

CLIMATE NARRATIVE, January 2019

WEST COAST OF UNITED STATES AND NORTH PACIFIC

At the end of January 2019, areas of weak negative sea surface temperature SST anomaly became less defined in a warm North Pacific (NP). Negative SST anomalies ($>-1.5^{\circ}\text{C}$) were seen north of 30°N , west of 130°W , in an area centered near 40°N , 140°W and in an irregular band near 20°N from 160°W eastward to the coast. Positive anomalies ($<2^{\circ}\text{C}$) were observed in the north central and western NP, west of 160°W and east and south of Japan. <http://www.ospo.noaa.gov/Products/ocean/sst/anomaly/>
https://coastwatch.pfeg.noaa.gov/elnino/coastal_conditions.html

Positive **Sea Level Anomaly** (SLA) from 5 to 15 cm extended across the NP in two irregular bands, one band straddled 35°N . The other was centered near the equator east of 160°E and extended poleward beyond 15°N and 20°S . Positive SLA anomaly occurred along the coast of Mexico and southern California
http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/ocean/weeklyenso_clim_81-10/wksl_anm.gif

During January, **Chlorophyll-a** (Chl-a) at 2-3 milligrams per cubic meter (mg/m^3) persisted in a 200-500 km wide band along coast from Monterey Bay (37°N) north to Oregon (43°N) where the coastal band narrowed to 100-200 km and extended poleward of Vancouver Island ($>50.8^{\circ}\text{N}$). Areas exceeding $5 \text{ mg}/\text{m}^3$ occurred in localized inshore areas. <https://coastwatch.pfeg.noaa.gov/coastwatch/CWBrowserWW180.jsp#>

At the **Cape San Martine Data Buoy** (46028), off Central California (35.7°N), the monthly average surface temperature for January is $12.8\text{--}13.0^{\circ}\text{C}$ compared to an average of 13.8°C for January 2019. At the **St. Georges Data Buoy** (46027), 8 nautical miles NW of Crescent City, CA (41.9°N) mean surface temperature was 11.5°C over the last days of January compared to the historical mean of $10.7\text{--}11.0^{\circ}\text{C}$. At the **Tillamook Data Buoy** (46089), 85 nautical miles WNW of Tillamook, Oregon (46°N), historical January mean surface temperature is $9.9\text{--}10.1^{\circ}\text{C}$. The 46089 mean during the last 10 days of January 2019 was 10.4°C
https://www.ndbc.noaa.gov/station_page.php?station=46028

EQUATORIAL AND SOUTH PACIFIC (late January)

Weak El Niño SST conditions persist across the equatorial Pacific Ocean and are expected to continue through the boreal spring. Upper 300 meter (m) heat content anomaly of the eastern equatorial Pacific remained positive. Several large areas of negative SST anomaly occurred between 10°S and 40°S . A band of positive SST anomaly crossed the Pacific at $30^{\circ}\text{--}45^{\circ}\text{S}$. Positive sea level (SLA) was seen across the equatorial ocean. <http://www.ospo.noaa.gov/Products/ocean/sst/anomaly/>
http://www.pc.ncep.noaa.gov/products/analysis_monitoring/ocean/weeklyenso_clim_81-10/wksl_anm.gif

The **NOAA OCEANIC EL NIÑO INDEX (ONI)** (3-month running mean of SST anomalies in the Niño 3.4 region) 0.7 for SON, 0.9 for OND, and 0.8 for NDJ are El Niño positive values.

http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/lanina/enso_evolution-status-fcsts-web.pdf

The **NOAA / NCEI PACIFIC DECADEAL OSCILLATION INDEX (PDO)** recently

had ten consecutive negative or neutral values, including -0.29, for January 2019.

<https://www.ncdc.noaa.gov/teleconnections/pdo/>

<http://research.jisao.washington.edu/pdo/PDO.latest.txt>

The **PACIFIC / NORTH AMERICAN Teleconnection Index (PNA)**, computed from atmospheric pressure over the Pacific Ocean and North America, had consistently positive monthly values from November 2018 through January 2019. Daily values were consistently positive during December and January.

<http://www.cpc.noaa.gov/data/teledoc/pna.shtml>

January **ERD monthly Bakun Upwelling Index (UI)** was negative from 36°N northward and weakly positive UI to the south. UI anomaly was negative south of 45°N and positive north of 51°N (range 21°N to 60°N).

<https://upwell.pfeg.noaa.gov/products/PFELData/upwell/monthly/table.1901>

PRECIPITATION and RUNOFF (Late January)

Washington had 5-14 inches (127-356 mm), 60%-85% of normal. Oregon received 5-7 inches, about 65% of long-term January averages. Northern California received 6-17 in (80-120%), Central California 3-14 in (70-180%) and Southern California had 5-14 in (80-200%). <https://cdec.water.ca.gov/reportapp/javareports?name=PRECIPSUM>

The **Fraser River**, measured at Hope (130 km upstream from Vancouver, B.C.), was flowing at about 34,000 cubic feet per second (cfs). <https://wateroffice.ec.gc.ca>

The **Columbia River** at The Dalles was 155,000 [120,000, long term median in cfs].

The **Rogue River** in Oregon 4,600 [7,000 cfs] at Agnees. In California, the **Klamath River** near Klamath was 10,850 [11,300 cfs]. The **Sacramento River** was transporting 11,200 cfs [near median] at Verona and 29,000 [30,000 cfs] at Freeport.

<https://waterdata.usgs.gov/ca/nwis/current/?type=flow>

<https://www.cnrfc.noaa.gov/awipsProducts/RNOWRKCLI.php=>

NOTES (January 2019)

During December the California commercial **market squid** (*Doryteuthis opalescens*) fishery landed near 6, 200 metric tons bringing the seasonal total to 27% of the State limit of 107,045 mt. The season ends 31 March, 2019.

<https://www.wildlife.ca.gov/Conservation/Marine/Pelagic/Landings>

The Pacific Fisheries Management Council (**PFMC**) published a review of the 2018 **Pacific Coast Ocean Salmon Fisheries** with estimates of stock size and escapement. https://www.pcouncil.org/wp-content/uploads/2019/02/2018_Review_of_Ocean_Salmon_Fisheries_Final_021419.pdf

According to NASA and NOAA, **2018** ranked behind 2016, 2017, and 2015 as **warmest in globally annual analyses**. The most recent 5 years have been the **globally hottest 5 years on record**. <https://climate.nasa.gov/news/2840/nasa-noaa-to-announce-2018-global-temperatures-climate-conditions/>

All harvest advisories for California **Dungeness crab** harvest have been lifted. Commercial harvest north of 41.1°N was opened on 25 January.

<https://www.wildlife.ca.gov/Fishing/Ocean/Dungeness-Crab>

Monthly Climate Narratives may be found,

https://coastwatch.pfeg.noaa.gov/elnino/coastal_conditions.html

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