

# Seasonal Climate Forecast

## October – December 2022

Issued: September 16, 2022

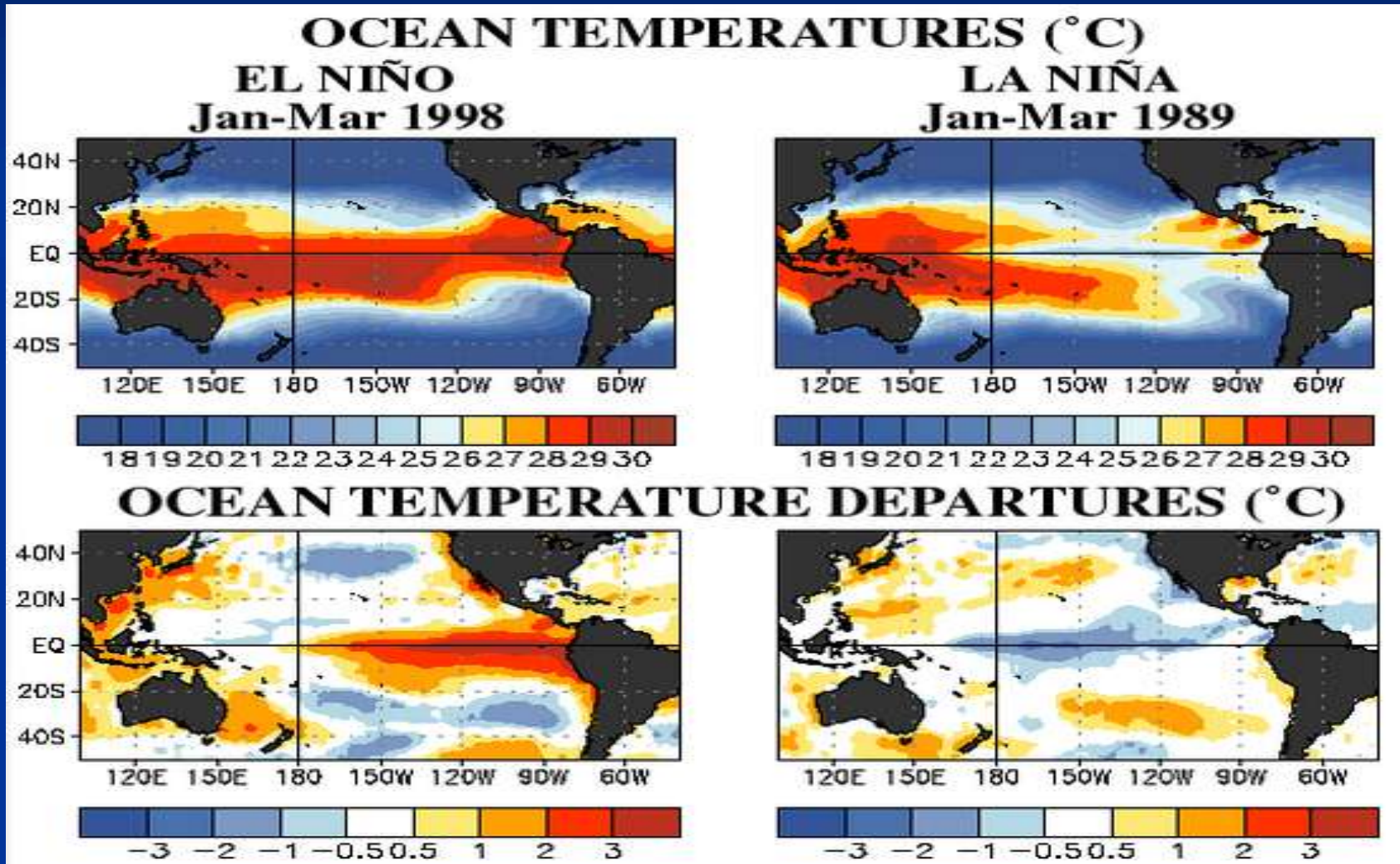
Contact: ODF Lead Meteorologist Pete Parsons  
503-945-7448 or [peter.gj.parsons@odf.oregon.gov](mailto:peter.gj.parsons@odf.oregon.gov)

Oregon Department of Agriculture (ODA) - Oregon Department of Forestry (ODF)  
Production support: Diana Walker; Andy Zimmerman; Julie Waters; Kristin Cody

Photo: Gary Votaw

# El Niño vs La Niña

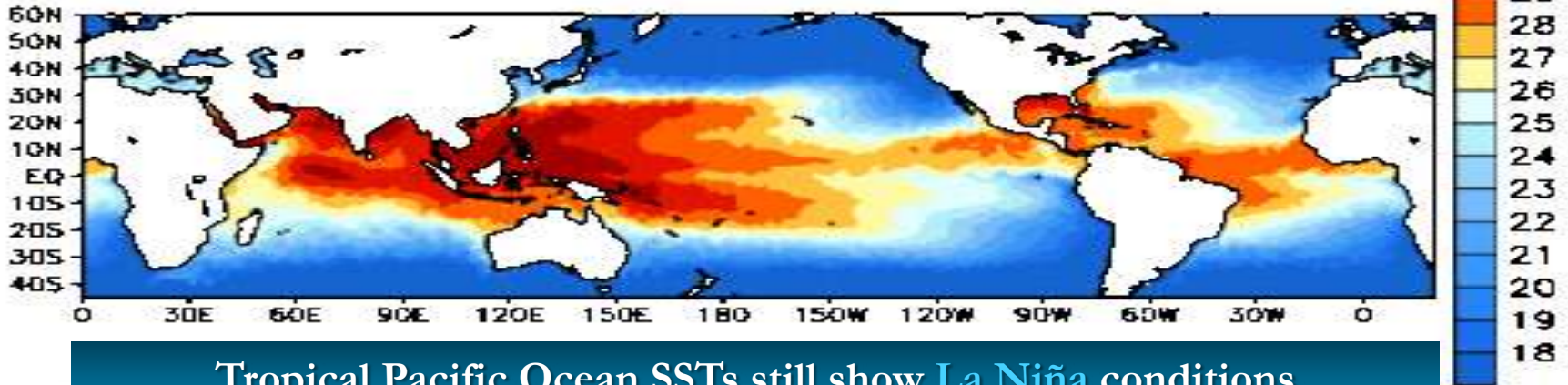
(Examples of Past Extremes)



# Sea Surface Temperatures (SSTs)

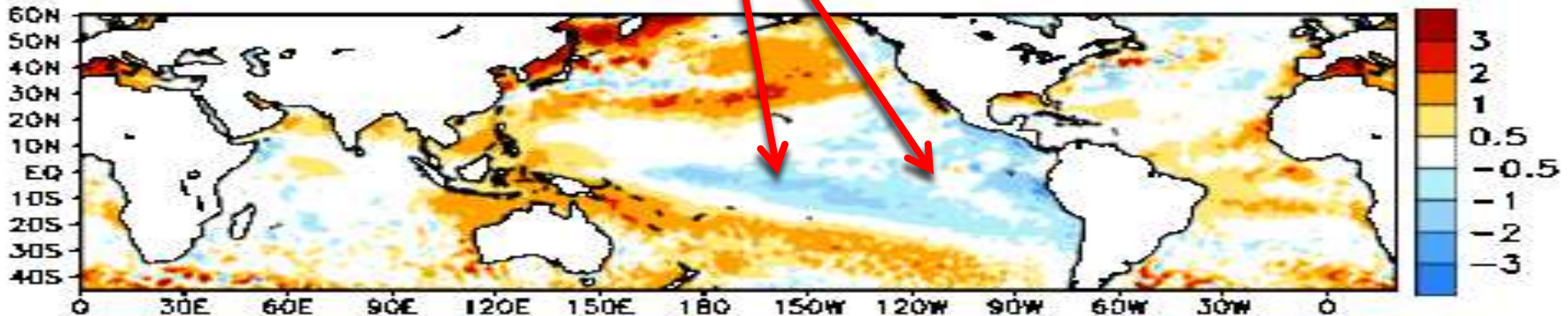
Animated (PowerPoint only) SSTs (top) / Anomalies (bottom)

Week centered on 22 JUN 2022  
SST (°C)



Tropical Pacific Ocean SSTs still show *La Niña* conditions

Anomalies (°C)



# El Niño Southern Oscillation (ENSO)

## Current Status and Forecast

- The August Southern Oscillation Index (SOI) of +1.0 corresponds with stronger-than-normal easterly trade winds across the tropical Pacific Ocean (a *La Nina* condition).
- The June – August Oceanic Niño Index (ONI) of -0.8°C continued to reflect tropical Pacific Ocean SSTs associated with *La Niña*.
- NOAA’s Climate Prediction Center (CPC) predicts that *La Niña* will continue through this winter. That would make three consecutive fall/winter seasons with *La Niña* (last such occurrence was 1998-2001).

*Important Note: This “Seasonal Climate Forecast” does not consider NOAA’s ENSO forecast. It uses only historical and current ENSO conditions to find “analog years” that most-closely match the evolution of the current ENSO state.*

# Southern Oscillation Index (SOI)

SOI\* values from the top "analog years" compared with the current period (2021-2022)  
(1955-56; 1970-71; 2007-08)

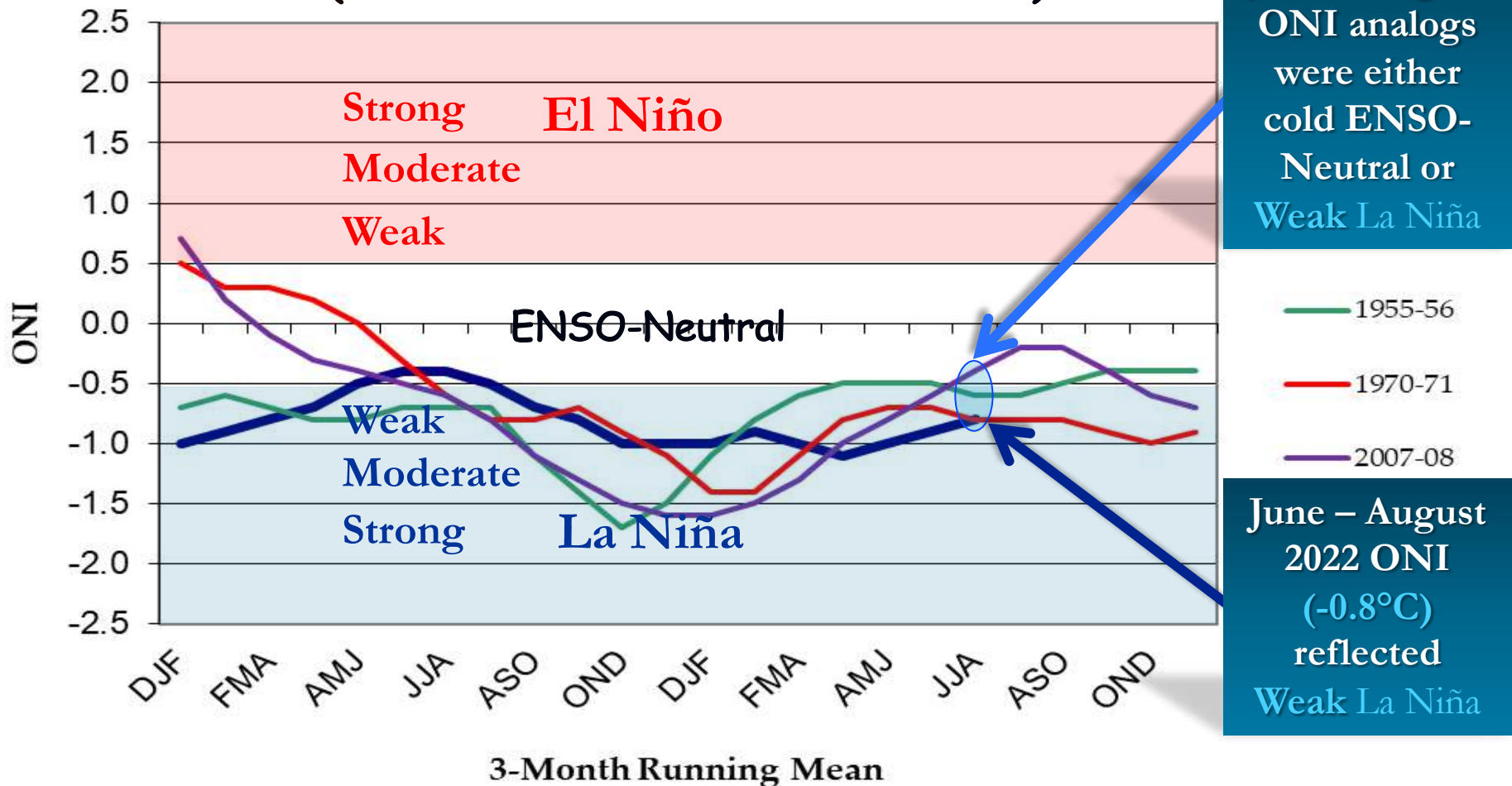


\*SOI explanation via "Forecasting Methods..." at <https://oda.direct/Weather>

# Oceanic Niño Index (ONI)

ONI\* values from the top "analog years"  
compared with the current period (2021-22)

(1955-56; 1970-71; 2007-08)



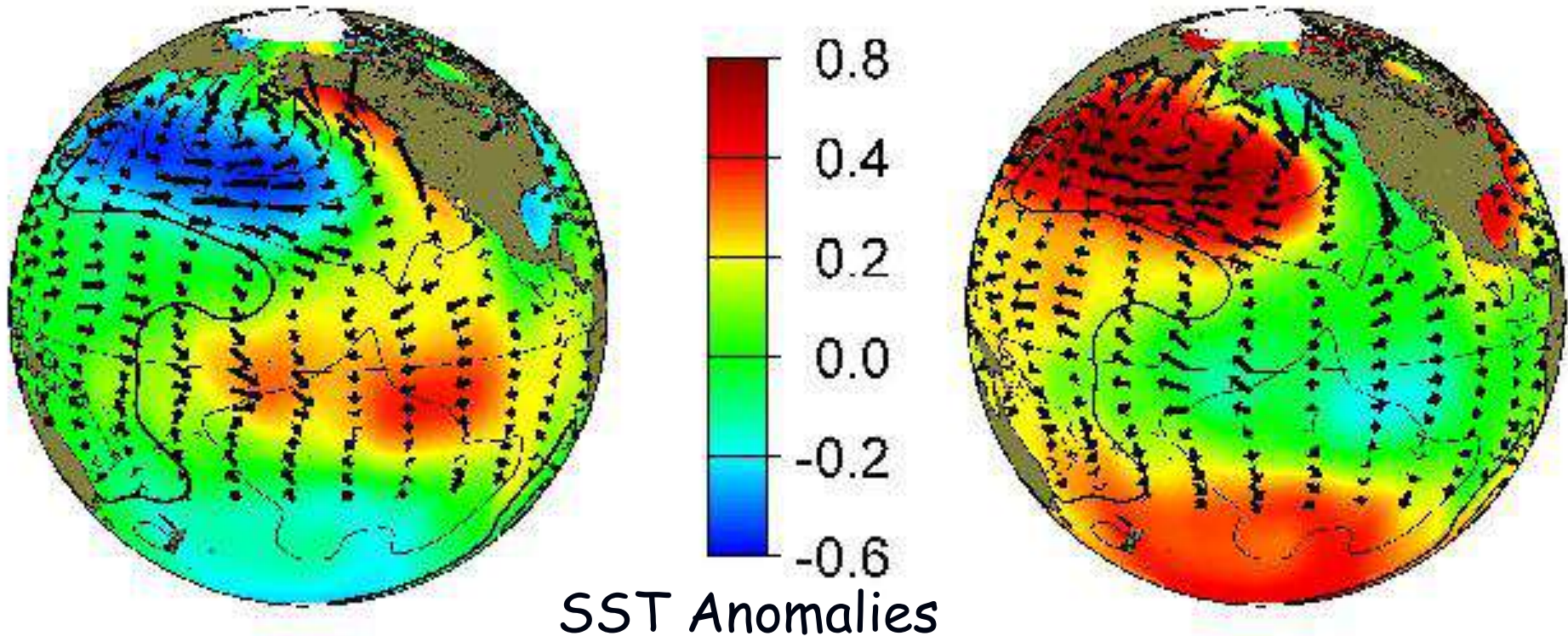
\*ONI explanation via "Forecasting Methods..." at <https://oda.direct/Weather>

# The Pacific Decadal Oscillation (PDO)

(Reflects SST "Phase" in the North Pacific Ocean)

Positive (Warm)  
"Phase"

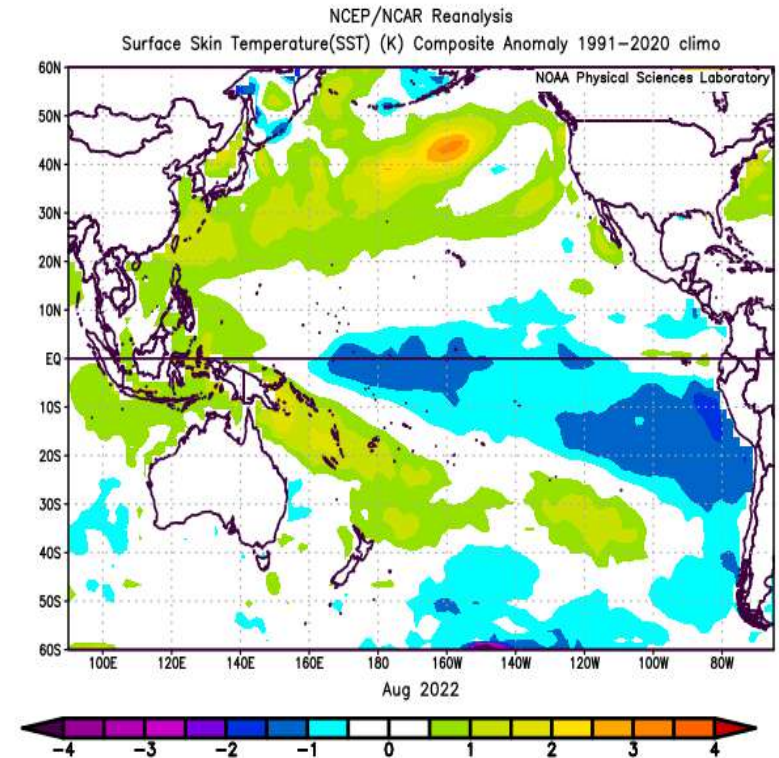
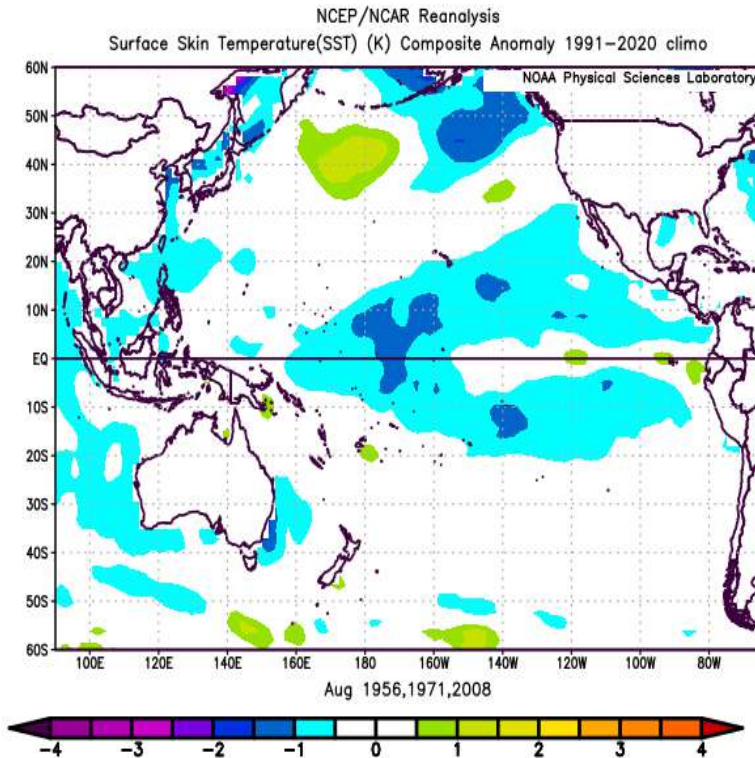
Negative (Cool)  
"Phase"



# SST Anomalies Comparison

## August Analogs

## August 2022



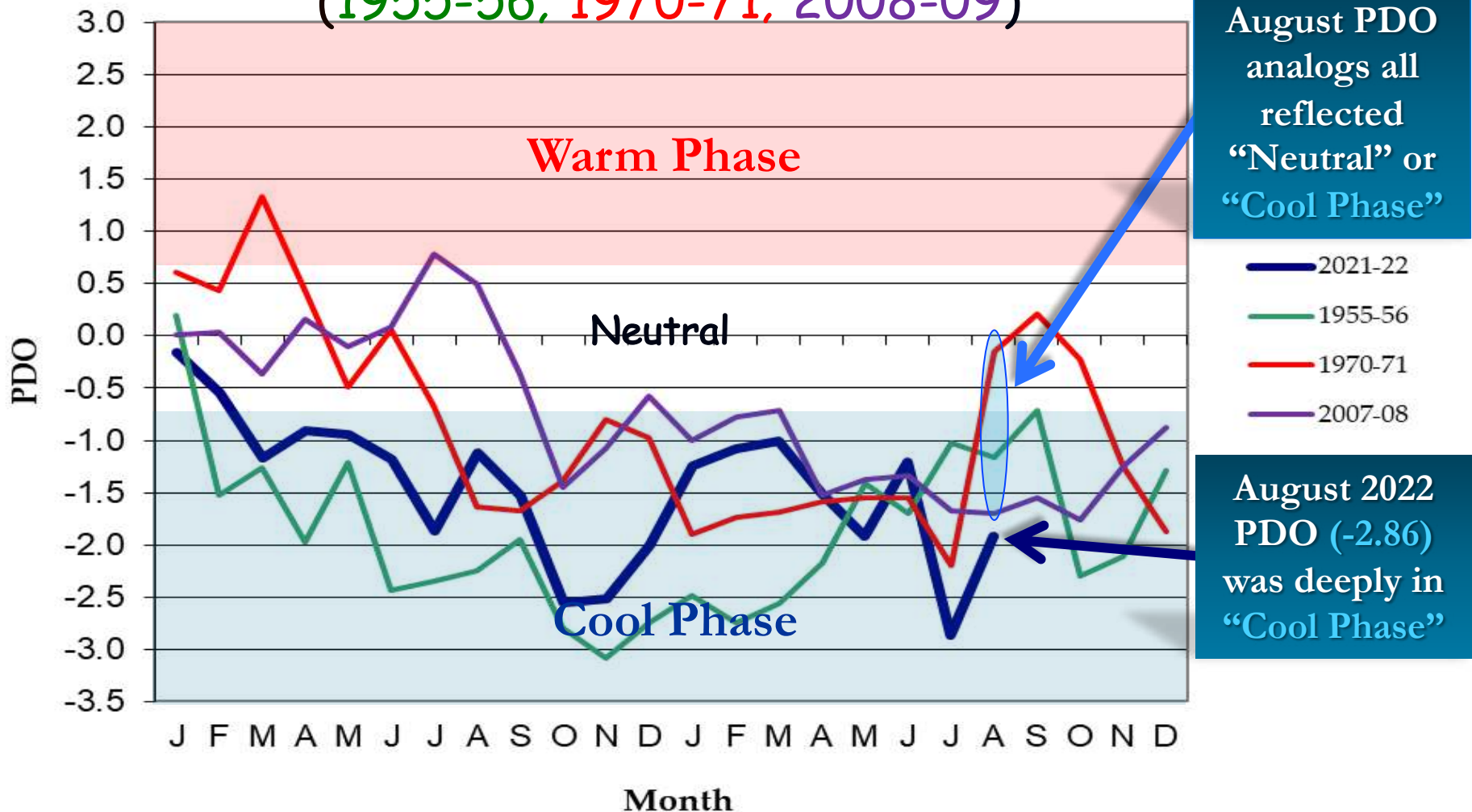
- The August analog (1956; 1971; 2008) composite (left) has a similar SST anomaly pattern, compared to August 2022 (right).
- Both charts depict *La Niña* conditions in the tropical Pacific Ocean and “Cool Phase” PDO in the northern Pacific Ocean.



# North Pacific Ocean

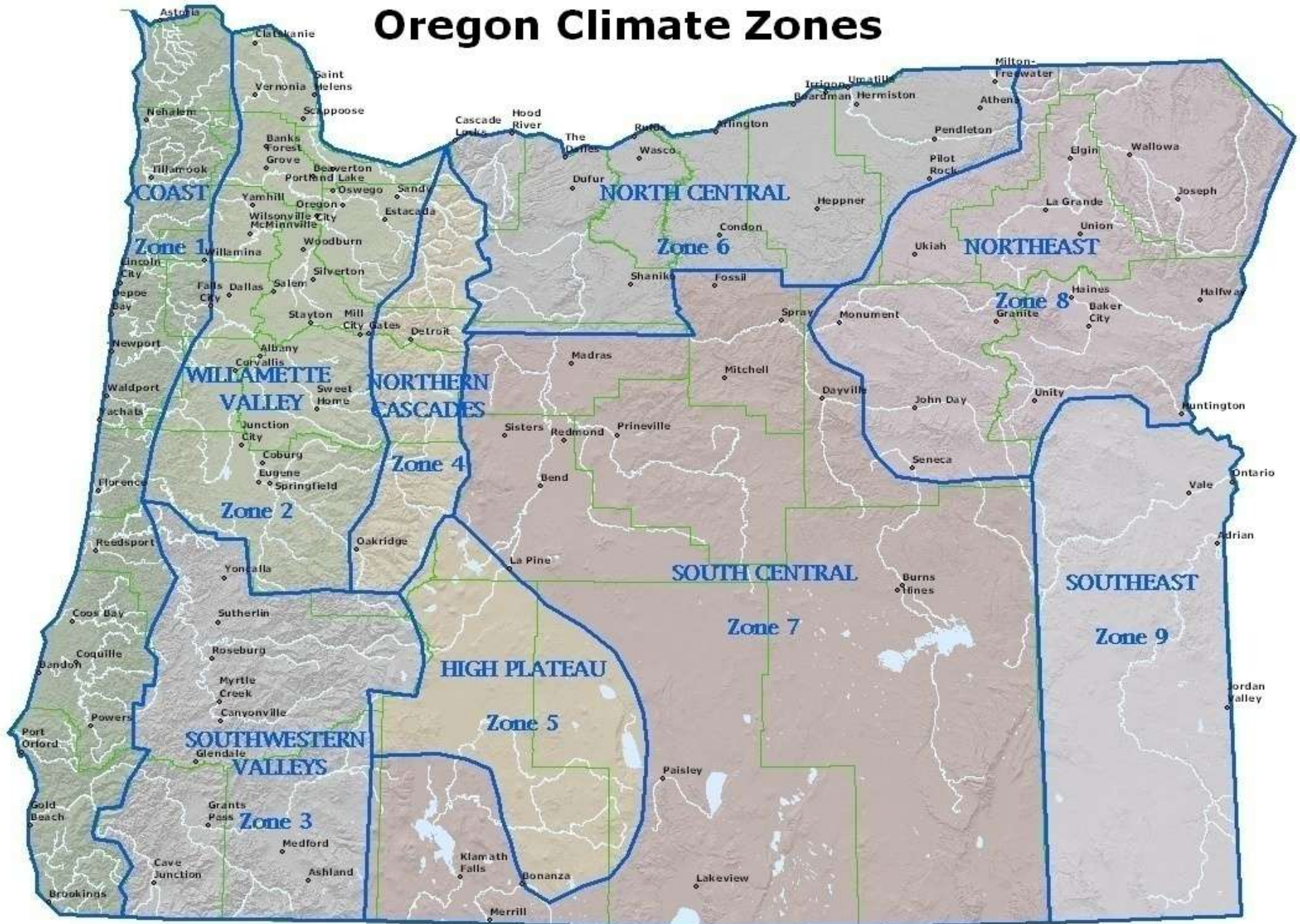
(Poleward of 20°N Latitude)

PDO\* values from the top "analog years" compared with the current period (2021-22)  
(1955-56; 1970-71; 2008-09)



\*To see PDO explanation, go to <https://oda.direct/Weather> and click on "Forecasting Methods."

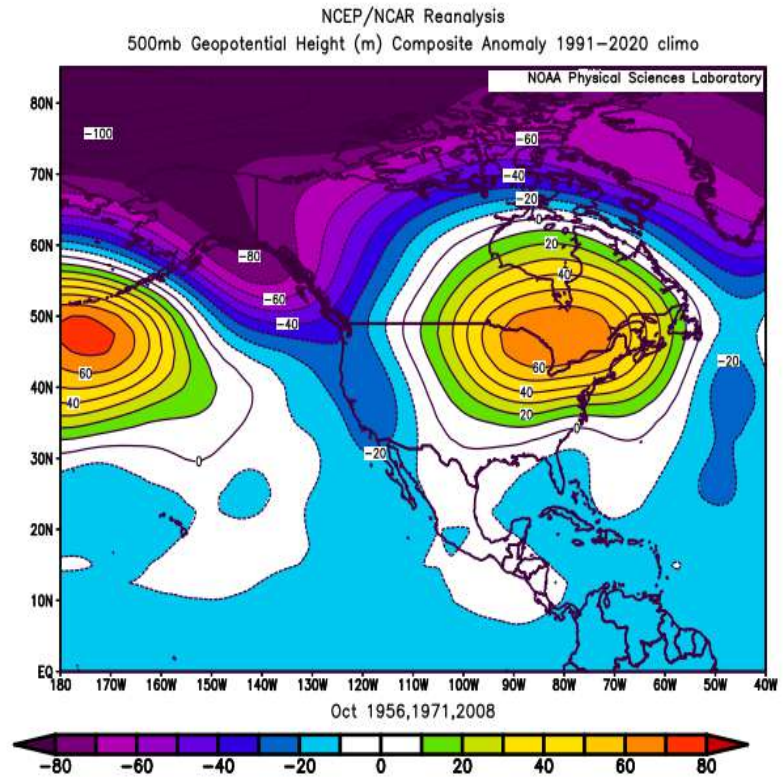
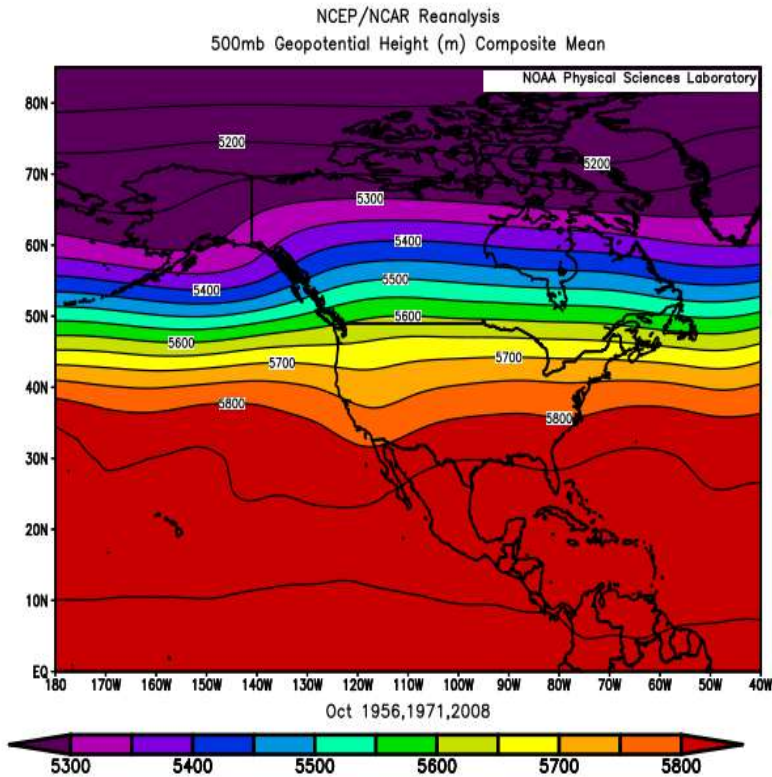
# Oregon Climate Zones



# October 2022 Forecast

## Mean Upper-Air Pattern

## Upper-Air Anomalies

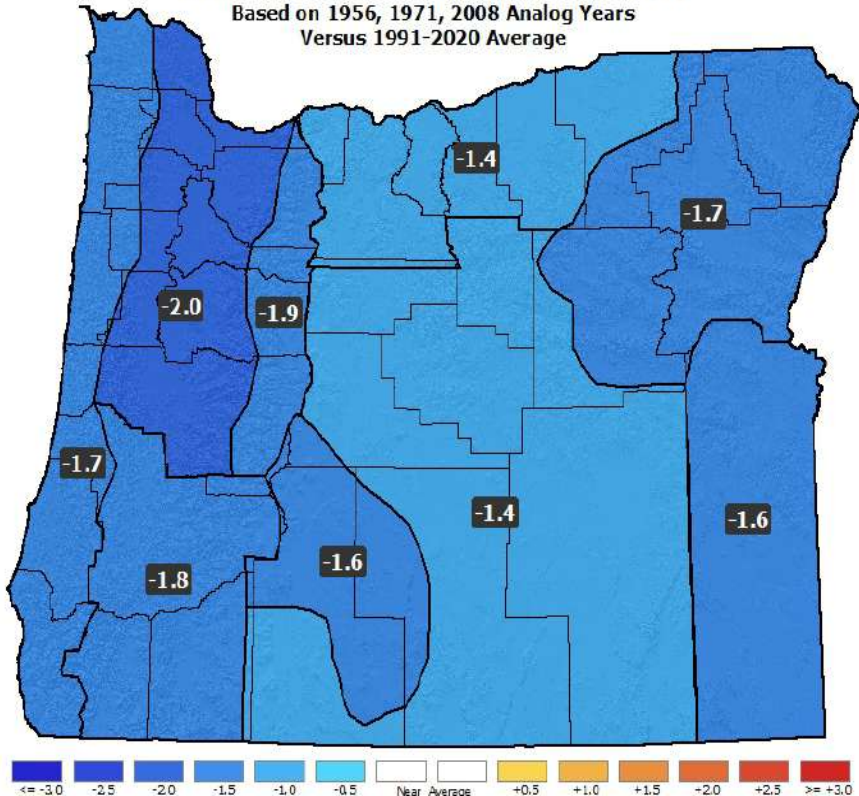


- Analogs are inconsistent. Anomalous troughing in 1956 & 1971 gets somewhat countered by weak ridging over Oregon in 2008.
- Highly amplified upper-air patterns are expected with La Niña, but this method has difficulty predicting the locations of the large anomalies.

# October 2022 Forecast

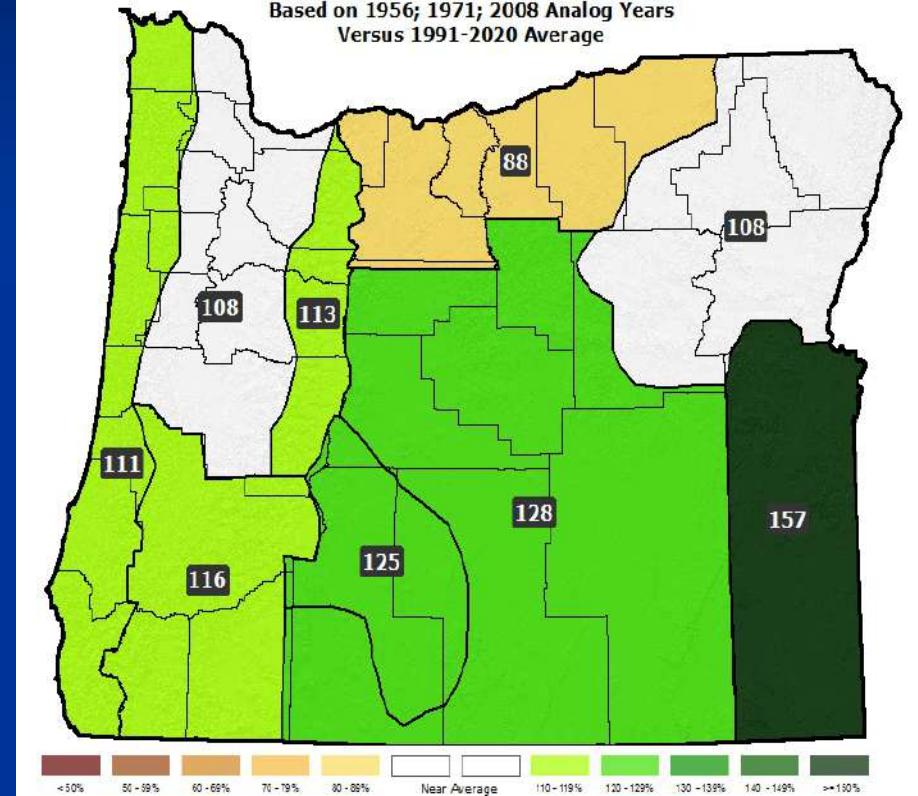
## Temperatures

October 2022 Forecast Temperature Anomalies (°F)  
Based on 1956, 1971, 2008 Analog Years  
Versus 1991-2020 Average



## Precipitation

October 2022 Forecast Precipitation Anomalies (% of Avg)  
Based on 1956; 1971; 2008 Analog Years  
Versus 1991-2020 Average

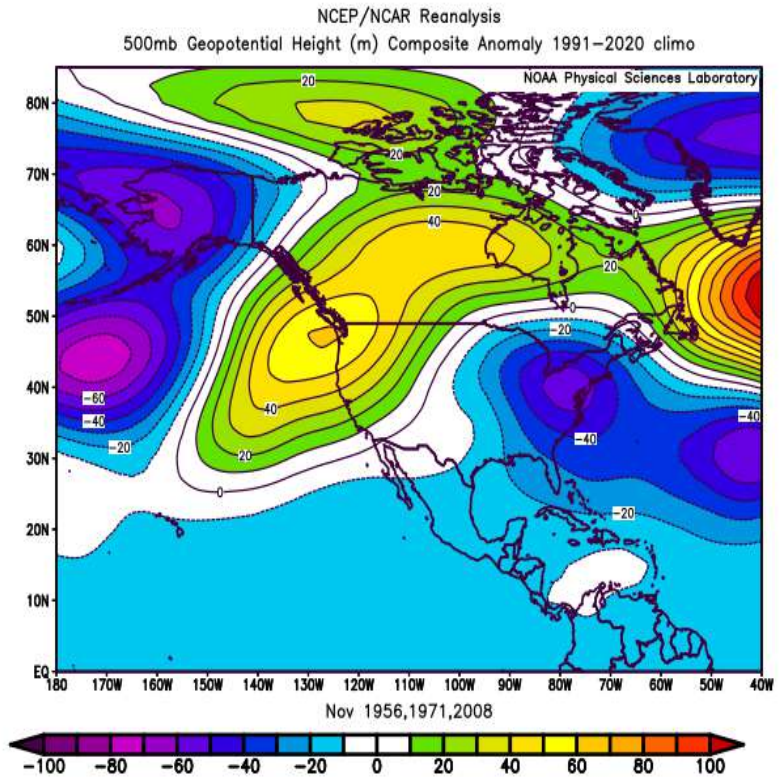
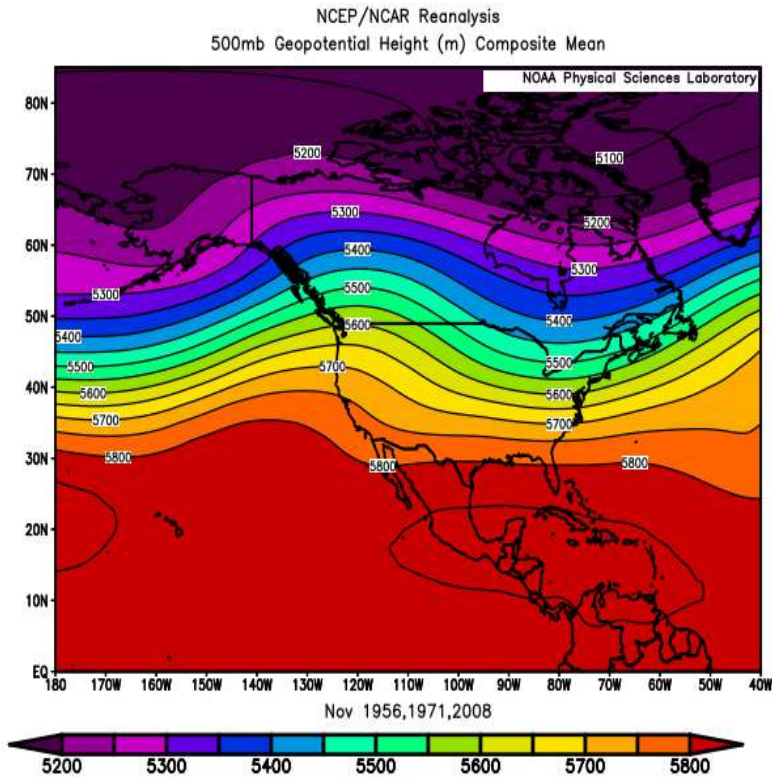


- Expect near or below-average temperatures. Heightened chances of a cold spell that could threaten some daily low-temperature records.
- Precipitation forecast is less certain. 1956 was wet, but 1971 & 2008 were drier than average. Their “blend” yields near-average rainfall.

# November 2022 Forecast

## Mean Upper-Air Pattern

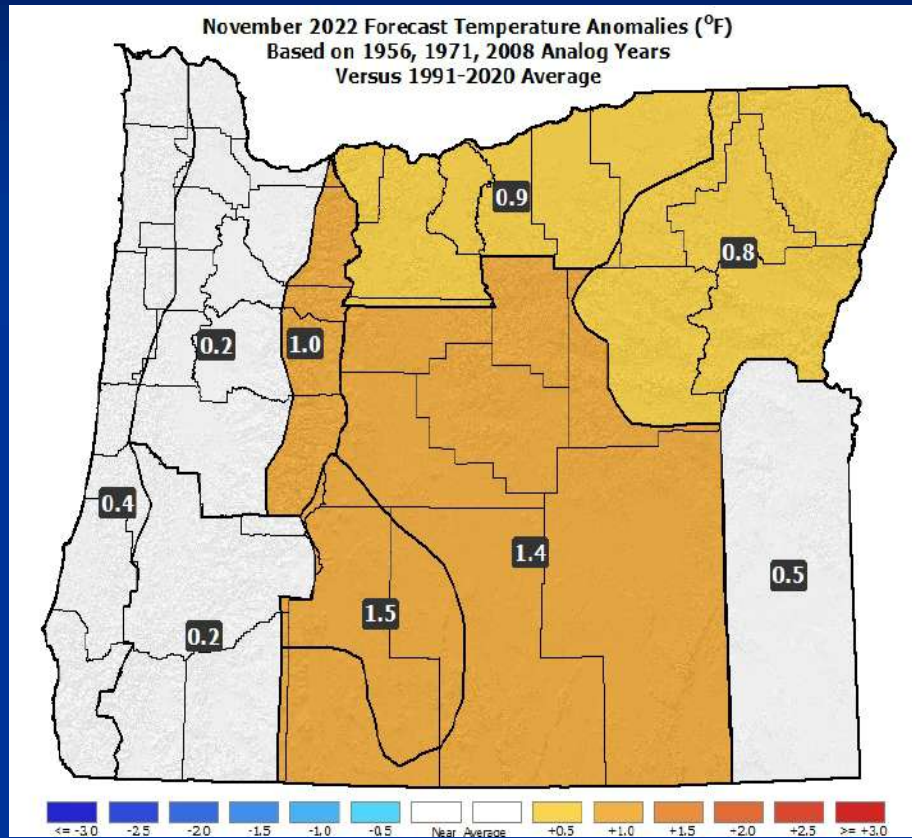
## Upper-Air Anomalies



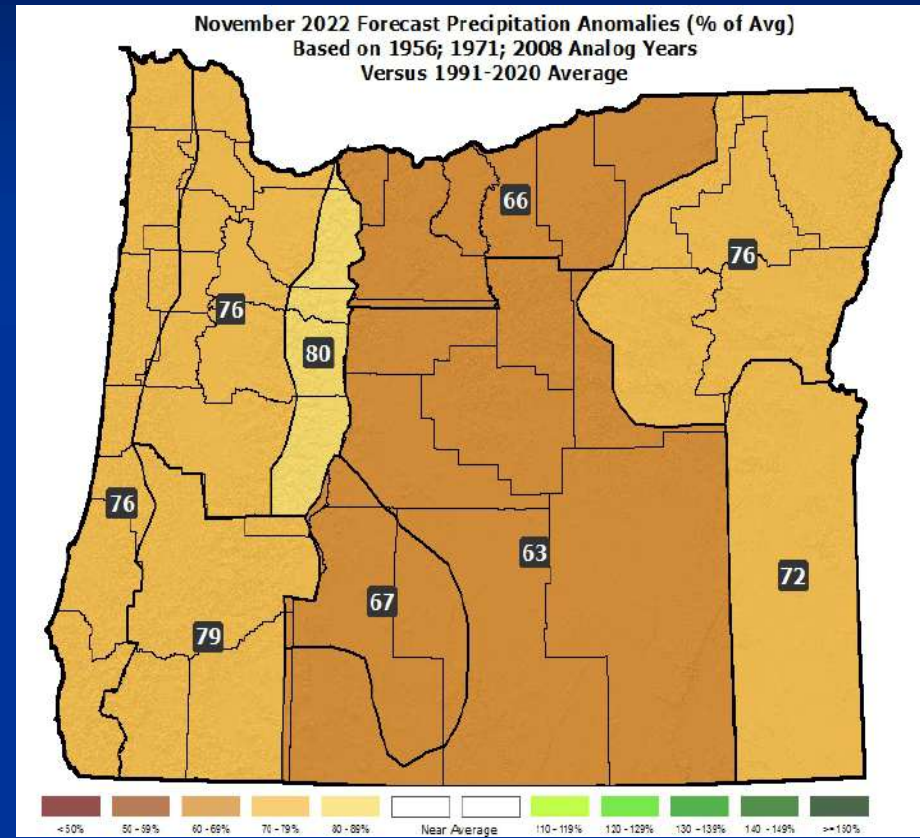
- 1956 & 2008 had anomalous ridging over Oregon, while 1971 had weak troughing. Their blend shows significant ridging.
- The predicted anomalous ridging over Oregon in November is common with *La Niña*, which tends to delay cold weather until later...

# November 2022 Forecast

## Temperatures



## Precipitation

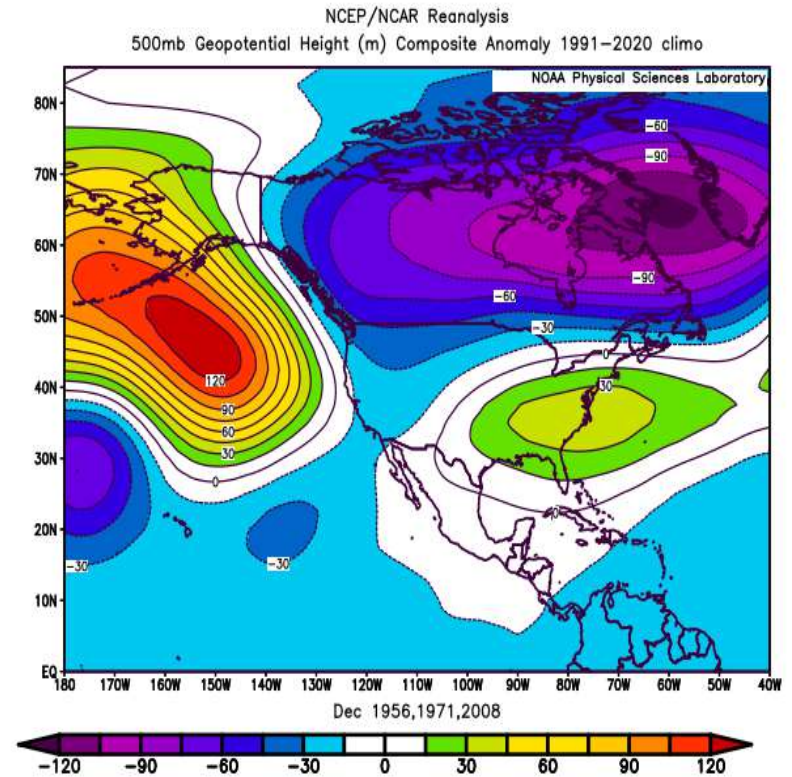
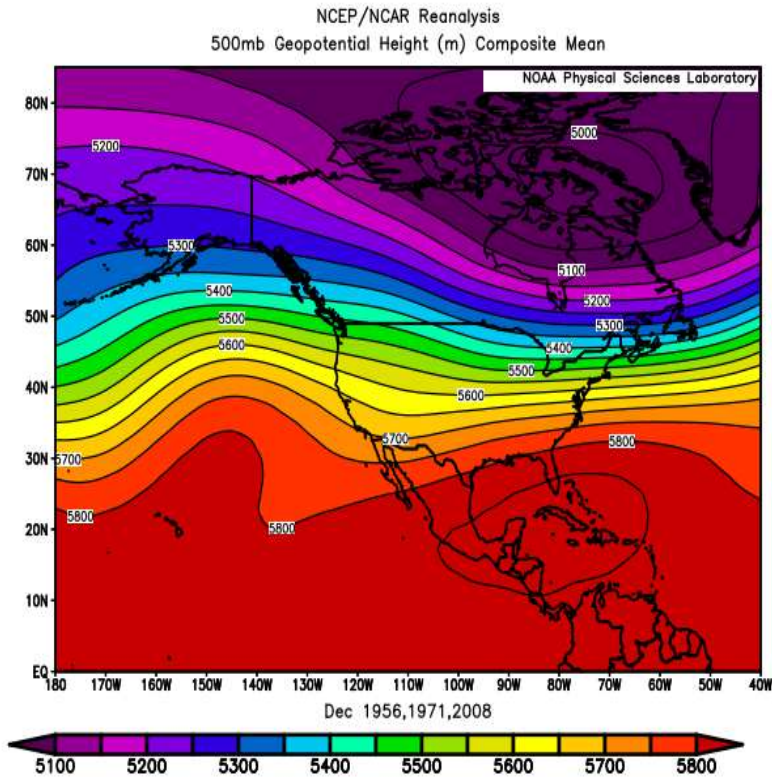


- Anomalous upper-level ridging in both 1956 and 2008 caused temperature inversions, while 1971 had more “average” conditions.
- Analog blend favors above-average temperatures, especially at higher elevations, with below-average precipitation and mountain snowfall.

# December 2022 Forecast

## Mean Upper-Air Pattern

## Upper-Air Anomalies

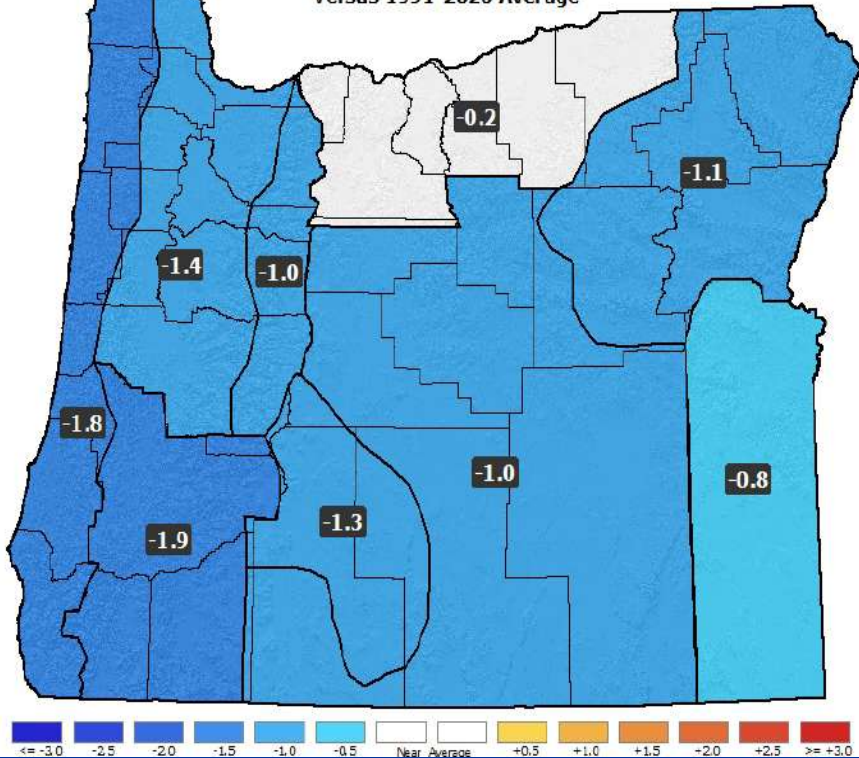


- Analogs all have strong anomalous ridging over the eastern Pacific Ocean but centered in different locations, which is significant...
- Their blend (above) shows anomalous troughing over Oregon, but the 1956 analog brought anomalous ridging to the state, after a cold start.

# December 2022 Forecast

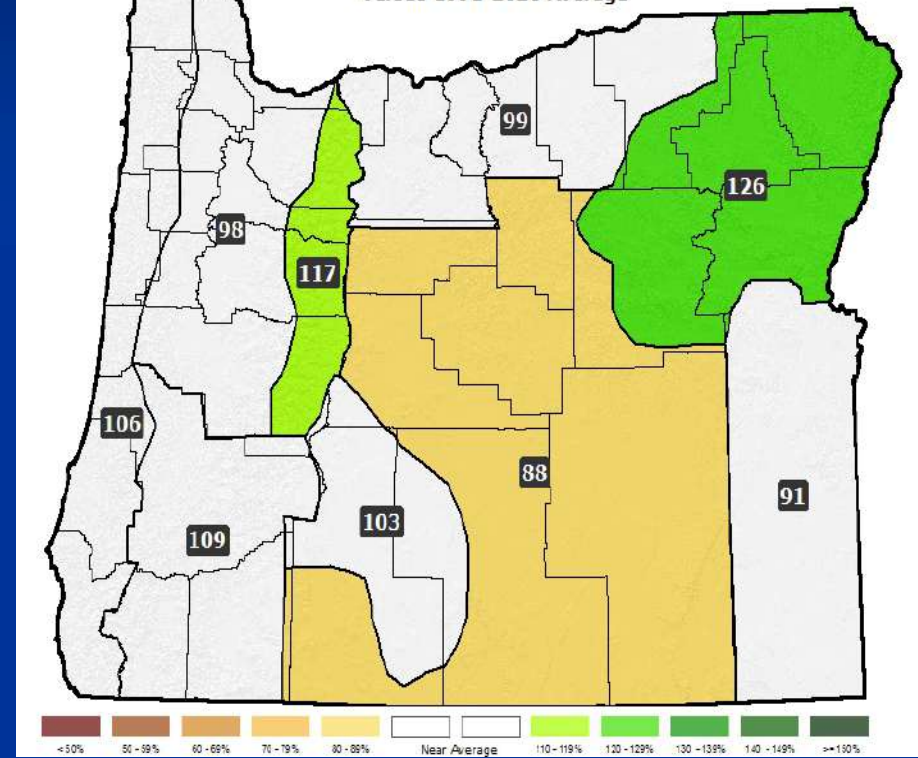
## Temperatures

December 2022 Forecast Temperature Anomalies (°F)  
Based on 1956, 1971, 2008 Analog Years  
Versus 1991-2020 Average



## Precipitation

December 2022 Forecast Precipitation Anomalies (% of Avg)  
Based on 1956; 1971; 2008 Analog Years  
Versus 1991-2020 Average



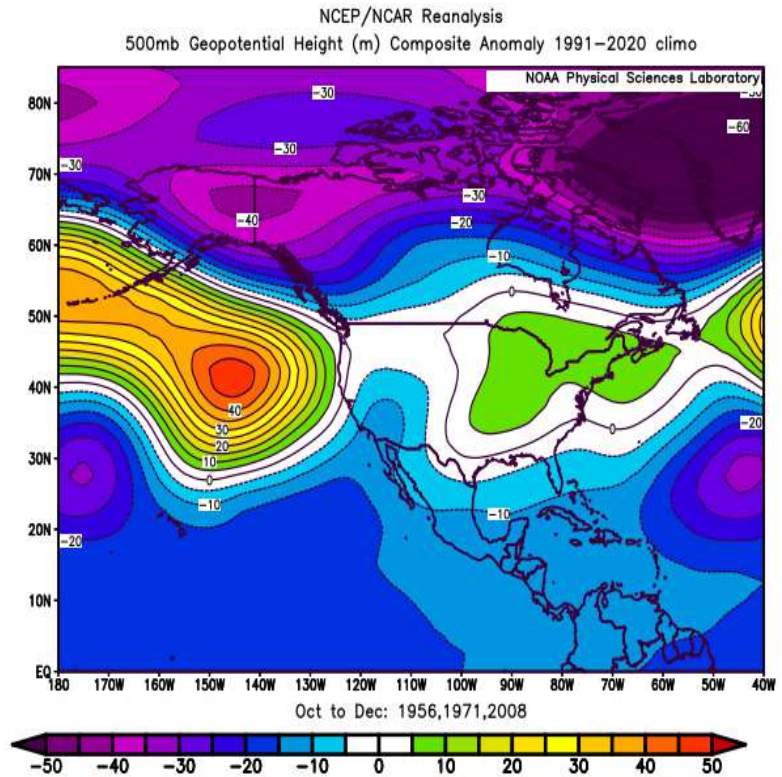
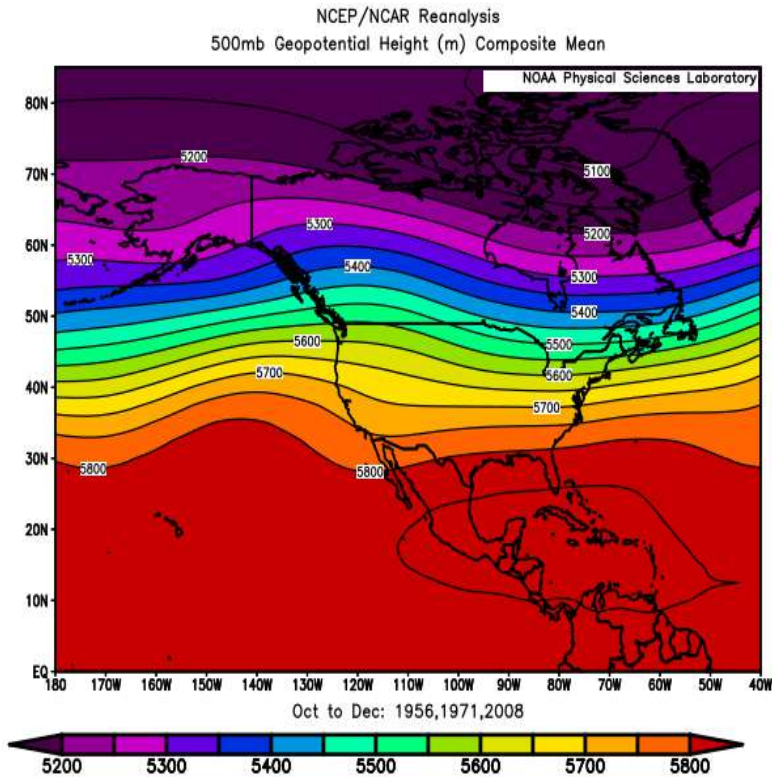
- Analogs all had some cold weather early-to-mid month with some snow even making it into the western valleys.
- While 1971 and 2008 maintained the cold/stormy pattern with coastal rain/wind, ample mountain snow, & some valley snow, 1956 was drier.



# Oct. – Dec. 2022 Forecast

## Mean Upper-Air Pattern

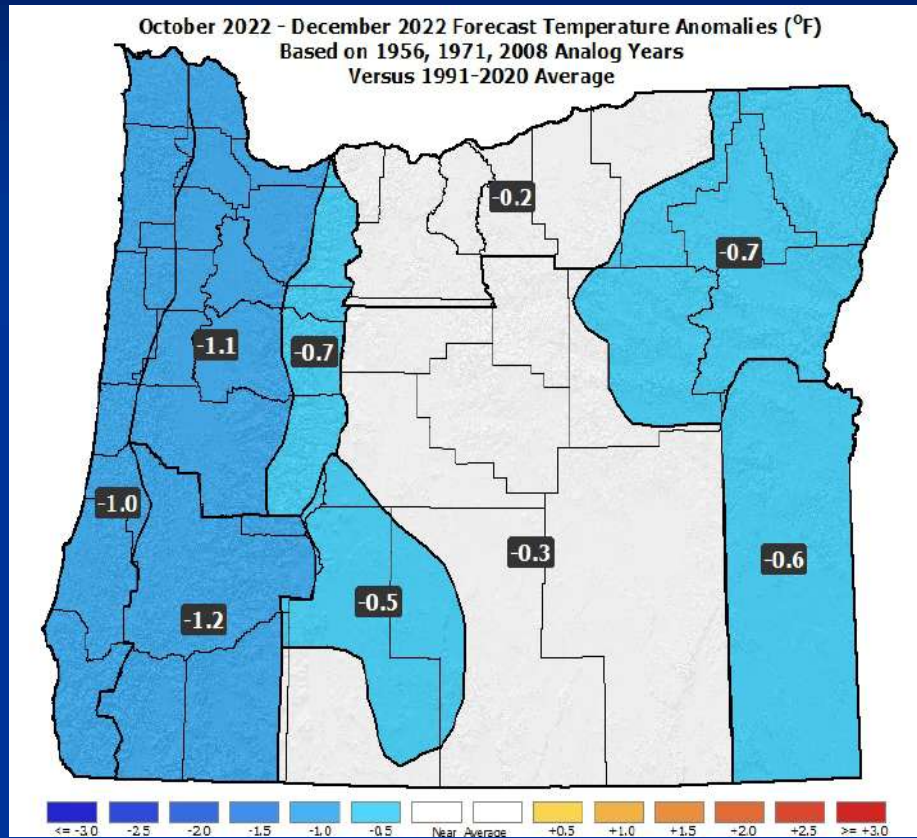
## Upper-Air Anomalies



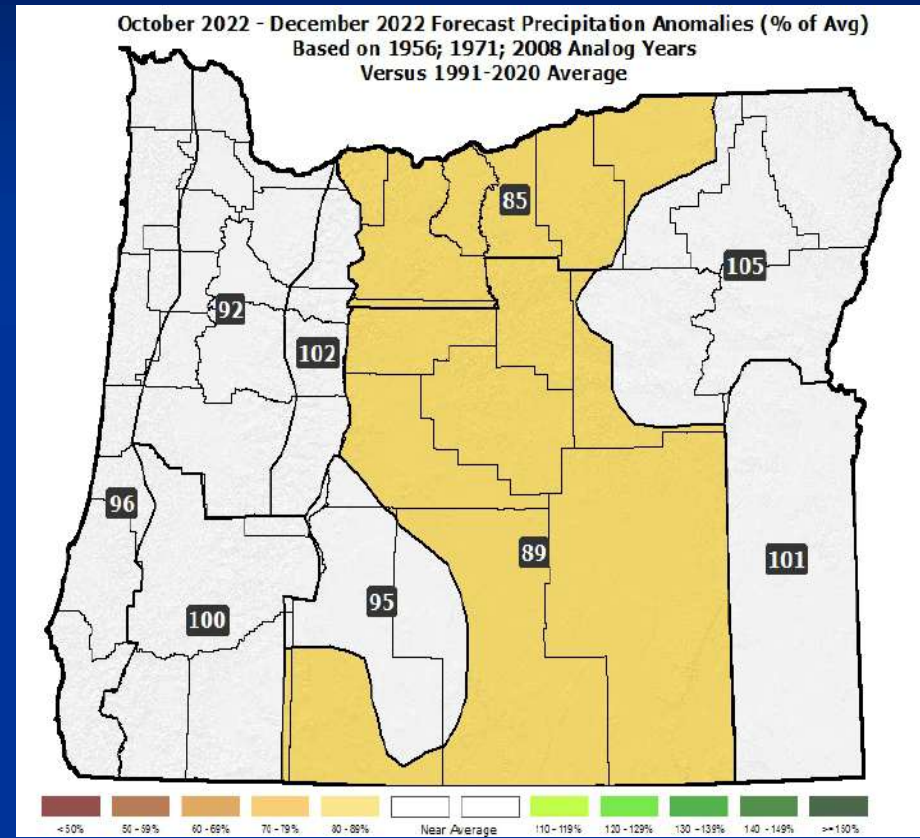
- Analogs show considerable variation with high-amplitude flows. That is typical of La Niña, but pinpointing anomaly centers is problematic.
- Anomalous ridging is expected over the eastern Pacific Ocean with downstream troughing over Oregon, mainly in October and December.

# Oct. – Dec. 2022 Forecast

## Temperatures



## Precipitation



- Significant month-to-month variation in temperature anomalies is likely, with a slight overall weight towards cooler than normal.
- Monthly swings in precipitation are also likely, but they may balance out over the 3-month period.

# Forecast Highlights

- *La Niña* conditions are expected to continue through this coming winter, which typically results in some highly anomalous weather, but “swings” in opposite directions can balance out over a 3-month period. Weather patterns from 1956, 1971, & 2008 were used to generate this forecast (same years that were used last month).
- Temperatures should have significant month-to-month swings with the 3-month period likely ending up a little cooler than average. November has the best chances for relatively mild conditions.
- Precipitation should be near average but may exhibit significant month-to-month variation. Even “average” precipitation would bring some improvement to drought-affected areas (see next slide).

*Disclaimer: This forecast is not associated with NOAA's CPC (see “Forecasting Methods...” at: <https://oda.direct/Weather>) nor the official CPC “Three-Month Outlooks,” which are available here: [https://www.cpc.ncep.noaa.gov/products/predictions/long\\_range/seasonal.php?lead=1](https://www.cpc.ncep.noaa.gov/products/predictions/long_range/seasonal.php?lead=1)*

# U.S. Drought Monitor

## National Drought Mitigation Center (NDMC)

[Home](#) > Oregon

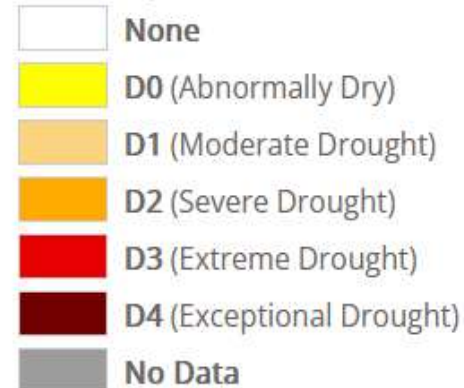
### Oregon

<https://droughtmonitor.unl.edu/>

Map released: Thurs. September 15, 2022

Data valid: September 13, 2022 at 8 a.m. EDT

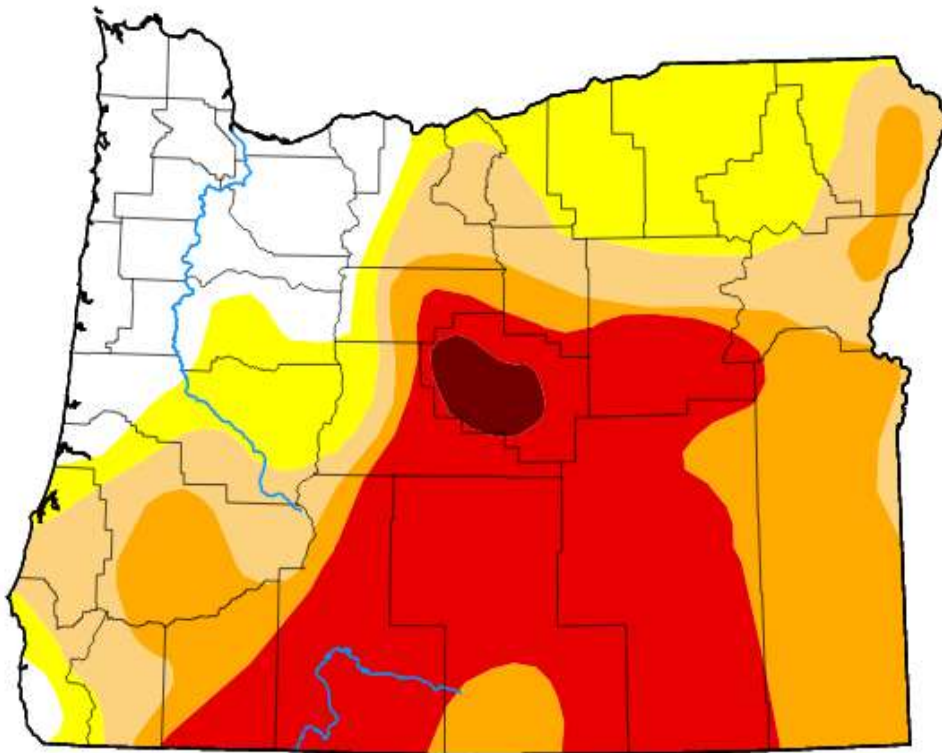
#### Intensity



#### Authors

United States and Puerto Rico Author(s):

**David Simeral**, Western Regional Climate Center



# Forecast Resources

- ODA Seasonal Climate Forecast Home:

<https://www.oregon.gov/ODA/programs/NaturalResources/Pages/Weather.aspx>

- CPC Official US Three-Month Forecasts (Graphics):

[https://www.cpc.ncep.noaa.gov/products/predictions/long\\_range/seasonal.php?lead=01](https://www.cpc.ncep.noaa.gov/products/predictions/long_range/seasonal.php?lead=01)

- CPC US 30-Day & 90-Day Forecasts (Discussions):

[https://www.cpc.ncep.noaa.gov/products/predictions/long\\_range/fxus07.html](https://www.cpc.ncep.noaa.gov/products/predictions/long_range/fxus07.html)

- CPC Weekly & Monthly ENSO Discussions:

[https://www.cpc.ncep.noaa.gov/products/analysis\\_monitoring/enso\\_advisory](https://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory)

- Australian Government Climate Model Summary:

<http://www.bom.gov.au/climate/model-summary/#region=NINO34&tabs=Overview>

- Australian Government ENSO Wrap-Up:

<http://www.bom.gov.au/climate/enso>

- IRI ENSO Quick Look:

<https://iri.columbia.edu/our-expertise/climate/forecasts/enso/current/>

# Water Supply / Fire-Potential Outlook

- CPC U.S. Seasonal Drought Outlook:

[https://www.cpc.ncep.noaa.gov/products/expert\\_assessment/season\\_drought.png](https://www.cpc.ncep.noaa.gov/products/expert_assessment/season_drought.png)

- NRCS Snow Water Equivalent Oregon Map:

[https://www.wcc.nrcs.usda.gov/ftpref/data/water/wcs/gis/maps/or\\_swepctnormal\\_update.pdf](https://www.wcc.nrcs.usda.gov/ftpref/data/water/wcs/gis/maps/or_swepctnormal_update.pdf)

- NRCS/USDA Snow Water Equivalent Products:

<https://www.nrcs.usda.gov/wps/portal/wcc/home/snowClimateMonitoring/snowpack/>

- NDMC U.S. Drought Monitor:

<https://droughtmonitor.unl.edu/>

- NIDIS North American Drought Portal:

<https://www.drought.gov/nadm/content/percent-average-precipitation>

- WRCC WestWideDroughtTracker:

<https://www.wrcc.dri.edu/wwdt/>

- NWCC Northwest Interagency Coordination Center (video)

<https://gacc.nifc.gov/nwcc/predict/outlook.aspx>



# Updated Monthly

## Your Feedback is Welcome!

Sign-up for Email Notification of Updates at:  
<https://oda.fyi/SubscribeSCF>

Contact: Pete Parsons, ODF Lead Meteorologist  
at 503-945-7448 or [peter.gj.parsons@odf.oregon.gov](mailto:peter.gj.parsons@odf.oregon.gov)