

Pacific Northwest Harmful Algal Blooms Bulletin

Oct 18, 2026 HAB risk =

HAB risk key:

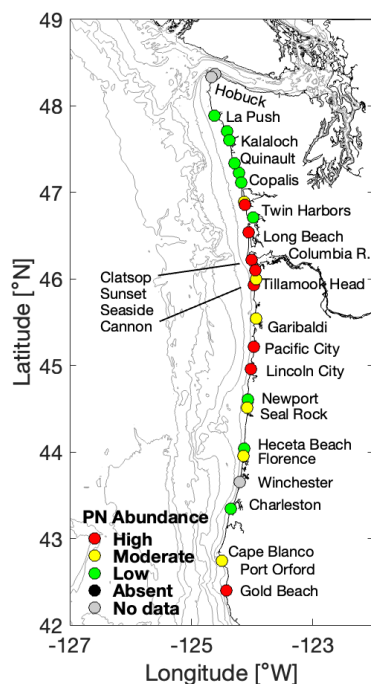
- = low
- = medium
- = high



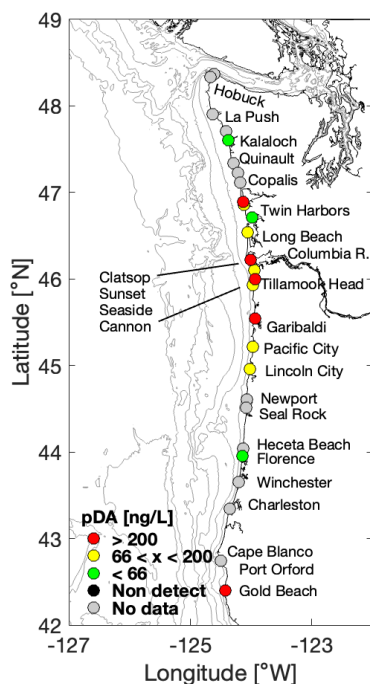
The statements, findings, conclusions, and recommendations do not necessarily reflect the views of NOAA or the Department of Commerce.

Beach Sampling

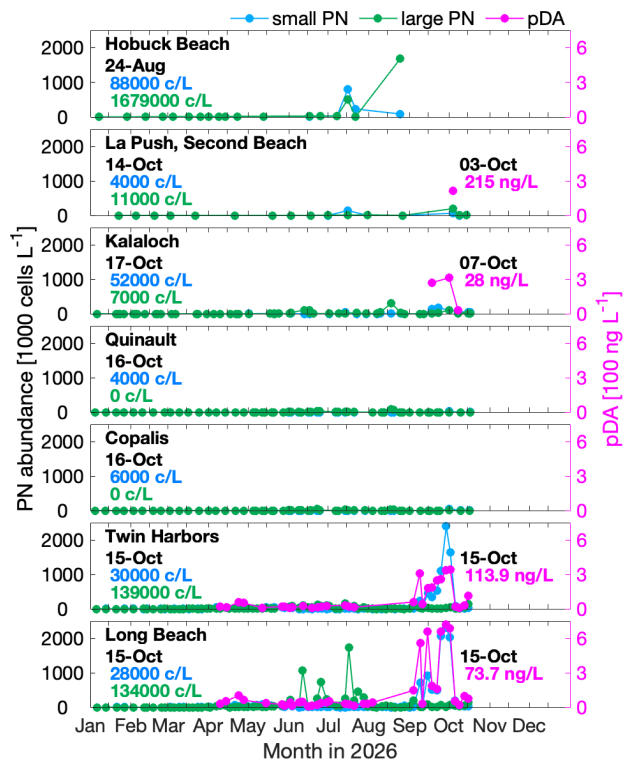
(*Pseudo-nitzschia*)



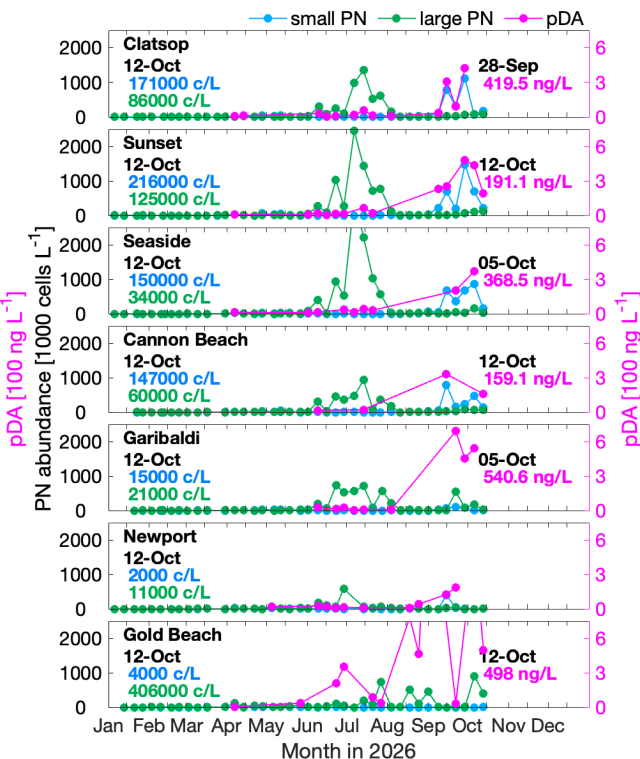
(particulate domoic acid)



WA *Pseudo-nitzschia* & Domoic Acid

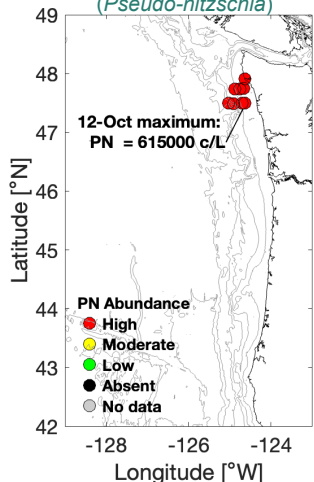


OR *Pseudo-nitzschia* & Domoic Acid

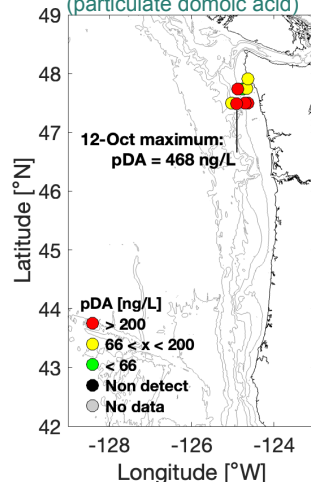


Offshore Sampling

(*Pseudo-nitzschia*)



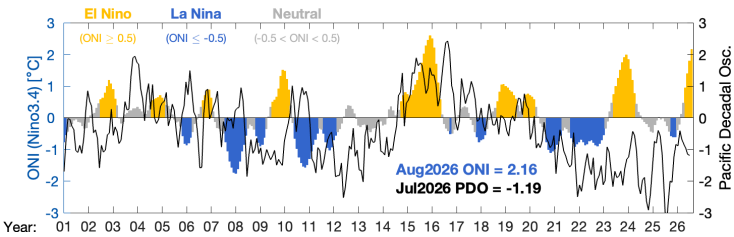
(particulate domoic acid)



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.

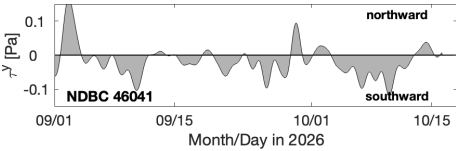
Decisions regarding shellfish harvest closures at individual beaches are made by the Washington Department of Health, the Oregon Department of Agriculture, and Coastal Treaty Tribes after measuring toxin levels in shellfish collected from each beach (WA [link](#); OR [link](#)), and not from the information 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.

Pacific Ocean Indices



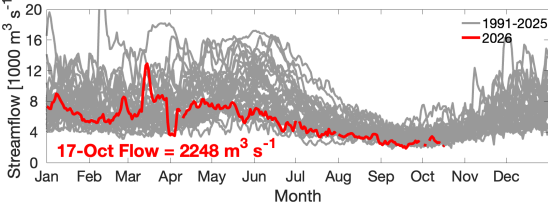
Research has shown that toxic HAB events off WA and OR tend to occur during or following periods of El Niño and/or positive phases of the PDO, when ocean temperatures are relatively warm.

North-south Wind Stress



Southward wind stress drives coastal upwelling that can lead to plankton blooms. Northward wind stress tends to push any existing offshore plankton and toxins towards beaches. In addition, summer/fall toxic blooms often occur in years with a moderate cumulative upwelling index (i.e. during years with fluctuating winds) rather than in years with sustained upwelling or downwelling winds.

Columbia River Discharge



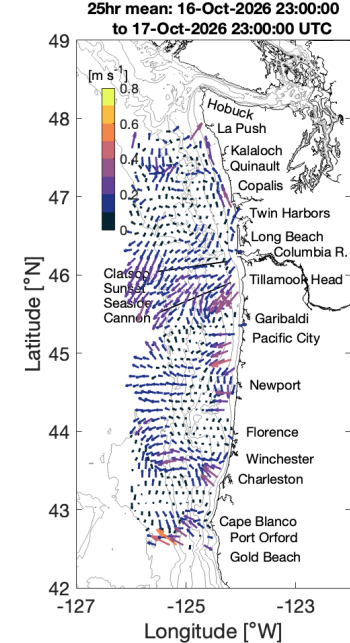
The Columbia River plume can help transport HABs and toxins from the south, northward along the WA coast. However, the plume can also serve as a protective barrier by preventing offshore toxins from reaching beaches.

Marine Weather Forecast

Mon	Tues	Wed	Thur	Mon - S wind, 10 kt
				Tues - N wind, 10 kt
				Wed - NW wind, 10 kt
				Thur - NW wind, 10 kt

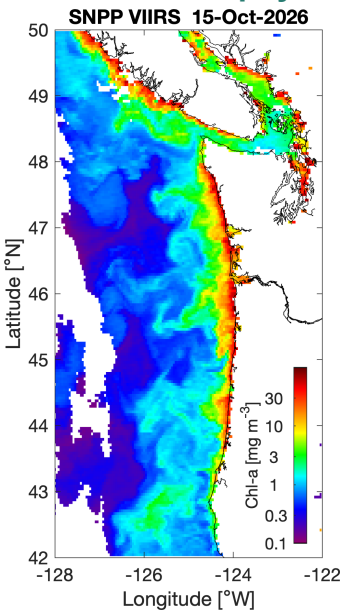
Fair weather can support plankton blooms whereas storms can concentrate any plankton and toxins on beaches.

Ocean Surface Currents



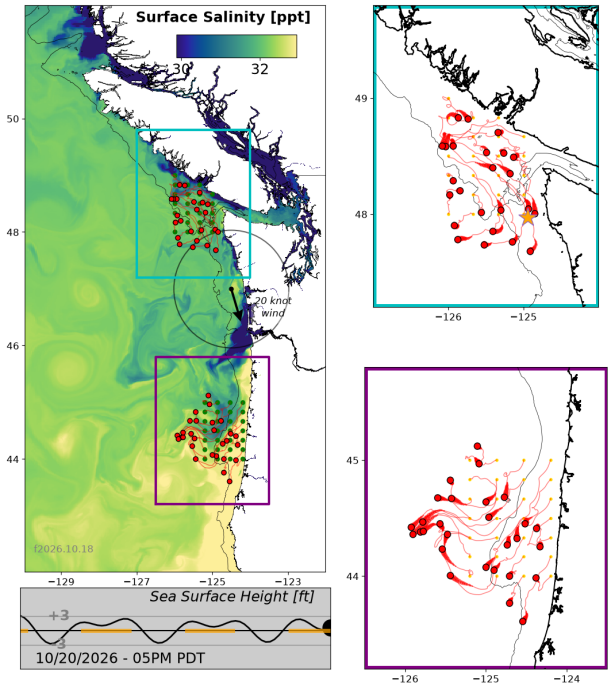
Primary currents flow north and south in winter and summer, respectively, except within ~10 km of shore, where fluctuations follow changes in wind direction.

Satellite Chlorophyll-a



Clouds often obstruct satellite views, but the extent of phytoplankton blooms can at times be seen from space. Blooms do not necessarily reflect the presence of toxins.

LiveOcean Forecast Model



Summary - Winds turned southward (upwelling-favorable) in early October and forecast wind relaxations and northward pulses did not manifest. Instead, winds remained predominantly upwelling-favorable over the last couple of weeks. Nearshore upwelling of higher salinity water was evident in the LiveOcean model during this period and satellite images indicate an increase in chlorophyll-a near the coast along both WA and OR, consistent with upwelling. Despite this, surface ocean currents, which remain southward along the coast, still appear weak in HF radar data and LiveOcean output. Concentrations of small morphology *PN* decreased from >1,000,000 cells/L to <50,000 cells/L at southern WA beaches. Fewer small *PN* were also observed at the northernmost beaches in OR (highest concentrations were <300,000 cells/L on 12-Oct), though there was an increase in large morphology *PN* (many appearing like *P. australis*) at those sites. Particulate domoic acid (pDA) concentrations also dropped significantly at southern WA beaches during the period of southward winds: from >300 ng/L to <150 ng/L at both Long Beach and Twin Harbors. Northern OR beaches still had elevated pDA concentrations on 12-Oct; most were just below 200 ng/L. A sample from Gold Beach, OR, contained ~500 ng/L pDA on 12-Oct. Samples collected offshore of Kalaloch, WA, from 12–13 Oct by the Lightfish Kum'tuks ASV contained high concentrations of both *PN* and pDA, with values as high as 468 ng/L over the mid to outer shelf. Razor clam DA concentrations in OR have not been updated since 2-Oct (44 ppm DA at Sunset Beach). In WA, razor clam DA was 18 ppm at Long Beach, and ranged from 6–11 ppm at central WA beaches spanning Twin Harbors to Quinalt as of 14-Oct.

Forecast - A strong El Niño is currently developing and is predicted to strengthen through the end of the year. The PDO remains negative. Coastal winds are forecast to remain upwelling-favorable for the next few days. An approaching low-pressure system appears likely to remain just offshore and then move south of OR on Monday, suggesting little impact. Another storm, with northward winds, may impact the region next weekend. Near-term risk appears moderate since conditions will remain predominantly upwelling-favorable during the week. Risk increases to high with the storm next weekend since high pDA concentrations were documented just offshore, and forecast northward winds could push those toxins to area beaches.