Pacific Northwest Harmful Algal Blooms Bulletin

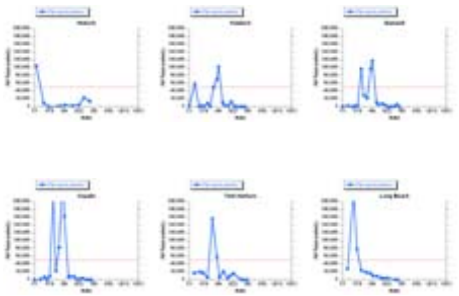
School of Oceanography, University of Washington

September 09, 2009

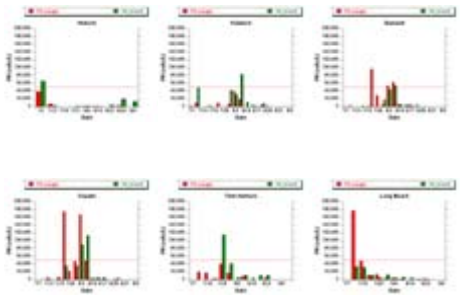
ORHAB Partnership

ORHAB Sample Sites

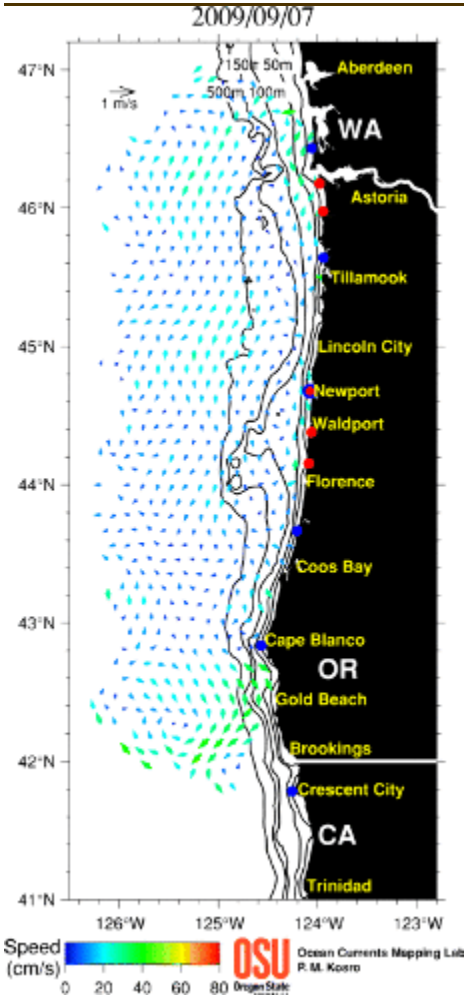
Pseudo-nitzschia Totals



Pseudo-nitzschia Species

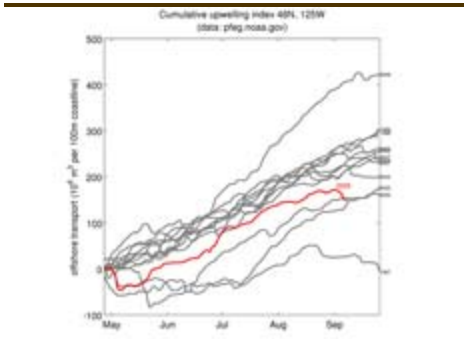


Surface Currents

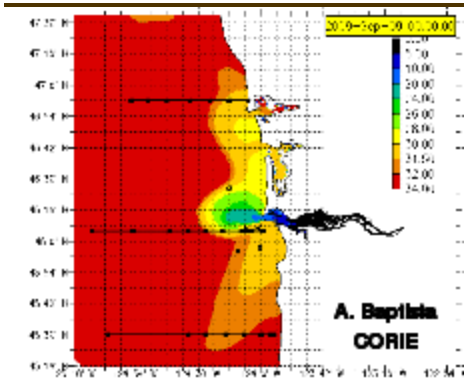


ARGOS Drifters

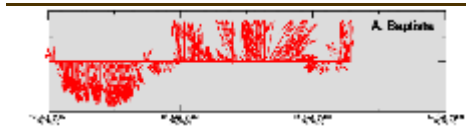
Cumulative Upwelling Index



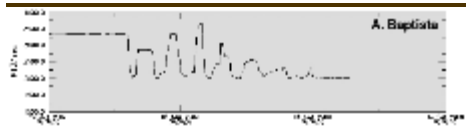
Columbia River Model Output



Winds - NDBC Buoy 46029



Columbia River Discharge



Weather Forecast - Ocean Shores

Wed	Thu	Fri	Sat
65 | 52	70 | 52	72 | 54	67 | 54

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 – *Pseudo-nitzschia* spp. have not been detected in recent whole water samples except Hobuck Beach on 9/4 at 14,000 cells/L of the small cell type. The highest levels of DA in razor clams are found at Quinault Res. B & MocRocks BC on 8/24 at 7 ppm. *Alexandrium* spp. are present all along the WA coast in recent samples. The highest counts are at Long Beach on 9/4 at 7,000 cells/L of A. catenella. PSP is detectable in shellfish at several sites along the WA coast. The highest levels are found at La Push, Second Beach on 9/2 at 63µg/100g in CA mussels according to WDOH. *Dinophysis* spp. have been common in recent samples. The highest levels are at Raft River on 8/27 at 4,000 cells/L of *D. acuminata*.

Strong downwelling favorable winds (from the south) have been prevalent during early September, as observed at NDBC buoy 46029. Surface currents are directed northward over the continental shelves of southern Washington and northern Oregon, and surface drifters have moved northward and toward shore. Model results show the Columbia River plume influencing the southern Washington coast. It is likely that phytoplankton populations along the coast have orginated from offshore, especially along the northern Washington coast where the Coumbia River plume has had less influence.

Forecast – Upwelling favorable winds are expected to resume Thursday 9/10 through Saturday 9/12. The marine forecast has winds returning to downwelling favorable by Monday 9/14. As the fall season approaches, there is a greater likelihood of downwelling winds. We forecast high risk levels for transport of *Pseudo-nitzschia* (not necessarily toxic) from the Juan de Fuca eddy region to coastal beaches in the following week. Condition is red.