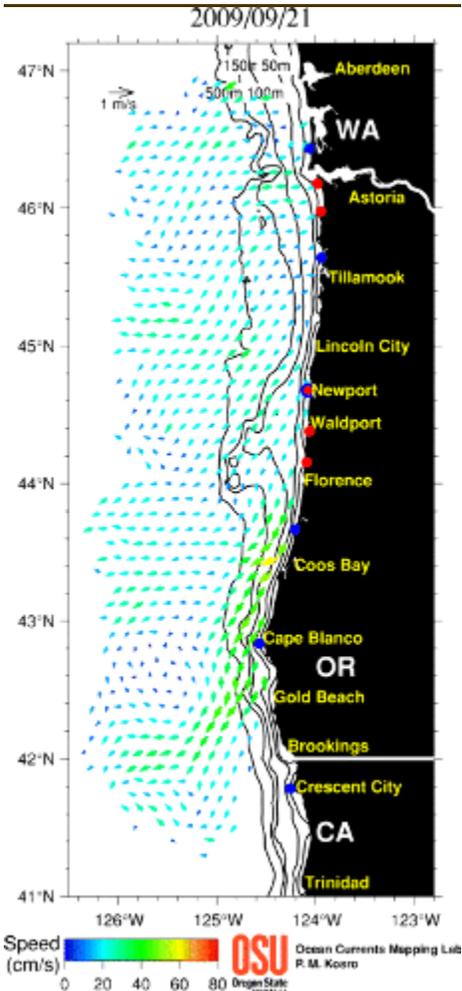


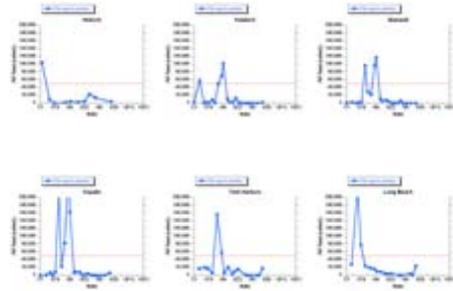
ORHAB Sample Sites



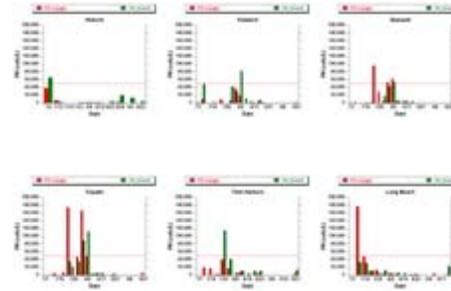
Surface Currents



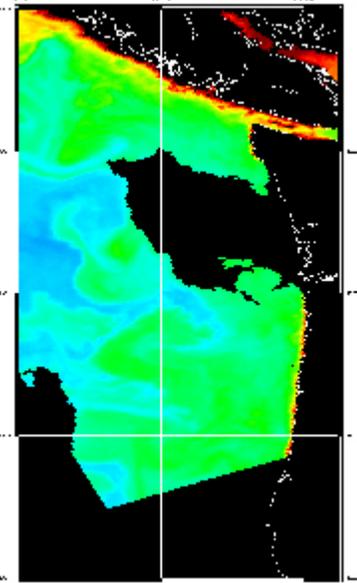
Pseudo-nitzschia Totals



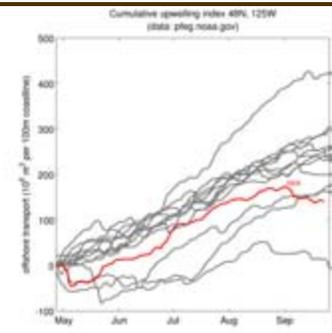
Pseudo-nitzschia Species



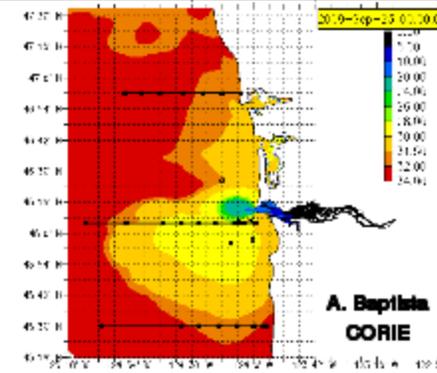
Chlorophyll-a



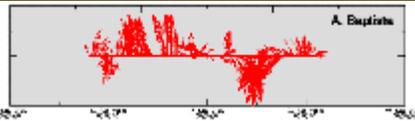
Cumulative Upwelling Index



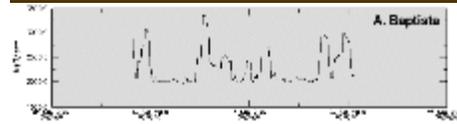
Columbia River Model Output



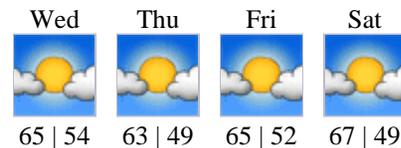
Winds - NDBC Buoy 46029



Columbia River Discharge



Weather Forecast - Ocean Shores



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 – *Akashiwo sanguinea* is dominant along the WA coast. The highest counts were at Quinault Beach at 1,553,000 cells/L on 9/10. The bloom has been observed coast wide, but seems to be concentrated from the Quinault Indian Nation to Cape Alava. *Pseudo-nitzschia* spp. have increased on the south WA Coast, but still remain under the action levels. The highest counts are found at Long Beach at 24,000 cells/L of the smaller type. WDOH reports the highest levels of DA are found at Quinault Beach A at 8ppm in razor clams on 9/14. The highest amounts of *Alexandrium catenella* are found in the nearshore waters off of Cape Alava at 15,000 cells/L. WDOH reports the highest levels of PSP were over the closure limit of 80 µg/100g tissue at La Push, Second Beach at 191 µg/100g on 9/16 in CA mussels. Long Beach Reserve is near the closure level for PSP at 62 µg/100g in razor clams on 9/21. *Dinophysis* spp. have been common along the WA coast. The highest counts were found in the nearshore waters off of Cape Alava at 46,000 cells/L of primarily *D. acuminata*.

Downwelling favorable winds (from the south) have occurred during much of September, as seen in the cumulative upwelling index and at NDBC buoy 46029. Periods of upwelling favorable winds have also occurred, and surface currents off the coasts of southern Washington and northern Oregon have recently been directed offshore. Satellite-derived *chlorophyll-a* from 9/22 shows high phytoplankton biomass in the Strait of Juan de Fuca and near the coast of southern Vancouver Island, but not along the western edge of the Juan de Fuca eddy as sometimes observed during this time of year.

Forecast – Upwelling favorable winds are expected through Tuesday 9/29. Model output shows coastal currents accelerating and directing the Columbia River plume southward and offshore. It is not expected that toxic species from the Juan de Fuca eddy region will be transported to the coast during this period.