

## CLIMATE NARRATIVE, October 2018

### NORTH PACIFIC

At the end of October much of the Pacific north of 40°N had weakly positive SST anomalies. However, negative SST anomalies (>-1.5°C) were found along the coasts of Mexico and the US. Some of these areas of weak negative anomaly extended westward as far as 130°W. Strongest positive SST anomalies (< 2°C) were observed in the Gulf of Alaska and west of 180°E/W between 30°-50°N.

<http://www.ospo.noaa.gov/Products/ocean/sst/anomaly/>

[https://coastwatch.pfeg.noaa.gov/elnino/coastal\\_conditions.html](https://coastwatch.pfeg.noaa.gov/elnino/coastal_conditions.html)

Positive **SEA LEVEL ANOMALY** (SLA), to 10 centimeters (cm) was seen along the coast of Central America (5°N-20°N) and across the equatorial Pacific.

The seemingly coupled trans-Pacific trough of negative SLA (>-20 cm), zonal at 10°N, persisted through October.

[http://www.cpc.ncep.noaa.gov/products/analysis\\_monitoring/ocean/weeklyenso\\_clim\\_81-10/wksl\\_anm.gif](http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/ocean/weeklyenso_clim_81-10/wksl_anm.gif)

During October, **Chlorophyll-a** (Chl-a) at 2 milligrams per cubic meter (mg/m<sup>3</sup>) persisted in 200-400 km wide coastal areas off Central California. Chl-a concentrations of 0.3-1.0 mg/m<sup>3</sup> were found offshore. Areas with Chl-a exceeding 2 mg/m<sup>3</sup> were seen in localized inshore areas.

<https://coastwatch.pfeg.noaa.gov/coastwatch/CWBrowserWW180.jsp#>

### WATER TEMPERATURES AT SHORE STATIONS

SANTA MONICA (34°N) Subtidal Water Temperature (STWT) was 16.7°-21.1°C during the month, and ended October between 19°-19.3°C. Southern MONTEREY BAY (36.6°N), STWT was between 13.8° and 17.5°C during October, with 31 October STWT 14.5°-15°C. ARENA COVE (38.9°N) STWT was between 10.2° and 14.3°C during the month with values of 12.5°-12.9°C at month's end. At the PORT ORFORD tide station (42.7°N), near Cape Blanco, STWT was at a minimum of 9.1°C on 14 October, dropping from 13.3°C on 3 October. Port Orford STWT was 14.0-14.5°C at the end of October. At NEAH BAY, WA (48.4°N) STWT during October was between 9.5° and 12.9°C, with STWT of 10.5°C at month's end.

<https://tidesandcurrents.noaa.gov/stations.html?type=Physical+Oceanography>

### EQUATORIAL AND SOUTH PACIFIC

El Niño-Southern Oscillation (ENSO)-neutral conditions remained through October. Neutral to positive SST anomalies persisted across Equatorial and Tropical Pacific. Equatorial upper ocean (0-300m) heat content anomaly from 180-100°W increased during October. Positive sea level anomalies (SLA) to 10 cm occurred across the equatorial Pacific from 140°E to 100°W. Negative SST anomalies (>-2°C) occurred south of Australia and around the Antarctic continent.

<http://www.ospo.noaa.gov/Products/ocean/sst/anomaly/>

The **NOAA OCEANIC EL NIÑO INDEX (ONI)** [3-month running mean of ERSST.v4 SST anomalies in the Niño 3.4 region (5N-5S, 120-170W)] was positive (0.4), but neutral for the fifth consecutive 3-month mean (ASO).

[http://www.cpc.ncep.noaa.gov/products/analysis\\_monitoring/lanina/enso\\_evolution-status-fcsts-web.pdf](http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/lanina/enso_evolution-status-fcsts-web.pdf)

## **MULTIVARIATE ENSO INDEX (MEI)**

The September-October MEI remained steady at 0.47, below the lowest El Niño rating. Of seven 'analogue' years: 1951, '52, '68, '69, '79, '90, and 2003, all remained in either high neutral or weak El Niño conditions through the following few seasons (updated 9 Nov). <https://www.esrl.noaa.gov/psd/enso/mei/>

The **NOAA / NCEI PACIFIC DECADEAL OSCILLATION INDEX (PDO)**, calculated from ERSST.v4 data, had nine consecutive negative or neutral PDO values, including -0.71 (negative) for October. <https://www.ncdc.noaa.gov/teleconnections/pdo/>

**PACIFIC / NORTH AMERICAN Teleconnection Index (PNA)**, computed from atmospheric pressure over the Pacific Ocean and North American Continent dropped from a high monthly value of 1.44 in September to 0.21 in October. <http://www.cpc.noaa.gov/data/teledoc/pna.shtml>

During October 2018 the Bakun **ERD UPWELLING INDEX (UI)**, computed from monthly average sea level atmospheric pressure fields were weakly positive from 24°N to 42°N. Poleward of 51°N the monthly means UI values were negative. <http://www.pfeg.noaa.gov/products/PFELData/upwell/monthly/table.1810>

## **PRECIPITATION and RUNOFF**

Summer and fall rainfall in the Pacific States and southern Canada was 20 – 60% of average during 2018. The Fraser River was flowing at about at about 55,000 cubic feet per second (cfs) in October, 40-65% less than median-range seasonal discharge. At the Dalles, the Columbia river fluctuating near seasonal median. The lower Sacramento River was below median flow in October.

[https://wateroffice.ec.gc.ca/search/real\\_time\\_results\\_e.html?](https://wateroffice.ec.gc.ca/search/real_time_results_e.html?)

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

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

## **NOTES**

In September and October rockfish and other species were feeding on *Pleuroncodes planipes*) off Central California. Additional sightings and occasional stranding of *P. planipes* occurred around southern Monterey Bay through October 2018.

The commercial **Market Squid** (*Doryteuthis opalescens*) fishery landed 772 mt into Southern California ports in September and October combined. The **Northern Anchovy** (*Engraulis mordax*) fishery landed 3,733 mt during September and October combined for a season-total of 16,713 mt landed into California ports.

## **MARINE ALGAL TOXINS**

During October 2018, California shellfish sport harvest advisories were related to domoic acid concentrations in recreational Dungeness crabs and bi-valve shellfish from areas north of Mendocino County (40°N) and in lobster fisheries around Anacapa Island and the eastern Santa Barbara Channel Islands.

<https://www.cdph.ca.gov/Programs/CEH/DRSEM/Pages/EMB/Shellfish/Marine->

[Biotxin-Monitoring-Program.aspx](#).  
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