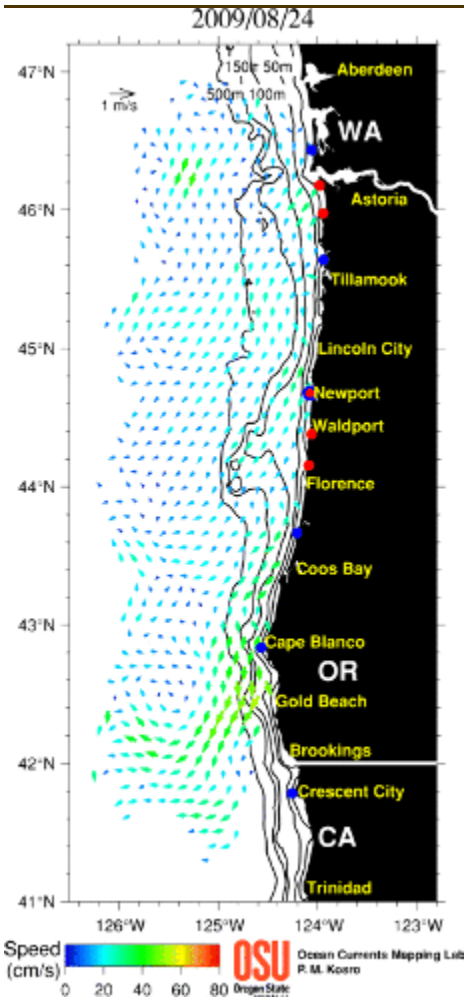


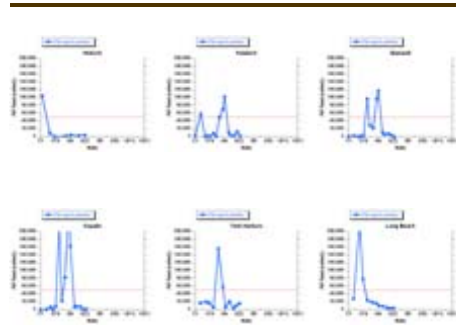
ORHAB Sample Sites



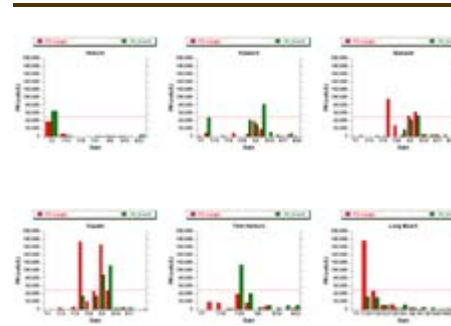
Surface Currents



Pseudo-nitzschia Totals



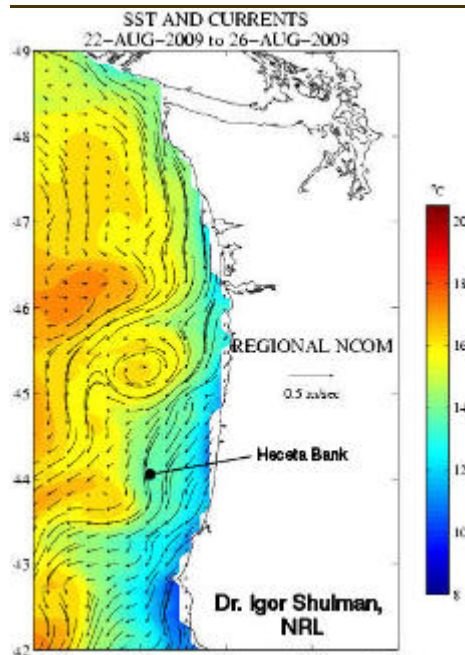
Pseudo-nitzschia Species



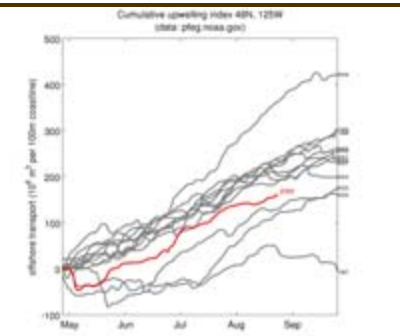
Pseudo-nitzschia (PN) totals are identified by light microscopy and grouped by PN Large and PN Small. The 50k cells/L threshold level for large PN that triggers toxin testing is indicated by a red line across the PN plots. (The trigger for toxin testing for small PN is 1 million cells/L)

Summary – PN spp. cell counts remain low along the WA coast. The highest counts were at Twin Harbors at 16,000 cells/L of the smaller cell type. DA levels declined in razor clam tissue according to WDOH except at Quinalt Beach which rose to 7ppm. *Alexandrium catenella* was present along the south and central coast. The highest levels were at Long Beach at 4000 cells/L. PSP levels in razor clam tissue are somewhat elevated along the south and central WA coast according to WDOH. The highest levels were at Copalis Beach QBR at 48 µg/100g in razor clams. *Dimophysis* spp. were present along the WA coast. The highest levels were at Long Beach at 3,000 cells/L in 10x conc. whole water. *Akashiwo sanguineum*, *Lingulodinium polyedrum*, and *Protoceratium reticulatum* were also present along the south WA coast.

Modeled Surface Currents

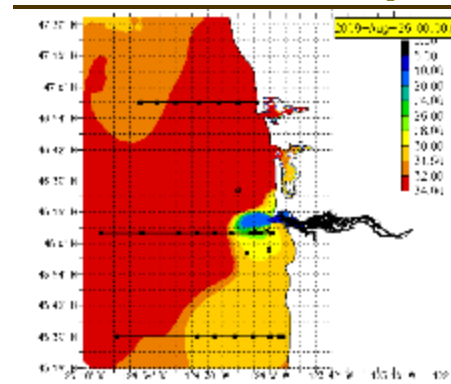


Cumulative Upwelling Index



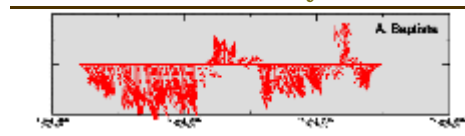
Winds were primarily upwelling favorable in mid to late Aug., shown by the increasing cumulative upwelling index. In the past week, upwelling favorable winds (from the north) were interrupted by two downwelling favorable wind events (winds from the south), observed at NDBC wind buoy 46029. This is consistent with mapped surface currents that are directed southward and either offshore or onshore, depending on the location. Model results show the Columbia River plume being retained close to the river mouth.

Columbia River Model Output

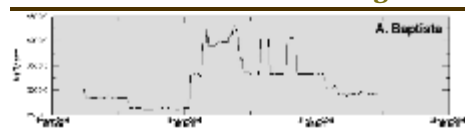


Forecast – A front is expected to approach shore on 8/28 causing 10-20 knot downwelling favorable winds. [Satellite-tracked drifters](#) deployed near the Juan de Fuca eddy show some onshore movement, which is expected to continue with downwelling favorable winds. In this upcoming period, phytoplankton populations from offshore may affect the WA coast. Upwelling favorable winds (10-15 knots) are expected to resume on 8/29 as high pressure builds offshore. However, as the fall season approaches, there is a greater likelihood of downwelling winds. We forecast moderate risk levels for arrival of toxic PN on coastal beaches in the following week.

Winds - NDBC Buoy 46029



Columbia River Discharge



Weather Forecast - Ocean Shores

