



Pacific Northwest Harmful Algal Blooms Bulletin

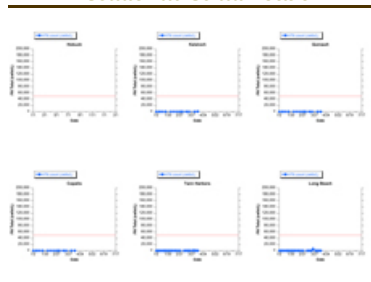
April 18, 2011



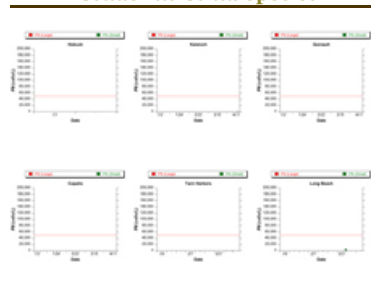
ORHAB Sample Sites



Pseudo-nitzschia Totals



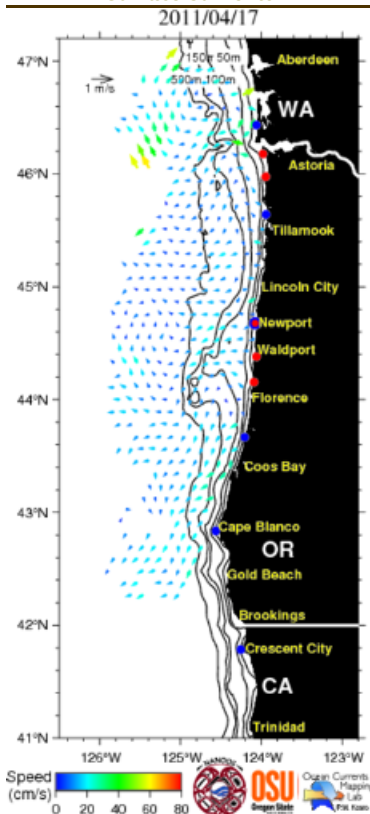
Pseudo-nitzschia Species



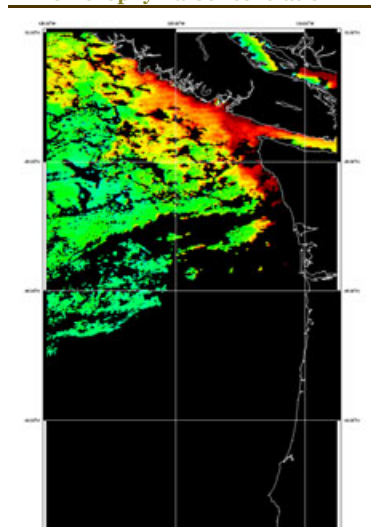
Pseudo-nitzschia (PN) totals are identified by light microscopy and grouped by PN Large and PN Small. The 50k cells/L threshold level for large PN that triggers toxin testing is indicated by a red line across the PN plots. (The trigger for toxin testing for small PN is 1 million cells/L)

Summary – No HAB species were detected in recent outer WA coast cell counts with the exception of Kalaloch Beach at 1,000 cells/L of the small cell type *Pseudo-nitzschia* on April 11. DA levels in razor clams remain at ≤ 1 ppm and the highest levels of PSP in shellfish along the outer coast were found in razor clams from the Willapa spits at $39 \mu\text{g}/100\text{g}$. All other samples sites on the outer coast remain at ntd or $<38 \mu\text{g}/100\text{g}$ for PSP according to WDOH. *Attheya armatus* and *Asterionellopsis socialis* are dominant in the WA outer coast surf zone. Very few other species are present in phytoplankton assemblage.

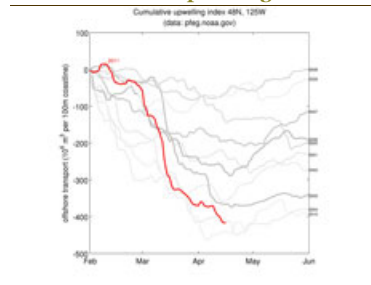
Surface Currents



Chlorophyll-a Concentration

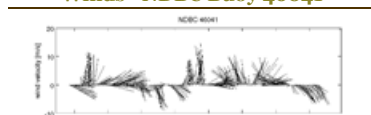


Cumulative Upwelling Index

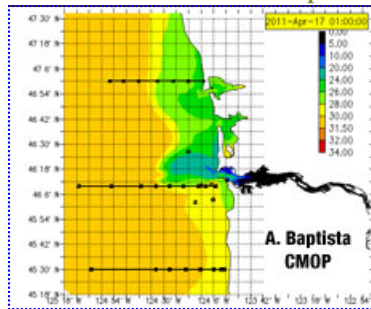


During April the coast has mostly experienced moderate downwelling favorable winds (from the south). On Saturday April 16, winds switched to upwelling favorable after a five-day period of downwelling favorable winds. Although satellite images of chlorophyll-a indicate that phytoplankton biomass is present along the coast, high concentrations in the Juan de Fuca eddy region may be biased by sediment in a northward tending Columbia River plume.

Winds - NDBC Buoy 46041

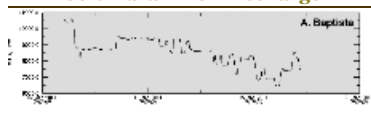


Columbia River Model Output



Forecast – Upwelling favorable winds from the northwest are expected to continue for most of the week, with 10-15 kt onshore winds from the west forecast for Tuesday, April 19. Model forecasts show the northward Columbia River plume moving away from the coast, and a southward plume forming offshore of the Oregon coast. These patterns suggest that any cells near the coast will be pushed offshore. However, there is a small risk that toxic cells, from a southern source off Oregon, were transported to Washington beaches during recent downwelling favorable winds.

Columbia River Discharge



Weather Forecast - Ocean Shores

