Seasonal Climate Forecast
September – November 2024

Issued: August 15, 2024

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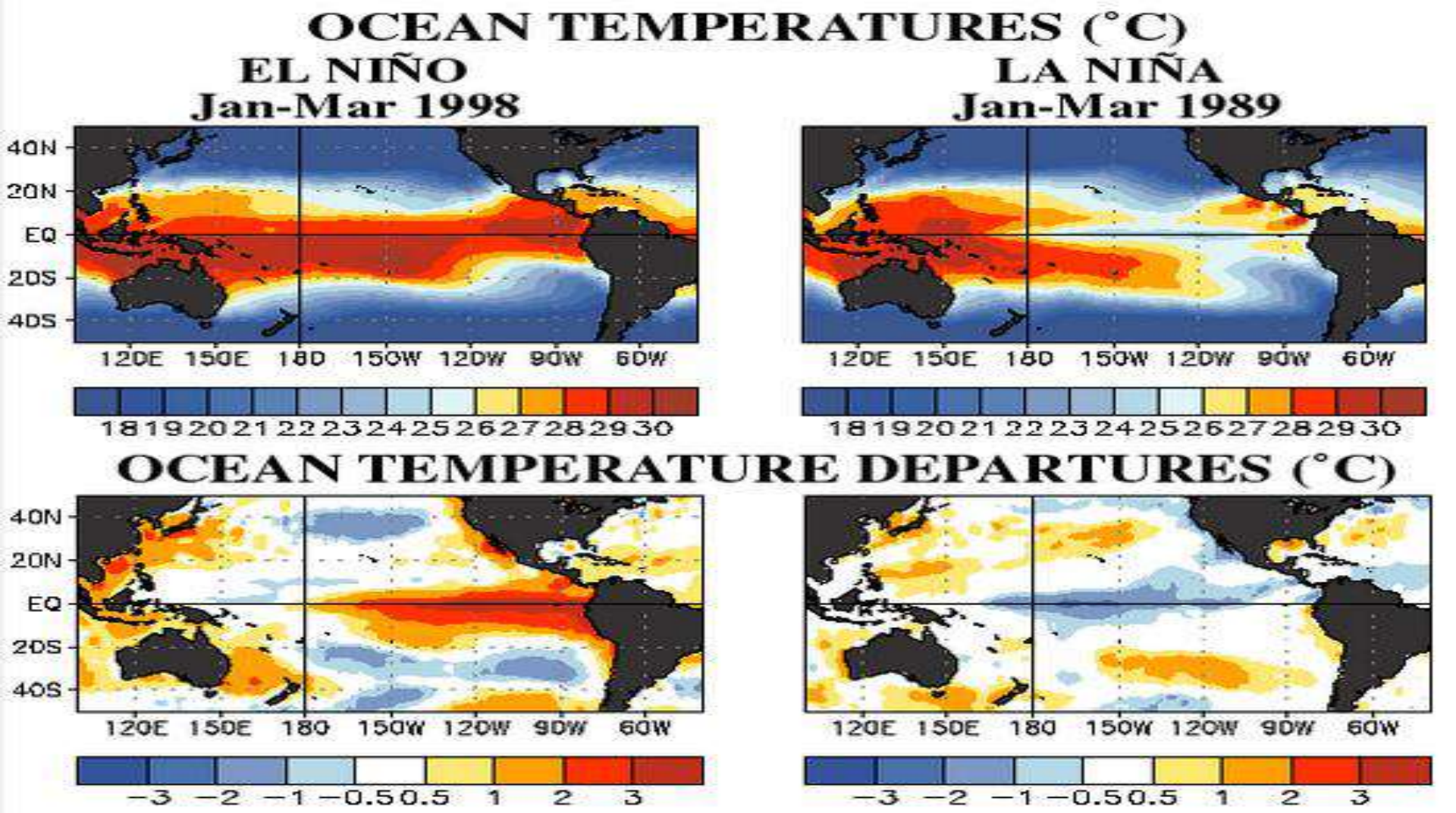
ODF Team: Julie Vondrachek; Kristin Cody

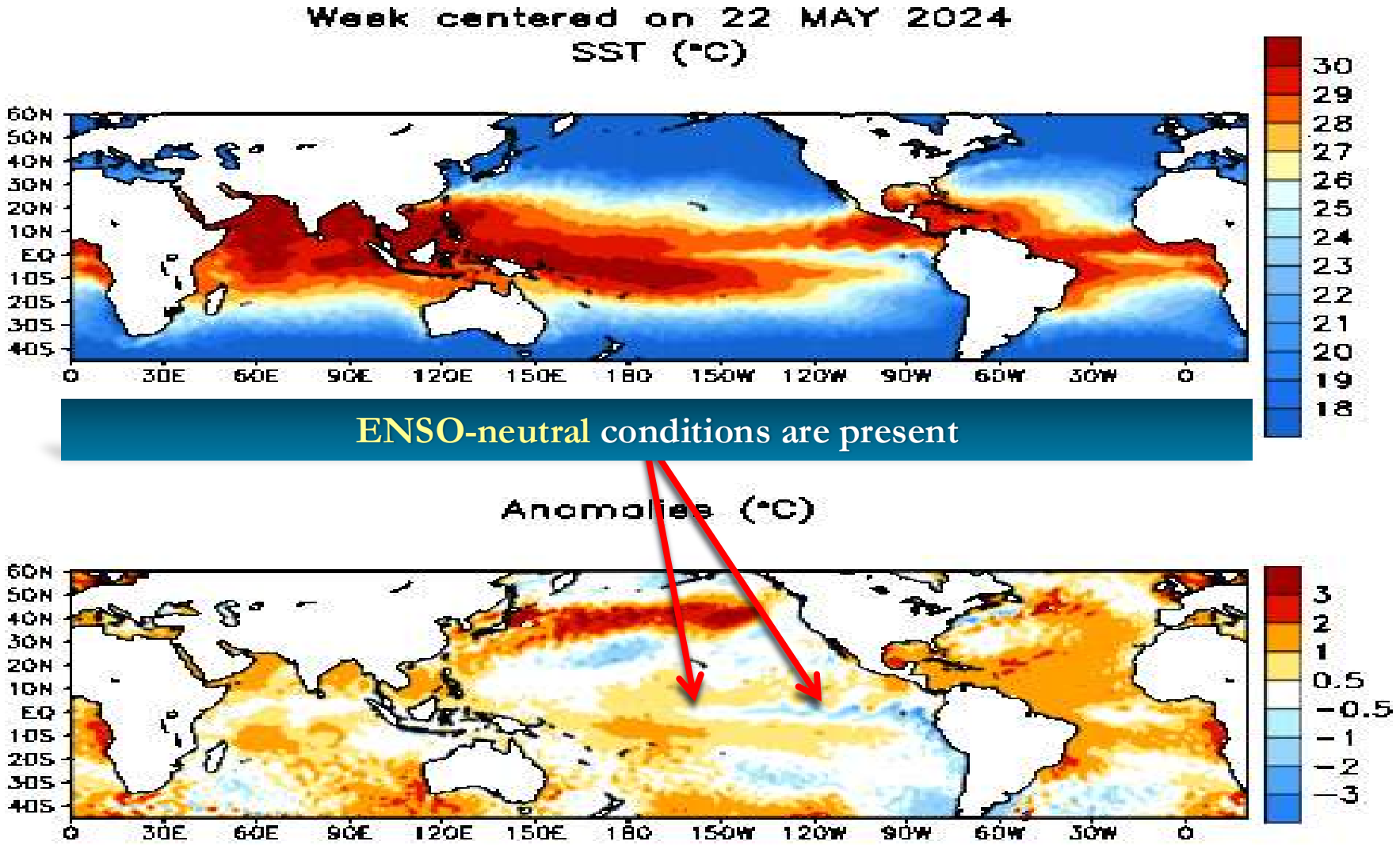
El Niño vs La Niña
(SST Patterns in the Tropical Pacific Ocean)



Courtesy: https://www.cpc.ncep.noaa.gov/products/analysis_monitoring/ensocycle/ensocycle.shtml

Sea Surface Temperatures (SSTs)

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



Courtesy: https://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_update/gsstanim.shtml

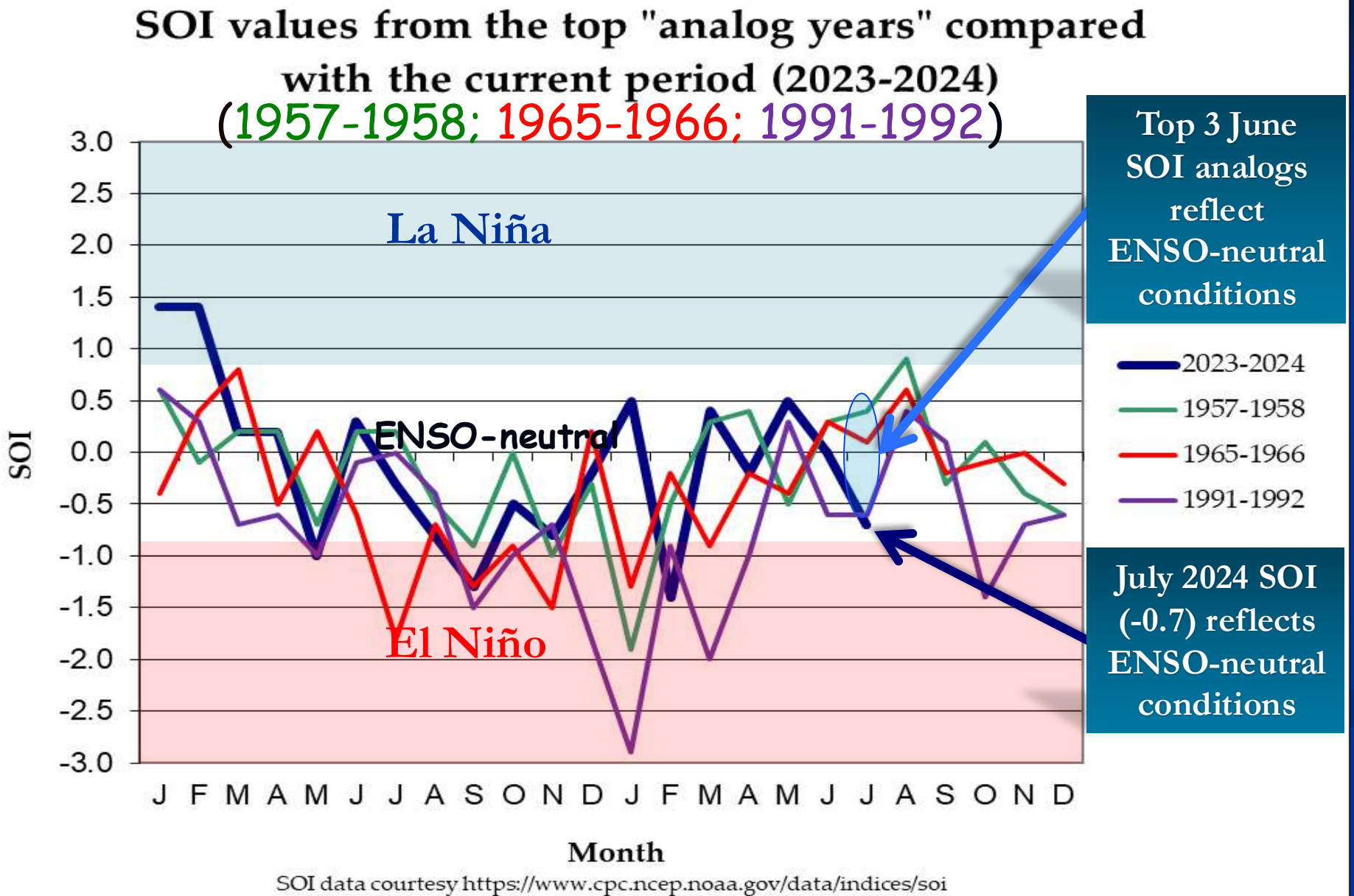
El Niño Southern Oscillation (ENSO) Current Status and Forecast

- The July Southern Oscillation Index (SOI) was -0.7, which reflected the recent transition to ENSO-neutral conditions.
- The May – July Oceanic Niño Index (ONI) fell to +0.2°C, which reflects cooling of central and eastern tropical Pacific Ocean sea surface temperatures "SSTs"…into the ENSO-neutral range.
- NOAA's Climate Prediction Center (CPC) predicts continued cooling of central and eastern tropical Pacific Ocean SSTs with a transition from ENSO-neutral to La Niña during the September – November period.

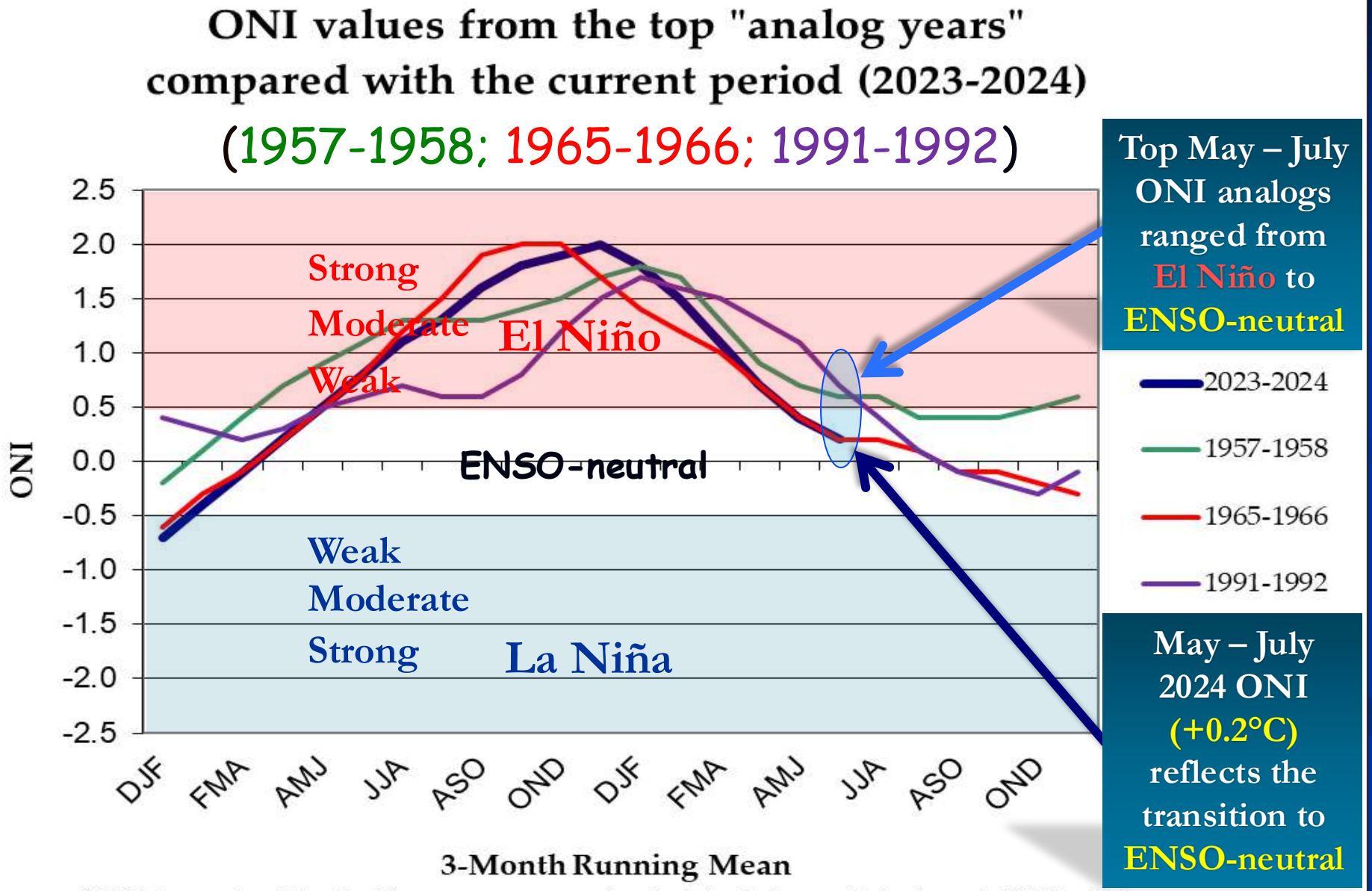
Note: This "analog" forecast does not consider NOAA's ENSO forecast. It uses only historical and current ENSO conditions to find "analog years" that most-closely match the recent evolution of the ENSO state.

https://www.cpc.ncep.noaa.gov/products/analysis_monitoring/lanina/enso_evolution-status-fcsts-web.pdf

Southern Oscillation Index (SOI)



Oceanic Niño Index (ONI)

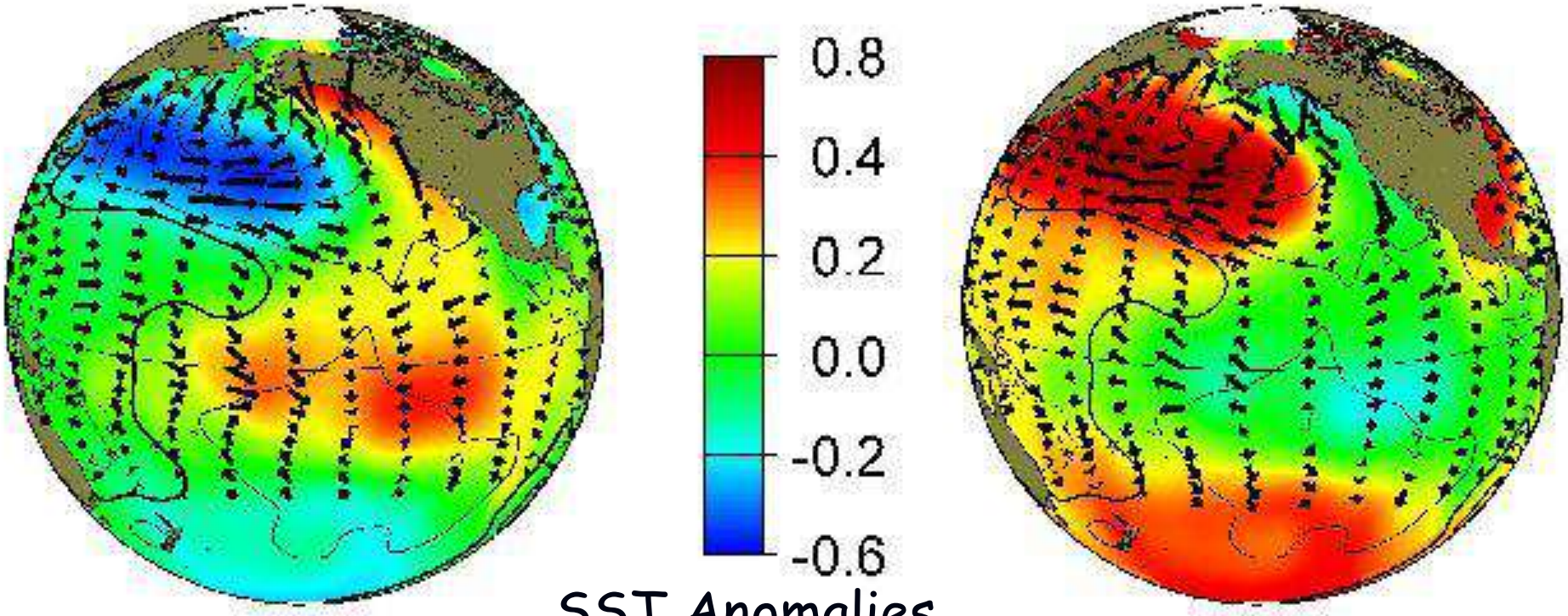


The Pacific Decadal Oscillation (PDO)

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

Positive (Warm) "Phase"

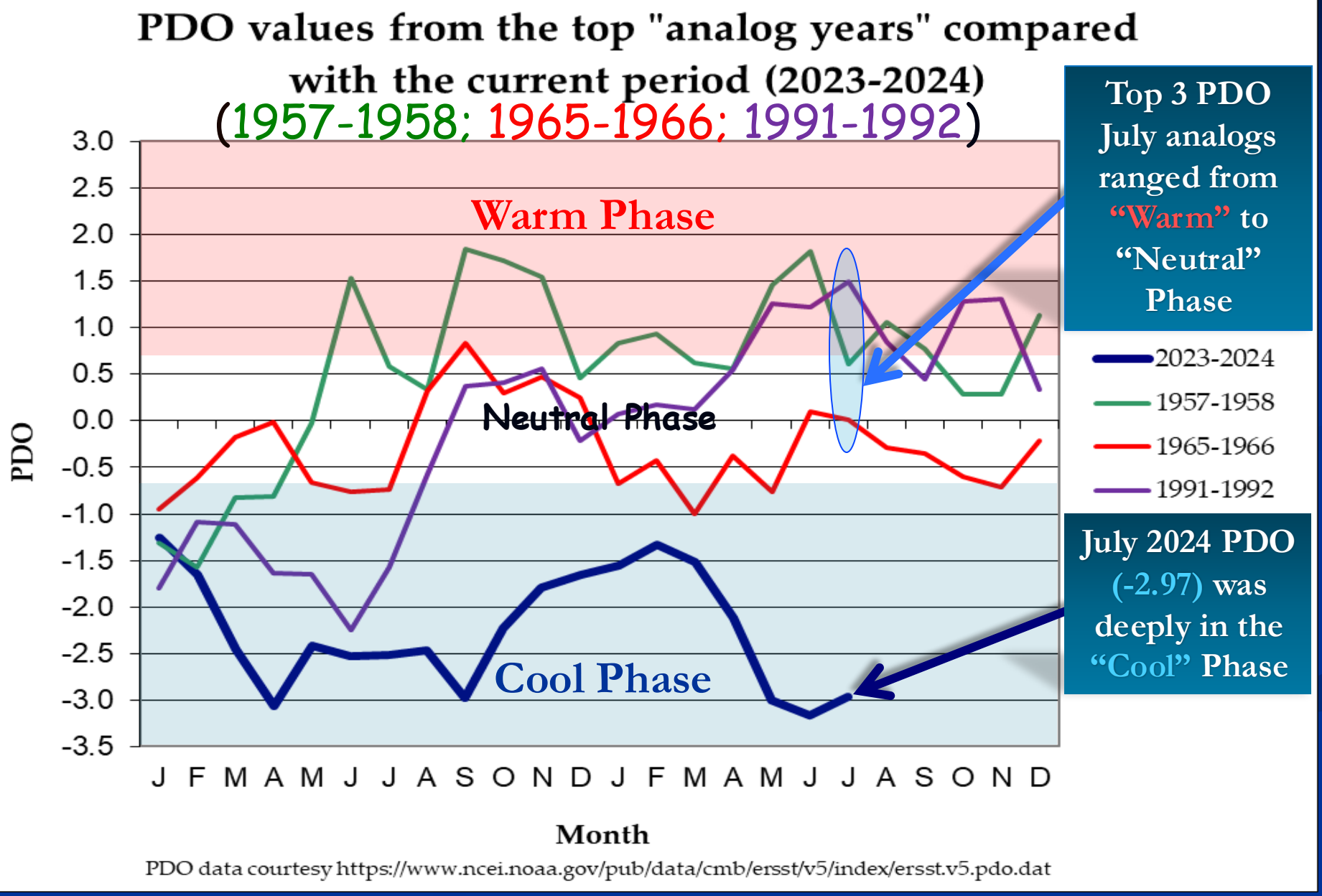
Negative (Cool) "Phase"



Courtesy: http://research.jisao.washington.edu/pdo/img/pdo_warm_cool.jpg

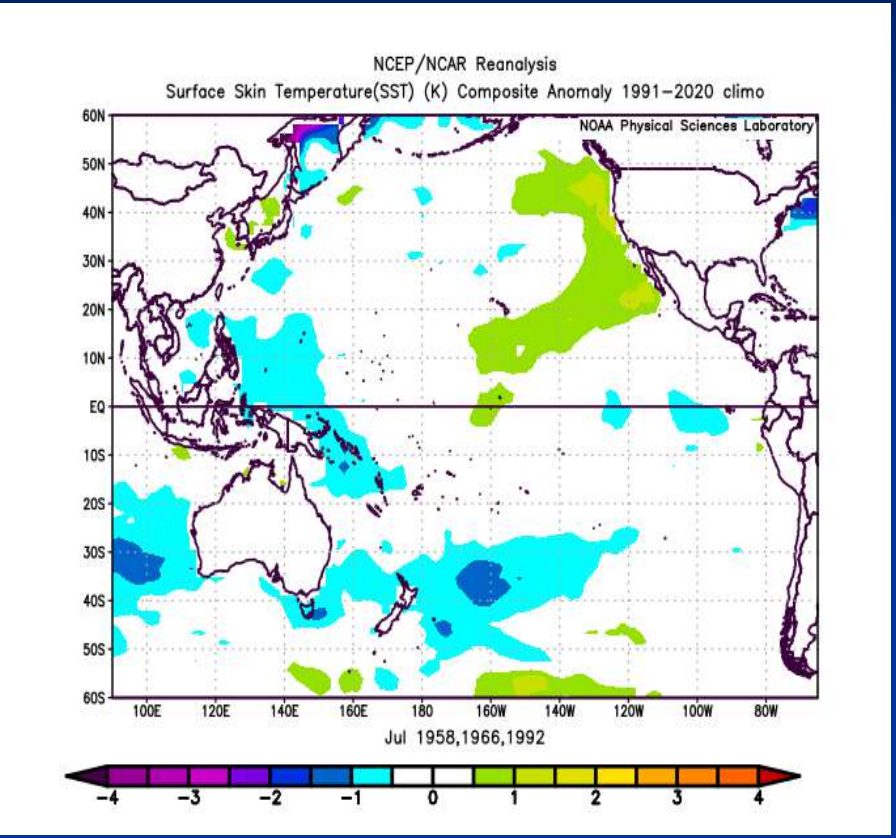
North Pacific Ocean

(Poleward of 20°N Latitude)

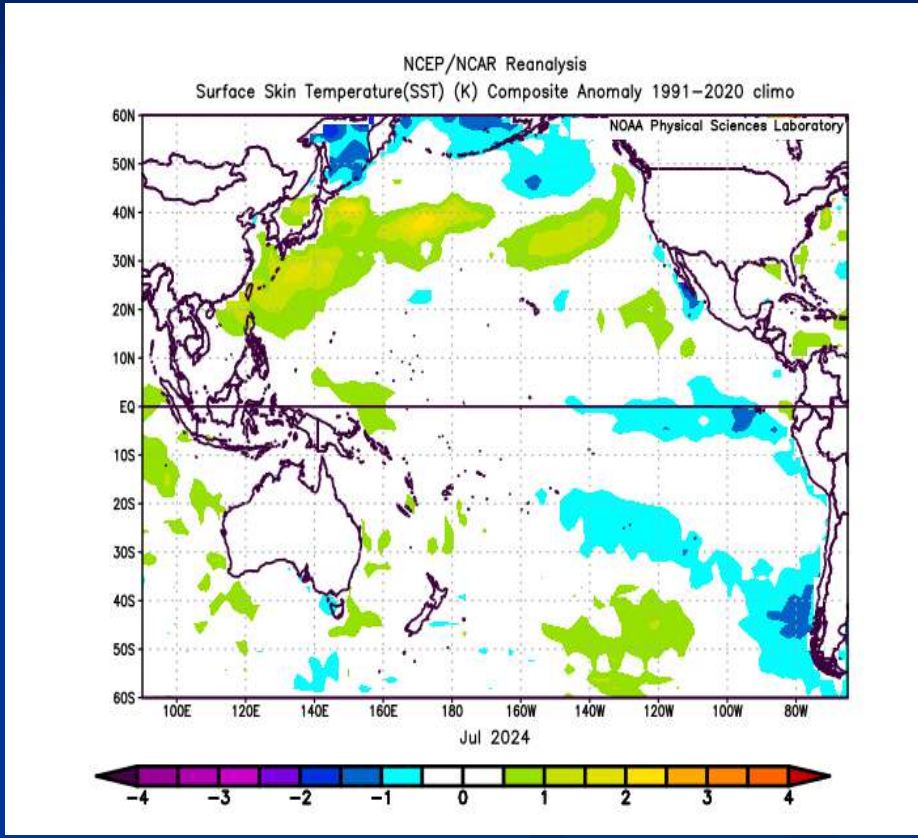


SST Anomalies Comparison

July Analogs

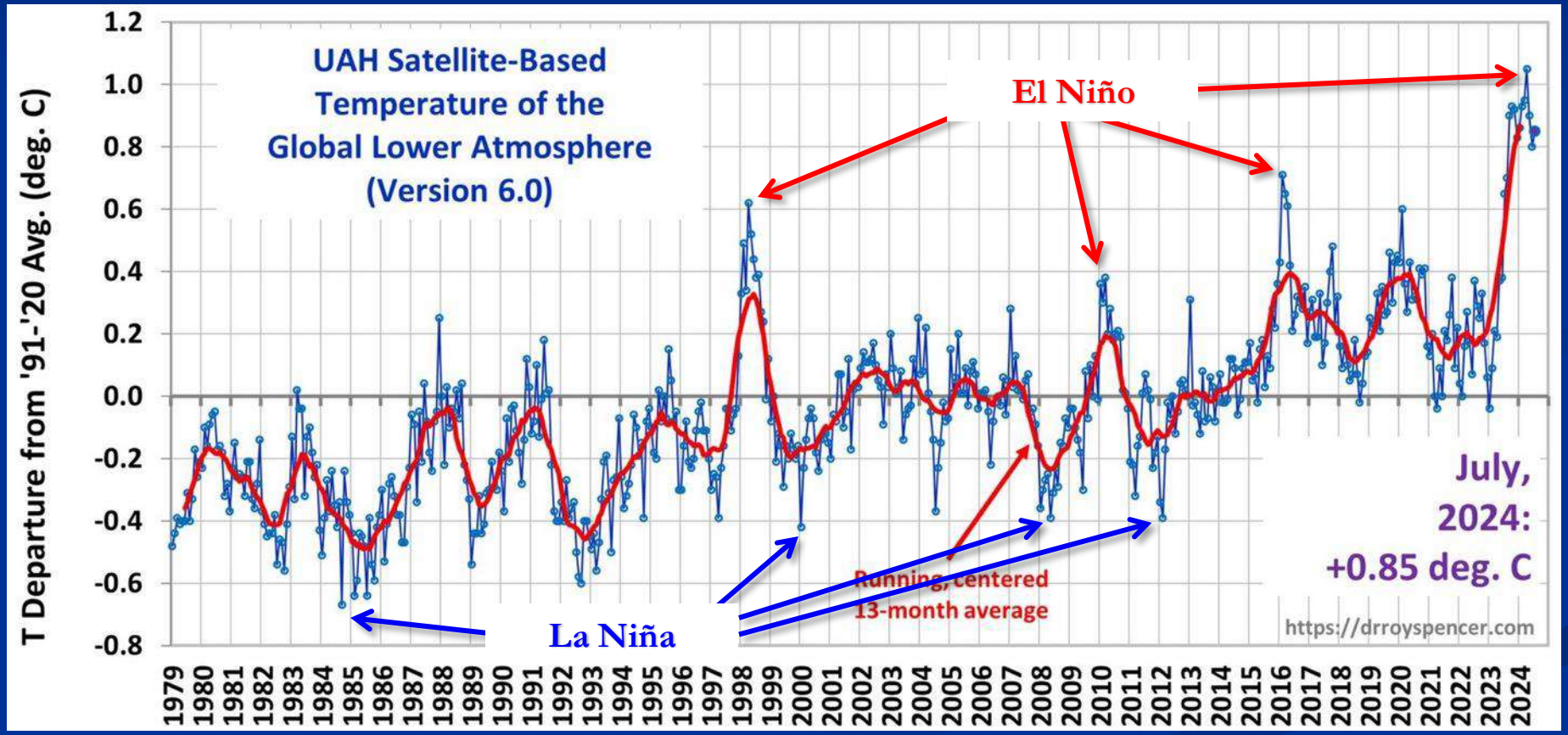


July 2024



- The SST anomalies of both the July analog composite (left) and July 2024 (right) reflected ENSO-neutral conditions.
- Both charts also show cooler-than-normal SSTs emerging along the eastern equatorial Pacific Ocean (possible transition towards La Niña).

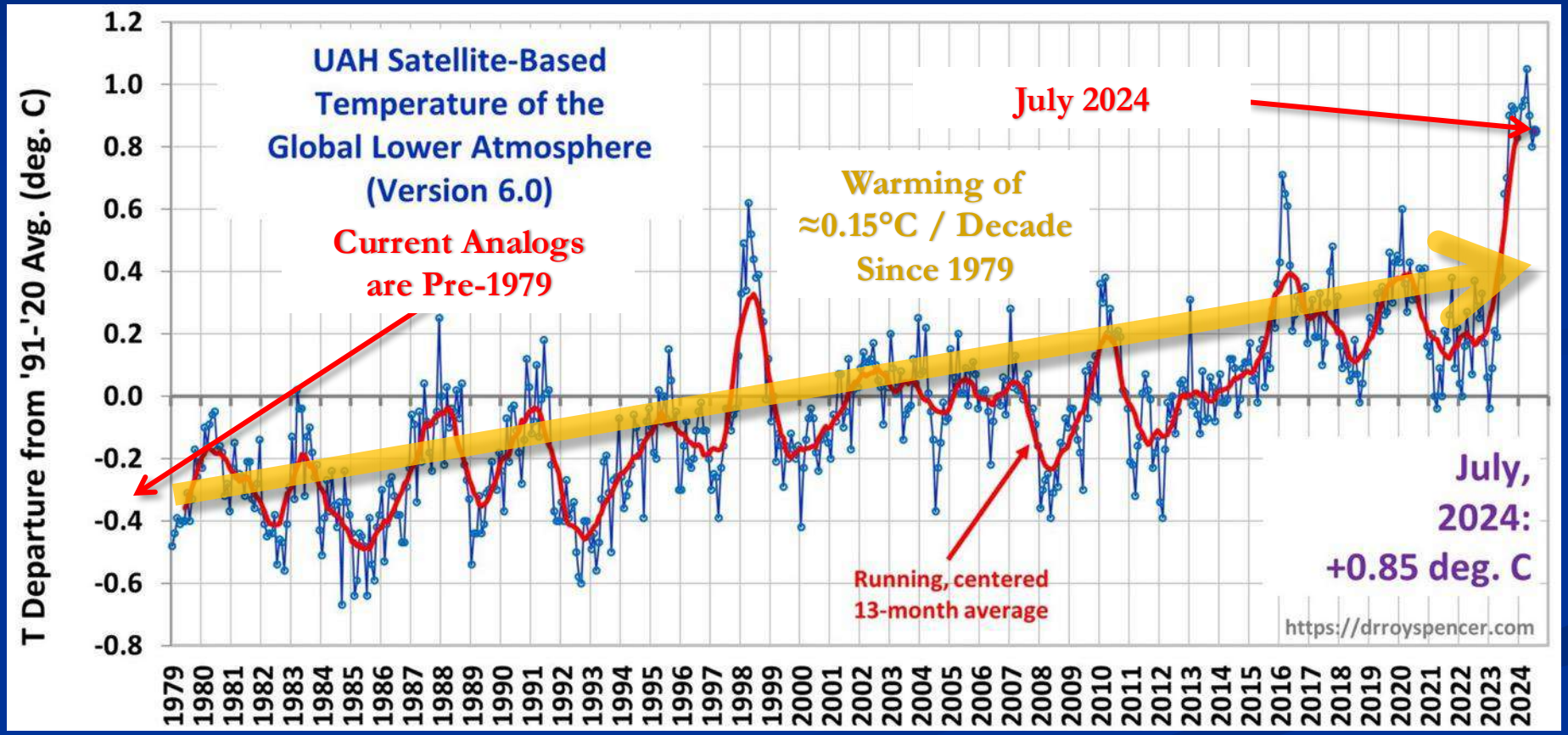
El Niño & La Niña Impact Global Temperatures…



Courtesy: http://www.drroyspencer.com/latest-global-temperatures/

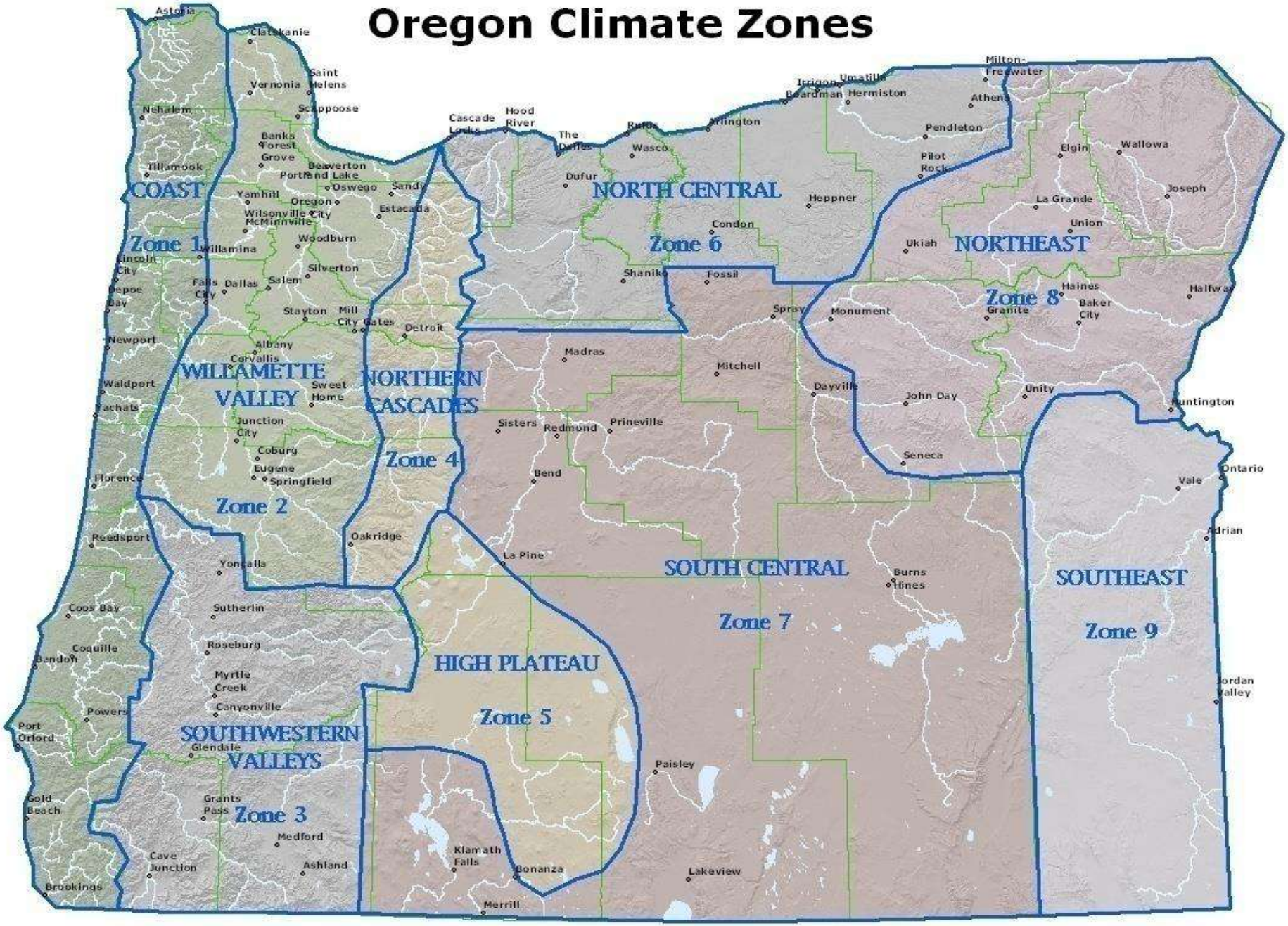
Global Temperature Trends

Increase Error in Analog Forecasts!



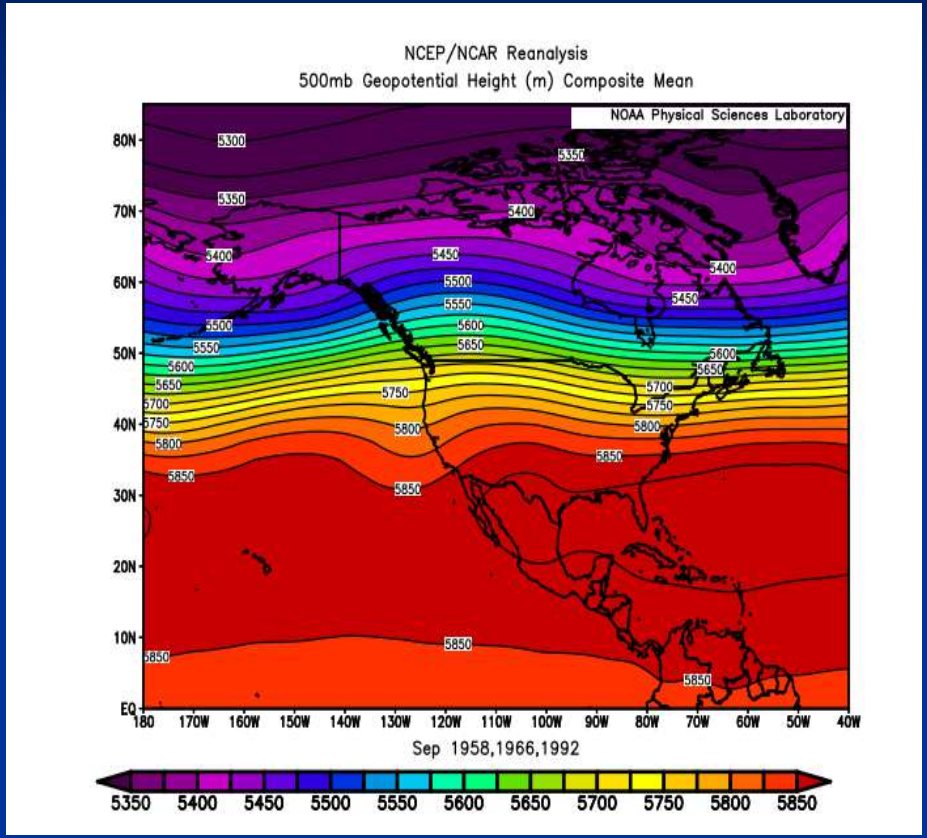
Courtesy: http://www.drroyspencer.com/latest-global-temperatures/

Oregon Climate Zones

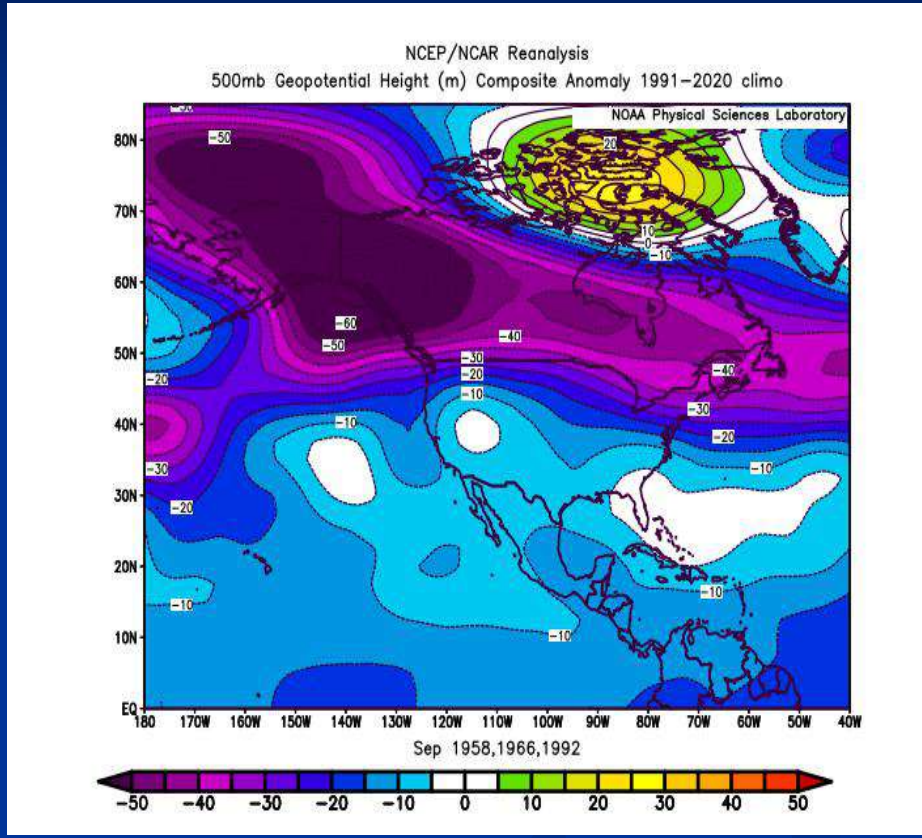


September 2024 Forecast

Mean Upper-Air Pattern



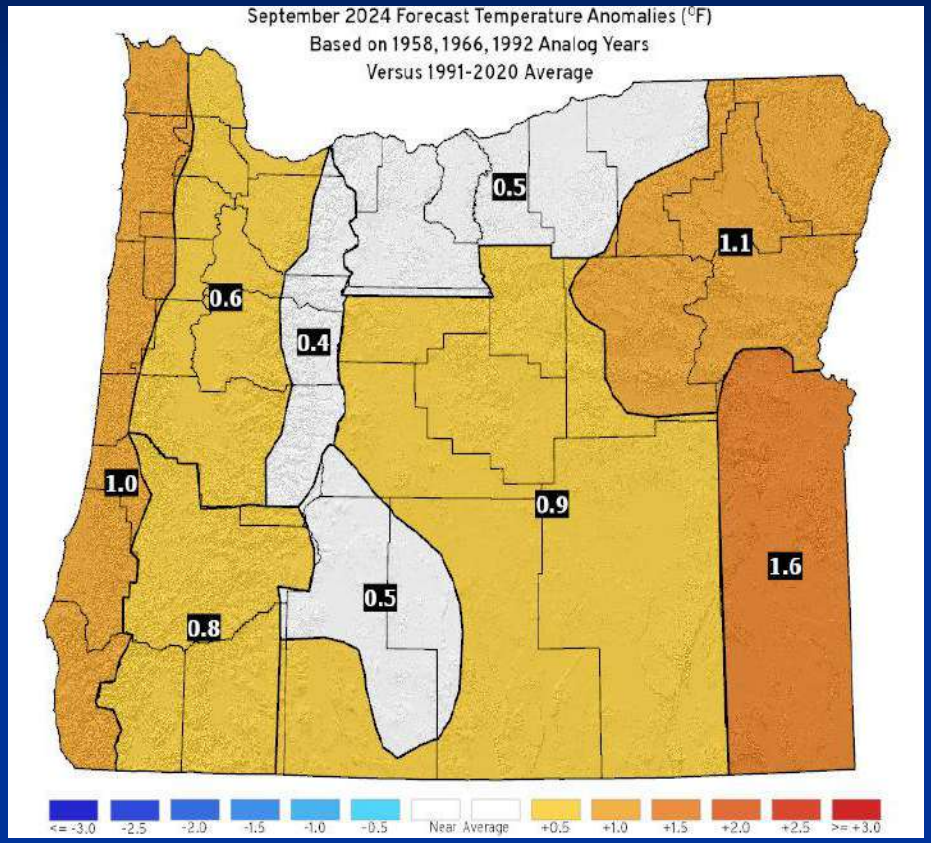
Upper-Air Anomalies



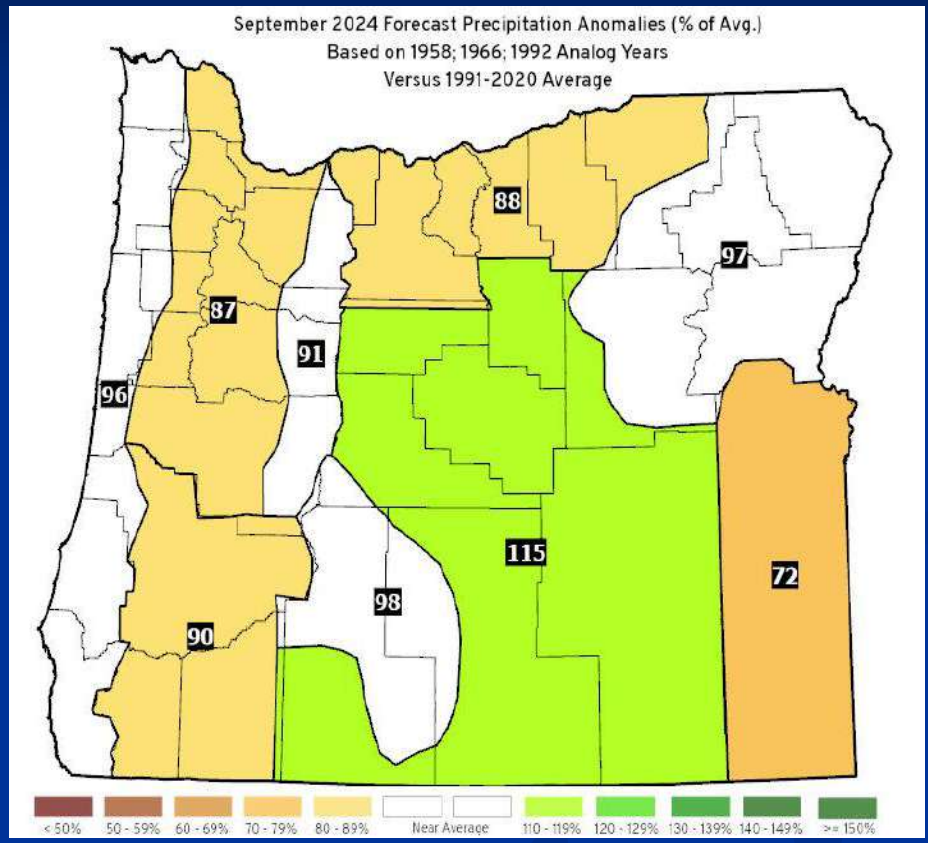
- Analogs were consistent with a general westerly flow aloft over Oregon (1966 had more of a prevailing SW flow aloft).
- This pattern favors average-to-warm temperatures with near or slightly below average rainfall.

September 2024 Forecast

Temperatures



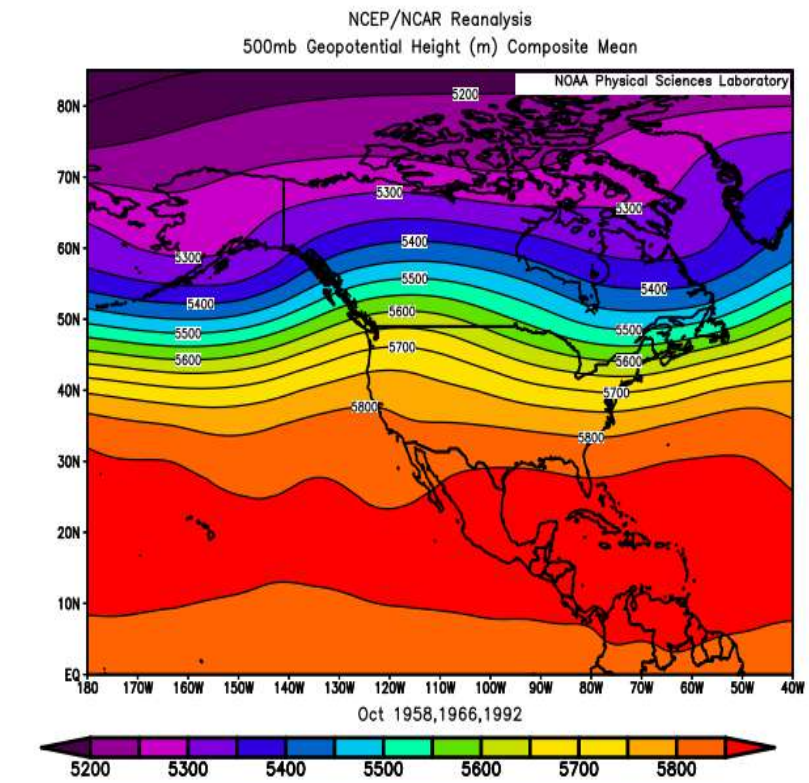
Precipitation



- Modestly above-average temperatures with some "very warm" days possible, especially in the first half of the month.
- Transition from relatively dry conditions to more-damp weather likely in the second half of the month with near-average rainfall.

October 2024 Forecast

Mean Upper-Air Pattern



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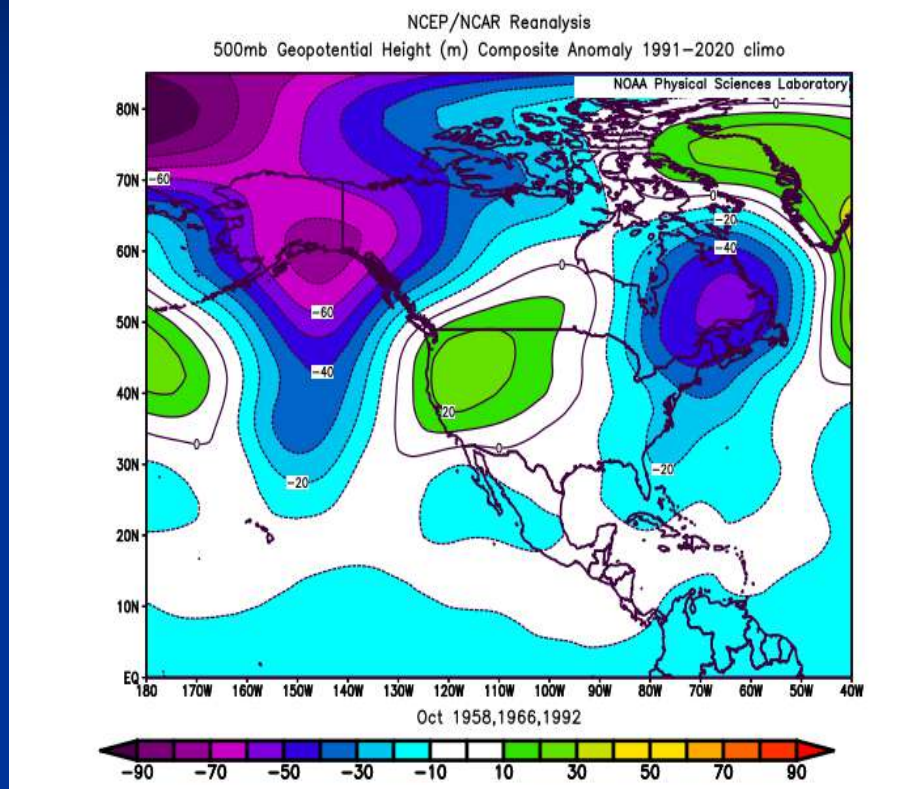
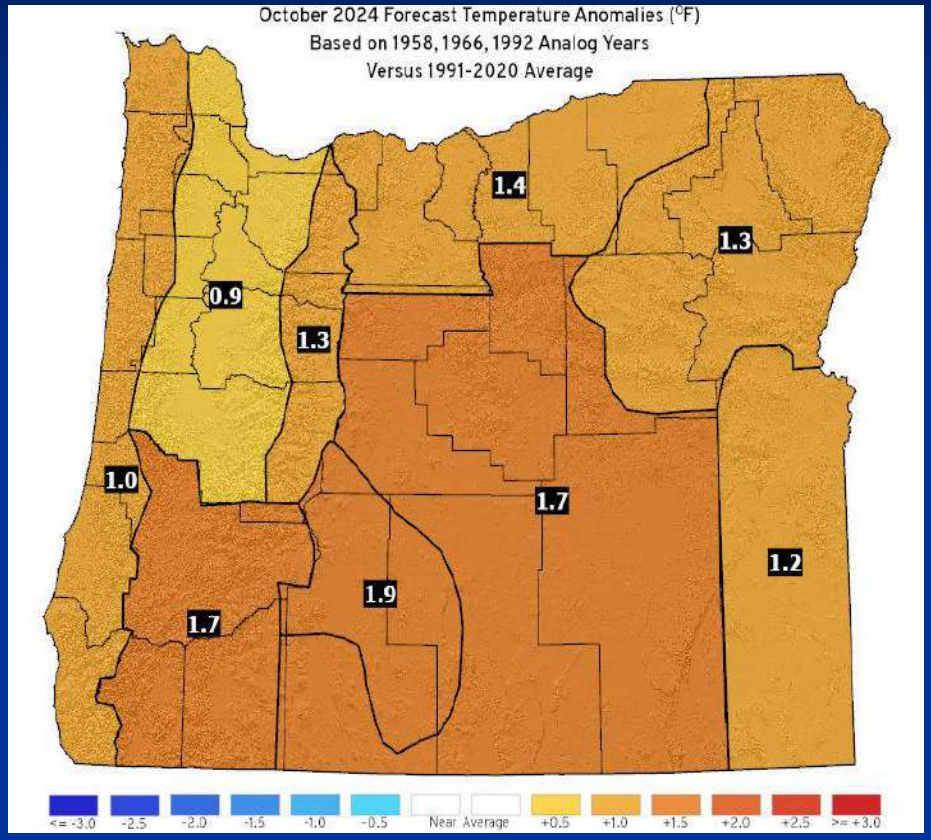


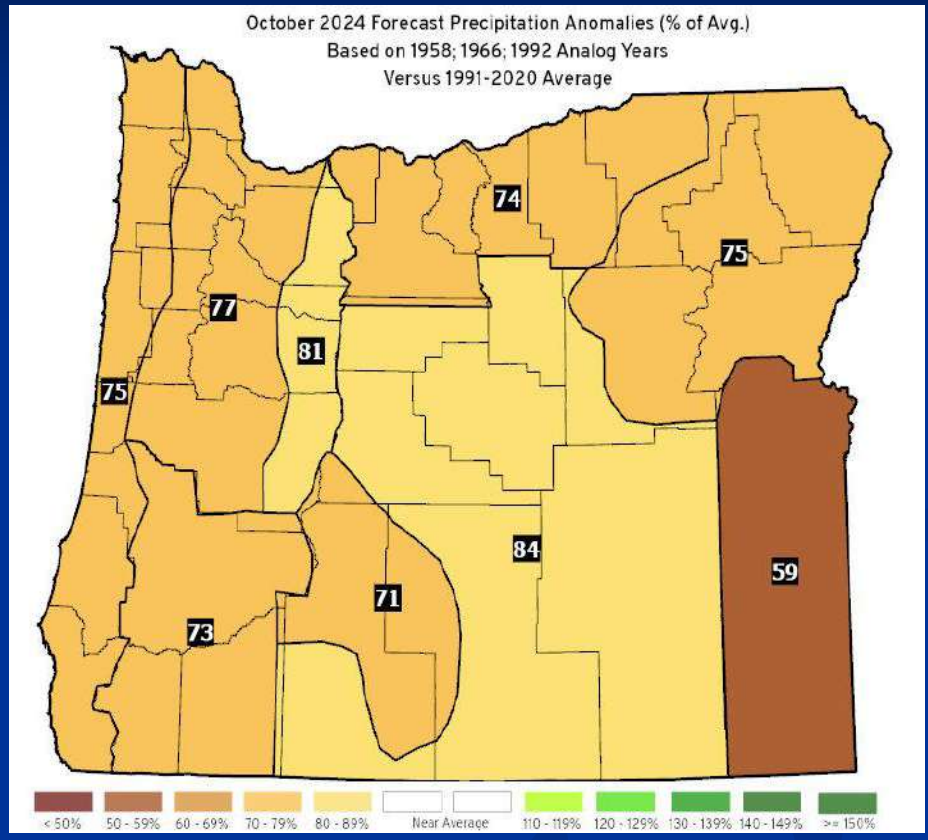
- Analogs had a mean ridge ranging from the west coast (1966) to the Rockies (1958). Their composite places the ridge axis over Idaho.
- Near or above-average upper-air ridging is favored.

October 2024 Forecast

Temperatures



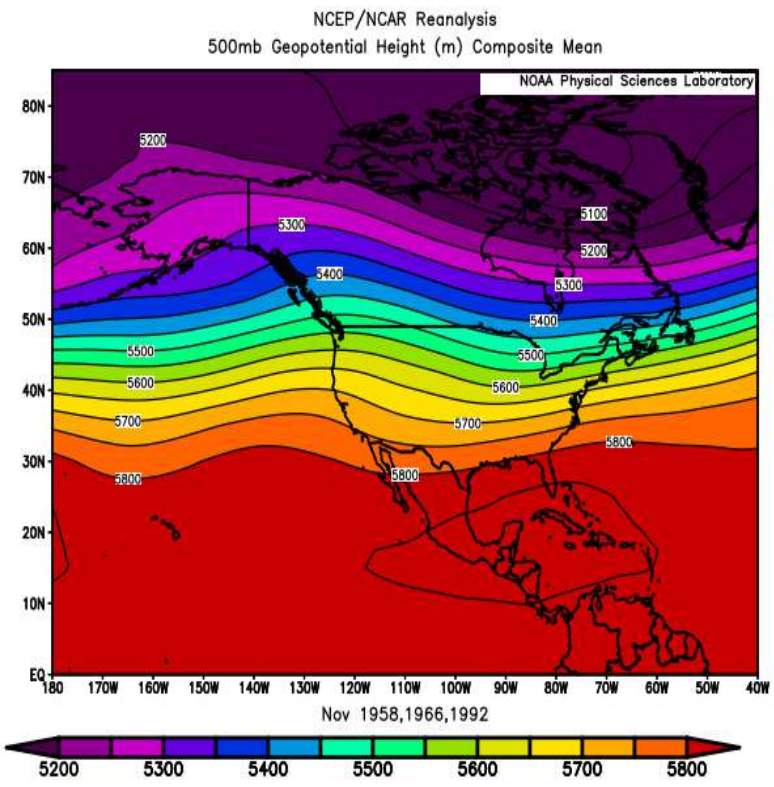
Precipitation



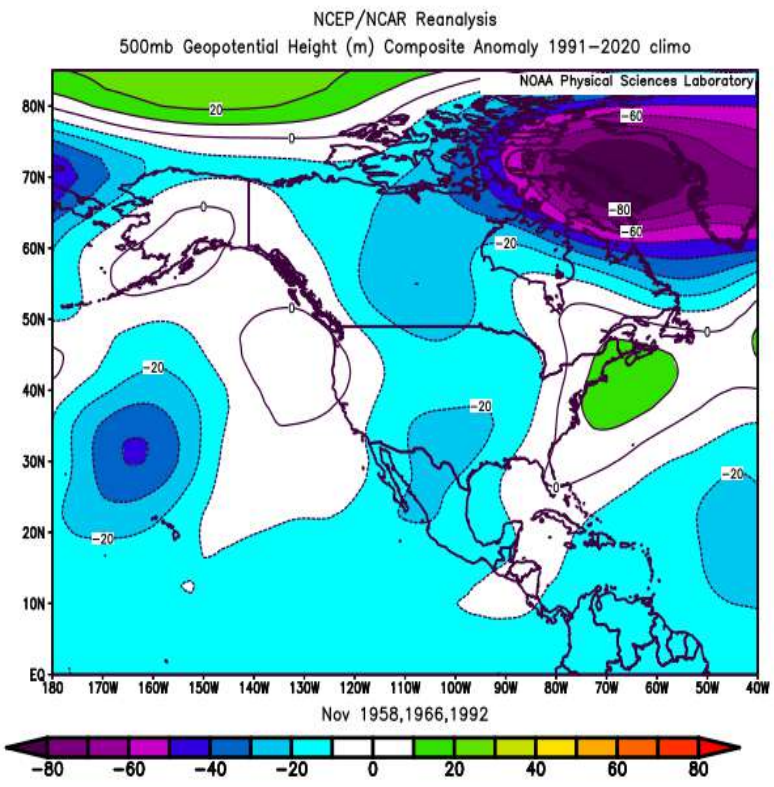
- Near or above-average temperatures. All three analog years had their warmest weather early (typical), but 1992 had warm periods all month.
- Precipitation near or below average.

November 2024 Forecast

Mean Upper-Air Pattern



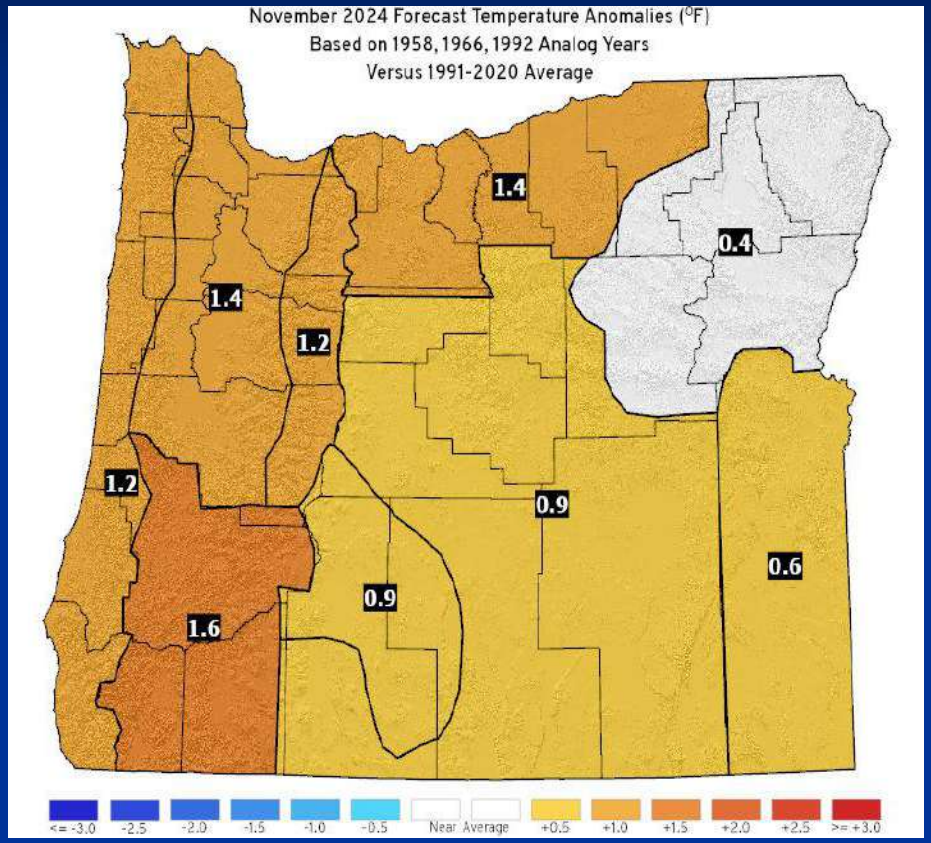
Upper-Air Anomalies



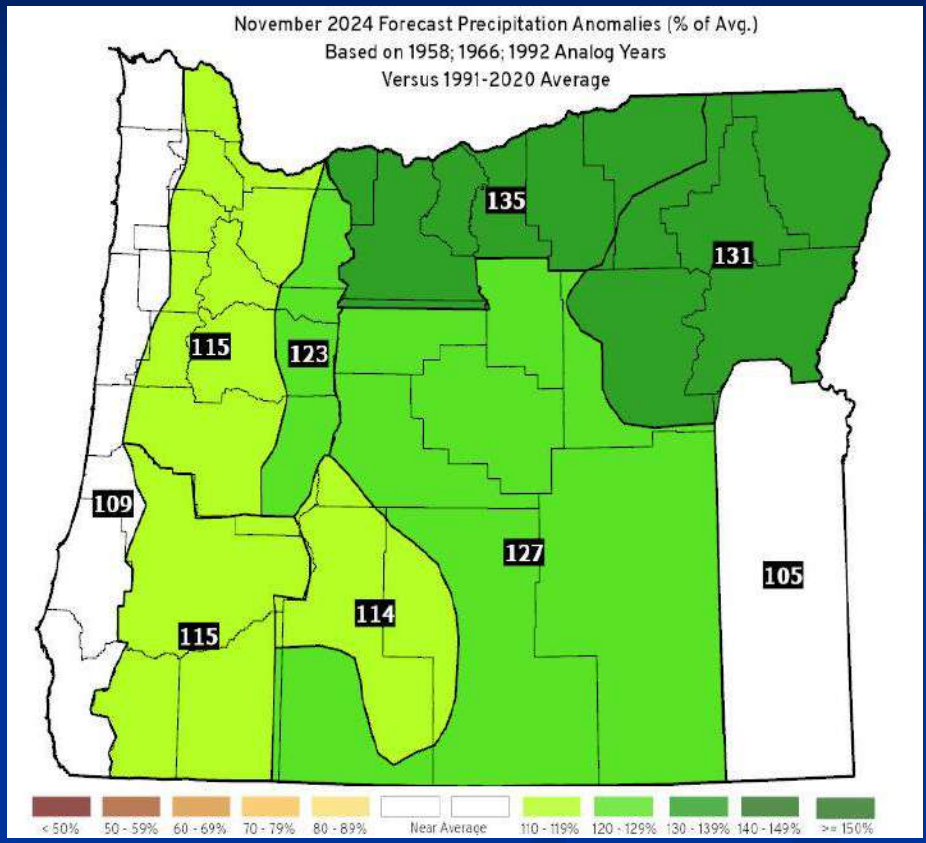
- Weak mean ridging centered along the Pacific NW Coast (typical).
- Prevailing westerly flow aloft should finally transition Oregon out of the "dry season." Analogs had snow levels dropping to the Cascade passes by mid-month.

November 2024 Forecast

Temperatures



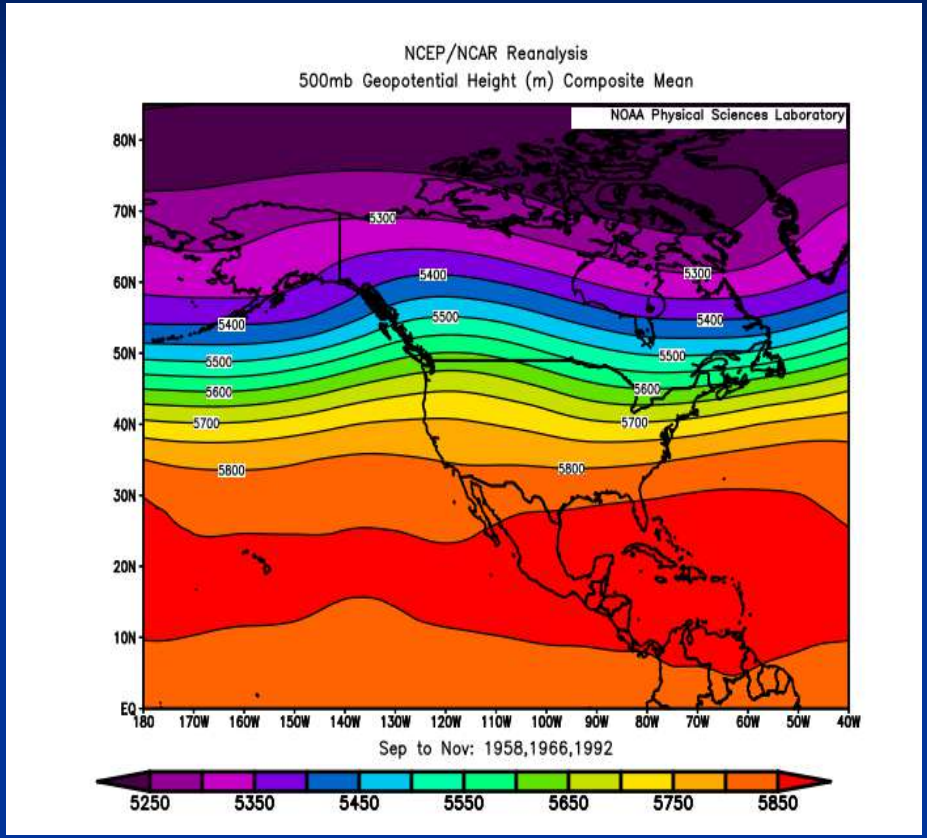
Precipitation



- Near to above-average temperatures. 1958 had a cold snap at mid-month with mountain snow and frost/flurries in the valleys.
- Precipitation likely most days, with a welcome transition to near or above average rainfall. Mountain snow beginning by mid-month.

September – November 2024 Forecast

Mean Upper-Air Pattern



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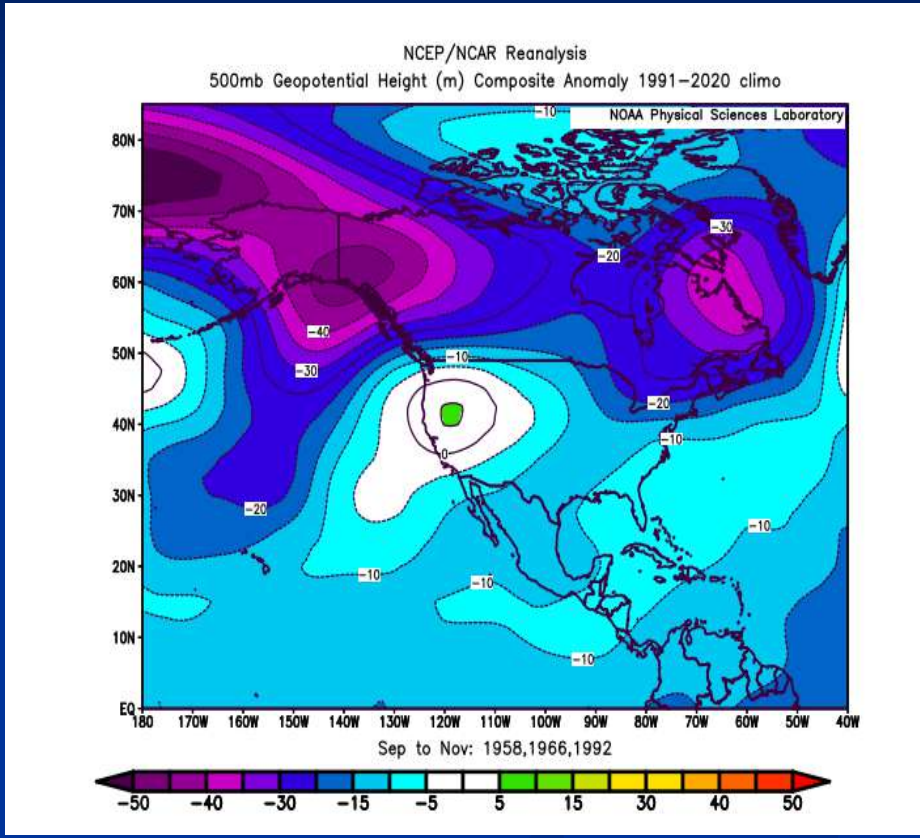
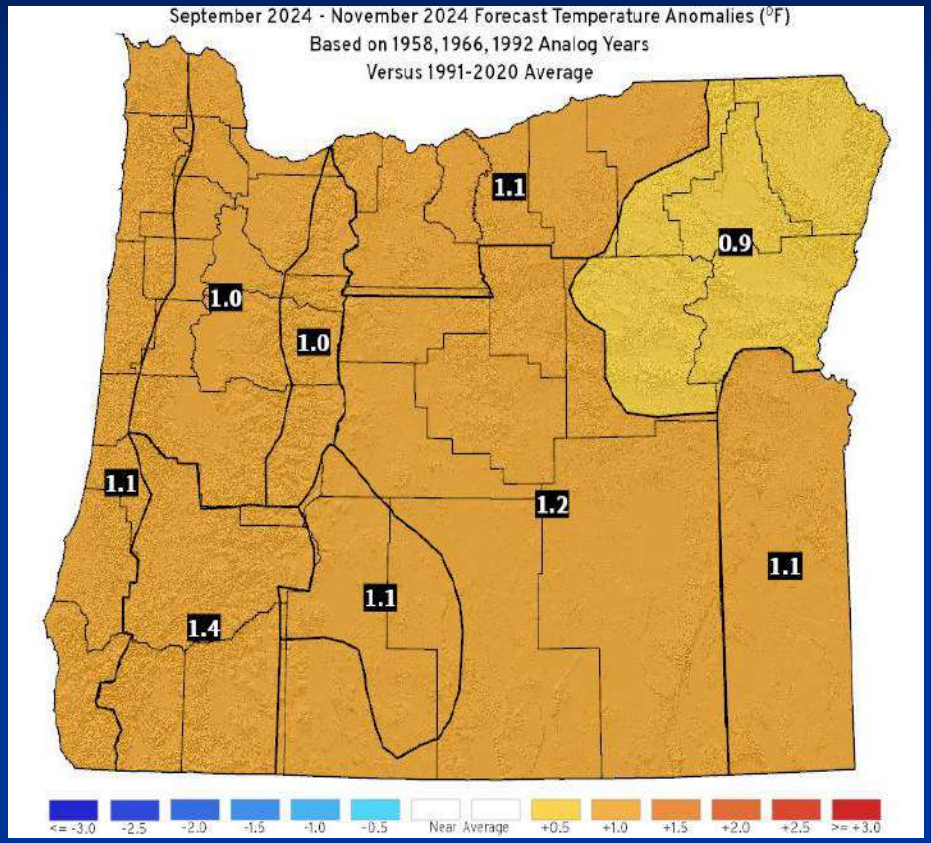


- Analogs show only slight variations in a mean weak ridge expected over the Pacific Northwest.
- This pattern favors relatively warm/dry conditions extending well into the fall season...

September – November 2024 Forecast

Temperatures



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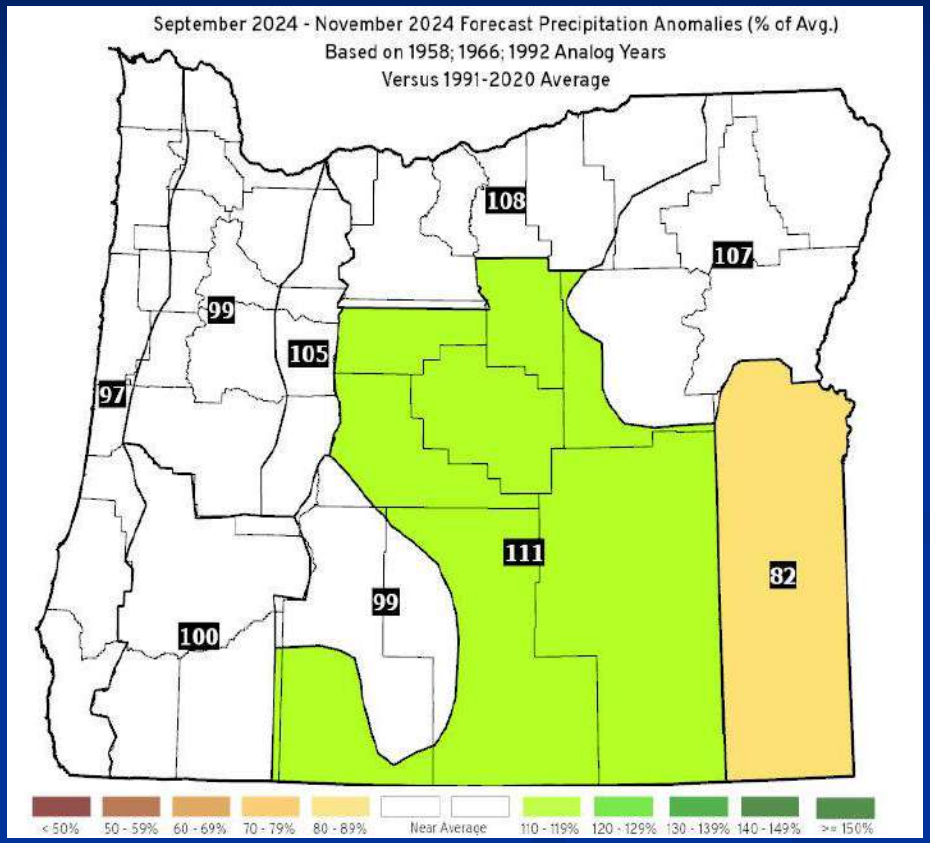


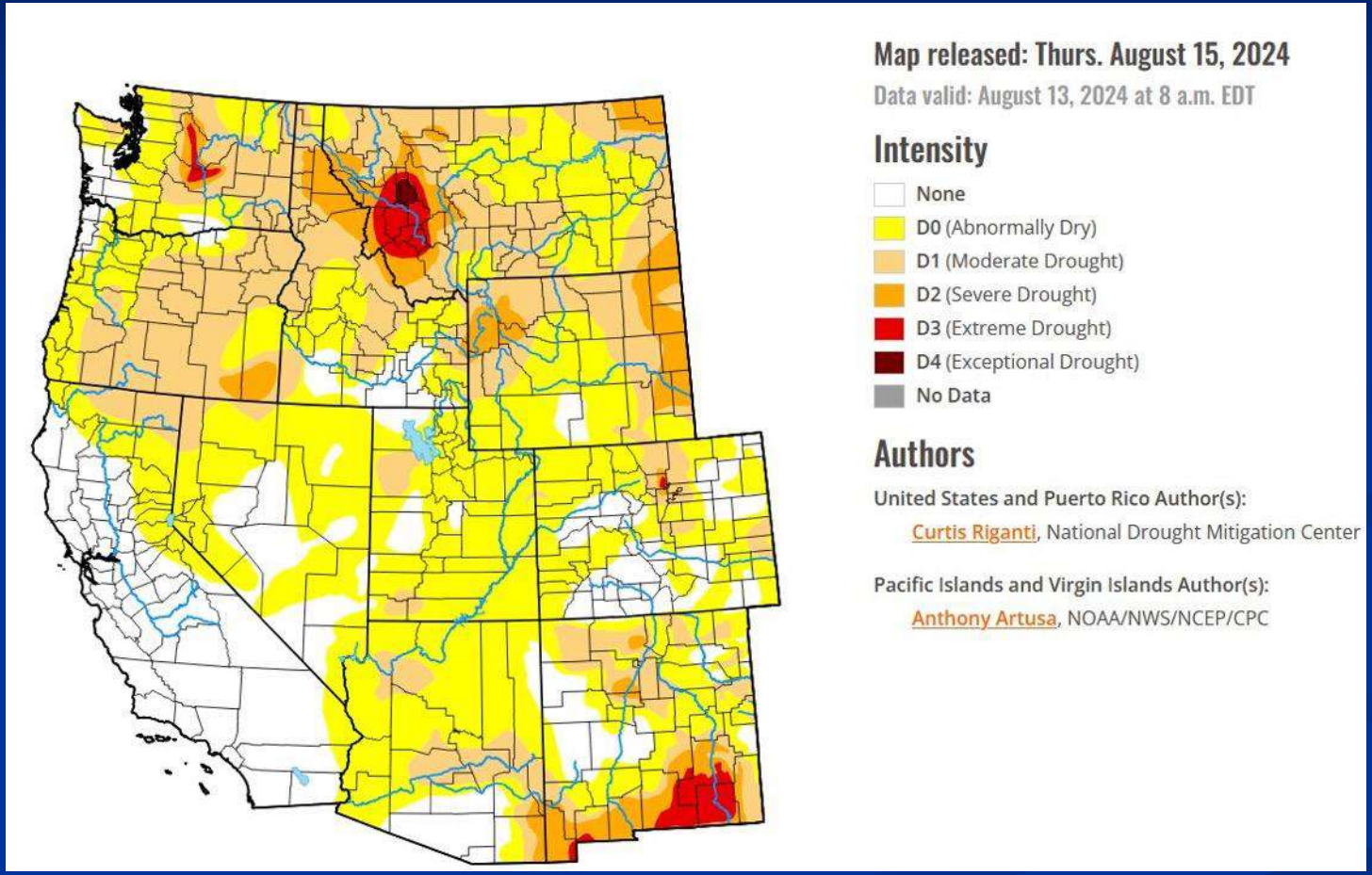
- Above-average temperatures are likely to continue through the period.
- Drier-than-average conditions may persist through October. Look for a marked transition to relatively damp weather in November.

Forecast Highlights

- This forecast is based on weather that occurred during the (1958; 1966; 1992) analog years (1992 replaced 1973 this month).
- A transition to ENSO-neutral conditions has weakened the prevailing "split-flow" jet stream pattern that developed last winter.
- Although analogs show some increase in rainfall in September (closer to average), expect relatively dry weather, with hot/warm periods, to continue through October.
- Prepare for a marked transition to damp conditions in November.
- 1958 had a significant windstorm in early November, with all analog years getting snow down to the Cascade passes by mid-November.

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 at: https://www.cpc.ncep.noaa.gov/products/predictions/long_range/seasonal.php?lead=1

Moderate Drought Conditions Return
(Much of Oregon)



Courtesy: National Drought Mitigation Center (NDMC)

U.S. Drought Monitor

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

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

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

- 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

- NRCS Snow Water Equivalent Oregon Map:

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

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