NOAA West Watch Update
15 October 2024

NANOOS Update

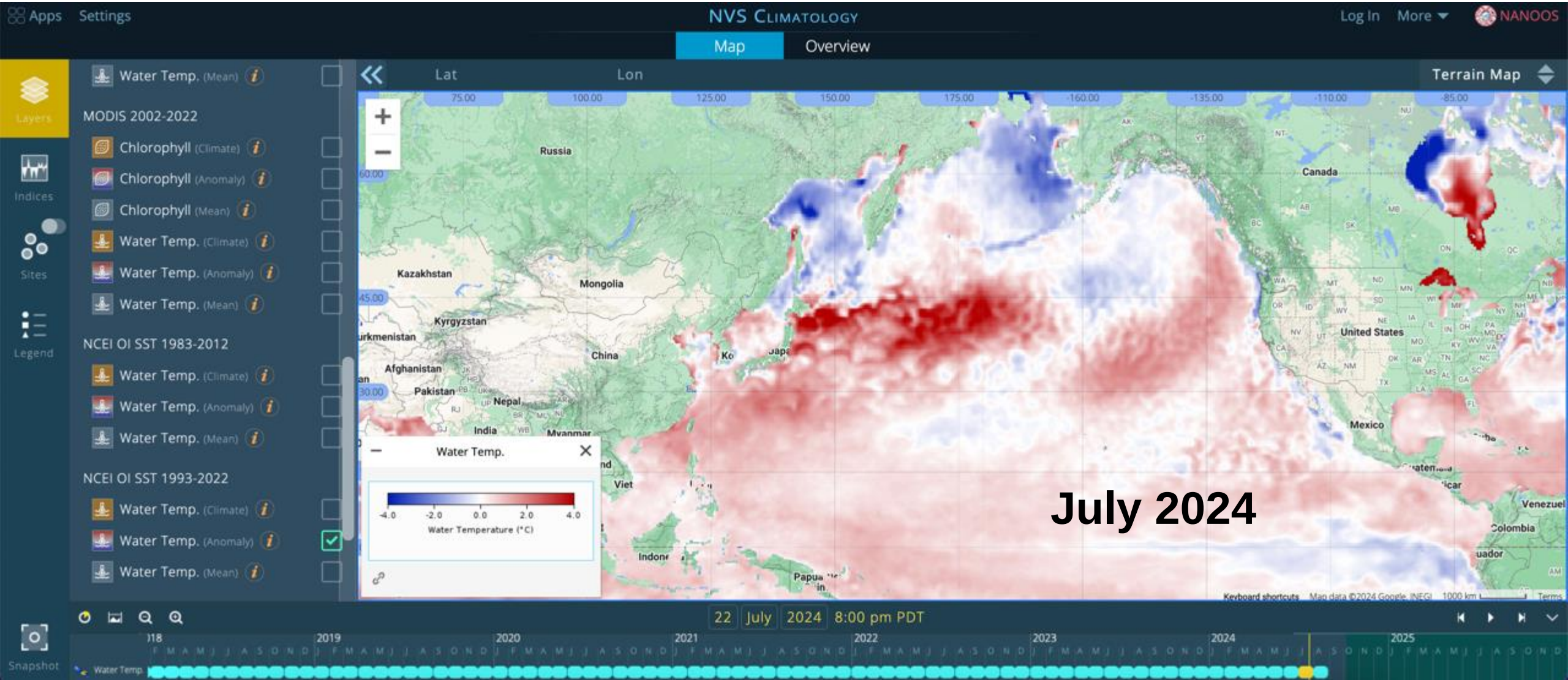
Roxanne Carini on behalf of many

www.nanoos.org

NANOOS: www.nanoos.org Climatology app

Sea Surface Temperature Anomaly
NCEI Optimum Interpolation SST

NCEI OI SST 1983-2012



NANOOS: www.nanoos.org Climatology app

Sea Surface Temperature Anomaly
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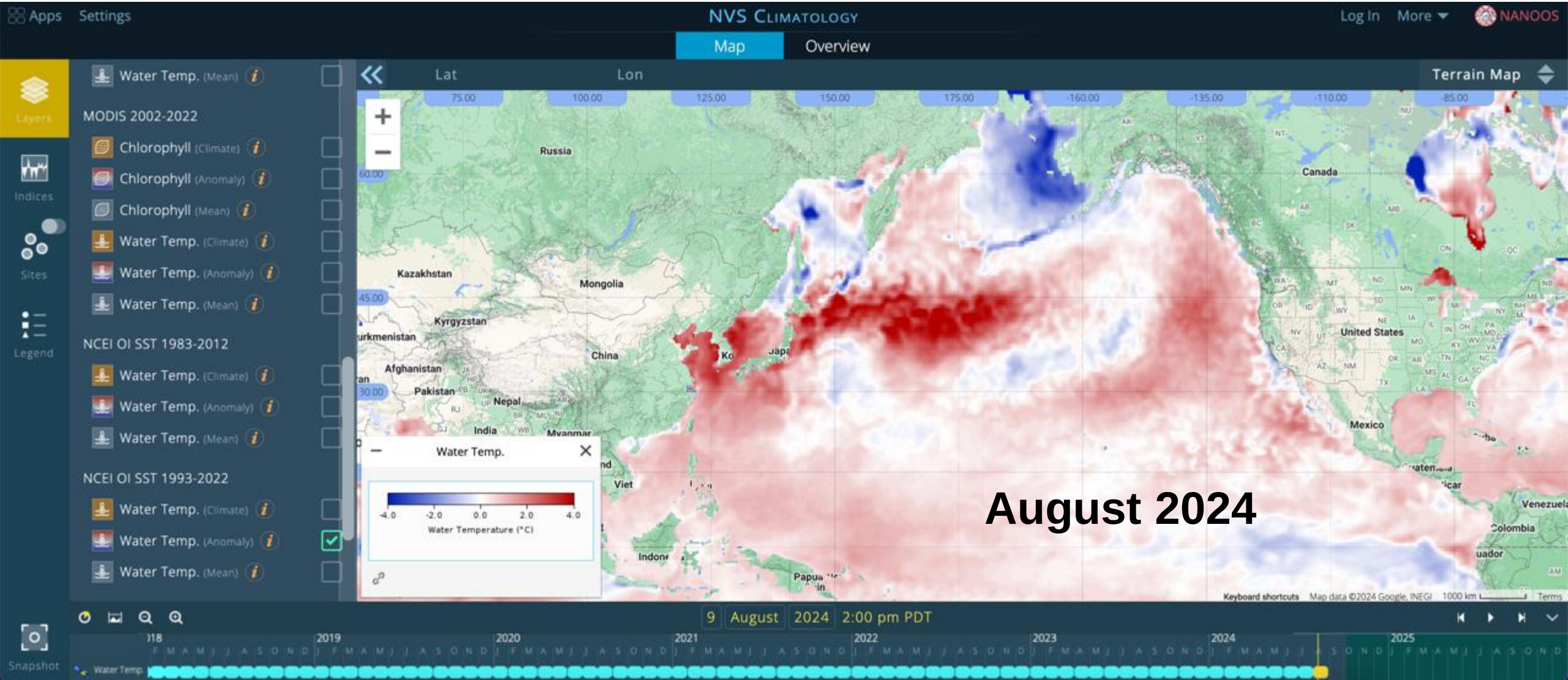
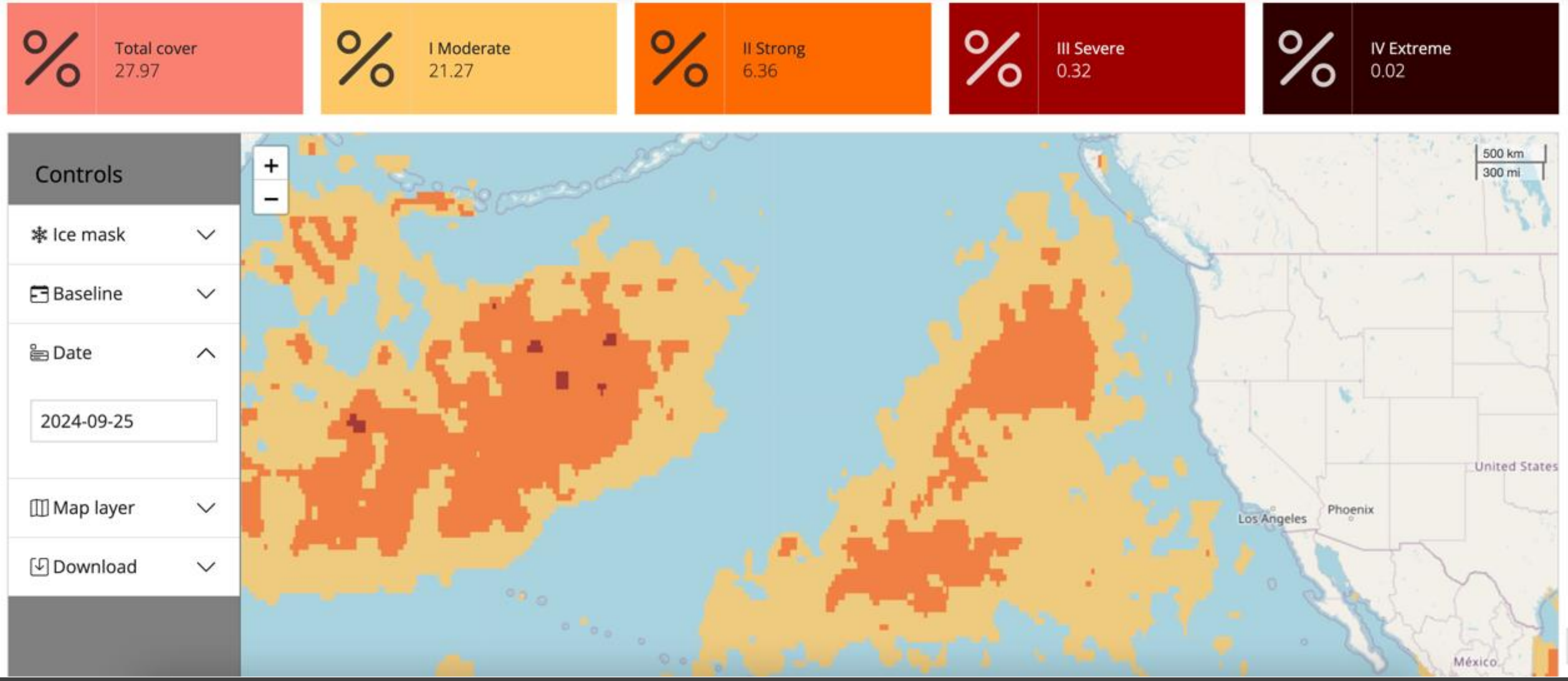


NCEI OI SST 1983-2012

September 2024

MARINE HEATWAVES International Working Group

HOME MHW OVERVIEW MHW IMPACTS TRACKER WORKSHOPS AND CONFERENCES PUBLICATIONS MEMBERS CODE



http://www.marineheatwaves.org/tracker.html

NANOOS: www.nanoos.org

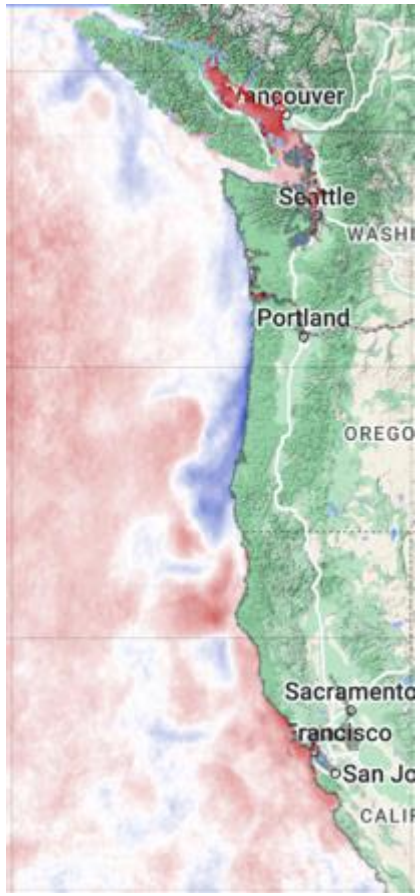
Climatology app: https://nvs.nanoos.org/Climatology

Sea Surface Temperature Anomaly

OSU Modis

July 2024

OSU MODIS 2002-2012



August 2024

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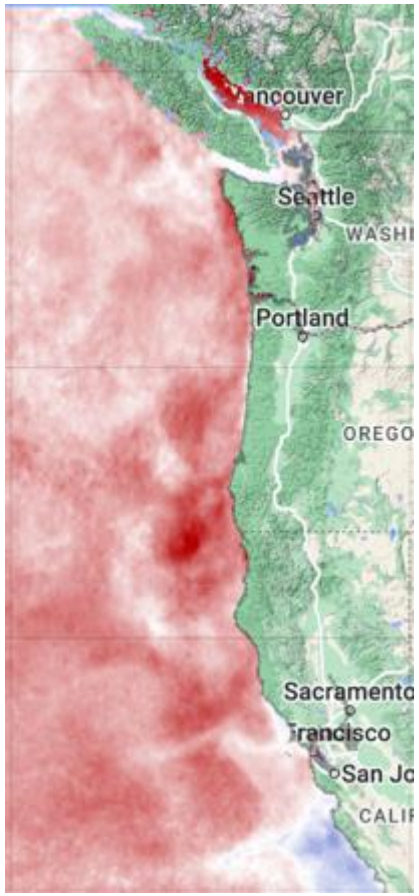

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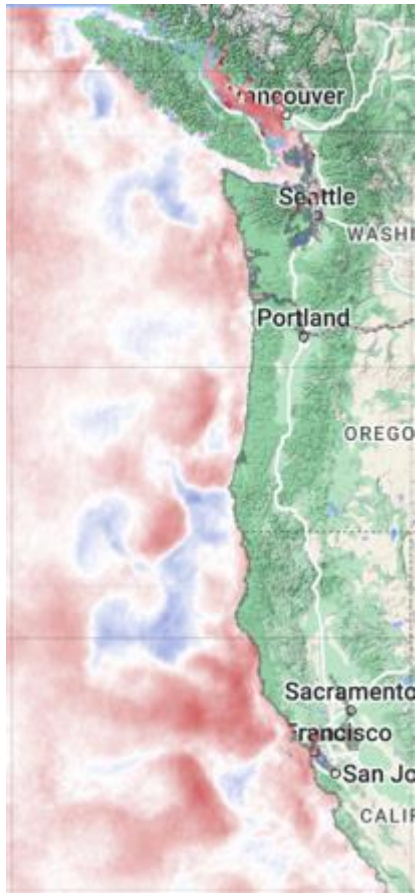

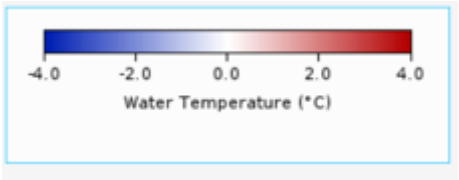

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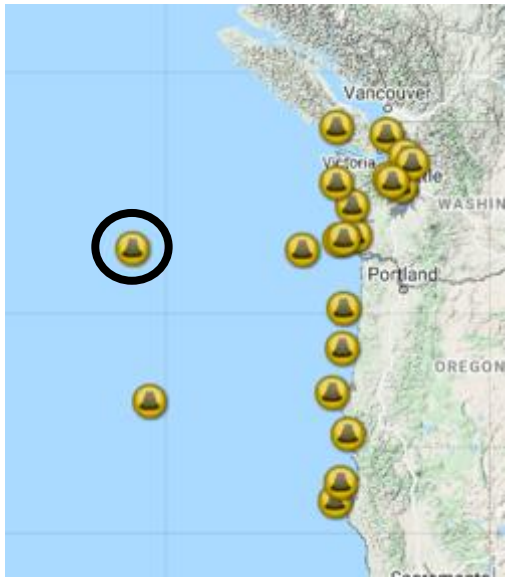
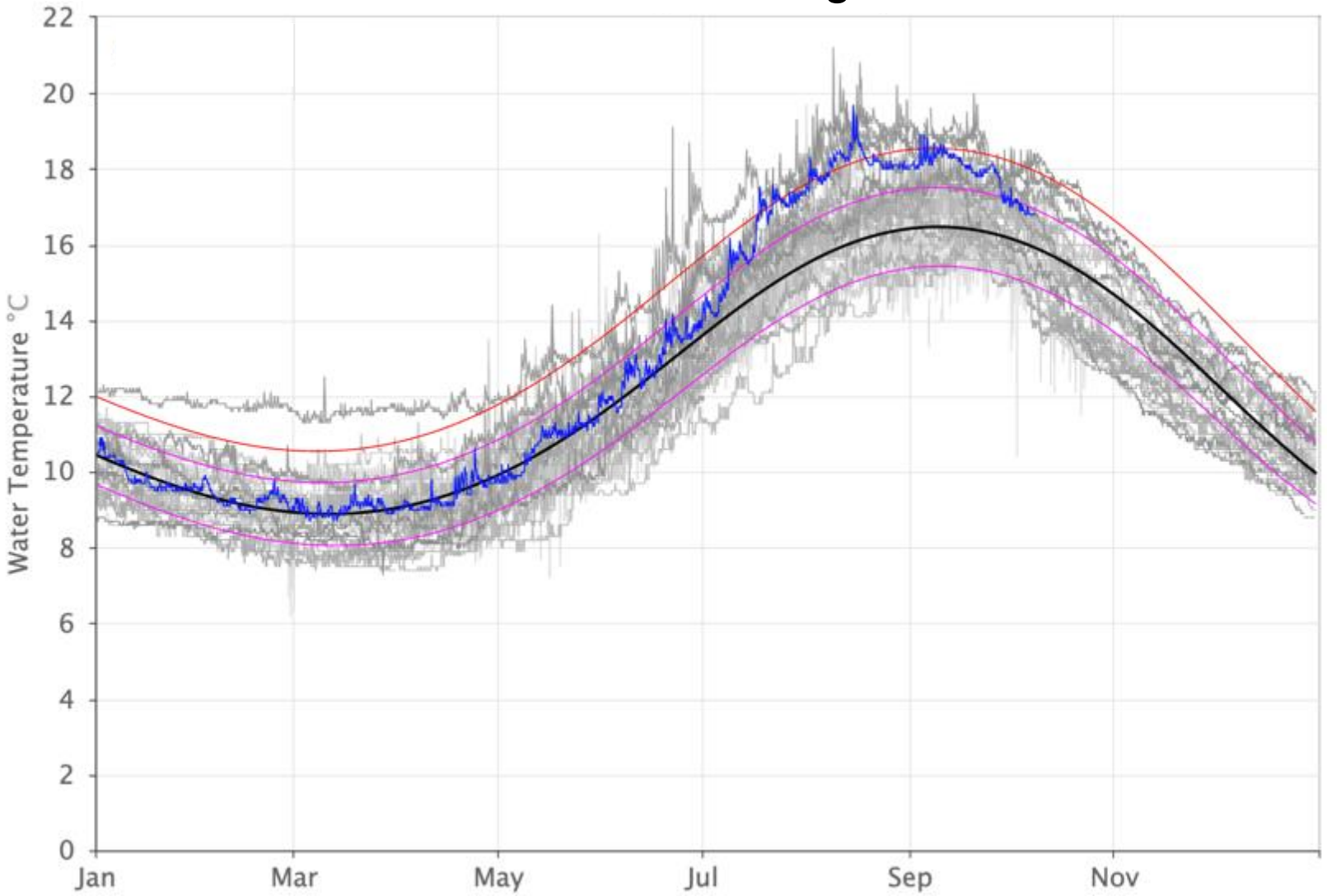
Sea Surface Temperature

~300 nautical miles



Seasonal Cycle
n=45 Yrs
-1 STD
+1 STD
+2 STD
2024

NDBC Washington



IOOS

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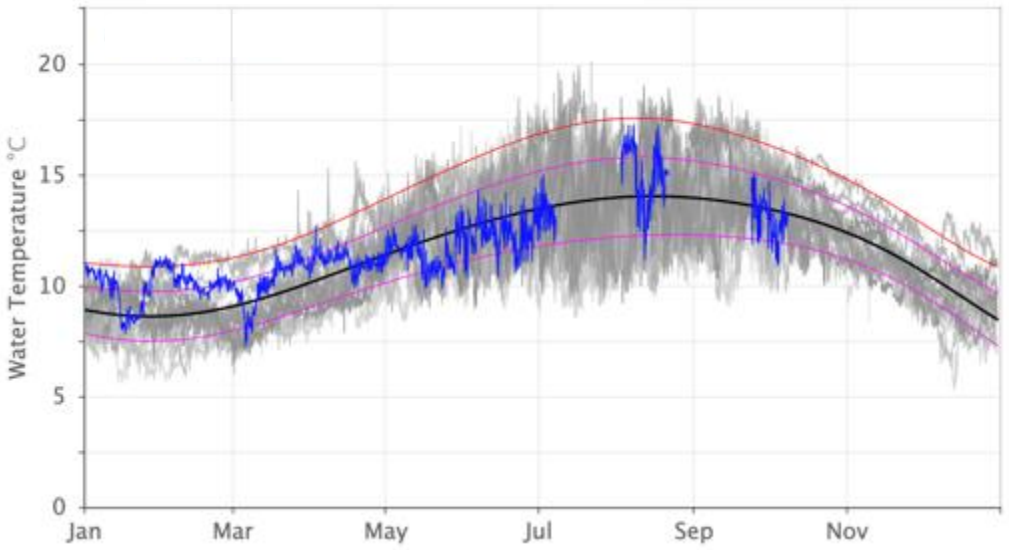
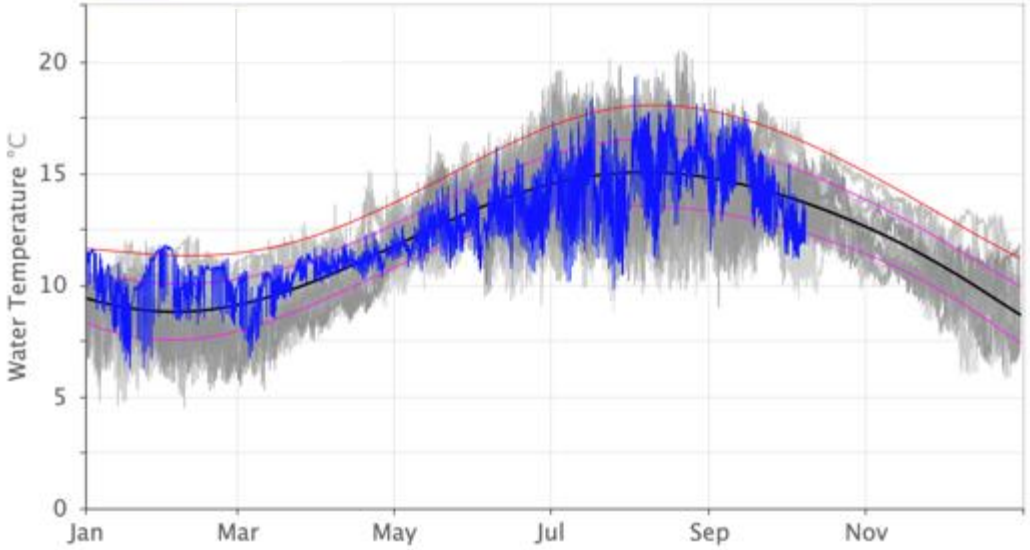
Sea Surface Temperature

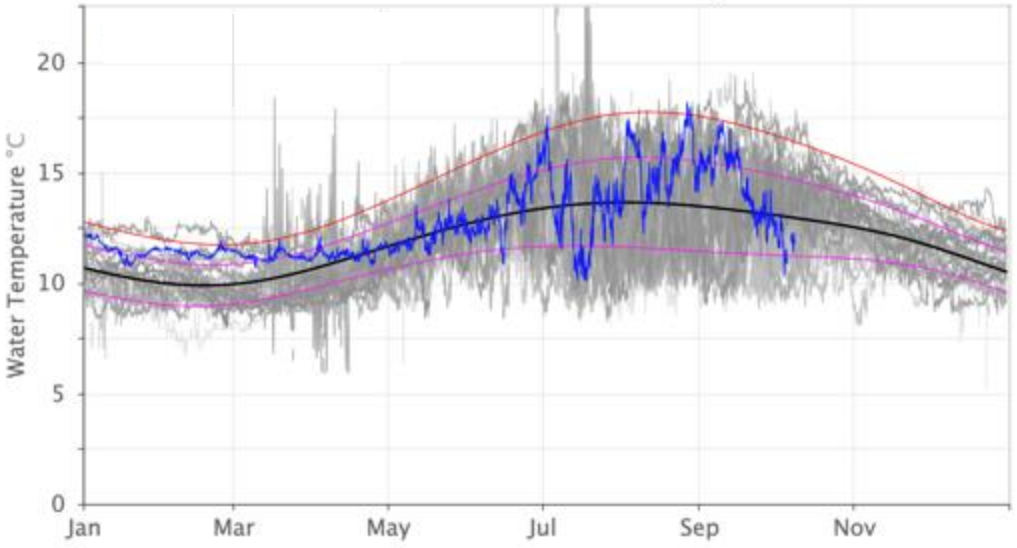
CDIP Grays Harbor ● 17 yrs



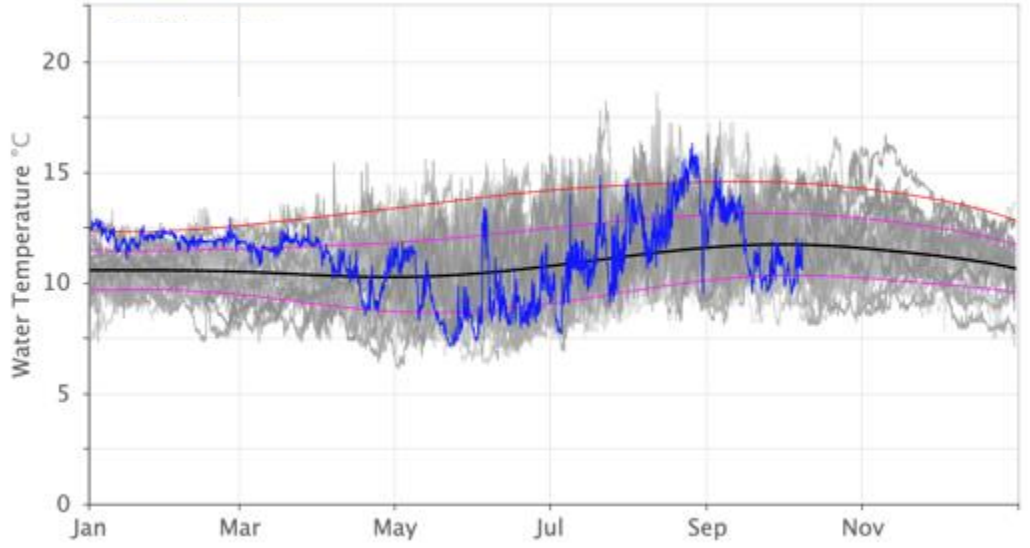
CDIP Clatsop Spit ● 12 yrs

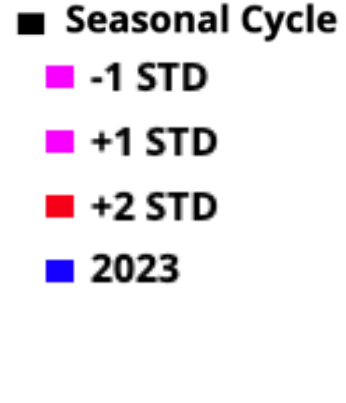


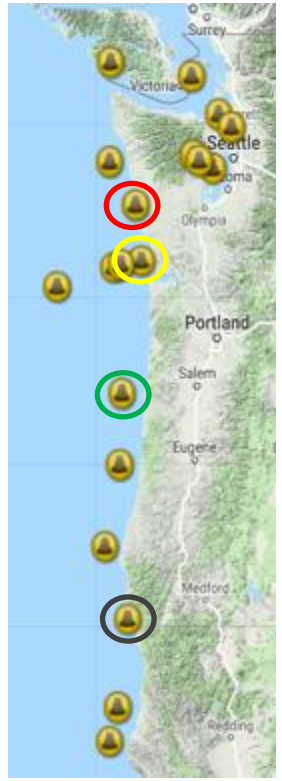
NDBC Stonewall Bank ● 34 yrs



NDBC St. Georges ● 38 yrs

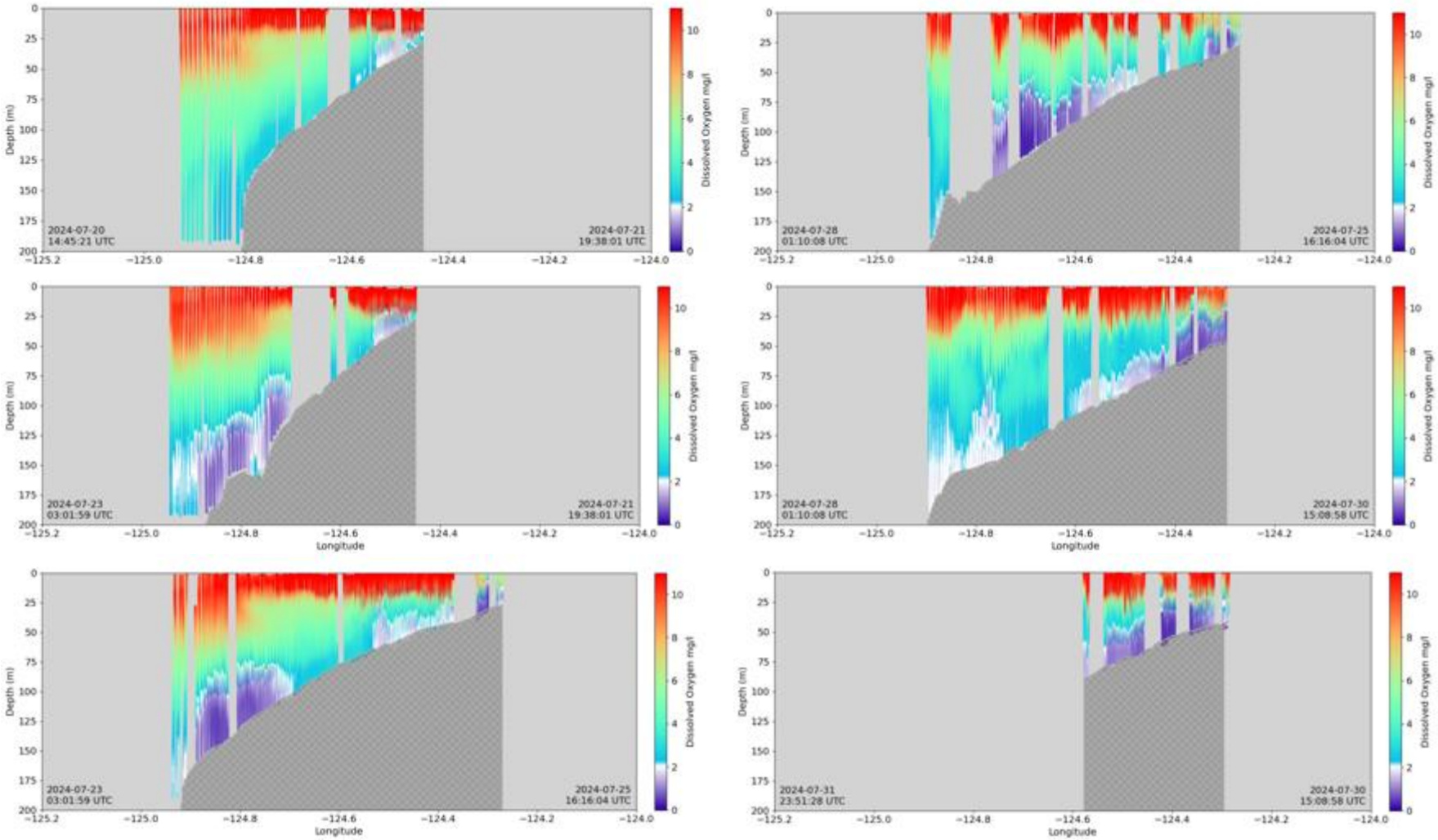


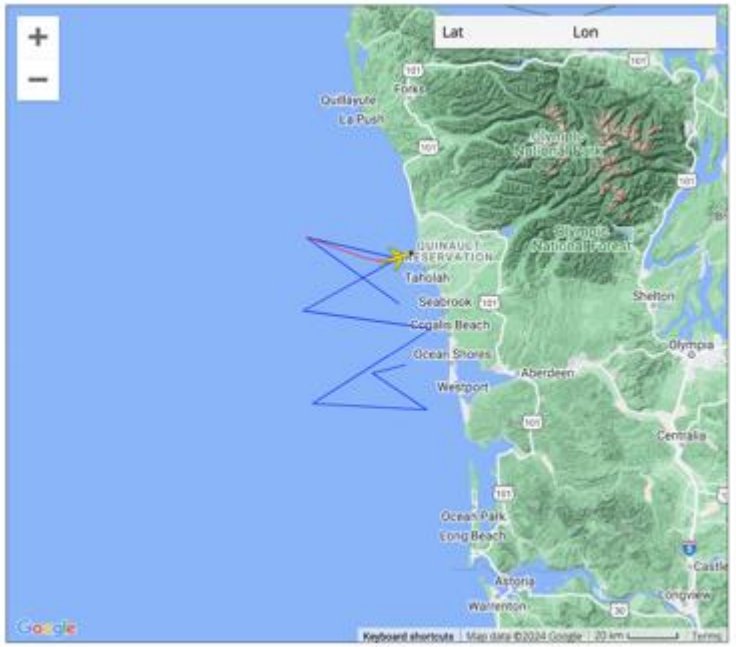




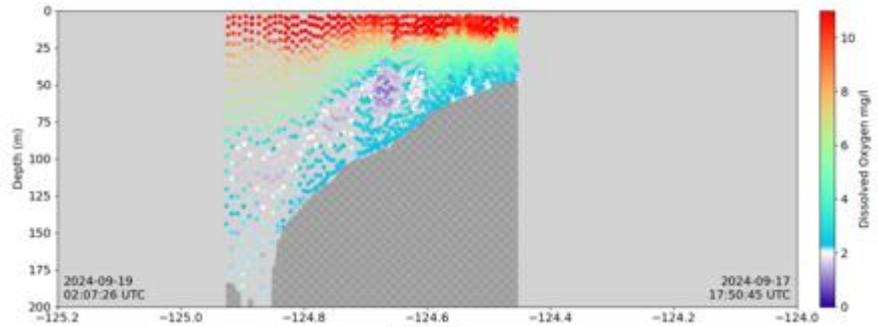
IOOS

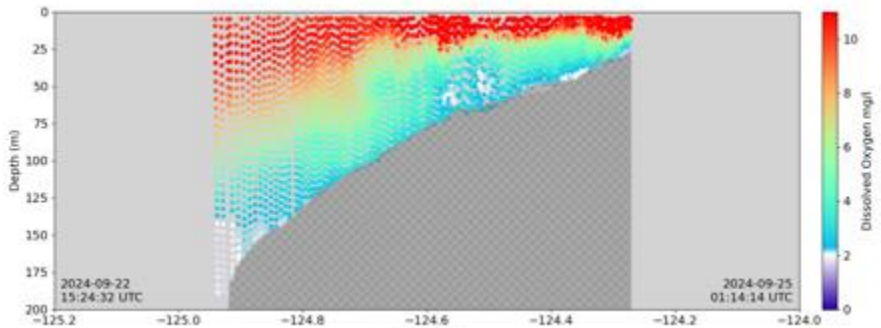
Washington Shelf Glider DO plots – July-August

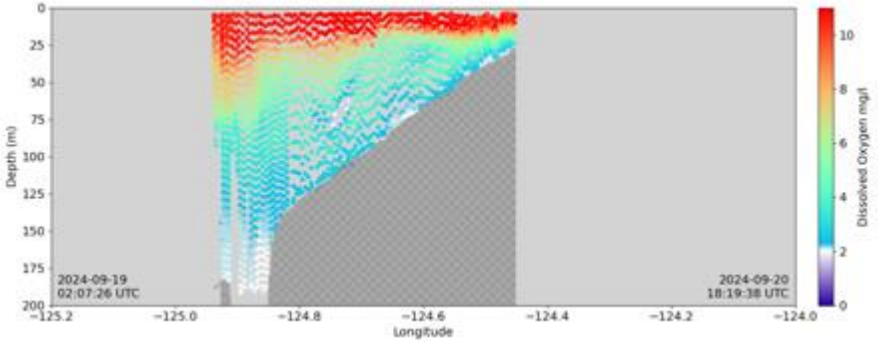


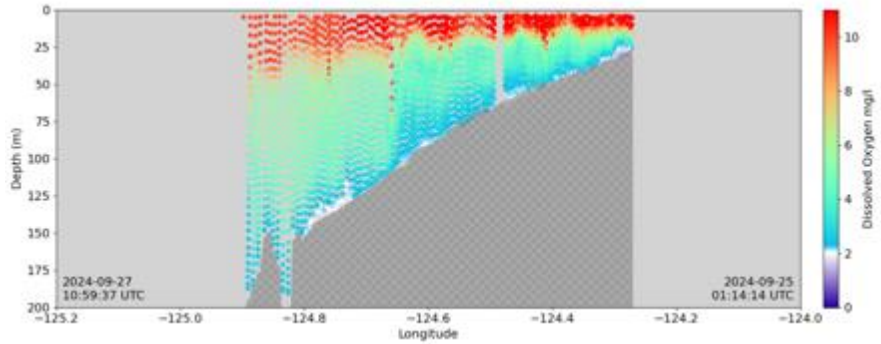


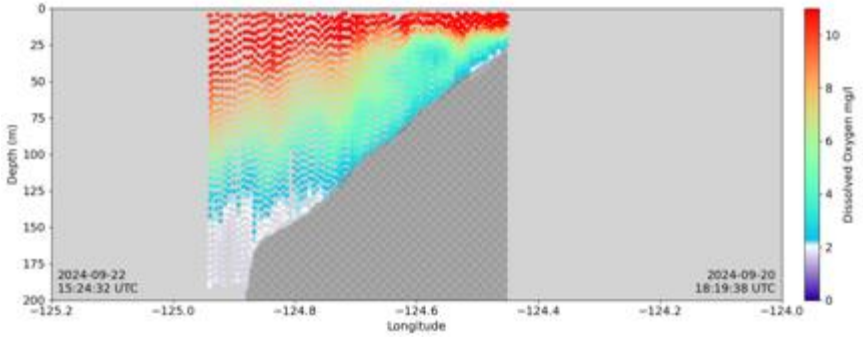
Washington Shelf Glider DO plots - September

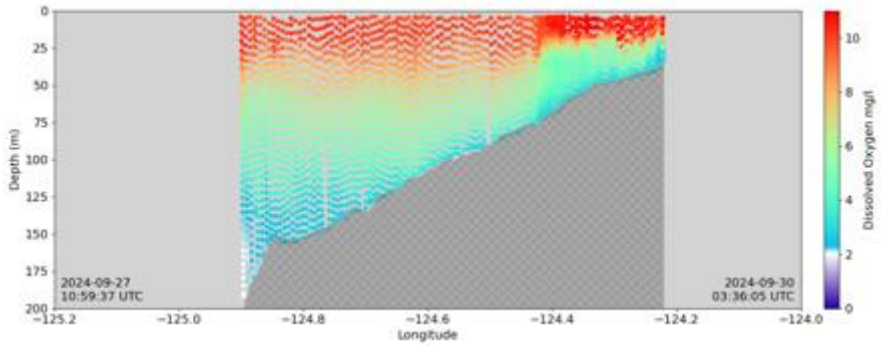


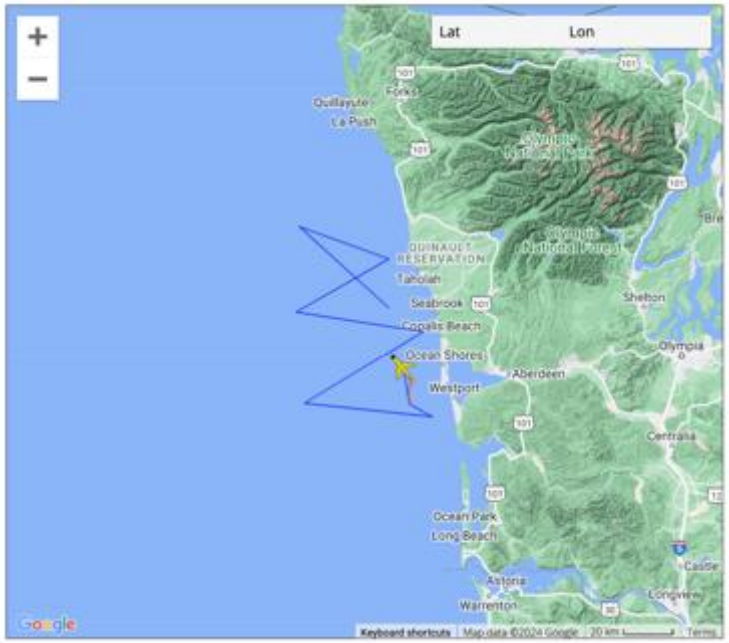




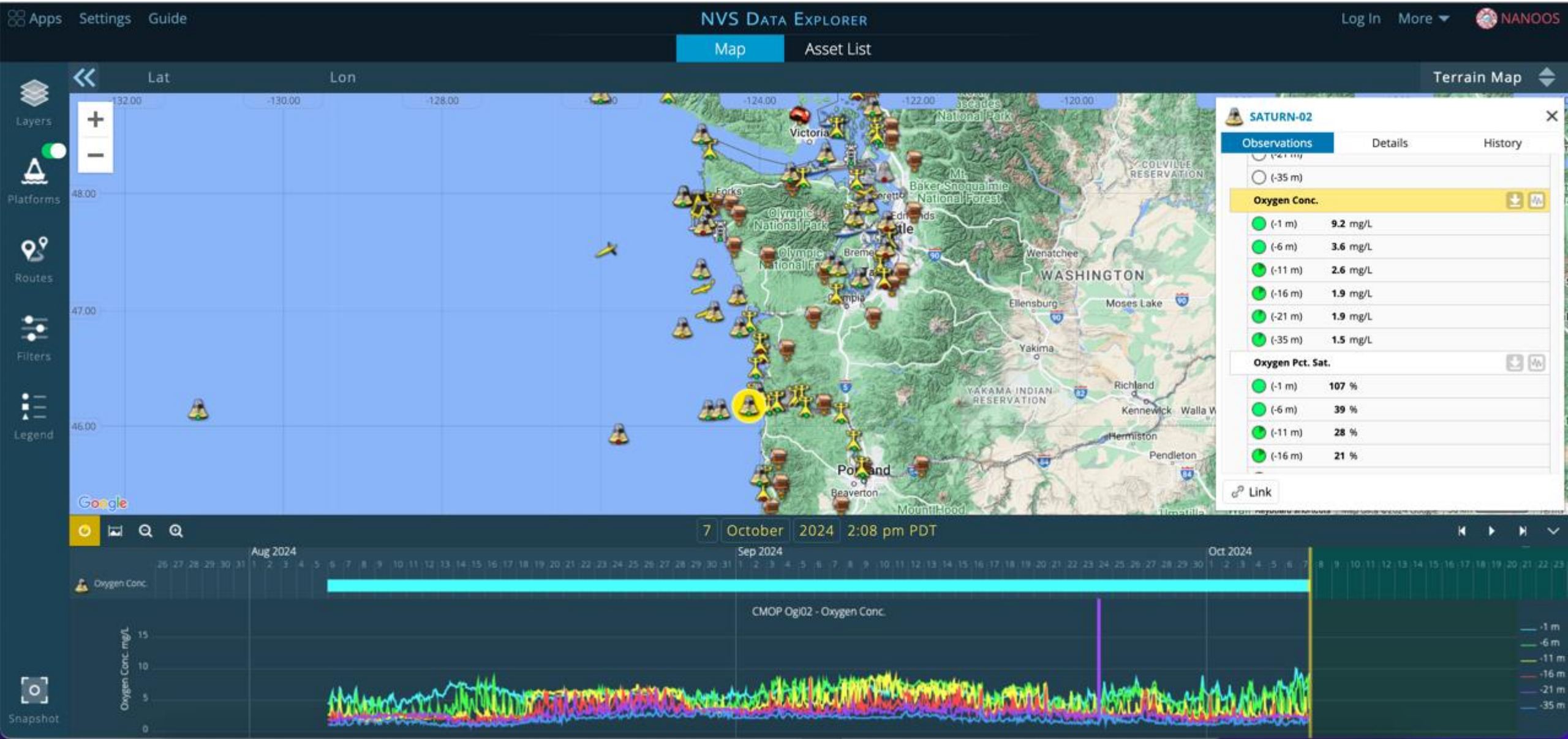






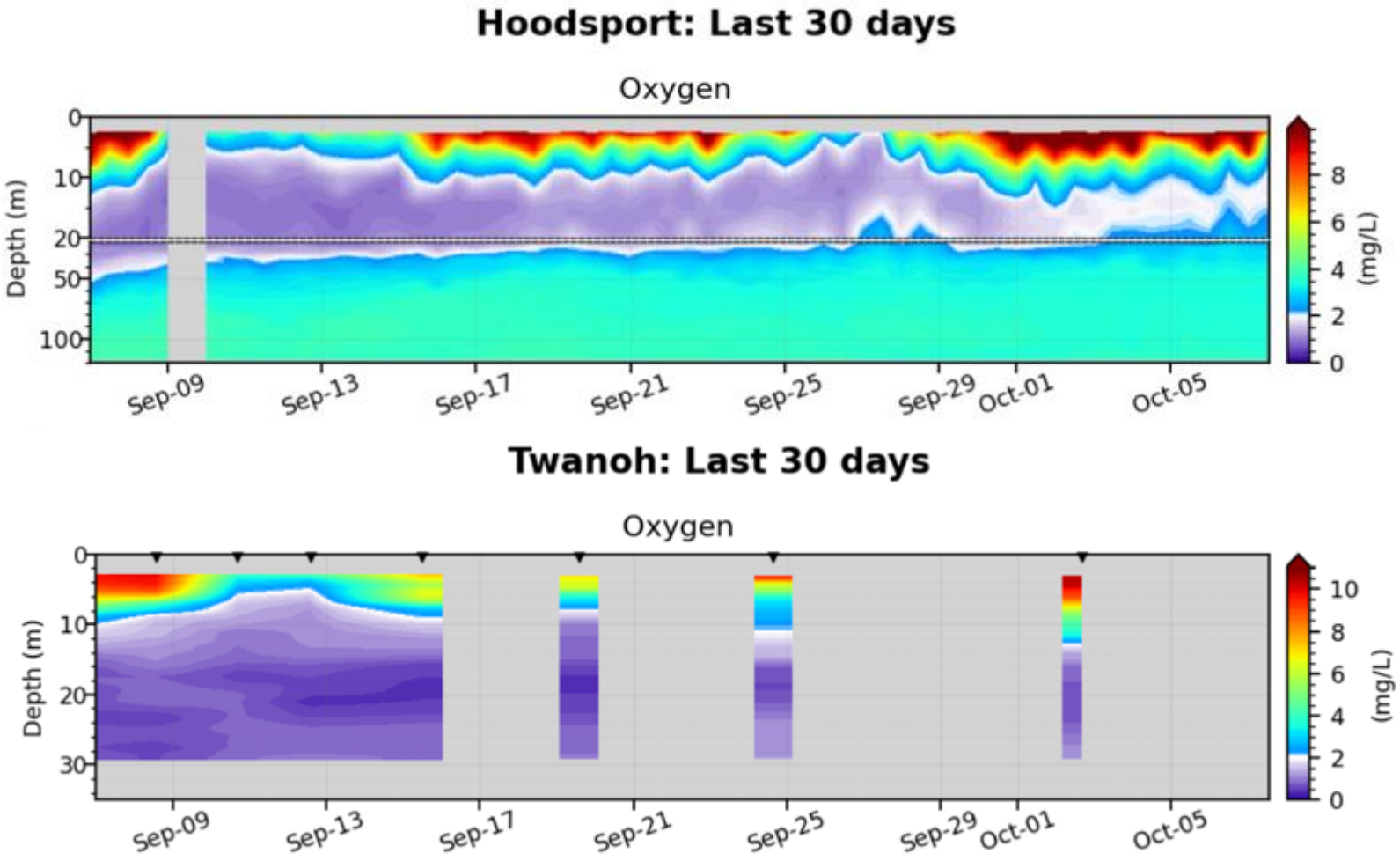


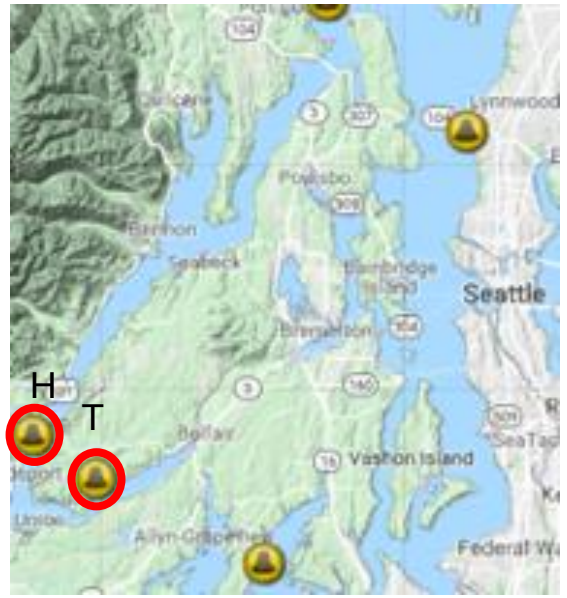
Hypoxia Watch: CMOP Columbia R plume mooring



Hypoxia Watch: Hood Canal

Puget Sound Profiling Buoys

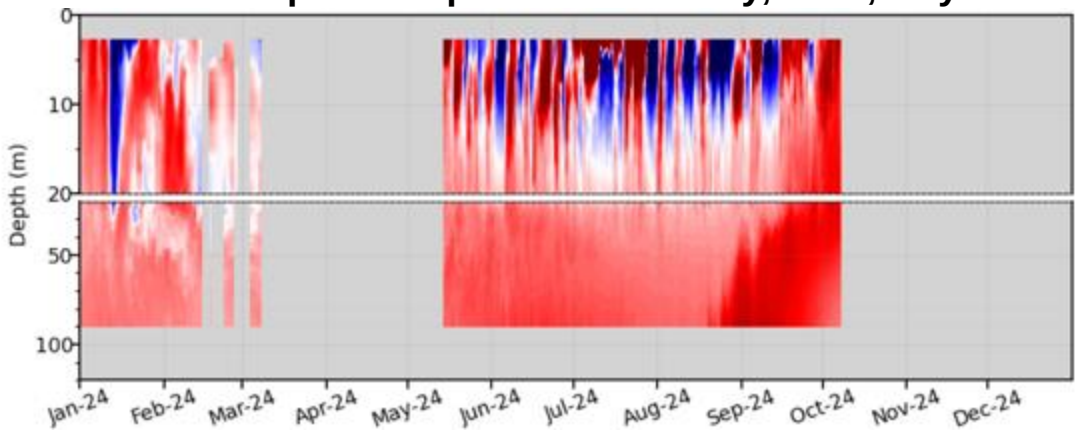




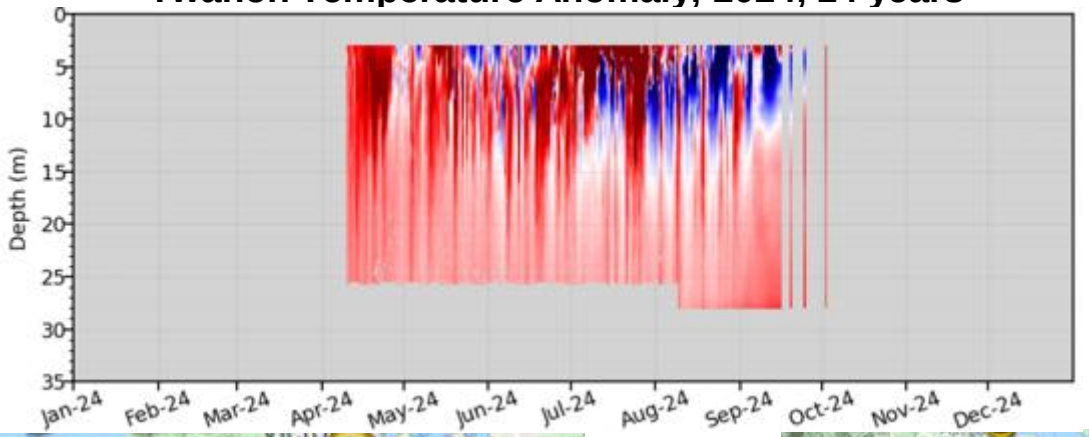
Temperature Anomalies

Puget Sound Profiling Buoys

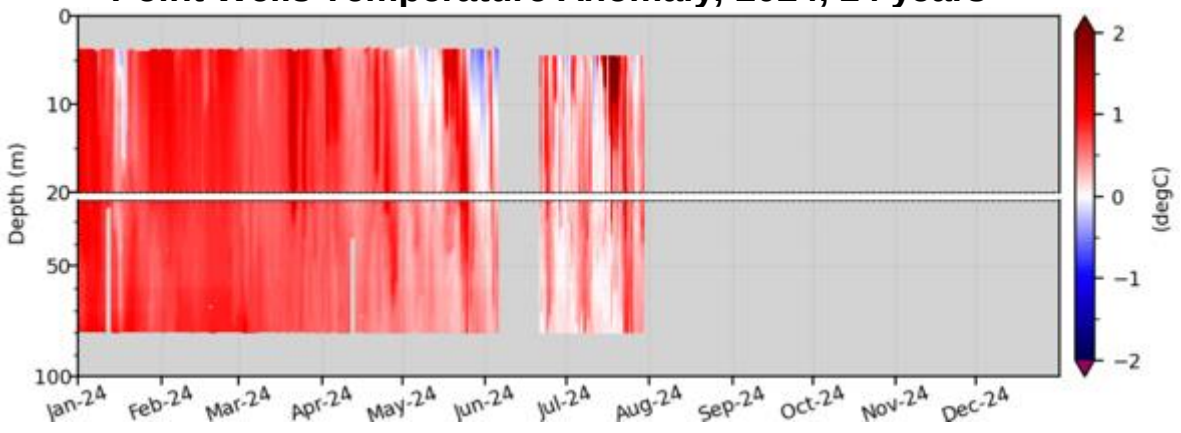
Hoodsport Temperature Anomaly, 2024, 14 years



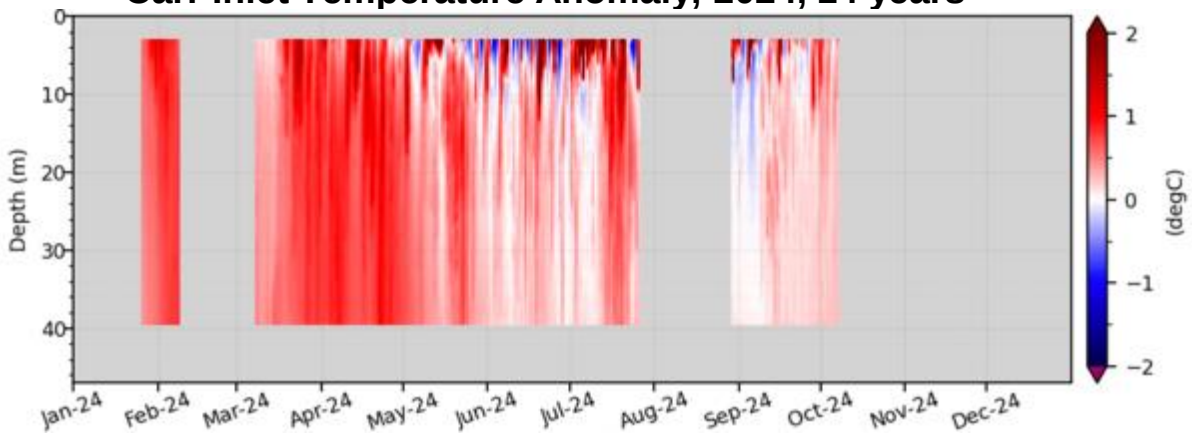
Twanoh Temperature Anomaly, 2024, 14 years

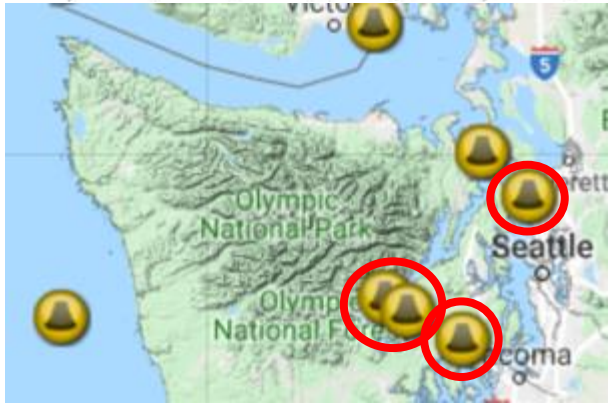


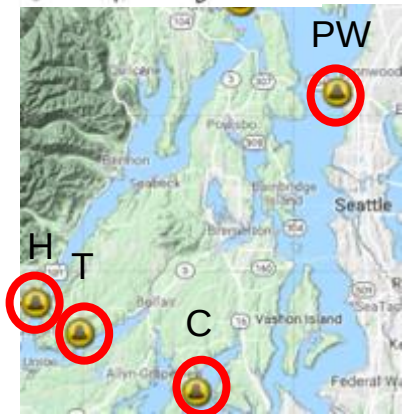
Point Wells Temperature Anomaly, 2024, 14 years



Carr Inlet Temperature Anomaly, 2024, 14 years



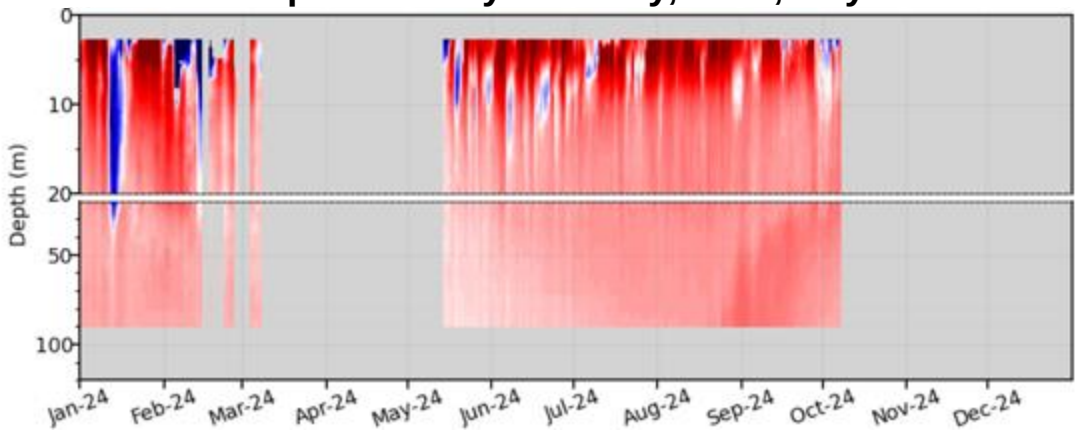




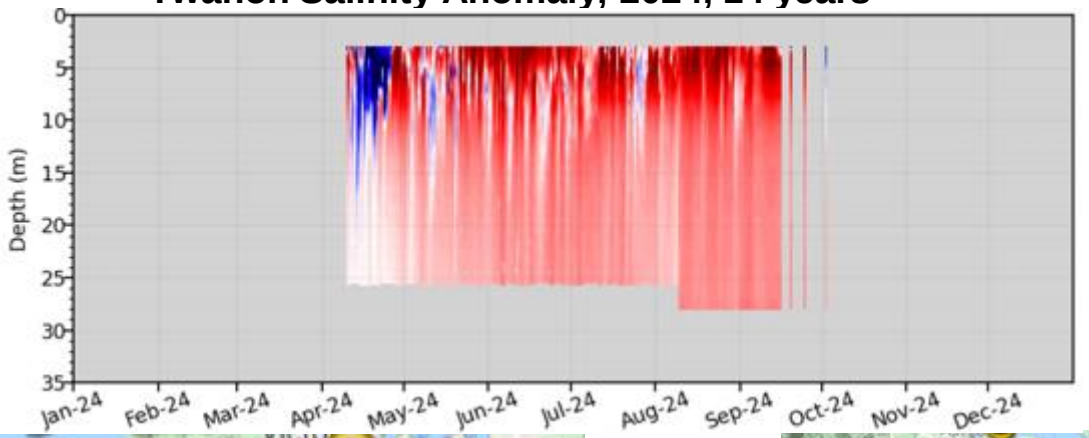
Salinity Anomalies

Puget Sound Profiling Buoys

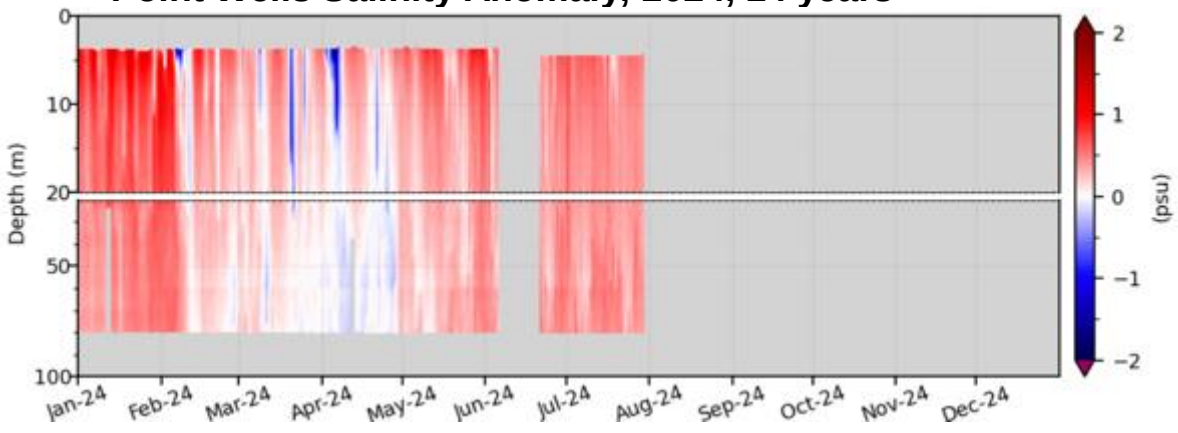
Hoodsport Salinity Anomaly, 2024, 14 years



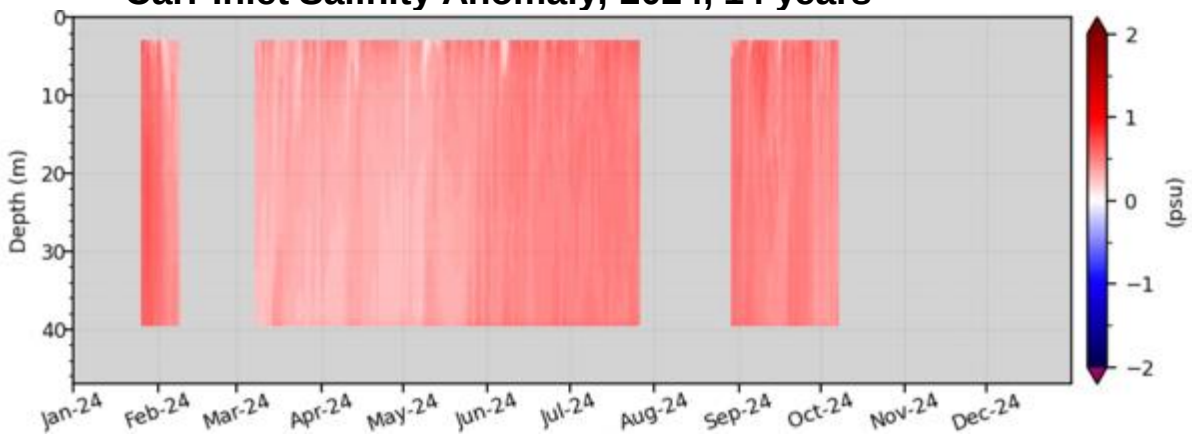
Twanoh Salinity Anomaly, 2024, 14 years

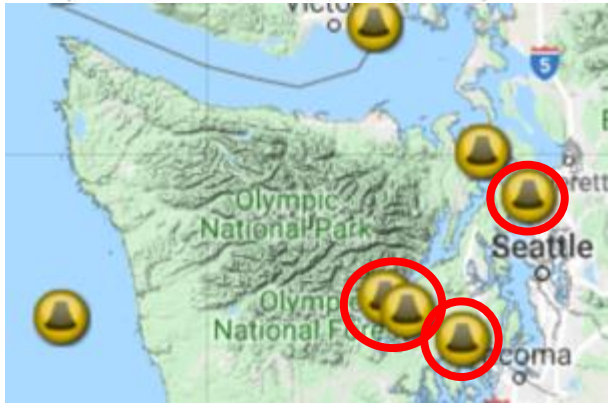


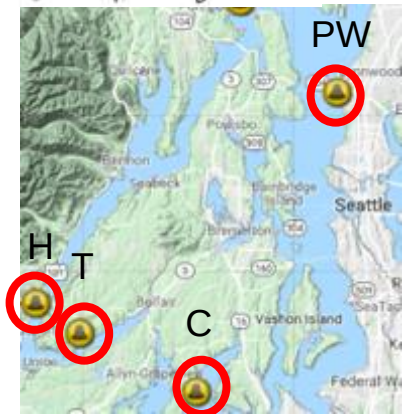
Point Wells Salinity Anomaly, 2024, 14 years



Carr Inlet Salinity Anomaly, 2024, 14 years

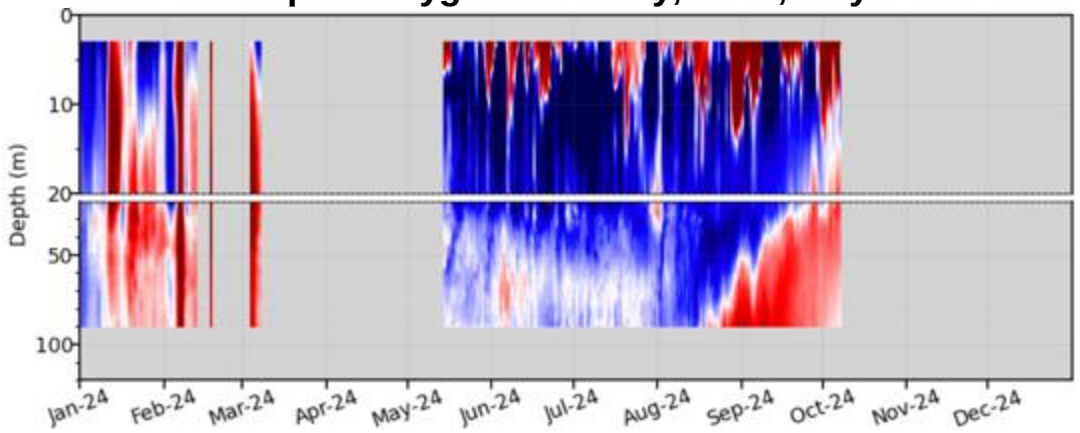




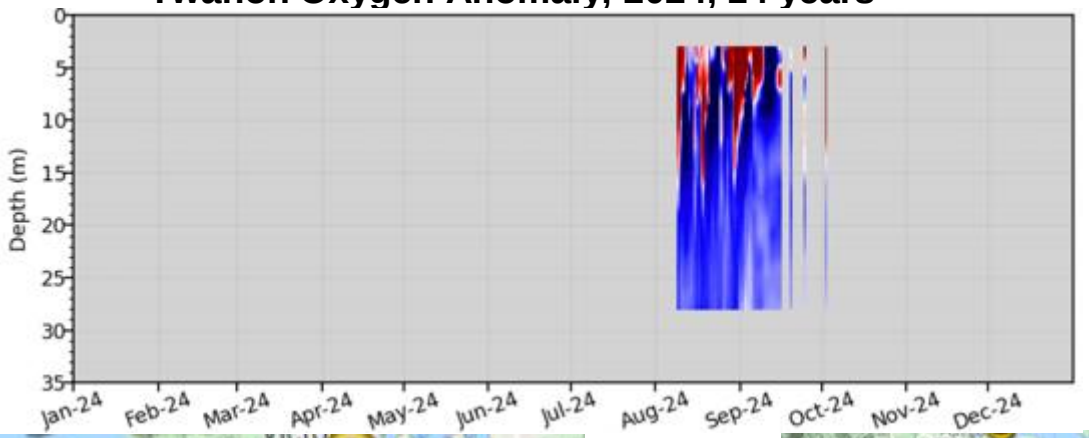


Dissolved Oxygen Anomalies

Hoodsport Oxygen Anomaly, 2024, 14 years

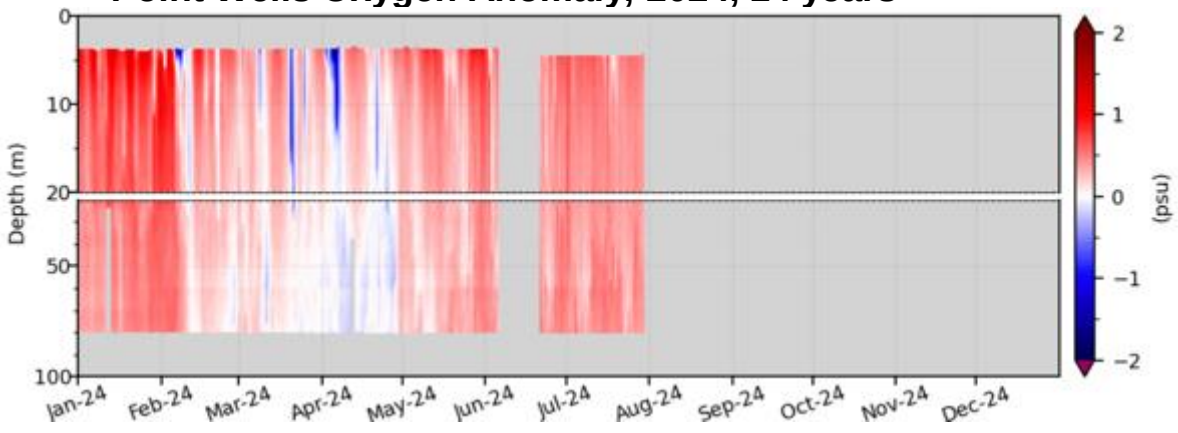


Twanoh Oxygen Anomaly, 2024, 14 years

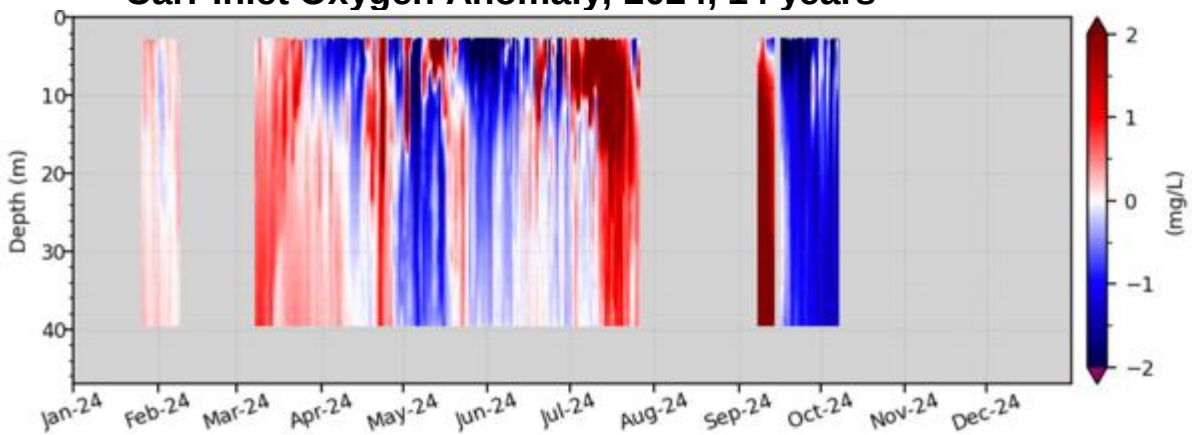


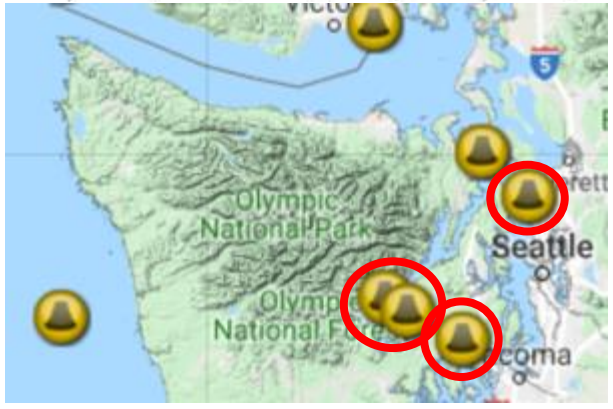
Puget Sound Profiling Buoys

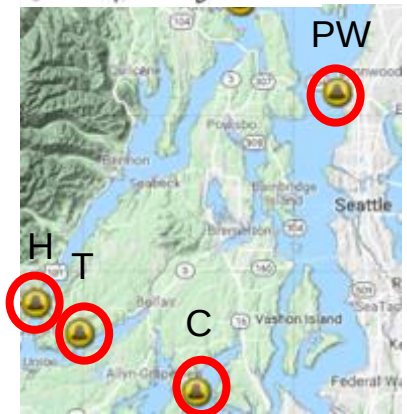
Point Wells Oxygen Anomaly, 2024, 14 years



Carr Inlet Oxygen Anomaly, 2024, 14 years







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Chlorophyll Anomaly

OSU Modis

July 2024

OSU MODIS 2002-2012

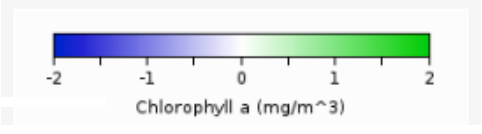
August 2024

OSU MODIS 2002-2012

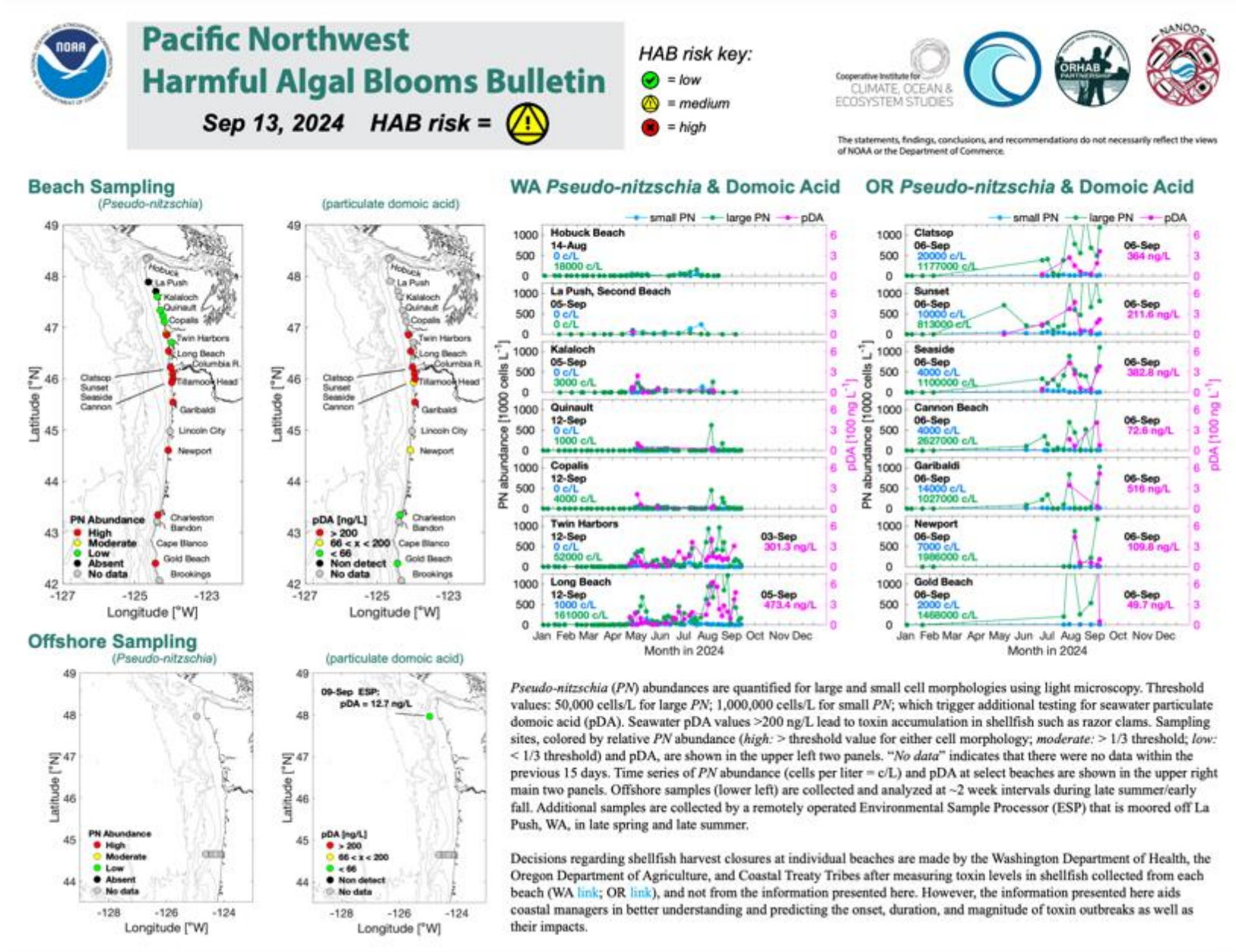
September 2024

OSU MODIS 2002-2012

Chlorophyll



HABs



Pseudo-nitzschia (*PN*) abundances are quantified for large and small cell morphologies using light microscopy. Threshold values: 50,000 cells/L for large *PN*; 1,000,000 cells/L for small *PN*; which trigger additional testing for seawater particulate domoic acid (pDA). Seawater pDA values >200 ng/L lead to toxin accumulation in shellfish such as razor clams. Sampling sites, colored by relative *PN* abundance (*high:* > threshold value for either cell morphology; *moderate:* > 1/3 threshold; *low:* < 1/3 threshold) and pDA, are shown in the upper left two panels. "*No data*" indicates that there were no data within the previous 15 days. Time series of *PN* abundance (cells per liter = c/L) and pDA at select beaches are shown in the upper right main two panels. Offshore samples (lower left) are collected and analyzed at ~2 week intervals during late summer/early fall. Additional samples are collected by a remotely operated Environmental Sample Processor (ESP) that is moored off La Push, WA, in late spring and late summer.

Decisions regarding shellfish harvest closures at individual beaches are made by the Washington Department of Health, the Oregon Department of Agriculture, and Coastal Treaty Tribes after measuring toxin levels in shellfish collected from each beach (WA link; OR link), and not from the information presented here. However, the information presented here aids coastal managers in better understanding and predicting the onset, duration, and magnitude of toxin outbreaks as well as their impacts.

To summarize:

Coastal conditions

- ENSO neutral; While marine heatwave persists in N. Pacific, it is ~500 km (300 mi) offshore.
- Offshore WA coastal buoy transitioned from 2 S.D. above average T July - August, to decreasing trend during September, and in early October is only 1 S.D. above average.
- Inshore OR-WA buoys temperature decreased to below normal throughout September - early October.

Hypoxia

- Coast-wide hypoxia is dissipating; hypoxia in Hood Canal and Columbia plume area evident but less.

Puget Sound

- Temperature and salinity anomalies continue warm and salty, with cooler surface waters at times in Hood Canal.

Chlorophyll & HABs

- Satellite shows lower than average monthly ocean color values July - September.
- *Pseudo-nitzschia* blooms through the summer on Oregon and Washington coasts, *Pseudo-nitzschia* decreasing in number in late September.

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