

Seasonal Climate Forecast Verification

February – April 2024

Issued: May 15, 2024

Contact: Pete Parsons, ODF Lead Meteorologist
503-945-7448 or peter.qj.parsons@odf.oregon.gov

Production - ODA: Diana Walker; Andy Zimmerman; Jenn Ambrose; Taylor Harding
Production - ODF: Julie Vondrachek; Kristin Cody

Photo: Kevin Klink

Format and Purpose:

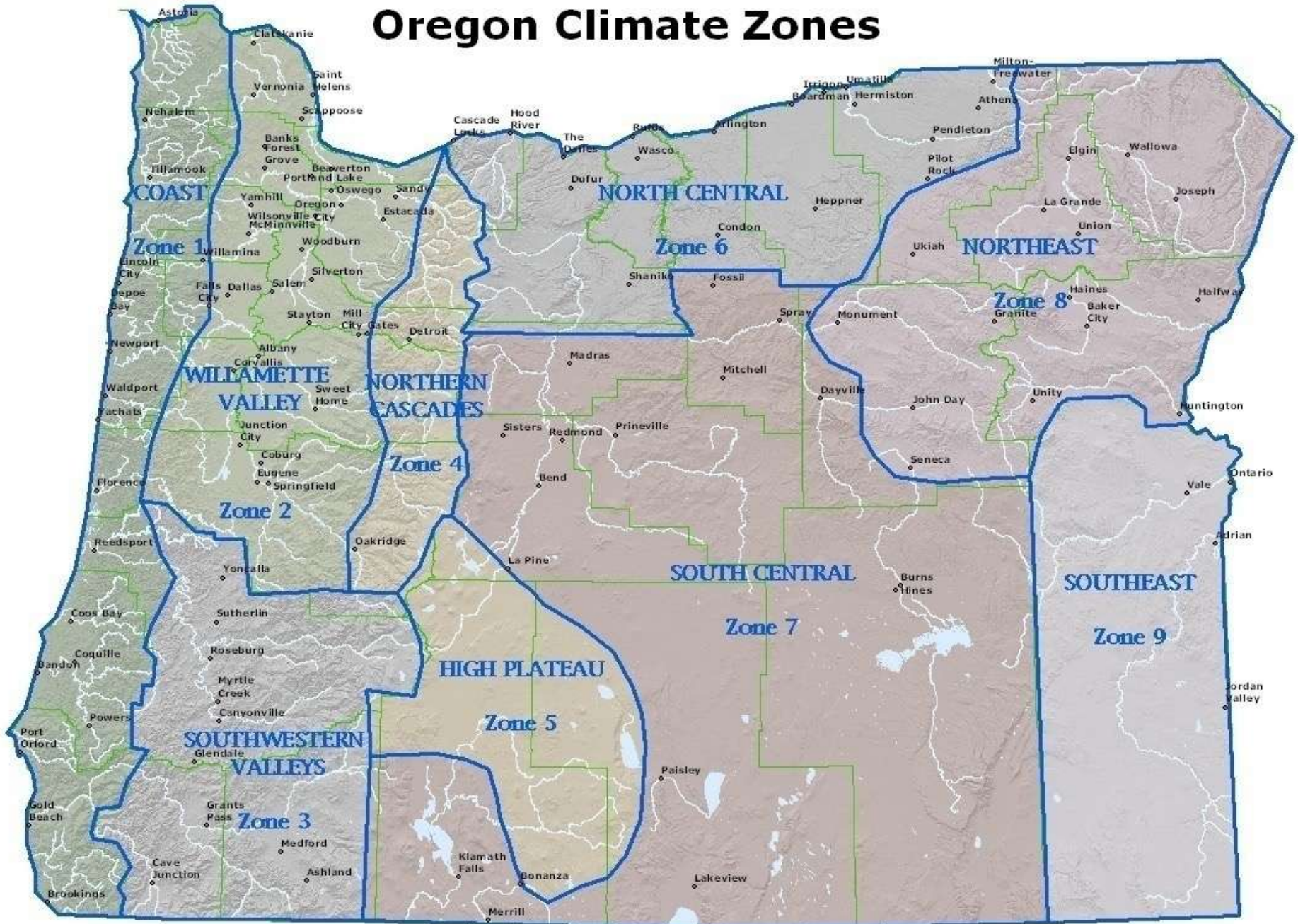
- A side-by-side comparison of the “**Seasonal Climate Forecast**” vs. what (**Actually Occurred**) is done for both the 1-month & 3-month forecasts.*
- The accuracy of each forecast is reviewed, and the need for analog-year updates is examined.
- This is part of an ongoing assessment of the utility of this forecast method.**

**Utilizes 1991-2020 long-term averages*

**See “Forecasting Methods...” at:

<https://oda.direct/Weather>

Oregon Climate Zones

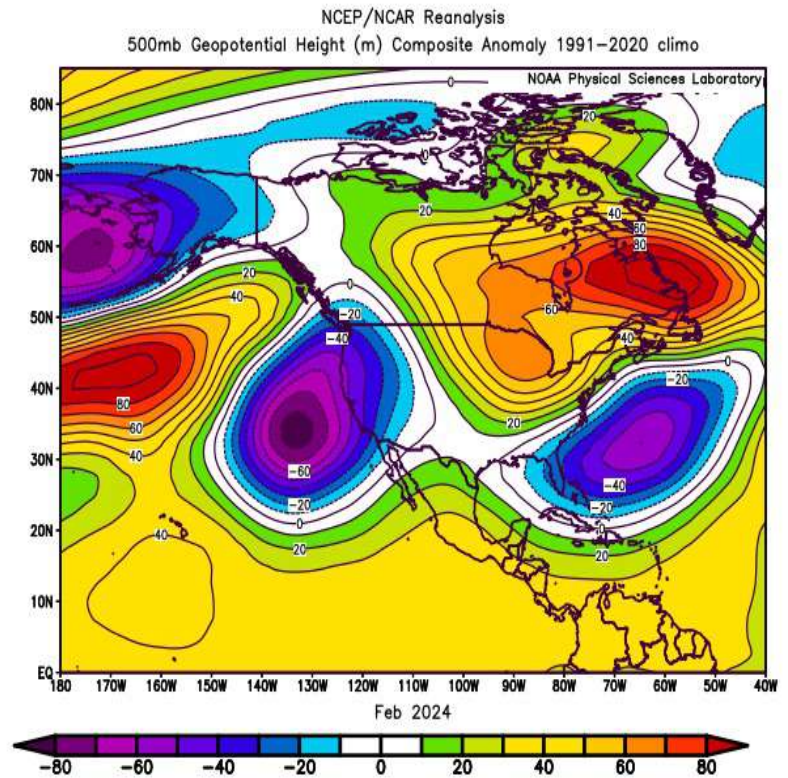
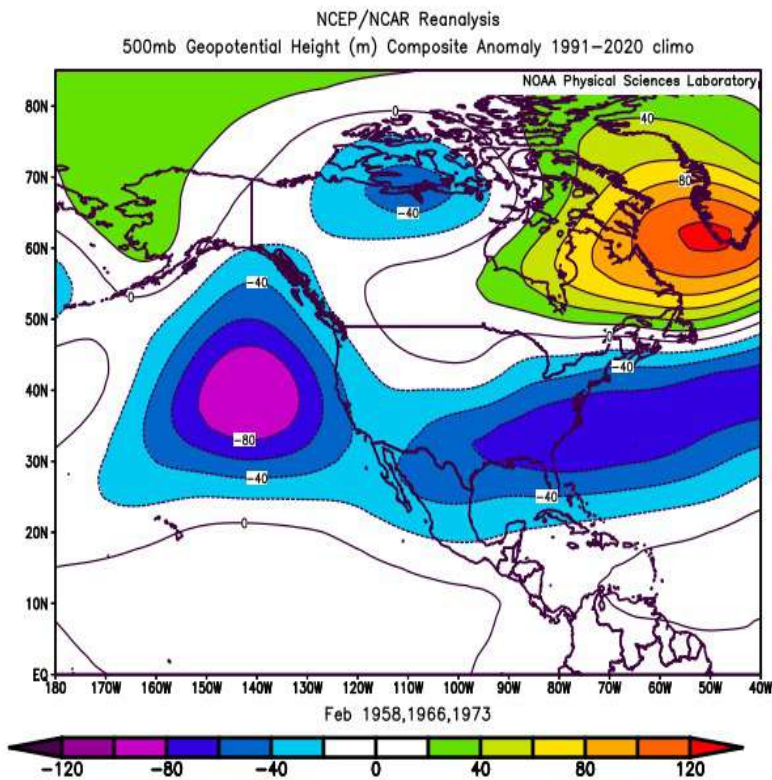


February 2024

(Forecast Issued January 18, 2024)/(Actual)

Forecast Upper-Air Anomalies

Actual Upper-Air Anomalies



■ Analogs (left) showed anomalous troughing over the eastern Pacific Ocean (El Niño signature). The February 2024 pattern (right) had strong negative anomalies centered just off the California Coast. *Mostly a “forecast hit.”*

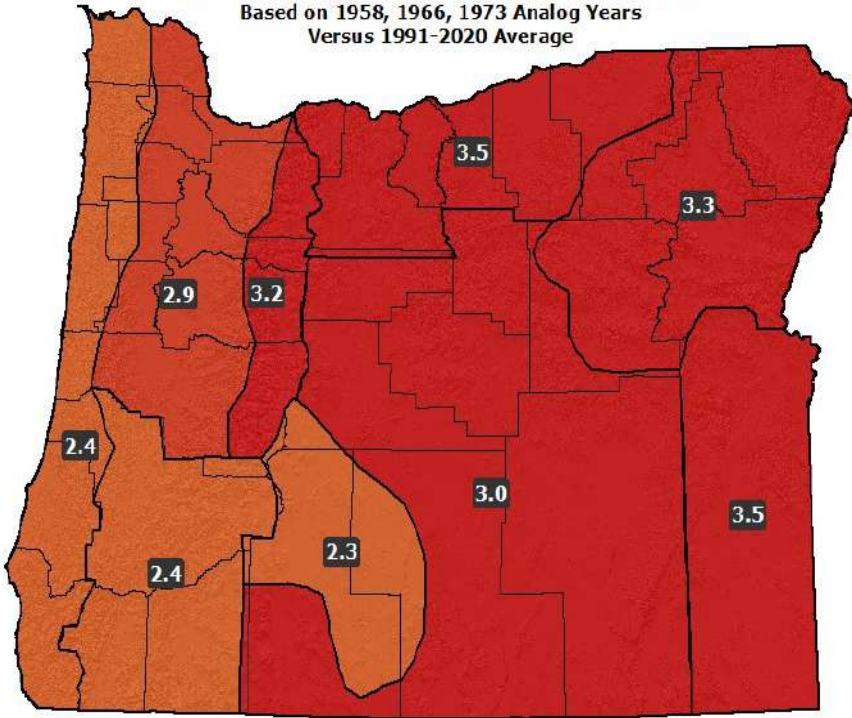
February 2024

(Forecast Issued January 18, 2024) / (Actual)

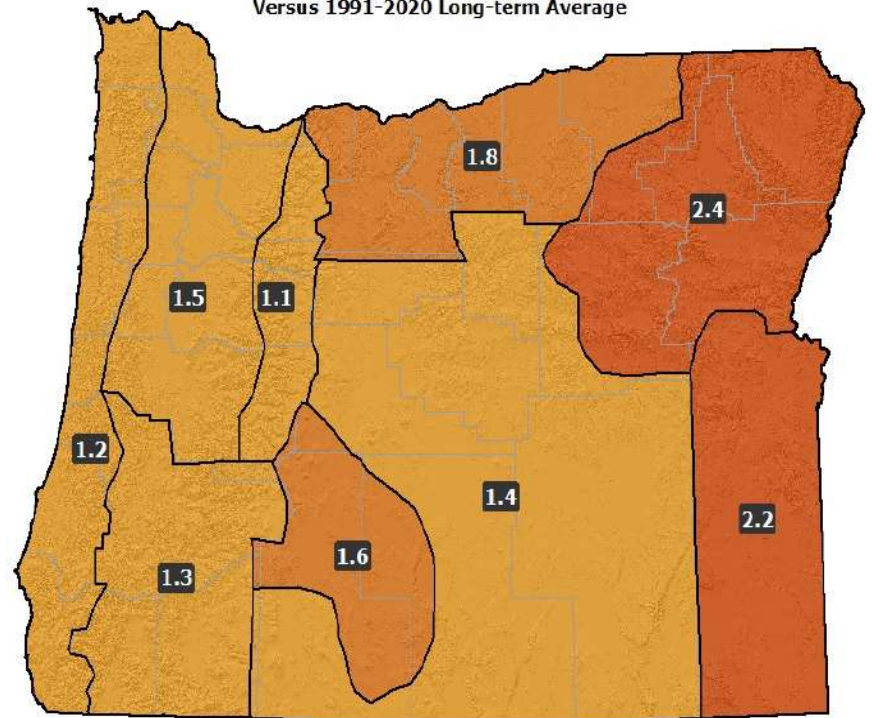
Forecast Temperatures

Actual Temperatures

February 2024 Forecast Temperature Anomalies (°F)
Based on 1958, 1966, 1973 Analog Years
Versus 1991-2020 Average



February 2024 Actual Temperature Anomalies (°F)
Versus 1991-2020 Long-term Average



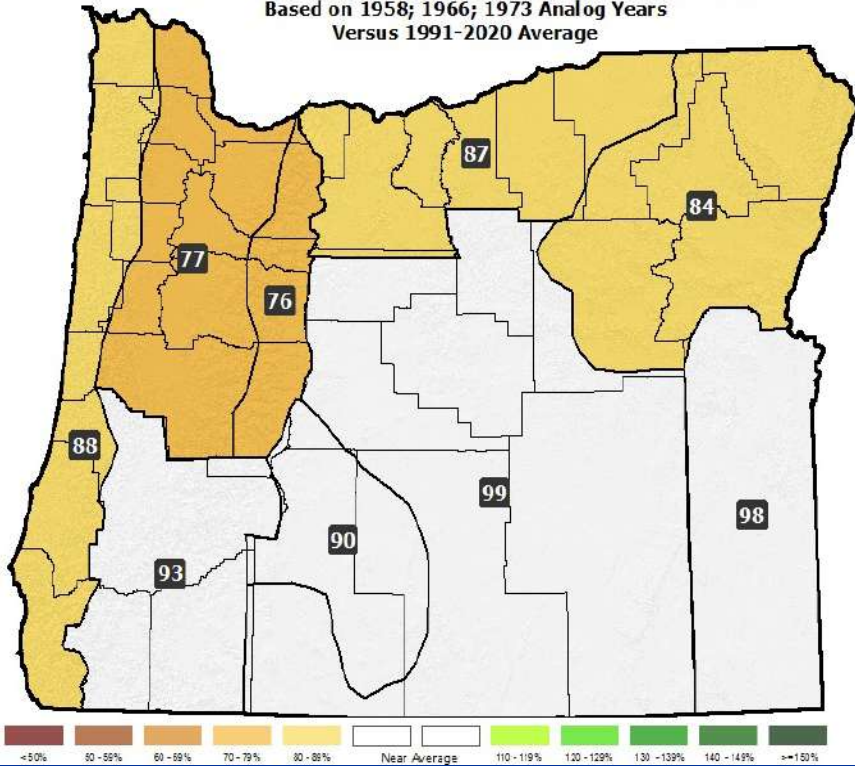
Data courtesy of the National Centers for Environmental Information (NCEI)

February 2024

(Forecast Issued January 18, 2024)/(Actual)

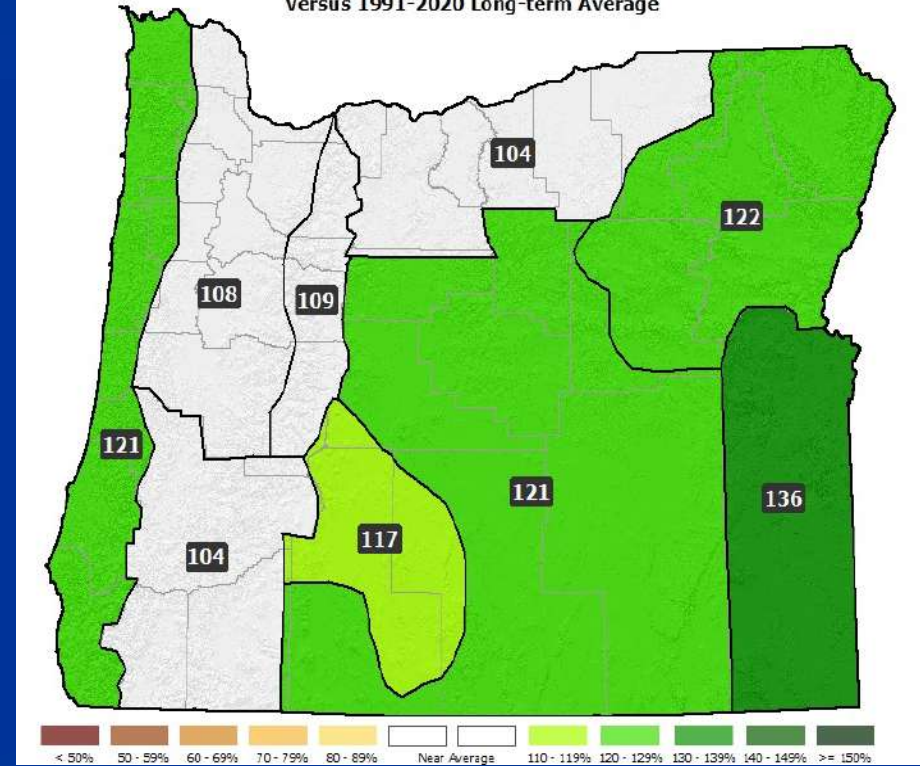
Forecast Precipitation

February 2024 Forecast Precipitation Anomalies (% of Avg)
Based on 1958; 1966; 1973 Analog Years
Versus 1991-2020 Average



Actual Precipitation

February 2024 Actual Precipitation Anomalies (% of Avg)
Versus 1991-2020 Long-term Average



Data courtesy of the National Centers for Environmental Information (NCEI)

February 2024

(Forecast Issued January 18, 2024) / (Actual)

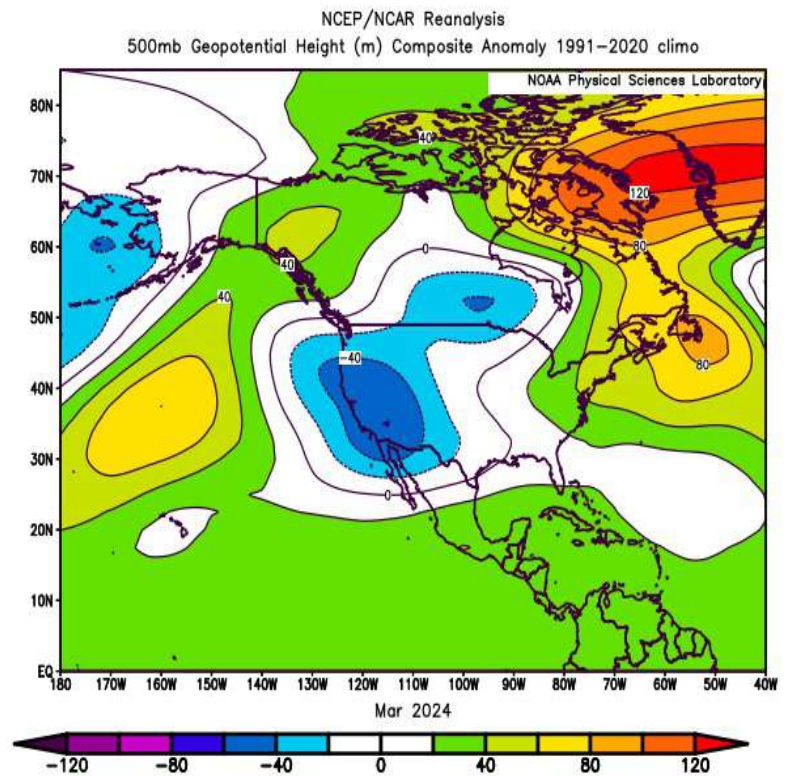
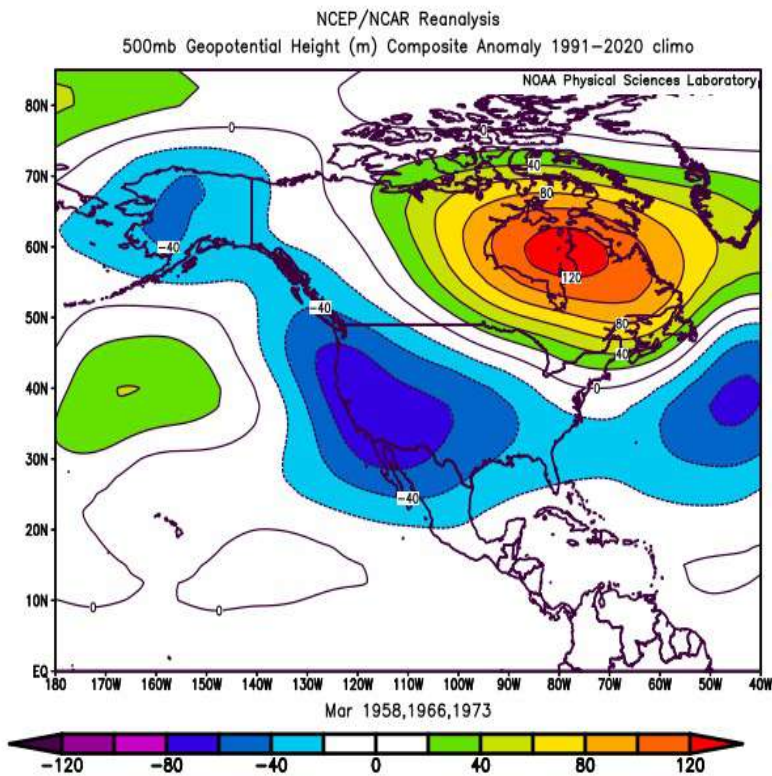
- Above-average temperatures but with short-duration cool periods. (A split-flow jet stream pattern brought generally benign weather with above-average temperatures statewide. There were only two relatively cool periods, each lasting just a couple of days.) A “forecast hit.”
- Precipitation near average south and slightly below average north. (Storms generally weakened, as they came ashore. While there were many days with some precipitation, amounts were mostly light until the very end of the month. Overall, rain and mountain snow were near or slightly above average.) A “partial forecast hit.”

March 2024

(Forecast Issued February 15, 2024)/(Actual)

Forecast Upper-Air Anomalies

Actual Upper-Air Anomalies



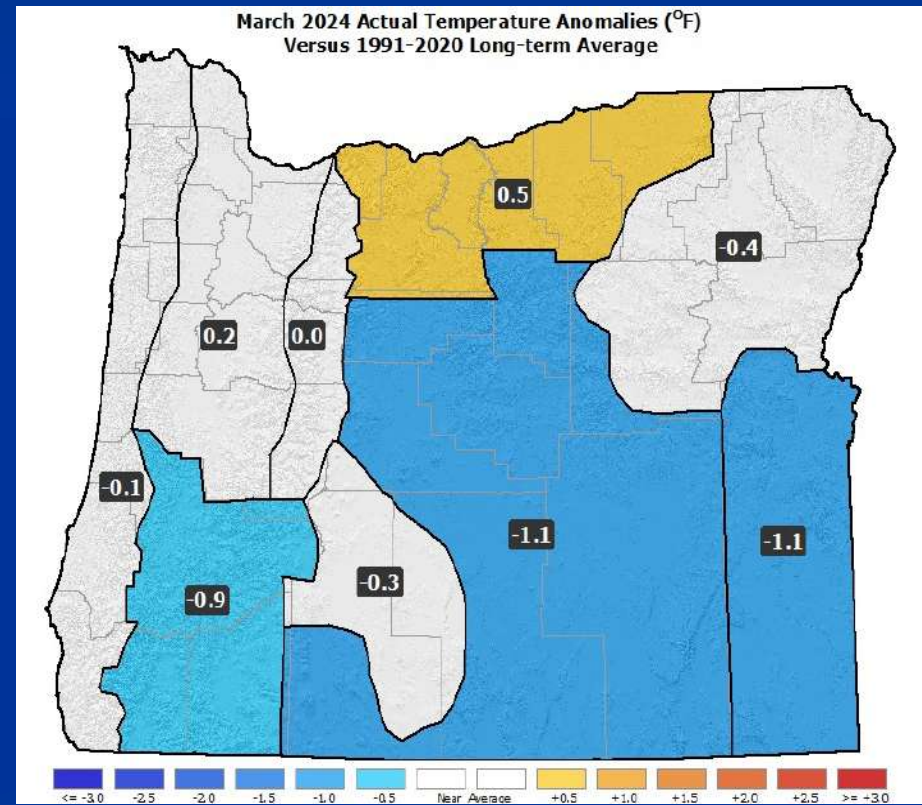
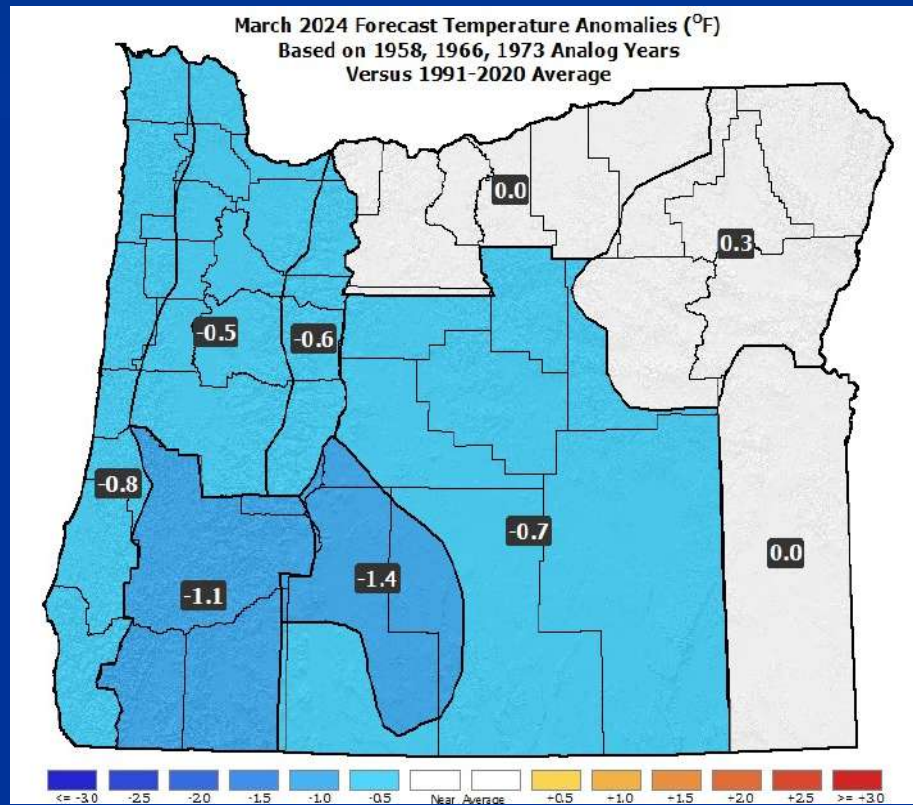
- Analog forecast (left) and observed pattern (right) both had negative anomalies along the west coast...centered over California (**El Niño** signature). A “forecast hit.”

March 2024

(Forecast Issued February 15, 2024)/(Actual)

Forecast Temperatures

Actual Temperatures



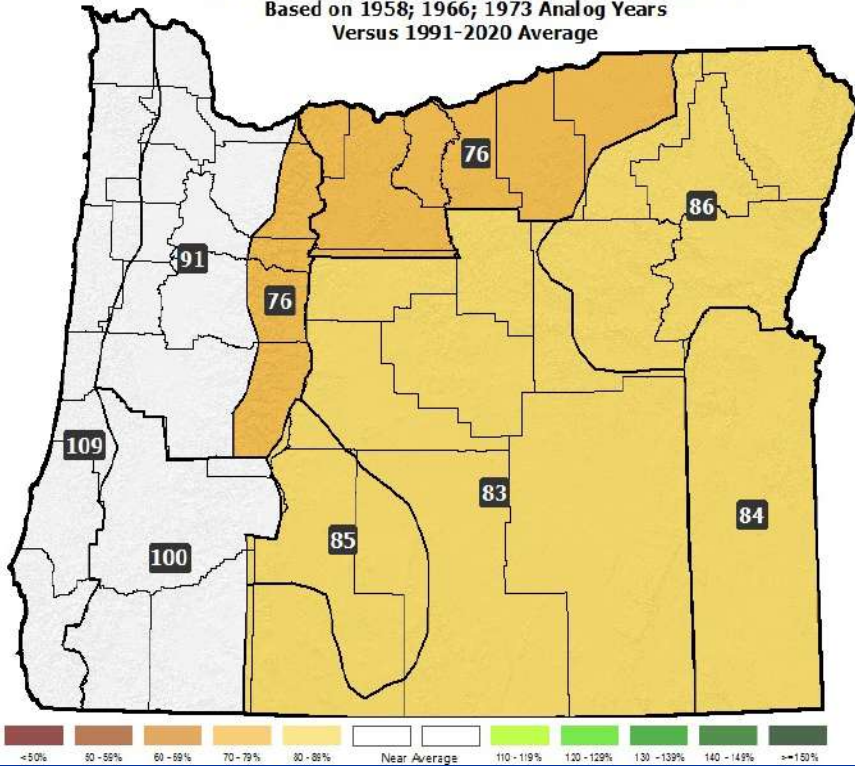
Data courtesy of the National Centers for Environmental Information (NCEI)

March 2024

(Forecast Issued February 15, 2024)/(Actual)

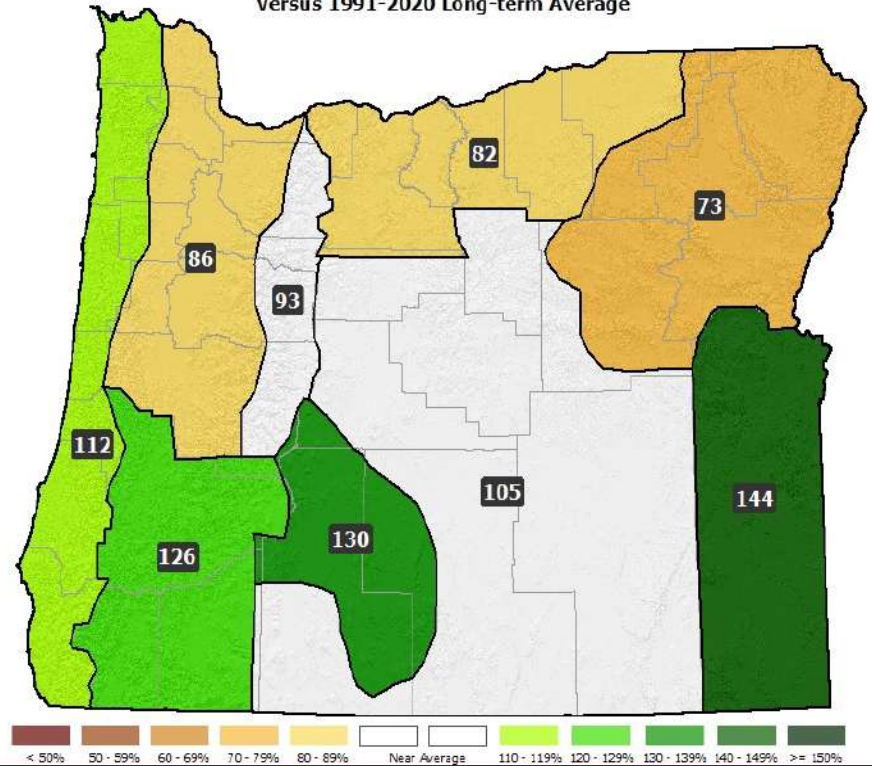
Forecast Precipitation

March 2024 Forecast Precipitation Anomalies (% of Avg)
Based on 1958; 1966; 1973 Analog Years
Versus 1991-2020 Average



Actual Precipitation

March 2024 Actual Precipitation Anomalies (% of Avg)
Versus 1991-2020 Long-term Average



Data courtesy of the National Centers for Environmental Information (NCEI)

March 2024

(Forecast Issued February 15, 2024)/(Actual)

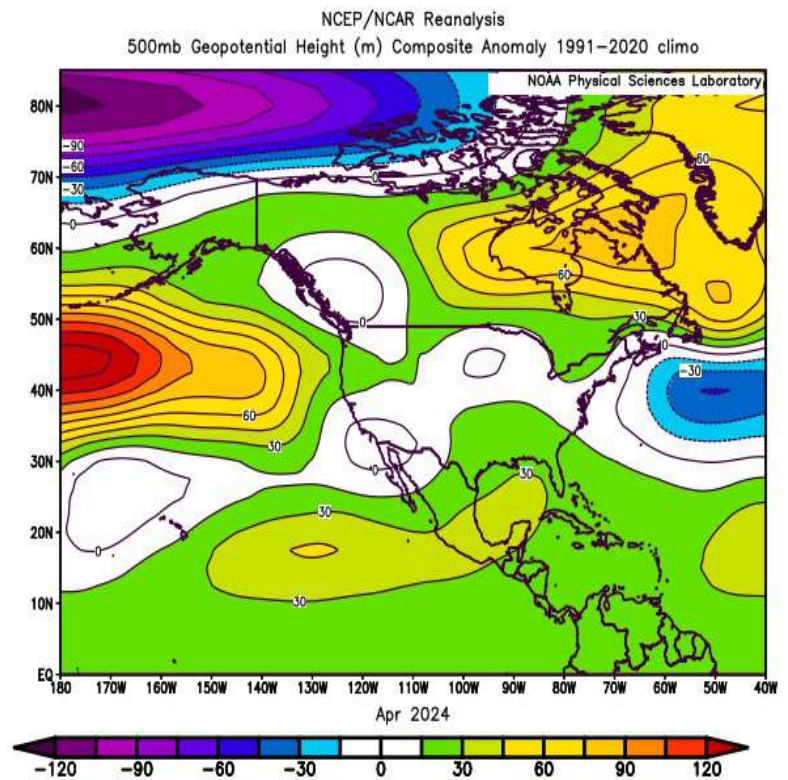
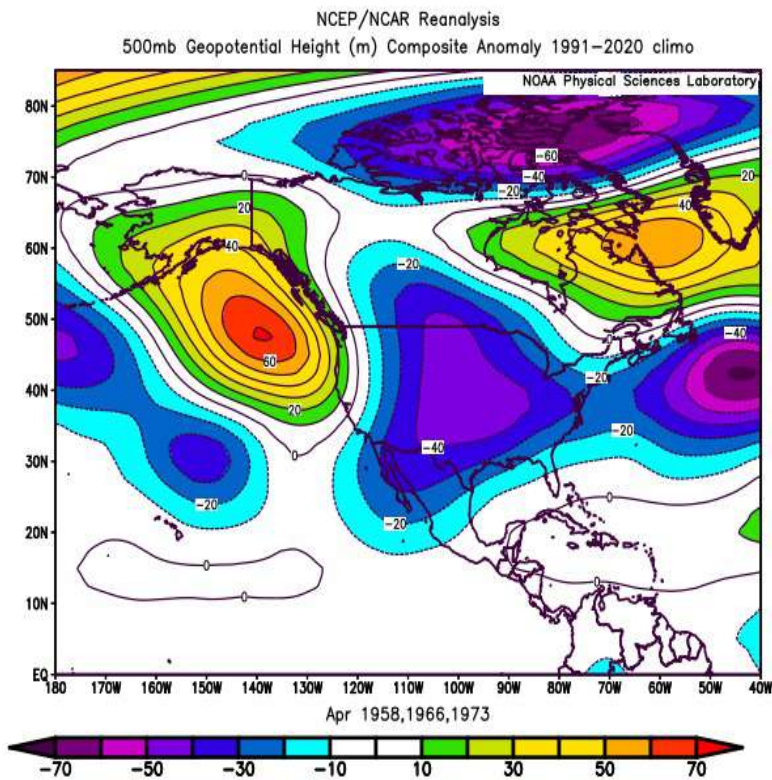
- All three analog years experienced near or below-average temperatures with a general “split-flow” jet stream pattern directing the punch of incoming storms towards California. (A pervasive “split-flow” jet stream pattern directed significant storm activity into California...keeping Oregon’s temperatures generally near or below average.) A “forecast hit.”
- Precipitation expected most days, but with the “split-flow” jet stream pattern centering the impacts over California. (There were more wet days than dry days across the state. As expected, the **El Niño** “split-flow” jet stream pattern brought more precipitation, relative to average, to the southern zones.) A “forecast hit.”

April 2024

(Forecast Issued March 21, 2024) / (Actual)

Forecast Upper-Air Anomalies

Actual Upper-Air Anomalies



- Anomalous ridging was predicted in the Gulf of Alaska...extending to the Pacific NW Coast (left). The observed anomalies (right) resembled those predicted. Both showed near-average conditions over Oregon. Mostly a “forecast hit.”

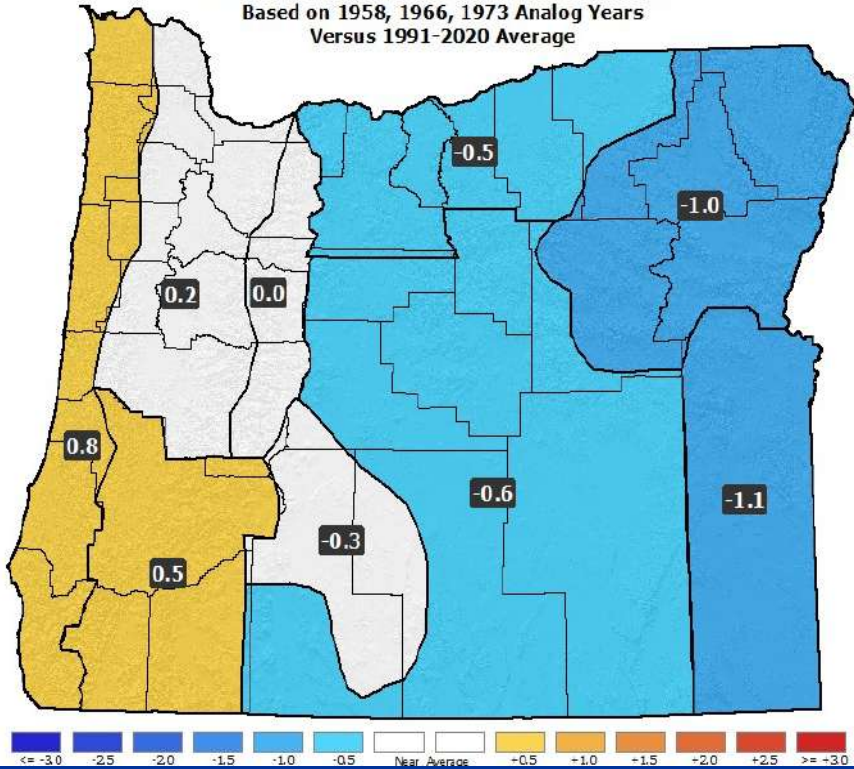
April 2024

(Forecast Issued March 21, 2024) / (Actual)

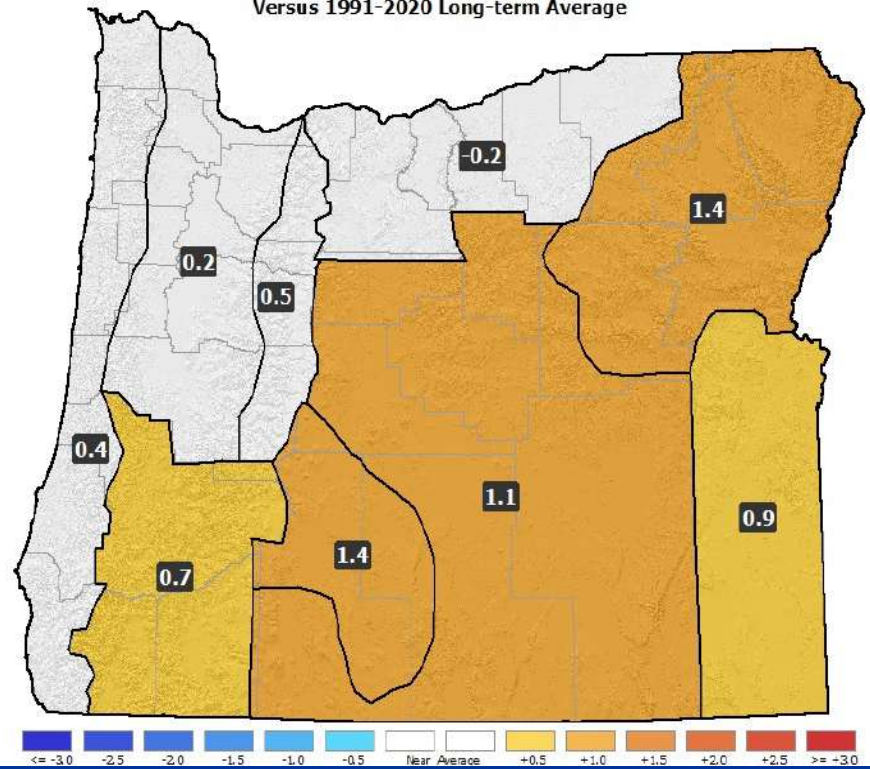
Forecast Temperatures

Actual Temperatures

April 2024 Forecast Temperature Anomalies (°F)
Based on 1958, 1966, 1973 Analog Years
Versus 1991-2020 Average



April 2024 Actual Temperature Anomalies (°F)
Versus 1991-2020 Long-term Average



Data courtesy of the National Centers for Environmental Information (NCEI)

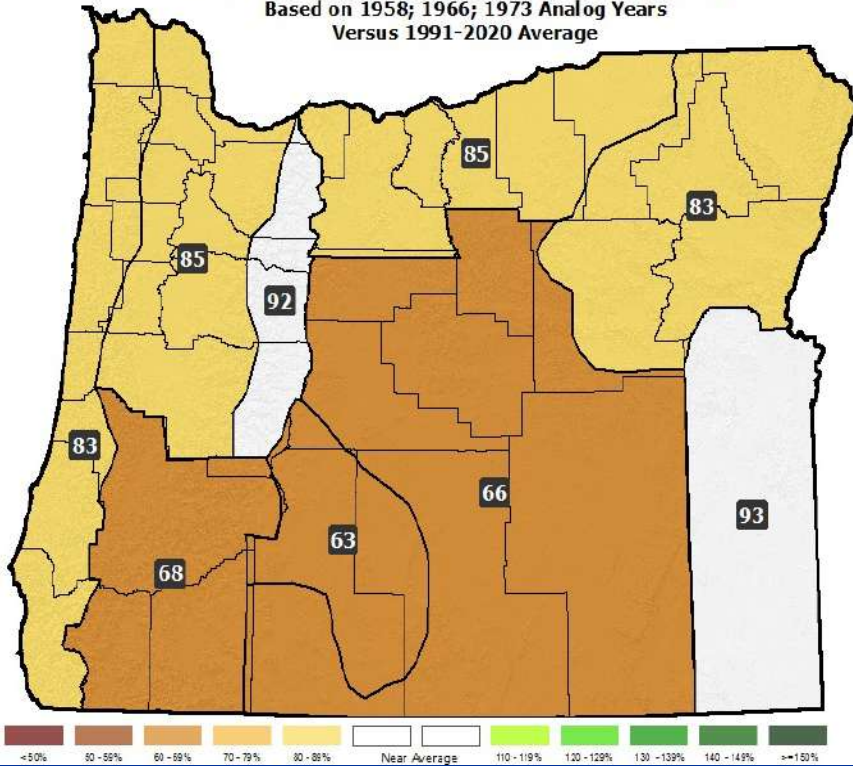
April 2024

(Forecast Issued March 21, 2024) / (Actual)

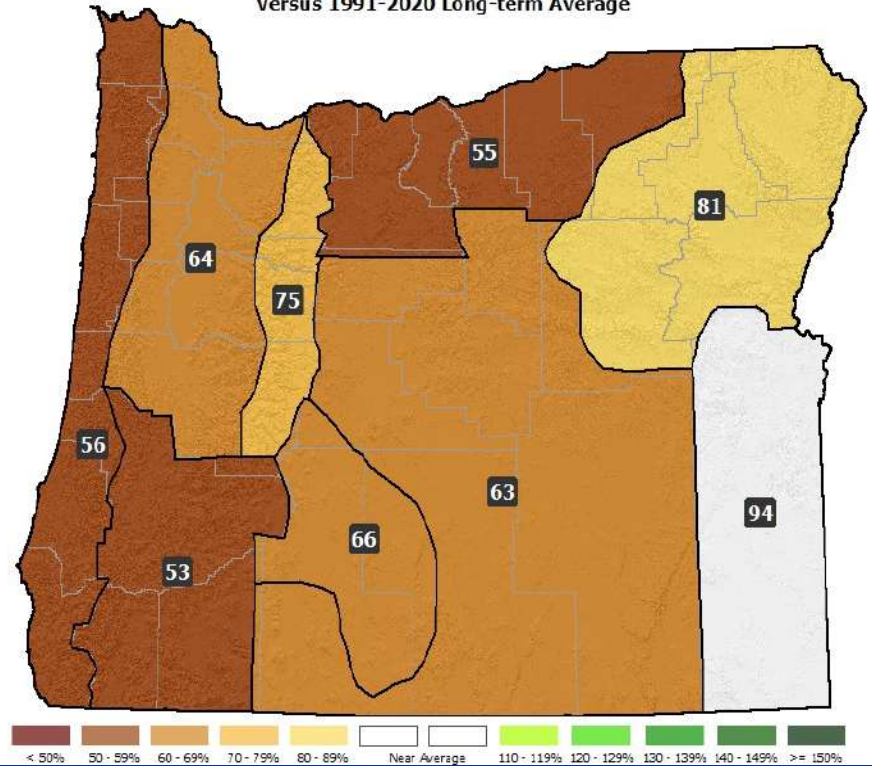
Forecast Precipitation

Actual Precipitation

April 2024 Forecast Precipitation Anomalies (% of Avg)
Based on 1958; 1966; 1973 Analog Years
Versus 1991-2020 Average



April 2024 Actual Precipitation Anomalies (% of Avg)
Versus 1991-2020 Long-term Average



Data courtesy of the National Centers for Environmental Information (NCEI)

April 2024

(Forecast Issued March 21, 2024) / (Actual)

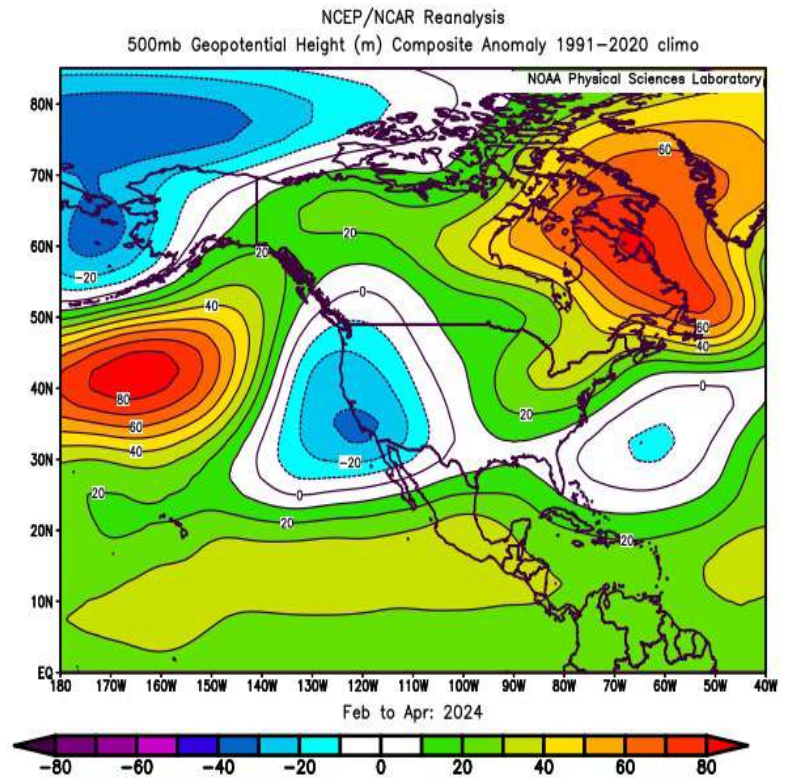
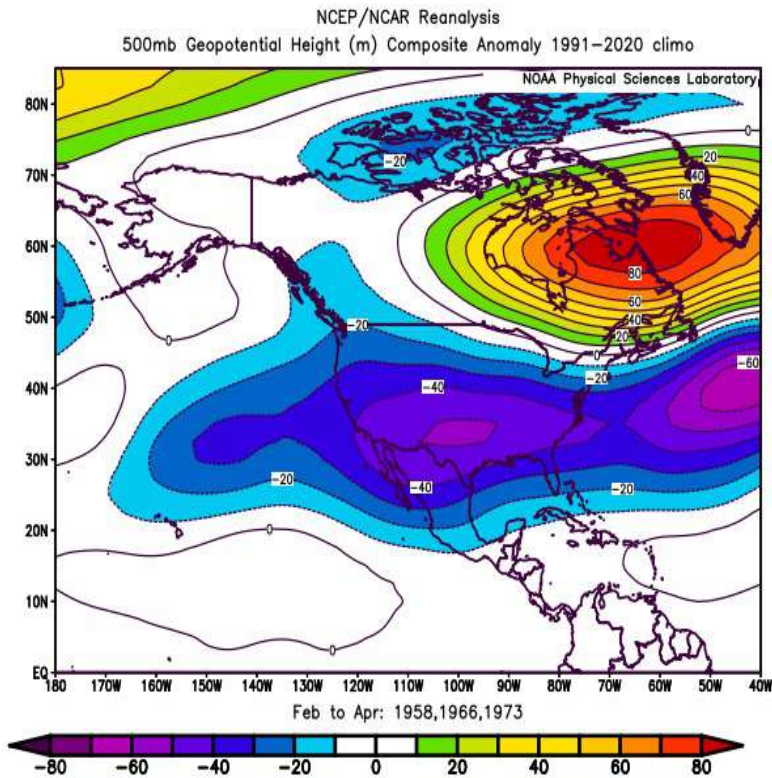
- Analogs mostly had near-average temperatures, but 1966 had a significant cold snap with fruit-tree damage. (Temperatures were generally near or slightly above average. However, there were cool periods at the beginning and middle of the month with local western valley frost.) A “forecast hit.”
- Precipitation varied among the analogs. 1958 was wet, but 1966 & 1973 were drier than average. The latter skewed the forecast dry but with reduced forecast confidence. (Most of the rain and mountain snow fell at the beginning and end of the month. Overall, precipitation was below average, especially north.) A “forecast hit.”

February – April 2024

(Forecast Issued January 18, 2024)/(Actual)

Forecast Upper-Air Anomalies

Actual Upper-Air Anomalies



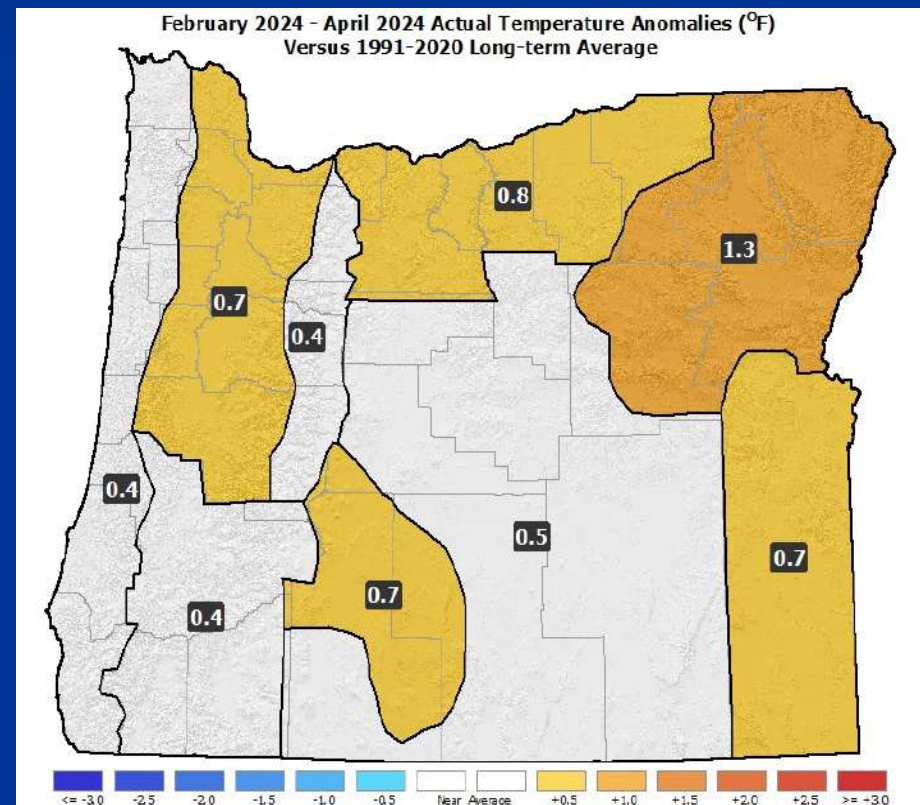
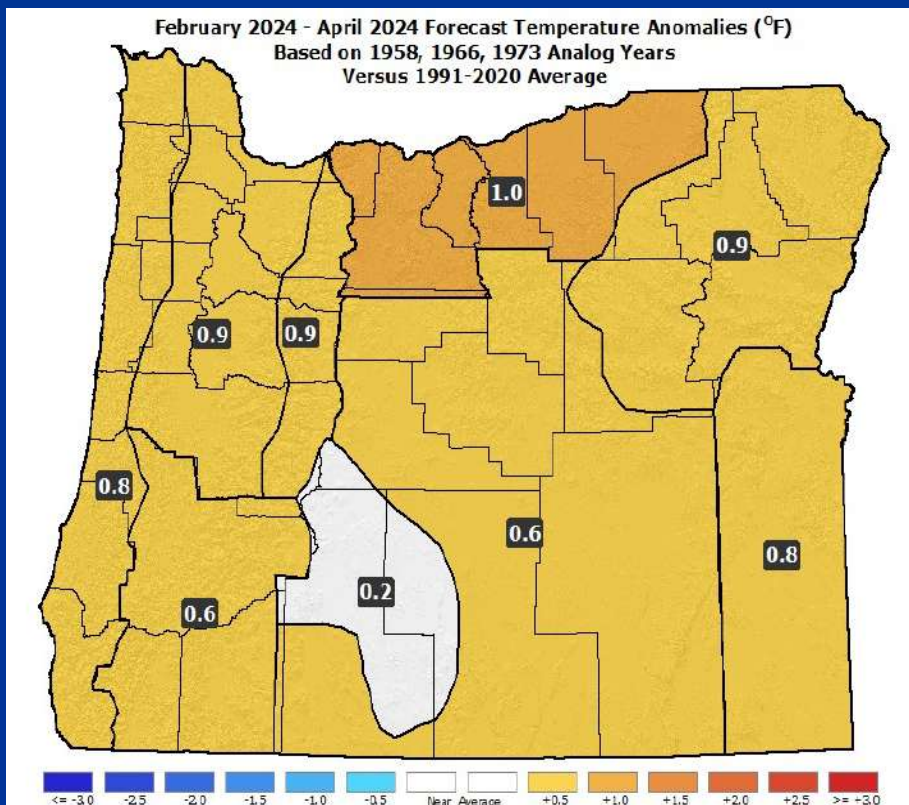
- Both the analog blend (left) and the observed pattern (right) exhibited a pervasive “split-flow” upper-air pattern (typical during an **El Niño**) with anomalous troughing along the west coast. *A “forecast hit.”*

February – April 2024

(Forecast Issued January 18, 2024) / (Actual)

Forecast Temperatures

Actual Temperatures



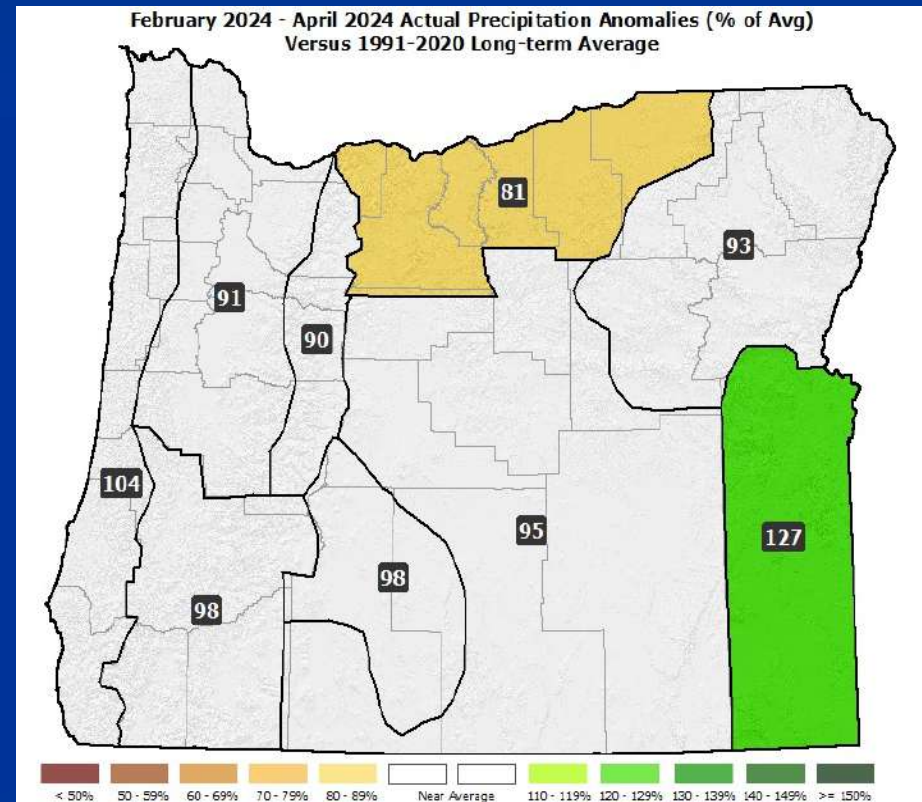
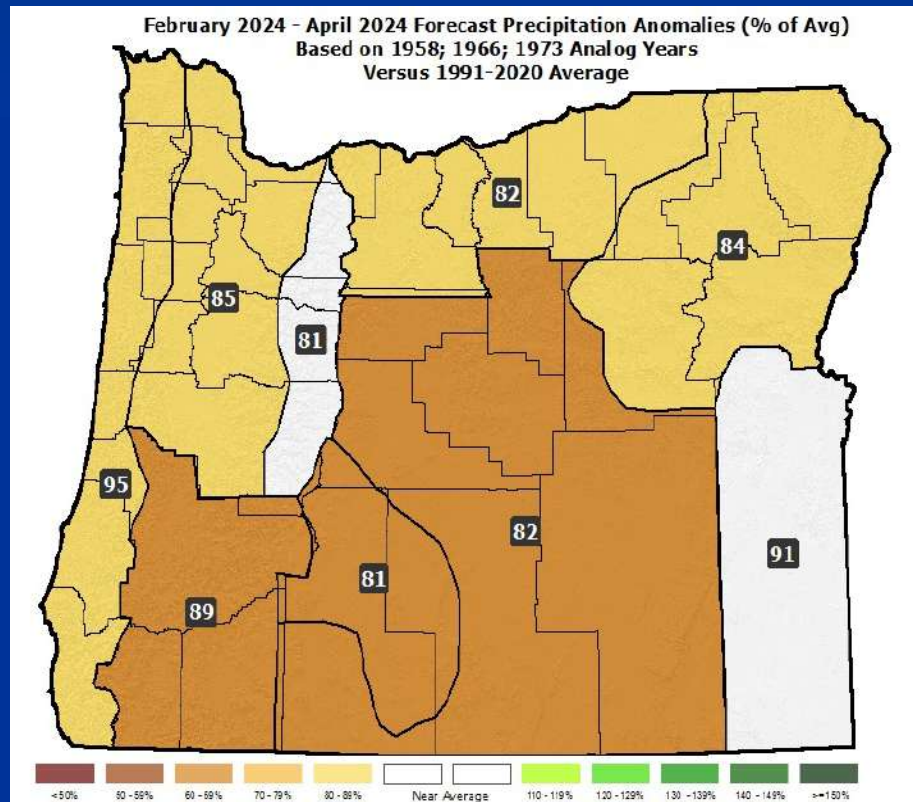
Data courtesy of the National Centers for Environmental Information (NCEI)

February – April 2024

(Forecast Issued January 18, 2024)/(Actual)

Forecast Precipitation

Actual Precipitation



Data courtesy of the National Centers for Environmental Information (NCEI)

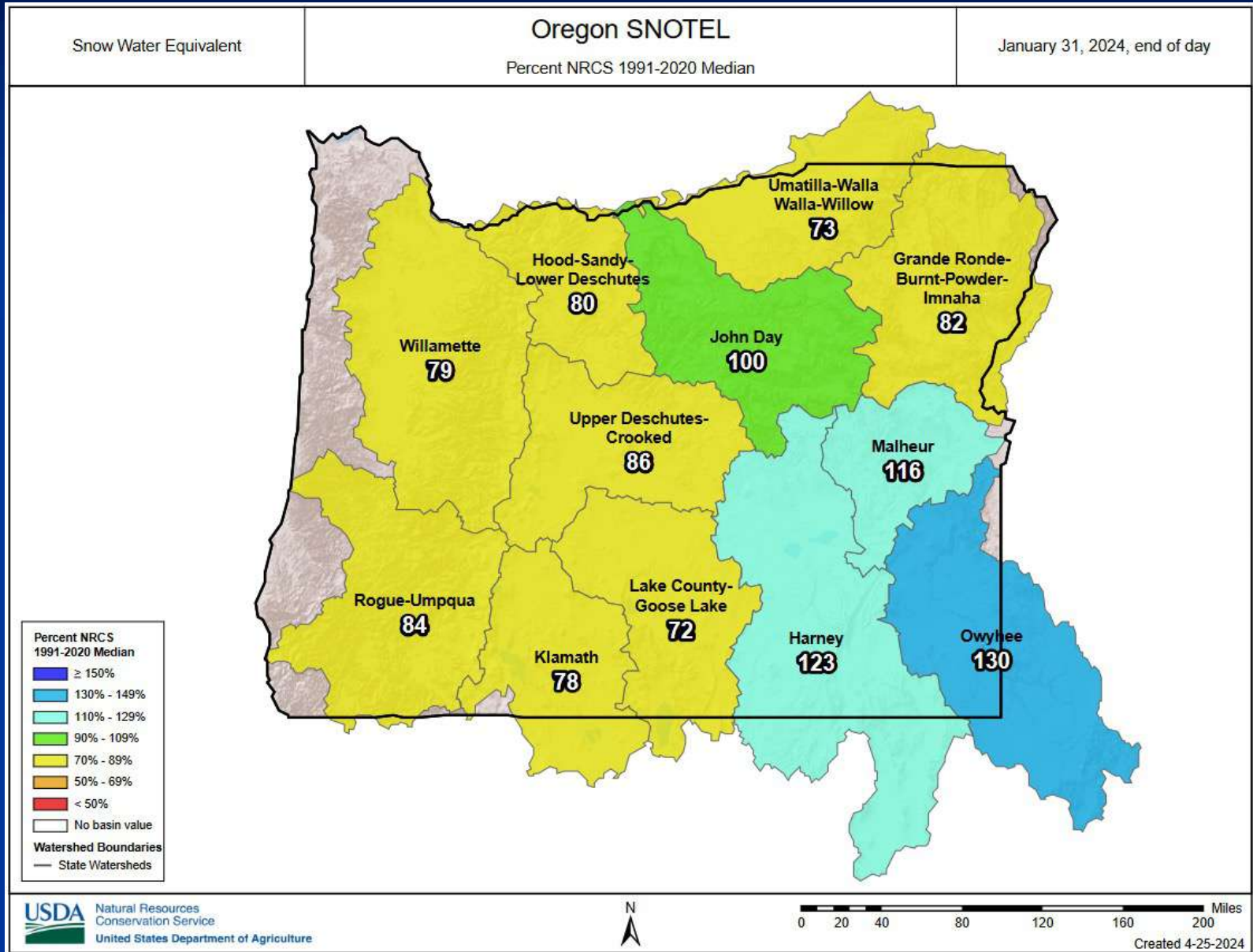
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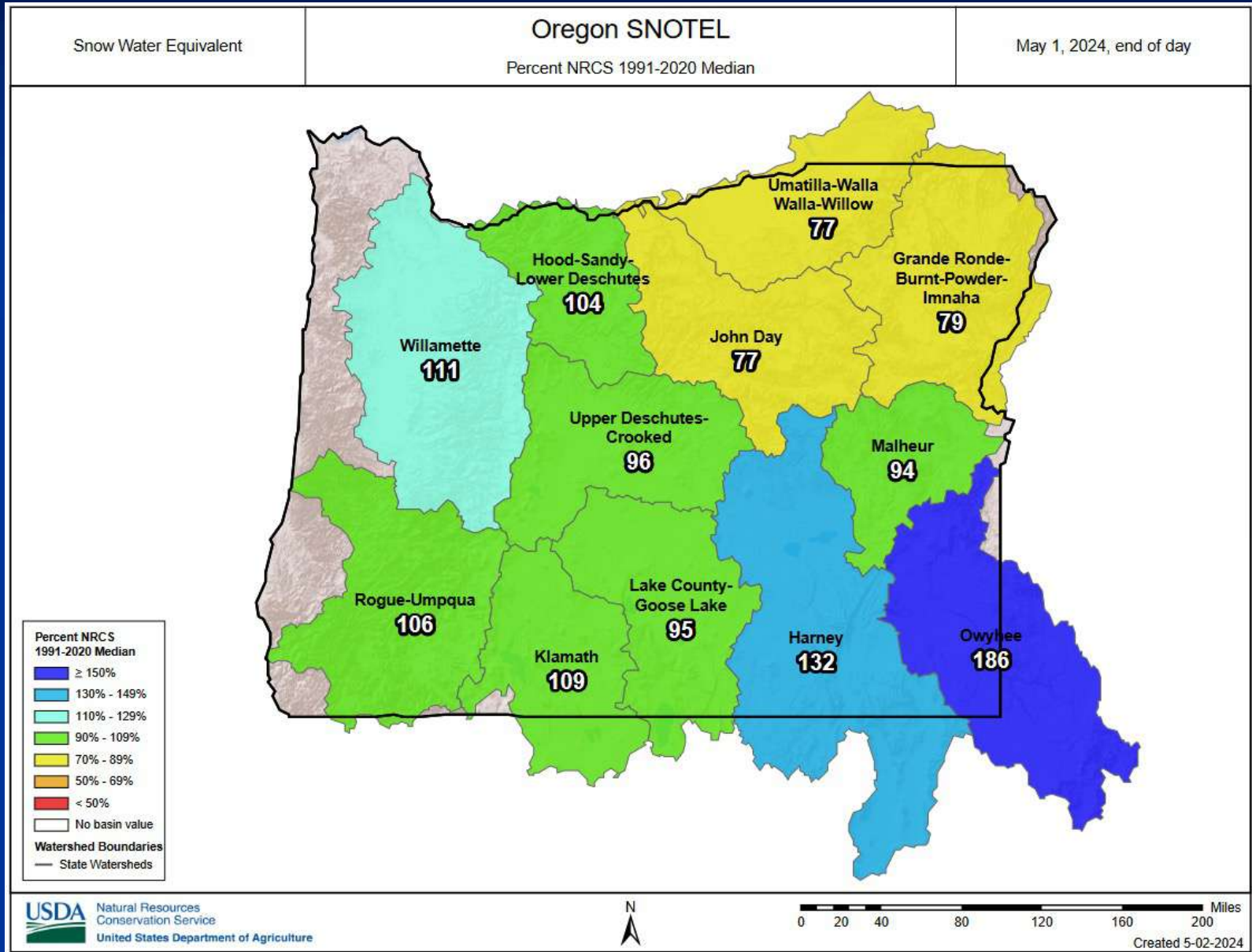
- Near or above-average temperatures. (As expected, a mild pattern emerged in February with March bringing some cooling, relative to average. April had slightly warmer-than-average temperatures. Overall, temperatures were slightly above average.) A “forecast hit.”
- An abundance of days with precipitation but overall values near or slightly below average. The greatest chances for positive departures in the southern zones. (Above-average rain and mountain snow in February was tempered by a transition to drier-than-average conditions by April. Overall, precipitation was near average. Mountain snowpacks peaked at near normal north and above normal south.) A “forecast hit.”

Oregon Snowpacks Started Slowly...

(Beginning of February 2024)



Increases in Snowpacks...Mainly South (Beginning of May 2024)



Continued Drought Improvement (over the past 3 months)

January 30, 2024

Map released: Thurs. February 1, 2024

Data valid: January 30, 2024 at 7 a.m. EST

Intensity

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

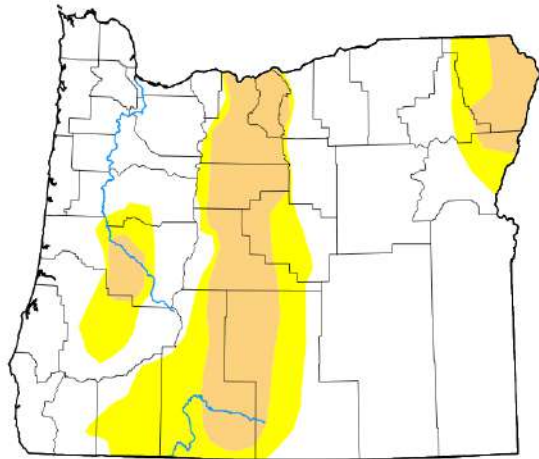
Authors

United States and Puerto Rico Author(s):

[Brian Fuchs](#), National Drought Mitigation Center

Pacific Islands and Virgin Islands Author(s):

[Curtis Riganti](#), National Drought Mitigation Center



April 30, 2024

Map released: Thurs. May 2, 2024

Data valid: April 30, 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

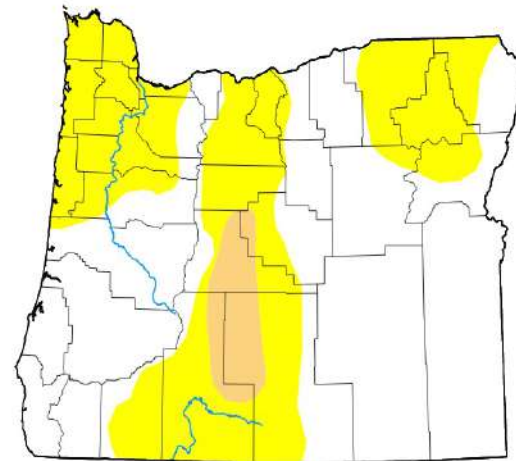
Authors

United States and Puerto Rico Author(s):

[Curtis Riganti](#), National Drought Mitigation Center

Pacific Islands and Virgin Islands Author(s):

[Lindsay Johnson](#), 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 Mid-Month

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

Photo: Sherry Brennan