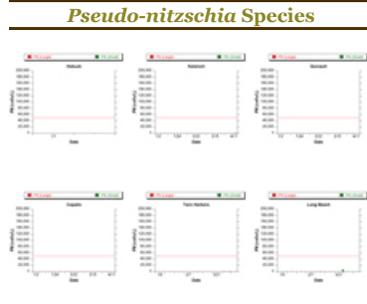
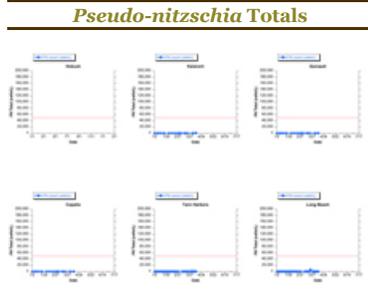
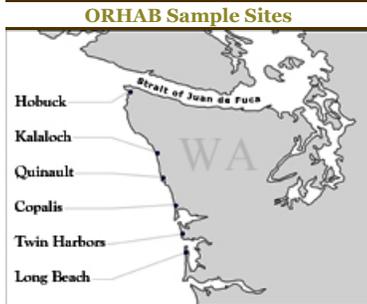




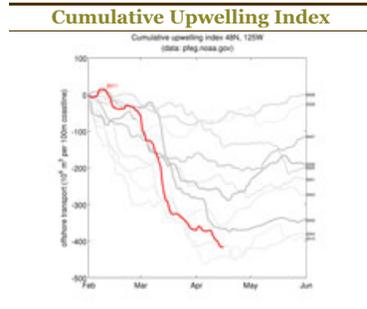
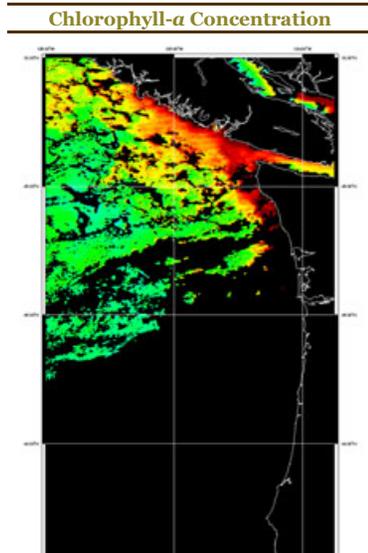
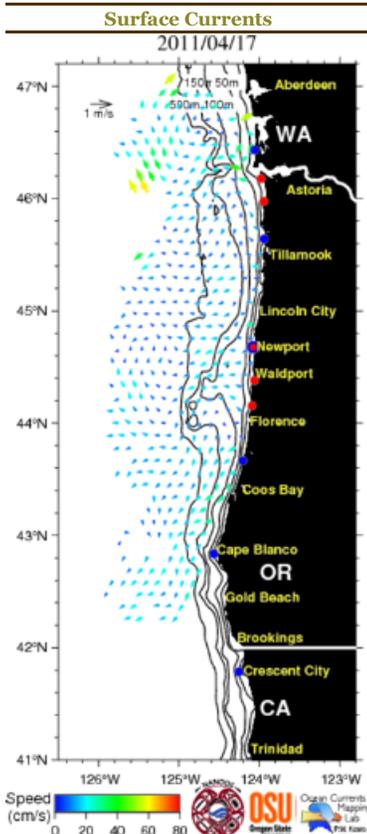
Pacific Northwest Harmful Algal Blooms Bulletin

April 18, 2011

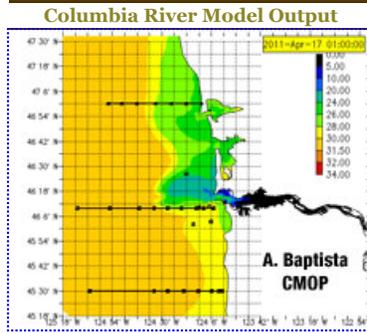
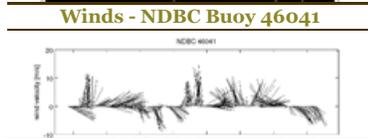


Pseudo-nitzschia (PN) totals are identified by light microscopy and grouped by PN Large and PN Small. The 50k cells/L threshold level for large PN that triggers toxin testing is indicated by a red line across the PN plots. (The trigger for toxin testing for small PN is 1 million cells/L)

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.



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.



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.

