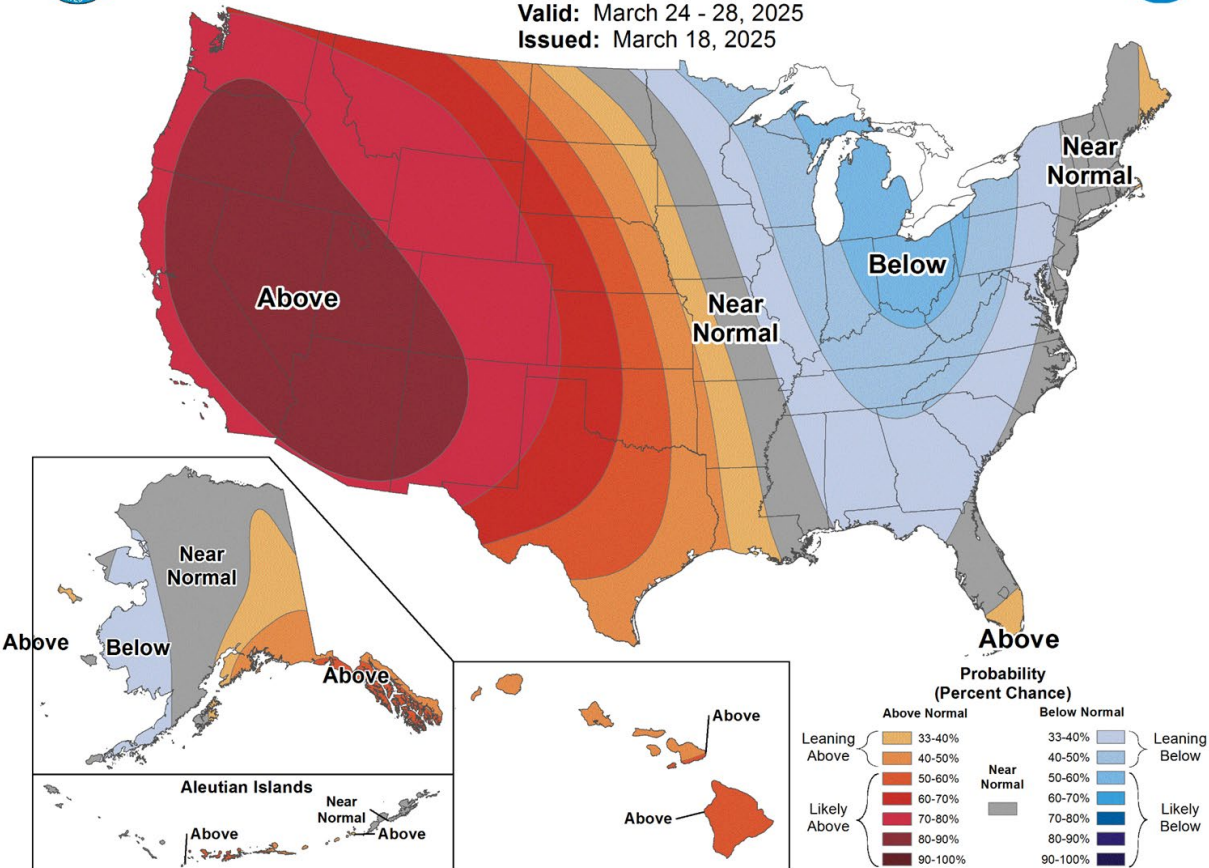
Weather Forecast Office
Boise
Wednesday, March 19



6-10 Day Temperature Outlook

Valid: March 24 - 28, 2025

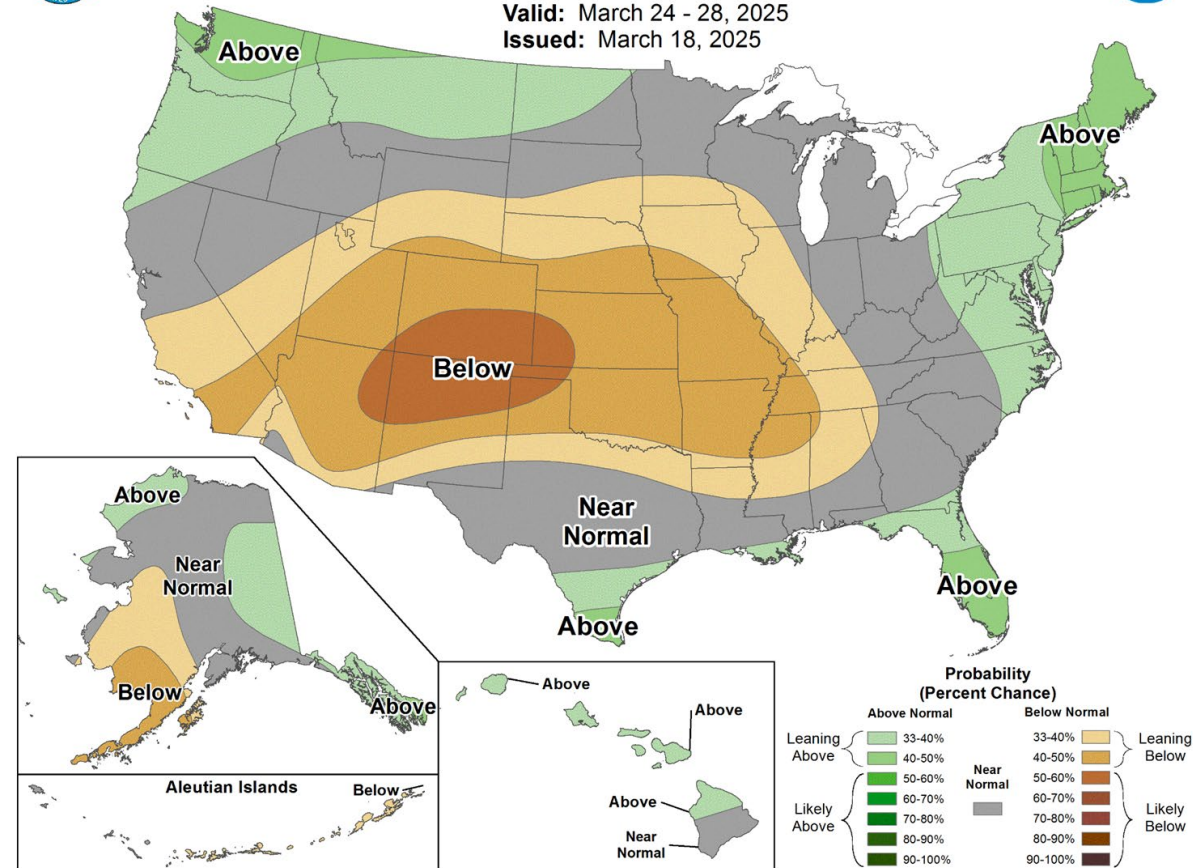
Issued: March 18, 2025



6-10 Day Precipitation Outlook

Valid: March 24 - 28, 2025

Issued: March 18, 2025





Weather Forecast Office
Boise
Wednesday, March 19



Valid: March 26 - April 1, 2025
Issued: March 18, 2025



Valid: March 26 - April 1, 2025
Issued: March 18, 2025

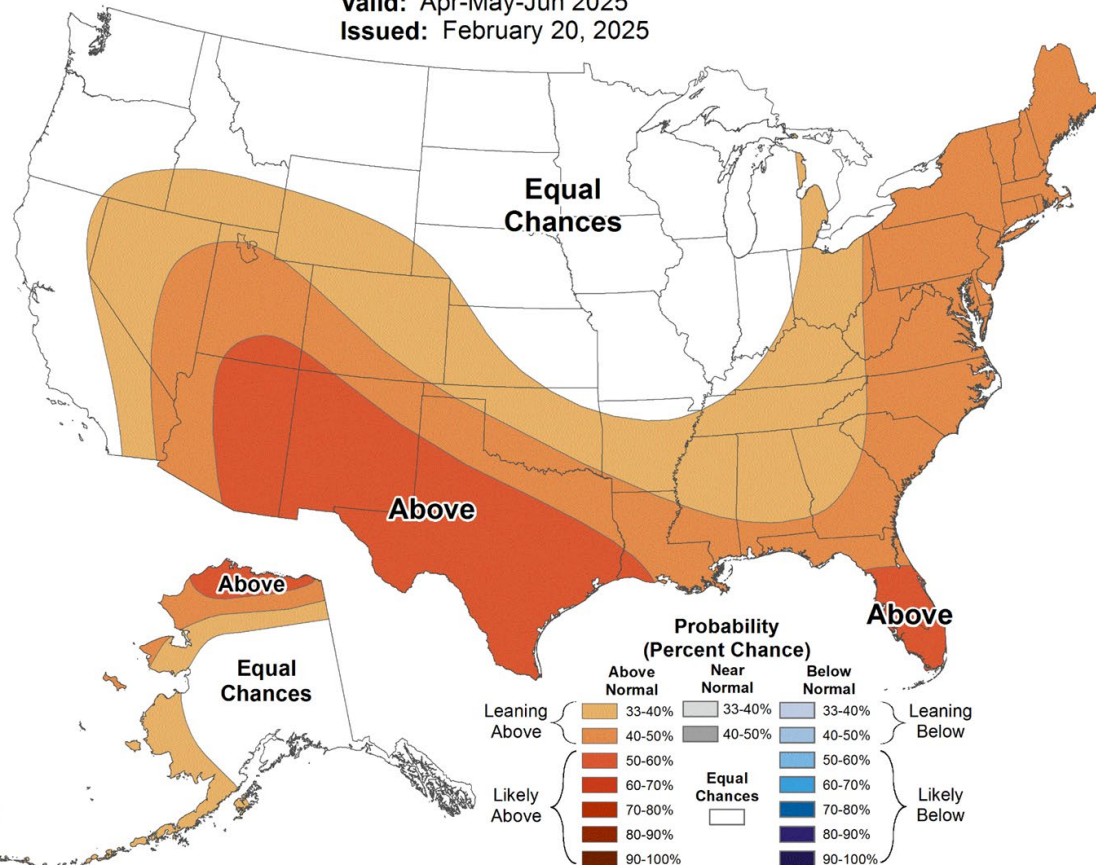




Seasonal Temperature Outlook



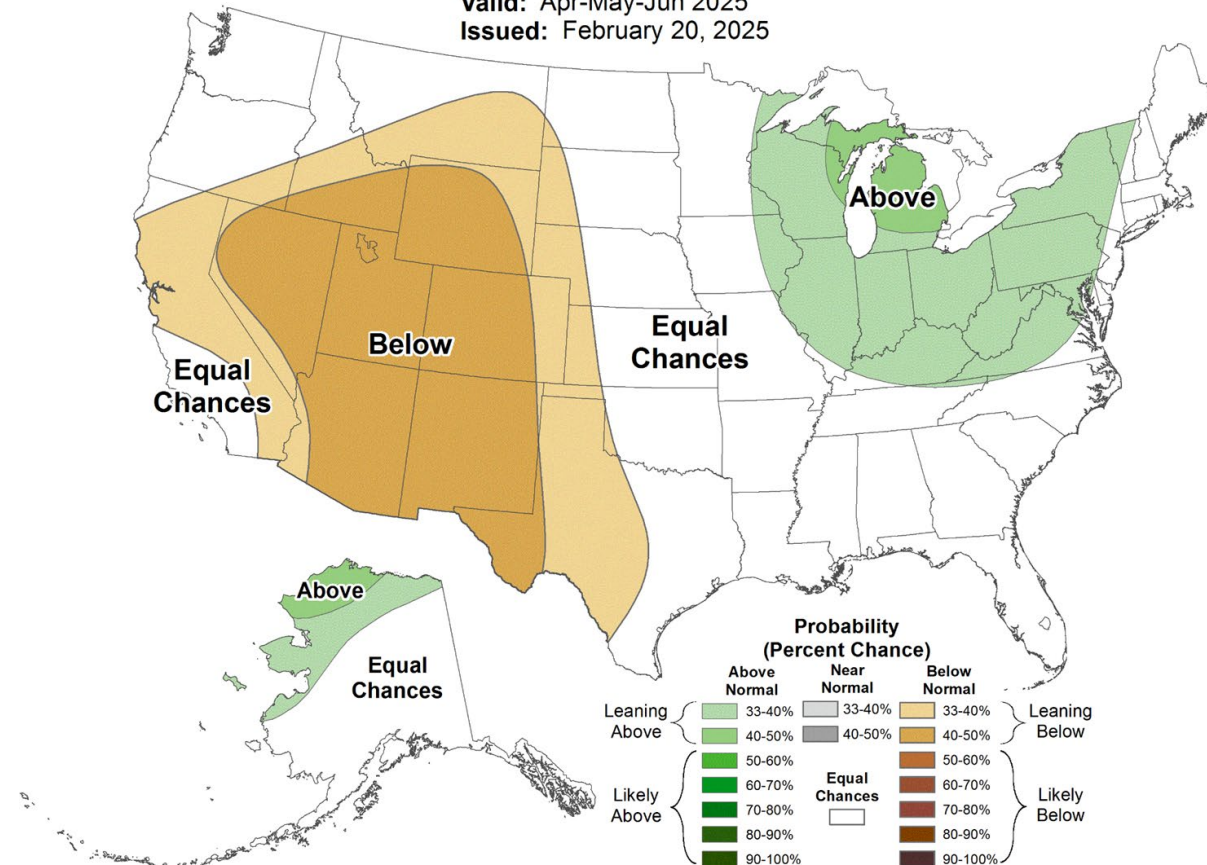
Valid: Apr-May-Jun 2025
Issued: February 20, 2025



Seasonal Precipitation Outlook



Valid: Apr-May-Jun 2025
Issued: February 20, 2025

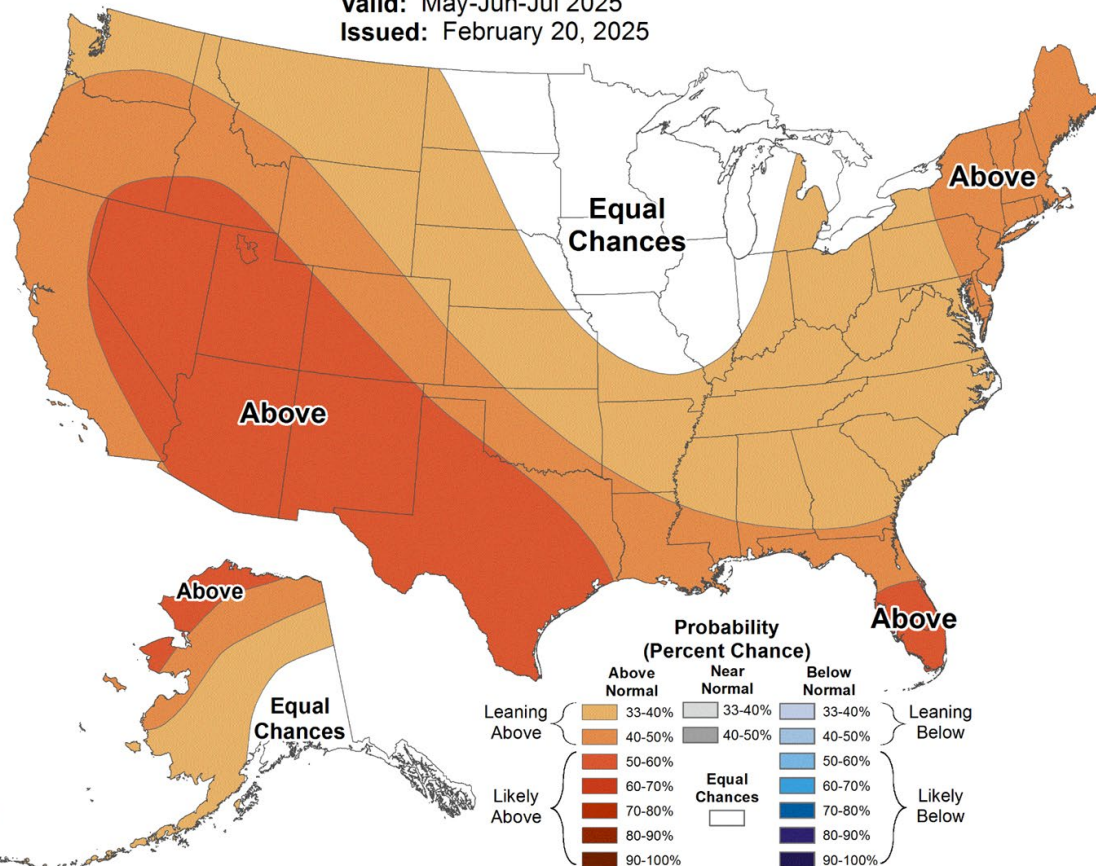




Seasonal Temperature Outlook



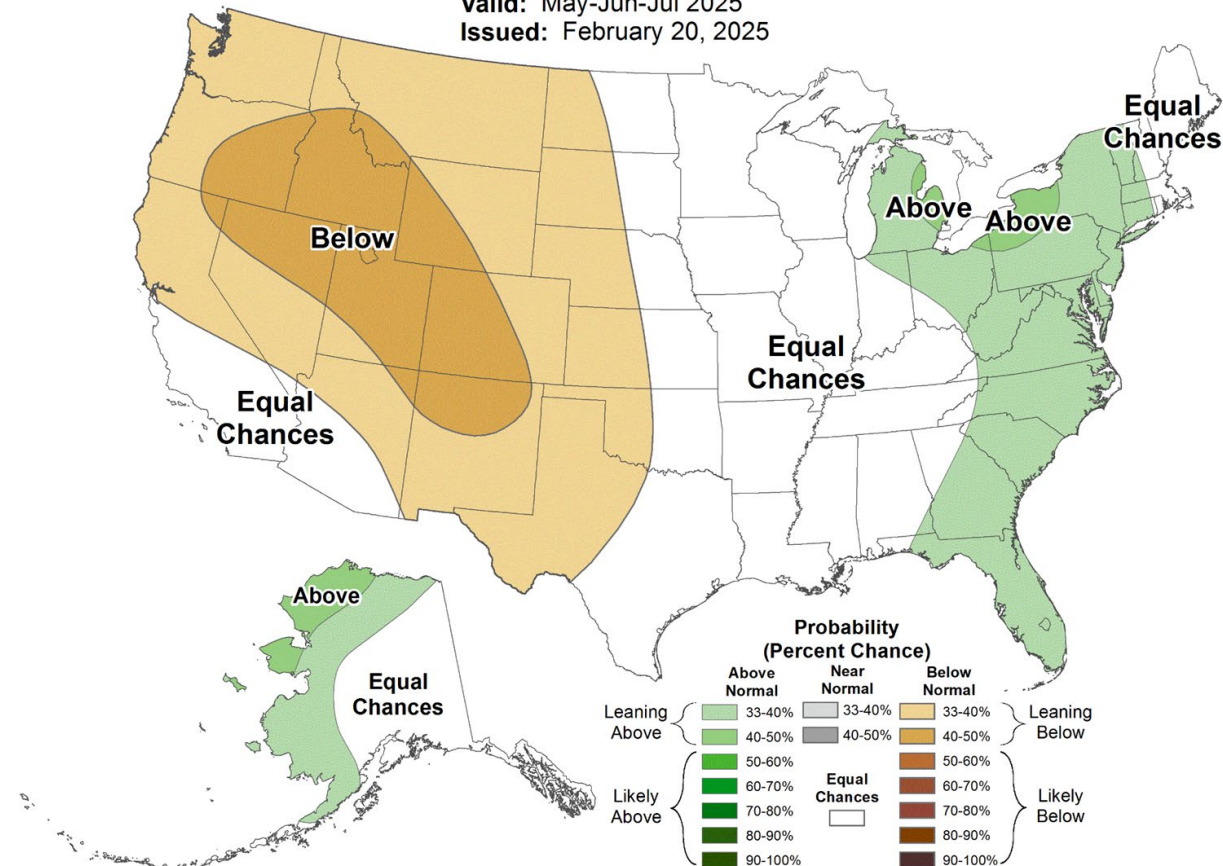
Valid: May-Jun-Jul 2025
Issued: February 20, 2025

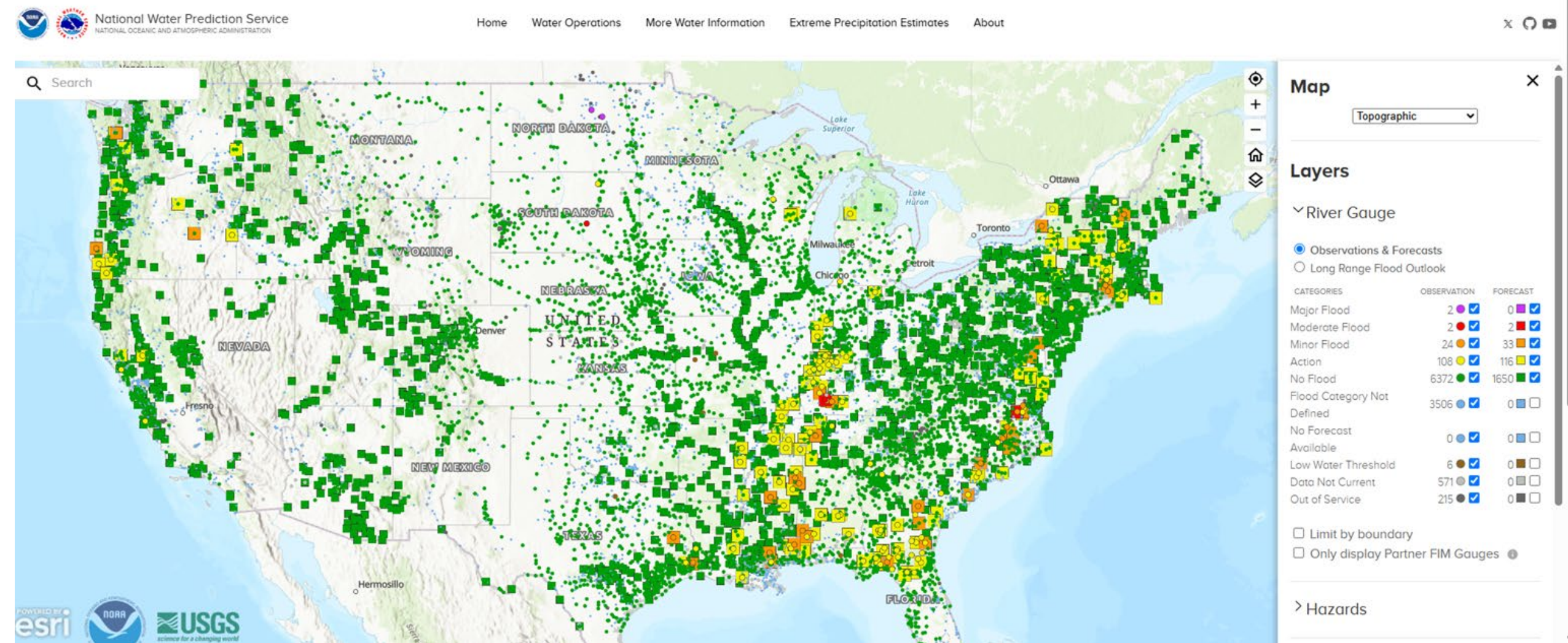


Seasonal Precipitation Outlook



Valid: May-Jun-Jul 2025
Issued: February 20, 2025

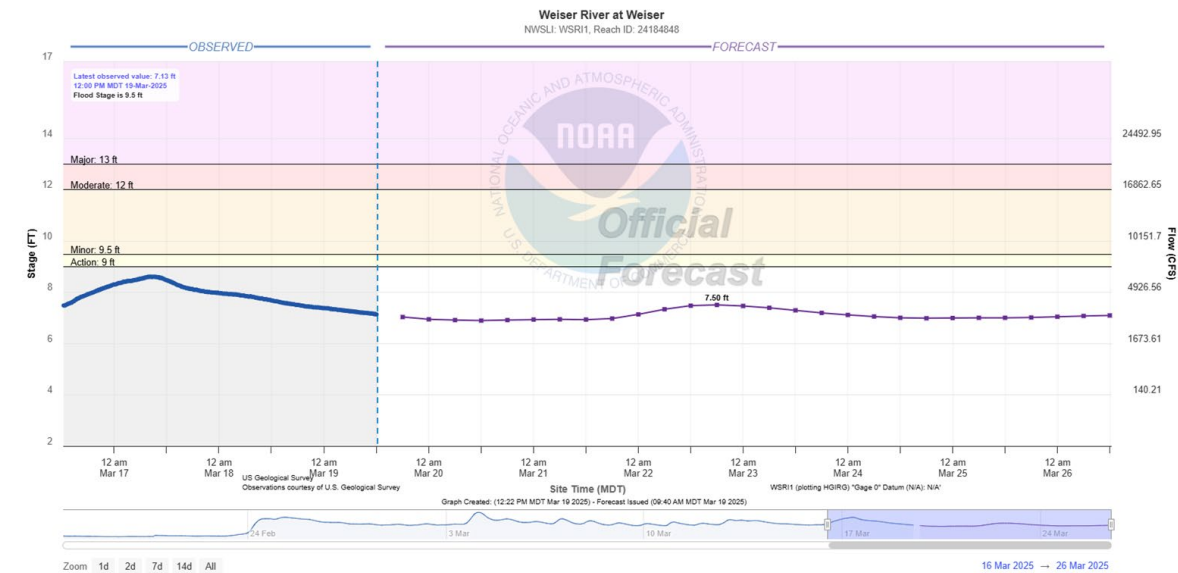






National Water Prediction Service

Weather Forecast Office
Boise
Wednesday, March 19



CATEGORY	STAGE
> Major Flooding	13 ft
> Moderate Flooding	12 ft
> Minor Flooding	9.5 ft
> Action	9 ft

Flood Impacts

13 - Major flooding will occur in Weiser and Midvale. Highway 95 will be inundated in several sections especially in the stretch just south of Weiser. Flooding of houses and other buildings near Weiser is likely with water several feet deep spreading north of the river towards Commercial Street. Water may begin flowing over the bridge on Cove Road. Flooding of Old Highway Road in Midvale is likely.

12.5 - Water will begin flowing over Highway 95 just south of Weiser with a depth around a half foot. Flooding will spread north of the river in Weiser towards Commercial Street. Water will be about 3 feet deep between the river and Couper Road with flooding of houses and buildings likely south of the river. Flooding of county roads near Midvale will continue.

12 - Significant flooding can be expected in Weiser and Midvale with flood waters beginning to cross Highway 95 south of Weiser. Extensive flooding south and east of Weiser will occur with water covering Cove Road and Couper Road to a depth of 2.5 feet. Flooding will also spread north of the river towards Washington Street in Weiser. The river will overflow its banks near Midvale with water beginning to cover county roads near the river.

11 - Flood water will begin spilling over the levees near the Cove Road bridge flooding portions of Cove Road and Couper Road near Weiser. County roads near the river upstream from Weiser will begin to flood.

10.3 - Floodwaters will approach the Cove Road bridge over the Weiser River making it unsafe to cross.

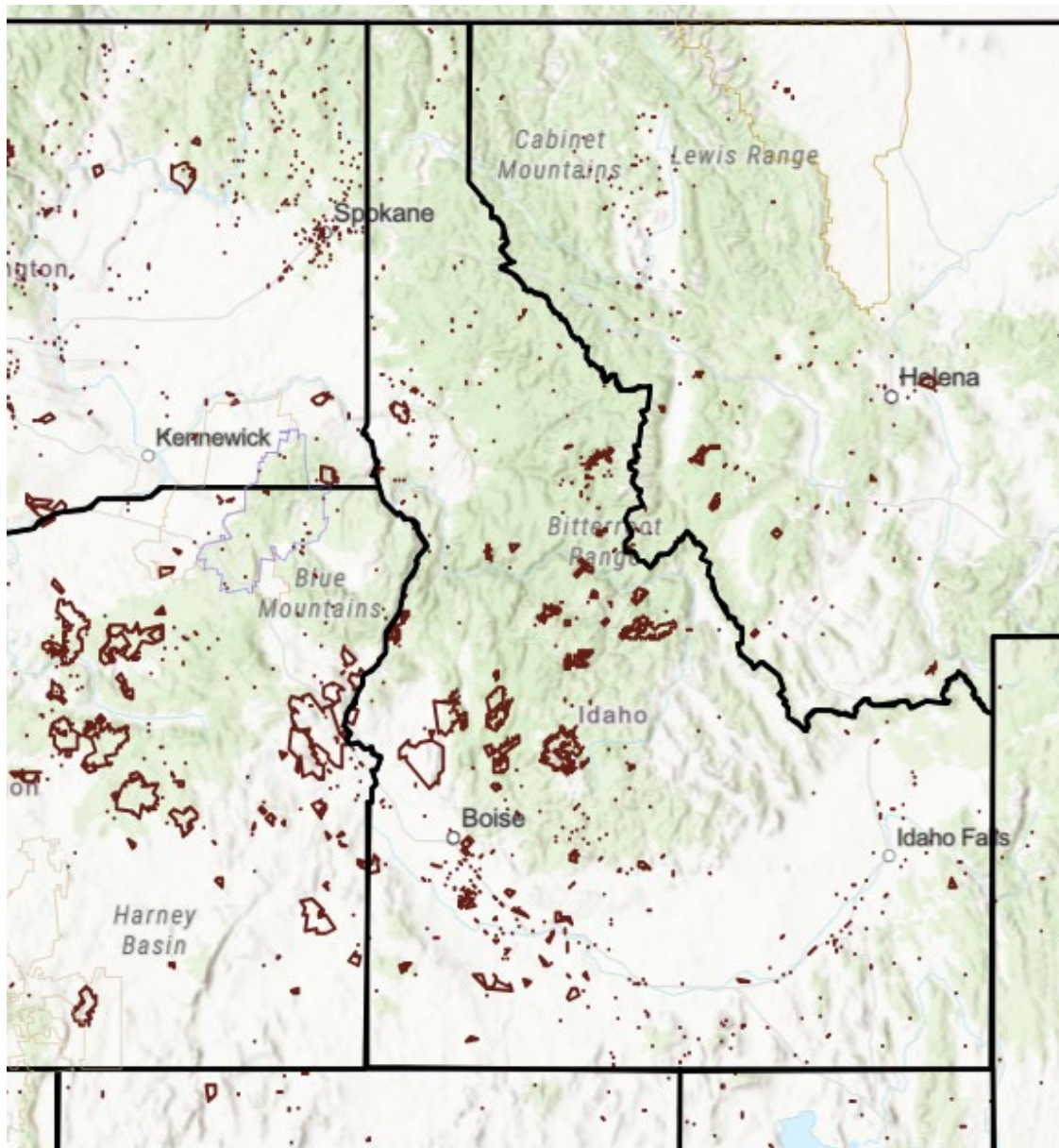
9.5 - Minor flooding of fields and agricultural land near Weiser is possible. Water will begin backing up under the Cove Road bridge into the slough and adjacent farmland.

[Click to view more impacts](#)

<https://water.noaa.gov>

2024 Wildfire Burned Areas

Weather Forecast Office
Boise
Wednesday, March 19



- Normal to above normal snowpack for this time of year
- The longer we maintain a good snowpack, the risk of rapid runoff and snowmelt flooding increases
- Outlook for late March and early April favors above normal temperatures and leans toward above normal precipitation
- Average to above average spring flood risk for the state as a whole
- Areas of SW Idaho and the Portneuf Basin where snowpack is the highest and soil moisture is well above average have the greatest risk of snowmelt flooding
- Flood risk below major reservoir systems is near average
- Uncertainty in spring weather (temperature & precipitation)





Spring Flooding Webinar

Idaho Department of Water Resources

Peter Jackson



**Idaho Office of
Emergency Management**

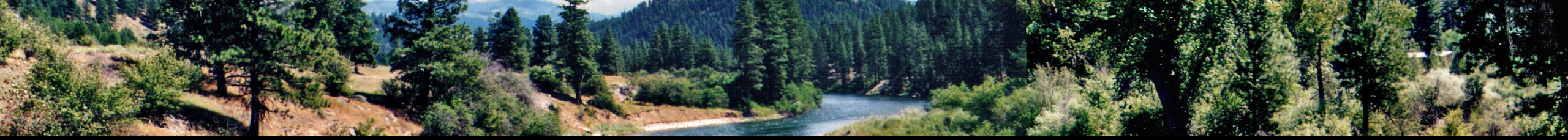


IDAHO DEPARTMENT OF
WATER RESOURCES

NFIP Update & Flood after Fire

Peter Jackson, CFM
State NFIP Coordinator
Peter.Jackson@idwr.idaho.gov
208-287-4973





FFRMS FEMA Policy (FP 206-24-005, Effective 09/09/2024)

The Higher Standards - NOW ON HOLD

This Policy was created to bolster community resilience to flooding and ensures that FEMA actions located in or near flood-prone areas last as long as intended.

With the New Administration placing the requirements on HOLD, where do we go from here ??????

First & Foremost, use the minimum Community Stds.

NFIP – Where are We Going

**Why would a Community want to follow the idea of the Higher Standards?
What is the Impact to Your Community Plans?**

Does your Community Comp. Plans and ordinances consider planned funding sources ? What will be the Funding Requirements going forward ?



FEMA & NFIP – Where are We Going



Idaho still has 19 On-Going FEMA Mapping Projects in the State that need to be completed.

Projects are being delayed, furthering Community frustrations on getting updated Floodplain Maps.

Getting updated mapping still takes many years, and the future funding of these on-going projects may take even longer with the new Administration guidelines.



Be patient and be ready for longer waits to get projects completed.



NFIP Flood Insurance - Idaho Statewide

3-18-2025

	9/2023	3/2025
NFIP Coverage	\$1,552,619,30	\$1,454,708
NFIP Annual Premiums	\$7,143,976	\$4,535,223
NFIP Total Policies	5,561	5,178
NFIP Average Premium	\$1,284.66	\$875.86
NFIP Claims since 1978	\$10,079,401	\$10,212,976
NFIP Total Claims since 1978	1,092	1,104
NFIP Total Paid Claims since 1978	747	753
Average NFIP Loss	\$13,493.17	\$13,563.05

Flood After Fire

You may be at an even greater risk of flooding after a wildfire. Normally, vegetation absorbs rainfall, reducing runoff. Wildfires leave the ground charred, barren, & unable to absorb water, creating conditions ripe for flash flooding & mudflow. Flood risk remains significantly higher until vegetation is restored - up to 7 years after a wildfire.

Idaho is **VERY** susceptible to flooding after a wildfire.







Flood After Fire

Flooding after fire is often more severe, as debris & ash left from the fire can form mudflows. As rainwater moves across charred & denuded ground, it can also pick up soil & sediment & carry it in a stream of floodwaters. These mudflows can cause significant damage.



Flood Definition

Flood or Flooding means:

(a) A general & temporary condition of partial or complete inundation of normally dry land areas from:

(1) The overflow of inland or tidal waters.

(2) The unusual & rapid accumulation or runoff of surface waters from any source. ...



Flood Definition - Continued

Flood or Flooding means:

(a)(3) Mudslides (i.e., mudflows) which are proximately caused by flooding as defined in paragraph (a)(2) of this definition & are akin to a river of liquid & flowing mud on the surfaces of normally dry land areas, as when earth is carried by a current of water and deposited along the path of the current.





IDAHO DEPARTMENT OF
WATER RESOURCES





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An NFIP Policy

Mudflows are rivers of liquid & flowing mud on the surface of normally dry land, often caused by a combination of brush loss & subsequent heavy rains.

Mudflows can develop when water saturates the ground, such as from rapid snowmelt or heavy or long periods of rainfall, causing a thick, liquid, downhill flow of earth.

Mudflows are covered by flood insurance but are different from other non-covered earth movements where there is not a flowing characteristic – such as landslides or slope failures.



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WATER RESOURCES



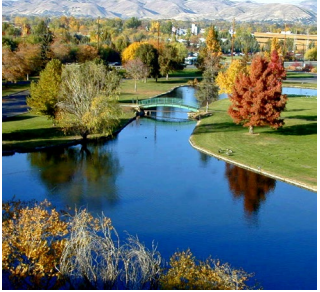
Flood After Fire



An NFIP Policy

There is no 30-day waiting period before flood insurance takes effect in certain cases where property is affected by flooding on burned Federal land that is a result of, or is exacerbated by post-wildfire conditions.

Flood After Fire





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WATER RESOURCES

NFIP Update & Flood after Fire

Questions?

Peter Jackson, CFM

State NFIP Coordinator

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208-287-4973

Maureen O'Shea, CFM

Floodplain Specialist

Maureen.OShea@idwr.idaho.gov

208-287-4928



Spring Flooding Webinar

United States Geological Survey

David Evetts



**Idaho Office of
Emergency Management**



USGS Idaho Water Science Center- Flood Response Capabilities and Resources

David Evetts USGS/IDWSC
devetts@usgs.gov



USGS 13046000 Henry's Fork nr Ashton, ID



Upper Columbia Idaho Field Office Lead
Technician, Keith Hein, measuring highflows
on the S.F. Clearwater at Sites, ID - 13338500

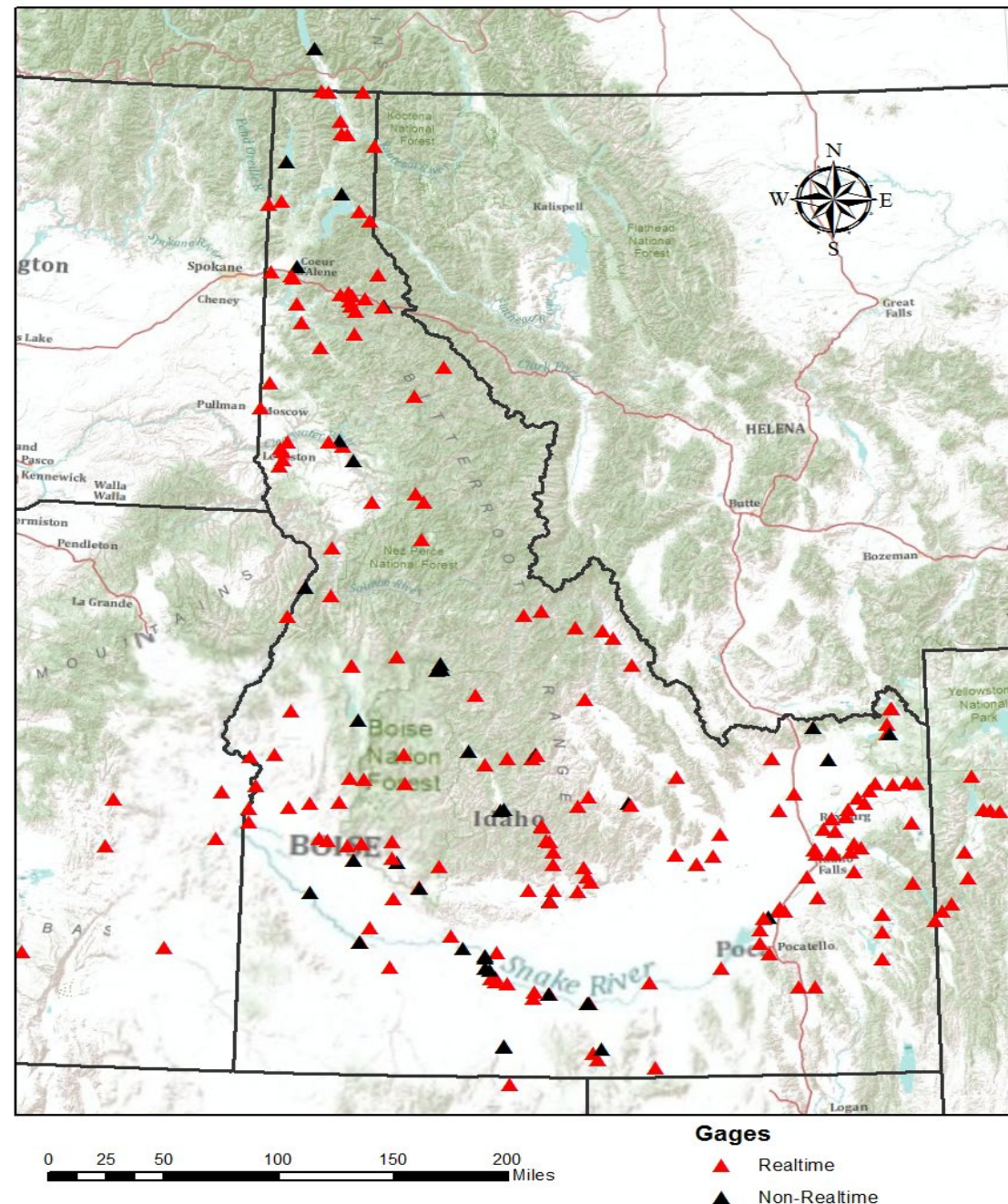
USGS Mission

- The mission of the USGS is to serve the Nation by providing reliable scientific information to describe and understand the earth; **minimize loss of life and property from natural disasters**; manage water, biological, energy and mineral resources; and enhance and protect our quality of life. The USGS mission is to monitor, analyze, and predict current and evolving dynamics of complex human and natural Earth-system interactions and to deliver actionable intelligence at scales and timeframes relevant to decision makers.



IDWSC SW Data section

- About 250 Active SW stations
 - Approximately 150 use GOES Satellite Transmission
 - 100 use cellular transmission
 - 16 cameras



IDWSC field offices

- Spokane – Upper Columbia
Idaho Field Office (UCI)

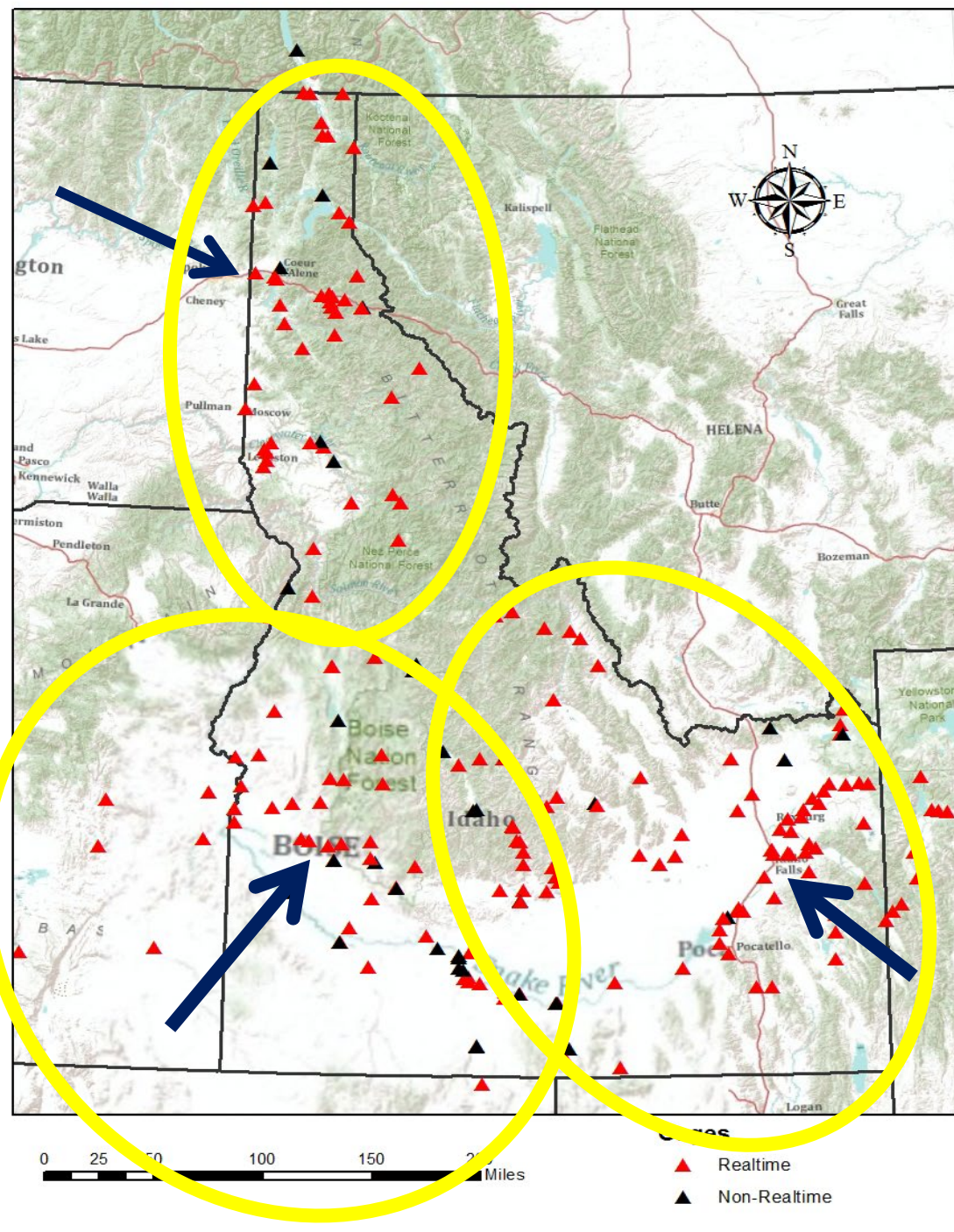
- Kootenai
- Pend Oreille
- Coeur D' Alene
- Clearwater
- Lower Salmon

- Boise – (BFO)

- Big Wood
- Mid-Lower Snake
- Upper Salmon
- Boise
- Payette
- Owyhee

- Idaho Falls (IFFO)

- Upper Snake
- Henry's Fork
- Teton
- Portneuf
- Big/Little Lost Rivers

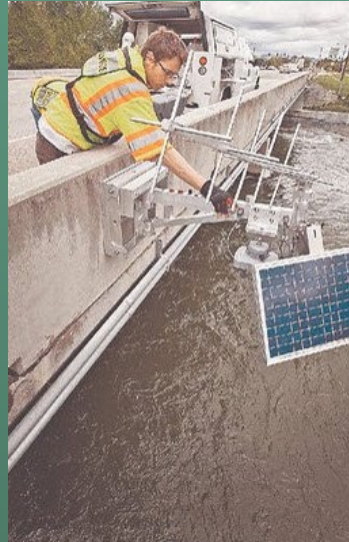


USGS Streamgaging and Measurements



Rapid Deployment Gages

- Multi-parameter
 - Stage (water surface Elevation)
 - Surface Velocity
 - Water Quality
- Telemetered and viewable on NWISWeb
- Installs on bridges/trees/riverbanks in about an hour
- Moveable

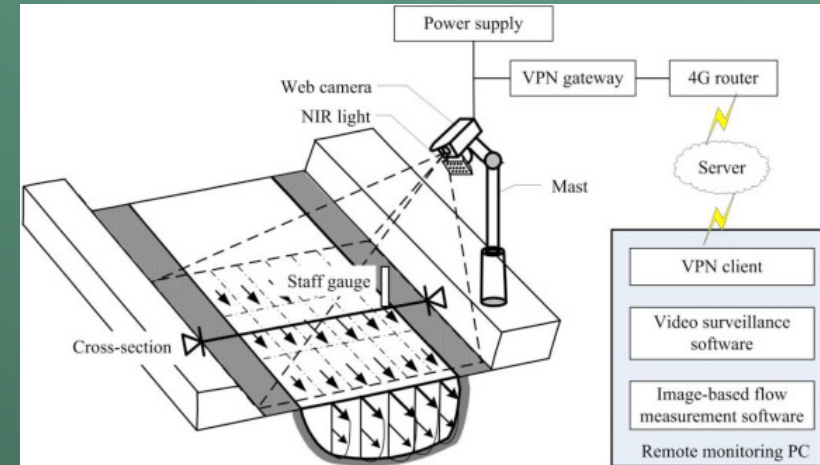


Noncontact Technology

- In-Situ Camera

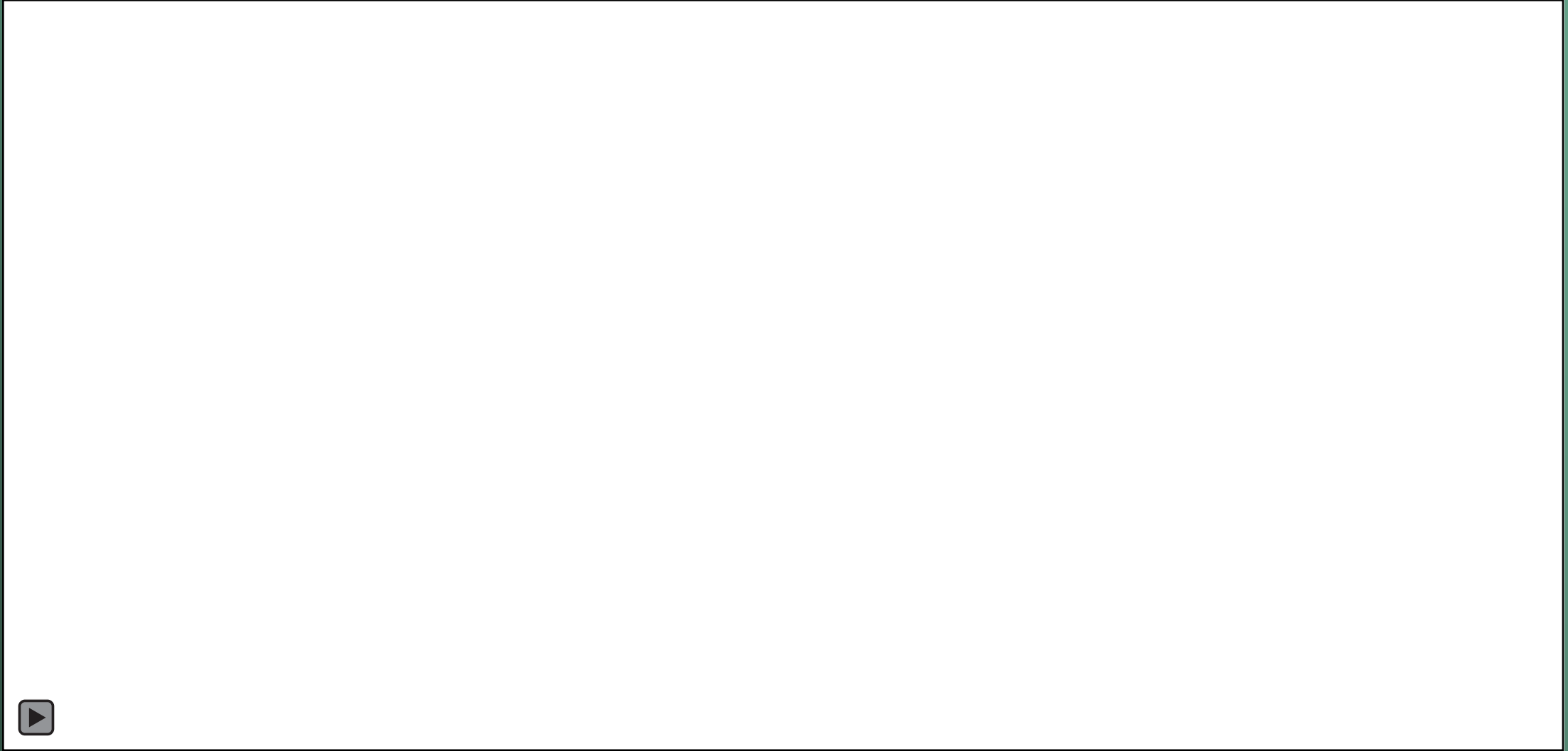


- LSPIV



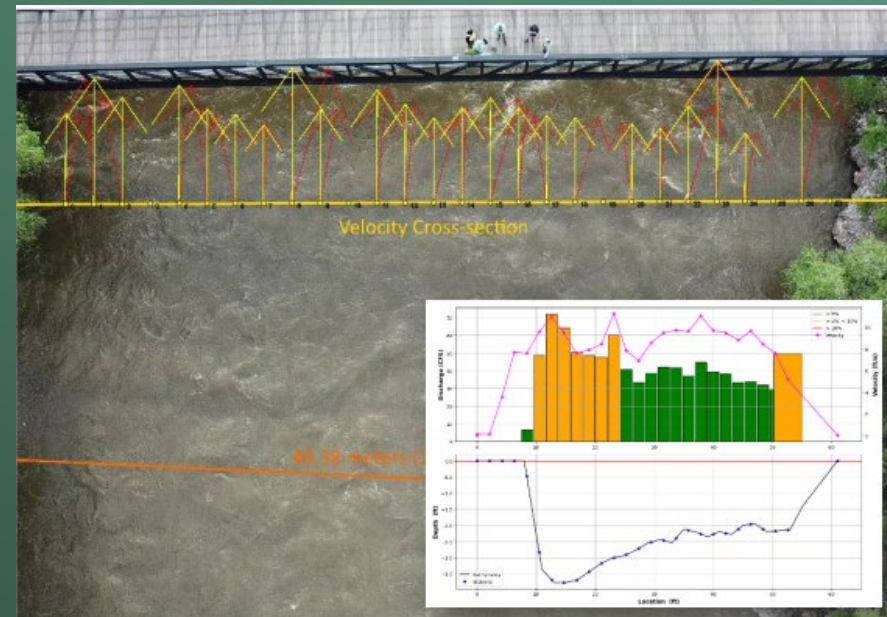
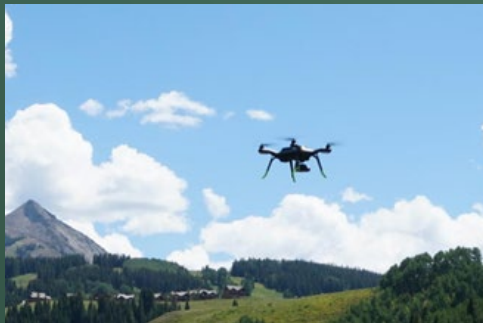
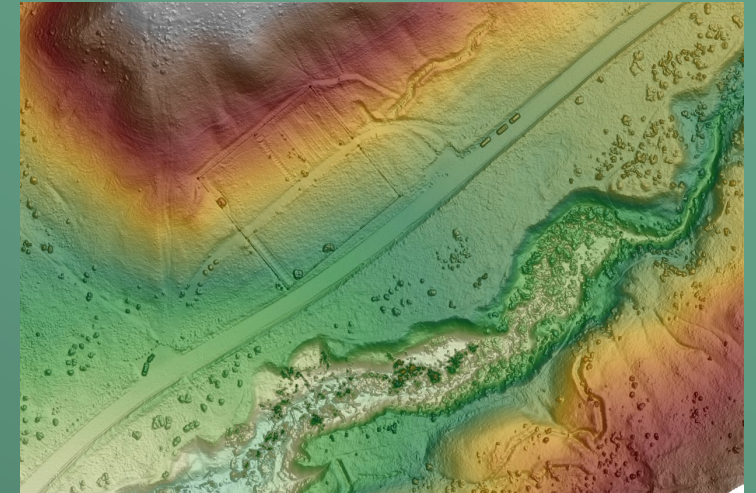
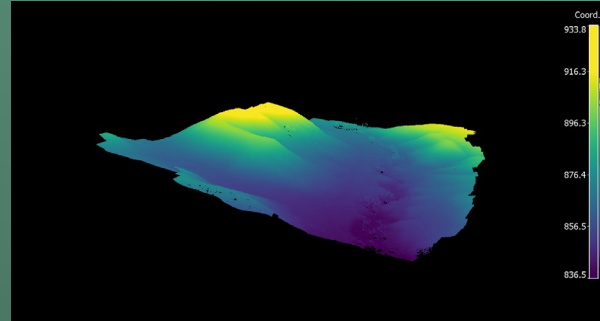


LSPIV in action



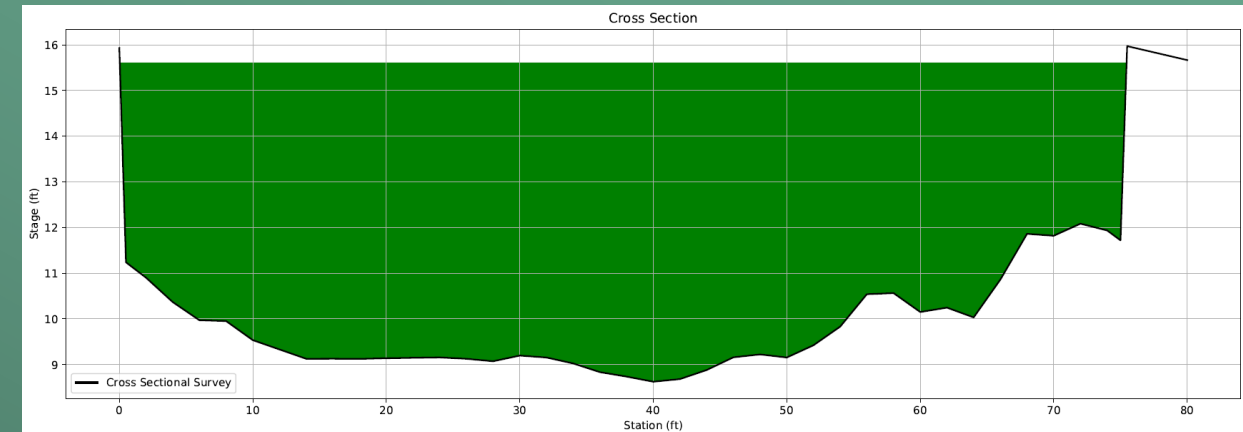
Noncontact Technology (cont.)

■ Drones



Noncontact Technology (cont.)

- Surface Velocity Radar



Getting the Word Out:

G GS-W_Project_Alert@usgs.gov
To: GS-W Project Alert
Cc: Miller, Darrin A

Summary of Event Impact:

A four day rain on snow event has caused moderate flooding and high flows in several drainages in southeastern and southern Idaho

Event Information:

affected area: Pocatello, Chubbuck, Tyhee, McCammon, Lava Hot Springs, Inkom, Idaho

Event: Over the past four days, rain on snow has caused moderate flooding and high flows in portions of the Portneuf River, Raft River, and lower Willow Creek basins.

Streamgages: 1 gage has experienced peak of record (13058520, Willow Creek Floodway Channel nr Ucon, ID) $Q = 1,020$ cfs. Regulated flow in the Willow Creek Basin below Ririe Reservoir gages impacted (damaged or destroyed) All gages are operational

Three crews were dispatched on Monday (4/29) for flow measurements, rating verification, and rating establishment at newly installed sites.

Three crews are scheduled to be dispatched on Tuesday (4/30) to continue to monitor and measure flow in the impacted basins.

communication with cooperators and stakeholders are conducted as needed to assist with prioritization of sites needing visits.



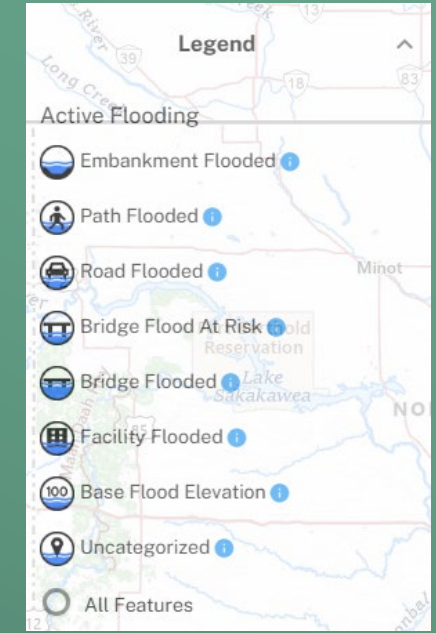
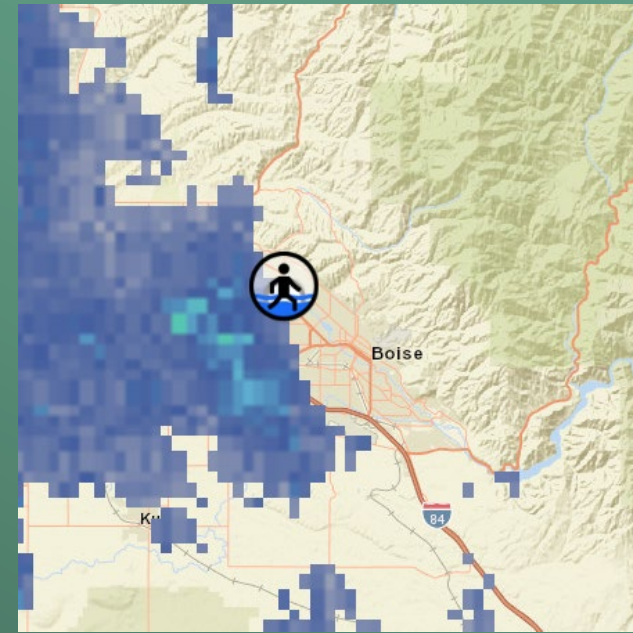
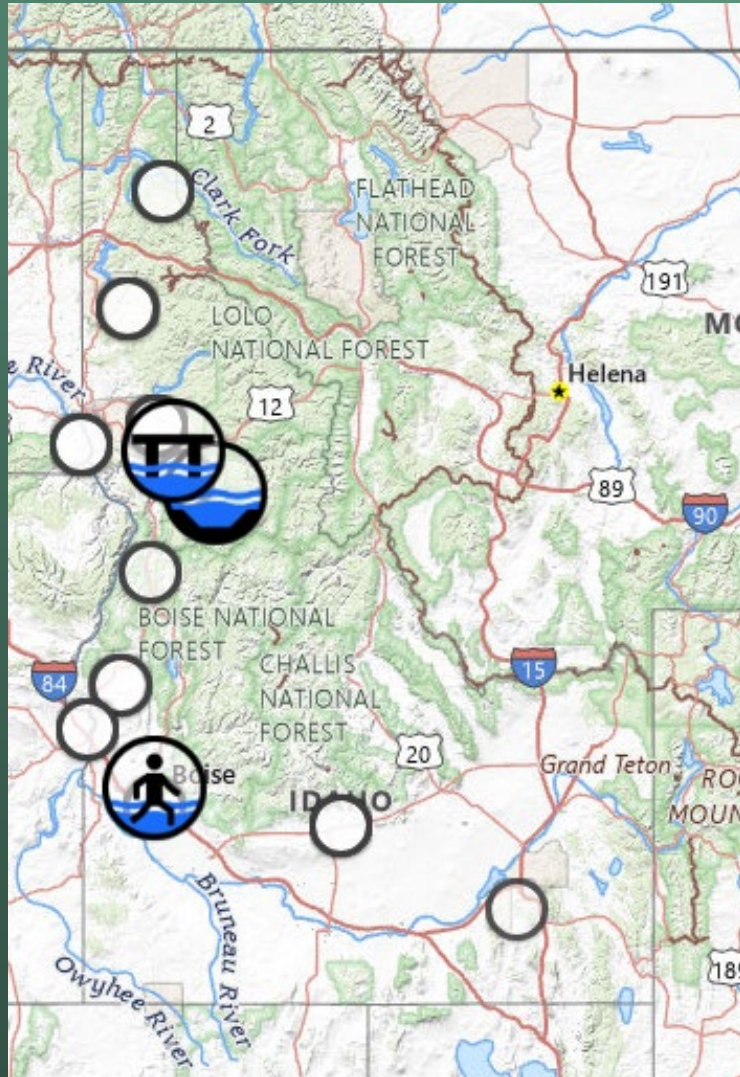
Collaborative Effort

- Emergency Management
 - Workshops
 - Presentations
 - Rapid Deployment
 - HWMK – Peak flow verification
 - Indirect Peak Flow estimations
- Community education and awareness
 - Glenwood Informative Sign
 - Boise River Historical High-Water Marks (HWKS)
 - Portneuf Informative Sign






Real-Time Flood Impact Map



USGS HIVIS

**USGS**
science for a changing world

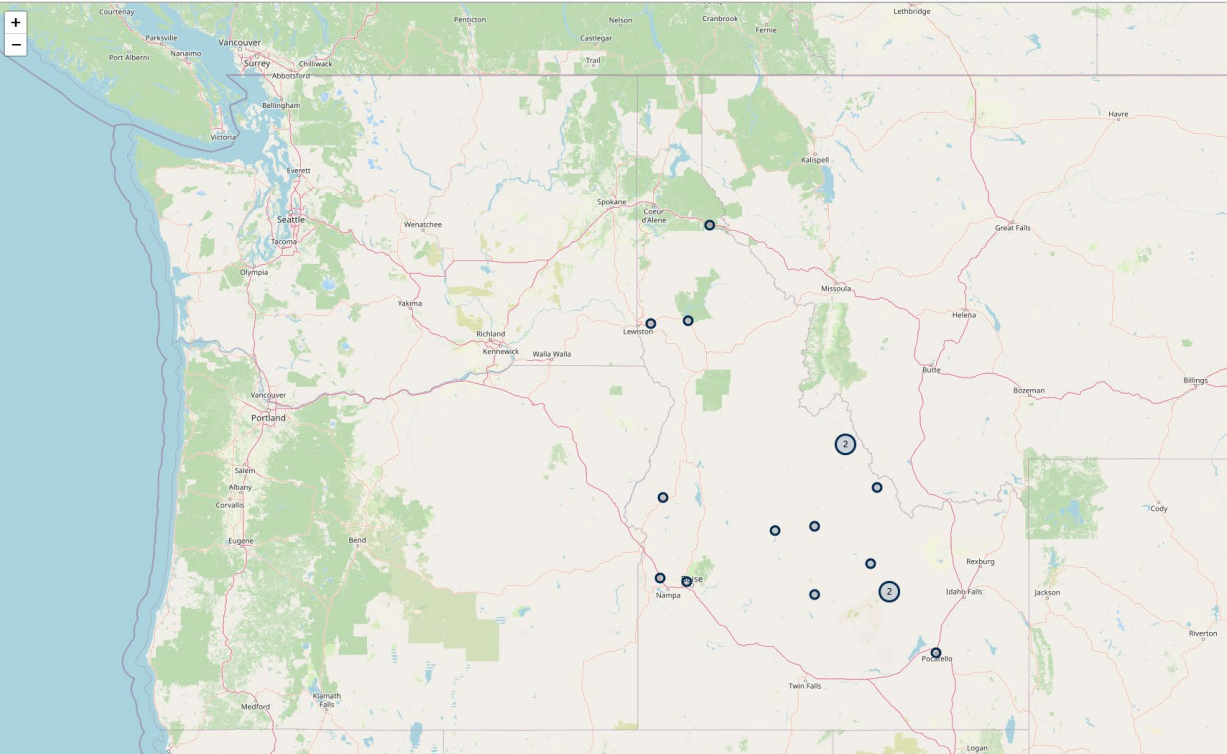
HIVIS
Hydrologic Imagery Visualization and Information System


LOGIN

State
ID ▾

Text Search

16 Cameras






3/12/2025, 11:00:02 AM MDT

Salmon River above East Fork near Clayton

USGS Site: 13297380

Salmon River above East Fork near Clayton, ID

DETAILS & DOWNLOADS




3/12/2025, 11:00:02 AM MDT

Lemhi River below L5 Diversion near Salmon

USGS Site: 13305310

Lemhi River below L5 Diversion near Salmon, ID

DETAILS & DOWNLOADS




3/12/2025, 11:00:04 AM MDT

West Hartley Gulch near Caldwell

USGS Site: 13210986

West Hartley Gulch near Caldwell, ID

DETAILS & DOWNLOADS




3/12/2025, 11:00:04 AM MDT

Big Timber Creek above Mouth at Leadore

USGS Site: 13304050

Big Timber Creek above Mouth at Leadore, ID

DETAILS & DOWNLOADS




3/12/2025, 11:00:04 AM MDT

Weiser River near Cambridge

USGS Site: 13258500

Weiser River near Cambridge, ID

DETAILS & DOWNLOADS




3/12/2025, 11:00:05 AM MDT

Big Lost River near Arco

USGS Site: 13132500

Big Lost River near Arco, ID

DETAILS & DOWNLOADS




3/12/2025, 11:00:25 AM MDT

Portneuf River at Pocatello

USGS Site: 13075500

Portneuf River at Pocatello, ID

DETAILS & DOWNLOADS




3/12/2025, 11:00:04 AM MDT

Big Lost River below Inlet Diversion near Arco

USGS Site: 13132520

Big Lost River below Inlet Diversion near Arco, ID

DETAILS & DOWNLOADS




3/12/2025, 11:00:05 AM MDT

South Fork Coeur d'Alene River above Placer Creek at Wallace

USGS Site: 12413131

South Fork Coeur d'Alene River above Placer Creek at Wallace, ID

DETAILS & DOWNLOADS




3/12/2025, 5:00:16 AM MDT

Clearwater River at Orofino

USGS Site: 13340000

Clearwater River at Orofino, ID

DETAILS & DOWNLOADS




3/12/2025, 11:00:05 AM MDT

Boise River at Glenwood Bridge near Boise

USGS Site: 13206000

Boise River at Glenwood Bridge near Boise, ID

DETAILS & DOWNLOADS




3/12/2025, 11:00:05 AM MDT

Valley Creek at Stanley

USGS Site: 13295000

Valley Creek at Stanley, ID

DETAILS & DOWNLOADS




3/12/2025, 1:00:03 PM MDT

Clearwater River at Spalding

USGS Site: 13342500

Clearwater River at Spalding, ID

DETAILS & DOWNLOADS




3/12/2025, 11:00:05 AM MDT

Big Lost River near Leslie

USGS Site: 13130300

Big Lost River near Leslie, ID

DETAILS & DOWNLOADS



3/12/2025, 11:00:05 AM MDT

Big Wood River at Hailey Total Flow

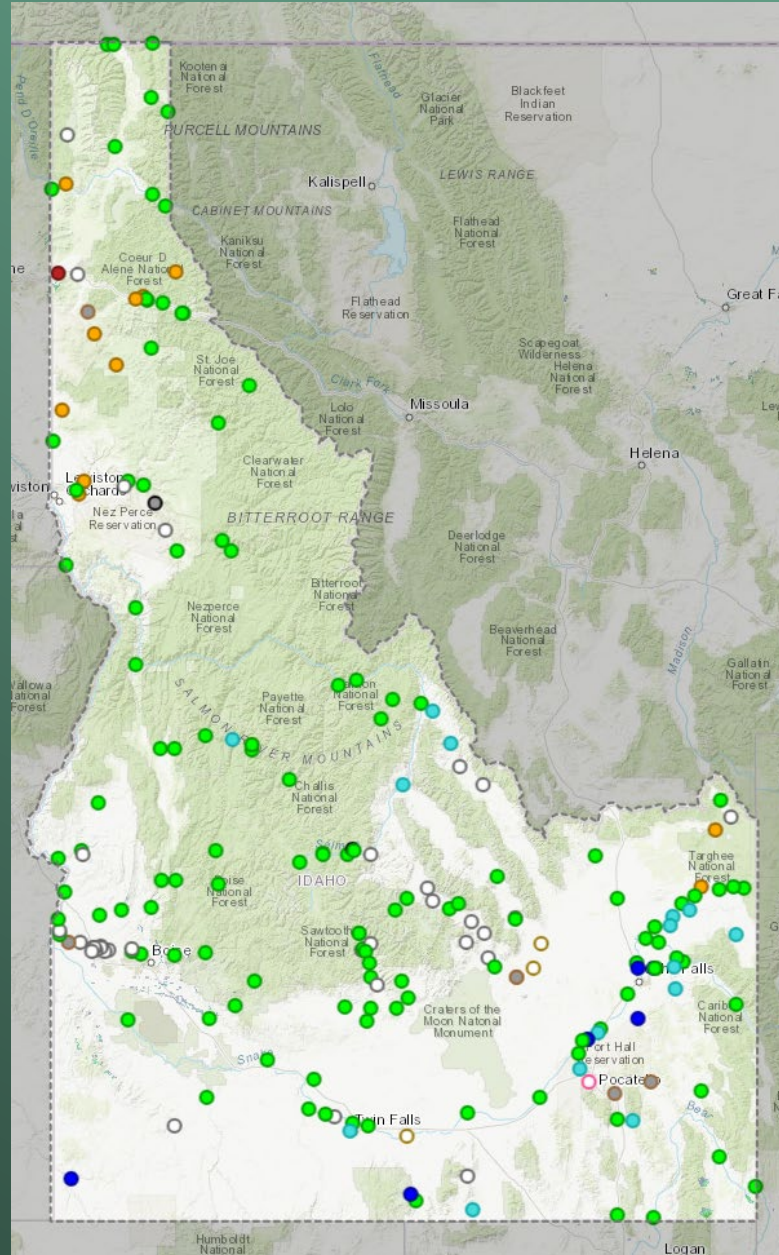
USGS Site: 13139510

Big Wood River at Hailey Total Flow, ID

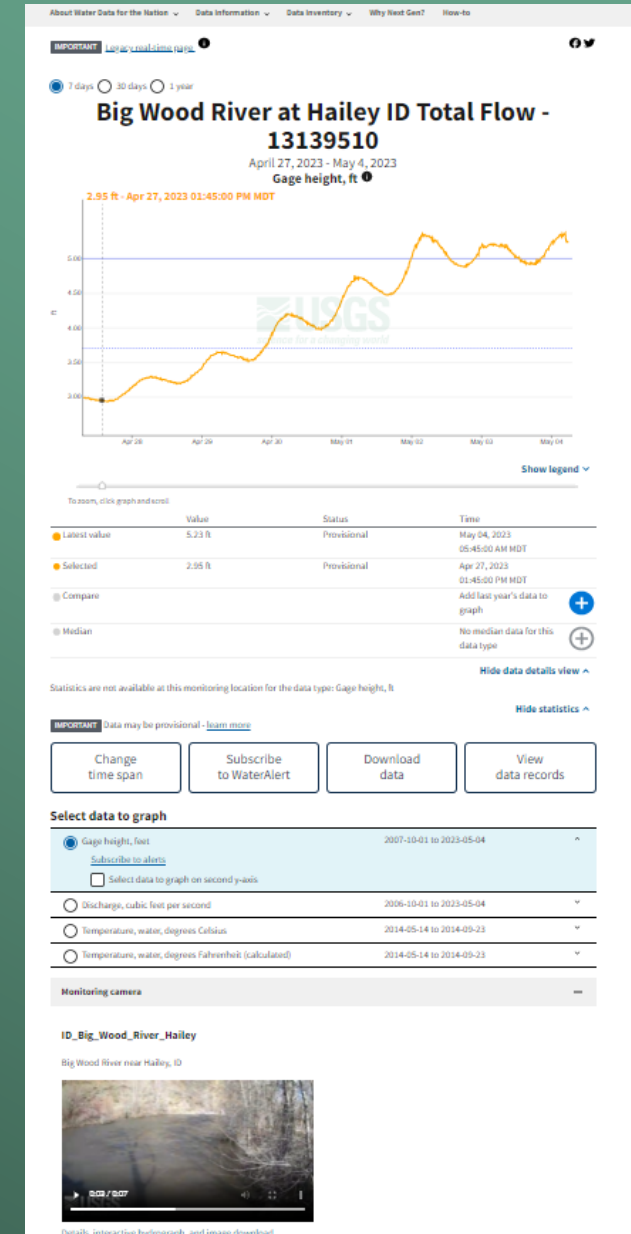
DETAILS & DOWNLOADS

Web Resources (cont)

■ National Water Dashboard



- WDFN (Water Data for the Nation)
- – Water Alert



Thank you! And stay safe!

- **David Evetts**

Assistant Director of Hydrologic Data,
USGS/IDWSC

devetts@usgs.gov

208.996.4579

- **Idaho Silver Jackets**

<https://www.iwr.usace.army.mil/Silver-Jackets/State-Teams/Idaho/>

[Idaho Silver Jackets@usace.army.mil](mailto:IdahoSilverJackets@usace.army.mil)

208.433.4473



Jake Jacobson, 2011 high flow measurement

13027500-Salt River above Palisade Reservoir
near Etna, WY



Spring Flooding Webinar

United States Army Corps of Engineers

David Evetts



**Idaho Office of
Emergency Management**

Levees, Flooding & Flood fighting

- Troy A. Gilbert, P.E.
Levee Safety Program Manager
- Russ Lodge, P.E.
Idaho Silver Jackets Coordinator
- Robert R. Herres
PL84-99 Coordinator
- Jason Clapp
Emergency Operations Manager
- Date: 29 Mar 2022



**US Army Corps
of Engineers®**



BRIEFING TOPICS:

- Assessment of the situation
 - Local Knowledge / Agency Support / H&H Data / Levee Reports
- Common Levee Issues
 - Failure Modes
- Solutions/Flood Fight Techniques
- Safety



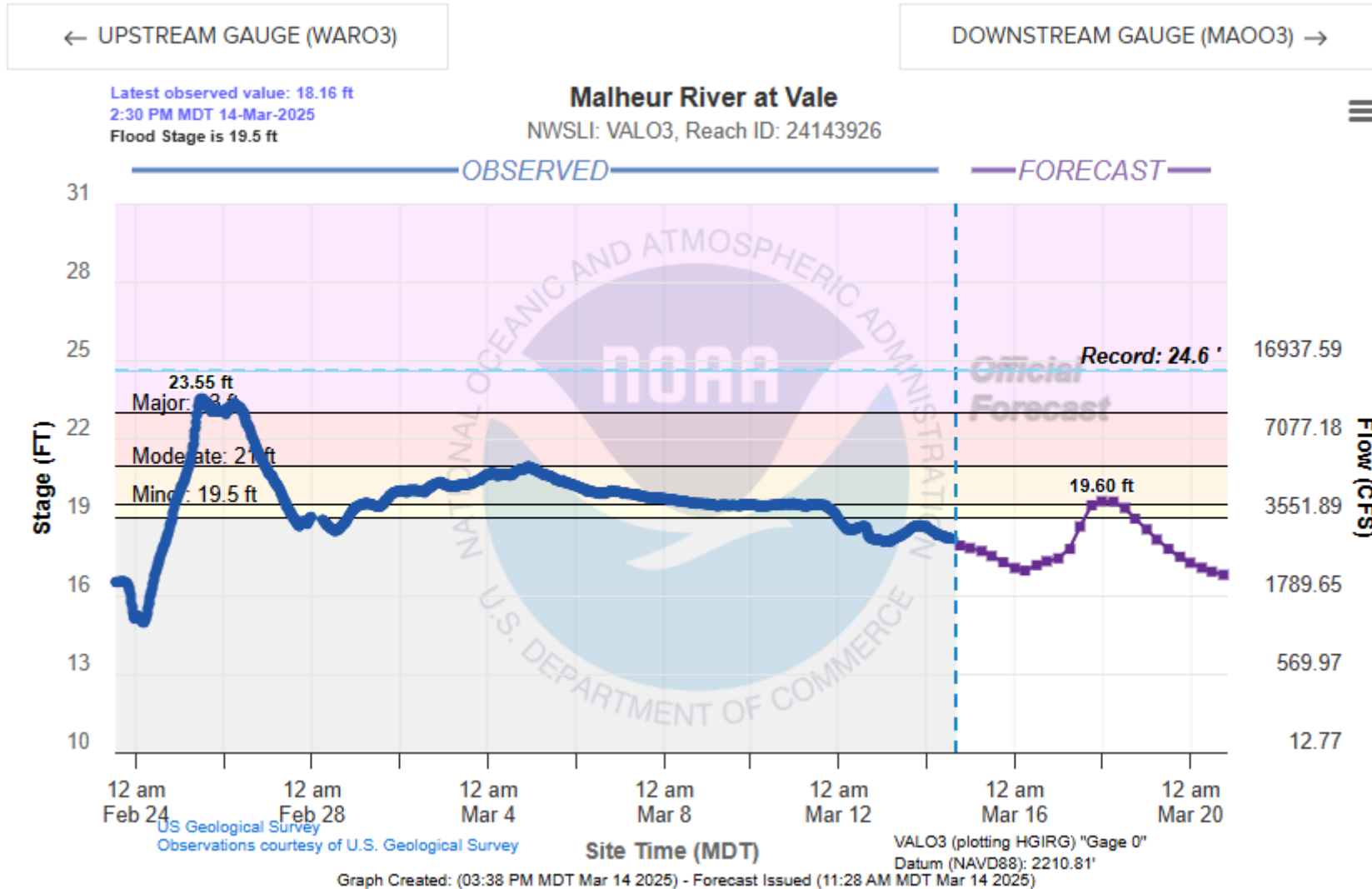
USACE Authorities

- Rob Herres – PL84-99 Coordinator

- Technical Assistance – People
 - Direct Assistance – Material
 - Advanced Measures – Prior to Flooding
 - Initial repairs
-
- Process: All requests for assistance must go through State E.M.
City-County-State -> USACE

H&H Information

- <https://water.noaa.gov/>



H&H Information

- <https://waterdata.usgs.gov/id/nwis/rt>

USGS Current Water Data for Idaho

Click to hide state-specific text

[Idaho Water Science Center](#) | [Subscribe to Water Alerts](#) | [Threatened and Endangered Species](#)

--- Predefined displays ---

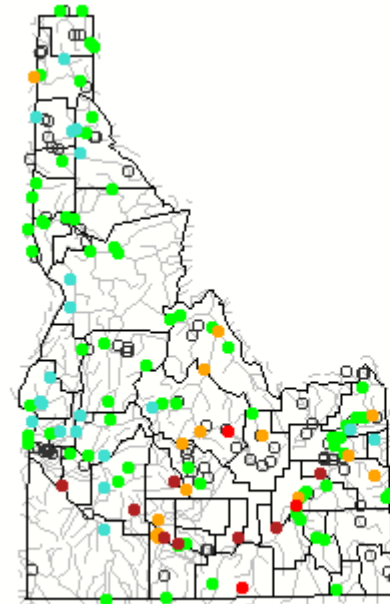
Introduction

go

Daily Streamflow Conditions

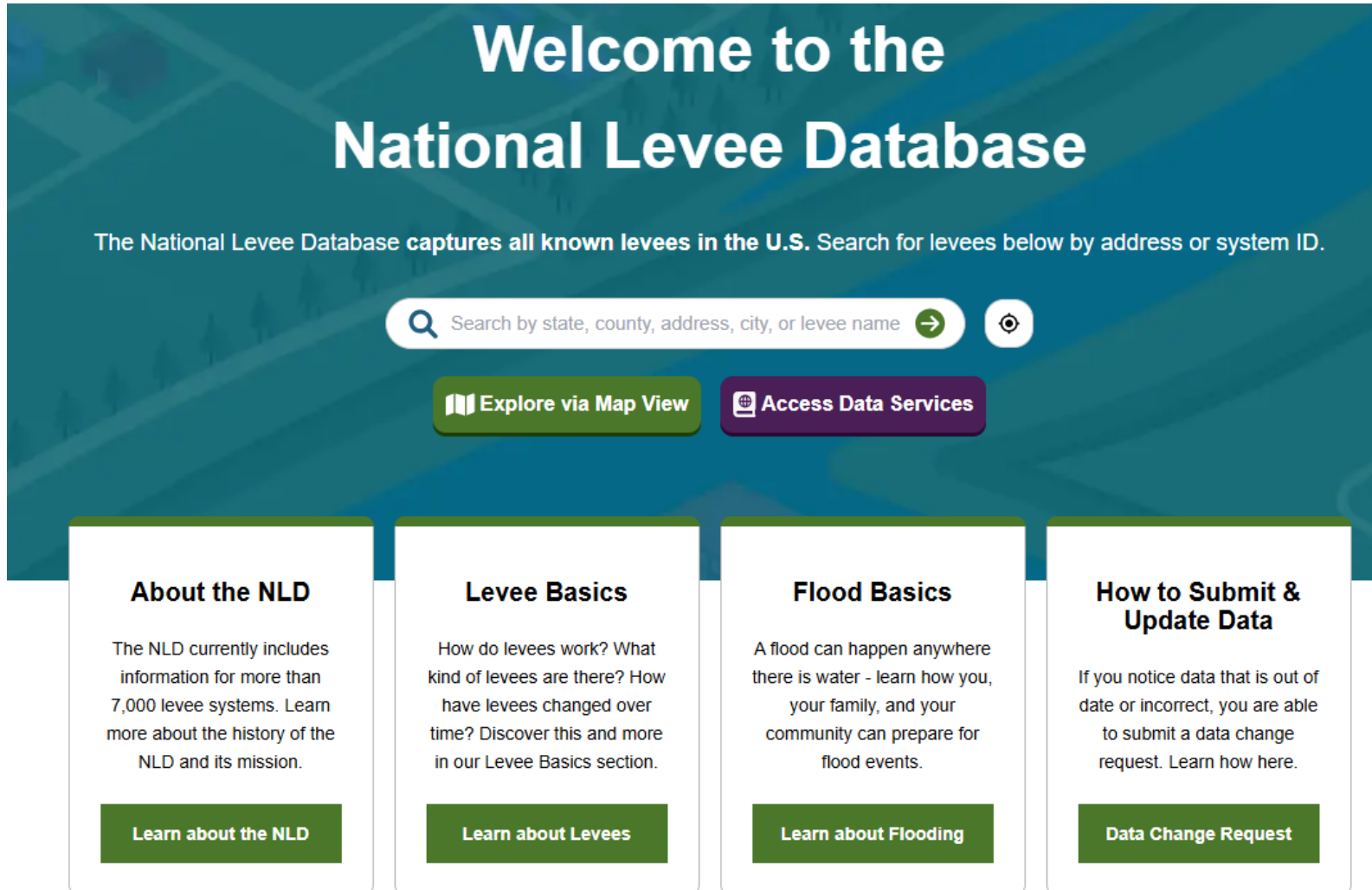
Select a site to retrieve data and station information.

Friday, March 14, 2025 17:30ET



National Levee database

- <https://levees.sec.usace.army.mil/>

The image is a screenshot of the National Levee Database website. The background is a teal map of the United States with white lines representing levees. At the top, the text 'Welcome to the National Levee Database' is displayed in white. Below this, a subtitle reads: 'The National Levee Database captures all known levees in the U.S. Search for levees below by address or system ID.' A search bar is centered, containing the text 'Search by state, county, address, city, or levee name' and a magnifying glass icon. To the right of the search bar is a circular icon with a camera symbol. Below the search bar are two buttons: 'Explore via Map View' (green) and 'Access Data Services' (purple). At the bottom, there are four white boxes with green borders, each containing a title, a paragraph of text, and a green button.

**Welcome to the
National Levee Database**

The National Levee Database captures all known levees in the U.S. Search for levees below by address or system ID.

Search by state, county, address, city, or levee name

Explore via Map View **Access Data Services**

About the NLD

The NLD currently includes information for more than 7,000 levee systems. Learn more about the history of the NLD and its mission.

Learn about the NLD

Levee Basics

How do levees work? What kind of levees are there? How have levees changed over time? Discover this and more in our Levee Basics section.

Learn about Levees

Flood Basics

A flood can happen anywhere there is water - learn how you, your family, and your community can prepare for flood events.

Learn about Flooding

How to Submit & Update Data

If you notice data that is out of date or incorrect, you are able to submit a data change request. Learn how here.

Data Change Request

COMMON LEVEE ISSUES

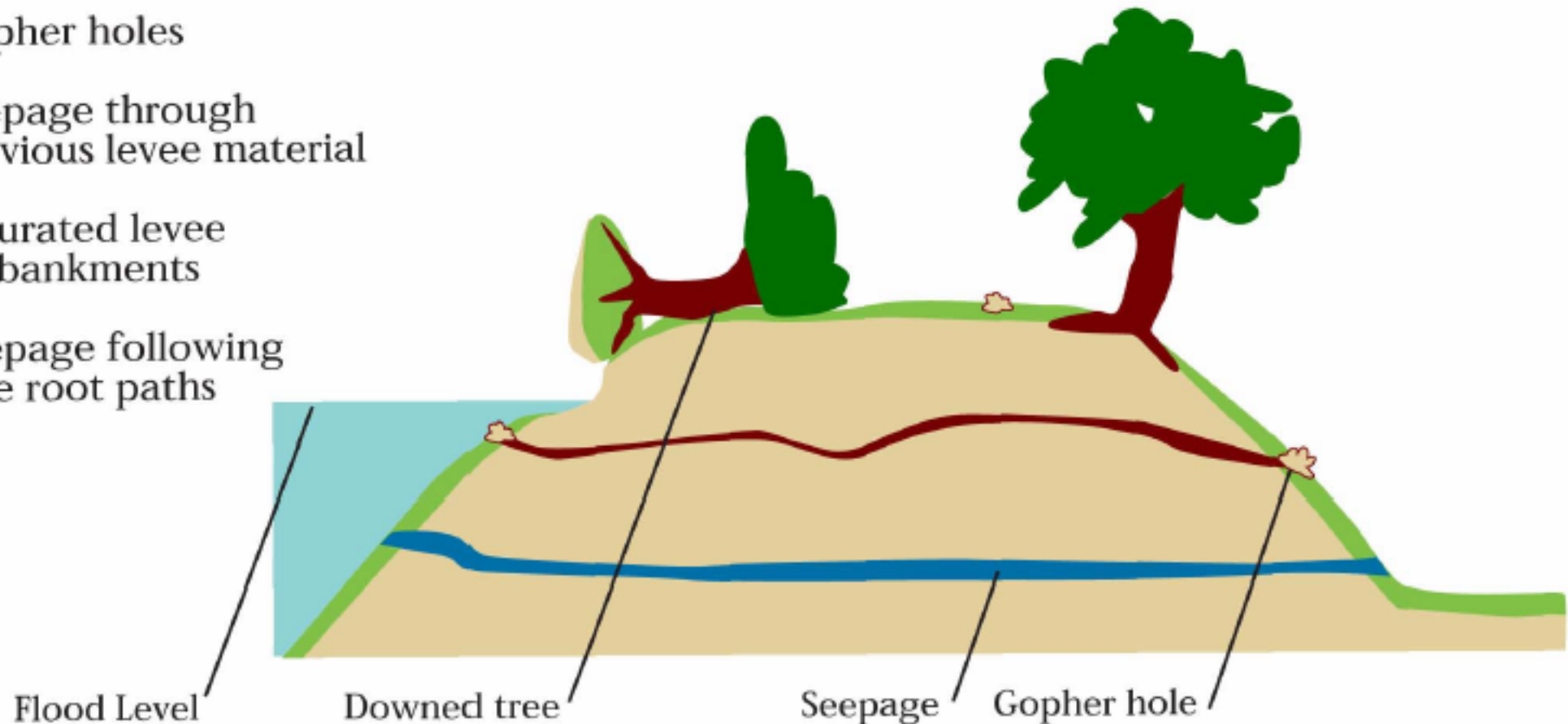
- **Levee Failure Modes**

- Seepage
- Boils
- Sink Holes
- Slope Failure
- Scour
- Overtopping
- Ice Jams



CAUSES OF LEVEE FAILURE

- Overtopping
- Downed trees on levee slope
- Gopher holes
- Seepage through pervious levee material
- Saturated levee embankments
- Seepage following tree root paths



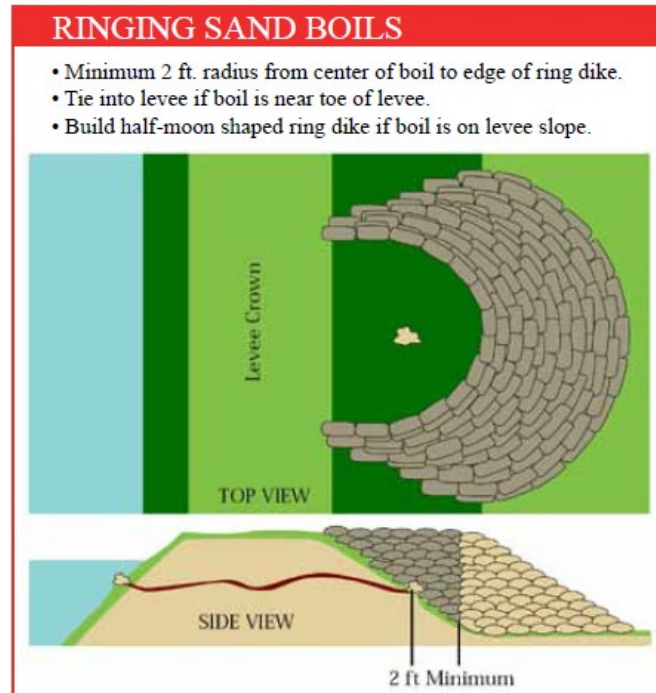
SEEPAGE

- Causes
- What to look for
- Immediate action
- Dangers
- Solutions



BOILS

- Causes
- What to look for
- Immediate Action
- Dangers
- Solutions



BOILS at Malheur 2025

- Rapid increase in WSE
- Numerous boils
- Sandbag ring attempted to slow flow
- Caused or exacerbated by rodent holes



SEEPAGE ALONG PIPES



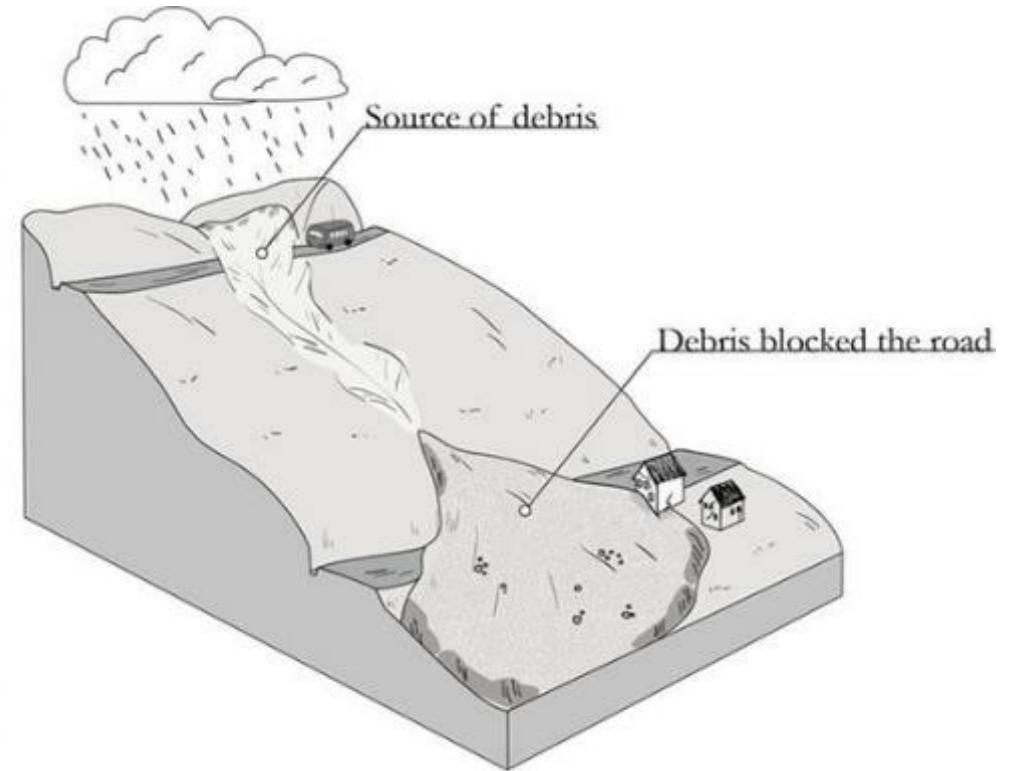
SINK HOLES

- Causes
- What to look for
- Immediate Action
- Dangers
- Solutions



SLOPE FAILURE

- Causes
- What to look for
- Immediate Action
- Dangers
- Solutions



SCOUR

- Causes
- What to look for
- Immediate Action
- Dangers
- Solutions



OVERTOPPING

- **Causes**
- **What to look for**
- **Immediate Action**
- **Dangers**
- **Solutions**



ICE JAMS

- Causes
- What to look for
- Immediate Action
- Dangers
- Solutions



SOLUTIONS

- **Heavy Construction / Raising a Levee**
- **Sandbagging**
- **Flood-proofing**
- **Temporary floodwalls**
- **Pumps**



HEAVY CONSTRUCTION



RAISING A LEVEE

•



SANDBAGGING



SANDBAGGING

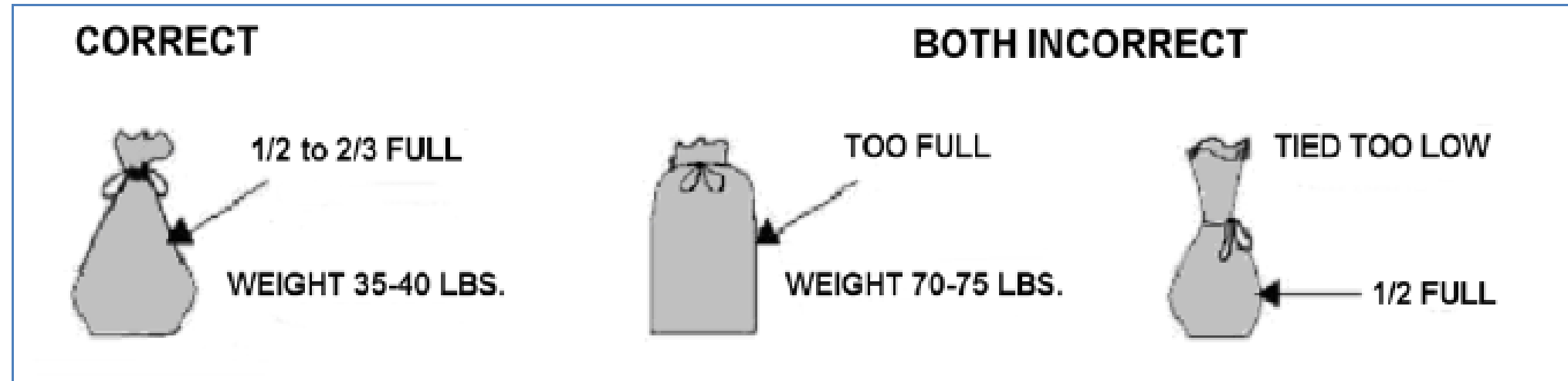


Figure 1: Correct and incorrect sandbag preparation.

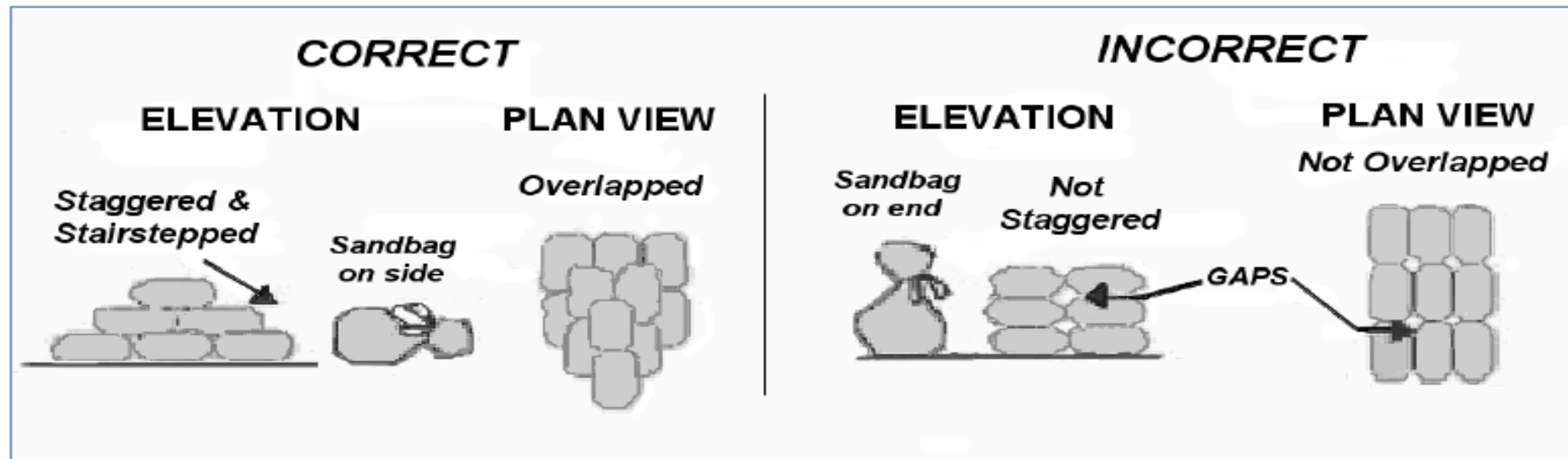


Figure 4 – Correct and incorrect placement of staggered sandbag layers.

SANDBAGGING

•

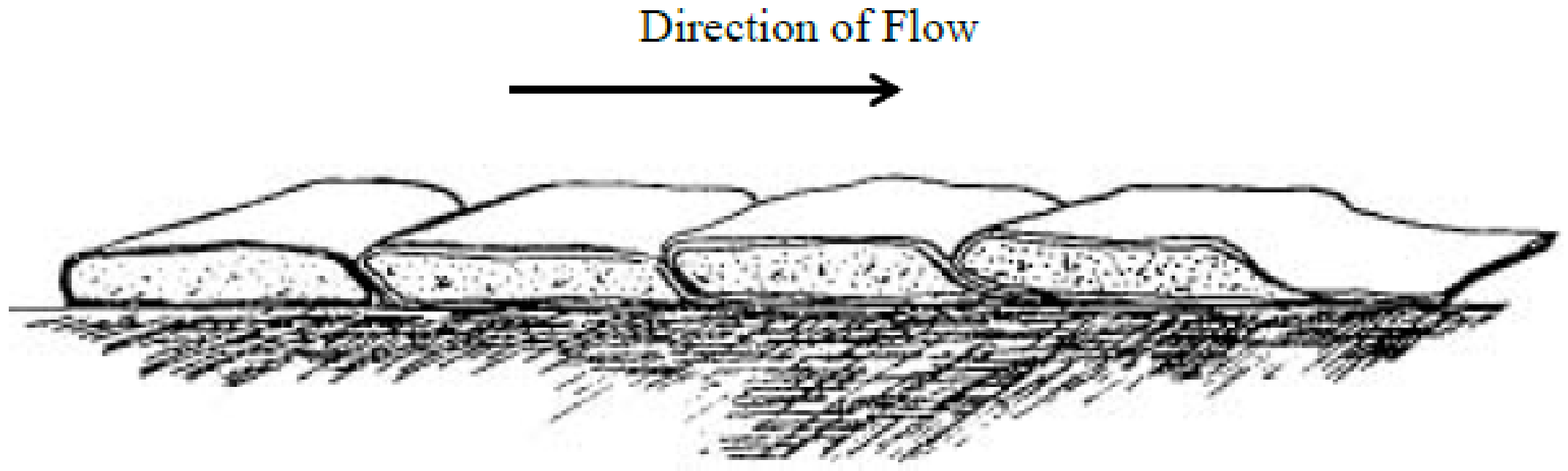
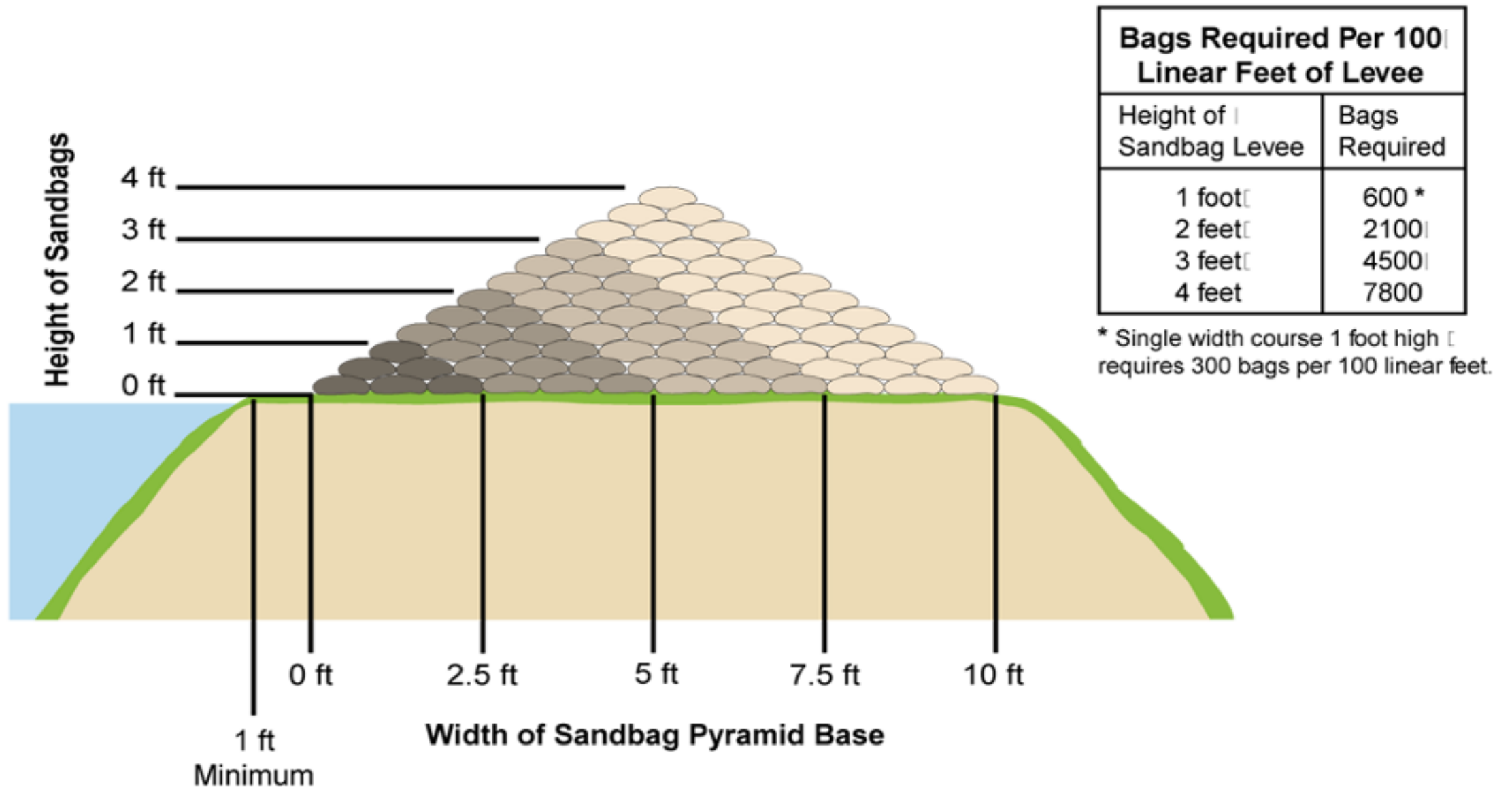


Figure 3 – Sandbag placement

SANDBAGGING - Pyramid Placement

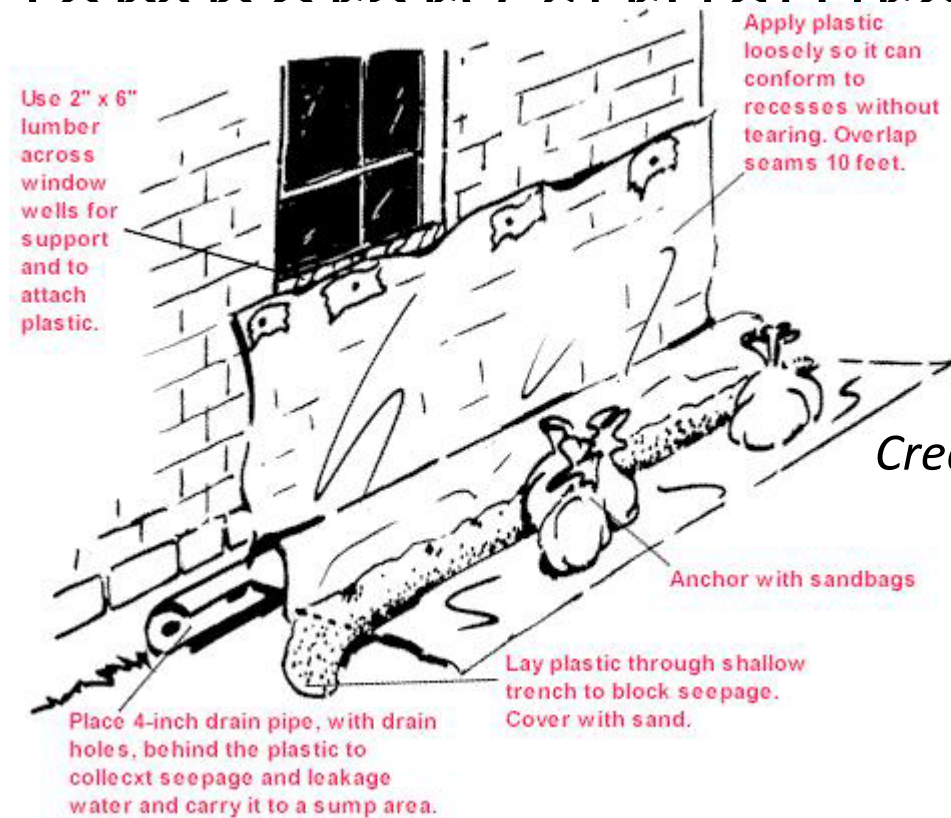


SANDBAGGING – single stack Placement

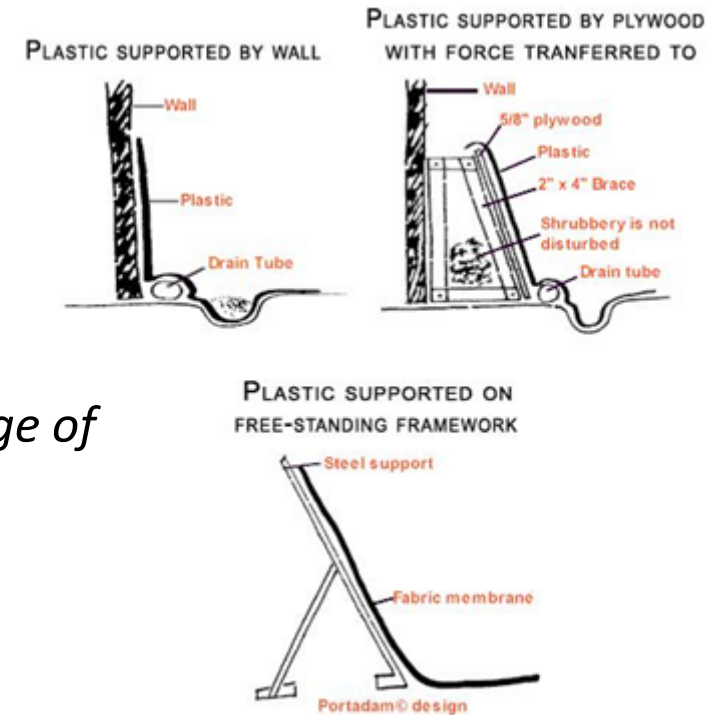


- Not recommended over 1' (3bags) high
- Not recommended for flowing water or debris
- Only used at standing water and non-critical areas

Temporary structure protection



Credit: LSU College of Agriculture



Temporary Flood Proofing may be effective in moderate floods.

- NEED CLOSURES (PLYWOOD) ACROSS DOORWAYS
- STRUCTURALLY SOUND BUILDING OR BUILD SUPPORTS
- NO MORE THAN 3 FEET HIGH
- MAY BE INEFFECTIVE WITH CRAWLSPACE OR BASEMENT

Flood Fight Techniques

Direct flood fighting is more effective with planning and preparation.



Combining permanent and temporary nonstructural measures with flood fighting may significantly mitigate flood risk

FLOOD FIGHT MATERIALS:

- **SANDBAGS AND SUPER SACKS**
- **PLASTIC SHEETING**
- **JERSEY BARRIERS**
- **COMMERCIAL FLOOD BARRIERS**

HESCO Barriers



PUMPS



FLOOD FIGHT SAFETY

- **Weather**
- **Darkness**
- **Slippery slopes**
- **Slips, trips and falls**
- **Bank collapse**
- **Mud slides**
- **Swift and cold water**
- **Standing water**
- **Driving**
- **Impaired drivers**
- **Sleepiness**
- **Angry Citizens**
- **Dog bite**
- **Fallen trees**
- **Fallen power lines**
- **Rescue situations**
- **Equipment hazards**

KNOW WHEN TO QUIT

- **Flood fight operations are not worth dying for, nor are they worth putting your contractors at risk.**
- **Is there a reasonable expectation we will be successful?**
- **Does the effort justify the outcome?**
- **Haste makes waste, slow down and make the best decision under the circumstances.**
- **We are not superhuman, you need sleep to make good decisions.**
- **Don't go it alone, ask for help as needed.**
- **Jointly make these decisions with the local sponsor.**

references

- <https://www.fema.gov/flood-maps/products-tools/know-your-risk/homeowners-renters>



- <https://www.swl.usace.army.mil/Portals/50/Flood%20Fighting%20Booklet.pdf>



- **Seattle District-** Daryl Downing or Doug Weber at 206-764-3406
- **Walla Walla District** – Robert Herrres at 509-527-7145
- 24hr Emergency Number: 509-380-4538

Questions





Spring Flooding Webinar

Idaho Office of Emergency Management

Darin Letzring



**Idaho Office of
Emergency Management**

Dams of Idaho



Dam Safety Performance Report ID Weighted Percentage Detail

Legislation	85%	
Inspection	90%	
Enforcement	83%	
Permitting	86%	
EAP & Response	78%	<i>Goal 90%</i>
Education/Training	56%	<i>Goal 90%</i>
Public Relations	17%	<i>Goal 90%</i>

The Road Ahead

1. Build Relationships
2. Update Plans
3. Train and Exercise
4. Social Media

Dams of Idaho ?

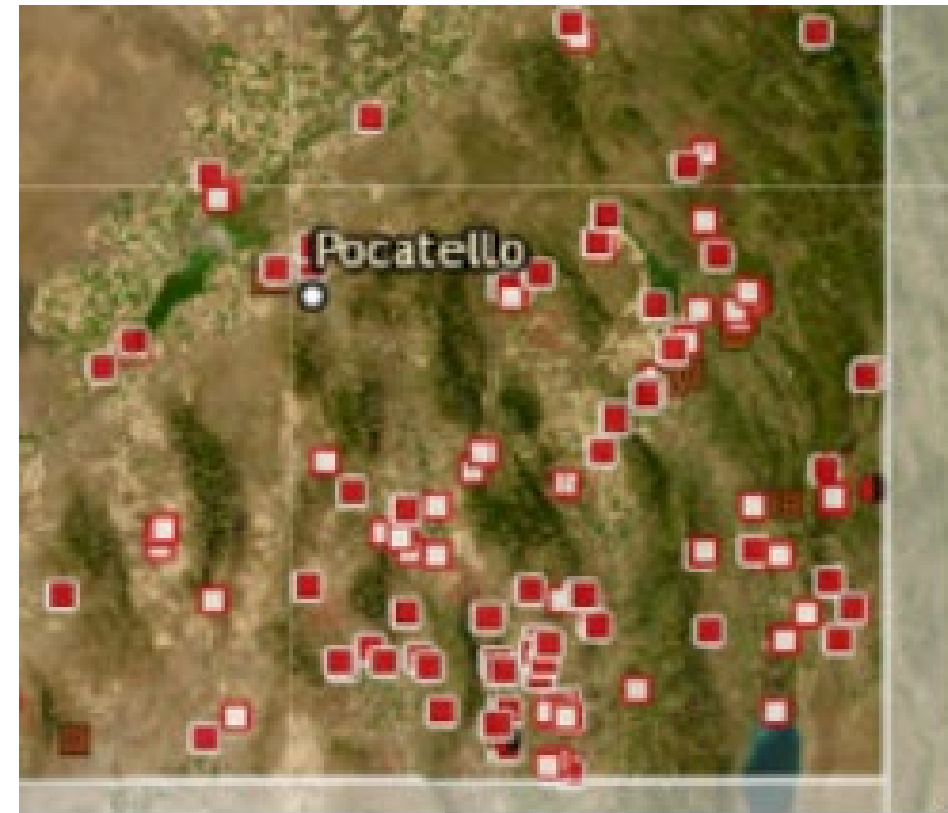
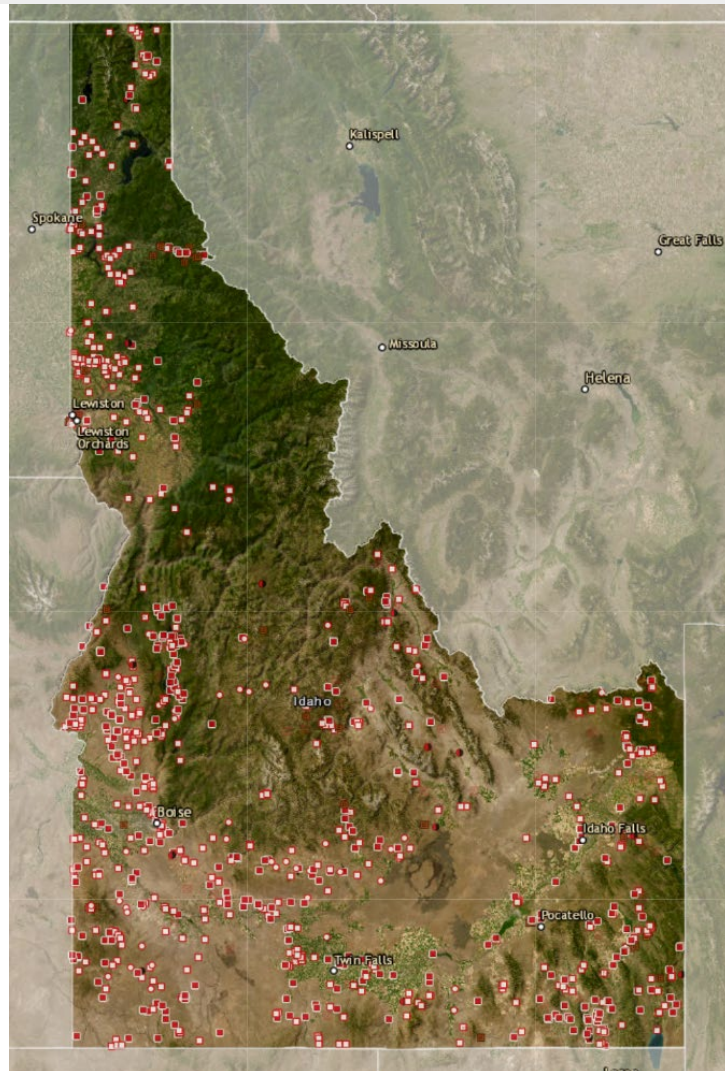
407 Total Dams **75 years** Average Dam Age

98% High Hazard Potential Dams with an EAP

21% Federally Regulated Dams

14% Dams with Hydropower

98% State-Regulated Dams





General Trends

- New guidance completed by ASDSO and FEMA
 - Model State Dam Safety Program
 - FEMA-64
- Limited reference to NIMS training / none in place in with dam owners
- More reference to Exercises but can be improved / no exercises completed
- EAPs follow an old template and look the same
- Many EAPs don't have inundation maps – they are not required
- Some interaction between dam owners and local EMs

Recommendations

EAP Status / Model Program	Education / Training	Public Awareness
Update plans with new template matching FEMA-64	NIMS training IS-100/700 , 200/800, 2200	Maximize Dam Safety Day May 31
Incorporate ASDSO Model Dam Safety Program	ICS 300/400, 402 , 191 <i>L-2300 (EOC)</i> , <i>IS-870 Crisis Mgt</i>	
Enhance references to NIMS training and exercises to maximize relationships (policy requirement?)	Annual pre-season meeting	Social Media - include partners
Include inundation maps and digitize all current maps w/ GIS	TTX every five years	Website information Public awareness flyers
Develop digital process for updates, reviews, sharing		Dam owners attend LEPCs

The Road Ahead

- 1. Build Relationships**
2. Update Plans
3. Train and Exercise
4. Social Media

EMW in March 2023

NWS, USACE
IOEM
Local EMs



Preparedness



USACE, USGS, NWS
IOEM, IDWR
County EM, Dam Owner, HE Operators



Response

After Action and Recovery

IDWR
IOEM
County EM
Dam Owners



Recovery

Dam Safety Emergency Response Response Players Meetup March 28, 2024



Time	Topic	Speaker
1000	Introduction Introductions Weather Review (1005-1015) IDWR Support Review (1015 – 1020) USACE Support Review (1020 – 1030) USGS Support Review (1030-1045) EAP Activation/Response Review (1045-1050) <ul style="list-style-type: none">- Dam owner notifications and actions- Evacuation determination and processes- Engineers and Fill	Darin Letzring

IDWR: John Falk

<u>LOCATION</u>	<u>NAME & TITLE</u>	<u>CONTACT INFORMATION</u>
State Dam Safety Office 2735 Airport Way Boise, ID 83705 PO Box 83720 Boise, ID 83720-0098	John Falk, P.E. Dam Safety Program Manager john.falk@idwr.idaho.gov	Office: (208) 287-4800 Direct: (208) 287-4927 Mobile: (503) 269-3236 FAX: (208) 287-6700

USACE:

- Rob Herres and Russ Lodge (Walla Walla)
- Sacramento Office for Bear River area 916-557-6911

USGS: Darrin Miller 208-529-4287

National Weather Service: Tim Axford 208-221-6373

The Road Ahead

1. Build Relationships

2. Update Plans

3. Train and Exercise

4. Social Media



D A M S A F E T Y P E R F O R M A N C E R E P O R T - 2 0 2 2

Why?



ID Weighted Percentage Detail	
LEGISLATION	85%
INSPECTION	90%
ENFORCEMENT	83%
EAP & RESPONSE	78%
PERMITTING	86%
EDUCATION/ TRAINING	56%
PUBLIC RELATIONS	17%
WEIGHTED %	78%

[illegible]

- Reviewed 20 EAPs for high-hazard dams.
- Talked to 16 dam owners.
- Reviewed ASDSO and FEMA documents
- No training and exercise requirements
- 8 of 20 had inundation maps (not required by statute or rule)
- 17 of 20 did not have contact info for fill material

- Public awareness is a critical component of emergency planning. Many people do not know they may live or work near a dam. Public awareness of an EAP will enhance its effective implementation.
- The EAP defines events that trigger emergency actions.
- An EAP includes a notification flowchart with names and numbers of who will call whom and in what priority.
- Emergency events at dams are infrequent. Training and exercises of EAPs help maintain readiness.
- EAPs should be updated at least once per year and following any changes or new information such as changes in downstream development or new contact information. EAPs should be exercised at least every five years.

The Road Ahead

1. Build Relationships

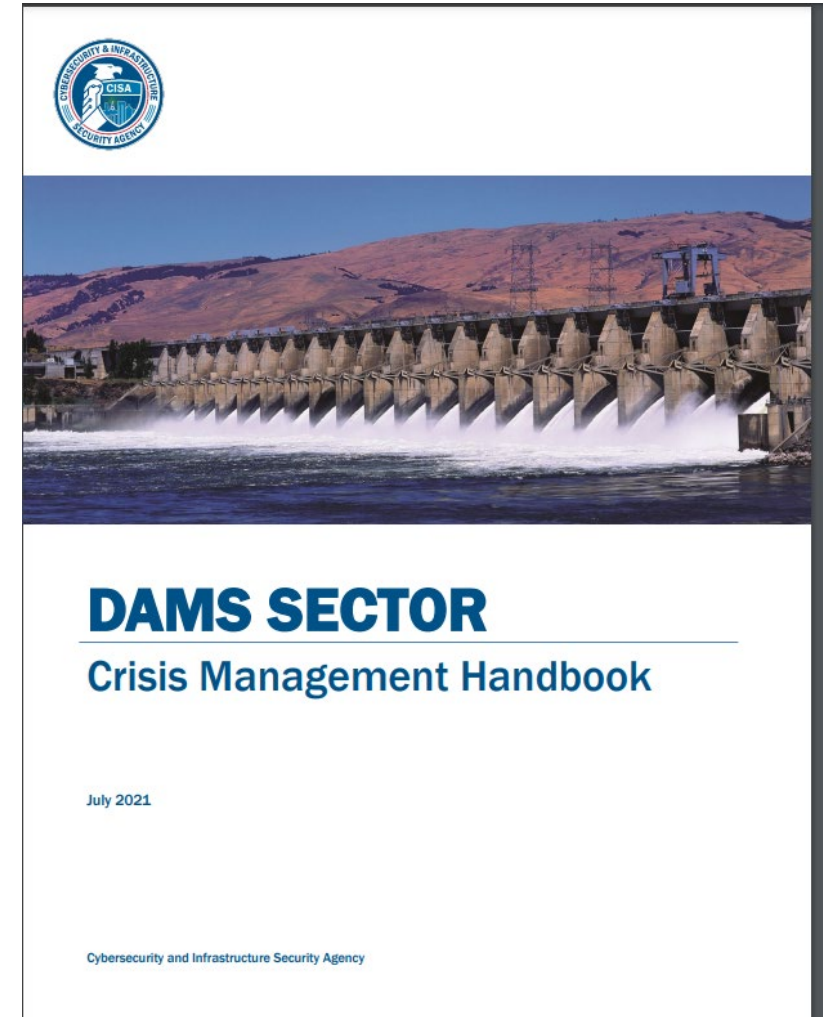
2. Update Plans

3. Train and Exercise

4. Social Media

Training and Education

- Focus on NIMS Training for Emergency Management interaction
 - Included Exercise in Training
- Crisis Management Handbook is best reference for this regarding dam safety specifics.
 - Lacks NIMS/ICS training references
- Scenarios:
 - Highwater and Earthquake
 - FEMA Prep Toolkit has activities relating mostly to large/FERC dams (physical security, cyber security).



The Road Ahead

1. Build Relationships

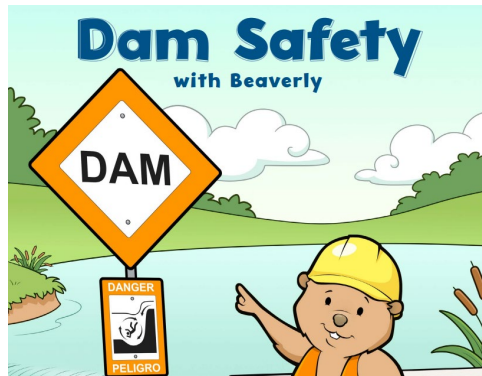
2. Update Plans

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Public Awareness

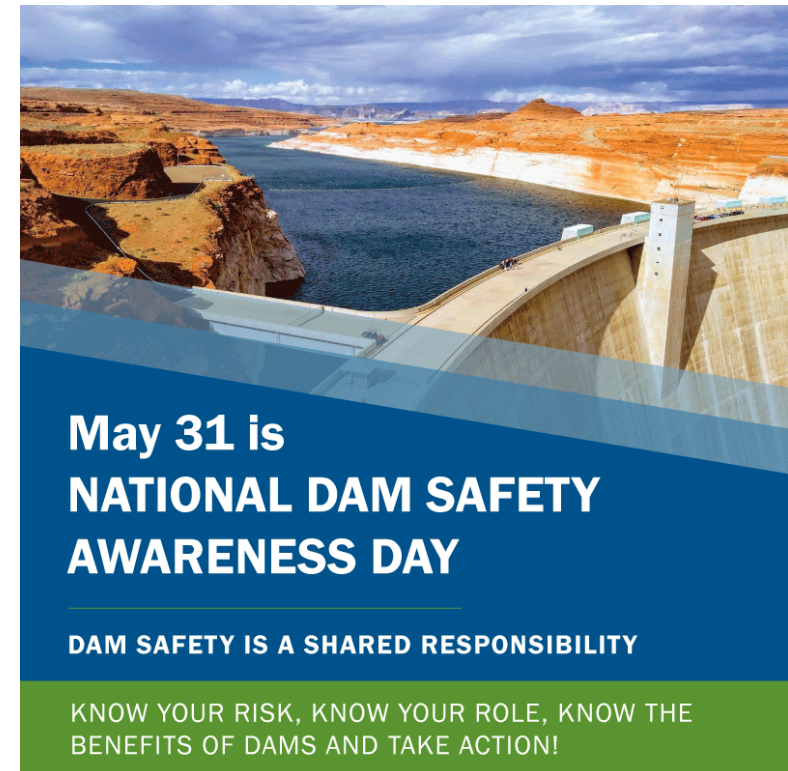
- Social Media is a key element
- Partnerships are available
 - Share content
 - USACE, NWS, IOEM, Local EM, ASDSO
 - Idaho PIER Team
- IDWR Public Information Officer?
- Presence at LEPC meeting



FEMA Fact Sheet

National Dam Safety Awareness Day – Local Event Planning Checklist

National Dam Safety Awareness Day – Media Coverage Tips

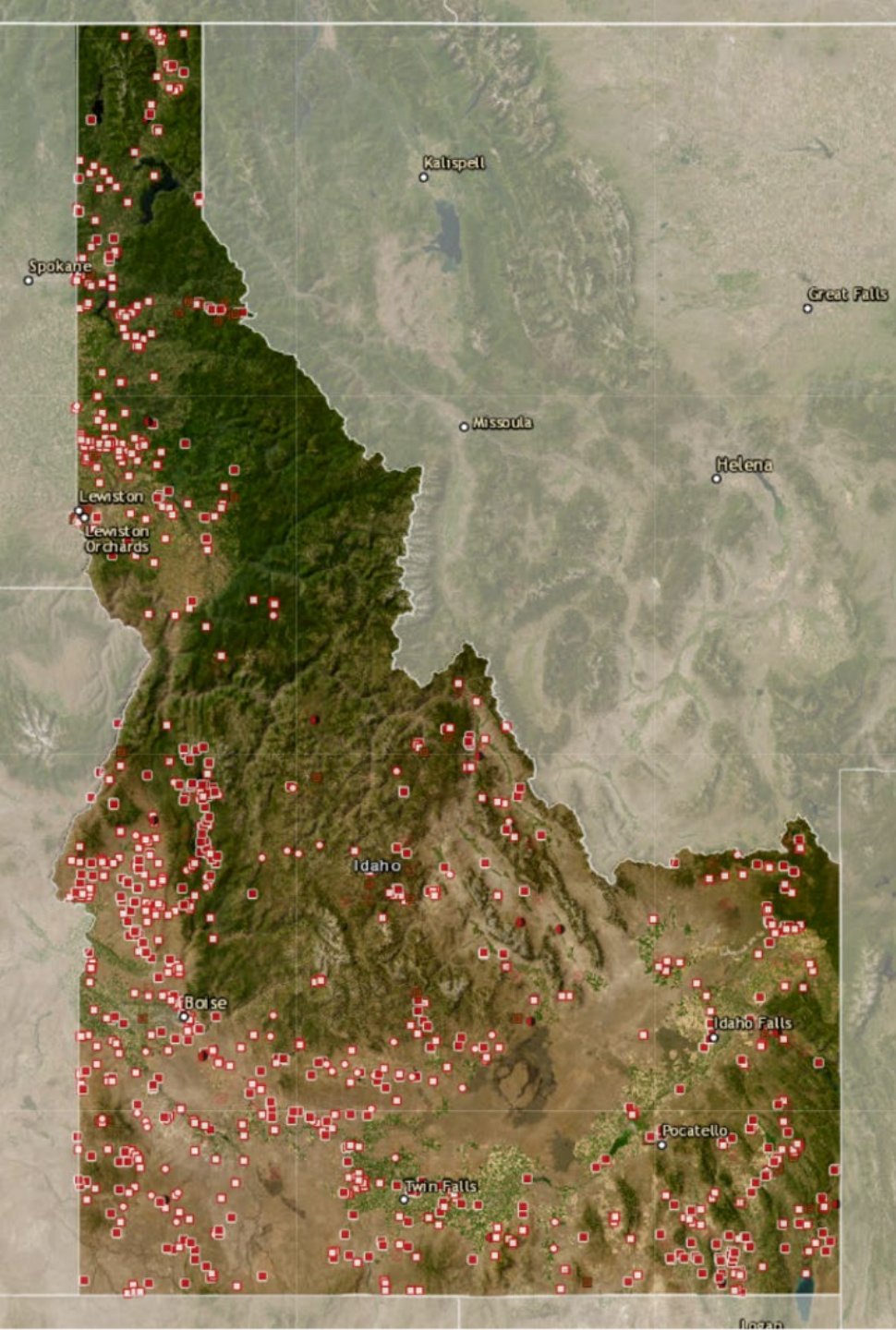


Thank you!

Darin Letzring
(208) 417-9546 dletzring@imd.idaho.gov
Southeastern Idaho Area Field Officer
Idaho Office of Emergency Management

The Road Ahead

1. Build Relationships
2. Update Plans
3. Train and Exercise
4. Social Media





Spring Flooding Webinar

Idaho Office of Emergency Management

Heidi Novich



**Idaho Office of
Emergency Management**

What, So What, Now What, What's the Gap...

What the AFO is asking County and Tribal Emergency Managers

- ☐ **Status (What?)** Summarize the root cause(s) to lifeline services
- ☐ **Impact (So What?)** Explain the disaster impact to specific communities, disaster survivors, and response operations. Detail how the survivor experience or response operations will improve if this component is addressed. Specify the impacted areas and population totals.
- ☐ **Actions (Now What?)** Describe the actions that are being taken to address the disrupted services. Summarize the most critical actions being taken across the whole community.
- ☐ **Limiting Factors (What's the Gap?)** Express issues that are preventing services from being re-established. Such issues can stem from another lifeline/component, resource shortfalls, management policy, etc.



Heidi A. Novich

hnovich@imd.idaho.gov

Local Disaster Declaration

☐ Title 46, Chapter 10-11

- ☐ May only be declared by mayor or chair of county commission
- ☐ Good for seven days
- ☐ May be extended with the consent of governing board of the political subdivision
- ☐ The effect of a declaration of a local disaster emergency is to activate the response and recovery aspects of any and all applicable local or intergovernmental disaster emergency plans and to authorize the furnishing of aid and assistance thereunder.



State Disaster Declaration

Questions to consider when deciding to ask for a state declaration

- ☐ Has the damage exceeded the county and/or taxing entities' ability to respond to current and future needs?
- ☐ Why use state taxpayer dollars to pay for your disaster?

☐ **The process**

- ☐ County/tribal declaration
- ☐ Budget impact reducing ability to provide essential services
- ☐ Request for specific assistance to Idaho Response Center (IRC)
- ☐ IOEM Bureau Chief recommendation to the Idaho Military Division, The Adjutant General (TAG) and then Governor's Office

☐ **Assistance available**

- ☐ Debris Removal and Emergency Protective Measures only
- ☐ Emergency repairs (not permanent)
 - ☐ What does it take for a first responding vehicle to use the road?
- ☐ Mission Assignment
 - ☐ Assistance provided by State of Idaho agency
 - ☐ Financial assistance for local activities

☐ **Cost Share**

- ☐ 50/50
- ☐ Declaring jurisdiction needs to provide delegation of spending authority



Damage Assessments

☐ The State process (not required)

☐ IOEM Damage Assessment

- ☐ A preliminary damage assessment
- ☐ Survey 123 app will be used

☐ The IOEM survey will be activated by the IRC Operations Section Chief

- ☐ Captures estimated cost of damage and how the cost estimate was developed
- ☐ Has work started
 - ☐ Is work complete
- ☐ Types of damage
- ☐ What infrastructure is affected
- ☐ Provide a narrative

The state damage assessment provides information that helps determine the need for a federal disaster/emergency declaration request.

☐ The FEMA process

☐ Impacted area must meet financial impact indicator

- ☐ Current Disaster Indicators

☐ Damage assessment for taxing entities, tribes, certain private non-profits

☐ Emergency Work

- ☐ Category A – Debris Removal
- ☐ Category B – Emergency Protective Measures

☐ Permanent Work

- ☐ C - Roads and Bridge Systems
- ☐ D - Water Control Facilities
- ☐ E - Public Buildings/Equipment
- ☐ F - Public Utilities
- ☐ G - Other (Parks, Recreation)

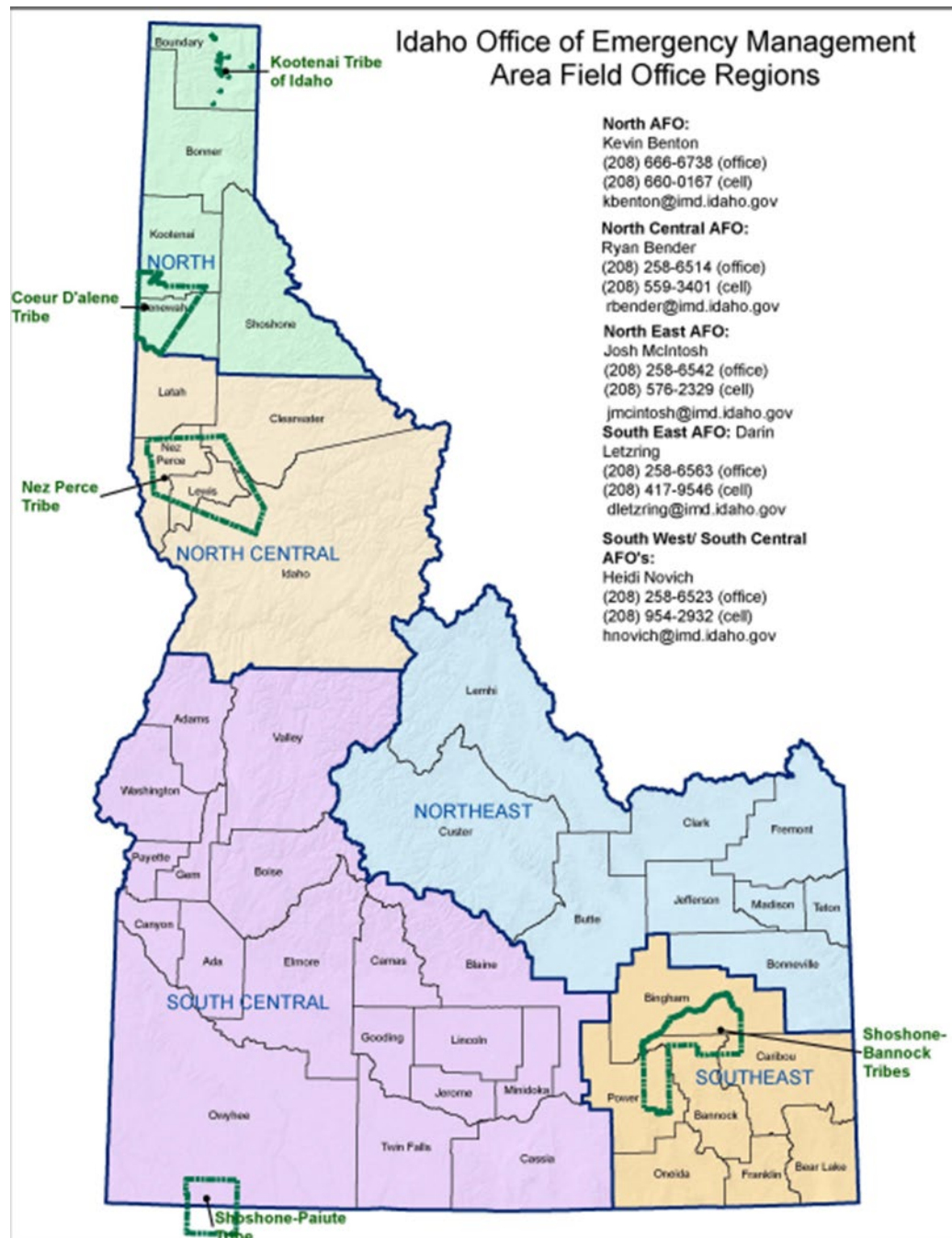
☐ Individual Assistance



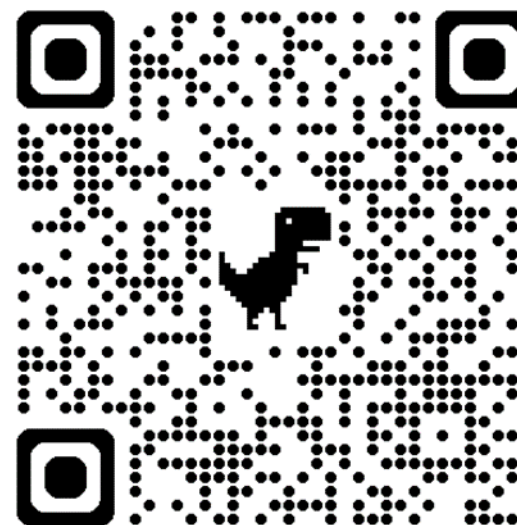
Floods, Roads, and not all Disaster Declarations are Equal

- ☐ **Determine who owns the road**
 - ☐ This determines potential avenues of funding
 - ☐ If a road has access to federal funding they are not eligible for disaster assistance from the state or FEMA
 - ☐ Other emergency funding sources and you may have to have a State Disaster Declaration
 - ☐ (Idaho) Local Highway Technical Assistance Council (LHTAC)
 - ☐ Federal Highway Administration's Emergency Relief Program
- ☐ **State Disasters**
 - ☐ Extraordinary costs. No permanent repair
 - ☐ Life safety – work that allows for fire, EMS, law enforcement to do their job
 - ☐ Debris removal
- ☐ **Federal Disasters**
 - ☐ Same as above
 - ☐ Some permanent work is eligible but this will be reviewed with IOEM Recovery when determining eligibility of work completed
- ☐ **When in doubt call your AFO or Jarod Dick, IOEM Recovery**





Area Field Officer Contact Information



Heidi Novich
hnovich@imd.idaho.gov



Spring Flooding Webinar

Idaho Office of Emergency Management

Ben Roeber



**Idaho Office of
Emergency Management**

Thank you for attending!
For share-out materials
please contact:

Levi Orr- Training and
Exercise

IOEM

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Mission

Guide the State of Idaho in effectively preparing for, protecting against, mitigating the effects of, responding to, and recovering from all hazards.