



National Weather Service
PORTLAND



NWS Winter Weather Outlook for 2021-2022

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October 23, 2021

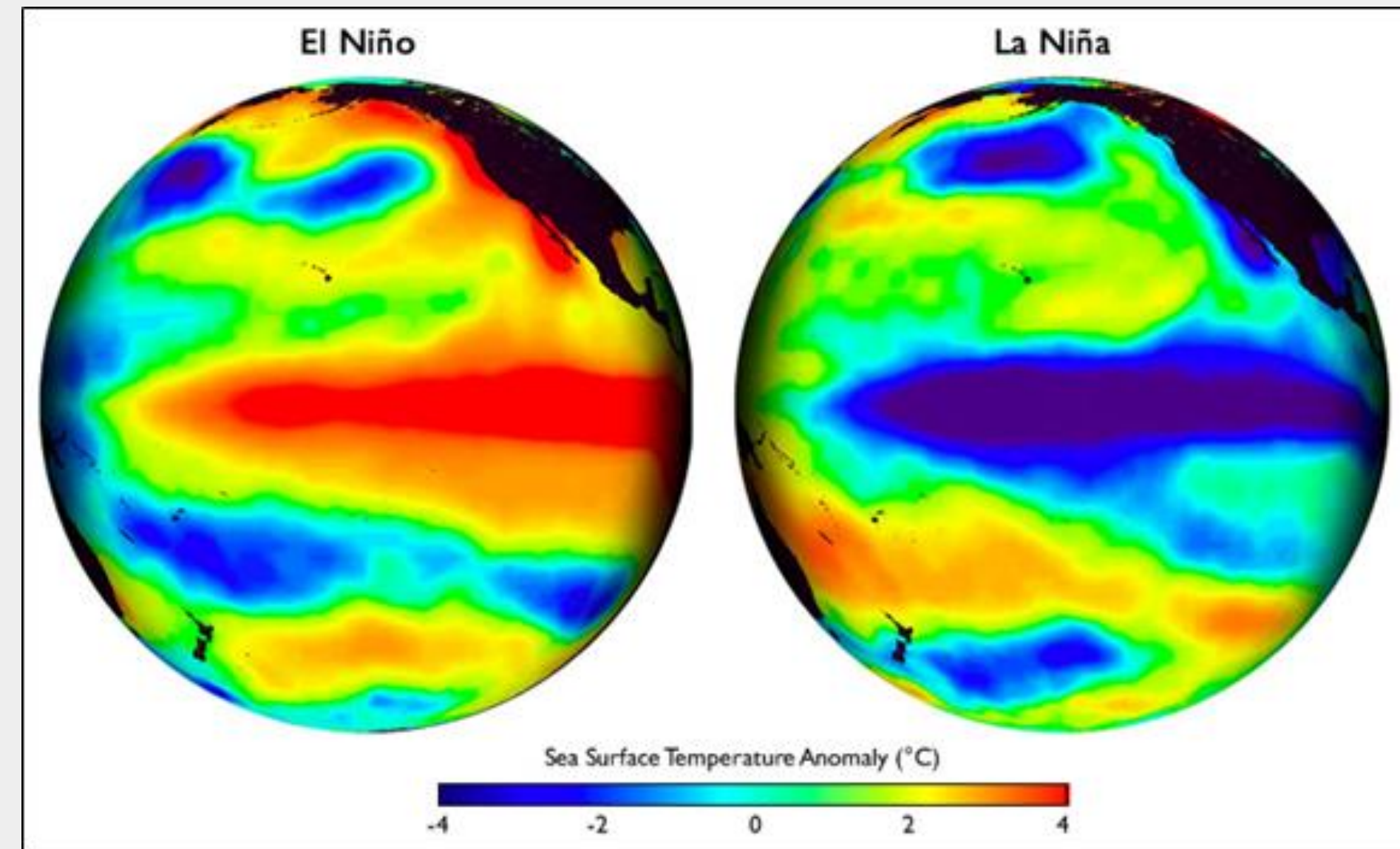
KEY POINTS

- La Niña conditions have developed as of mid-October 2021
- ~87% confidence in La Niña Conditions persisting Dec 2021 through Feb 2022
- Second consecutive winter with La Niña conditions
- NWS Climate Prediction Center (CPC) forecasts higher than normal probabilities (but not assured) for:
 - a Wetter than Normal Fall 2021
 - a Cooler and Wetter than normal Winter



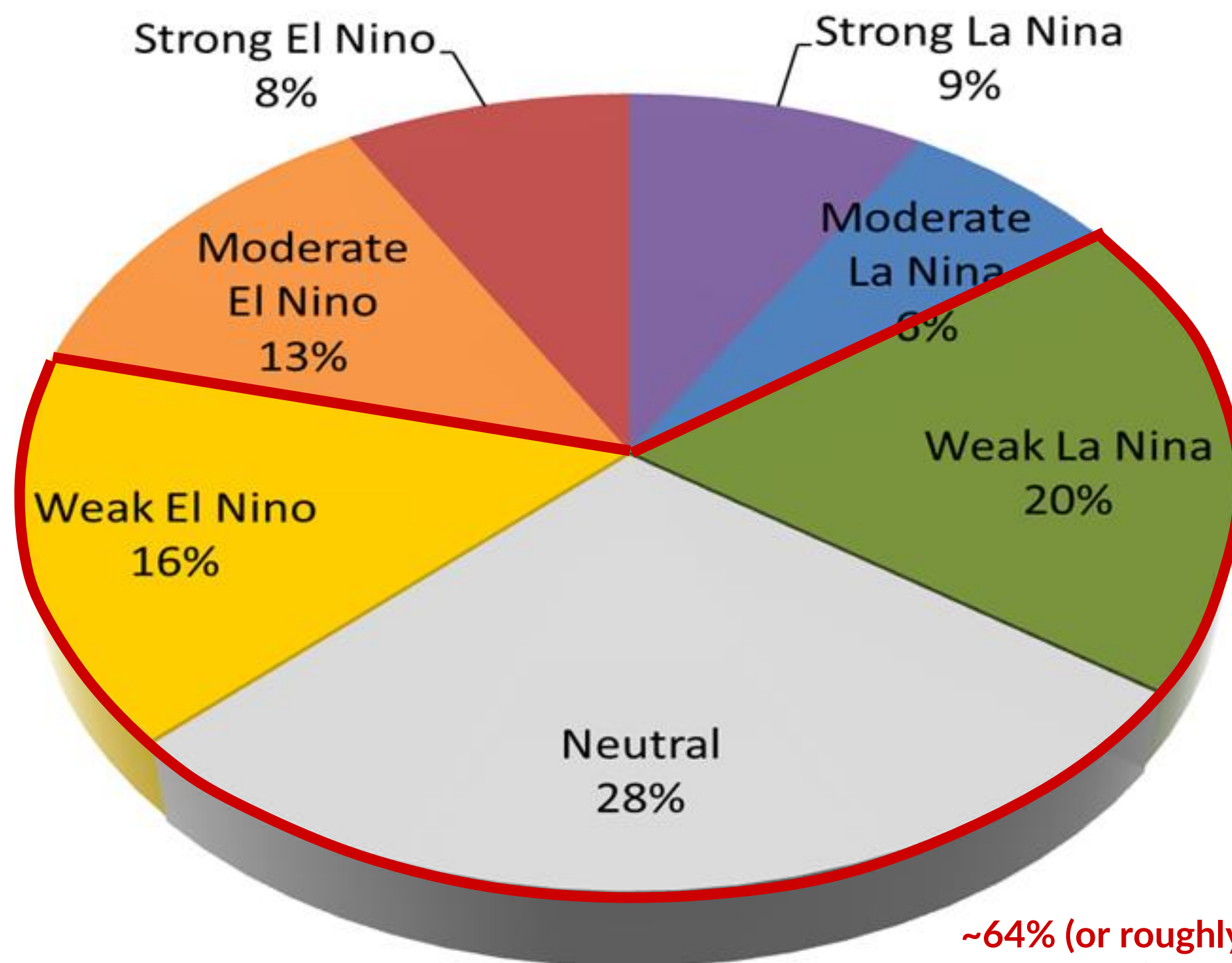
WHAT IS ENSO?

- El Niño and the Southern Oscillation, commonly referred to as **ENSO**, is a periodic fluctuation in sea surface temperature (SST) and the overlying atmosphere across the equatorial Pacific Ocean.



- ENSO has three possible phases:
 - ENSO-neutral (near-normal water temps across the equatorial Pacific)
 - **La Niña** (relatively **cool water** across the equatorial Pacific - **above right**)
 - **El Niño** (relatively **warm water** across the equatorial Pacific - **above left**)

ENSO Occurrence

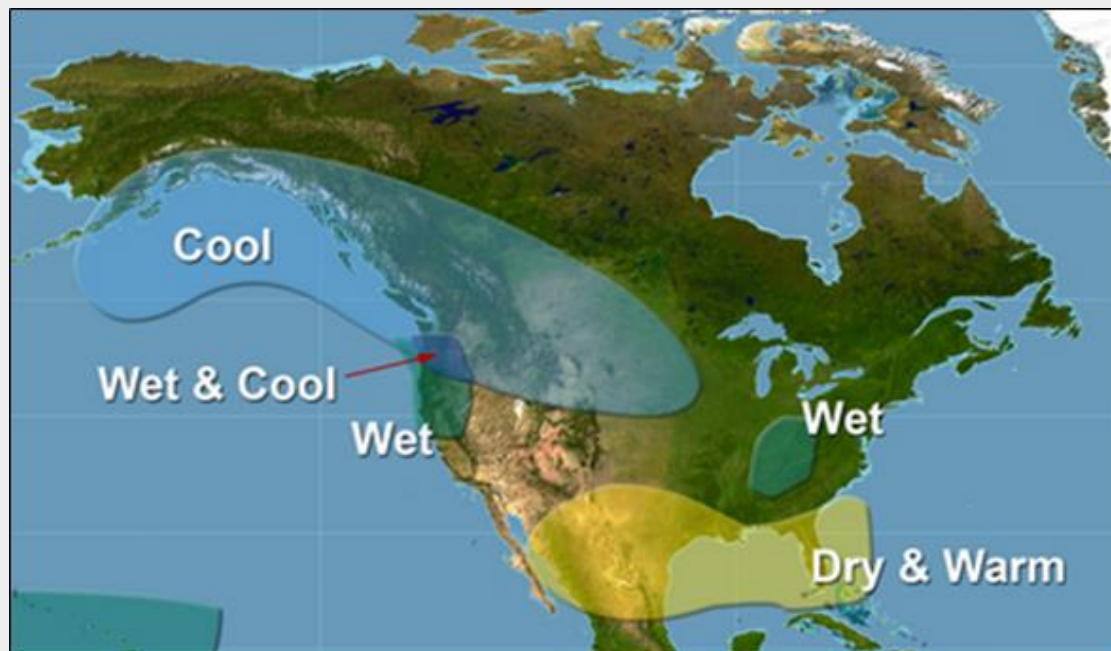


~64% (or roughly two-thirds of the time) we are in, or close to ENSO-neutral conditions

IMPACTS OF ENSO ON WEATHER PATTERNS

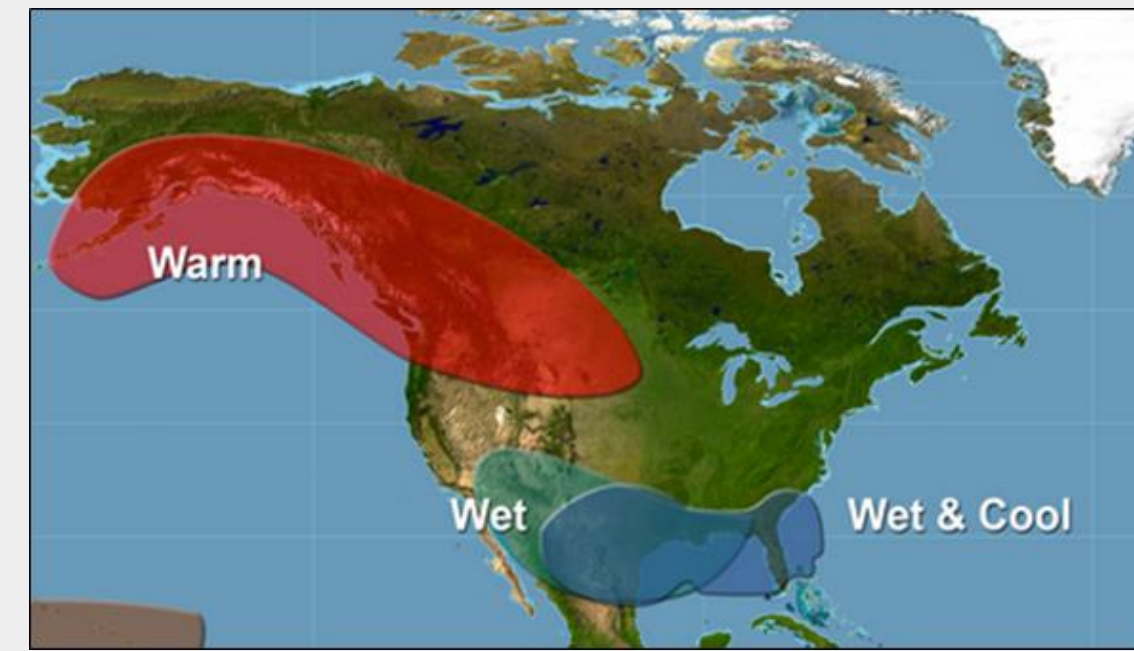
La Niña

- Cooler than average waters in the tropical Pacific.
- Favors higher probabilities for cooler and wetter than normal conditions for the PNW (winter months).



El Niño

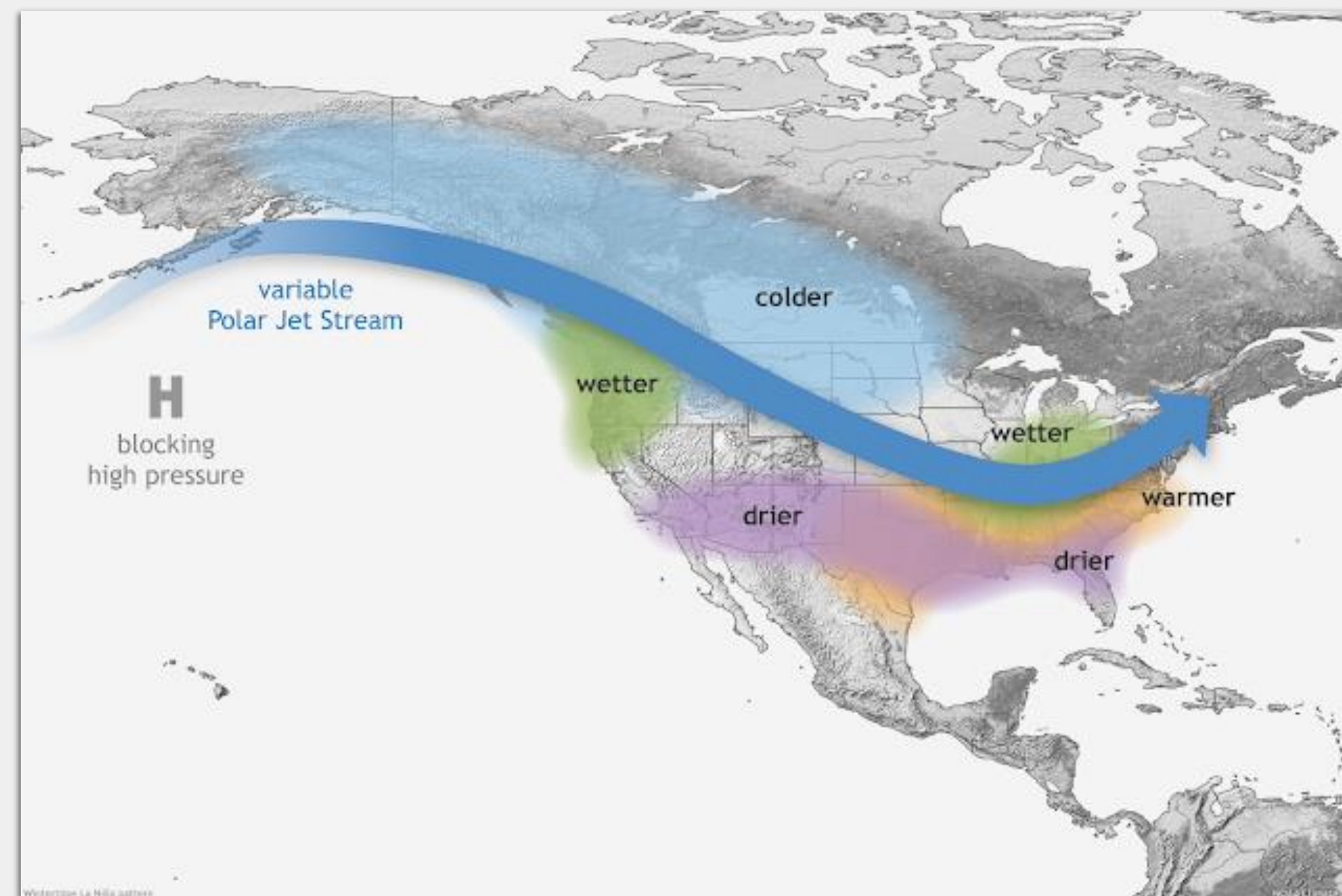
- Warmer than average waters in the tropical Pacific
- Favors higher probabilities for warmer than normal temperatures with near-normal to below normal precipitation for the PNW (winter months).



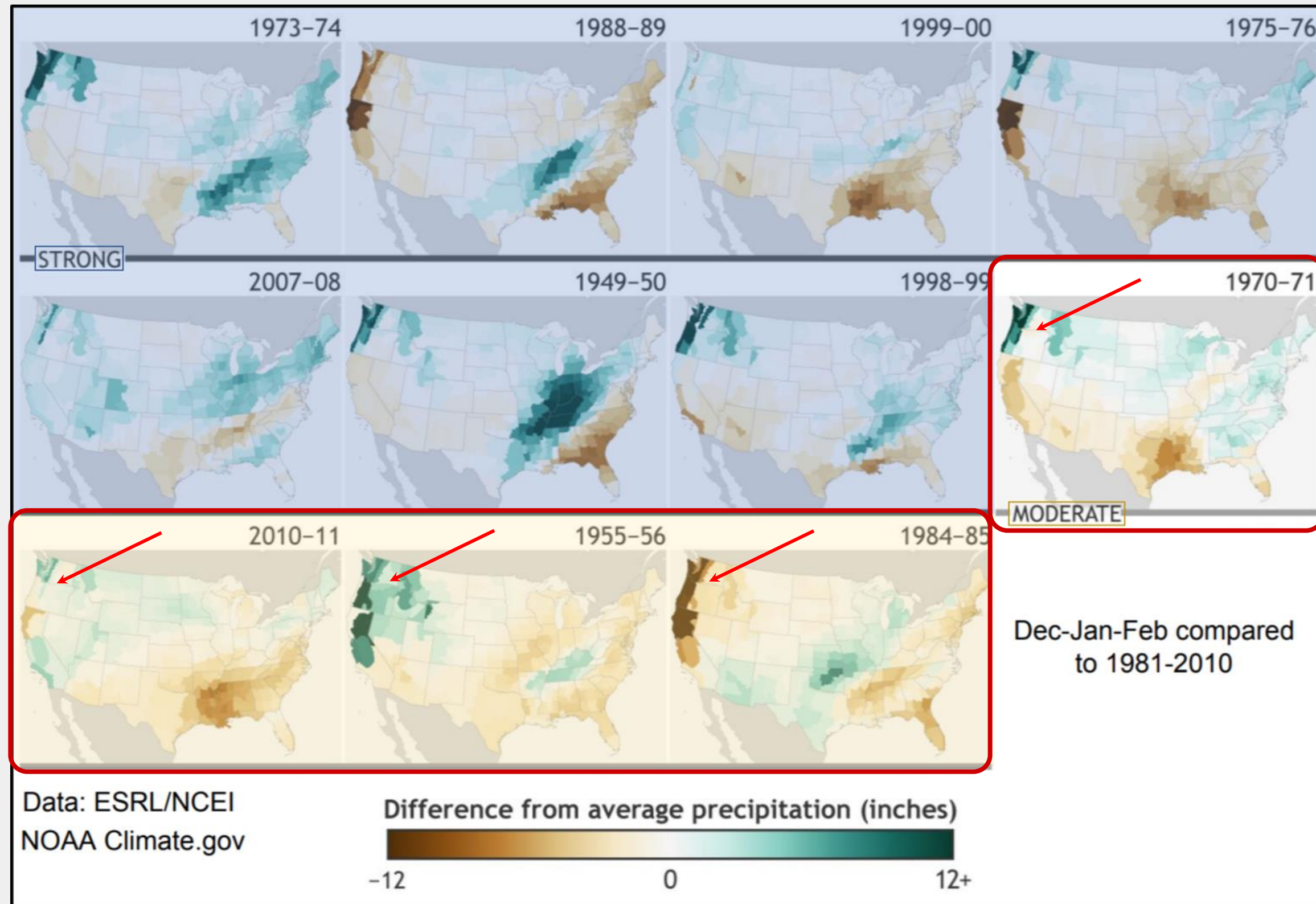
ENSO Alert System Status:

La Niña Advisory

- La Niña conditions have developed as of mid-October 2021
- Equatorial sea surface temperatures (SSTs) are below average across much of the tropical Pacific Ocean.
- **La Niña conditions are expected to persist for the Dec 2021 through Feb 2022 period with an ~87% degree of confidence.**

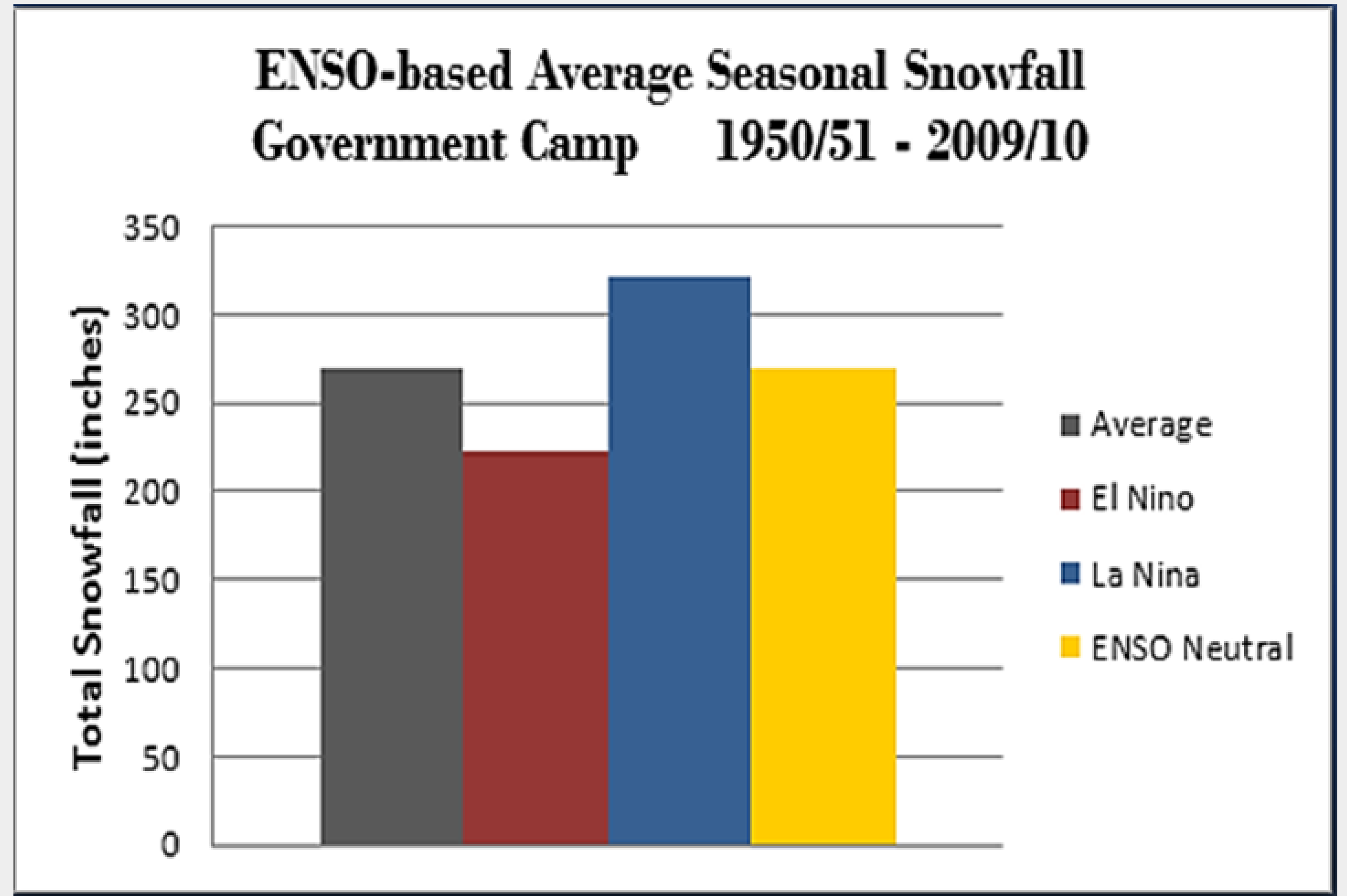


Precipitation History during La Nina Years



ENSO IMPACTS ON SNOWPACK

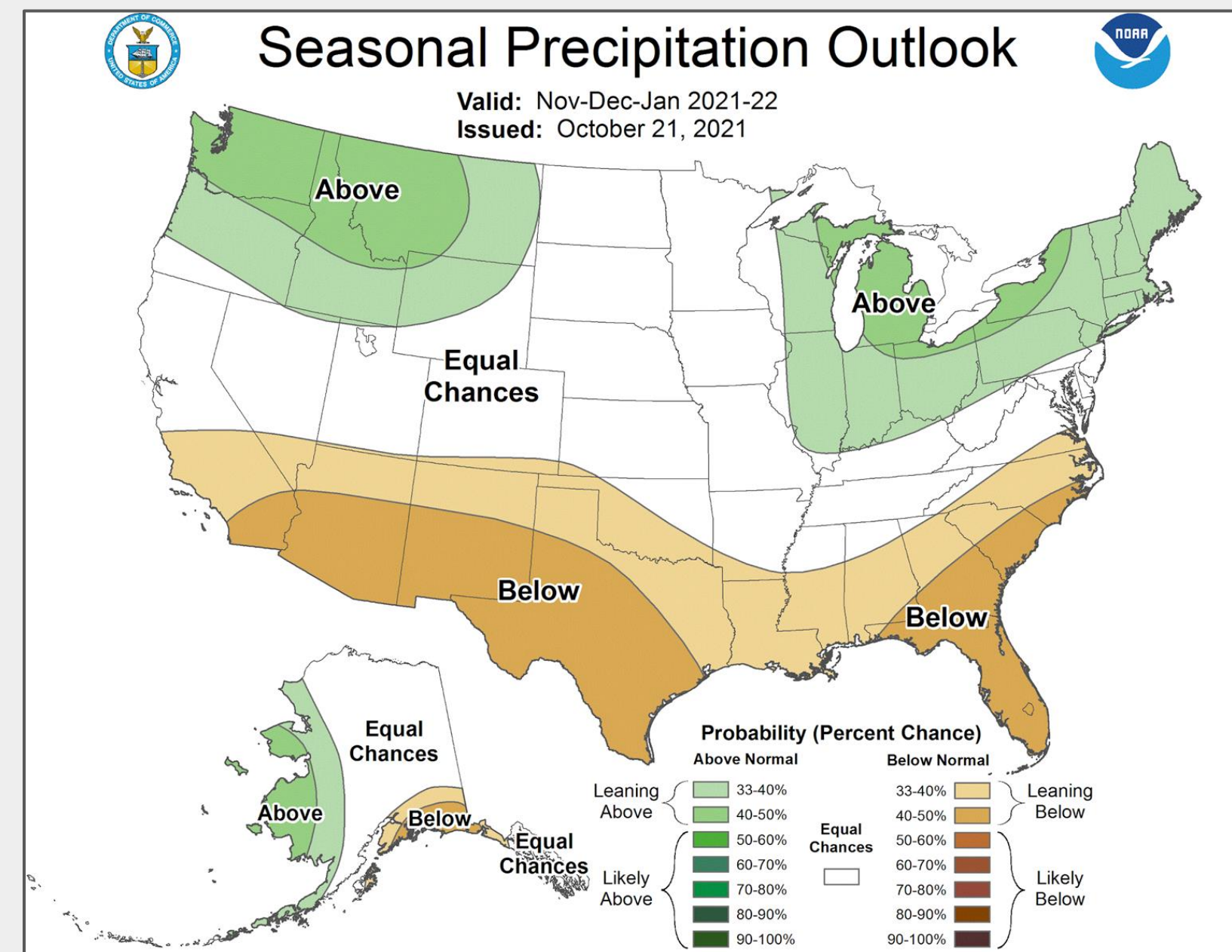
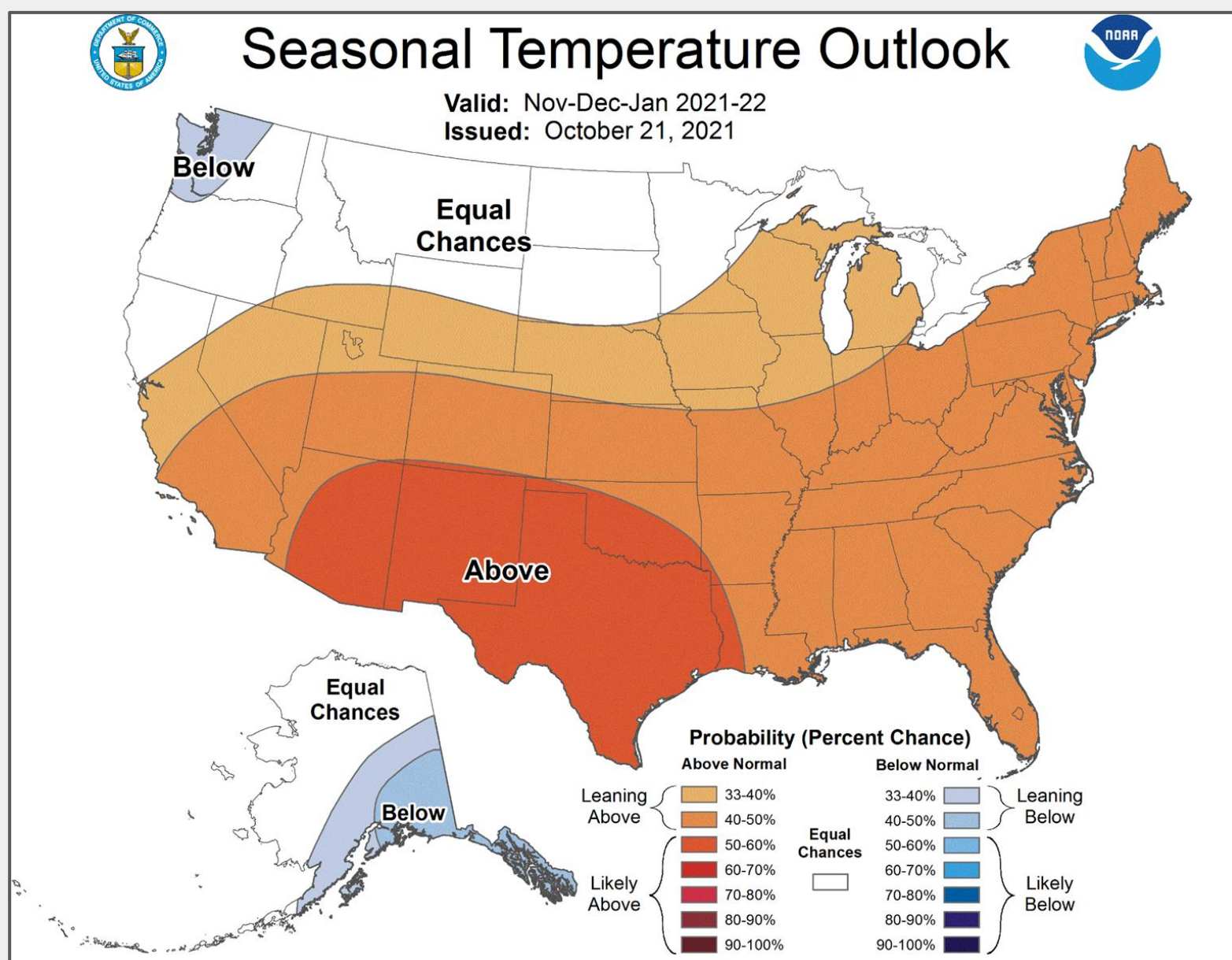
- Because ENSO impacts the amount of snowfall accumulation over the winter months, snowpack follows suit.
- On Average - La Niña winters have a higher probability of producing above normal snowfall and snowpack in the Cascades



November to January Outlook

Temperatures

Slightly increased chances for Cooler than Normal Conditions (3-month average)



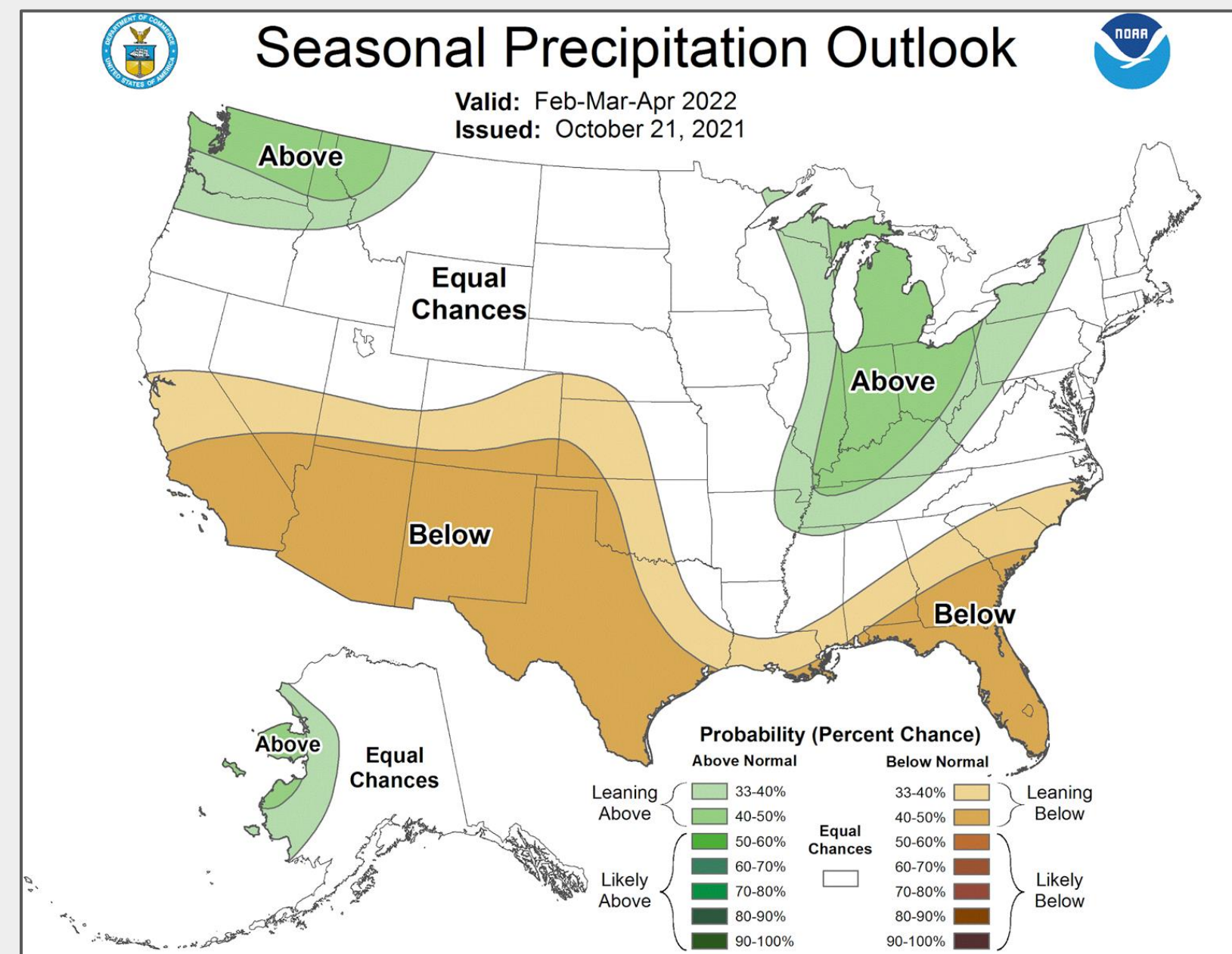
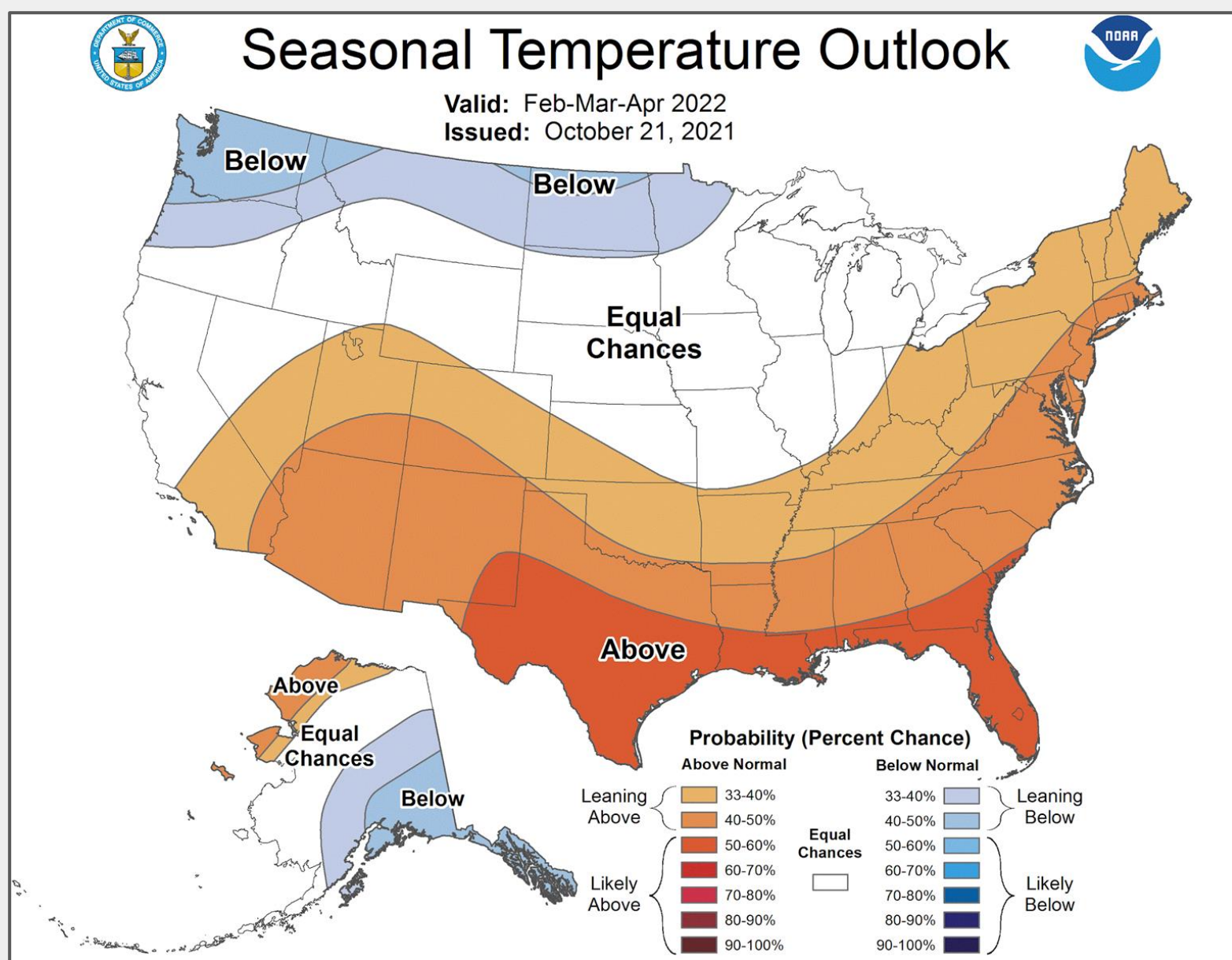
Precipitation

Increased chances for Wetter than Normal Conditions (3-month average)

February to April Outlook

Temperatures

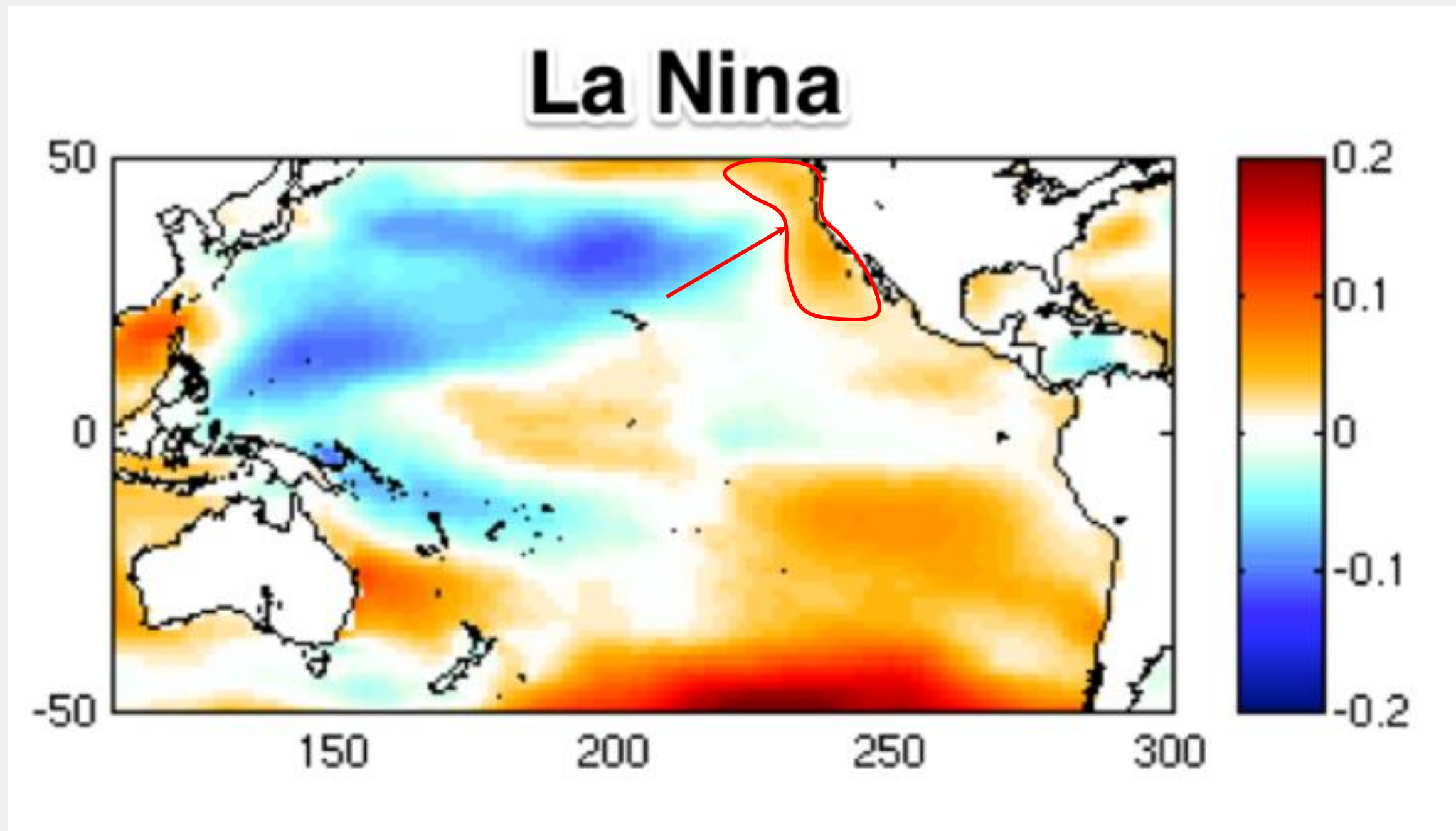
Increased chances for
Cooler than Normal Conditions
(3-month average)



Precipitation

Increased chances for
Wetter than Normal Conditions
(3-month average)

La Niña Brings Increased Surf & Marine Hazards



Australian Government
Bureau of Meteorology

Mean Significant Wave Height departure from normal for La Niña events (from 2015)

Higher than normal wave heights for the west coast.

During 2020/21 Winter: NWS Portland issued 10 High Surf Advisories, 2 High Surf Warnings, and 7 Beach Hazard Statements from November 2020 through February 2021



Bottom Line

Climate predictions can have skill in predicting seasonal totals and averages.

However, most impacts are associated with short-duration storm systems.

Get Involved With Preparedness



*Only requires a valid email
address to sign up.
Visit: weather.gov/wrn*



*Tsunami Ready Designation or
Tsunami Ready Supporter
Visit: weather.gov/tsunamiready*



Visit: weather.gov/stormready

*"We can't stop extreme events from happening. But we surely
can come together and find ways to make our societies
more dynamically resilient in the face of those threats."*

NOAA Administrator Dr. Kathryn Sullivan
American Meteorological Society Annual Meeting
January 10, 2013