

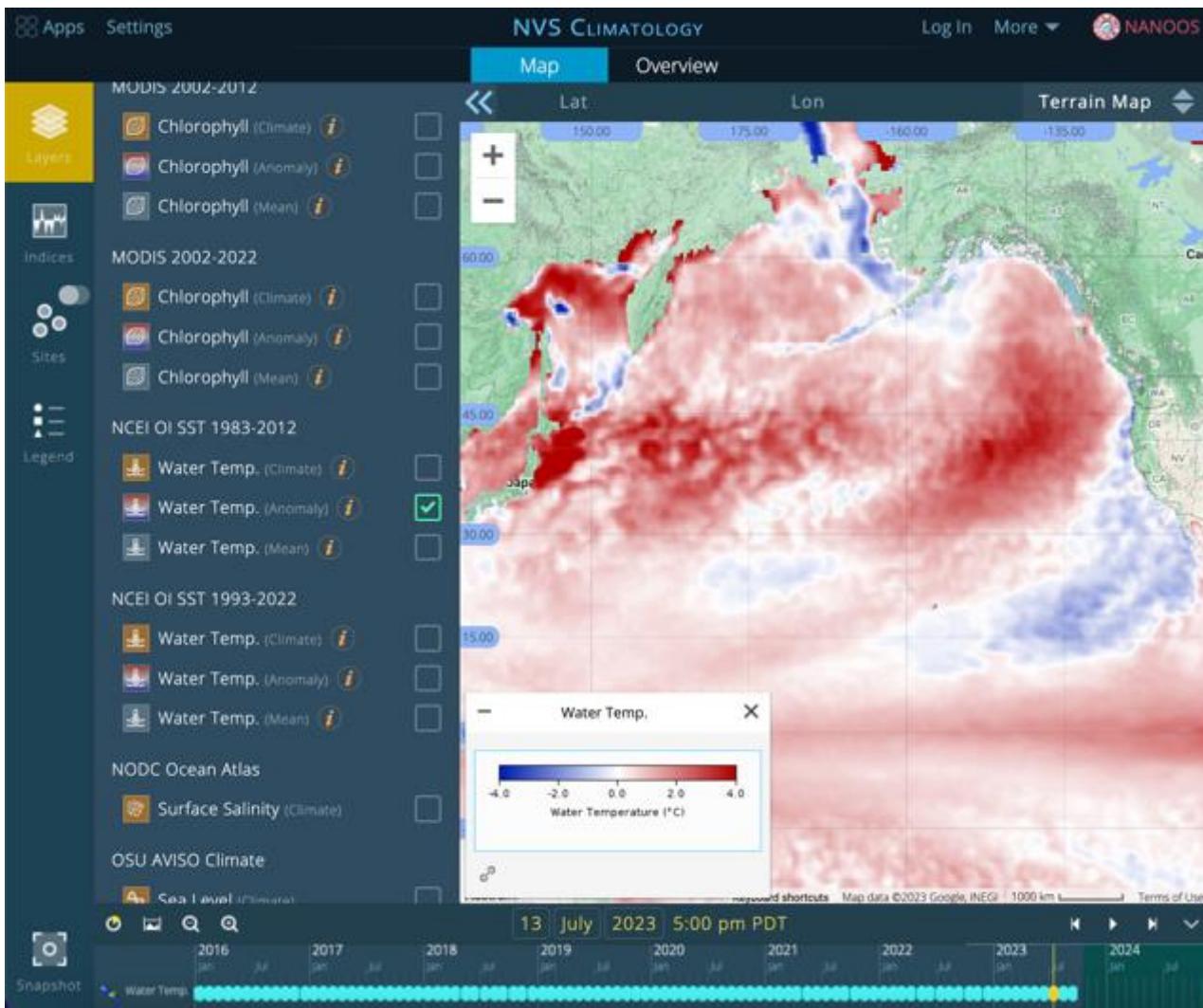
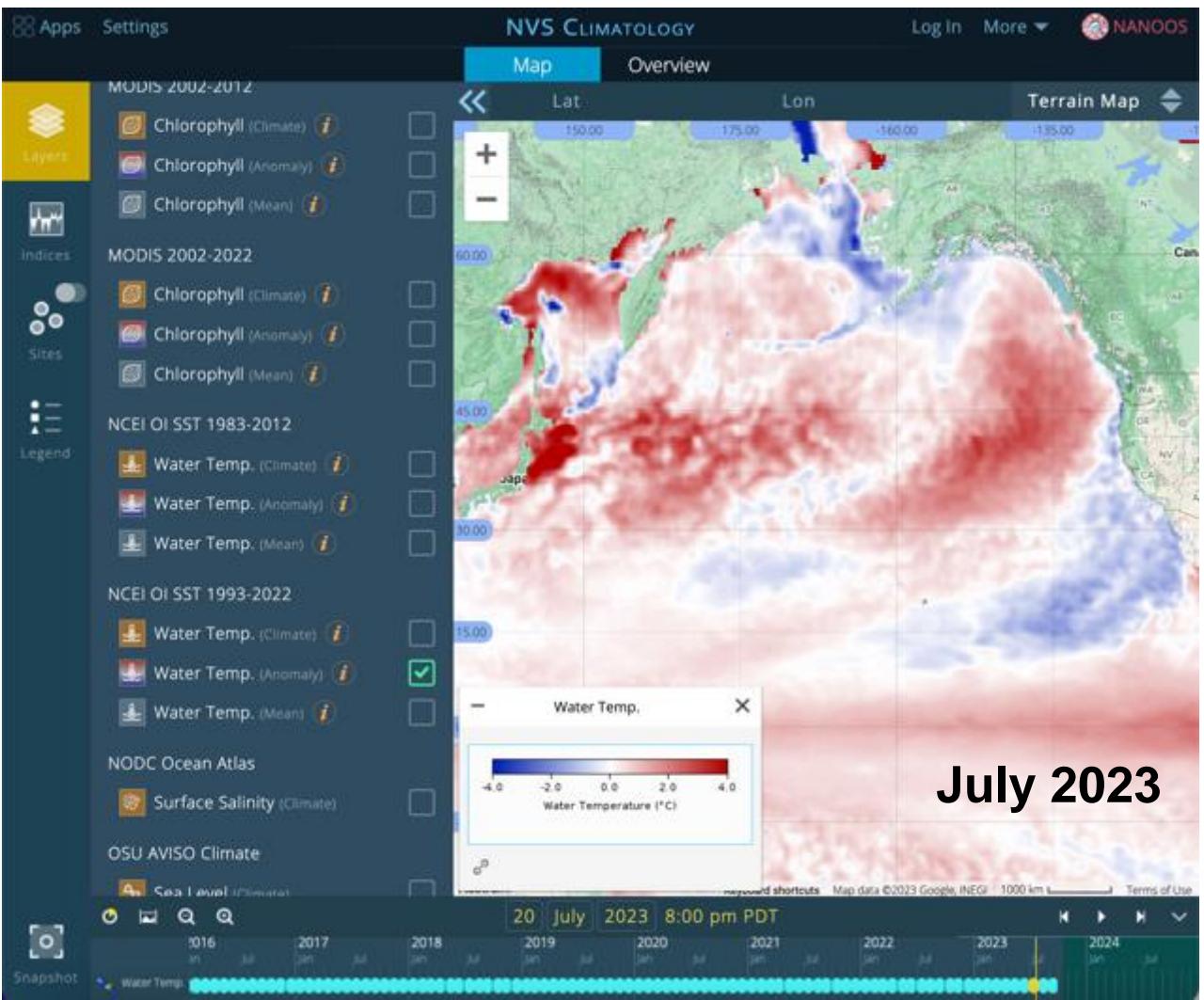
# NOAA West Watch Update 17 October 2023

**NANOOS Update**

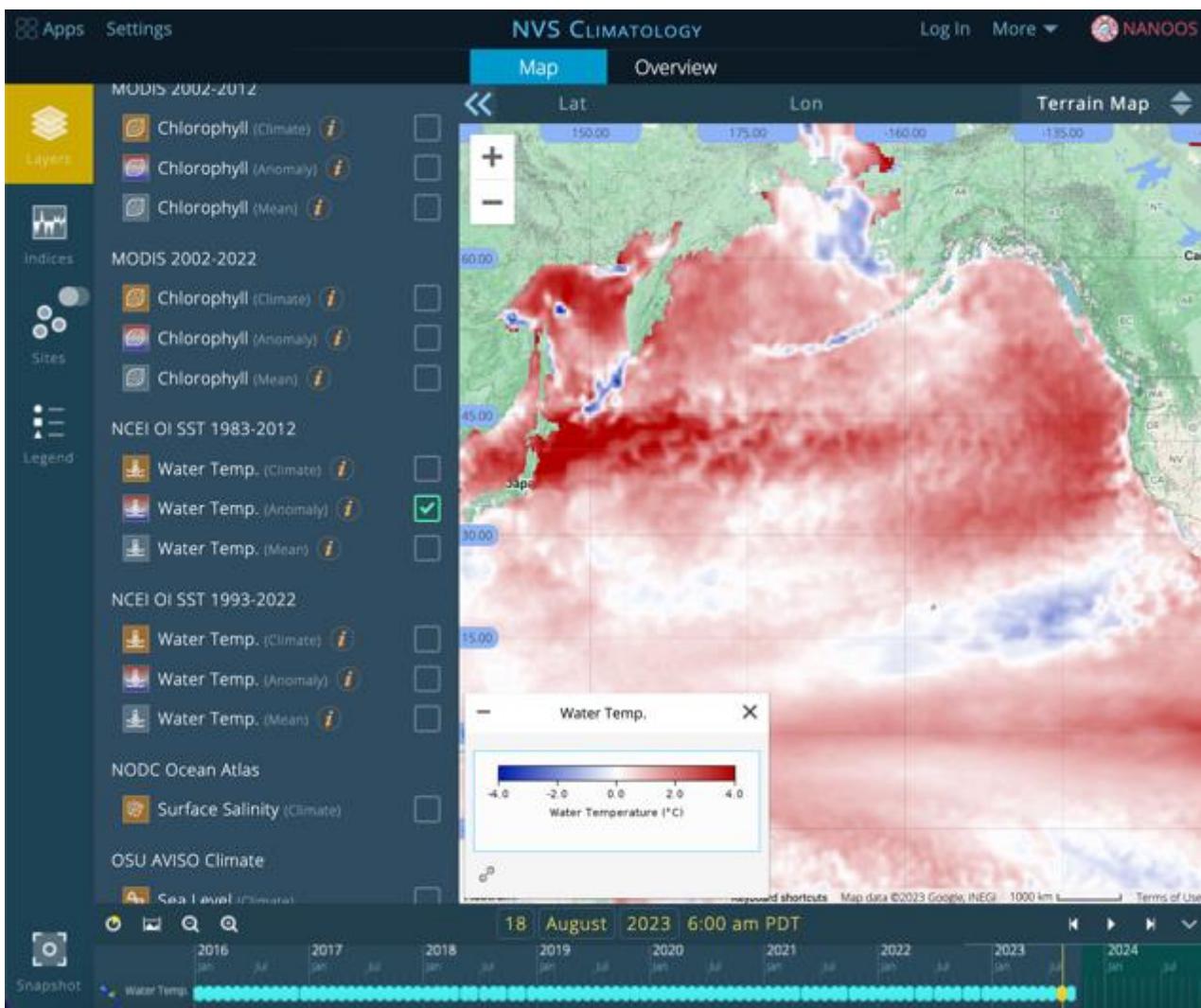
*Jan Newton, on behalf of many*

[www.nanoos.org](http://www.nanoos.org)

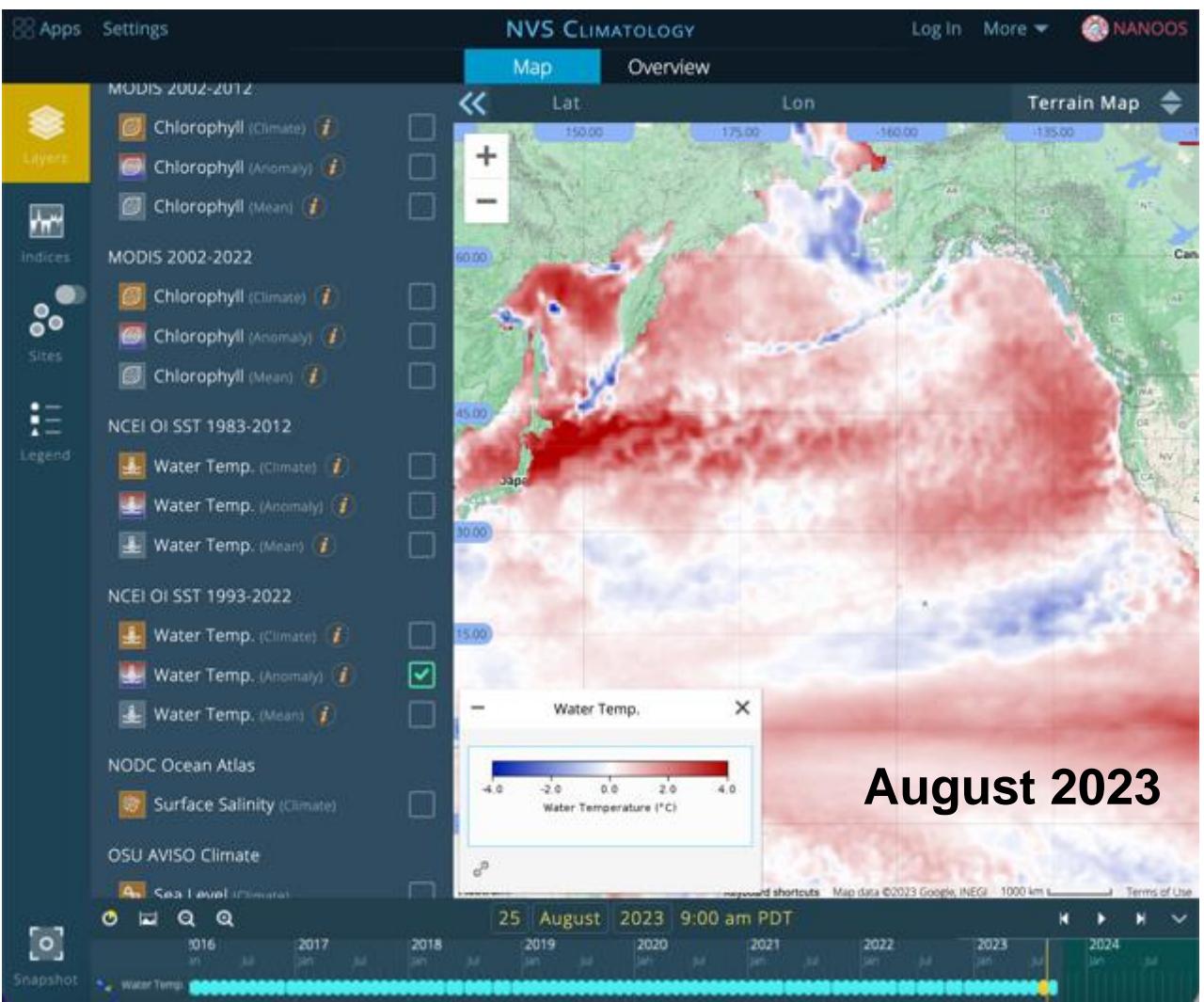


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*fixed*NCEI OI SST 1993-2022  
*shifting*

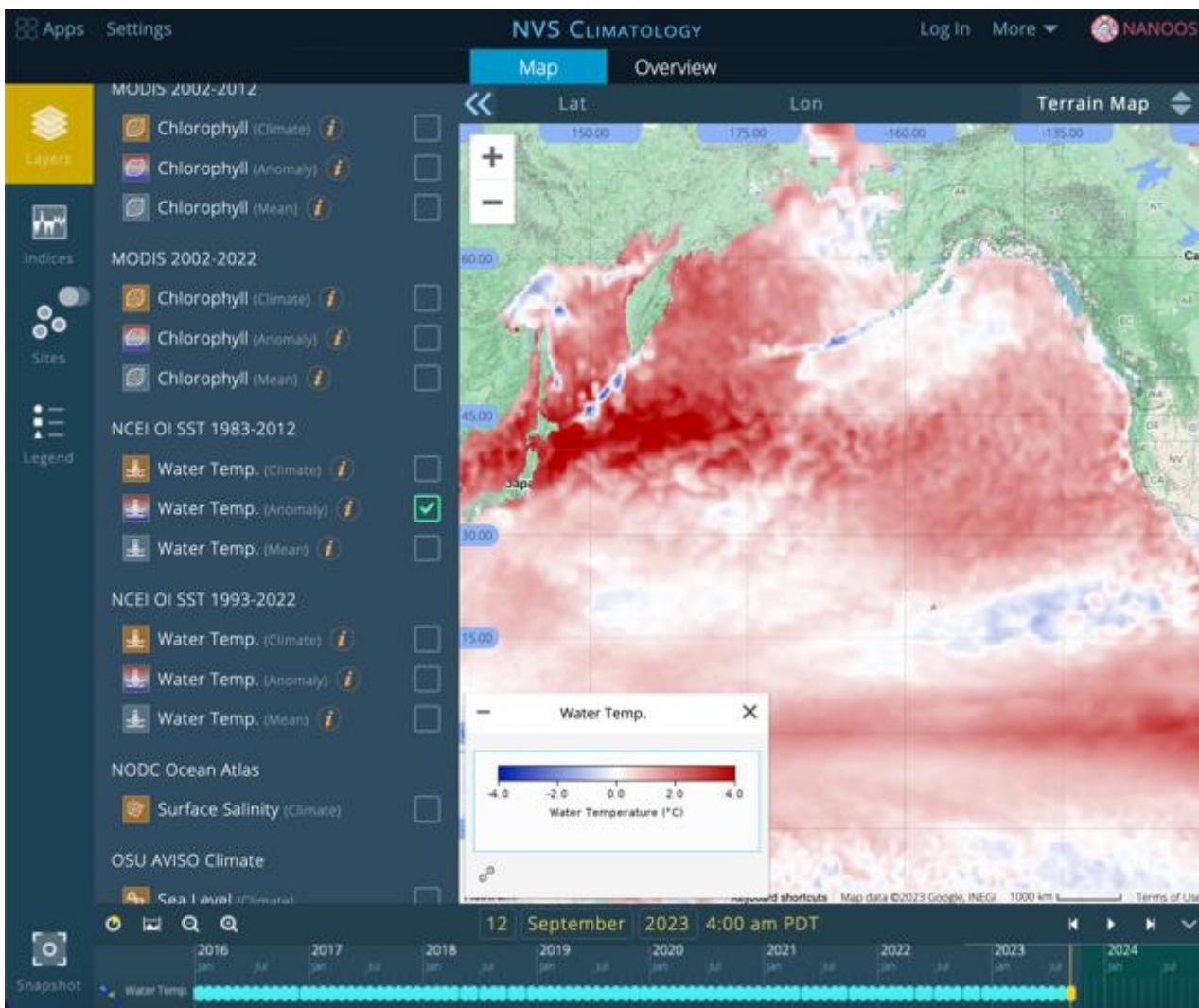
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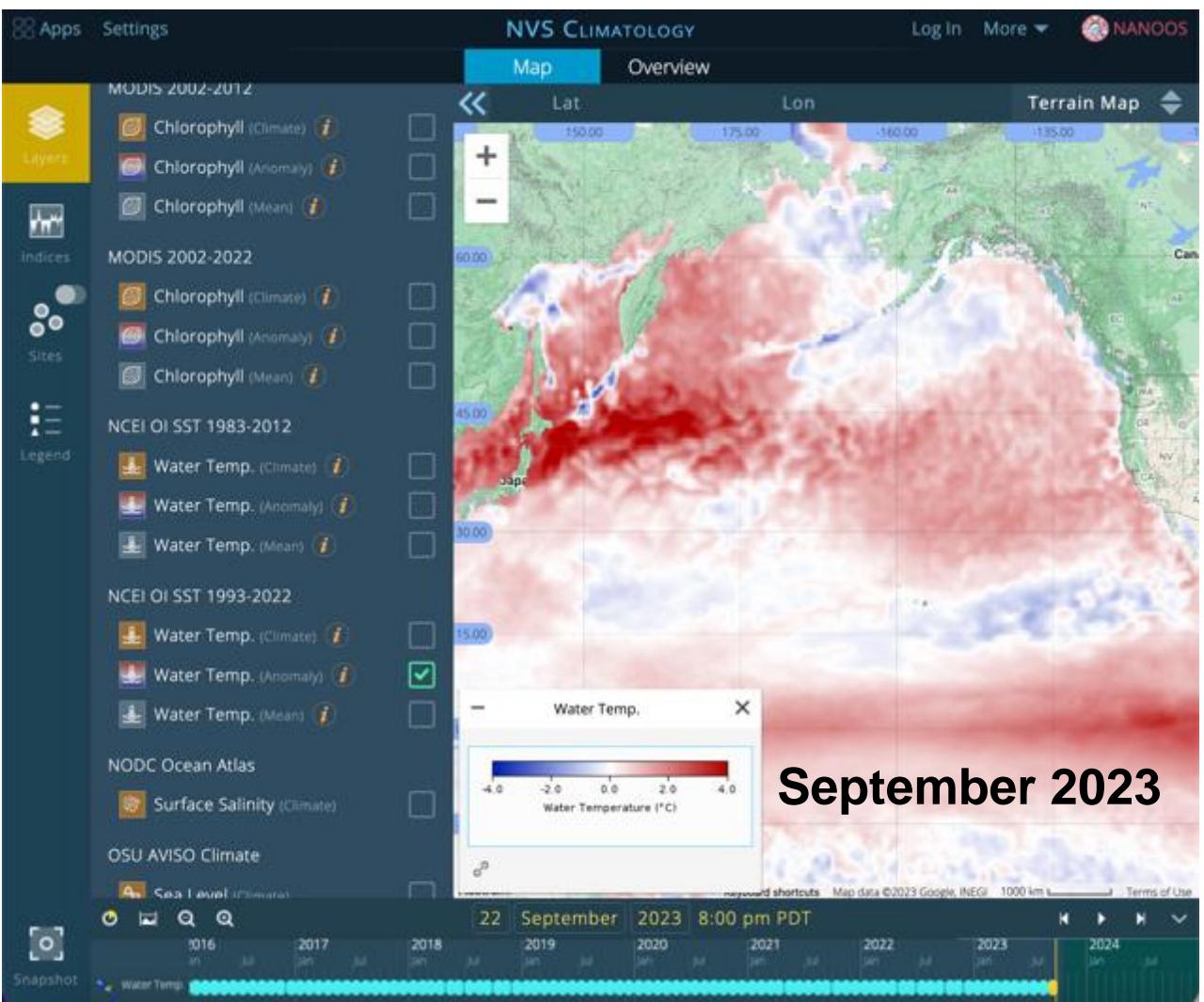
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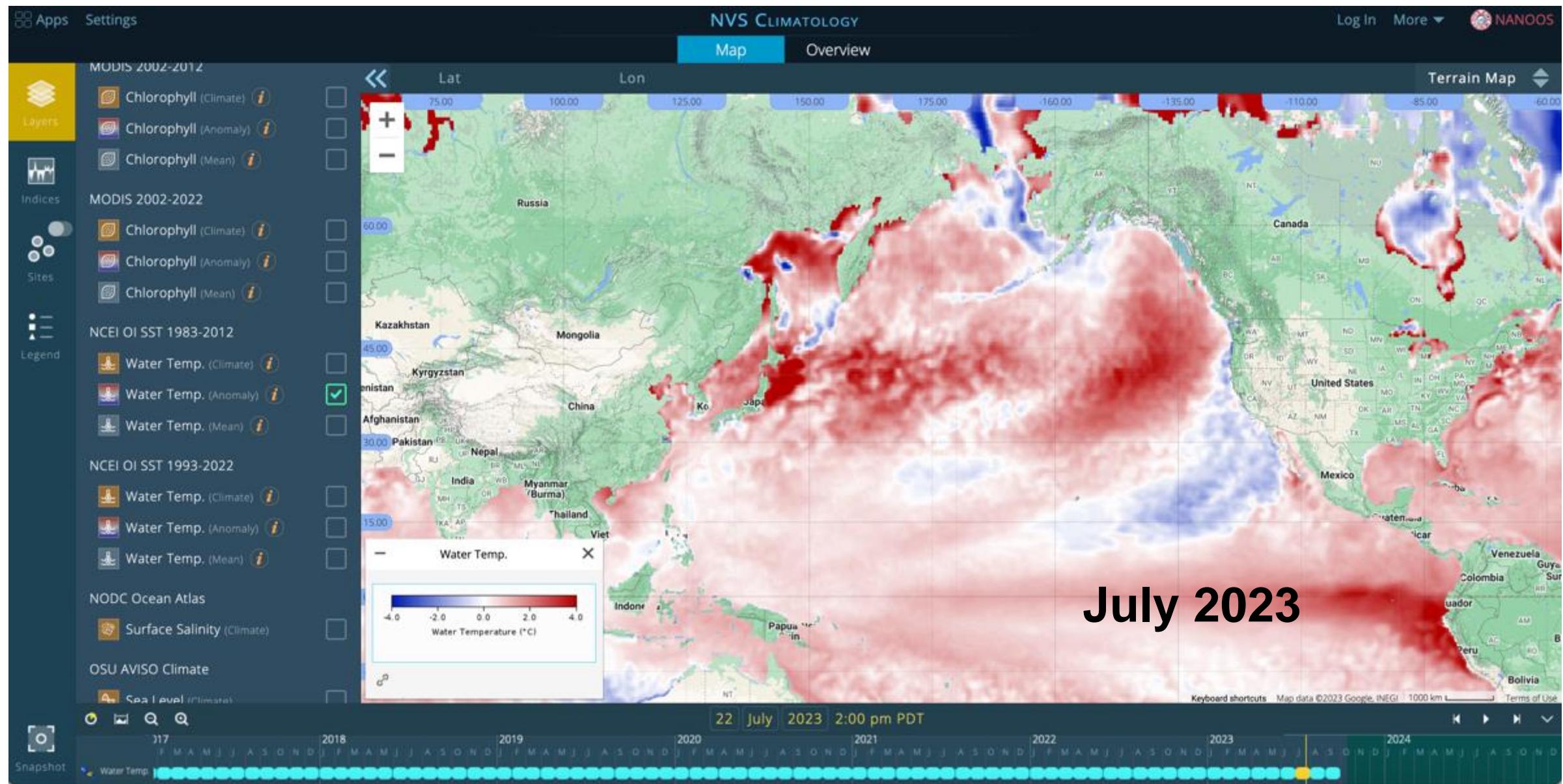
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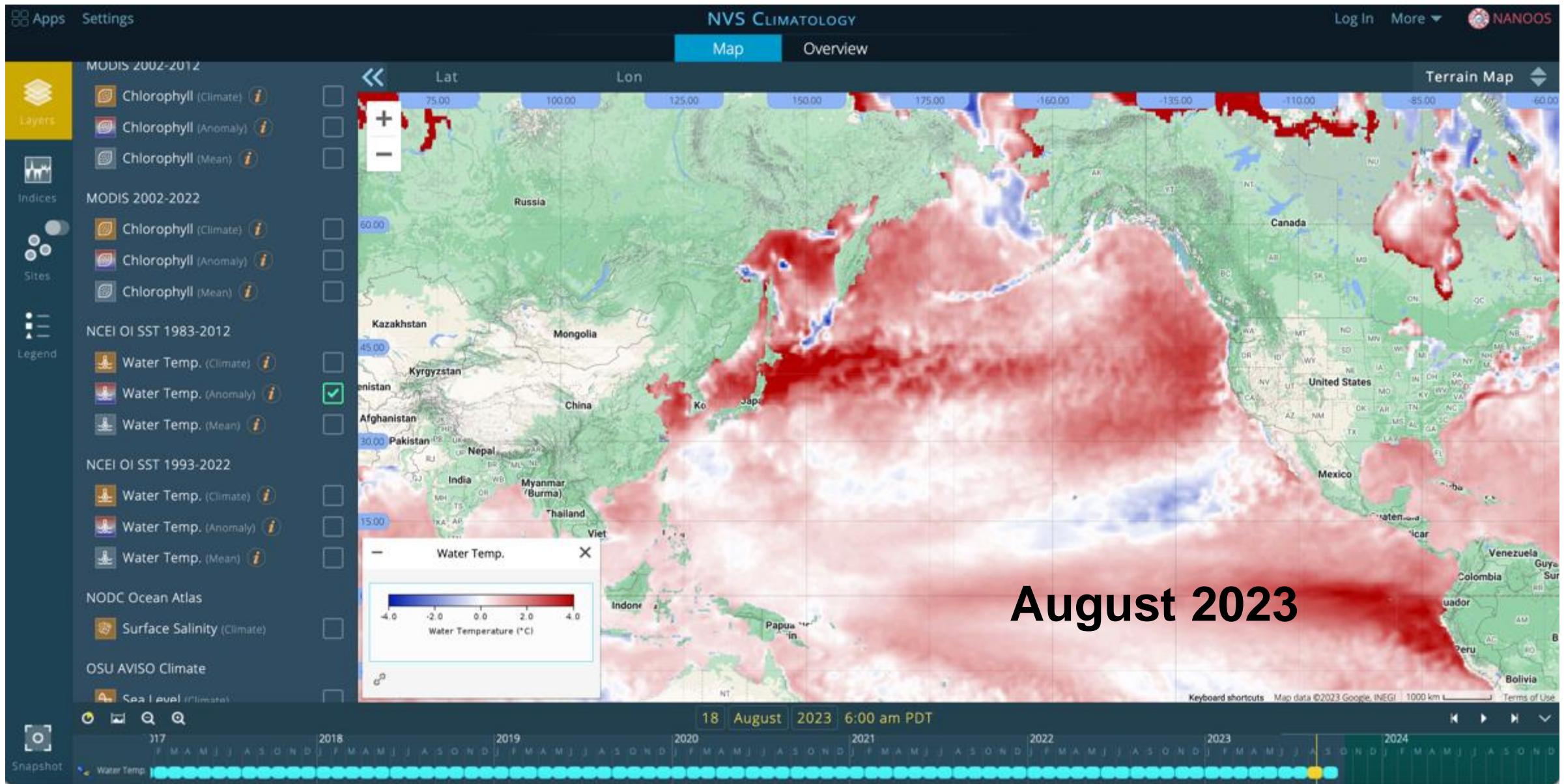
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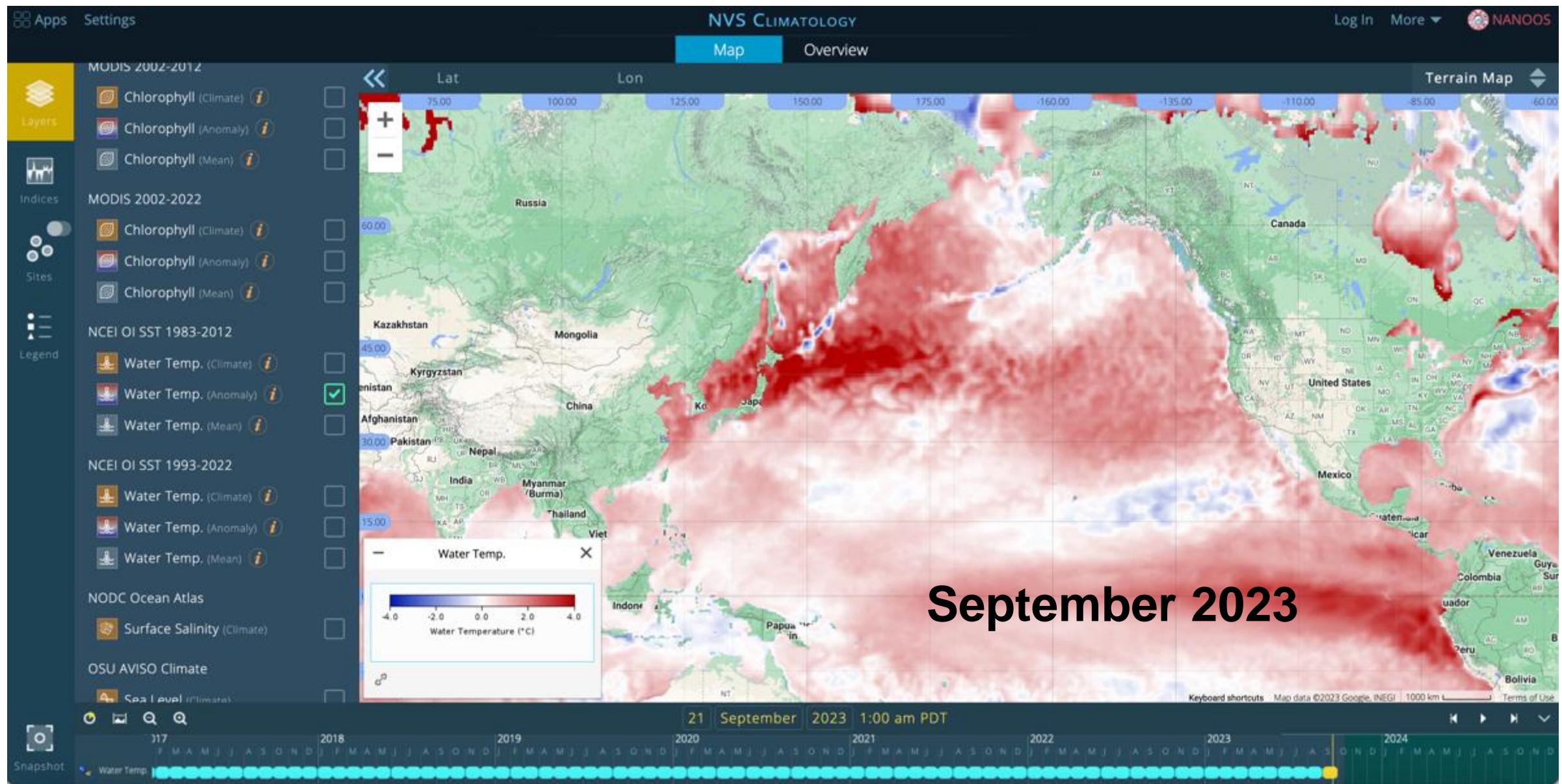
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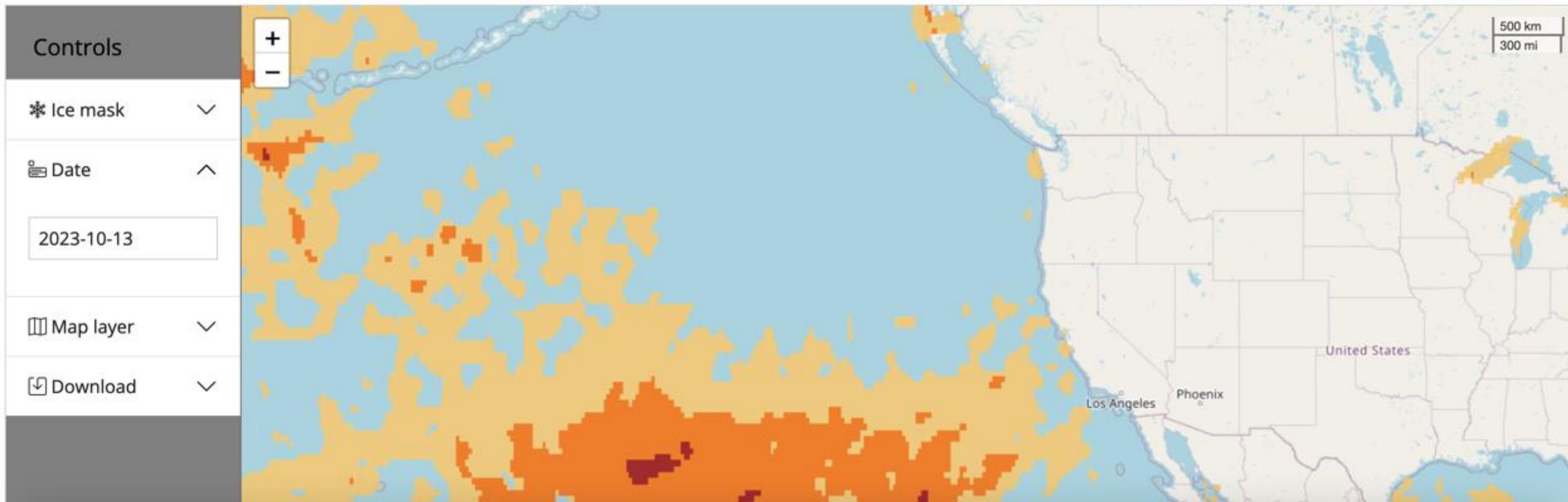


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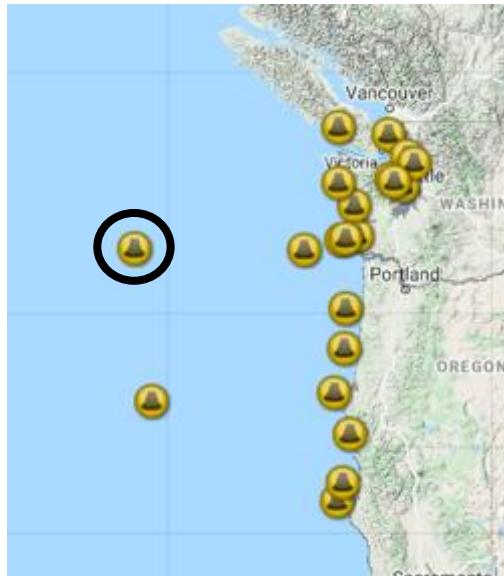


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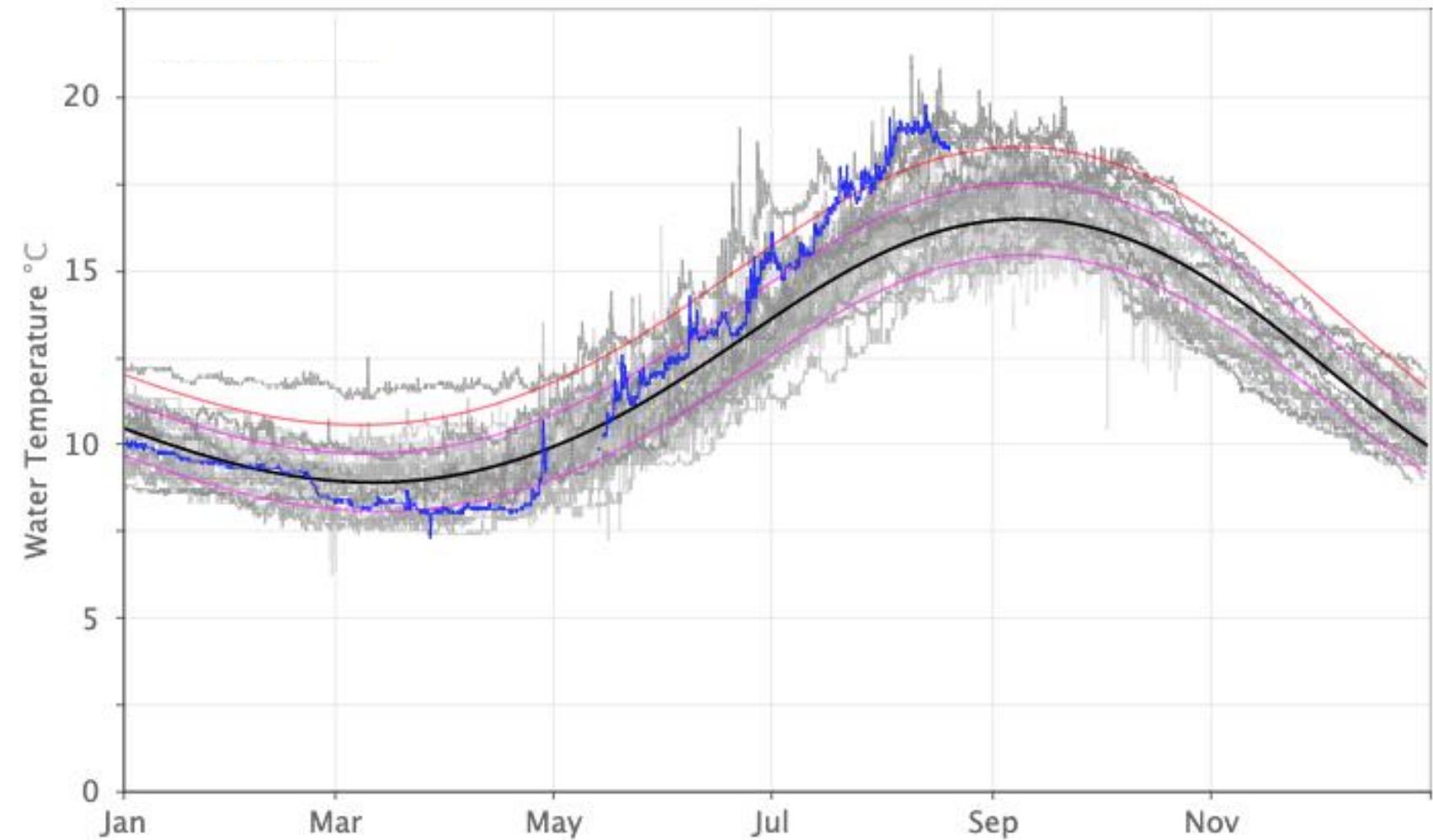




## NDBC Washington

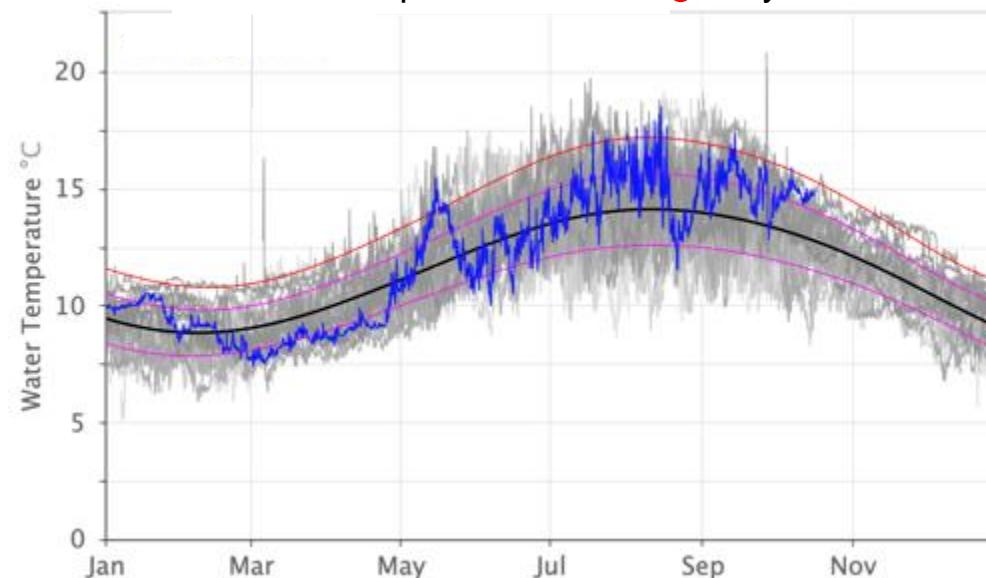


- Seasonal Cycle  
n=45 Yrs
- -1 STD
- +1 STD
- +2 STD
- 2023



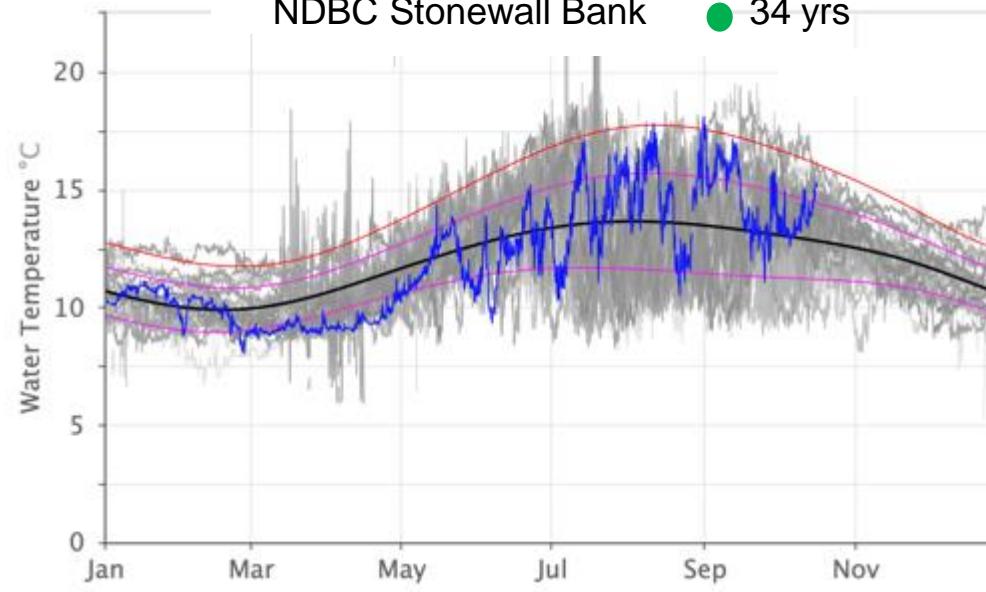
NDBC Cape Elizabeth

34 yrs



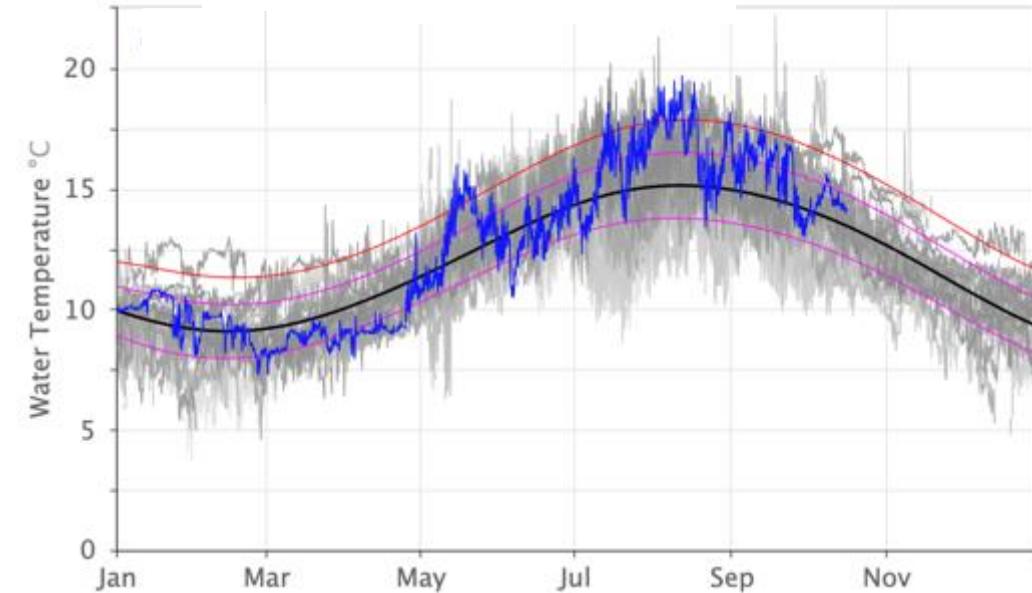
NDBC Stonewall Bank

34 yrs



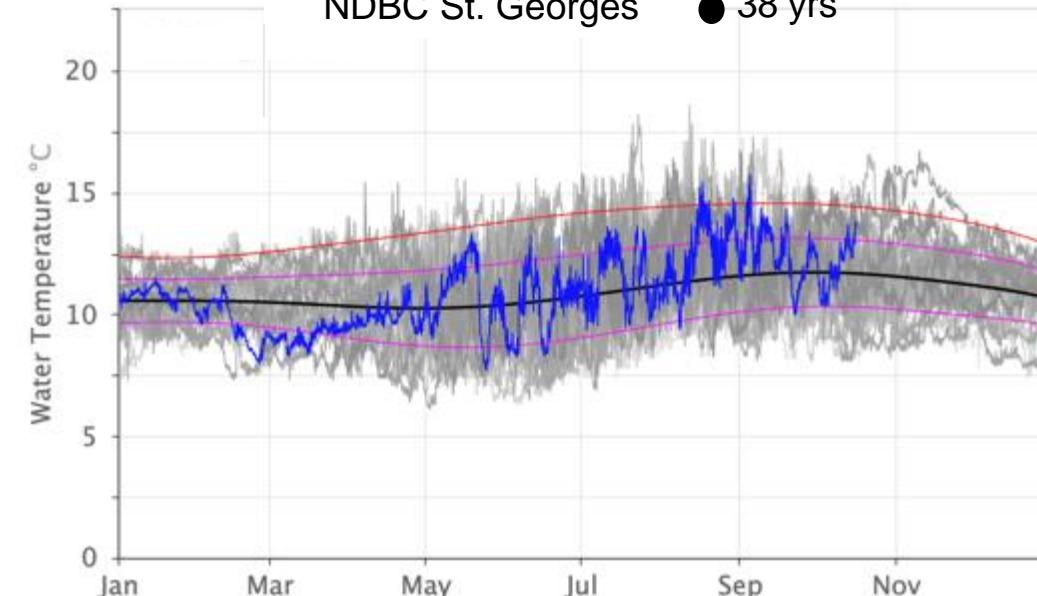
NDBC Columbia River Bar

37 yrs

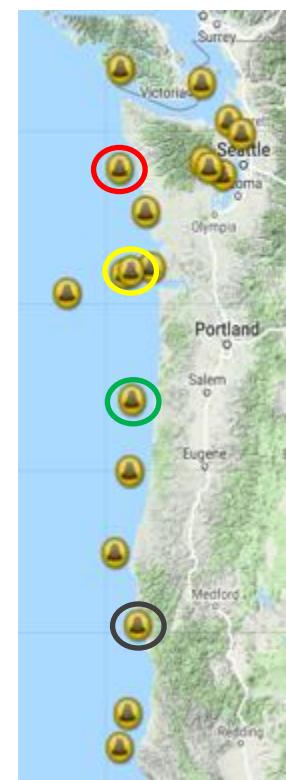


NDBC St. Georges

38 yrs

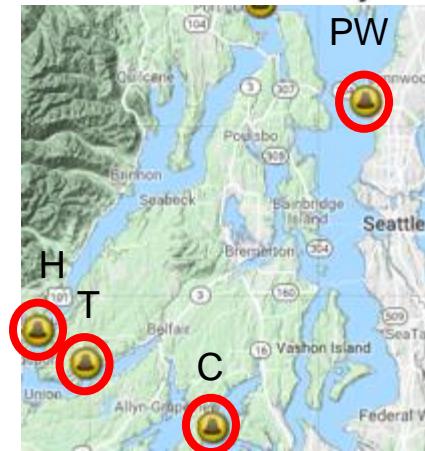
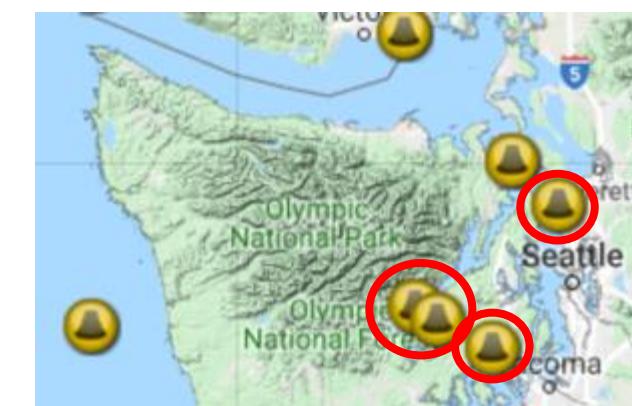
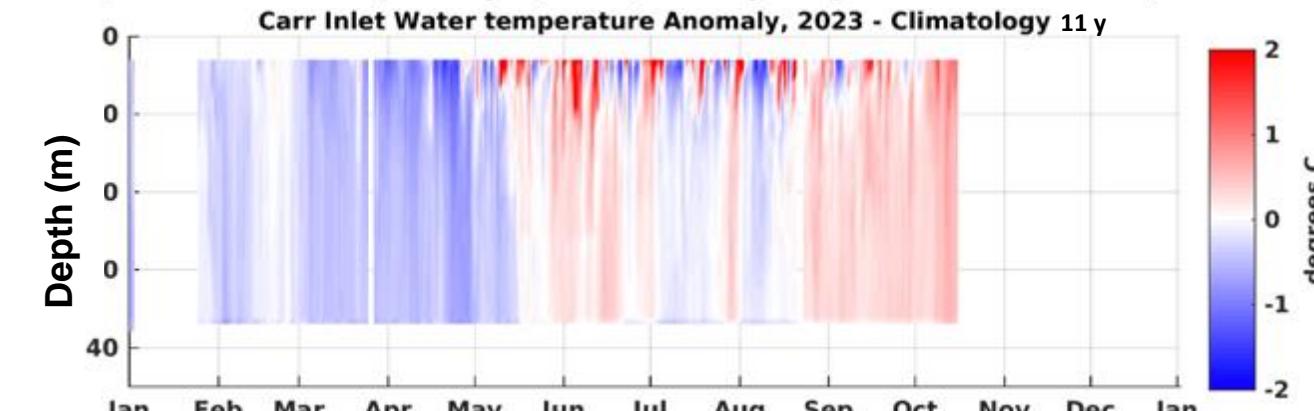
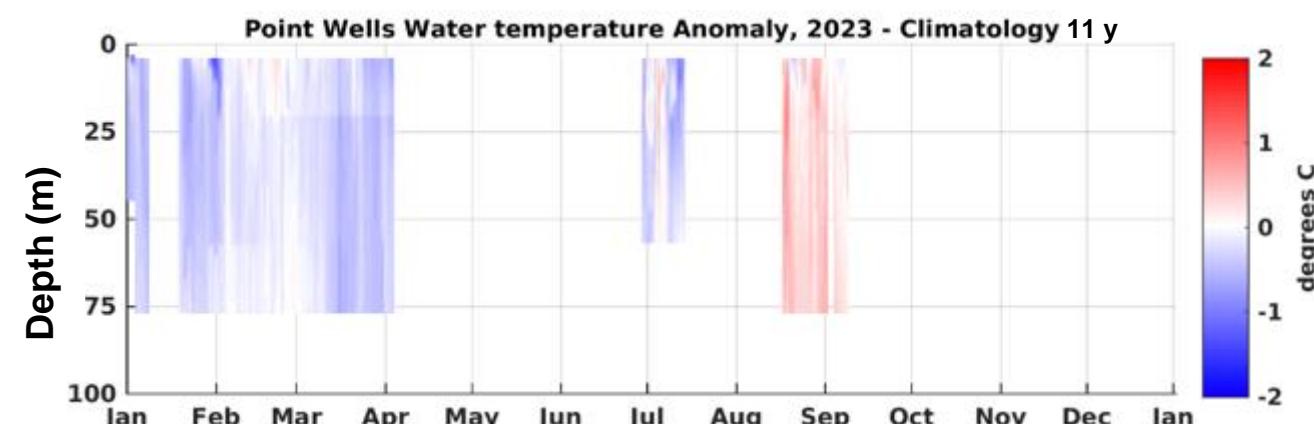
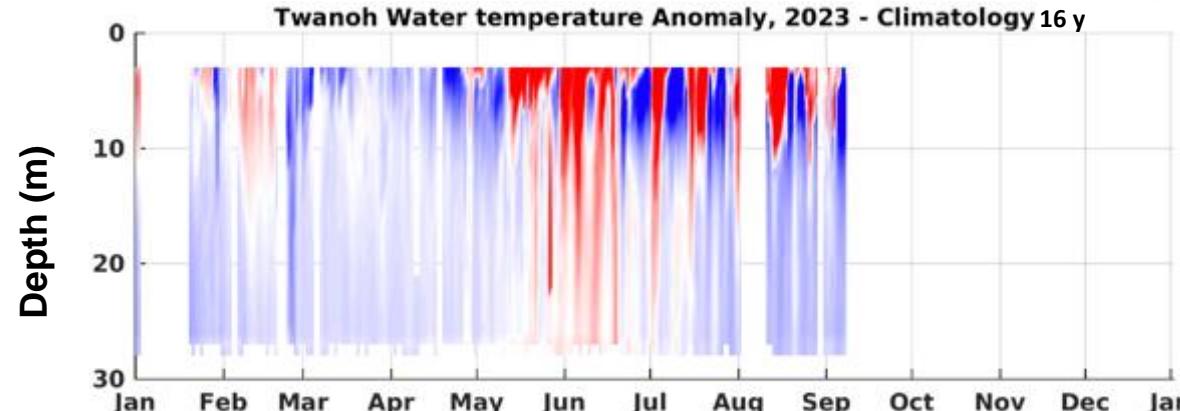
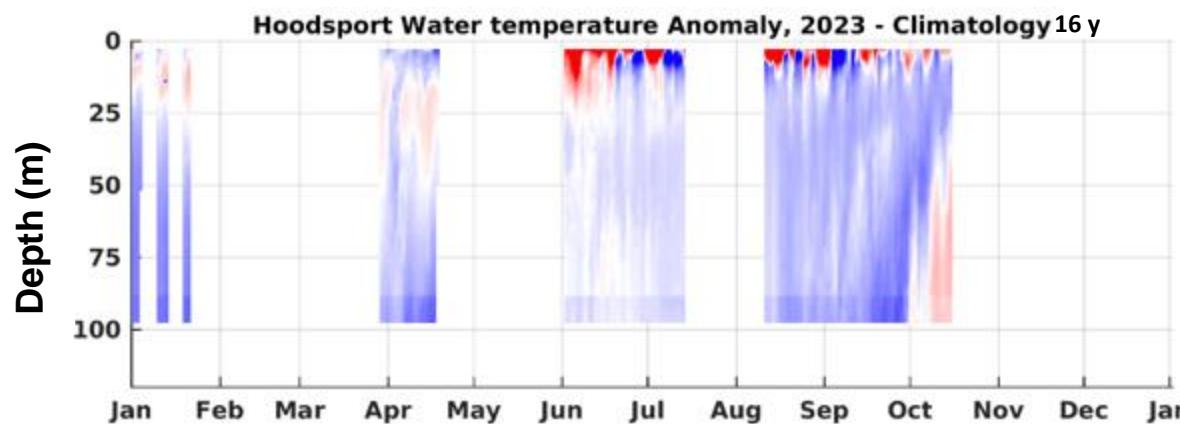


- Seasonal Cycle
- -1 STD
- +1 STD
- +2 STD
- 2023



# Temperature Anomalies

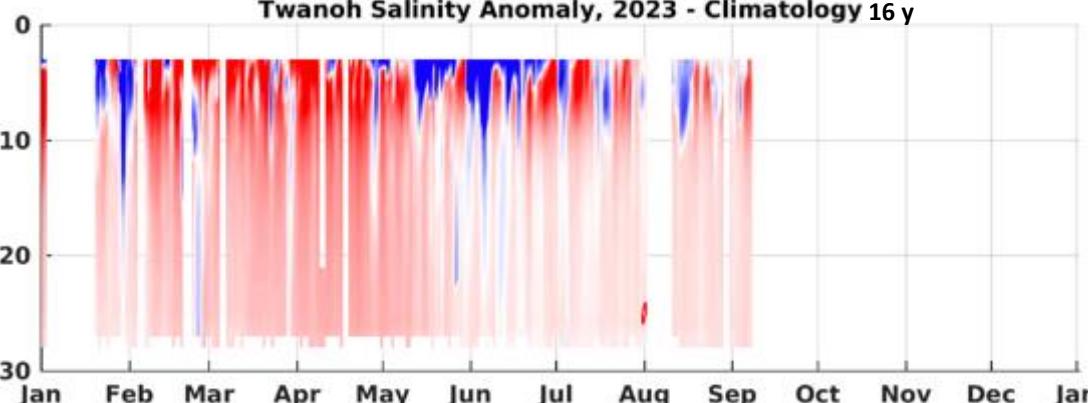
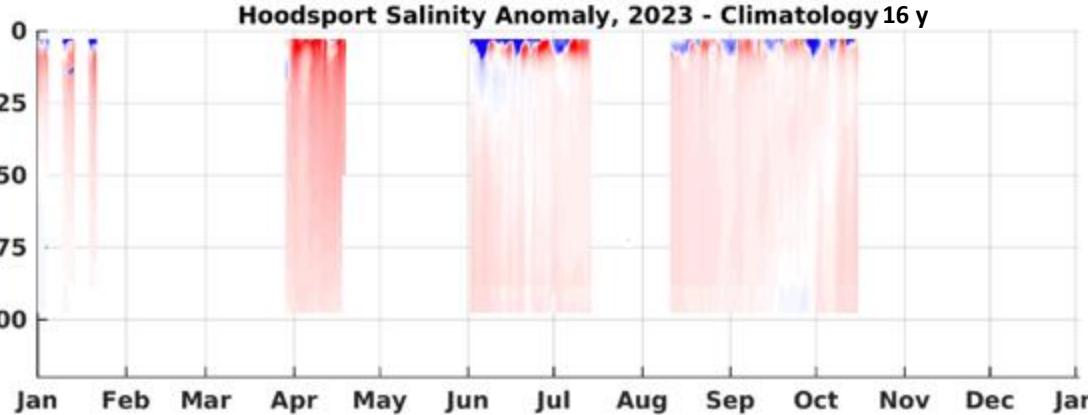
# Puget Sound Profiling Buoys



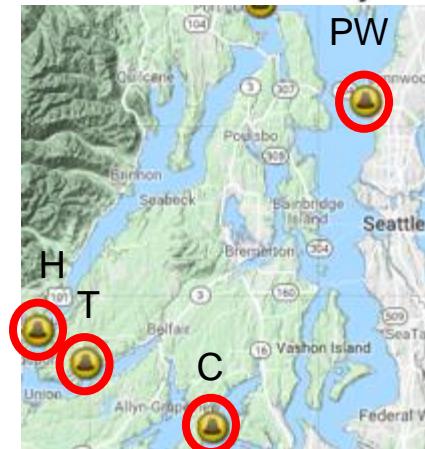
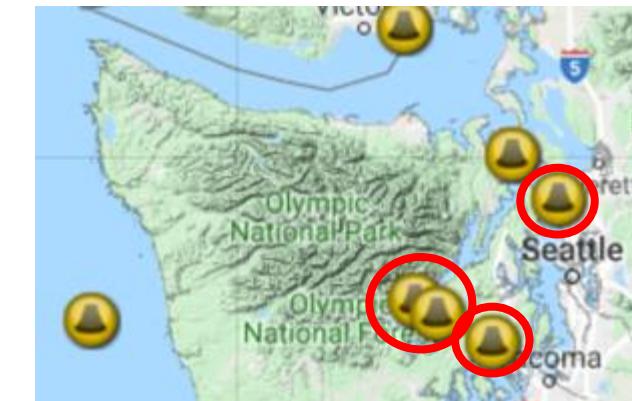
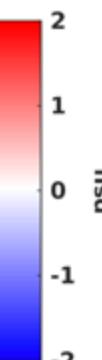
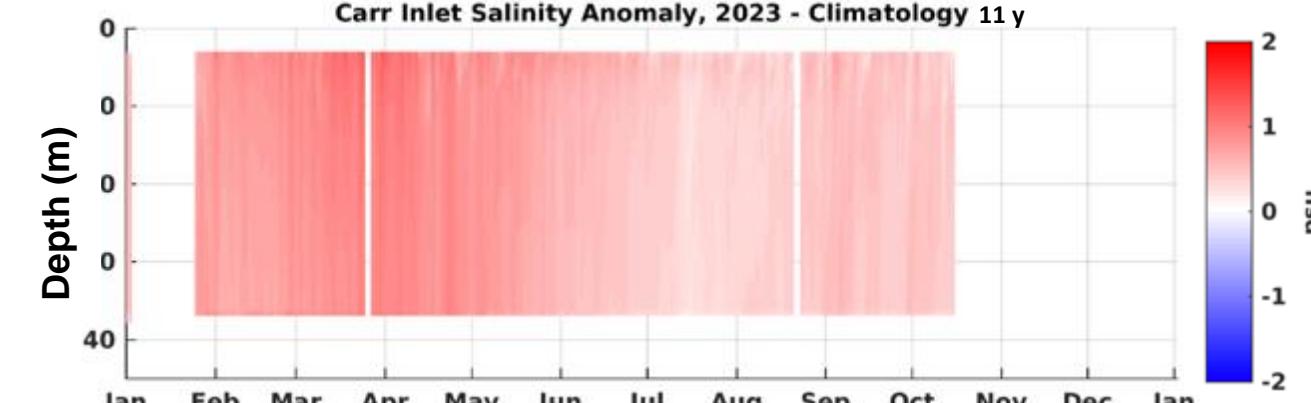
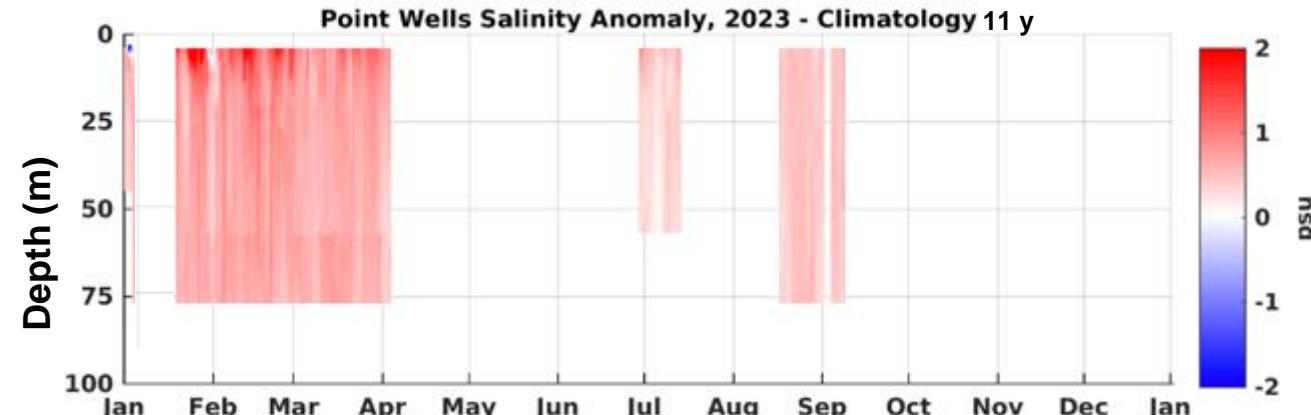
# Salinity Anomalies

# Puget Sound Profiling Buoys

Depth (m)



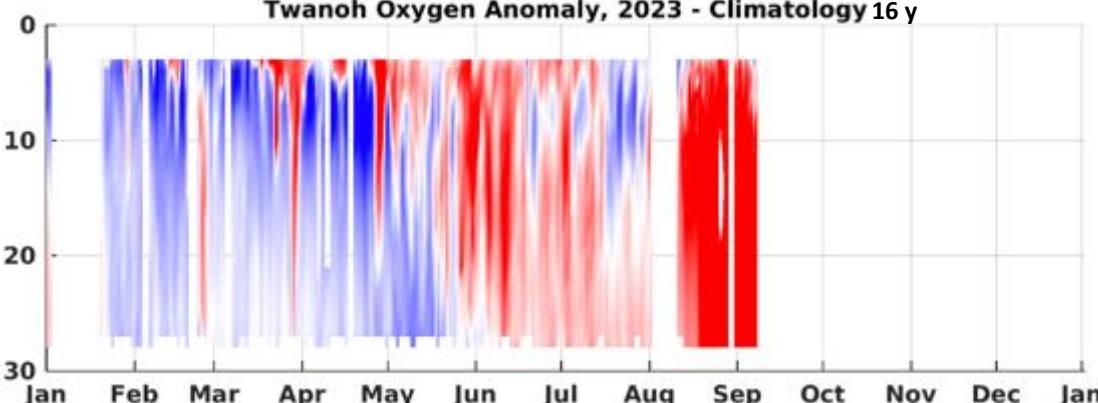
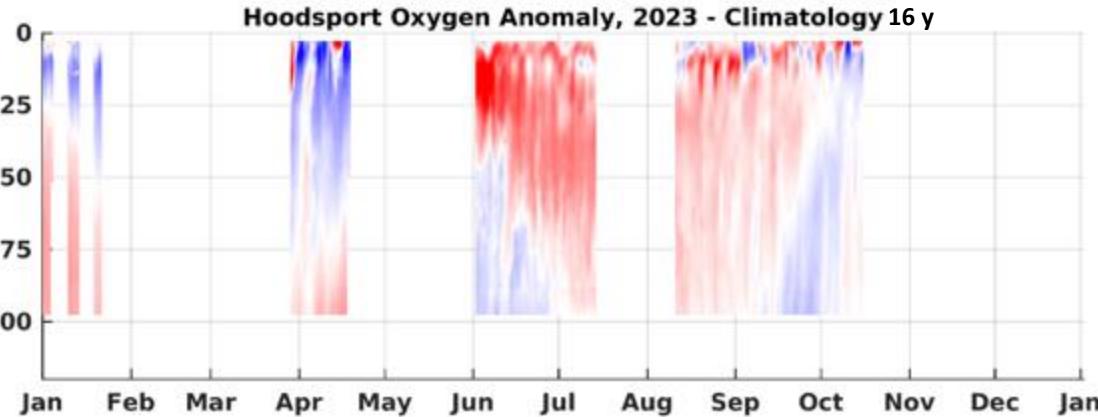
Depth (m)



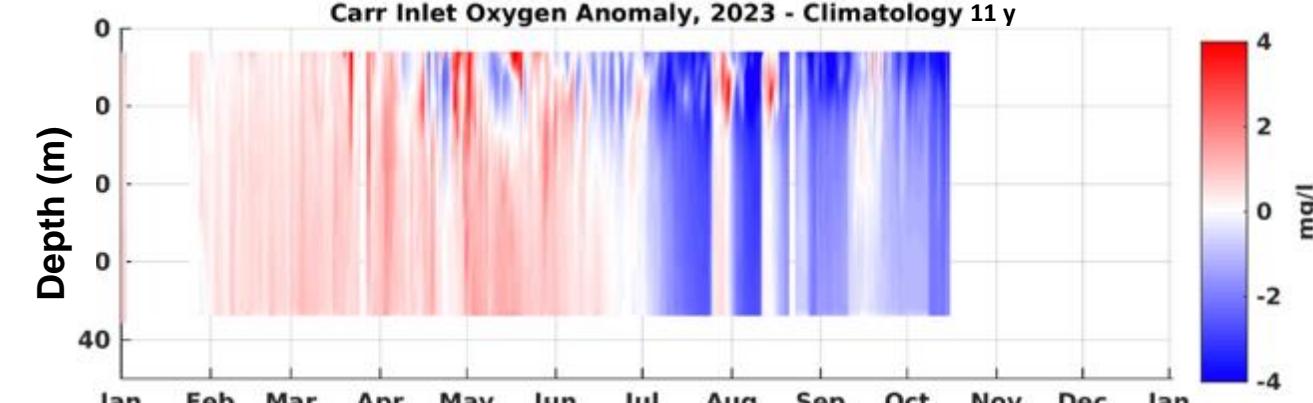
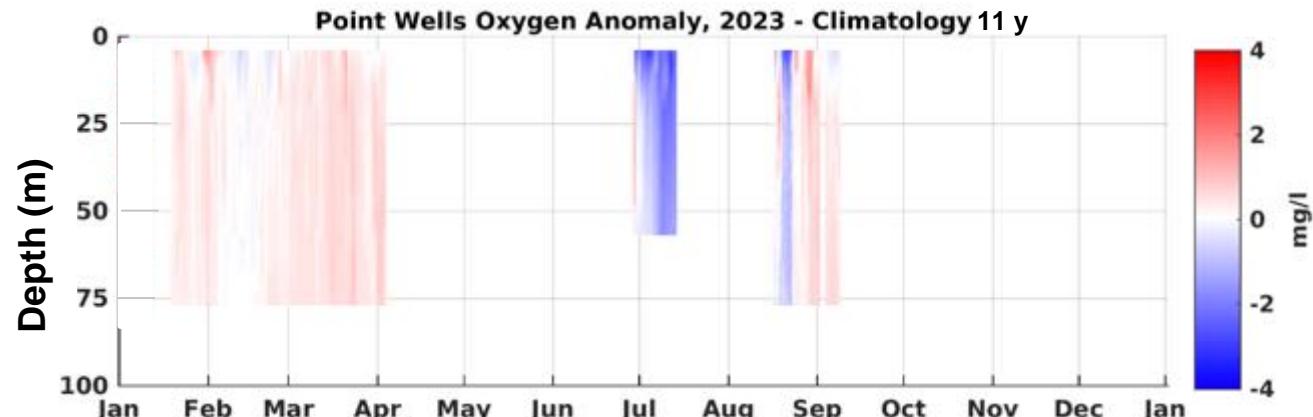
# Dissolved Oxygen Anomalies

# Puget Sound Profiling Buoys

Depth (m)

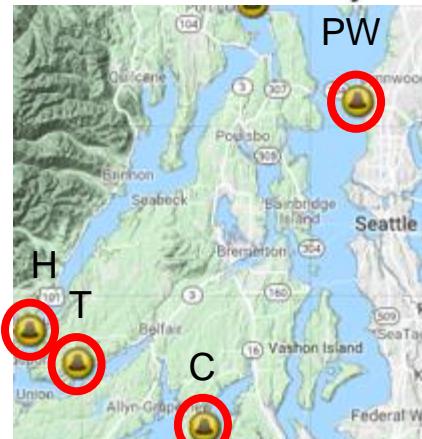
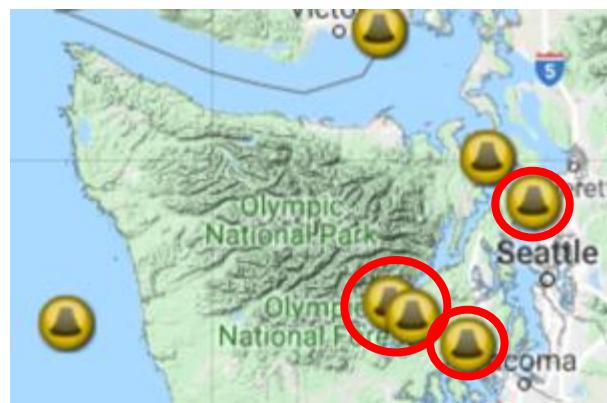


Depth (m)



mg/l

mg/l



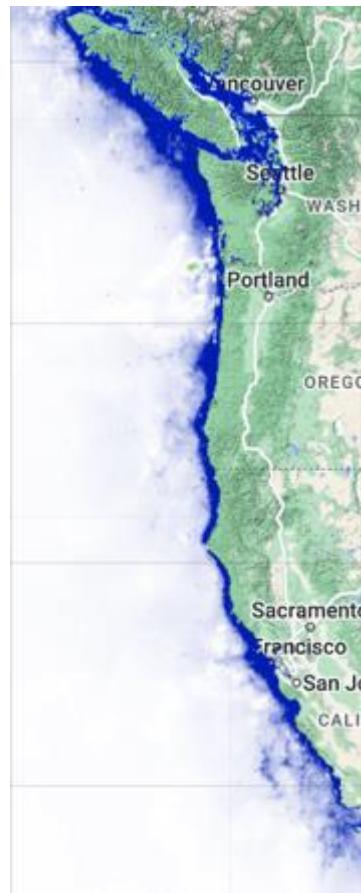
**July 2023**

OSU MODIS 2002-2022



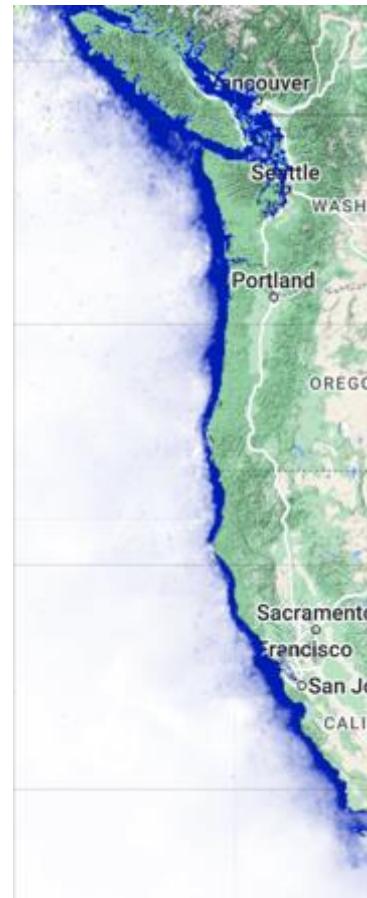
**August 2023**

OSU MODIS 2002-2022

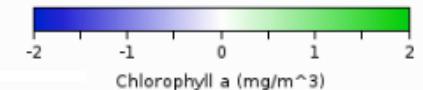


**September 2023**

OSU MODIS 2002-2022



Chlorophyll



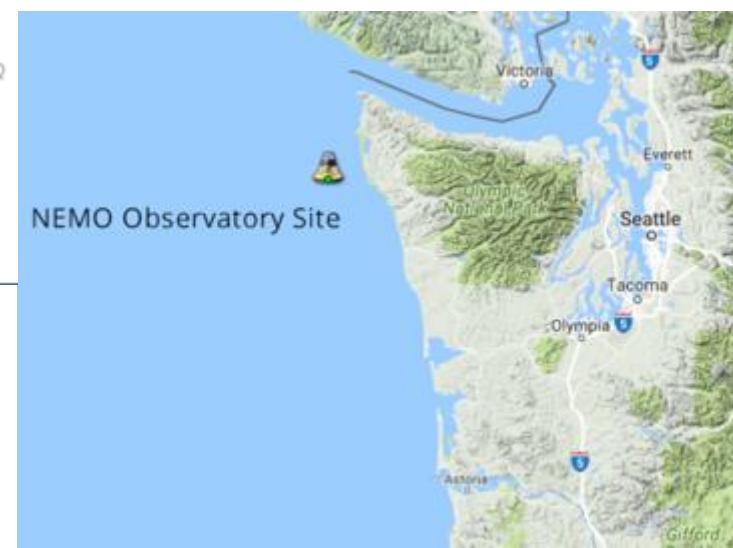
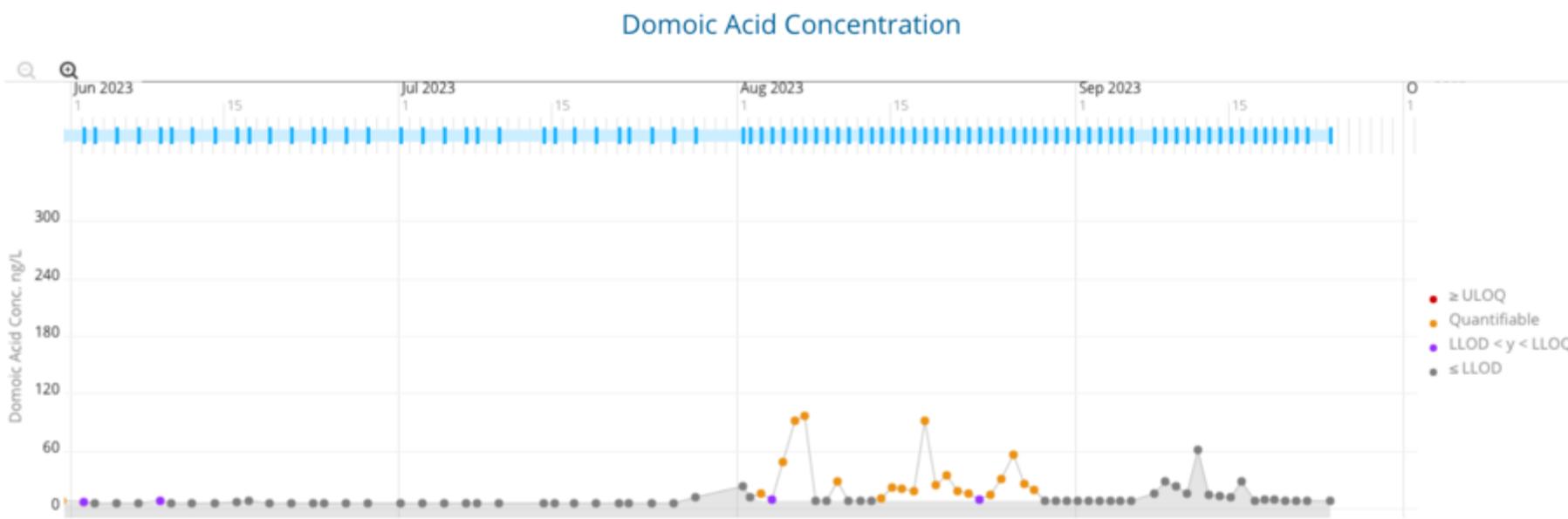


# REALTIME HABs

[Home](#) [ESP Now](#) [About](#) [Media](#) [People](#) [Partners](#) [Contact](#)

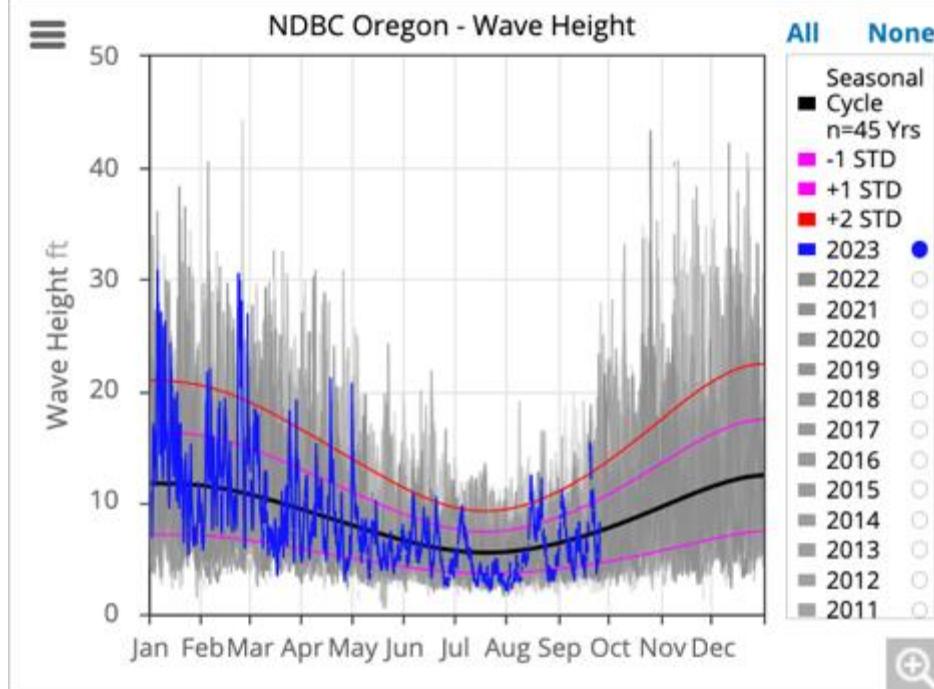
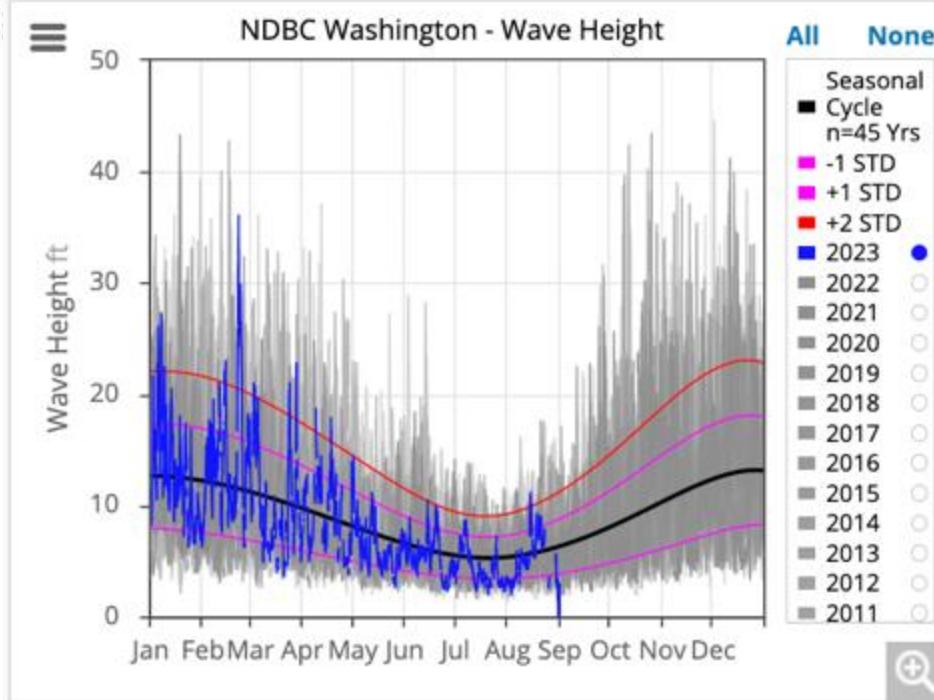
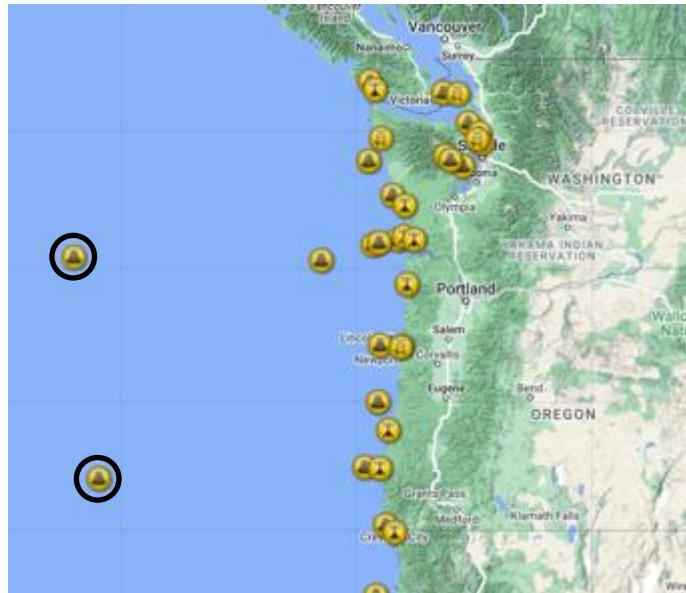
Home  
Information  
**Real-Time**  
Forecasts

**Real-Time HABs** provides timely information on harmful algae in the Pacific Northwest. The [Pacific Northwest HAB Bulletin \(PNW HAB\)](#) provides an early warning of HABs to coastal shellfish managers. An integrated component of the PNW HAB Bulletin, measurements are made remotely and autonomously by an underwater robot, the ESP, and are available in near-real time in the [ESP Now](#) section. By detecting both the potentially harmful phytoplankton species as well as the toxin they produce, the ESP gives us early warning of these events.

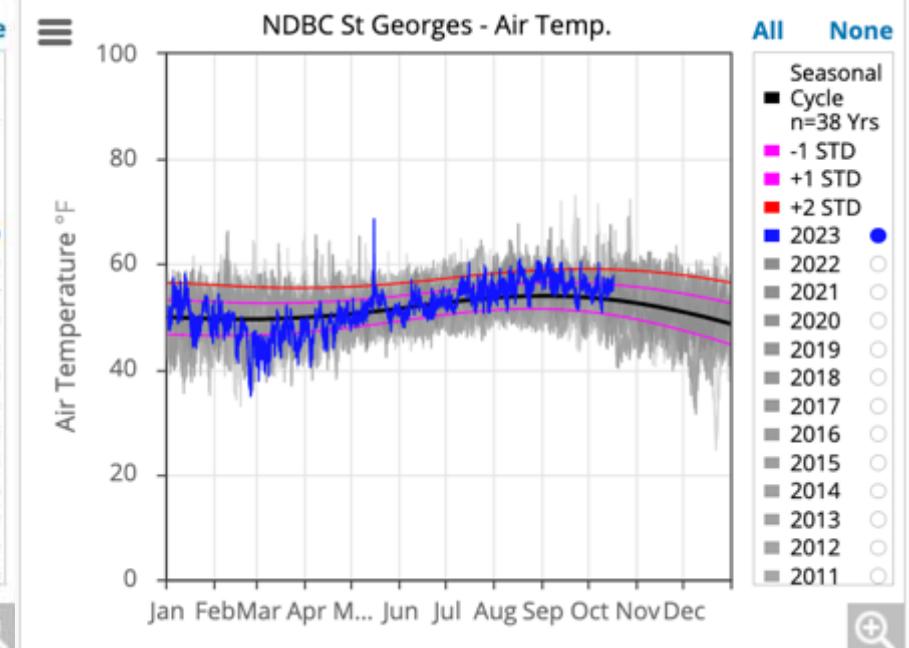
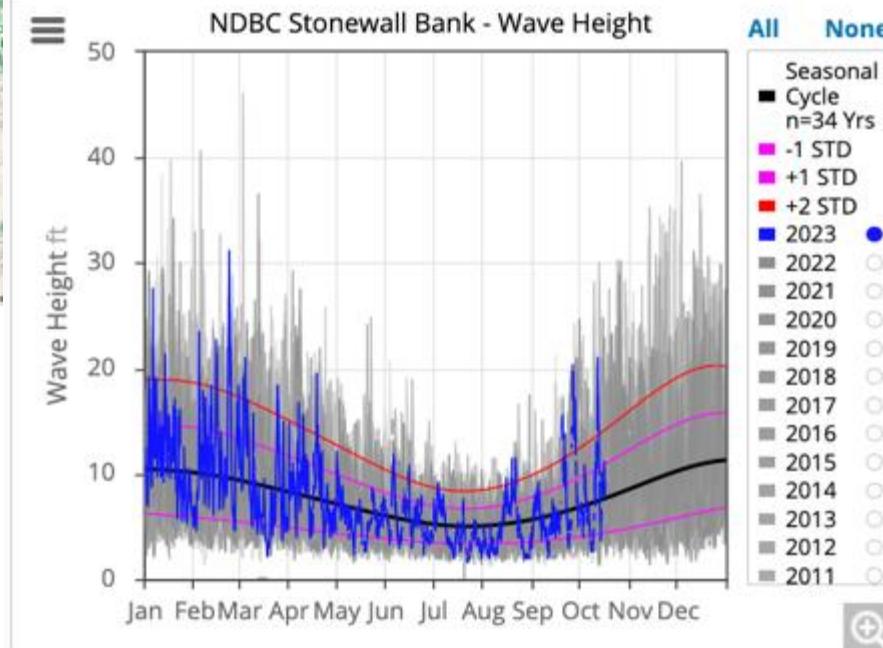
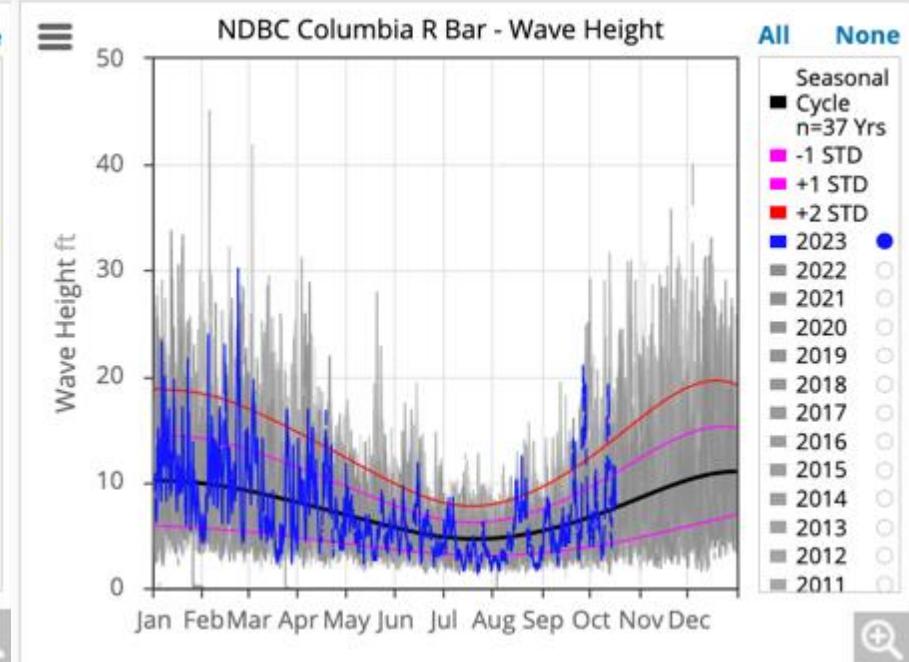
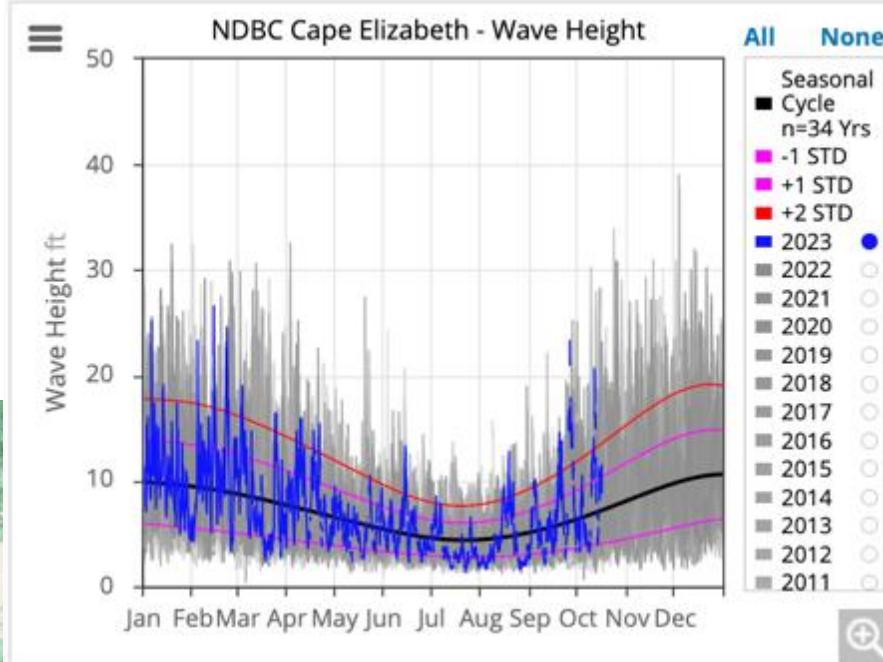


<https://www.nanoos.org/products/habs/real-time>

# Waves



# Waves





NSF's Convergence Accelerator



## To summarize:

### Coastal conditions

- El Niño persists; heat anomaly in NE Pacific strongest offshore; MHW intensifying to the south, but less so along the coast, small “moderate” patch off WA.
- Offshore WA coastal buoy gone; inshore buoy data indicate higher variation but around 1 SD warmer (~2C).

### Puget Sound

- Temperature anomalies show evidence of warmer waters.
- Salinity anomalies continue saltier than average.

### Chlorophyll & HABs

- Satellite shows lower than average values except for pockets of strong blooms.
- Domoic acid detected by ESP near La Push, WA.

### Waves

- Strong storm event late Sept; success of Quileute Tribe Backyard Buoy to show 23' waves.

[www.nanoos.org](http://www.nanoos.org)

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