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Chair  
Montana

**Doug Grob**  
Montana

**Jeffery C. Allen**  
Idaho

**Ed Schriever**  
Idaho



# Northwest Power and Conservation Council

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Vice Chair  
Washington

**KC Golden**  
Washington

**Margaret Hoffmann**  
Oregon

**Charles F. Sams III**  
Oregon

August 4, 2026

## MEMORANDUM

**TO:** Council Members

**FROM:** Stacy Horton, Washington Policy Analyst and Biologist

**SUBJECT:** Update from the Washington State Climate Office

## BACKGROUND:

**Presenter:** Guillaume Mauger, State Climatologist

**Summary:** The Northwest Power and Conservation Council is interested in how the effects of climate change might impact fish and wildlife populations and the mitigation and restoration actions carried out under the Columbia Basin Fish and Wildlife Program. Our Program continues to encourage, monitor and promote public awareness of pertinent climate change research and information and assess how it might influence program mitigation efforts. The Council's 2020 Addendum acknowledged the overarching challenge involved in implementing a program to improve environmental conditions for fish and wildlife while climate change is redefining those very same environmental characteristics.

The Council has invited the Washington State Climatology Office to provide a brief update on anticipated precipitation and hydrology under climate change, the 'super' El Nino and what that might mean for the Pacific Northwest and related marine ecosystems, and how the climate relates to the wildfire season we're seeing this year.

**More info:** Washington State Climate Office  
<https://climate.uw.edu/>



# Climate Change and Water in the PNW



EARTHLAB  
UNIVERSITY of WASHINGTON

Guillaume Mauger







**Katie Boyd**  
Education and Evaluation  
Specialist



**Jacob Genuise**  
Engagement Climatologist



**Karin Bumbaco**  
Deputy State Climatologist

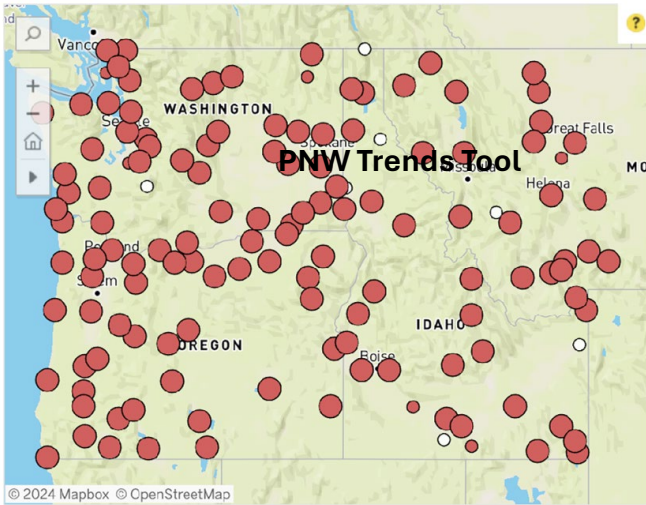


**Guillaume  
Mauger**  
State Climatologist

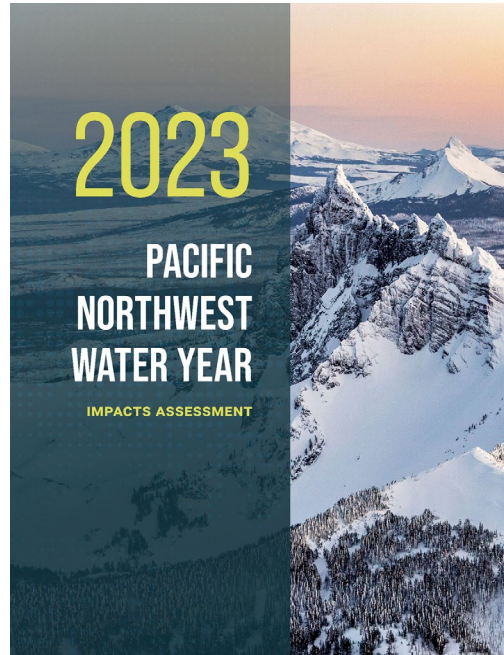


**Nick Bond**  
Emeritus State Climatologist

We provide technical information and analysis, data resources, training and capacity building, and facilitate collaboration.



**Communications**



**Applied Research**

## Washington Drought Declaration



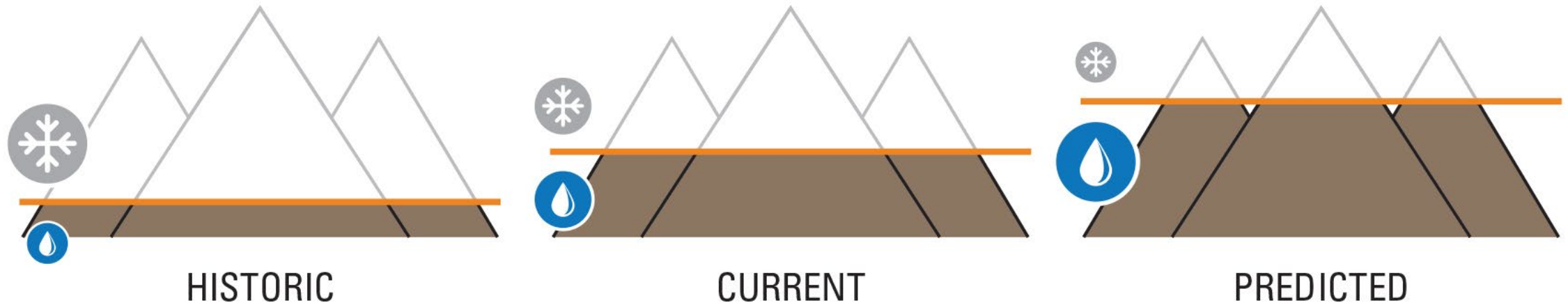
**Training**



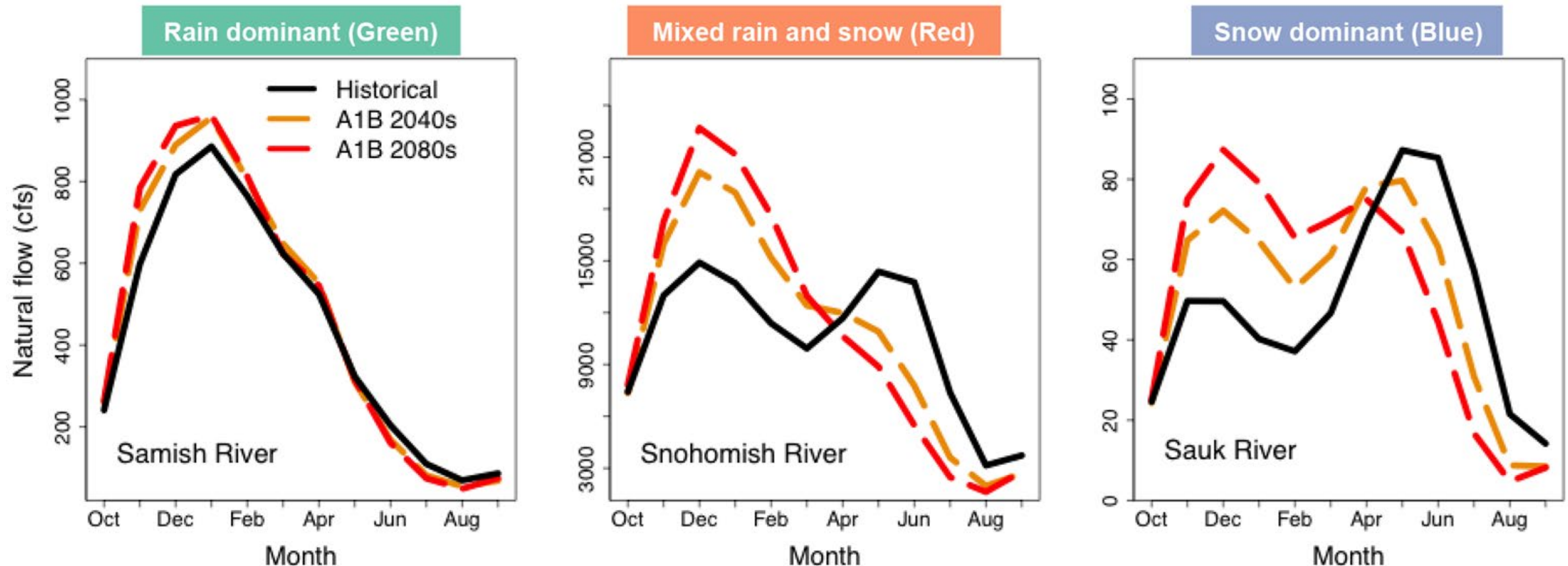
# Accelerated Warming



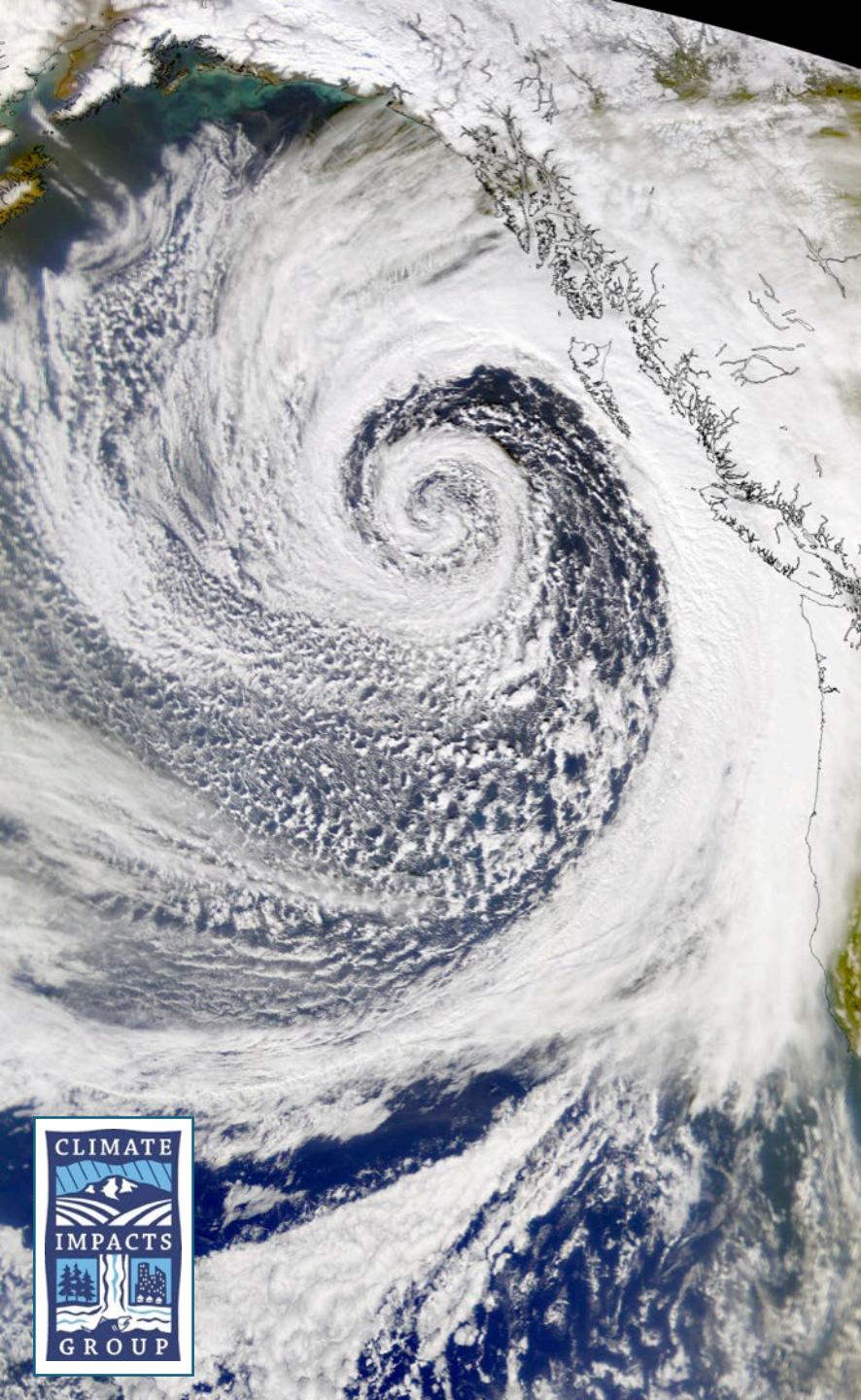
# Our primary mechanism for storing water – snow – is sensitive to warming



# Hydrology is most affected in basins that historically accumulated snow





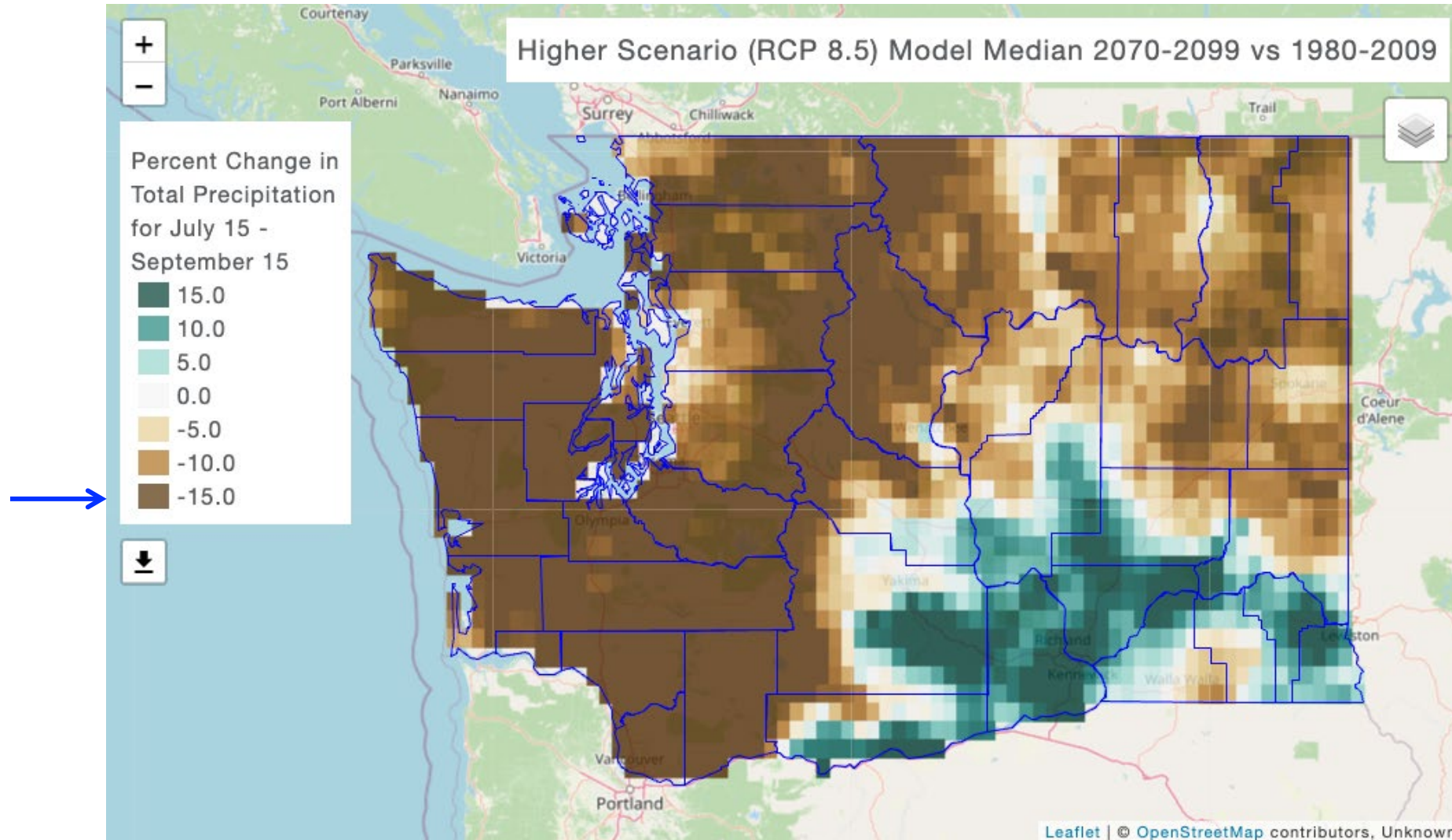


# More Intense Heavy Rains

Heaviest rain events (top 1% daily) are projected to become **+22% more intense** (*range: +5 to +34%*) by the 2080s.



# Small declines in summer precipitation





# Climate Change Impacts on the Water Balance



Precipitation

*Likely increases in heavy precip,  
decreases in summer*



Snowpack

*Accelerated declines*



Evapotranspiration

*Likely to increase in eastern WA;  
uncertain in western WA*

# Flavors of Drought in Washington State

- **Dry Winter (low precipitation)**  
*(examples: 1976-77, 2000-01)*
- **Warm winter (more rain, less snow)**  
*(examples: 2004-05, 2014-15)*
- **Dry spring (less rain, faster snowmelt)**  
*(example: 2021)*
- **Dry summer (less rain)**  
*(example: 2003)*





# Impacts



An aerial photograph showing a vast landscape where a river has overflowed its banks, inundating large areas of green agricultural fields. The sun is low on the horizon, creating a bright, hazy glow over the scene. The text "2-4x More Likely Due to Climate Change" is overlaid in white on the left side of the image.

2-4x More Likely Due  
to Climate Change

Image: KUOW

Source: Gillett et al. 2022



# 2015: A preview of the future



Warmest year on record for WA  
~4°F warmer than the 20<sup>th</sup> century average



6th driest April to September in WA



Lowest snowpack on record for WA  
30% of normal (1970-1999 average)

2015:

## FISHERIES

Low summer streamflow & warm waters resulted in fishery closures



**Columbia  
River sockeye  
salmon died**

## RECREATION

Low snowpack led to reductions in winter & summer recreation



**shorter ski  
season at  
Stevens Pass**

## WILDFIRE

The most severe wildfire season in Washington's recorded history



**acres  
burned**



**fire  
suppression**

## AGRICULTURE

Warm temperatures & reduced water availability stressed WA agriculture



**major crops  
with reduced  
yields**

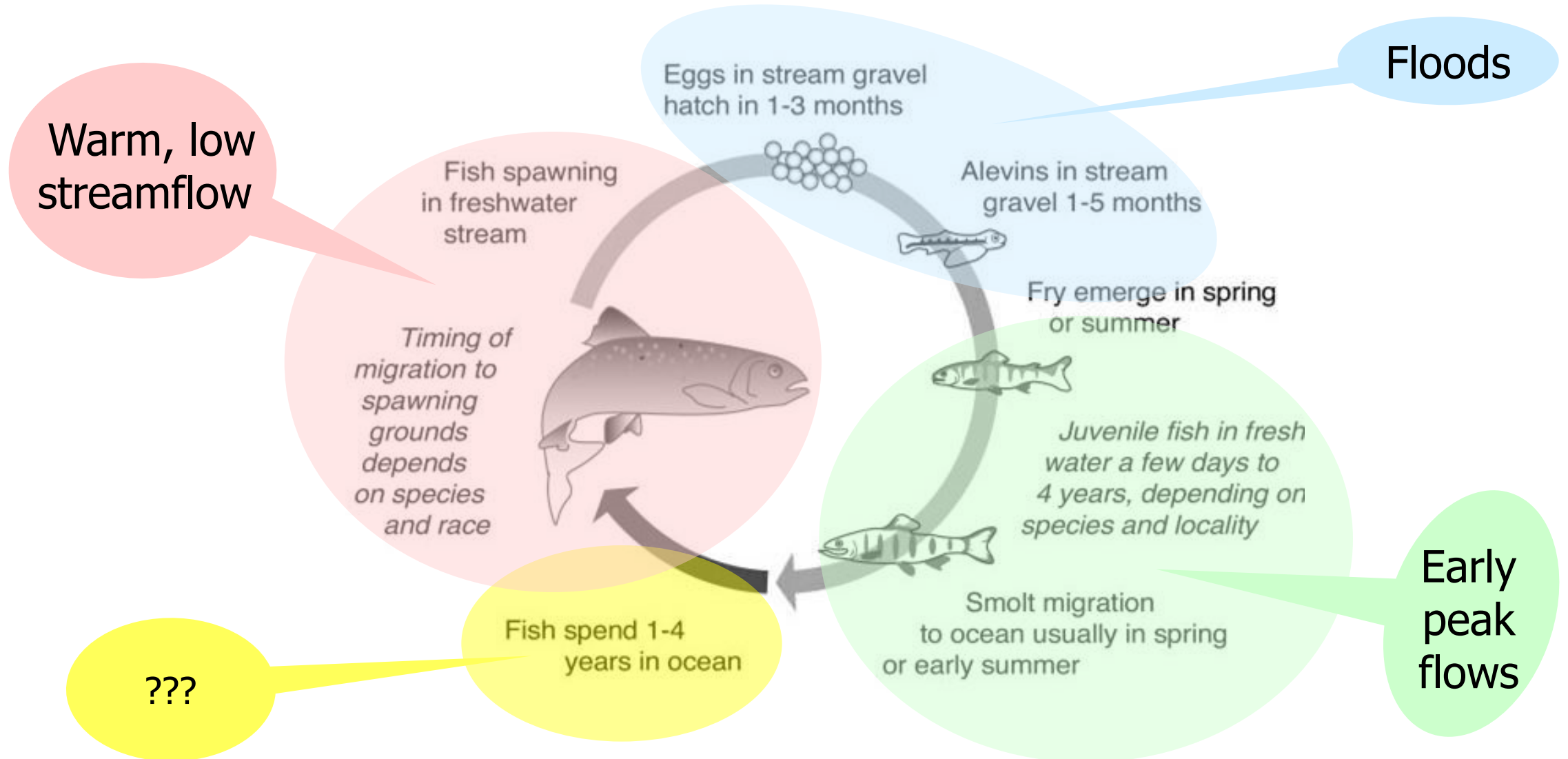


**economic  
losses**



# Warmer Air + Lower Flows = Higher Water Temperatures

# Salmon Impacted Across Full Life-Cycle



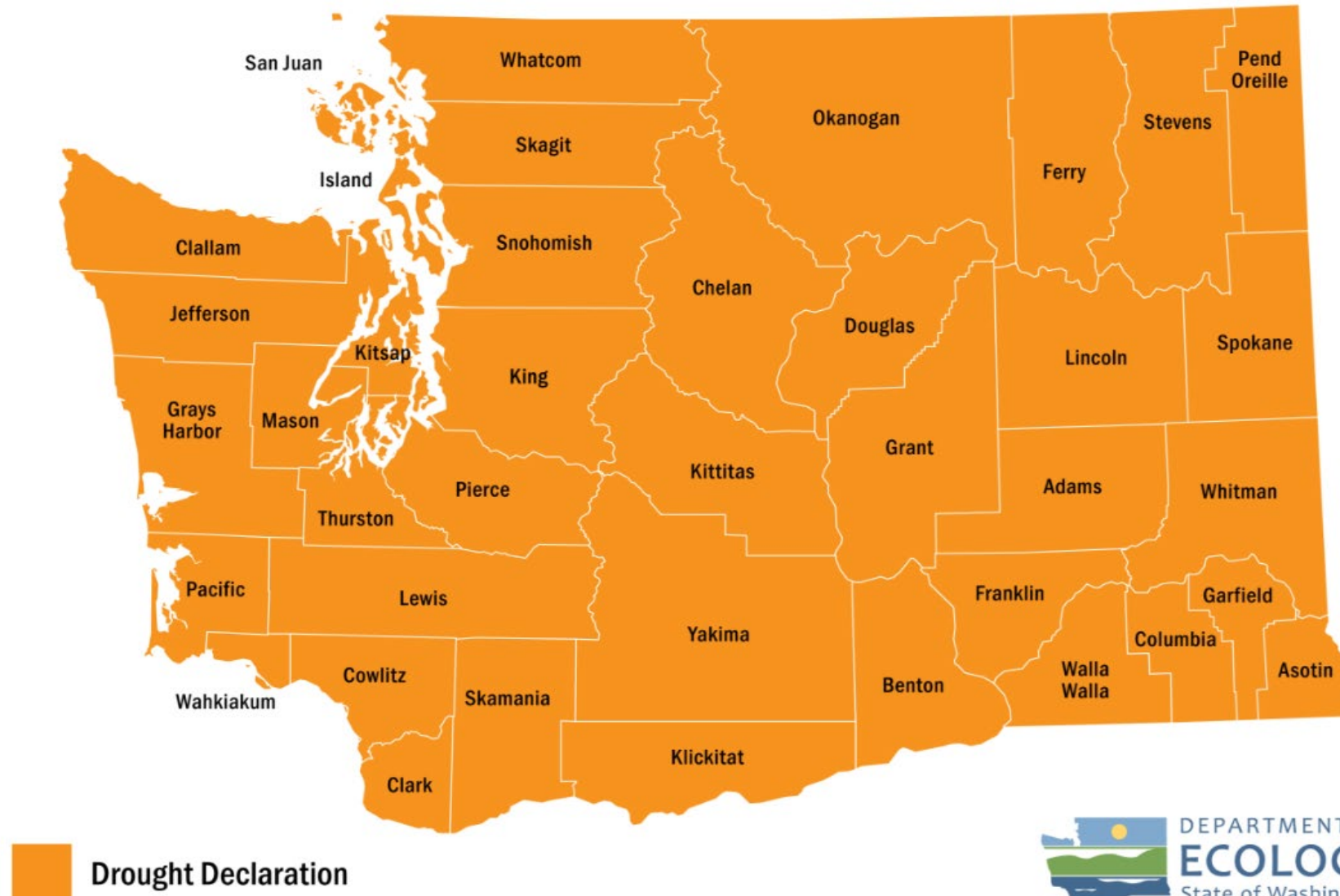


# Current Drought + El Niño





# Washington Drought Declaration 2026





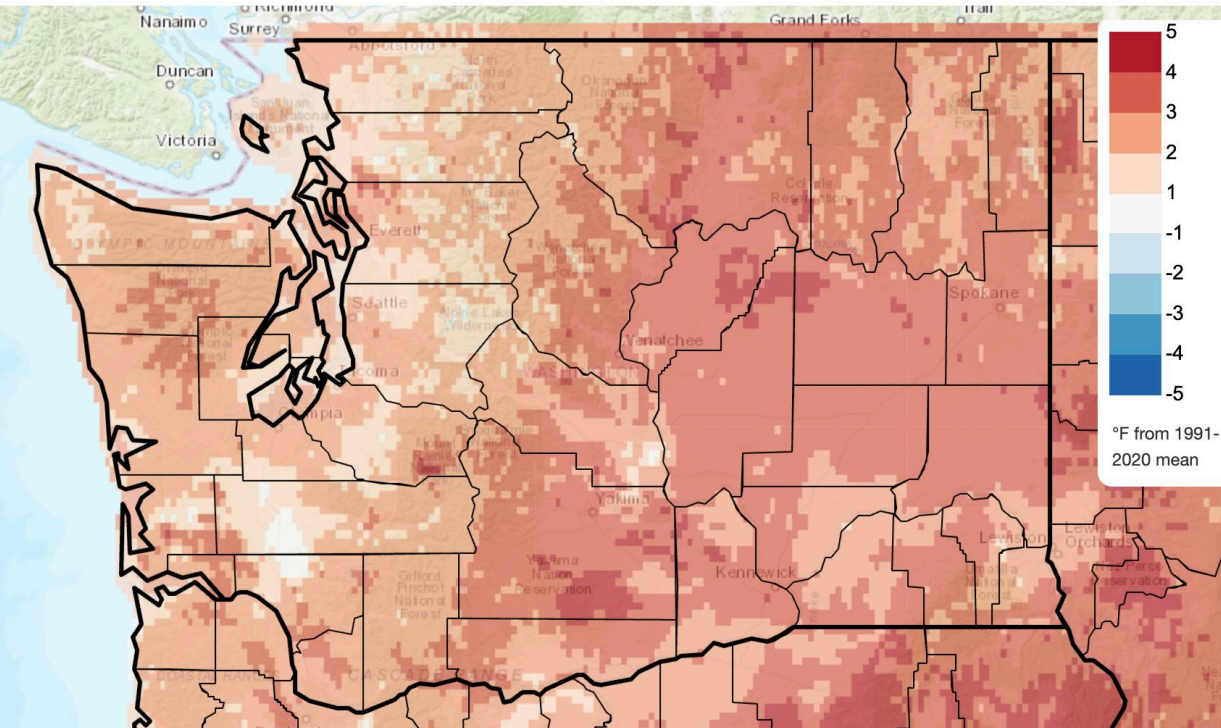
# Water Year 2026



## Temperature

### Mean Daily Temperature Anomaly, Since Oct 1st

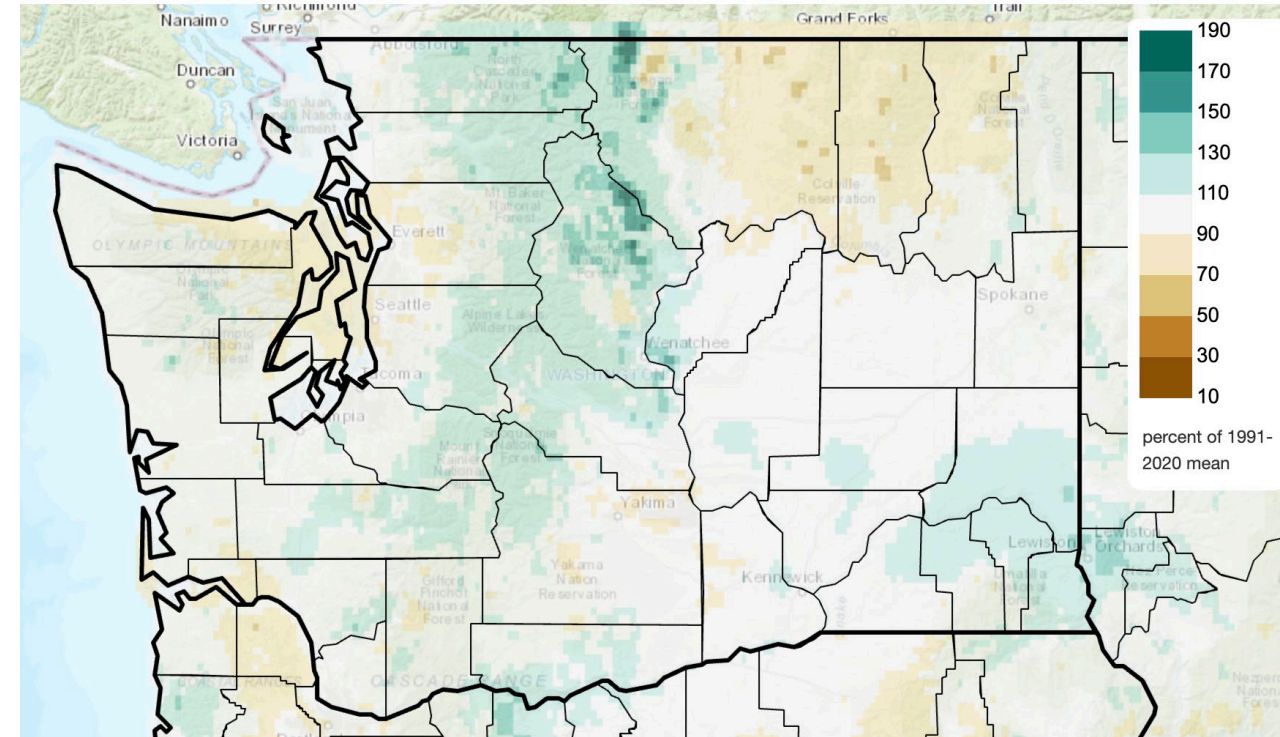
2025/10/01 - 2026/06/03



## Precipitation

### Total Precipitation Anomaly, Since Oct 1st

2025/10/01 - 2026/06/03

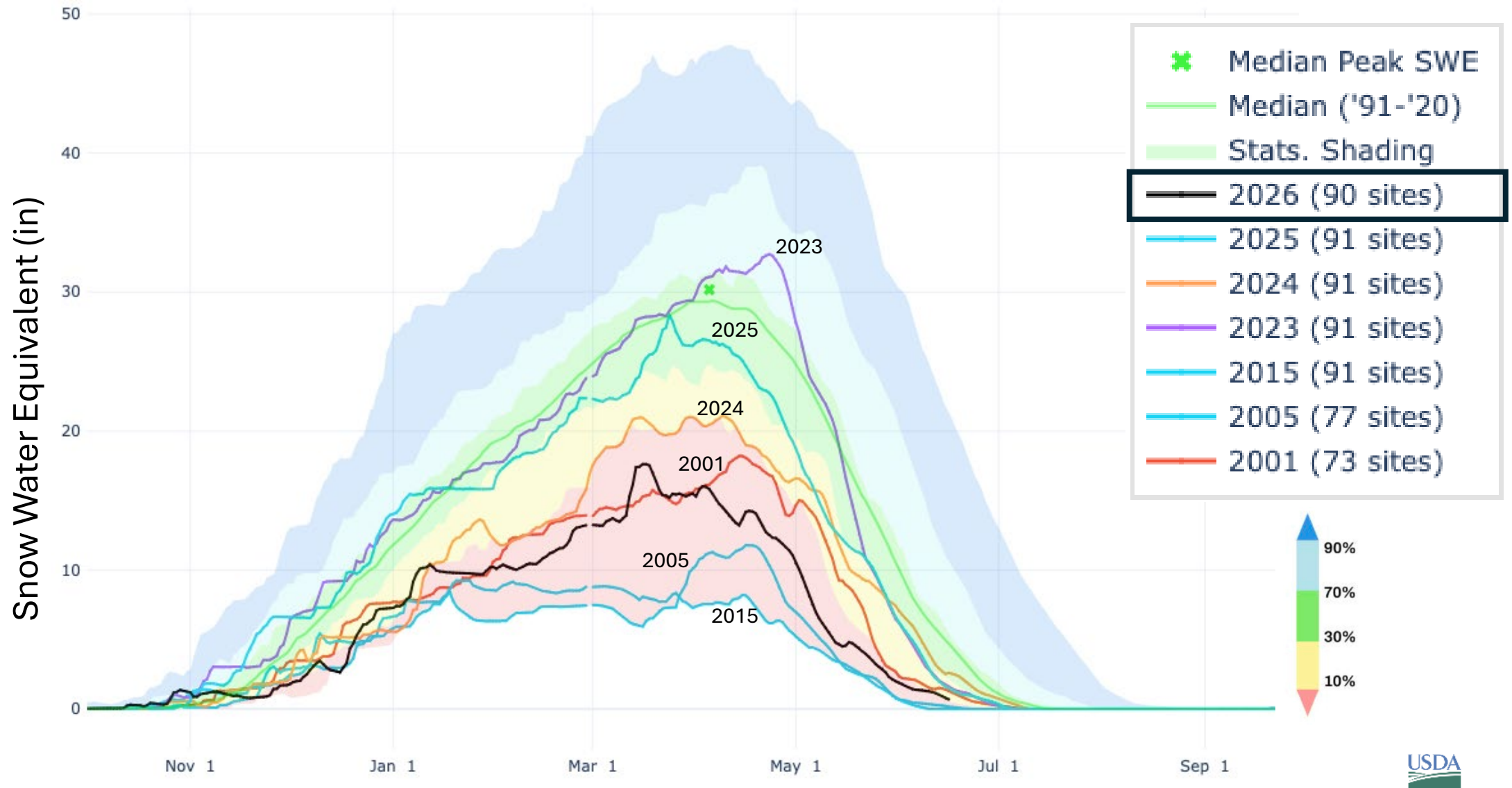


- Averaged statewide, Oct-May tied 1992 as the 3<sup>rd</sup> warmest (+2.7°F)\* on record
- Averaged statewide, Oct-May precipitation was near-normal (+1.12"; 103% of normal)\*

\*Records since 1895; Normal is 1991-2020

Source: <https://climatetoolbox.org/tool/Climate-Mapper>

# WA Average Snowpack lower than last 3 years

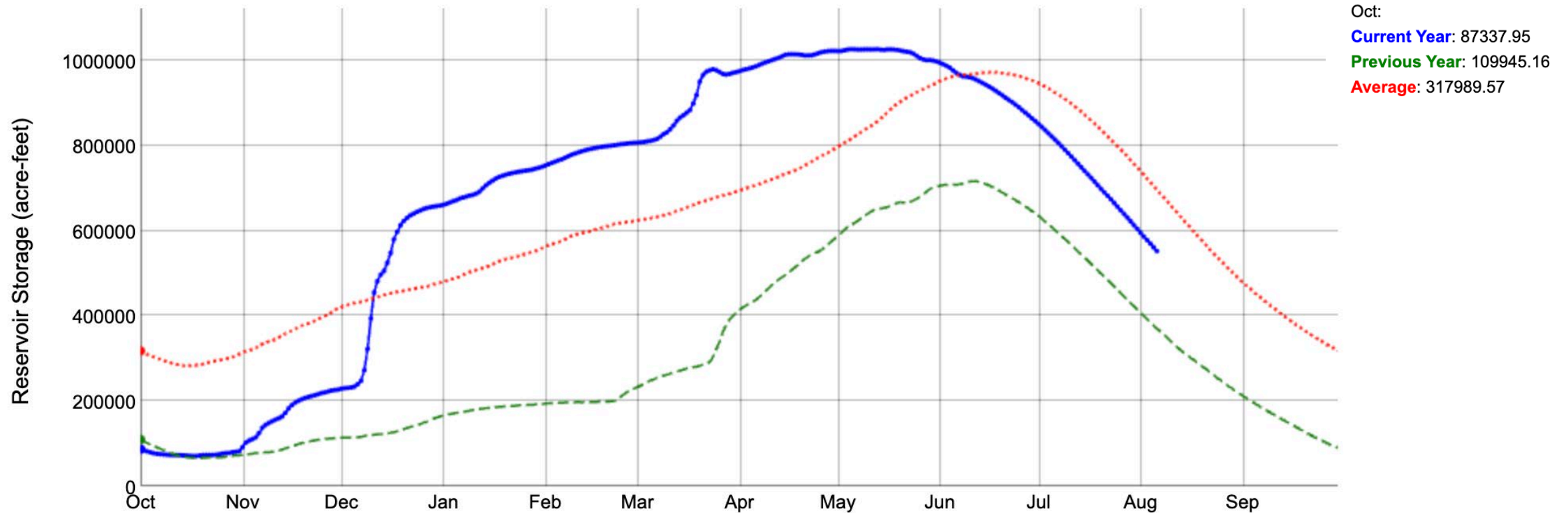


Currently: 12<sup>th</sup> percentile

Source: <https://nwcc-apps.sc.egov.usda.gov/basin-plots/?state=WA>



# Yakima Reservoirs have dropped below normal



## **USBR Water Supply Forecast:**

Proratable water users to **receive 58% of their May-September water allotments**

# Elevated wildfire potential – August 2026



Map produced by  
Predictive Services,  
National Interagency Fire Center  
Boise, Idaho  
Issued: June 1, 2026  
Next Issue: July 1, 2026

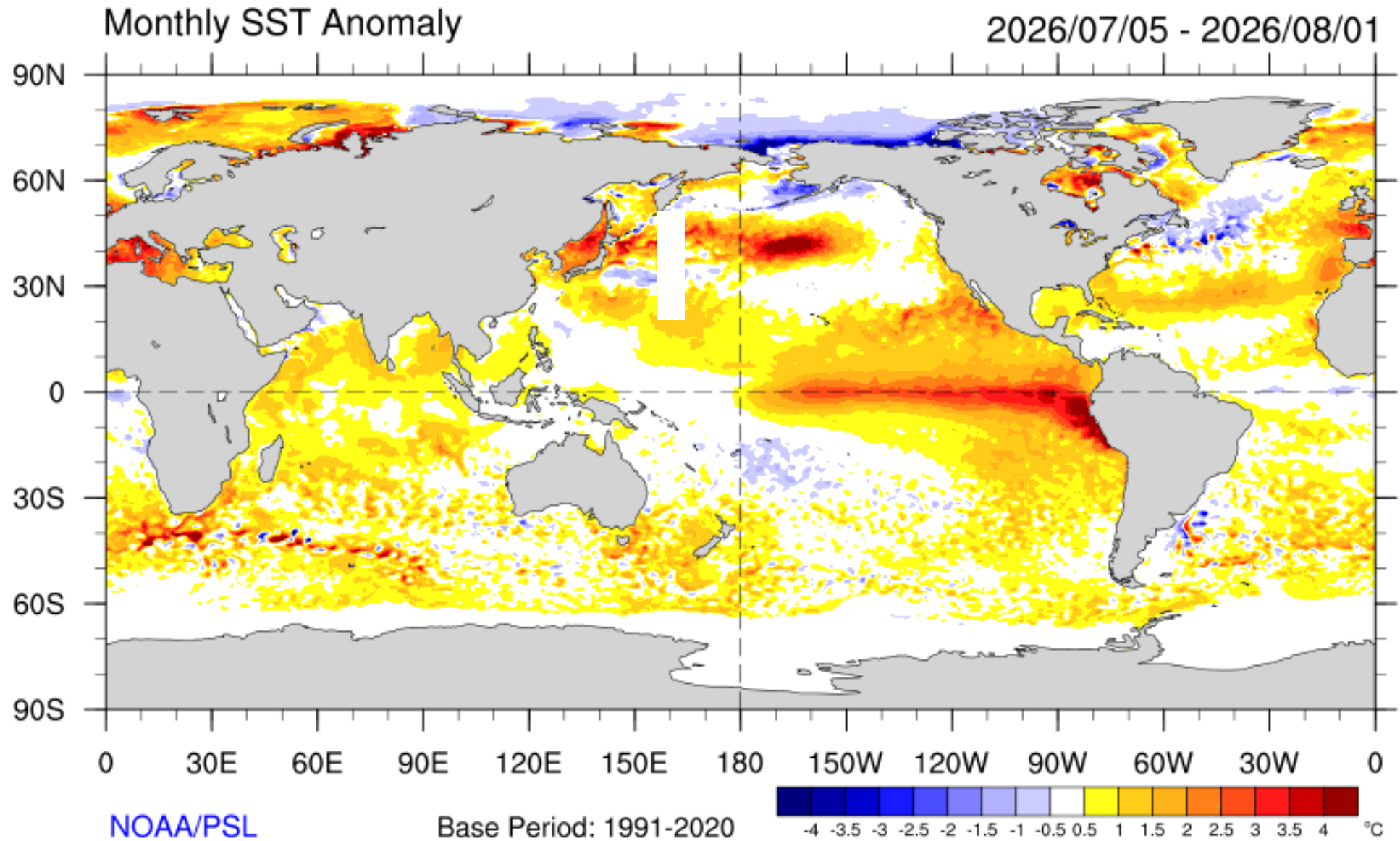
## Significant Wildland Fire Potential

|                                                                                     |              |                                                                                       |                                   |
|-------------------------------------------------------------------------------------|--------------|---------------------------------------------------------------------------------------|-----------------------------------|
|  | Above Normal |  | State Boundary                    |
|  | Below Normal |  | Predictive Services Area Boundary |
|  | Normal       |  | Geographic Area Boundary          |

Source: [https://www.nifc.gov/nicc-files/predictive/outlooks/monthly\\_seasonal\\_outlook.pdf](https://www.nifc.gov/nicc-files/predictive/outlooks/monthly_seasonal_outlook.pdf)



# Current Status: El Niño

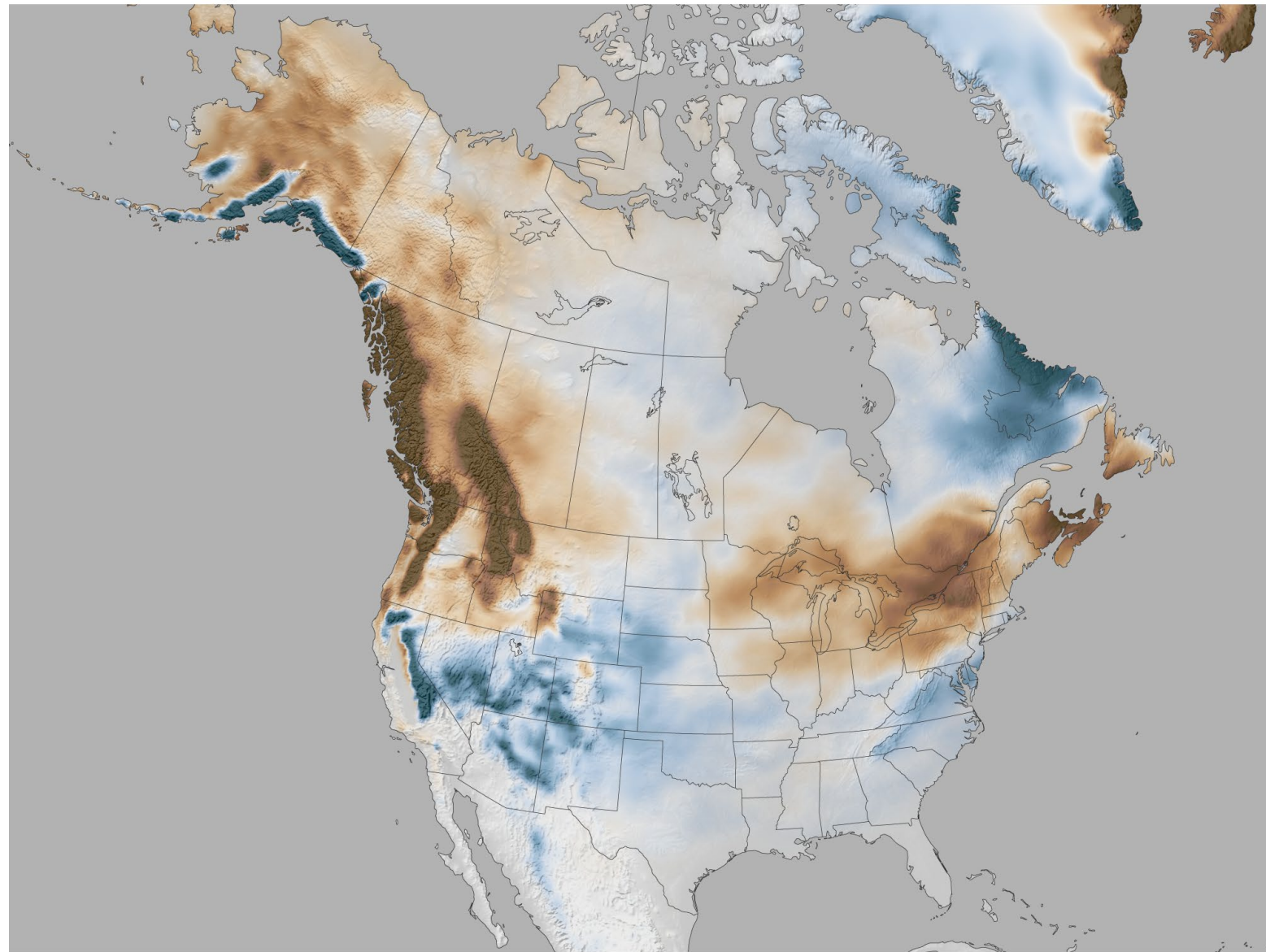


# Likely to be a very strong El Niño next winter





# Snowfall during all El Niño winters (Jan–Mar)



El Niño winters (1959–2023)  
vs. 1991–2020 average  
(detrended)

difference from average snowfall (inches)



NOAA Climate.gov  
Data: ERA5

Source: <https://www.climate.gov/news-features/blogs/snow-pain-snow-gain-how-does-el-nino-affect-snowfall-over-north-america>



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**Read the 2025 Water Year  
Assessment**



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*Image Credit: Kendra Kaiser, Boise State University*