The May – July 2020 Oceanic Niño Index (ONI) cooled into the cold ENSO-neutral range (-0.2°C).

The ONI lags real-time sea-surface temperatures (SSTs), which are near-to-slightly-below average across the tropical Pacific Ocean.

A La Niña Watch has been issued by NOAA’s Climate Prediction Center (CPC). They predict a 60% chance that SSTs will cool to below the La Niña threshold (ONI values of -0.5°C or colder) this autumn.

Regardless of whether the tropical Pacific remains ENSO-neutral, or cools into La Niña, the weather this coming fall and winter should be in stark contrast to the previous two years, which had El Niño events…

Forecast Highlights

- The analog years (1959; 1970; 2005) were retained from last month. Their tropical Pacific SSTs either stayed in the ENSO-neutral range or cooled into La Niña, during the fall and winter, which is consistent with current observations and ONI forecasts issued by CPC.

- Analogs are consistent in a marked transition to relatively cool and possibly-damp conditions in September (an early start to autumn).

- Their climate “signal” becomes less clear, beginning in October. They diverge with respect to their ONI values. For one thing, the colder the tropical Pacific SSTs become, by November, the greater the chances of an early start to mountain snowpacks (not certain at this point).

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
Tropical Pacific SSTs are near-to-below average

Courtesy: https://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_update/gsstanim.shtml
Tropical Pacific Ocean
Currently Cold ENSO-neutral Conditions

SSTs are mostly below average

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 (2019-20)
(1958-59; 1969-70; 2004-05)

May – July ONI (-0.2°C) dropped into the cold ENSO-neutral range

May – July analog ONIs were all in the ENSO-neutral range

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

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

July SOI (0.4) stayed in the ENSO-neutral range

July analog SOIs were all in the ENSO-neutral range

La Niña

ENSO-neutral

El Niño

"SOI explanation via "Forecasting Methods..." at https://oda.direct/Weather"
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)

July PDO (-0.38) stayed within the "Neutral" zone.

July PDO analogs spanned the "Neutral" zone.

*To see PDO explanation, go to https://oda.direct/Weather and click on "Forecasting Methods."
The July analog SST composite (left) and the July 2020 SST pattern (right) both show cold anomalies in the tropical Pacific (ENSO match) and warm anomalies in the western Gulf of Alaska (PDO match).

Both patterns exhibit cold ENSO-neutral conditions.
September 2020 Forecast

Mean Upper-Air Pattern

Analog upper-air composite (left panel) shows more jet stream energy than normal dropping southward, to over the Pacific Northwest.

Anomalous troughing (right panel) is projected over western Canada, extending southward across the entire Pacific Northwest.
Analogs were consistent in showing cooler-than-normal conditions. They also favor more storm activity than usual statewide.

The rainfall signal was less consistent, with a relatively-dry 2005 being more-than-countered by the progressively-wetter years of 1970 & 1959.
Analog solutions vary considerably, depending upon the degree of additional cooling of SSTs in the tropical Pacific Ocean.

The mean patterns (shown above) do not indicated large departures from average, but temperatures could turn cool, if La Niña develops...
October 2020 Forecast

Temperatures

A cold 1970 analog skews the temperature graphic to below average, but 1959 and 2005 were fairly mild, so forecast confidence is low.

Precipitation

All three analog years had precipitation fairly close to average, with a relatively-wet 2005 skewing the graphic to “slightly wet.”
Large variation among the analog years lowers forecast confidence.

A blend favors slightly more upper-level ridging that usual over the Pacific Northwest.
Individual analog years had considerable variation, with their blend keeping temperatures fairly close to average.

Analog precipitation varied with La Niña status. The best chances for above-normal rain/snow are across the southern zones.
Anomalous troughing over the Pacific Northwest in September may get partially balanced by weak anomalous ridging in November.

Upper-air anomalies in October and November will likely see a strong influence from tropical Pacific SST changes over the next few weeks.
A marked cool-down, relative to average, is indicated for September, but October and November should be closer to average.

Precipitation likely above-average in September and near average in October and November. La Niña evolution will influence November’s rain/snow.
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/kgibin/water/drought/wdr.pl

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

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

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