El Niño Southern Oscillation (ENSO) Current Status and Forecast

- The Nov. 2019 – Jan. 2020 Oceanic Niño Index (ONI) of 0.6°C was in the weak El Niño range for the second consecutive month.

- Real-time sea-surface temperatures (SSTs) are near-to-above average across most of the tropical Pacific Ocean.

- The Climate Prediction Center (CPC) is predicting SSTs to cool but remain in the ENSO-neutral range through this coming summer.

- ONI values from the analog years, used by this forecast, consistently and progressively dropped to the cold ENSO-neutral range by summer.


Forecast Overview

- One of the “analog years” was changed for this month’s forecast (1959 replaced 1981), but 1970 & 1978 remained unchanged.
- All of the analog years exhibited cooling SSTs, into the ENSO-neutral range, during the 3-month forecast period.
- A transition to progressively-cooler-than-average conditions is expected with near or below-average precipitation.

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 are borderline **Warm ENSO-neutral / Weak El Niño**

Courtesy: https://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_update/gsstanim.shtml
Tropical Pacific Ocean
Currently Warm ENSO-Neutral / Weak El Niño Conditions

Slightly-above-average SSTs

Courtesy: https://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_update/sstweek_c.gif
Strong El Niño

Moderate

Weak

ENSO-neutral

Weak

Moderate

Strong La Niña

Nov. – Jan. analog ONIs were all in the weak El Niño range

Nov. 2019 – Jan. 2020 ONI (+0.6°C) was also in the weak El Niño range

ONI* values from the top "analog years" compared with the current period (2019-20) (1958-59; 1969-70; 1977-78)

3-Month Running Mean

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

SOI* values from the top "analogue years" compared with the current period (2019-20)
(1958-59; 1969-70; 1977-78)

January 2020 SOI (0.2) was in the ENSO-neutral range

January SOI analogs ranged from ENSO-neutral to El Niño

"SOI explanation via "Forecasting Methods..." at https://oda.direct/Weather
Jan. PDO analogs were all in the “neutral” range.

January 2020 PDO (-0.23) dropped into the “neutral” range.

*To see PDO explanation, go to https://oda.direct/Weather and click on "Forecasting Methods.”
March 2020 Forecast

Mean Upper-Air Pattern

Analogs show anomalous upper-level ridging over the western U.S. and enhanced troughing over the eastern U.S.

This pattern should tend to weaken and split Pacific storms, as they approach the Oregon coastline.
March 2020 Forecast

Temperatures
- Temperatures slightly-above average west; near average east.

Precipitation
- Precipitation below average west; closer to average east.
- Decrease in snowpacks, relative to average, especially west.
A blend of the analogs favors anomalous ridging in the Gulf of Alaska and a return of anomalous upper-level troughing over the Pacific NW.

A “split-flow” jet stream pattern should persist, with considerable storm energy being directed south of Oregon, into the SW U.S.
A switch back to below-average temperatures statewide, which should help to slow the annual melt-off of mountain snowpacks.

Precipitation ranging from below average SW to near or above average, along the coast and in the extreme eastern zones.
Analogs were mixed, but an unweighted blend (above) maintains some degree of anomalous upper-level troughing over the western U.S.

A “split-flow” jet stream configuration should continue to weaken storm systems, as they approach Oregon.
Analog years were consistent in showing below-average temperatures, especially across the central and eastern zones.

Precipitation near average for the coast and NW zones and below average across the remainder of the state.
March – May 2020 Forecast

Mean Upper-Air Pattern

Analogs favor anomalous upper-level ridging over the eastern Gulf of Alaska and corresponding troughing over the Pacific NW.

Upper-Air Anomalies

A “split-flow” jet stream pattern, typical of warm ENSO-neutral or weak El Niño conditions, is expected along the U.S. west coast.
Below-average temperatures, especially in April and May, which should help to slow the annual mountain snow-melt at higher elevations.

Near or below-average precipitation (70-100% of average).
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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