Seasonal Climate Forecast
April – June 2022
Issued: March 18, 2022

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

- The Dec. 2021 – Feb. 2022 Oceanic Niño Index (ONI) held at -1.0°C, reflecting Moderate La Niña conditions.

- The ONI is a 3-month running mean and lags real-time SSTS, which are on the border between weak and moderate La Niña conditions.

- NOAA’s Climate Prediction Center (CPC) expects La Niña to continue into this summer with either La Niña or ENSO-neutral conditions likely after the June-August period.

Important Note: This “Seasonal Climate Forecast” does not consider NOAA’s ENSO forecast. It uses only historical and current ENSO conditions to find “analog years” that most-closely match the evolution of the current ENSO state.

Forecast Highlights

- The top 3 analog years (1972, 1997, & 2009) were retained. They have had a remarkable run (since last summer). More representative years may emerge soon...

- A relatively cool and damp April is predicted, with elevated chances for western valley frost events. That is in-line with general expectations for early spring during a La Niña episode.

- In contrast, a warm and dry May (predicted) is not as common during La Niña. That may melt mountain snowpacks faster than normal, which have already suffered through a mid-winter dry spell (next 3 slides).

- Near-average conditions are expected in June and for the 3-month period, which would not provide significant drought relief.

Disclaimer: This forecast is not associated with NOAA’s CPC (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
Oregon SNOTEL Current Snow Water Equivalent (SWE) % of Normal

Jan 21, 2022

Current Snow Water Equivalent (SWE)
Basin-wide Percent of 1991-2020 Median

- unavailable *
- <50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 125%
- 130 - 149%
- >=150%

* Data unavailable at time of posting or measurement is not representative at this time of year

Provisional Data Subject to Revision

The snow water equivalent percent of normal represents the current snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 06:00).

Prepared by:
USDA/NRCS National Water and Climate Center
Portland, Oregon
https://www.nrcs.usda.gov/wps/portal/wcc/home/
U.S. Drought Monitor
National Drought Mitigation Center (NDMC)

Oregon

https://droughtmonitor.unl.edu/

Map released: Thurs. February 17, 2022
Data valid: February 15, 2022 at 7 a.m. EST

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):
Brad Pugh, NOAA/CPC
Oregon

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U.S. Drought Outlook
NOAA/NWS/NCEP/Climate Prediction Center

U.S. Seasonal Drought Outlook
Drought Tendency During the Valid Period

Valid for March 17 - June 30, 2022
Released March 17

Author:
Brad Pugh
NOAA/NWS/NCEP/Climate Prediction Center

http://go.usa.gov/3eZ73

https://www.cpc.ncep.noaa.gov/products/expert_assessment/season_drought.png
Tropical Pacific SSTs still show **La Niña** conditions

Courtesy: https://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_update/gsstanim.shtml
Tropical Pacific Ocean
SSTs indicate ongoing La Niña conditions

La Niña continues...

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 (2021-22)
(1971-72; 1996-97; 2008-09)

Dec. 2021 – Feb. 2022 ONI (-1.0°C) indicated a Moderate La Niña

*ONI explanation via "Forecasting Methods..." at https://oda.direct/Weather
SOI* values from the top "analog years" compared with the current period (2021-2022) (1971-72; 1996-97; 2008-09)

Feb. SOI analogs were in La Niña range

Feb. 2022 SOI (+1.1) moved back into the La Niña range

"SOI explanation via "Forecasting Methods..." at https://oda.direct/Weather"
Jan. 2022 PDO not available

North Pacific Ocean (Poleward of 20°N Latitude)

PDO values from the top "analog years" compared with the current period (2021-22) (1971-72; 1996-97; 2008-09)

Feb. 2022 PDO (1.08) rose but was still in the "Cool" phase.
Feb. PDO analogs ranged from "Neutral" to "Strongly Cool" phase.

To see PDO explanation, go to https://oda.direct/Weather and click on "Forecasting Methods."
The Pacific Decadal Oscillation (PDO)

Positive “Warm” Phase

Negative “Cool” Phase

SST Anomalies

Courtesy: [http://research.jisao.washington.edu/pdo/img/pdo_warm_cool.jpg](http://research.jisao.washington.edu/pdo/img/pdo_warm_cool.jpg)
The February analog composite (left) has a similar SST anomaly pattern, basin-wide, compared to February 2022 (right).

Both charts depict cooler-than-normal conditions in the tropical Pacific Ocean (negative ONI) and in the Gulf of Alaska (negative PDO).
April 2022 Forecast

Mean Upper-Air Pattern

- More upper-level ridging than normal in the Gulf of Alaska...leading to more downstream troughing over the Pacific Northwest.

Upper-Air Anomalies

- Cooler-than normal air aloft indicated for Oregon, especially over the northern and eastern zones.
April 2022 Forecast

Temperatures

- Cooler-than-average conditions with heightened chances for western valley frost events.

Precipitation

- Precipitation mostly above average, especially north and west.
**May 2022 Forecast**

**Mean Upper-Air Pattern**

Analogs are consistent in showing a transition to more upper-level ridging than normal over the western half of the United States.

**Upper-Air Anomalies**

That is not always the case during a La Niña event, so it was surprising to find this signal on all 3 of the top analogs.
A marked flip to well-above average temperatures is indicated, which would accelerate the melt-off of mountain snowpacks.

Precipitation ranging from near average west to below average east.
- The 1972 and 2009 analogs had slightly more ridging than normal over Oregon, but 1997 had more troughing.
- Their blend (above) shows no significant departures from average upper-air patterns over Oregon.
Analogs varied on either side of normal for both temperatures and precipitation but “extremes” in monthly means were not indicated.

The analog blend (above) suggests “moderate” conditions but expect mountain snowpacks to melt off faster than usual.
April – June 2022 Forecast

Mean Upper-Air Pattern

- Analogs varied from weak anomalous troughing (1972) over Oregon to modest anomalous ridging (2009).

- The blend (above) shows slightly more upper-level ridging than normal over Oregon.
Below-average temperatures in April are expected to be countered by warmer conditions, relative to average, in May and June.

No significant departures from average precipitation are indicated for the 3-month period with little change in drought status.
Forecast Resources

- ODA Seasonal Climate Forecast Home:
  https://www.oregon.gov/ODA/programs/NaturalResources/Pages/Weather.aspx

- 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/
Water Supply Information

- CPC U.S. Seasonal Drought Outlook:
  https://www.cpc.ncep.noaa.gov/products/expert_assessment/season_drought.png

- NRCS Snow Water Equivalent Oregon Map:

- NRCS/USDA Snow Water Equivalent Products:
  https://www.nrcs.usda.gov/wps/portal/wcc/home/snowClimateMonitoring/snowpack/

- NDMC U.S. Drought Monitor:
  https://droughtmonitor.unl.edu/

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

- WRCC WestWideDroughtTracker:
  https://www.wrcc.dri.edu/wwdt/
Updated Monthly

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Photo: Pete Parsons