



Seasonal Climate Forecast Verification

August – October 2023

Issued: November 8, 2023

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ODF Team: Julie Vondrachek; Kristin Cody

Photo: Pete Parsons

Format and Purpose:

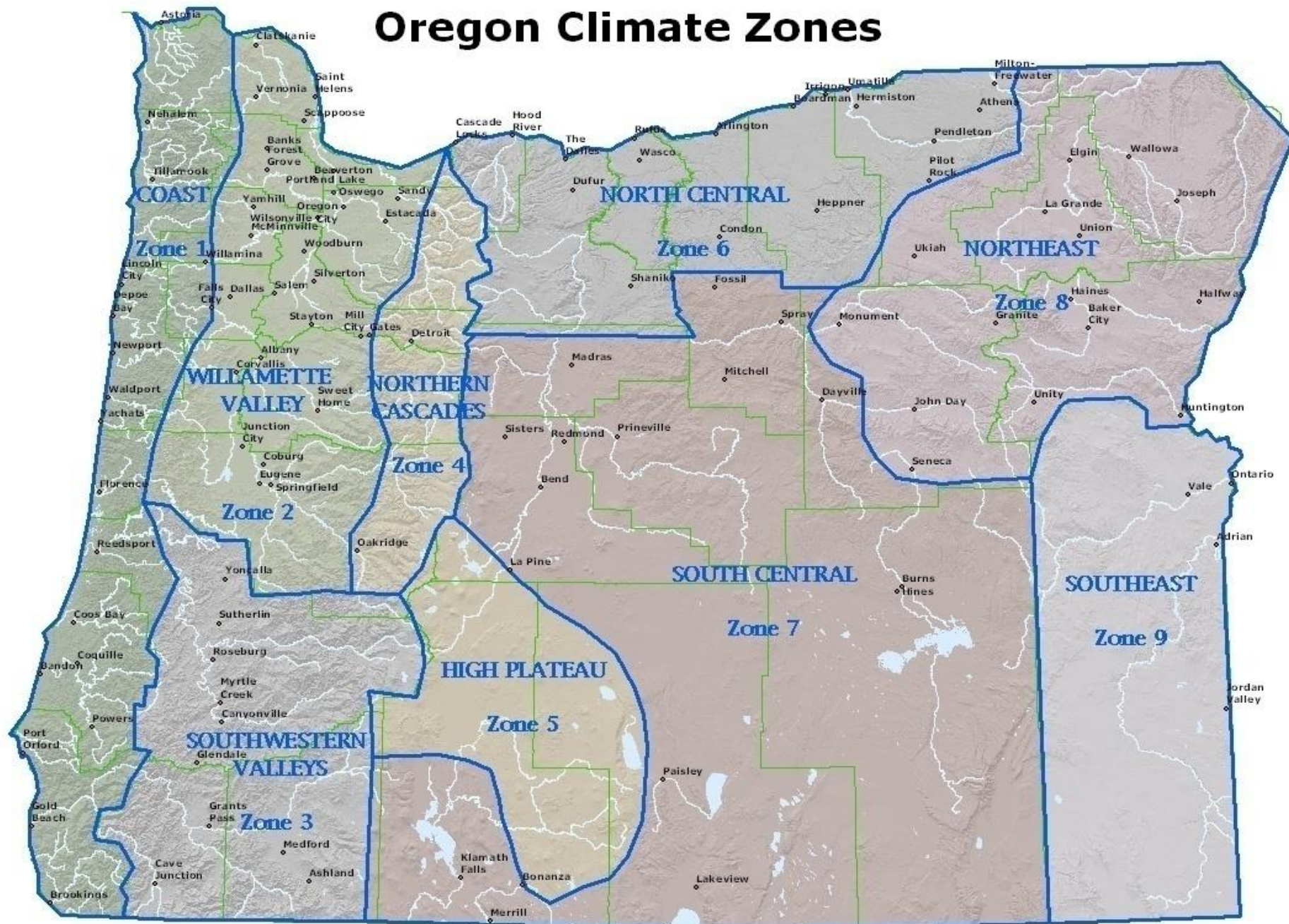
- A side-by-side comparison of the “Seasonal Climate Forecast” vs. what (Actually Occurred) is done for both the 1-month & 3-month forecasts.*
- The accuracy of each forecast is reviewed, and the need for analog-year updates is examined.
- This is part of an ongoing assessment of the utility of this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

**Utilizes 1991-2020 long-term averages*

**See “Forecasting Methods...” at:

<https://oda.direct/Weather>

Oregon Climate Zones

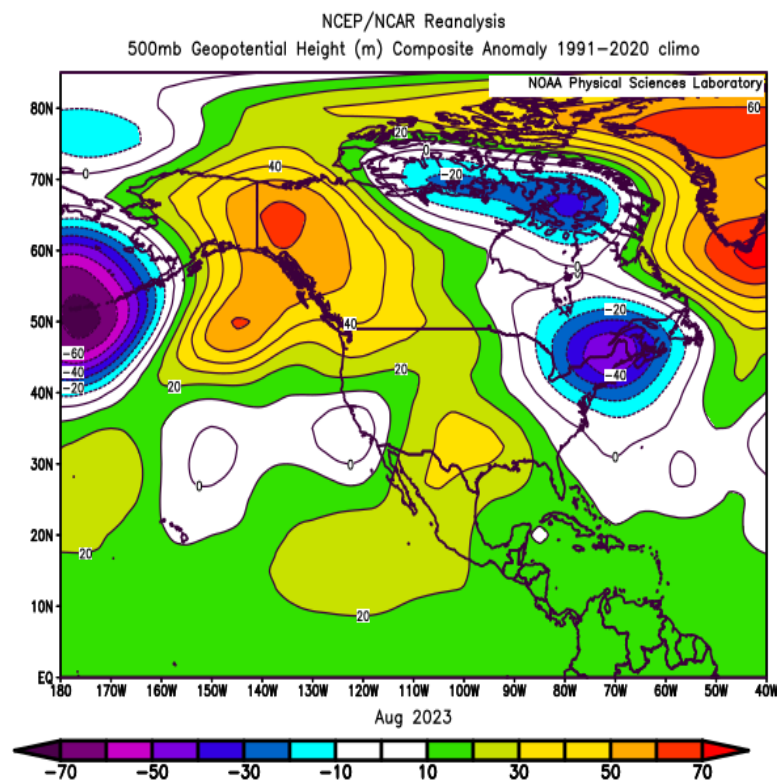
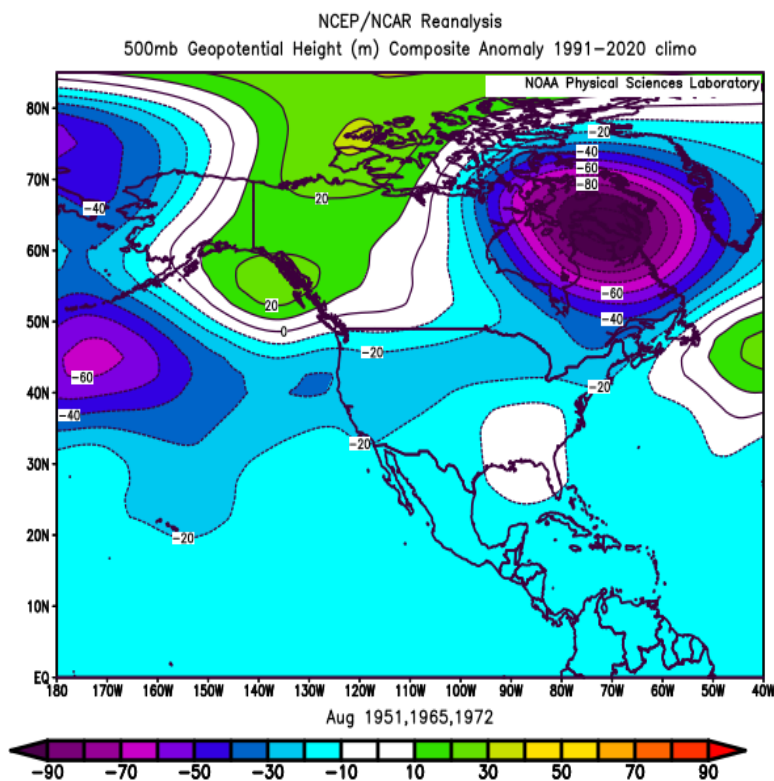


August 2023

(Forecast Issued July 20, 2023)/(Actual)

Forecast Upper-Air Anomalies

Actual Upper-Air Anomalies

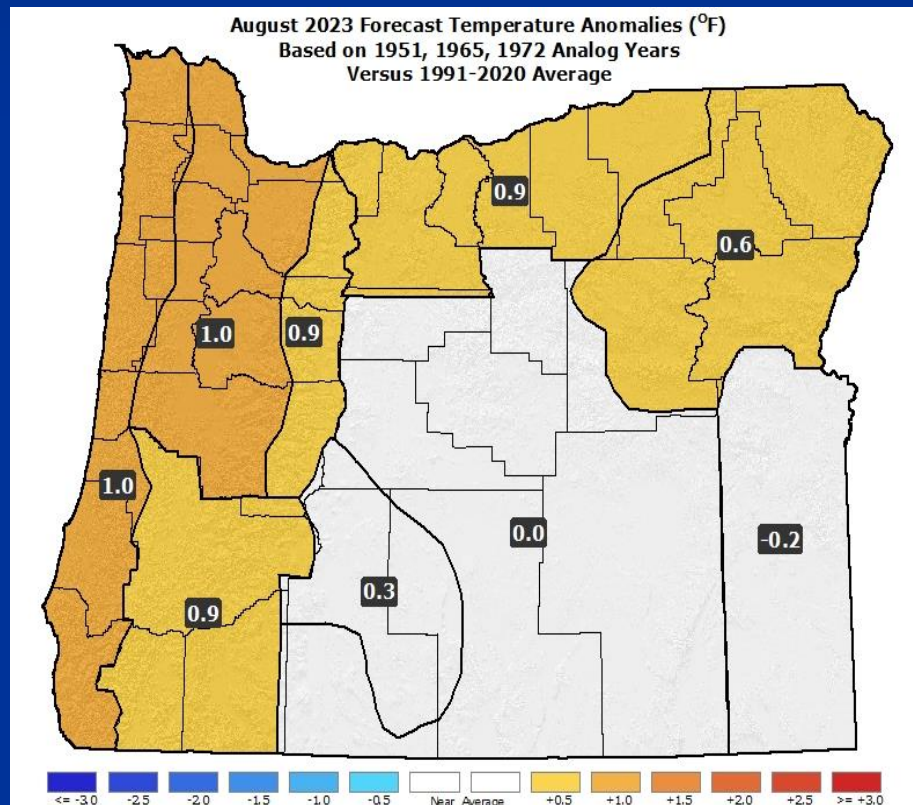


- Both the analog composite forecast (left) and observed pattern (right) had Oregon wedged between positive anomalies (more ridging than normal) in the Gulf of Alaska and negative anomalies (troughing) over southern California. A “*partial forecast hit.*”

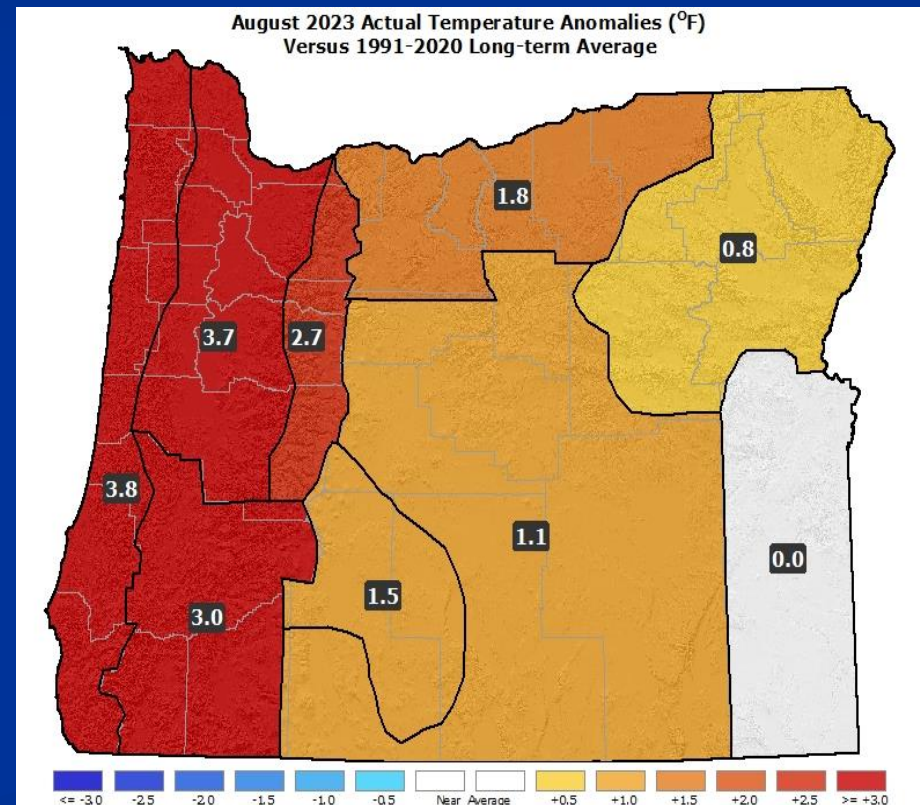
August 2023

(Forecast Issued July 20, 2023)/(Actual)

Forecast Temperatures



Actual Temperatures

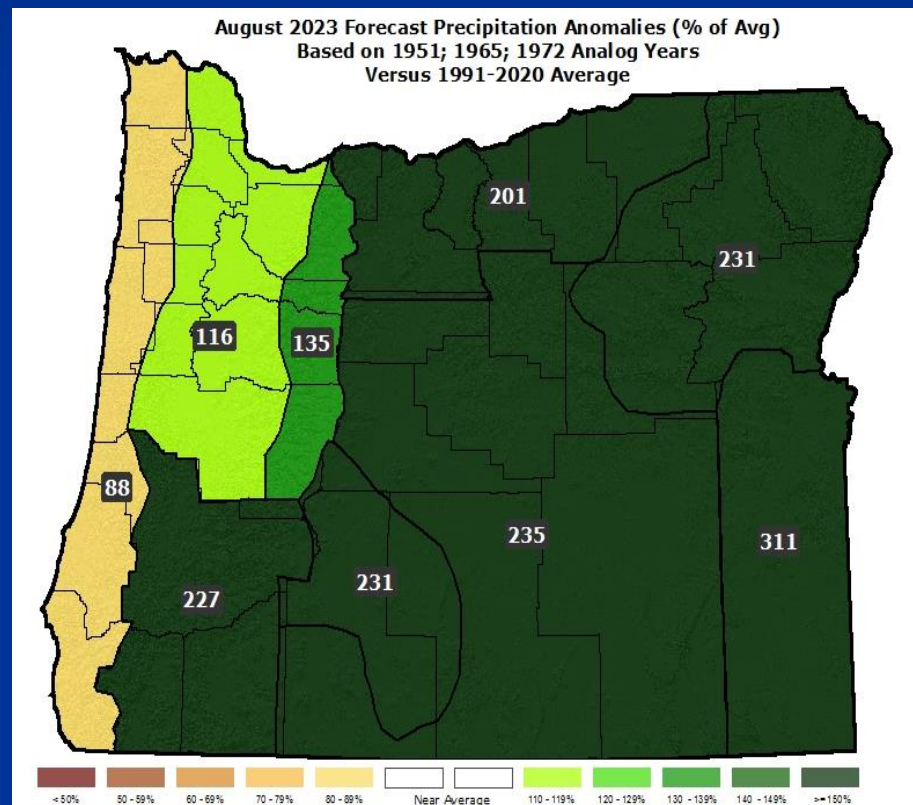


Data courtesy of the National Centers for Environmental Information (NCEI)

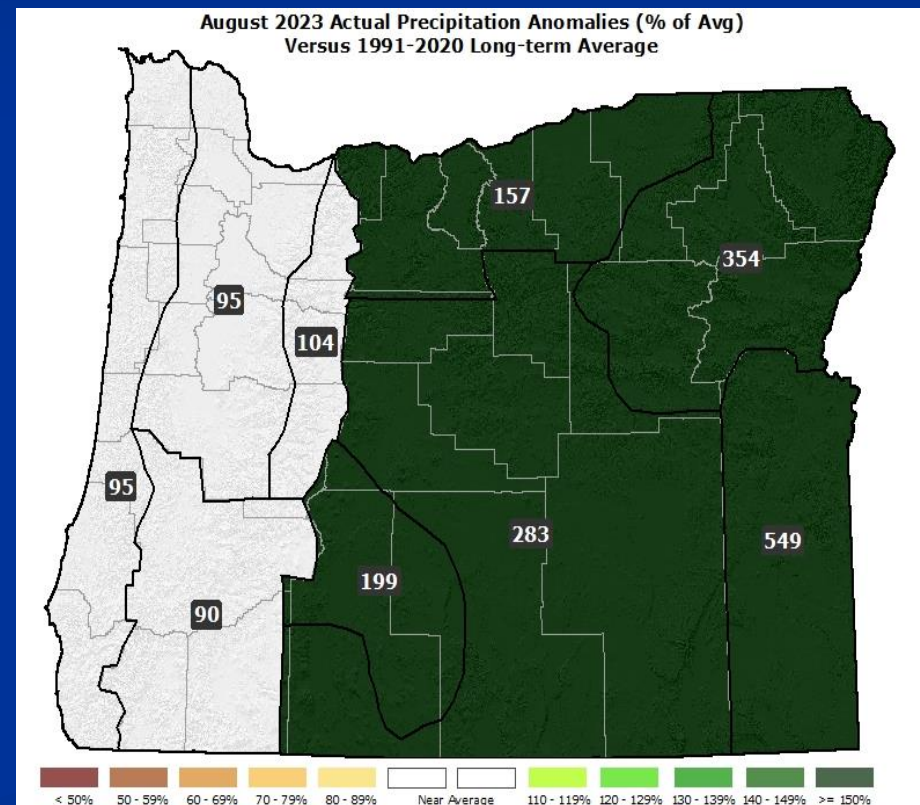
August 2023

(Forecast Issued July 20, 2023)/(Actual)

Forecast Precipitation



Actual Precipitation



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

August 2023

(Forecast Issued July 20, 2023)/(Actual)

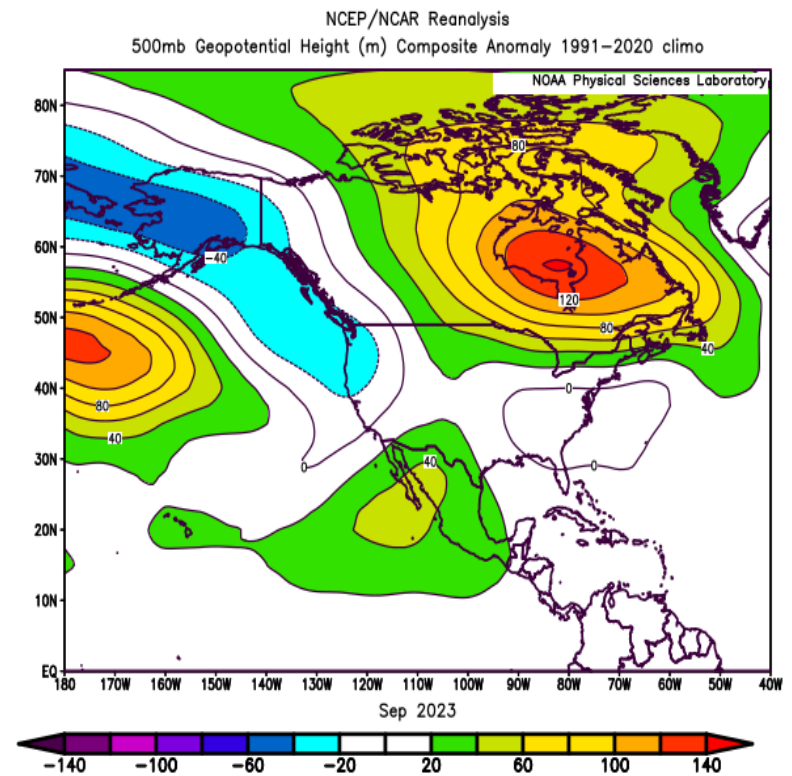
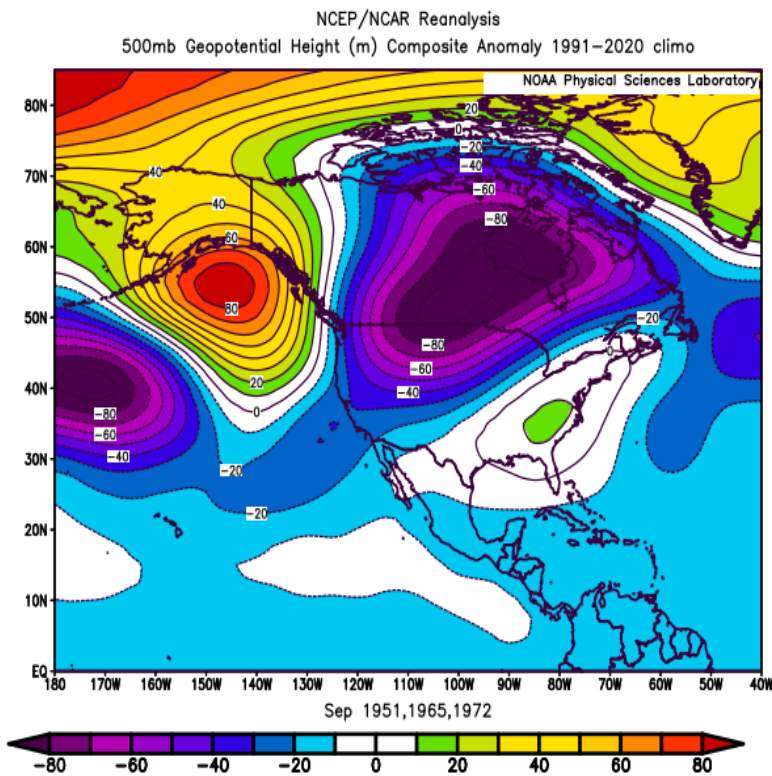
- Above-average temperatures west and NE with at least one hot spell sending valley temperatures over 100°F.
(Temperatures ranged from above average west and central to near average SE. A record-breaking hot spell pushed western valley temperatures over 100°F from the 13th through the 16th, with 100°F+ heat moving across the central and eastern zones from the 14th through the 17th.) A “forecast hit.”
- Below-average rainfall along the coast contrasting with above-average rainfall from the Cascades eastward.
(Precipitation ranged from slightly below average along the coast to well above average east of the Cascades, due largely to heavy rainfall from the remnants of Hillary, a strong eastern Pacific hurricane.) A “forecast hit.”

September 2023

(Forecast Issued August 17, 2023)/(Actual)

Forecast Upper-Air Anomalies

Actual Upper-Air Anomalies

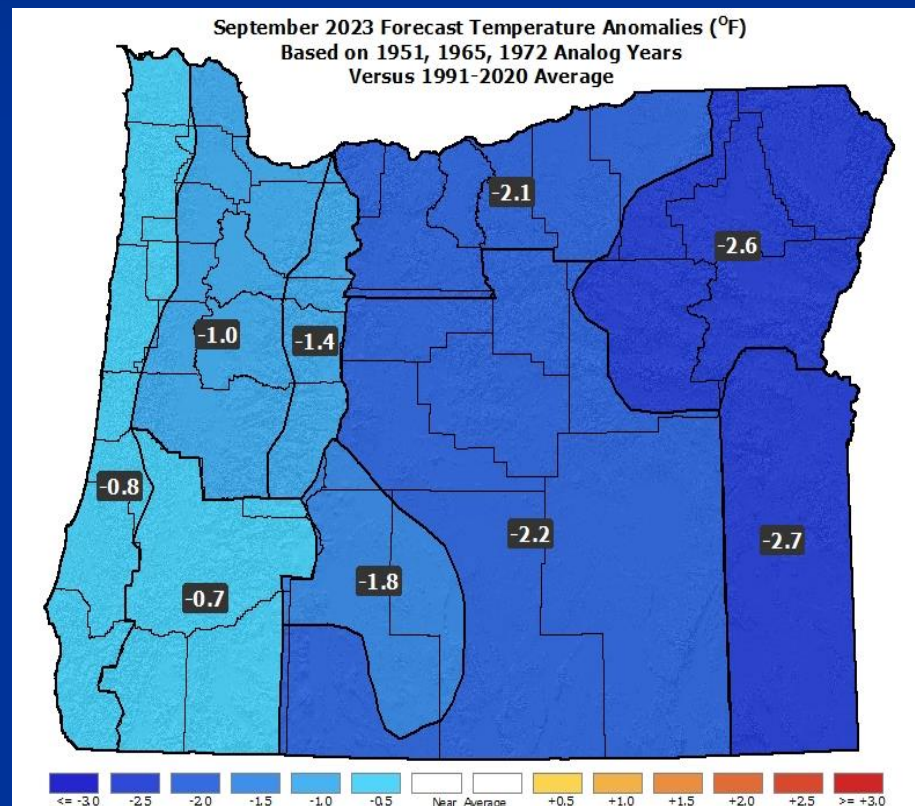


- Analog forecast (left) was mostly out-of-phase with the observed pattern (right), but both had anomalous troughing over the Pacific Northwest. *A “partial forecast hit.”*

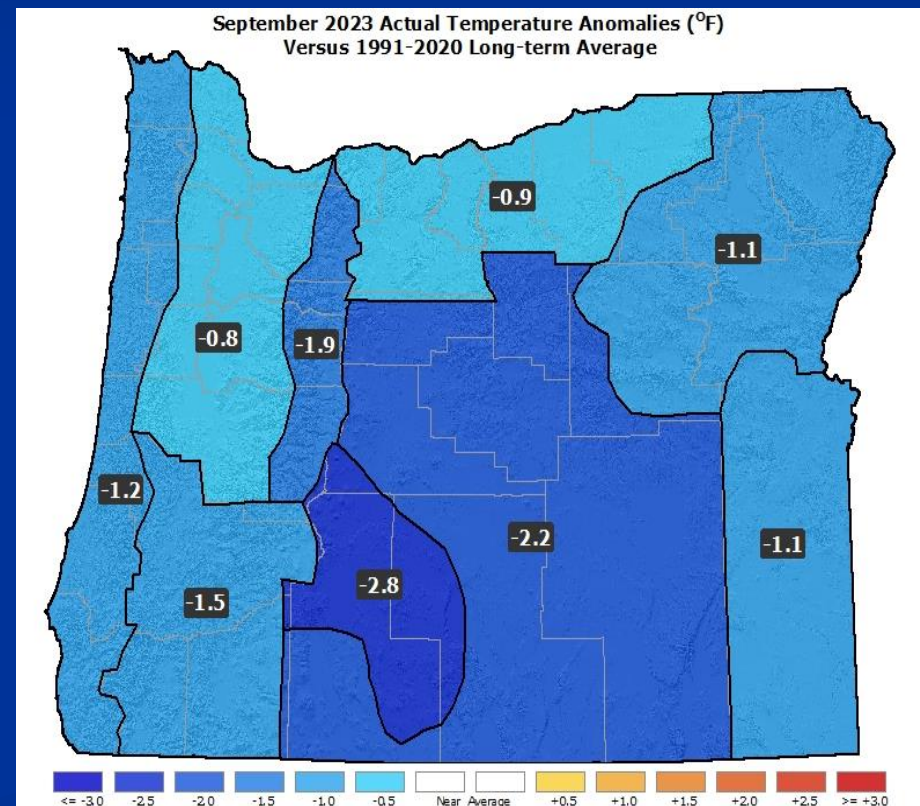
September 2023

(Forecast Issued August 17, 2023)/(Actual)

Forecast Temperatures



Actual Temperatures



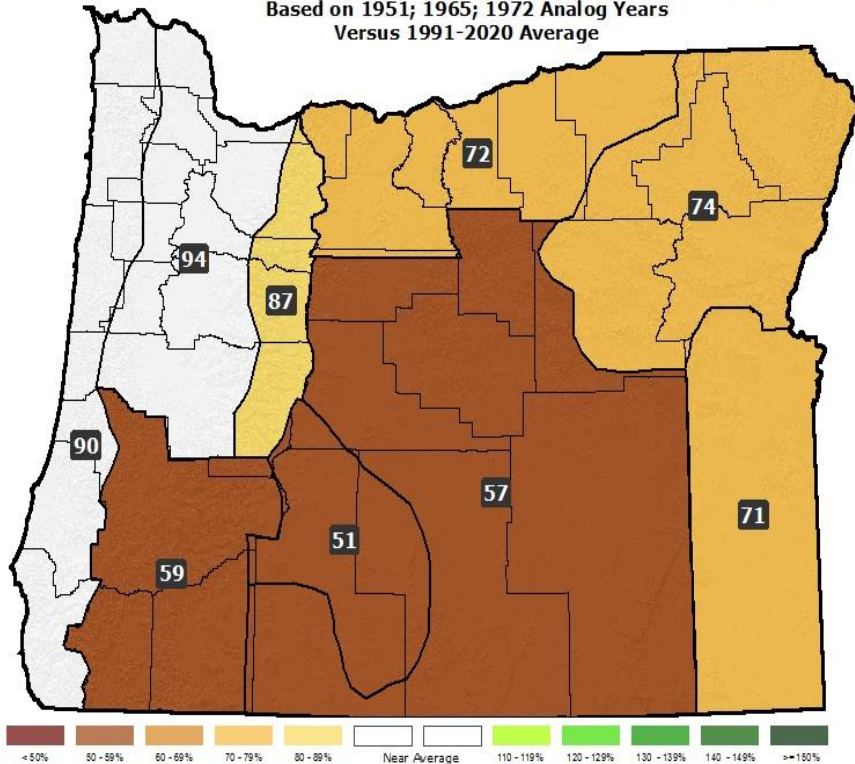
Data courtesy of the National Centers for Environmental Information (NCEI)

September 2023

(Forecast Issued August 17, 2023)/(Actual)

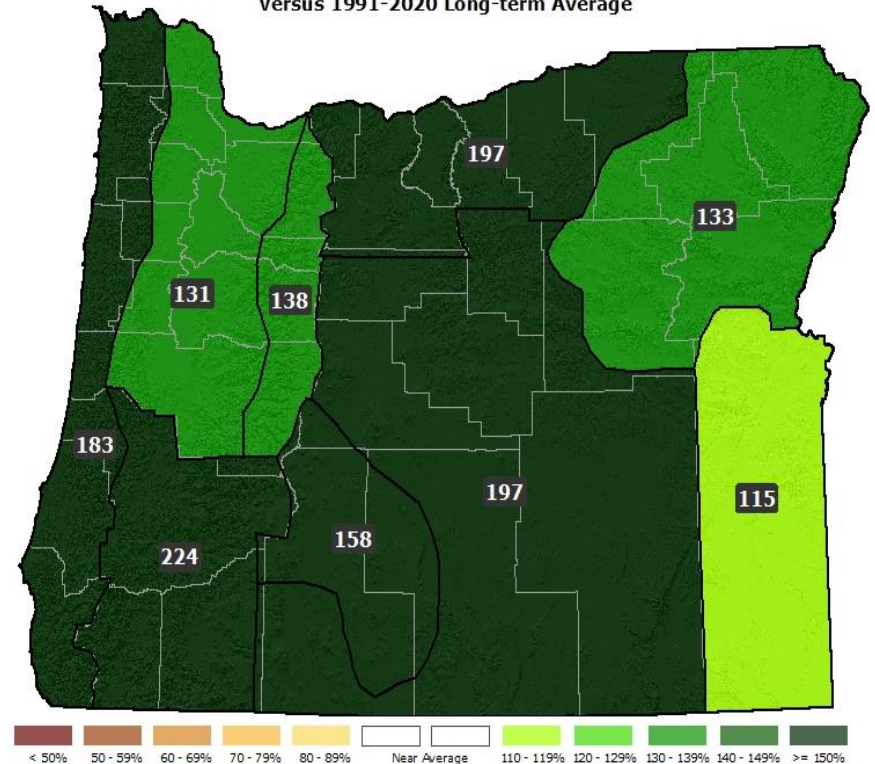
Forecast Precipitation

September 2023 Forecast Precipitation Anomalies (% of Avg)
Based on 1951; 1965; 1972 Analog Years
Versus 1991-2020 Average



Actual Precipitation

September 2023 Actual Precipitation Anomalies (% of Avg)
Versus 1991-2020 Long-term Average



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

September 2023

(Forecast Issued August 17, 2023)/(Actual)

- Temperature forecast skewed colder than normal by 1965 & 1972, but 1951 was warmer than normal (analog lacked consistency). (Temperatures were below normal across all zones.) Mostly a “forecast hit.”
- Precipitation forecast from the analog blend was below average, but 1972 was wet...analog lacked consistency. (Rainfall was above average across all zones, more in line with 1972 than with the analog average.) Mostly a “forecast miss.”

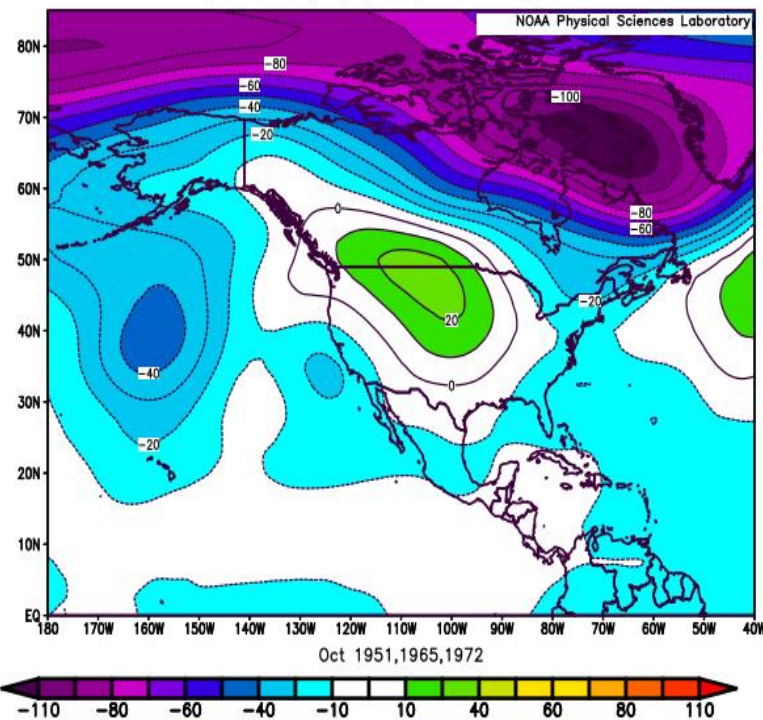
October 2023

(Forecast Issued September 21, 2023)/(Actual)

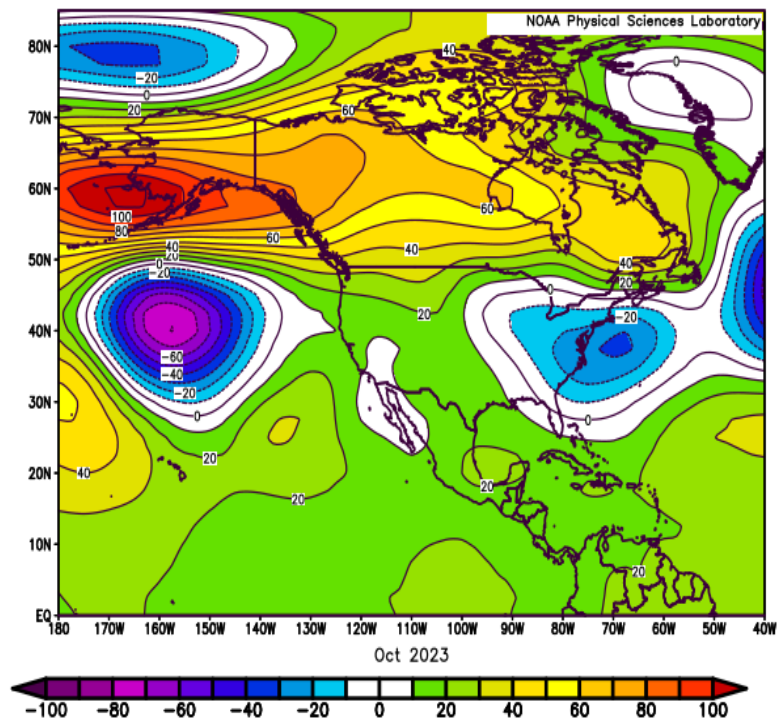
Forecast Upper-Air Anomalies

Actual Upper-Air Anomalies

NCEP/NCAR Reanalysis
500mb Geopotential Height (m) Composite Anomaly 1991–2020 climo



NCEP/NCAR Reanalysis
500mb Geopotential Height (m) Composite Anomaly 1991–2020 climo



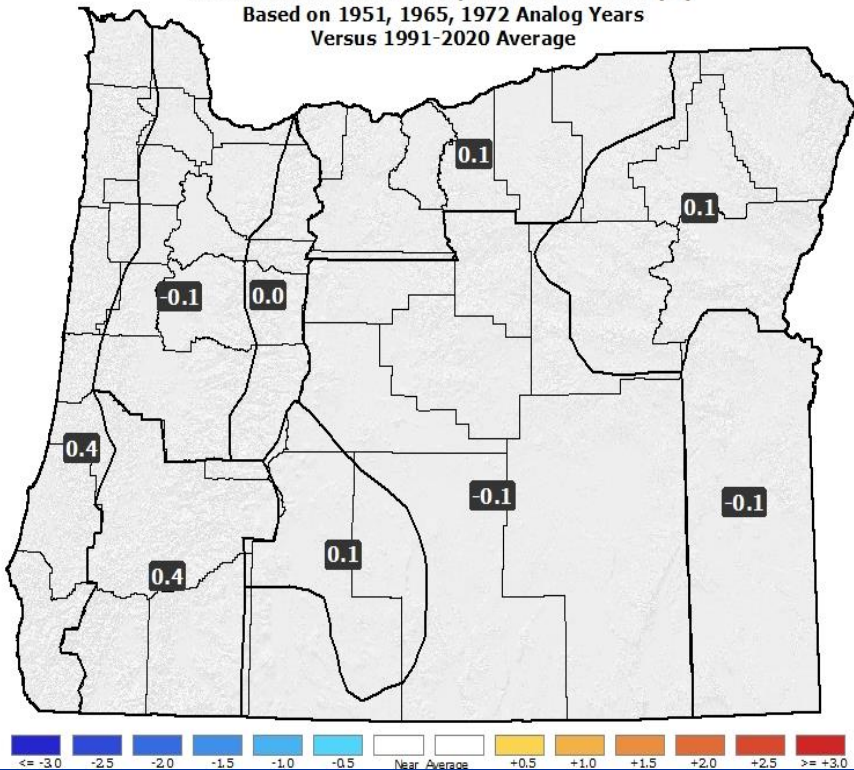
- Analog composite forecast (left) showed anomalous ridging over SW Canada extending into the Pac NW. The observed pattern (right) was similar but had slightly more ridging than predicted over Canada and the Pac NW. A “forecast hit.”

October 2023

(Forecast Issued September 21, 2023)/(Actual)

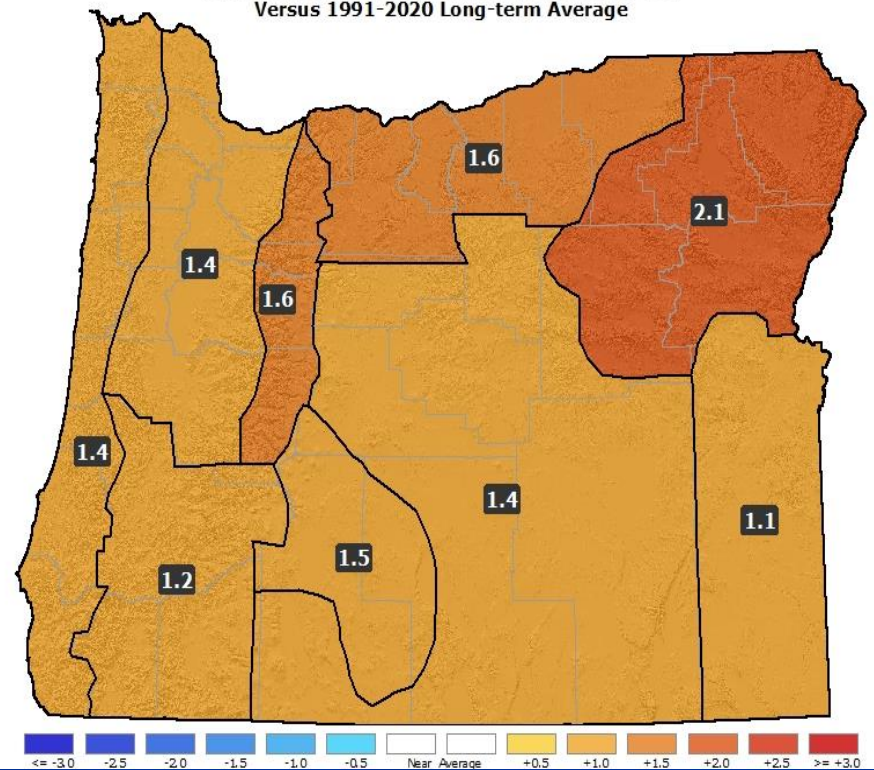
Forecast Temperatures

October 2023 Forecast Temperature Anomalies (°F)
Based on 1951, 1965, 1972 Analog Years
Versus 1991-2020 Average



Actual Temperatures

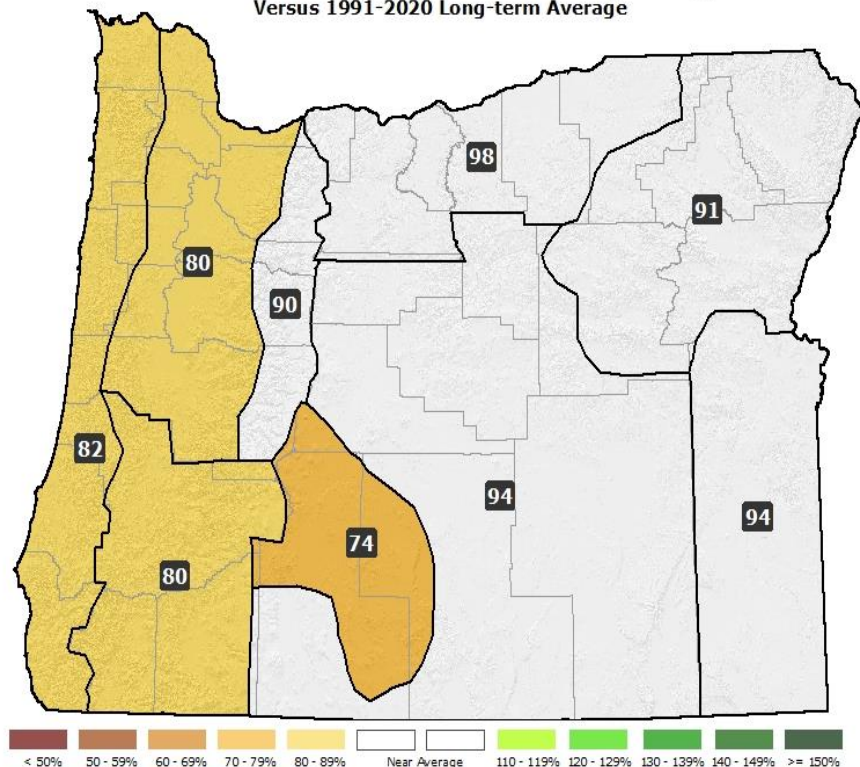
October 2023 Actual Temperature Anomalies (°F)
Versus 1991-2020 Long-term Average



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

(Forecast Issued September 21, 2023)/(Actual)

Actual Precipitation



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

October 2023

(Forecast Issued September 21, 2023)/(Actual)

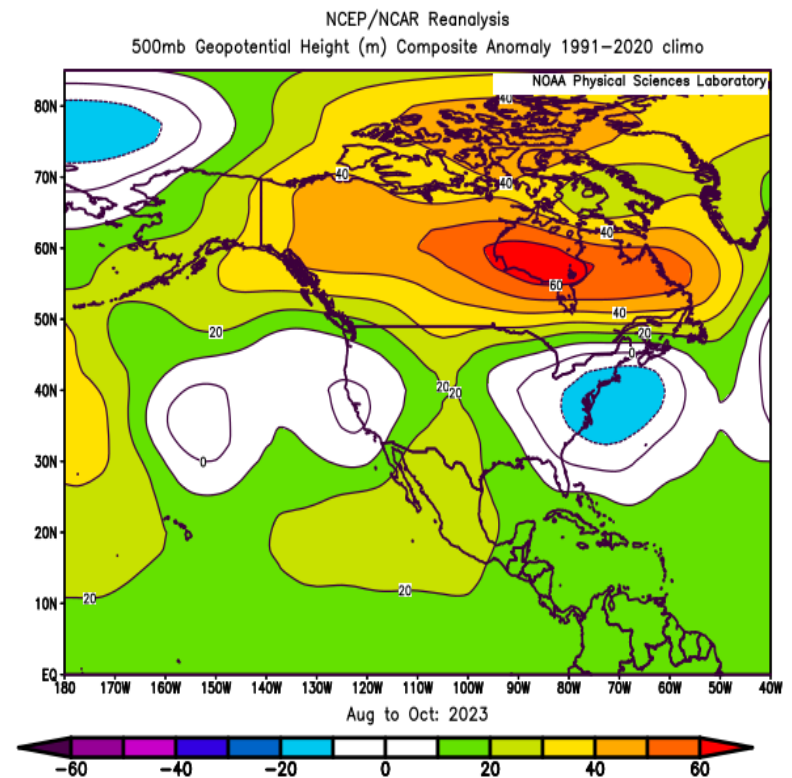
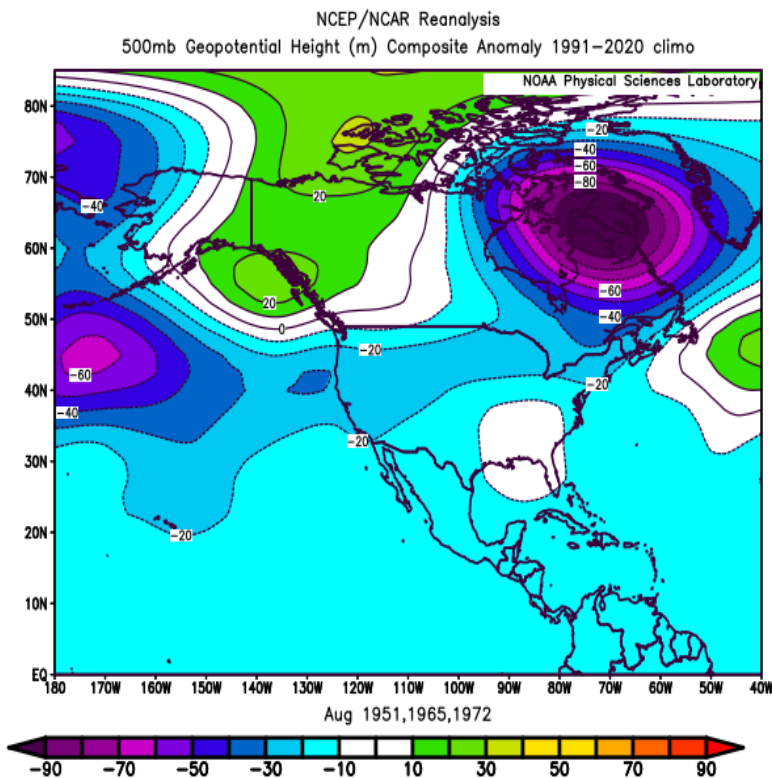
- Analogs had a wide variety of temperature departures with no clear signal in either direction. (Temperatures alternated between relatively warm and cool periods, but a few record-warm days, late in the first week, skewed the averages to slightly above normal.) A “*partial forecast hit.*”
- Precipitation near or slightly below average. (Rainfall was near or slightly below average.) A “*forecast hit.*”

August – October 2023

(Forecast Issued July 20, 2023)/(Actual)

Forecast Upper-Air Anomalies

Actual Upper-Air Anomalies

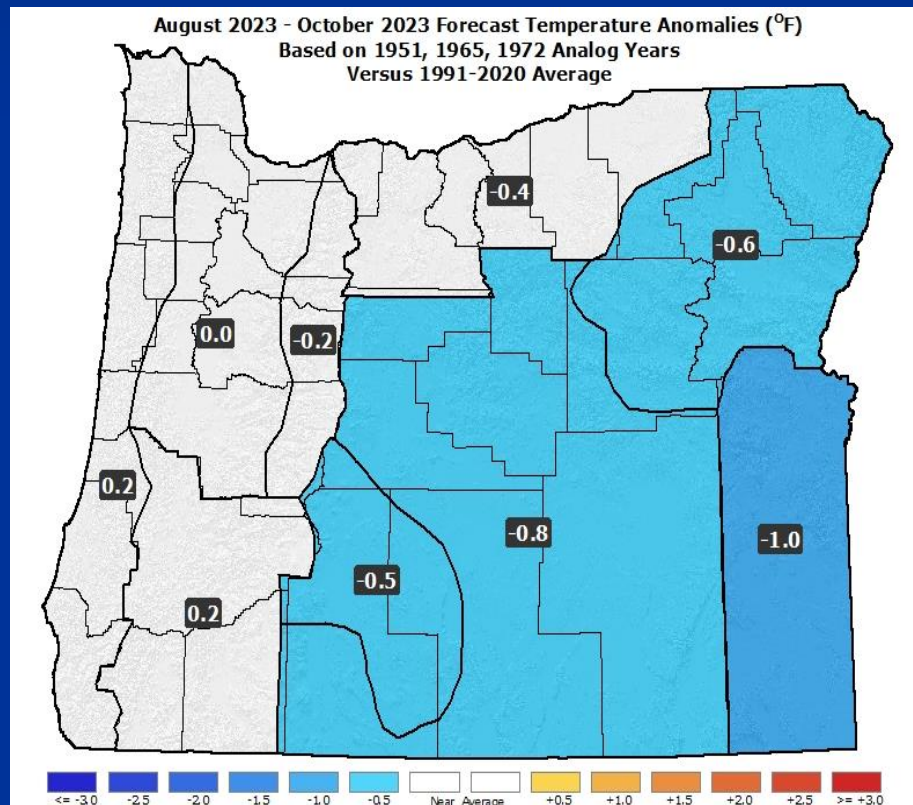


- The forecast (left) and observed (right) charts both had positive anomalies over western Canada. However, the forecast flipped to weak negative anomalies over Oregon, while the observed pattern was near average. A *“partial forecast hit.”*

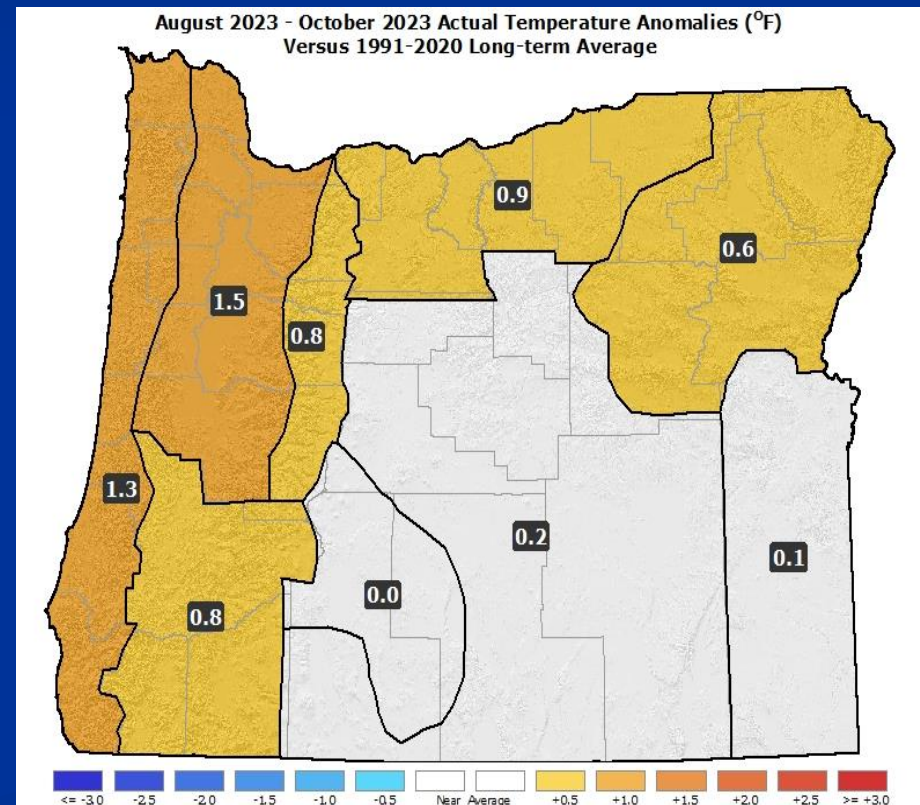
August – October 2023

(Forecast Issued July 20, 2023)/(Actual)

Forecast Temperatures



Actual Temperatures

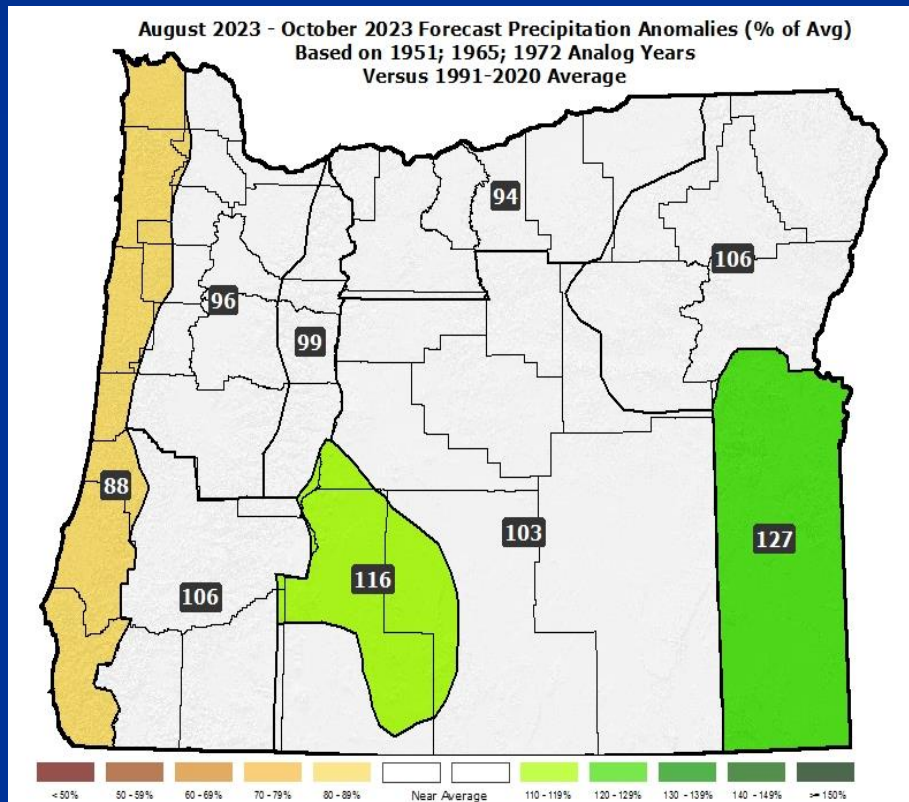


Data courtesy of the National Centers for Environmental Information (NCEI)

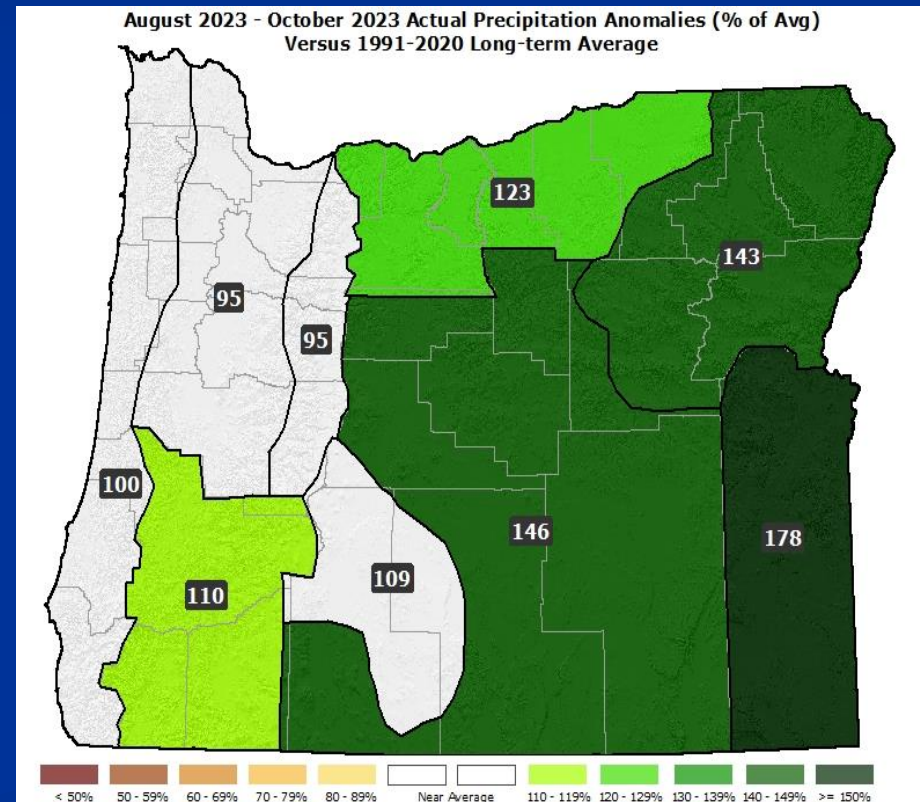
August – October 2023

(Forecast Issued July 20, 2023)/(Actual)

Forecast Precipitation



Actual Precipitation



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

August – October 2023

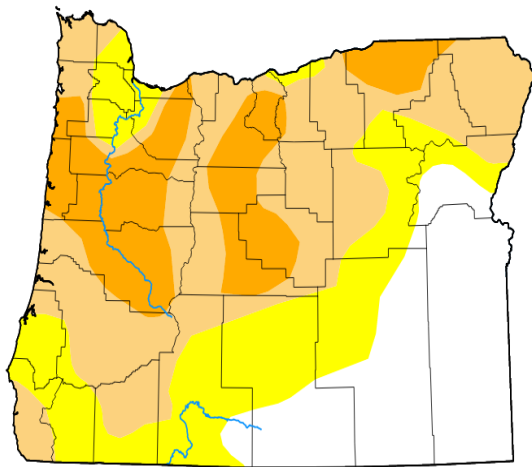
(Forecast Issued July 20, 2023)/(Actual)

- Large departures from average temperatures were not indicated by the analogs. (Above-average temperatures in August gave way to cooler-than-average conditions in September with alternating warm and cool periods in October.)
A “partial forecast hit.”
- Precipitation near average west; slightly above average east. (Rainfall varied from below average west to well-above average east in August. September rainfall was above average with a flip to slightly below-average rainfall in October. Overall, rainfall was near average west and above average east.)
Mostly a “forecast hit.”

Most of Oregon is Still Abnormally Dry

(despite a relatively damp 3 months for the central and eastern zones)

August 1st



Map released: Thurs. August 3, 2023

Data valid: August 1, 2023 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

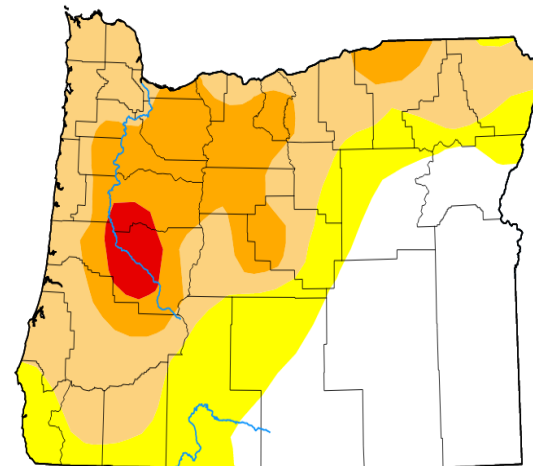
United States and Puerto Rico Author(s):

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

Pacific Islands and Virgin Islands Author(s):

[Richard Heim](#), NOAA/NCEI

October 31st



Map released: Thurs. November 2, 2023

Data valid: October 31, 2023 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):

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

Pacific Islands and Virgin Islands Author(s):

[Brad Rippey](#), U.S. Department of Agriculture

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

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