Seasonal Climate Forecast
May – July 2020
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El Niño Southern Oscillation (ENSO) Current Status and Forecast

The Jan. – Mar. 2020 Oceanic Niño Index (ONI) of 0.5°C was in the weak El Niño range for the 4th consecutive 3-month period (an El Niño event, by NOAA’s definition, requires the ONI to remain at or above 0.5°C for 5 consecutive 3-month periods (only one more month needed). 

Real-time sea-surface temperatures (SSTs) are near-to-above average across the tropical Pacific Ocean (+0.6°C in the Niño 3.4 region), so the ONI will likely remain at 0.5°C or greater for at least one more month… 

Although NOAA’s official El Niño criteria may be reached next month, its Climate Prediction Center (CPC) is expecting SSTs to slowly cool, into the ENSO-neutral range, later this spring and summer. 


Forecast Highlights

- The analog years (1959; 1970; 2005) were retained from last month.
- Their ONI values all cooled, from the weak El Niño range into the ENSO-neutral range, by the summer, which is consistent with the current ONI forecast issued by CPC.
- That said, there is increasing variation in the weather generated by the analog years, as we progress through the 3-month forecast window… Slightly-cooler-and-wetter-than-average conditions are predicted in May, followed by increasingly-warmer-and-drier weather, relative to average, in June and July.
- Month-to-month variations should “balance-out” during the period. Extreme heat is not favored, but the chance of dry lightning is elevated.

IMPORTANT NOTE: 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
SSTs in the tropical Pacific Ocean have recently warmed slightly and are in the weak El Niño range.

Courtesy: https://www.cpc.ncep.noaa.gov/products/analysis_monitoring/ensostuff/sstanim.shtml
Tropical Pacific Ocean
Currently Weak El Niño Conditions

Above-average SSTs are in the weak El Niño range

Courtesy: https://www.cpc.ncep.noaa.gov/products/analysis_monitoring/ensostat/sstweek_c.gif
ONI* values from the top "analog years" compared with the current period (2019-20) (1958-59; 1969-70; 2004-05)

Jan. – Mar. analog ONIs ranged from weak El Niño to warm ENSO-neutral

Jan. – Mar. 2020 ONI (+0.5°C) stayed in the weak El Niño range

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

Tropical Pacific Ocean
March analog SOIs ranged from the ENSO-neutral to La Niña range.

March 2020 SOI (-0.1) remained firmly in the ENSO-neutral range.
North Pacific Ocean
(Poleward of 20°N Latitude)

PDO* values from the top "analog years" compared with the current period (2019-20)
(1958-59; 1969-70; 2004-05)

March PDO (−0.82) dropped into the cool zone

March PDO analogs ranged widely (from warm to cool)

Warm
Neutral
Cool

*To see PDO explanation, go to https://oda.direct/Weather and click on "Forecasting Methods."
A blend of the analogs shows weak anomalous upper-level troughing over the western U.S.

Continued “split-flow” jet stream configuration along the west coast.
Below-average temperatures, especially central and eastern zones, which may help to slow the annual snow-melt at higher elevations.

A switch to near-or-slightly-above-average precipitation.
Analog upper-air composite (left panel) continues to show some “splitting” of the jet stream, as it approaches Oregon.

Upper-level anomalies (right panel) show troughing along the west coast of the U.S., extending across most of the Pacific Northwest.
June 2020 Forecast

Temperatures

- Wide-ranging analog solutions lowers forecast confidence. Blend yields near-average temperatures and near-to-below-average precipitation.

Precipitation

- 1970 had two distinct hot spells, with numerous small lightning-caused fires in the Cascades. In stark contrast, 1959 was relatively cool & wet.
- Mean upper-level SW flow (left panel) would bring relatively warm and dry conditions to Oregon but not necessarily extreme heat.

- Analogs predict anomalous ridging over the western U.S. (right panel).
Above-average temperatures, except for along the coast. Below average precipitation in what is normally a very dry period statewide.

Extremely hot temperatures are not indicated by the analog years. However, some did exhibit instances of dry lightning, especially 1959.
- Anomalous troughing in May is replaced with anomalous ridging by July, with the 3-month blend yielding near-average upper-level patterns.

- For Oregon, mostly SW flow aloft is indicated during the 3-month period, which is unlikely to yield large overall departures from average.
May – July 2020 Forecast

Temperatures

Precipitation

- Analogs generally transition from below-average temperatures and slightly-above-average rainfall, in May, to above-average temperatures and below-average rainfall by July.
- Cool-wet & warm-dry periods mostly “balance-out” over the 3-months.
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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