Seasonal Climate Forecast
August – October 2021
Issued: July 15, 2021

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The April – June 2021 Oceanic Niño Index (ONI) rose to -0.5°C, which is technically still in the weak La Niña range, however...

The ONI is a 3-month running mean and lags real-time SSTs, which have returned to ENSO-Neutral conditions.

NOAA’s Climate Prediction Center (CPC) expects ENSO-Neutral conditions to continue through the summer.

The CPC is expecting SSTs to begin cooling again later this summer and has issued a La Niña Watch for this coming fall and winter.


Forecast Highlights

- The analog years (1971, 1996, & 2008) are unchanged from last month. They have not been performing well the past couple of months, especially with regards to temperatures, but no analogs could have predicted the late-June heatwave!

- Forecast favors above-average temperatures in August with a cooling trend, relative to average, in September and October.

- Rainfall is expected to be below average east of the Cascades and closer to average west.

- An ongoing drought is magnifying the wildfire danger.

Disclaimer: This forecast is based on past and current weather data and is not associated with CPC predictions (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
Real-time tropical Pacific SSTs are near average (ENSO-Neutral)
Tropical Pacific Ocean
Current SST anomalies are minimal (ENSO-Neutral)

SSTs are near average across the central tropical Pacific

Courtesy: https://www.cpc.ncep.noaa.gov/products/analysis_monitoring/ensomonitoring/enso_update/sstweek_c.gif
Tropical Pacific Ocean

ONI* values from the top "analog years" compared with the current period (2020-21) (1970-71; 1995-96; 2007-08)

April – June ONI (-0.5°C) was on the border between La Niña and ENSO-Neutral

April – June analog ONIs ranged from La Niña to ENSO-Neutral

*ONI explanation via "Forecasting Methods..." at https://oda.direct/Weather
ENSO - Neutral

Tropical Pacific Ocean

SOI* values from the top "analog years" compared with the current period (2020-2021) (1970-71; 1995-96; 2007-08)

June SOI (+0.4) was ENSO-Neutral

June analogs ranged from ENSO-Neutral to weak La Niña

“SOI explanation via "Forecasting Methods..." at https://oda.direct/Weather"
June PDO was not available…
May PDO (-0.94) was in the “Cool” zone

1971 & 2008 are much better “matches” than 1996.

North Pacific Ocean
(Poleward of 20°N Latitude)

PDO* values from the top "analog years"
compared with the current period (2020-21)
(1970-71; 1995-96; 2007-08)

Warm
Neutral
Cool

*To see PDO explanation, go to https://oda.direct/Weather and click on "Forecasting Methods."
The June analog composite (left) has a similar overall SST anomaly pattern compared to the June 2021 plot (right) but is generally cooler.

Those differences could reflect the general warming of the climate during that period, which creates error in any analog forecast.
The analogs all have some degree of anomalous upper-level ridging over the Pacific Northwest.

This favors a continuation of relatively warm and dry conditions.
August 2021 Forecast

Temperatures

- Above average temperatures likely (coastal areas closest to normal). The analog years all had days with western valley temps over 100°F.

Precipitation

- Precipitation ranging from near average along the coast and NW interior to well-below average elsewhere.
The analog years diverge in their solutions...1971 & 1996 had anomalous troughing over Oregon, while 2008 had anomalous ridging.

A very cool 1971 skews the above graphic to the cool side of average, so forecast confidence in the “blended” solution is lower than usual.
Near or slightly below average temperatures; near or slightly above average precipitation.

This wouldn’t remove the threat of wildfires. Even a cool and damp 1971 had a mid-month dry period with east winds and high fire danger.
October 1971 and 1996 had anomalous troughing over Oregon, while 2008 had anomalous ridging. That reduces forecast confidence.

The blend (above) yields near average conditions, which is somewhat misleading, due to the wide range in analog solutions.
Analogs favor slightly below-average temperatures.

Precipitation is expected to climb closer to average but remain mostly on the dry side, especially south and east.
August – October 2021 Forecast

Mean Upper-Air Pattern

Expect anomalous upper-level ridging in August, but a transition to more-typical weather patterns is likely by mid-October.

Upper-Air Anomalies

Analog years show considerable variation, so forecast confidence is lower than average, especially later in the period.
August – October 2021 Forecast

Temperatures

Above-average temperatures in August may get countered by relatively cooler weather in September and October.

Precipitation

Oregon’s drought conditions (see next two slides) are likely to worsen, before autumn rains can bring some relief.
U.S. Drought Monitor
National Drought Mitigation Center (NDMC)

Oregon

https://droughtmonitor.unl.edu/

Map released: Thurs. June 10, 2021
Data valid: June 8, 2021 at 8 a.m. EDT

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

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Map released: Thurs. July 8, 2021
Data valid: July 6, 2021 at 8 a.m. EDT

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

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Forecast Resources

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

- 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:

- Australian Government ENSO Wrap-Up:

- IRI ENSO Quick Look:
  https://iri.columbia.edu/our-expertise/climate/forecasts/enso/current/

- ODA Seasonal Climate Forecast Home:
  http://www.oregon.gov/ODA/programs/NaturalResources/Pages/Weather.aspx
Water Supply Information

- **NDMC U.S. Drought Monitor:**
  https://droughtmonitor.unl.edu/

- **NIDIS North American Drought Portal:**
  https://www.drought.gov/nadm/content/percent-average-precipitation

- **NRCS Snow Water Equivalent Oregon Map:**

- **NRCS Snow Water Equivalent Products:**

- **NRCS Weekly Water and Climate Update:**
  https://www.wcc.nrcs.usda.gov/cgibin/water/drought/wdr.pl

- **NRCS Western Snowpack Data & Water Supply Forecast:**
  https://www.wcc.nrcs.usda.gov/cgibin/westsnowsummary.pl

- **WRCC WestWideDroughtTracker:**
  https://www.wrcc.dri.edu/wwdt/
Updated Monthly
(Around the 20th)

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Photo By: Dave Lorenz