Seasonal Climate Forecast
Nov. 2019 – Jan. 2020
Issued: October 17, 2019

Contact: ODF Meteorologist Pete Parsons
503-945-7448 or peter.g.j.parsons@oregon.gov

Oregon Department of Agriculture (ODA) - Oregon Department of Forestry (ODF)
Production support: Diana Walker; Jacob Cruser; Andy Zimmerman; Julie Waters
The July – September 2019 Oceanic Niño Index (ONI), of 0.1°C, was in the **ENSO-neutral** range for the second consecutive 3-month period.

Real-time sea-surface temperatures (SSTs) are **above average** in the western and central tropical Pacific Ocean but **below average** in the eastern Pacific. This is consistent with **ENSO-neutral** conditions.

The Climate Prediction Center (CPC) favors **ENSO-neutral** conditions through this coming winter, but the analogs used in this forecast (see next slide) indicate the possibility of **El Niño** returning…

**IMPORTANT NOTE:** Beginning with the October 2017 update, ONI values use ERSSTv5 data (Huang et al. 2017, J. Climate, vol. 30, 8179-8205).

The analog years (1969-70, 1977-78, & 1980-81), like the current year, all transitioned into an ENSO-neutral state, over the summer, from an El Niño the previous winter.

After briefly transitioning to ENSO-neutral, 1969 & 1977 returned to weak El Niño conditions, but 1980 stayed in ENSO-neutral conditions through the subsequent winter.

Bottom Line: Analogs favor mild weather (relative to average). Arctic outbreaks can’t be ruled out, especially from late November through early January, but they are not prevalent in the analogs. November will likely to be drier than average, but storminess is expected to increase in December. The precipitation forecast for January is less certain.

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: http://www.cpc.ncep.noaa.gov/products/predictions/long_range/seasonal.php?lead=1
Pacific Ocean

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

SSTs in the tropical Pacific Ocean are above average west and central; below average east (ENSO-neutral)

Tropical Pacific Ocean
Currently ENSO-neutral

Above-average SSTs west & central
Below-average SSTs east

Courtesy: http://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 (2018-19)**

(1968-69; 1976-77; 1979-80)

- **Strong El Niño**
- **Moderate El Niño**
- **Weak El Niño**
- **Strong La Niña**
- **Weak La Niña**
- **Moderate La Niña**
- **ENSO-neutral**

Jul. – Sept. 2019 ONI cooled to 0.1°C...within ENSO-neutral range

Jul. – Sept. analog ONIs ranged from ENSO-neutral to a renewal of El Niño conditions

*ONI explanation via "Forecasting Methods..." at https://oda.direct/Weather
Sept. 2019 SOI fell to -1.2, which takes it back into the El Niño range.

SOI* values from the top "analog years" compared with the current period (2018-19) (1968-69; 1976-77; 1979-80)

La Niña

ENSO-neutral

El Niño

"SOI explanation via "Forecasting Methods..." at https://oda.direct/Weather
Sept. PDO stayed in the “Neutral” range

Sept. PDO analogs were in the “Neutral” range

*To see PDO explanation, go to https://oda.direct/Weather and click on "Forecasting Methods."
Analogs show anomalous upper-level ridging over the western U.S. but also the threat of early-season Arctic outbreaks.

In particular, 1977 had a late-month Arctic outbreak with record November snowfall in Portland.
National composites for temperature and precipitation anomalies, based on the analogs (listed on graphics), show warmer-than-average weather in the western U.S. and cooler-than-average weather east.

Rainfall near or below average for the western two-thirds of the nation.
November 2019 Forecast

- Novembers of 1969 and 1980 were generally mild and drier than average. However, November of 1977 was cool and damp with a period of Arctic air and valley snow. That lowers forecast confidence.
- A blend of the analogs is slightly warmer and drier than average.
**December 2019 Forecast**

**Mean Upper-Air Pattern**

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

**Upper-Air Anomalies**

*That would favor generally mild conditions, relative to average, but with periods of storminess and possibly excessive rainfall.*
December 2019 Forecast

**Temperatures**

- Above-average temperatures for the western U.S.; below-average temperatures for the eastern U.S.

**Precipitation**

- Above-average precipitation for the Pacific Northwest.
December 2019 Forecast

Temperatures

- Above-average temperatures likely…possibly well-above average.

Precipitation

- Above-average precipitation.
- Increased chance of flooding episodes for coastal and western zones.
A blend of the analogs favors anomalous upper-level ridging over western Canada…extending southward into the western U.S.

Below-normal chance of Arctic intrusions into the Pacific NW, which should be more under the influence of mild Pacific storms.
January 2020 Forecast

Temperatures

- Above-average temperatures likely for the western third of the country.

Precipitation

- There is more variation in precipitation among the analog years, which lowers forecast confidence.
January 2020 Forecast

Temperatures

- Above-average temperatures likely.

Precipitation

- Analogs show considerable variation, with regards to precipitation, (very dry to very wet), so confidence in the precipitation forecast is low.
The analogs favor anomalous upper-level ridging over the most of Canada...extending southward across the western U.S.

This jet stream pattern is typical during either weak El Niño or warm ENSO-neutral conditions in the tropical Pacific Ocean.
Analog composite favors relatively mild weather for the western U.S. & slightly cooler-than-average conditions for the eastern U.S. (left panel).

Confidence is lower for the above-average precipitation forecast, across the Pacific NW, due to wide-ranging analog solutions in January.
Above-average temperatures likely. Arctic intrusions, if any, should be brief and may not penetrate south of the northern-most regions.

December has a good chance of being rather stormy and may include strong winds, heavy rain, and flooding, especially for the western zones.
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)

Your Feedback is Welcome!

Sign-up for Email Notification of Updates at:
https://oda.fyi/SubscribeSCF

Contact: Pete Parsons, ODF Meteorologist
at 503-945-7448 or peter.gj.parsons@oregon.gov