Pacific Northwest Harmful Algal Blooms Bulletin

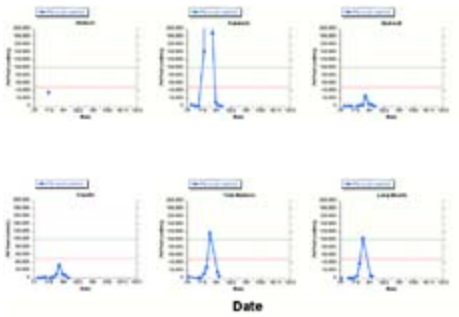
School of Oceanography, University of Washington

August 12, 2008

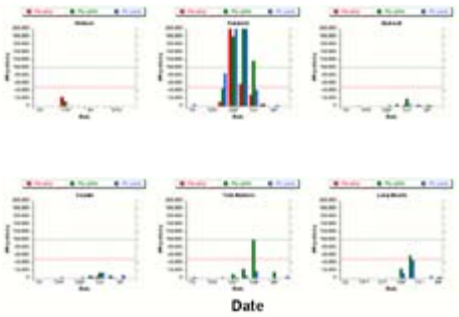
ORHAB Partnership

ORHAB Sample Sites

Pseudo-nitzschia Totals

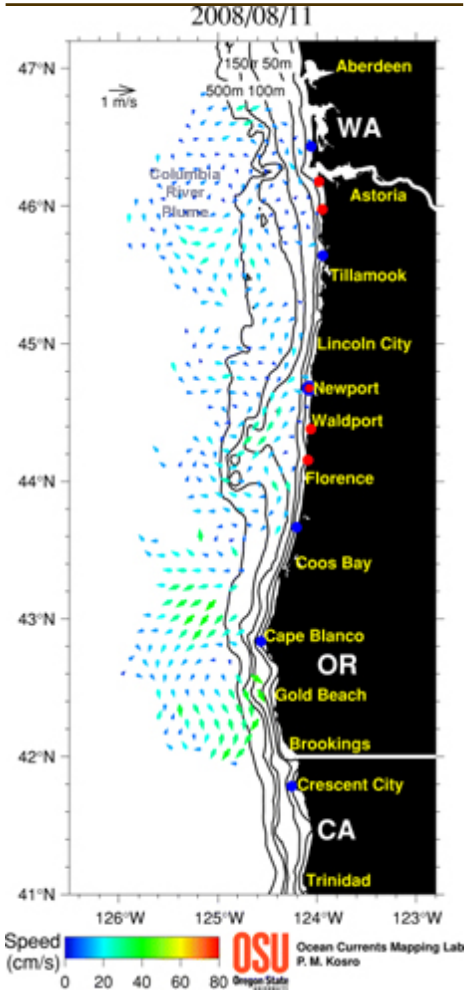


Pseudo-nitzschia Species

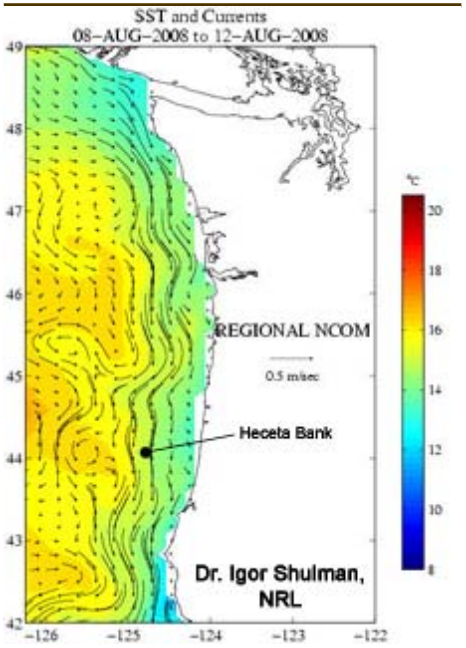


Pseudo-nitzschia totals are subdivided into the following species groups identified by light microscopy - *a/f/h (P. australis/fraudulenta /heimii), p/m (P. pungens/multiseries), pd/d/c (P. pseudodelicatissima/delicatissima/cuspidata).* Threshold levels of each group at which toxin testing is done are shown as a colored horizontal bar in the *Pseudo-nitzschia* species graph

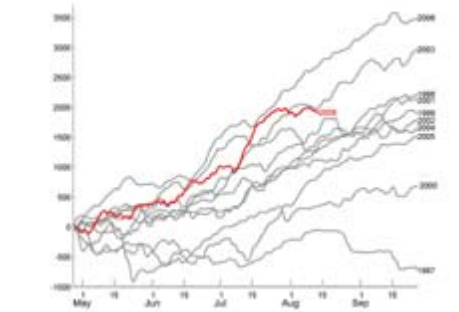
Surface Currents



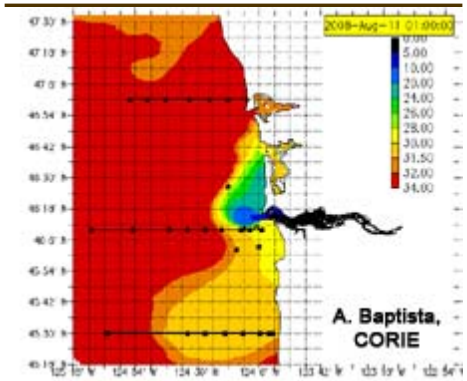
Modeled Surface Currents



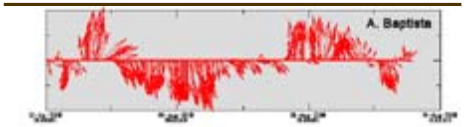
Cumulative Upwelling Index



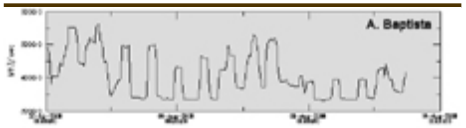
Columbia River Model Output



Winds - NDBC Buoy 46029



Columbia River Discharge



Weather Forecast - Ocean Shores

Tue	Wed	Thu	Fri
63° | 52°	67° | 56°	72° | 56°	67° | 54°

Summary – *Pseudo-nitzschia* cell counts dropped significantly along the Washington coast. Current cell counts are 5,000 cells/L at Long Beach and Twin Harbors and <1000 cells/L at all other sampling sites. The Washington Department of Health (WDOH) reports very low levels of domoic acid in razor clams. All WA coast sample sites report 1ppm or lower, concurring with ORHAB ELISA tests run in Taholah. *Alexandrium* sp. was reported in the surf zone at Long Beach (31,000 cells/L) and Twin Harbors (4000 cells/L). WDOH reports detectable PSP levels in razor clams at Long Beach (39 µg/100g) and Twin Harbors (<38 µg/100g) and in mussels at Ruby Beach (38 µg/100g) and La Push Second Beach (65µg/100g).

Relatively strong upwelling-favorable (southward) winds and fair weather prevailed throughout much of July (shown by the strong upward slope in the 2008 cumulative upwelling index); however, recent winds have been episodic, fluctuating between storms and upwelling favorable conditions. Results from ECOHAB-PNW studies indicate the Juan de Fuca Eddy is more retentive during these variable wind periods. Modeled and measured currents suggest a well-developed upwelling system. Cold water, evident all along the coast in the models, indicates upwelling. Satellite-derived Chl from early August (a proxy for surface phytoplankton abundance) indicates extensive chlorophyll blooms along the northern coast and on the perimeter and northward of the Juan de Fuca eddy (no data existed for Southern WA due to cloud cover).

Forecast – Surface currents would generally be moving phytoplankton slightly offshore, away from the coast as they move southward along the coast, so that a HAB event from the Juan de Fuca source region is unlikely on the WA coast while winds continue from the north. Moderately strong, southward winds (northwesterlies) are expected to continue through at least Saturday. We expect upwelling to continue fueling coastal productivity, with little potential for onshore transport.