Seasonal Climate Forecast
July – September 2021
Issued: June 17, 2021

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Photo: Pete Parsons
El Niño Southern Oscillation (ENSO)
Current Status and Forecast

- The March – May 2021 Oceanic Niño Index (ONI) rose to -0.7°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.

- CPC’s models show either a continuation of ENSO-Neutral or a return to La Niña conditions being the most-likely scenario for this coming fall and winter. Note: Model skill is lowest this time of year.


Forecast Highlights

- The analog years (1971, 1996, & 2008) are unchanged from last month. They all had La Niña conditions during the previous winter and were either moving towards or had transitioned to ENSO-Neutral.

- Forecast favors above-average temperatures in July and August with a possible switch to below-average temperatures in September.

- Rainfall is expected to be below average through August for most zones. A possible transition to above-average rainfall in September would be welcome, but wildfire danger could be quite high by then.

Note: Drought conditions exist across most of Oregon. 

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
Pacific Ocean

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

Real-time tropical Pacific SSTs are near average (ENSO-Neutral)

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

March – May ONI (-0.7°C) reflected weak La Niña

March – May analog ONIs ranged from La Niña to ENSO-Neutral

*ONI explanation via "Forecasting Methods..." at https://oda.direct/Weather
May SOI (+0.5) was ENSO-Neutral

May analogs ranged from ENSO-Neutral to weak La Niña

SOI* values from the top "analog years" compared with the current period (2020-2021)

(1970-71; 1995-96; 2007-08)

*SOI explanation via "Forecasting Methods..." at https://oda.direct/Weather
May PDO (-0.94) was in the "Cool" zone. May analogs ranged from "Warm" to "Cool".
The May analog composite (left) has a similar overall SST anomaly pattern compared to the May 2021 plot (right) but is generally cooler.

Those differences could be due, in part, to the cooler climate (compared to present) observed during the analog years.
July 2021 Forecast

Mean Upper-Air Pattern

Top analog years all have weak anomalous upper-level ridging over the west coast of the U.S.

Upper-Air Anomalies

This pattern favors relatively warm and dry conditions for Oregon.
Analogs strongly favor above-average temperatures.

July is typically a very dry month statewide, so even a slight deficit in monthly rainfall can significantly drop the percentages (above right).
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.
Above average temperatures likely (coastal areas closest to normal). The analog years all had days with western valley temps over 100°F.

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.
September 2021 Forecast

Temperatures

- Near or slightly below average temperatures; near or slightly above average precipitation.

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.
Expect anomalous upper-level ridging in July and August, with a possible flip to anomalous troughing in September.

This pattern would likely exacerbate the current drought conditions across Oregon and further increase the threat of wildfires.
July – September 2021 Forecast

**Temperatures**

- Above-average temperatures in July and August, with some cooling, relative to average, in September.

**Precipitation**

- Oregon’s drought conditions (see next two slides) are likely to worsen, before autumn rains can bring some relief late in the period.
Map released: Thurs. May 13, 2021
Data valid: May 11, 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

Authors
United States and Puerto Rico Author(s):
David Simral, Western Regional Climate Center

Pacific Islands and Virgin Islands Author(s):
Denise Gutzmer, National Drought Mitigation Center

https://droughtmonitor.unl.edu/
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

Authors

United States and Puerto Rico Author(s):
- Brian Fuchs, National Drought Mitigation Center

Pacific Islands and Virgin Islands Author(s):
- Richard Tinker, NOAA/NWS/NCEP/CPC
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/](https://droughtmonitor.unl.edu/)

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

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

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

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