Seasonal Climate Forecast
April – June 2024

Issued: March 21, 2024

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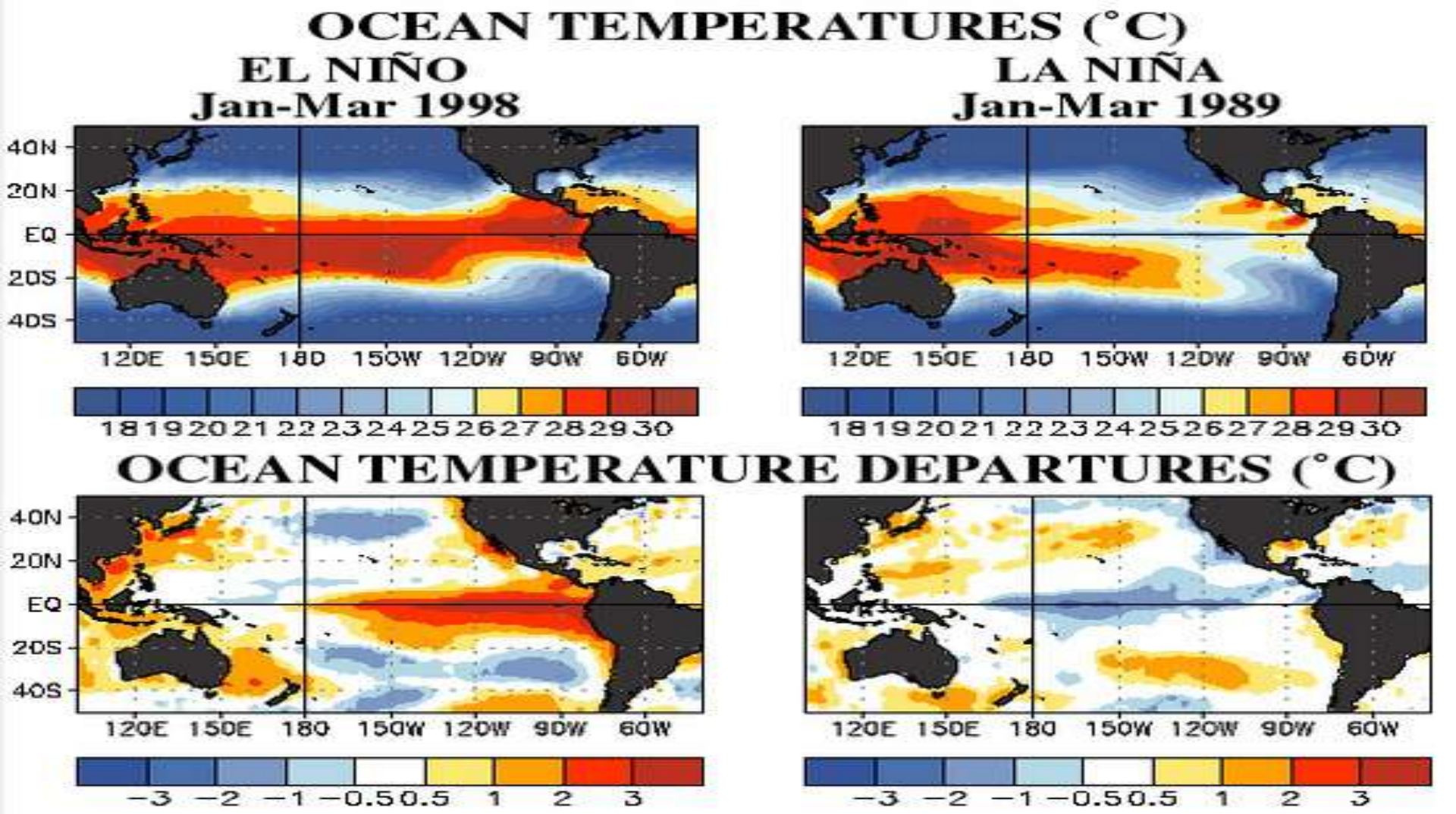
R Gress

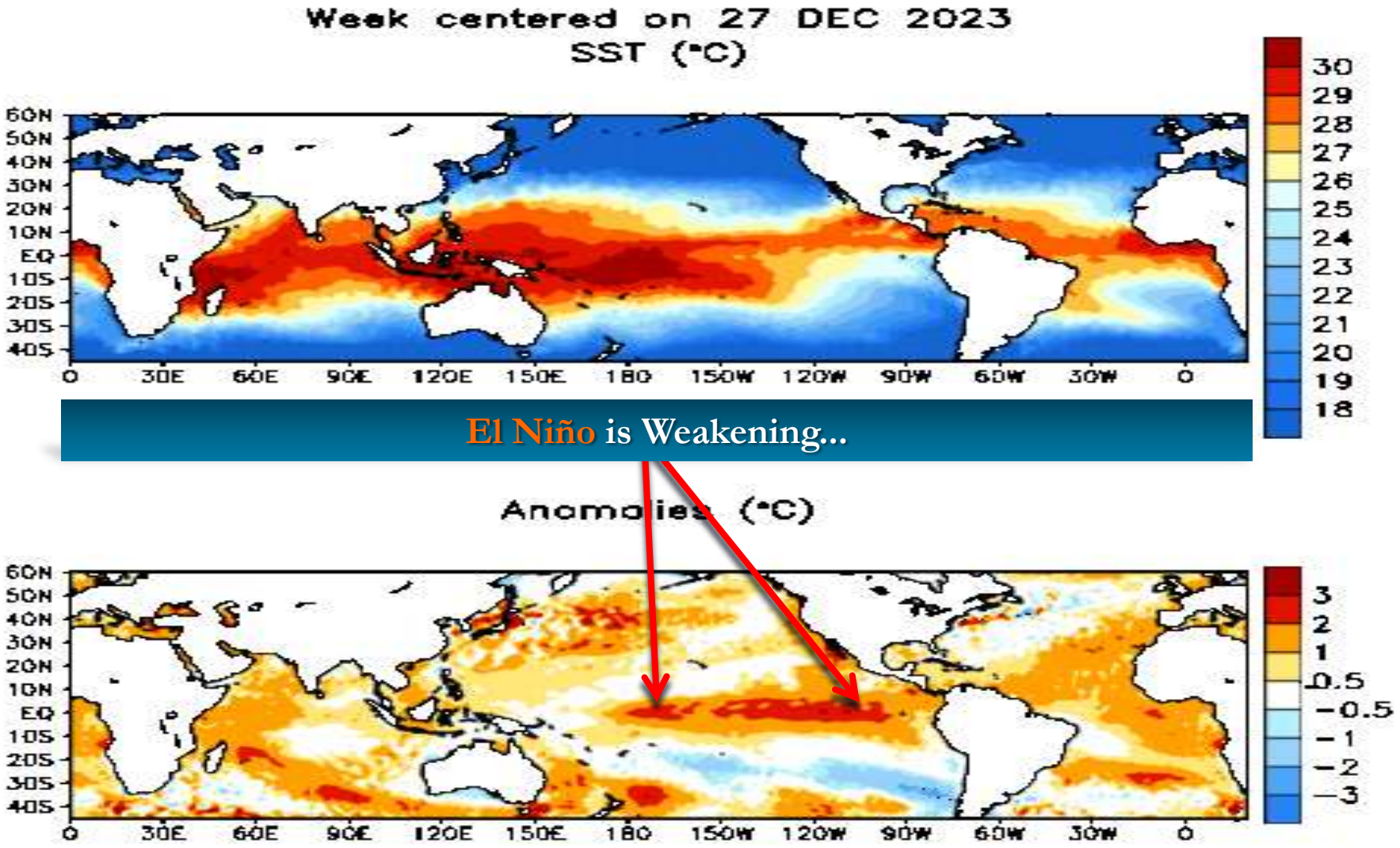
El Niño vs La Niña
(SST Patterns in the Tropical Pacific Ocean)



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 February Southern Oscillation Index (SOI) was -1.4, reflecting reduced trade wind strength across the tropical Pacific Ocean, which is typical during El Niño.

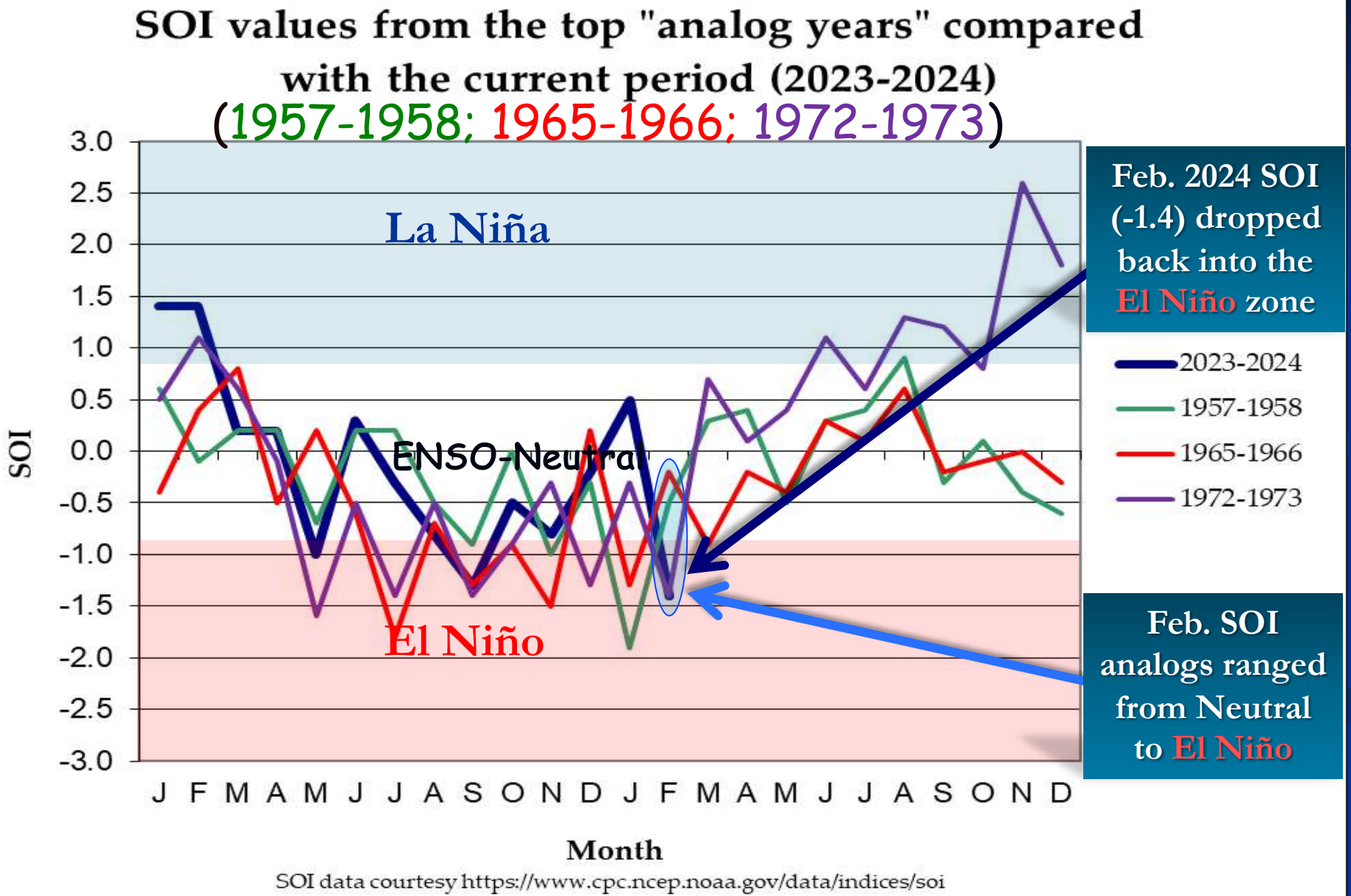
- The December – February Oceanic Niño Index (ONI +1.8°C) remained in the strong El Niño range. This index lags real-time sea surface temperatures (SSTs), which show El Niño weakening.

- NOAA's Climate Prediction Center (CPC) expects a rapid transition from El Niño to ENSO-neutral this spring and to La Niña this summer.

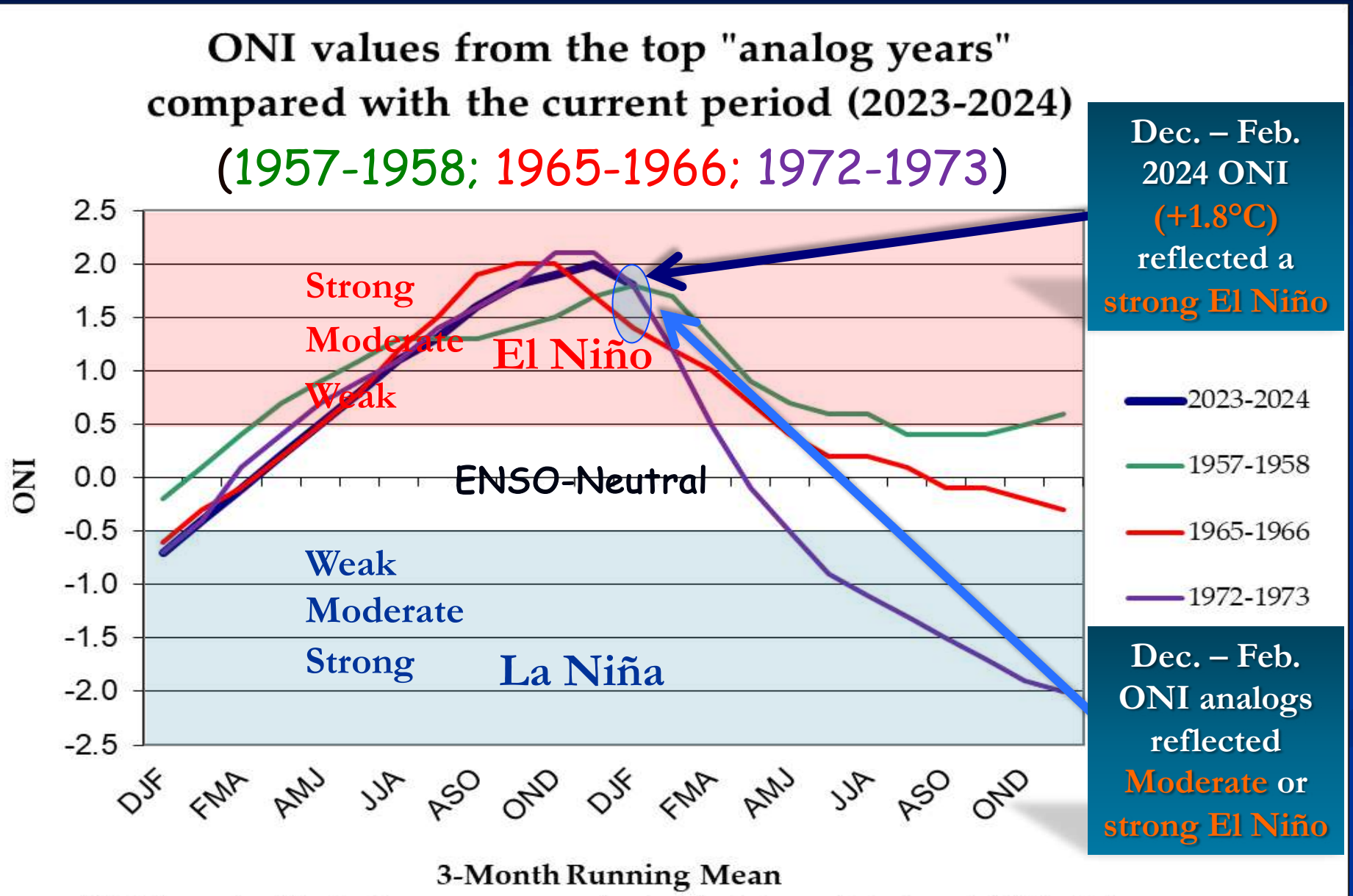
Important Note: This "Seasonal Climate Forecast" does not consider NOAA's ENSO forecast. It uses only historical and current ENSO conditions to find "analog years" that most-closely match the evolution of the current ENSO state.

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

Southern Oscillation Index (SOI)



Oceanic Niño Index (ONI)

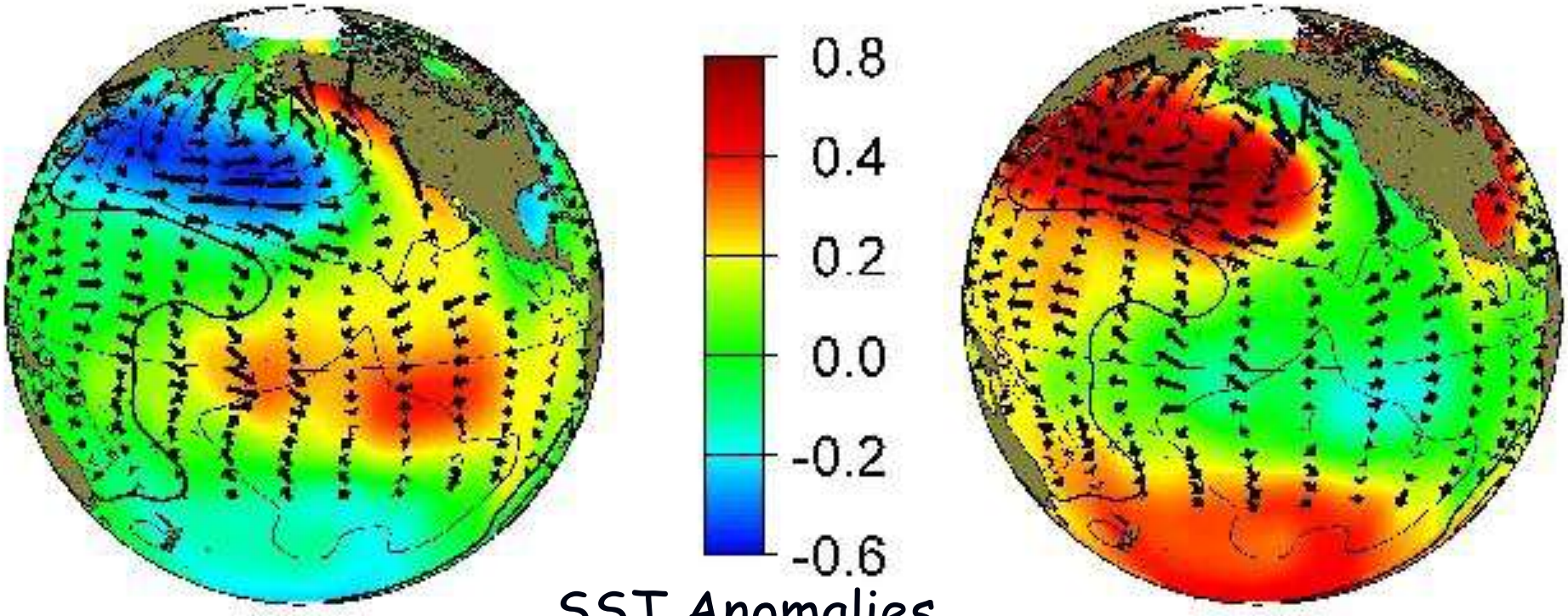


The Pacific Decadal Oscillation (PDO)

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

Positive (Warm) "Phase"

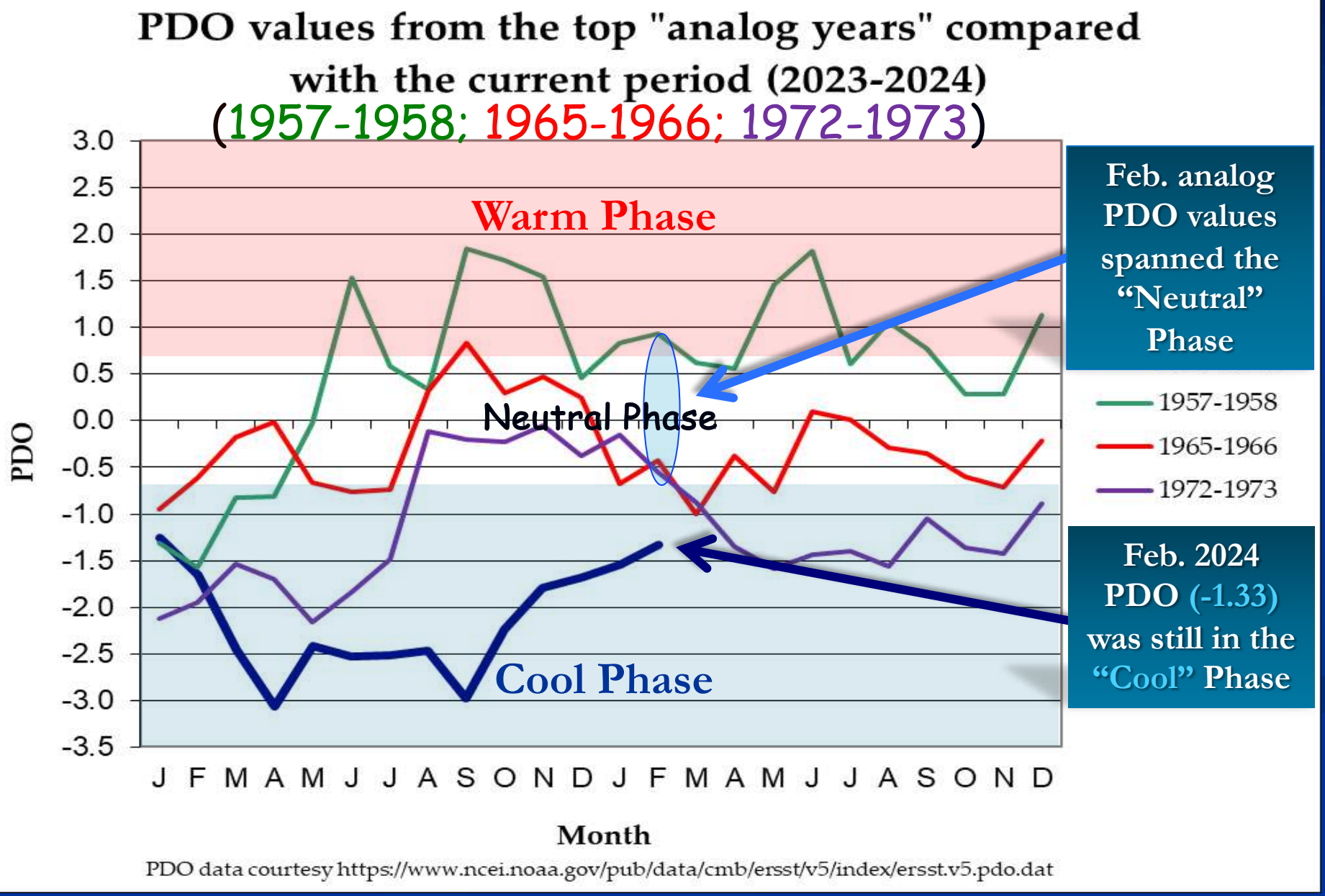
Negative (Cool) "Phase"



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

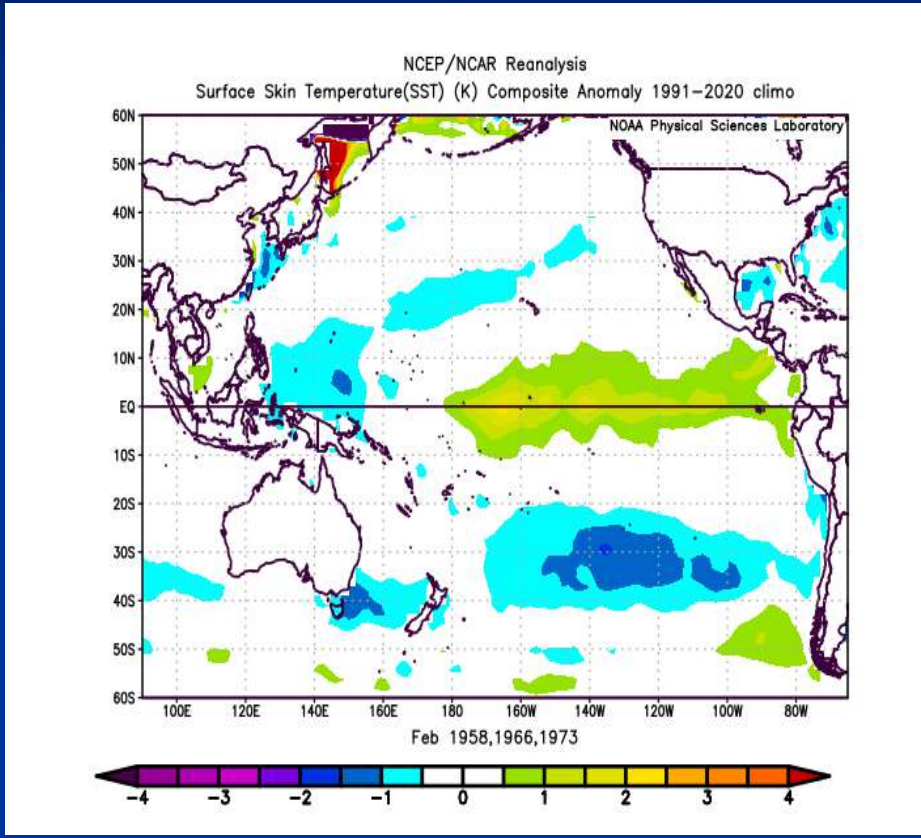
North Pacific Ocean

(Poleward of 20°N Latitude)

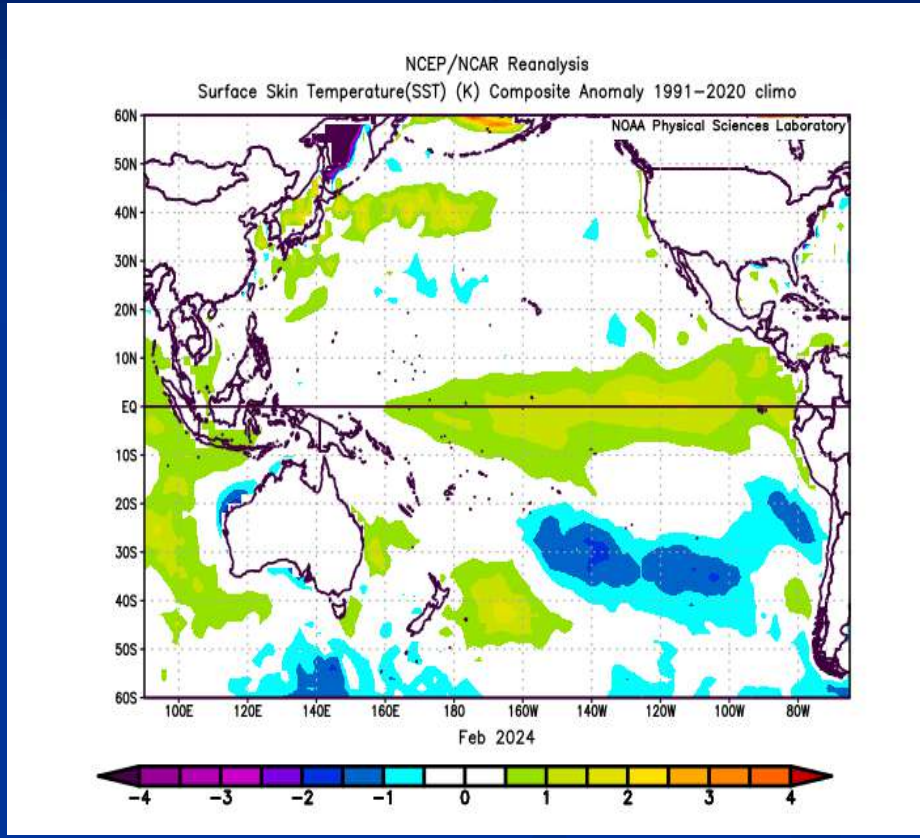


SST Anomalies Comparison

February Analogs

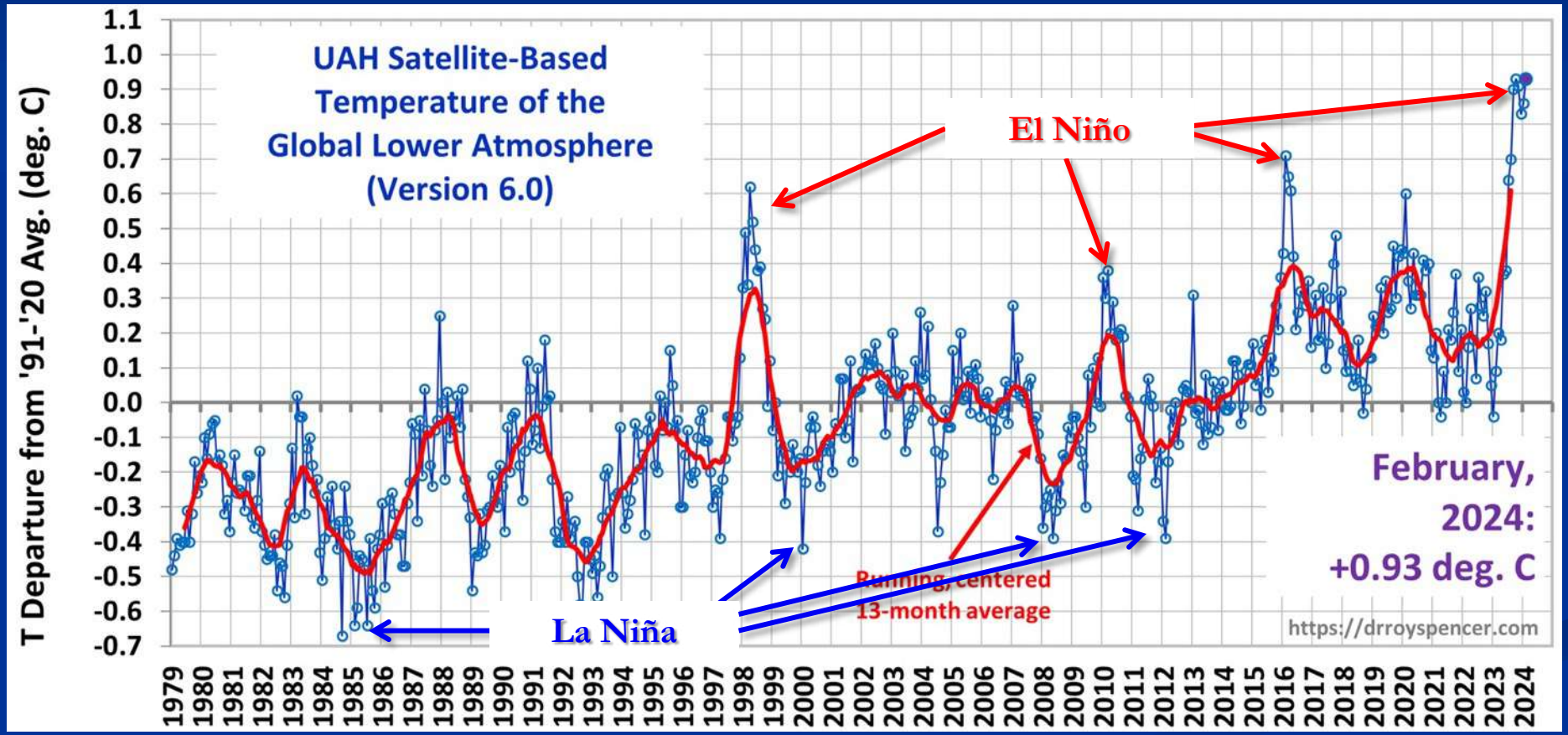


February 2024



- The February analog composite (left) has a similar SST anomaly pattern ("good match"), compared to that of February 2024 (right).
- Both charts show moderate-to-strong El Niño (warm) conditions in the tropical Pacific with greater differences in the north Pacific.

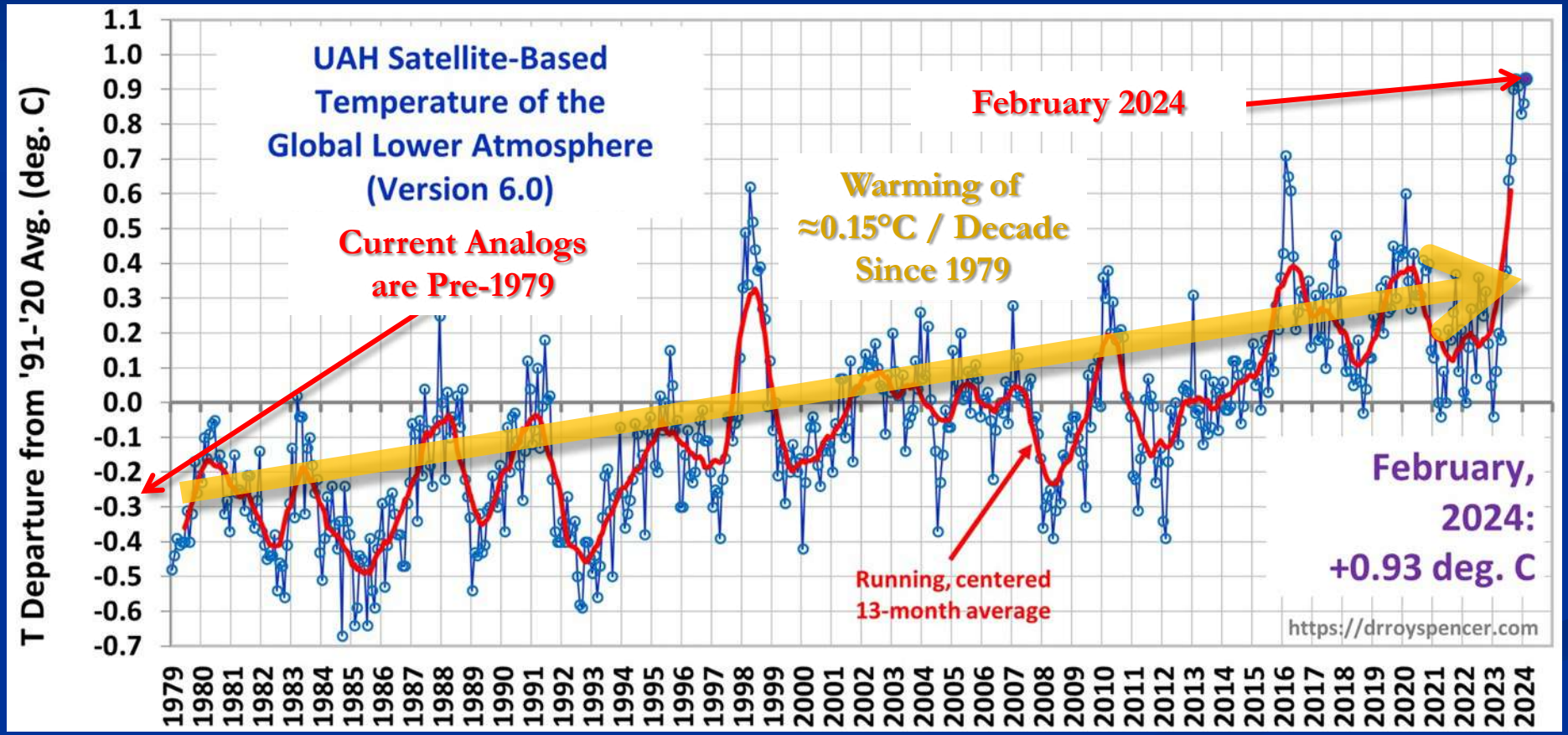
El Niño & La Niña Impact Global Temperatures...



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

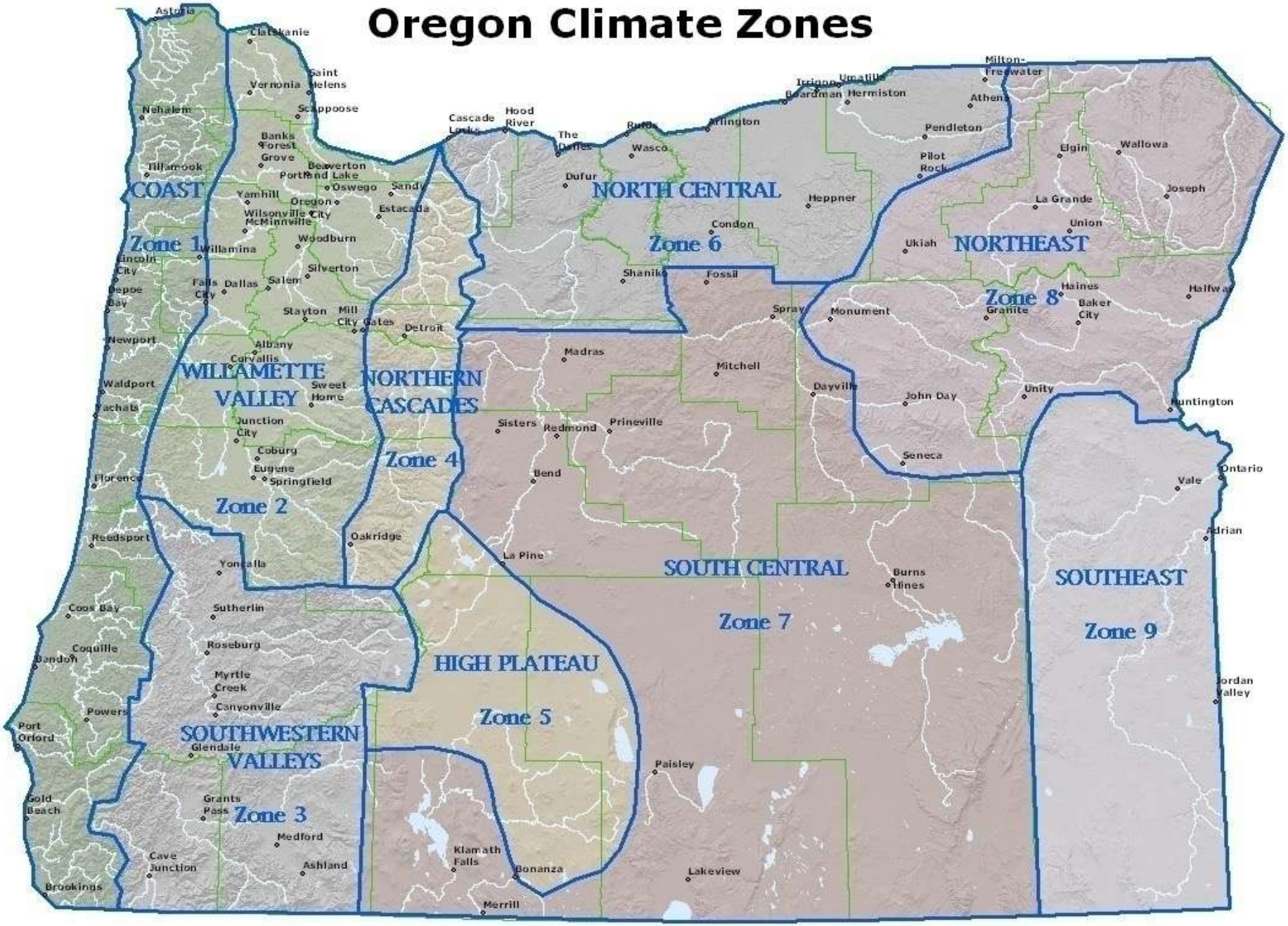
Global Temperature Trends

Increase Error in Analog Forecasts!



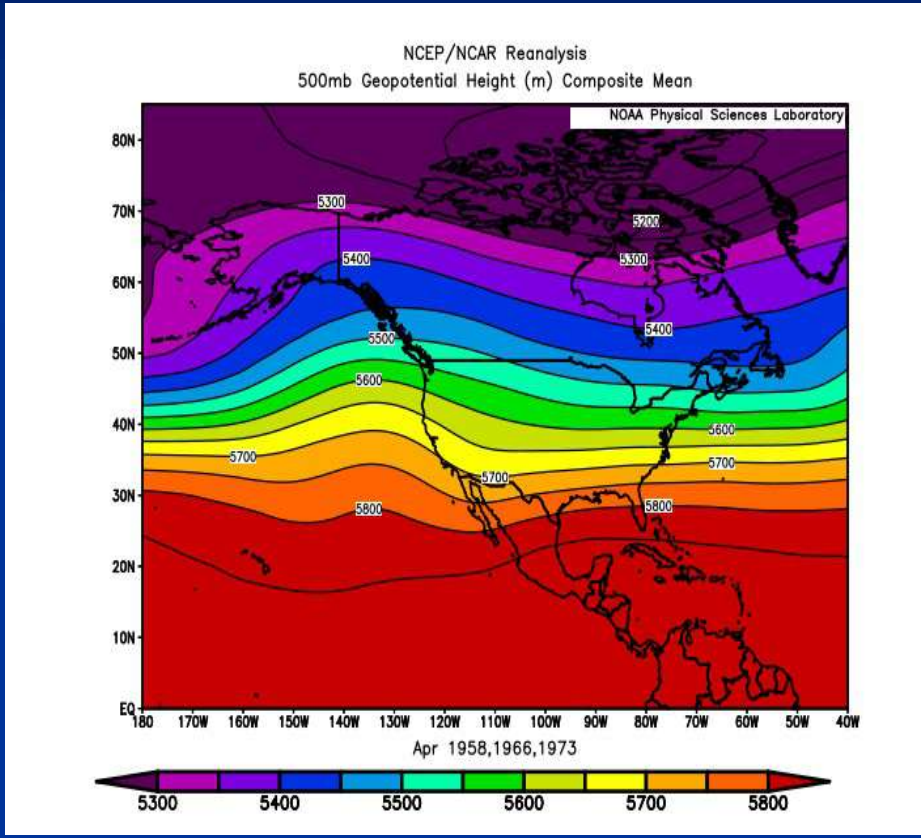
Courtesy: http://www.drroyspencer.com/latest-global-temperatures/

Oregon Climate Zones

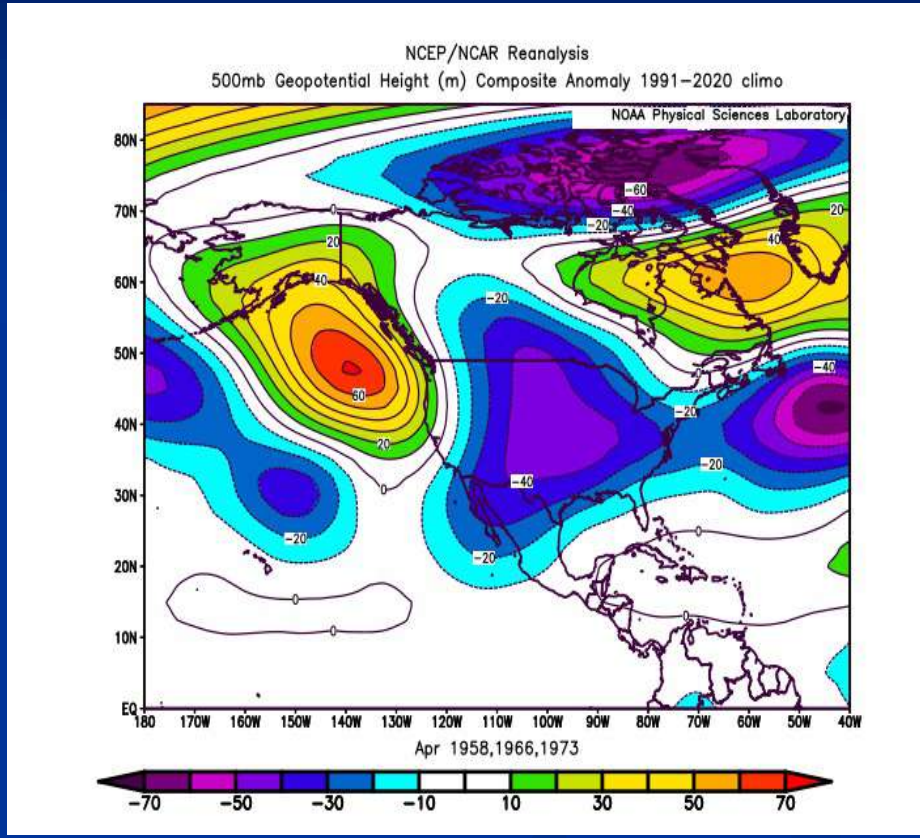


April 2024 Forecast

Mean Upper-Air Pattern



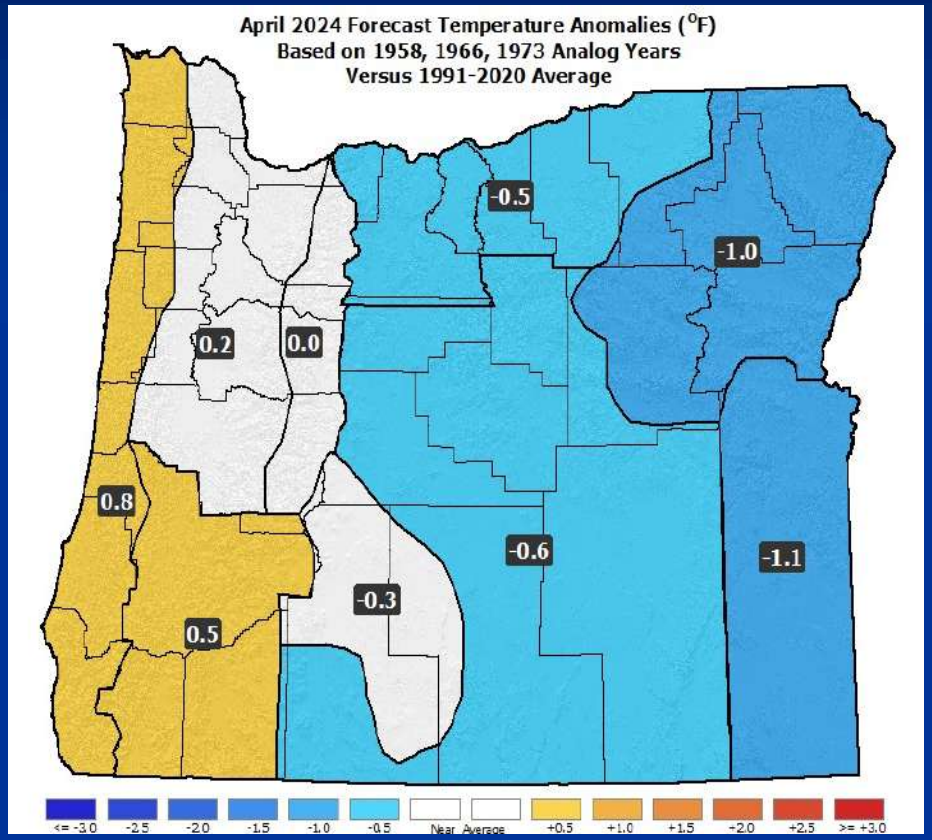
Upper-Air Anomalies



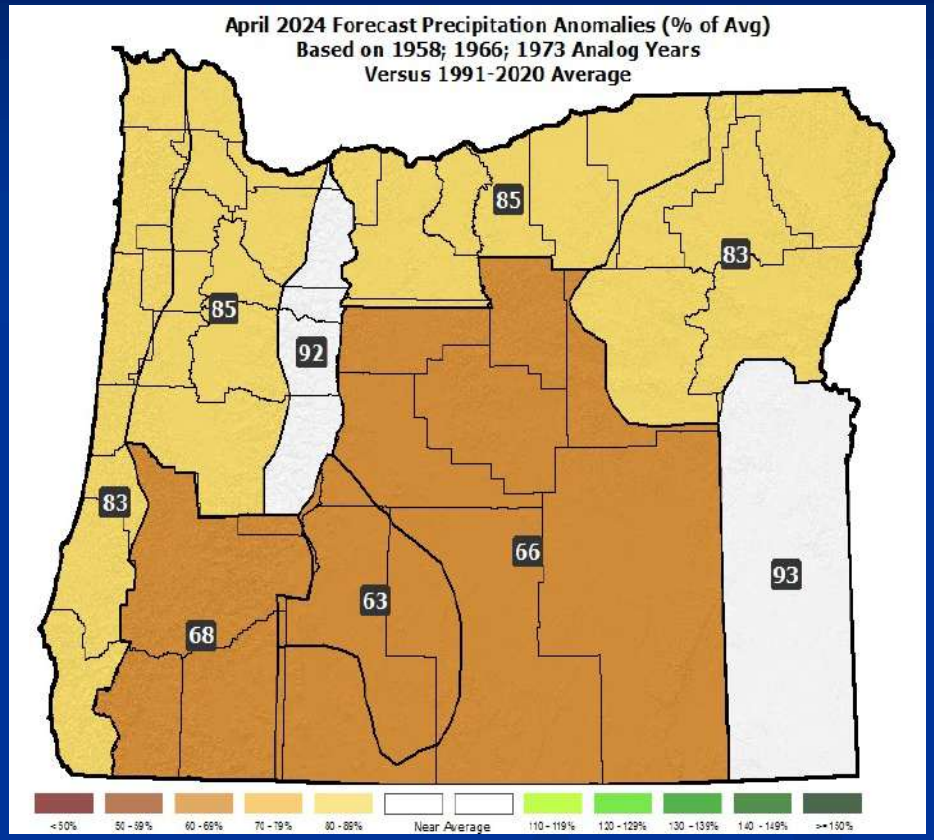
- The analog composite shows anomalous ridging extending from the eastern Gulf of Alaska to the Pacific NW Coast.
- This pattern, typically associated with El Niño, favors near-average temperatures but also opens the door for a late-season freeze.

April 2024 Forecast

Temperatures



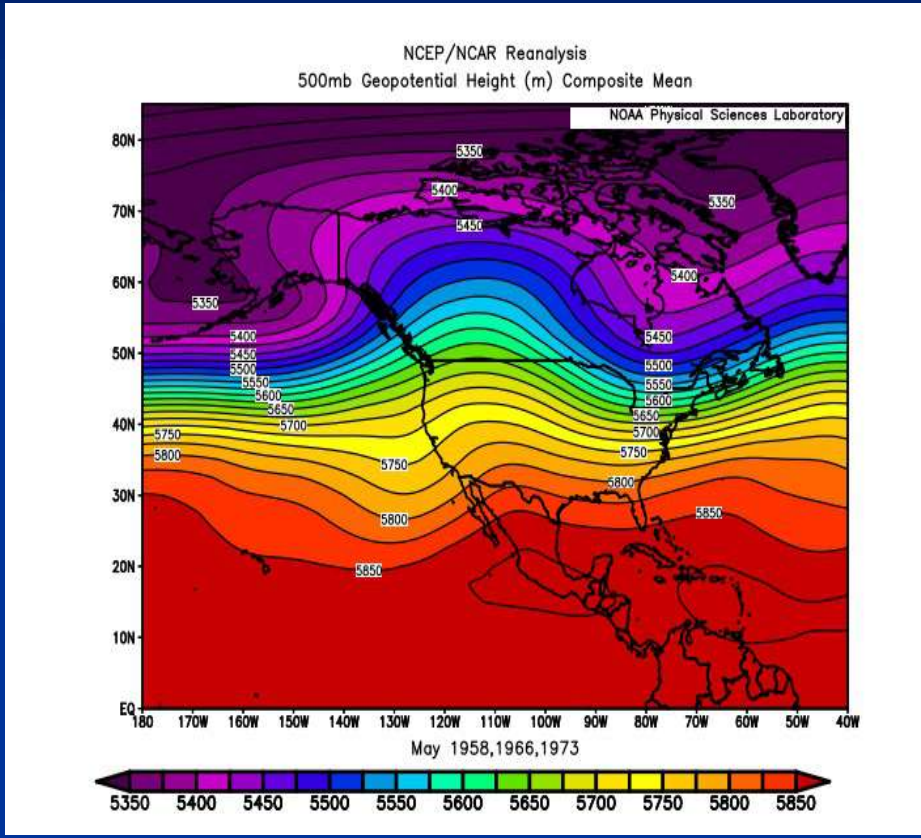
Precipitation



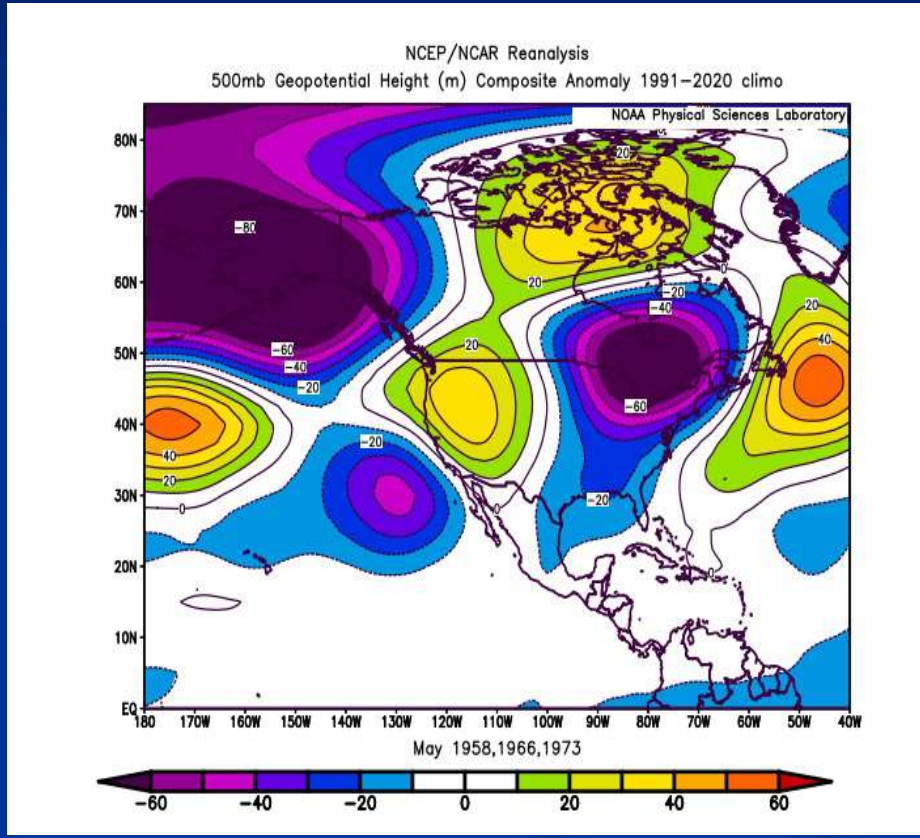
- Analogs had mostly near-average temperatures, but a cold snap in April 1966 caused considerable damage to fruit trees.
- Precipitation was above average in 1958 but well-below average in 1966 & 1973, which skews the overall forecast to below average.

May 2024 Forecast

Mean Upper-Air Pattern



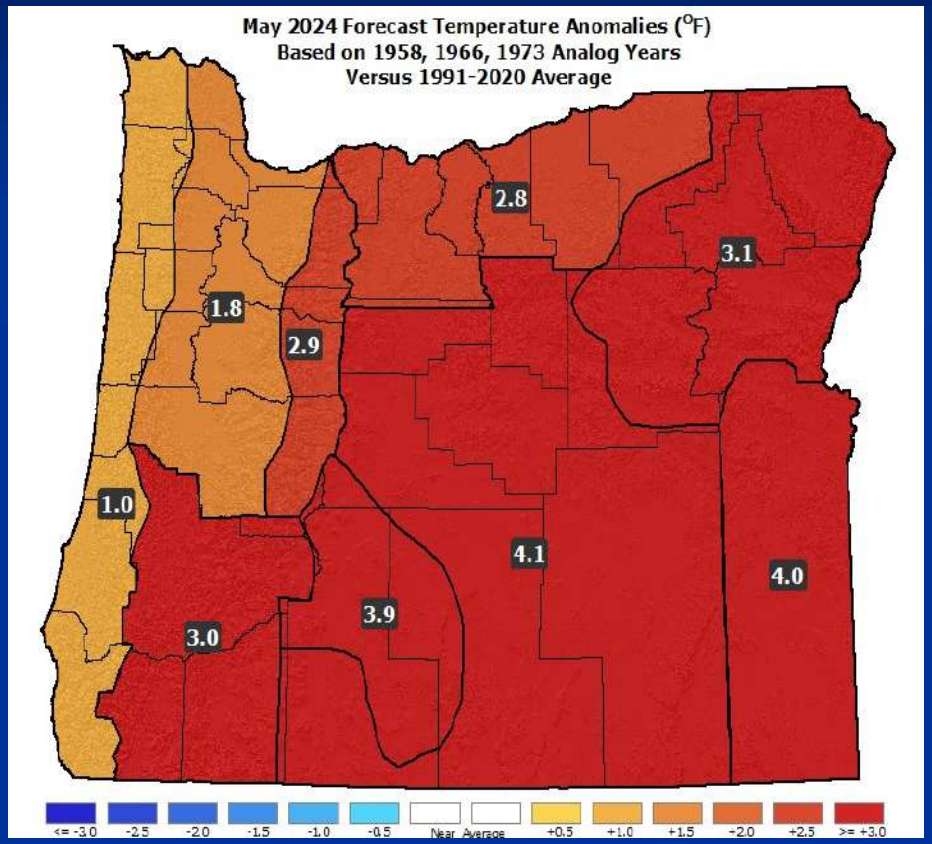
Upper-Air Anomalies



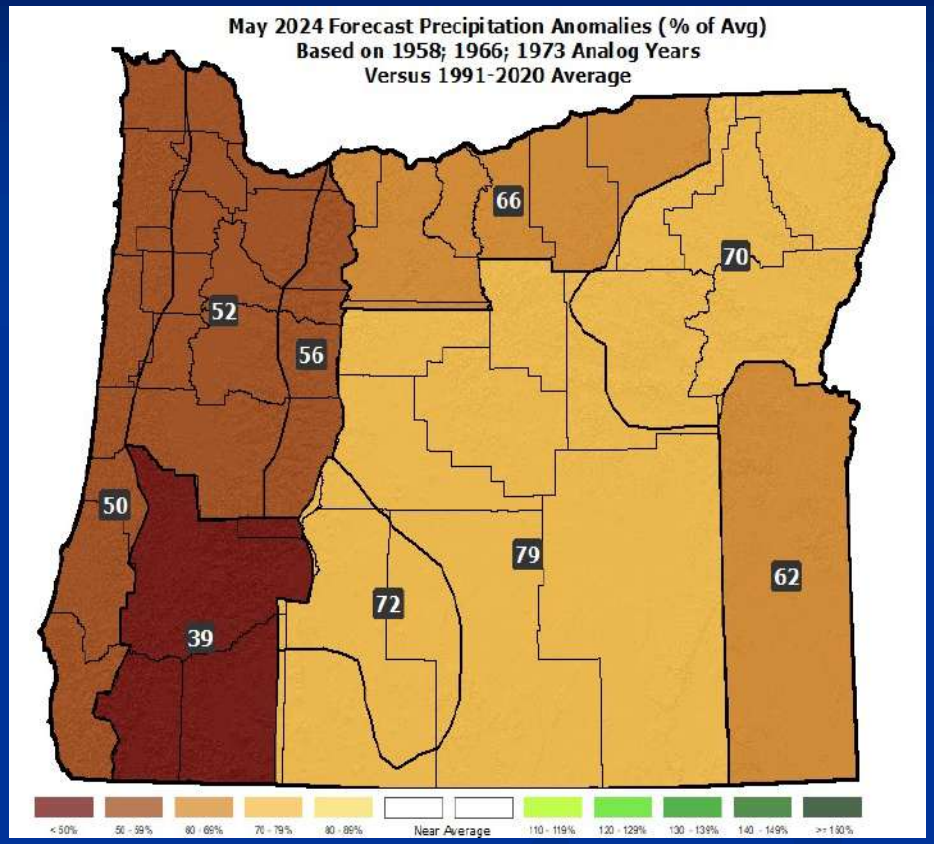
- A "split-flow" pattern should continue over the Pacific Northwest with mean ridging over the Rockies.
- Despite a weakening El Niño, analogs consistently maintained anomalous ridging over Oregon.

May 2024 Forecast

Temperatures



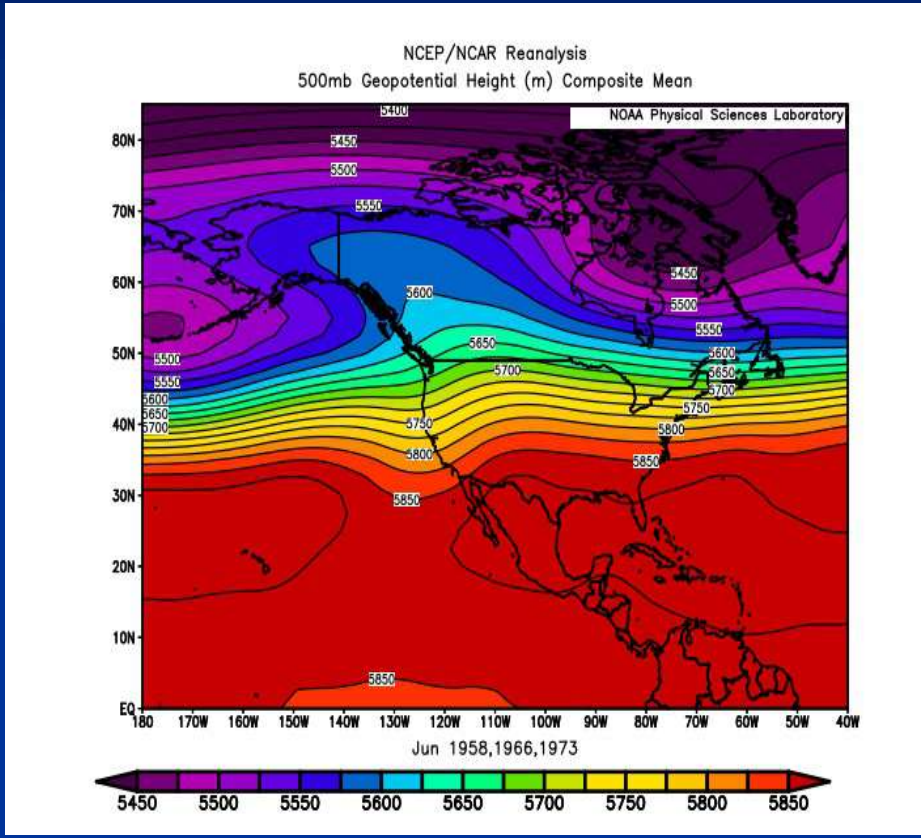
Precipitation



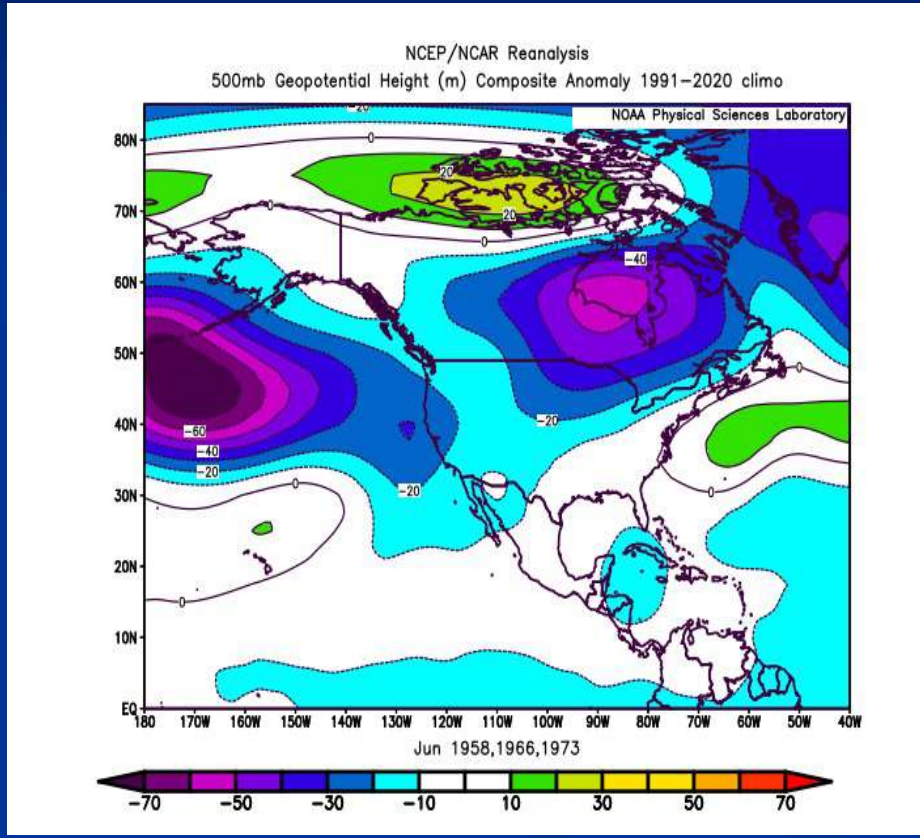
- Analog temperatures varied…ranging from a cool 1966 to an extremely mild 1958. 1966 had a western valley freeze late in the month.
- Below-average precipitation likely, but 1958 had considerable thunderstorm activity across the state.

June 2024 Forecast

Mean Upper-Air Pattern



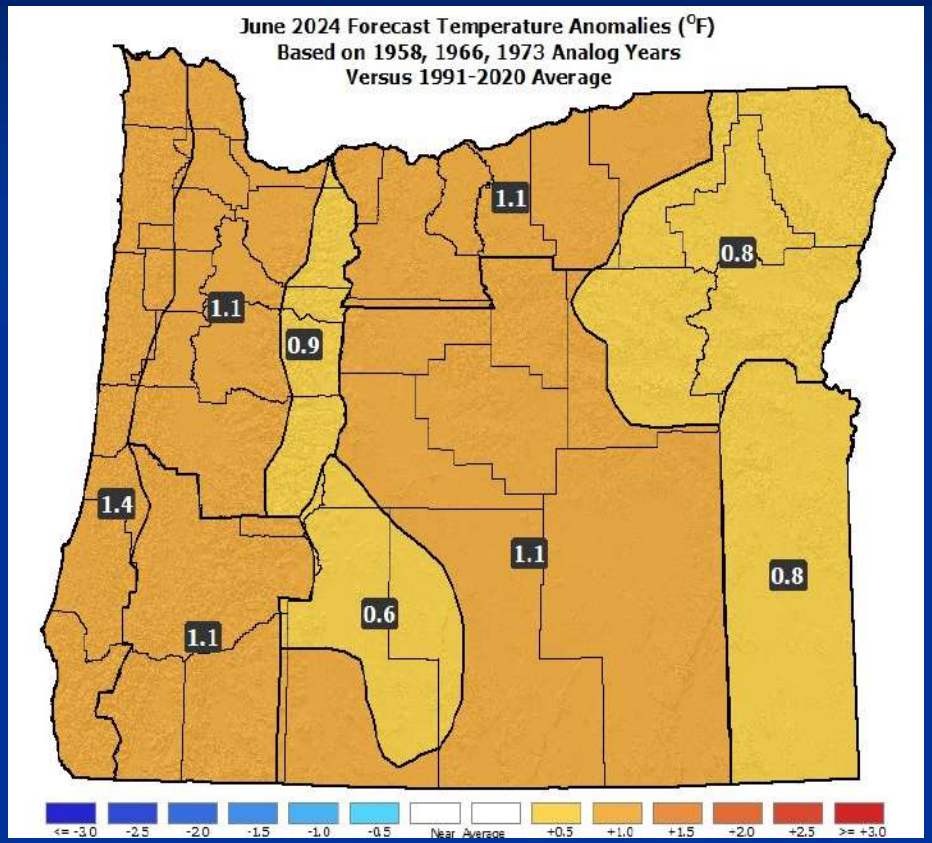
Upper-Air Anomalies



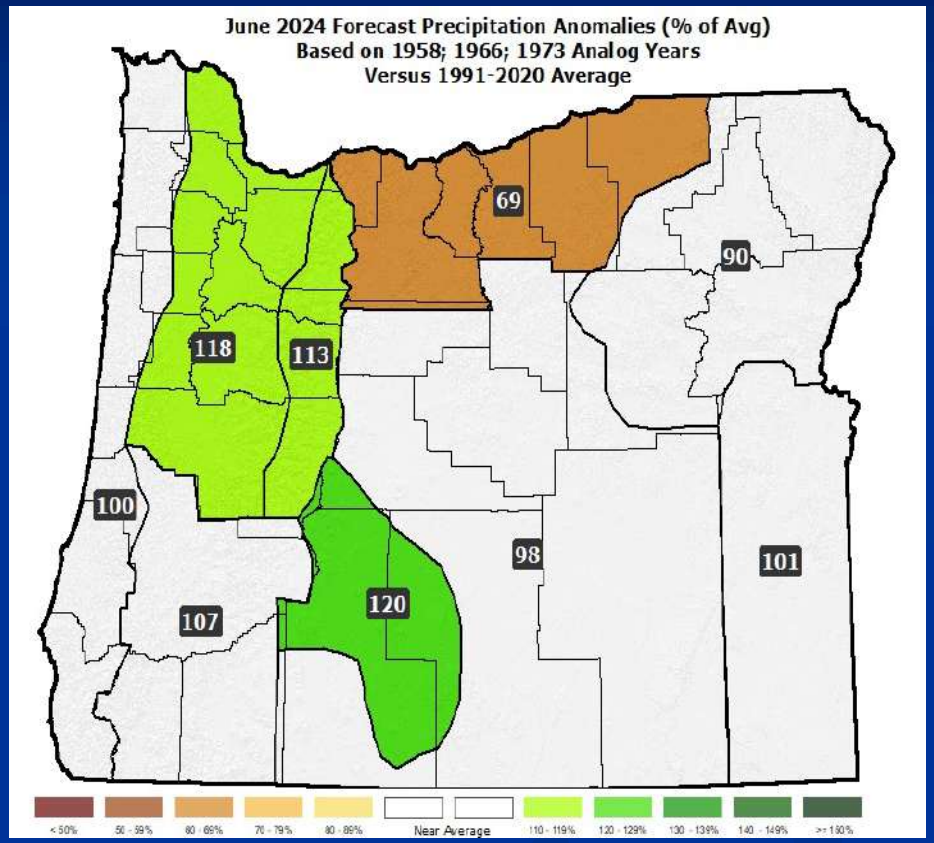
- A "split-flow" jet stream pattern should continue across the Pacific Northwest with enhanced storm activity directed towards California.
- This is a relatively warm pattern, but prolonged extreme temperatures are not featured. Thundershower activity may be enhanced.

June 2024 Forecast

Temperatures



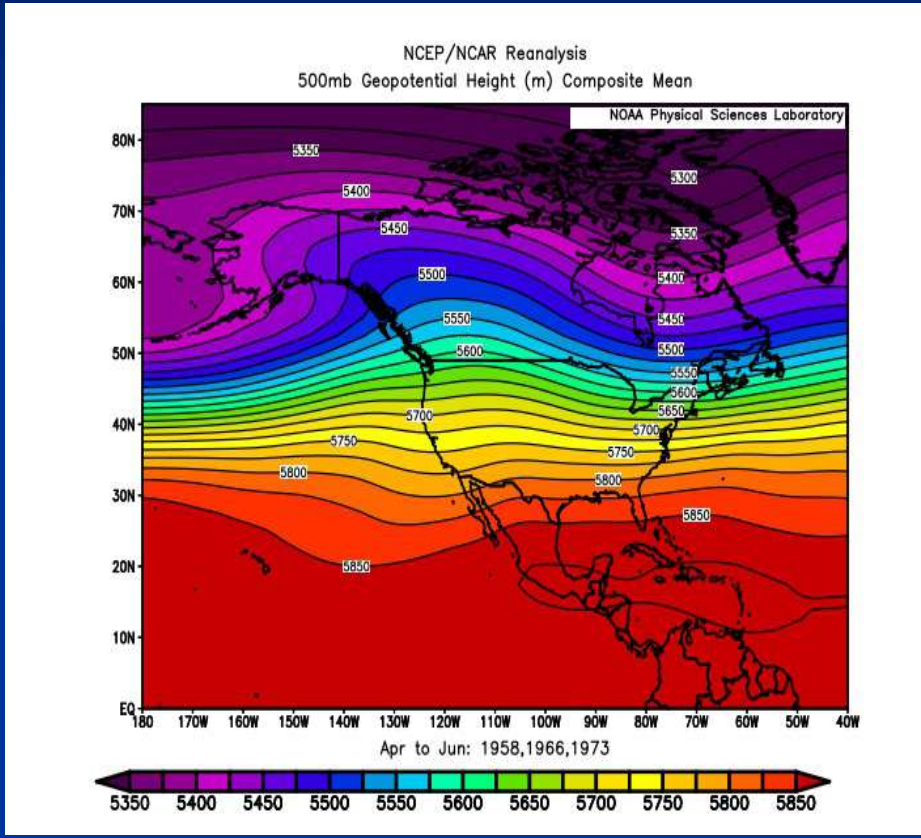
Precipitation



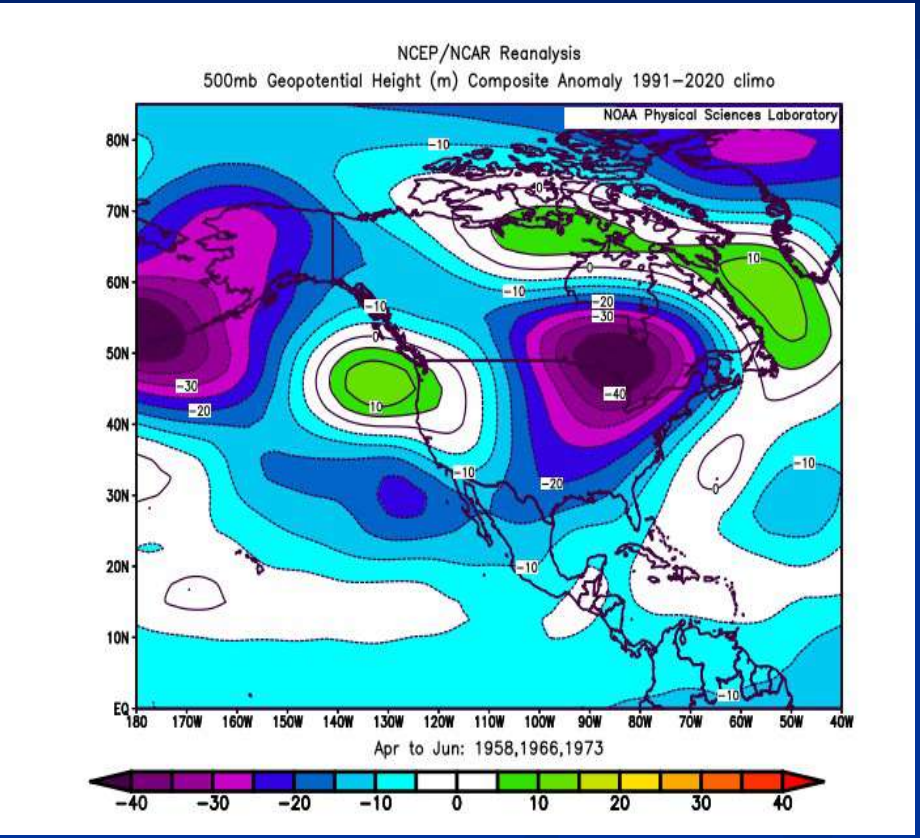
- Above-average temperatures with some "warm" spells (over 90°F in the interior) likely from mid-month on...
- Expect ample days with precipitation and an increased threat of thunderstorms statewide.

April – June 2024 Forecast

Mean Upper-Air Pattern



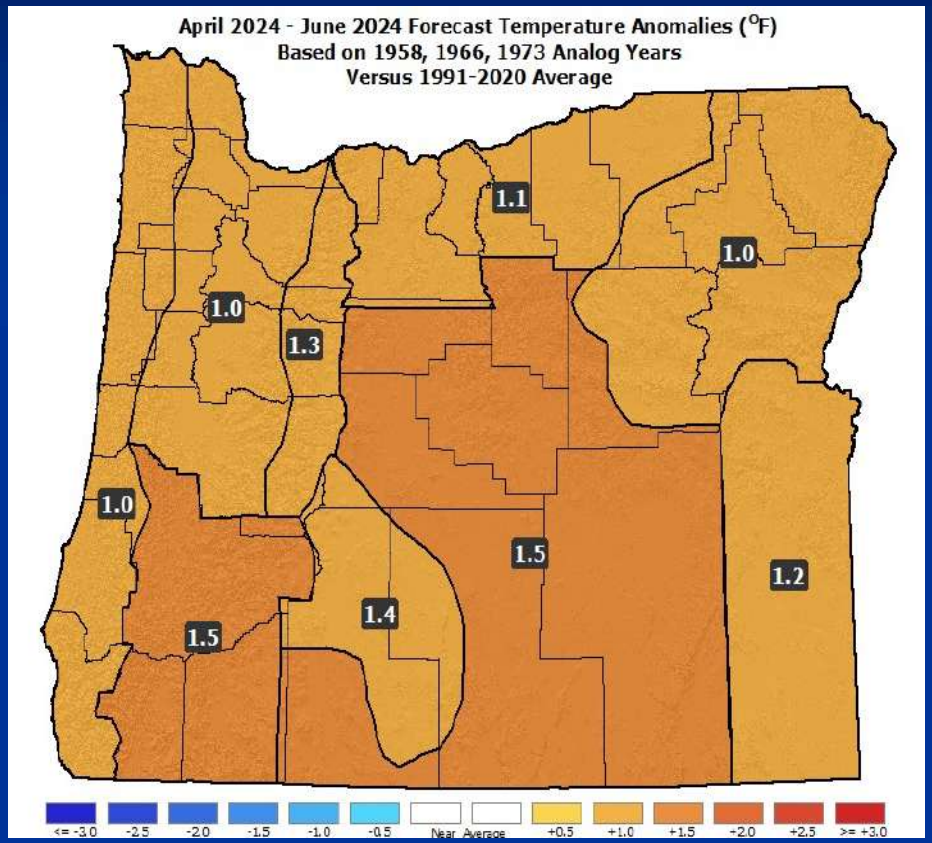
Upper-Air Anomalies



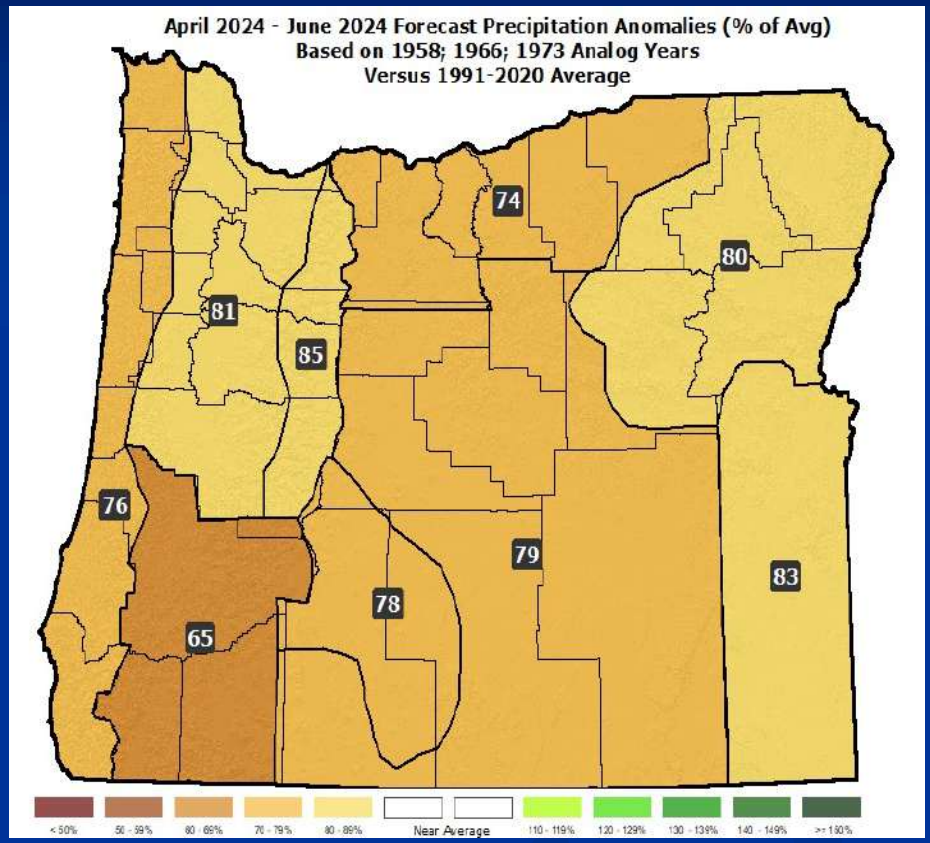
- Watch for a classic El Niño "split-flow" jet stream pattern into the Pacific Northwest with increased storminess across the SW US.
- This pattern tends to produce relatively warm weather across Oregon but also can bring brief cold periods, especially in April.

April – June 2024 Forecast

Temperatures



Precipitation



- Above-average temperatures but not without some cool periods early. 1966 had western valley freezes in April and May.
- Expect an abundance of days with precipitation but rain and mountain snow should generally fall short of average.

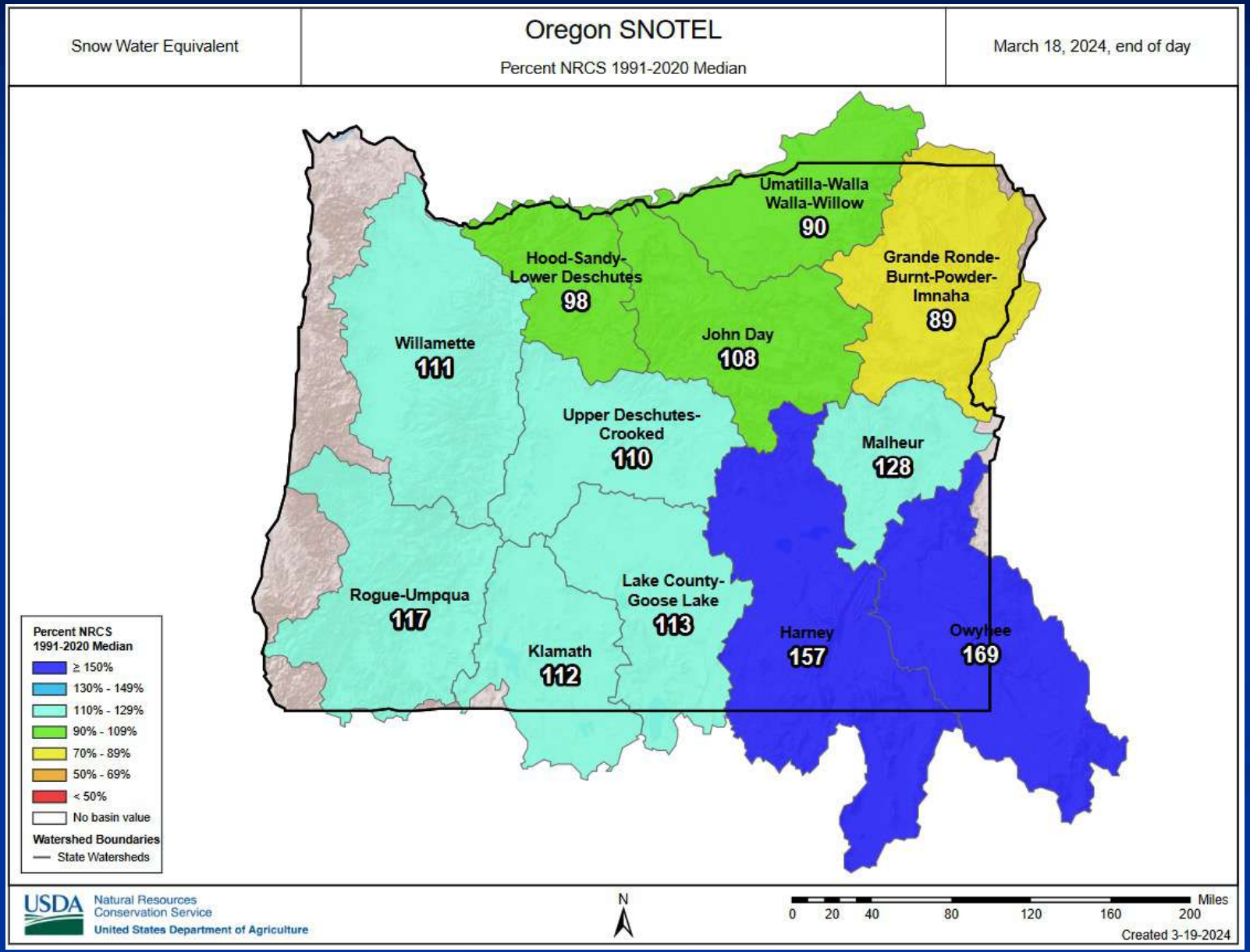
Forecast Highlights

- This forecast is based on weather that occurred during the (1958; 1966; 1973) analog years (no changes to the analogs from last month).
- A pervasive "split-flow" jet stream pattern should focus incoming storm energy towards California (classic El Niño signature).
- Brief cold/damp periods, counter to an overall "mild & dry" pattern, can occur (especially in April).
- 1966 brought late-season freeze events to the western valleys. June of 1958 experienced well-above-average thunderstorm activity statewide.

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

Mid-March Snowpacks…

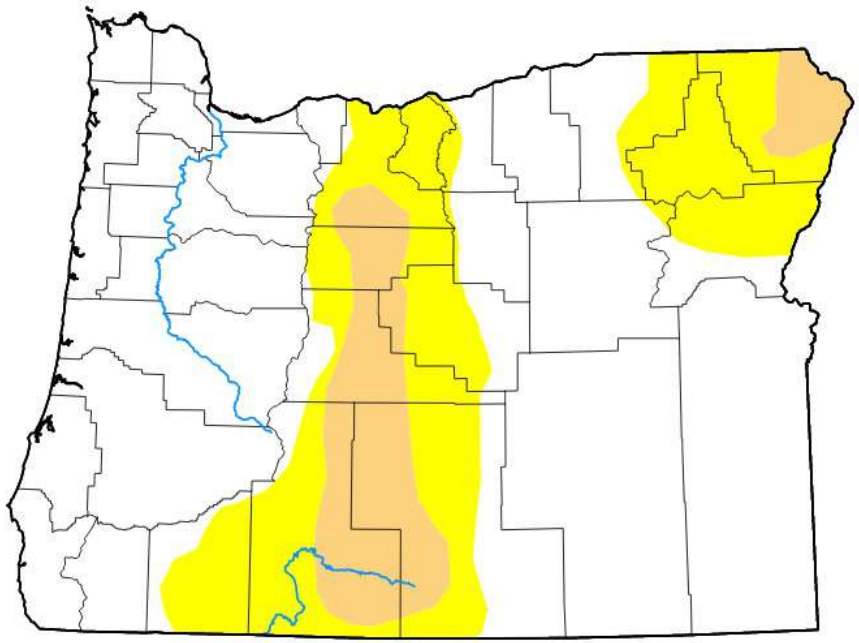
(Below Average North / Above Average South)



Drought Has Improved for Much of Oregon

(Drought Persists in Central & Extreme NE Oregon)

March 12, 2024



Map released: Thurs. March 14, 2024

Data valid: March 12, 2024 at 8 a.m. EDT

Intensity

- None
- D0 (Abnormally Dry)
- D1 (Moderate Drought)
- D2 (Severe Drought)
- D3 (Extreme Drought)
- D4 (Exceptional Drought)
- No Data

Authors

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Curtis Riganti, National Drought Mitigation Center

Pacific Islands and Virgin Islands Author(s):

Denise Gutzmer, National Drought Mitigation Center

Courtesy: National Drought Mitigation Center (NDMC)

https://droughtmonitor.unl.edu/

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

Updated Monthly

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