

Northeast PSP: Final Summary for 2010 Season

The 2010 *Alexandrium* forecast for the Gulf of Maine was not borne out by cruise observations and shellfish toxicity measurements. We predicted a large regional bloom in the WGOM that did not happen. Toxicity along the coast has been low, and cruise data show very few cells in the region from Massachusetts and Cape Cod Bays to mid-coast Maine.

Two possible (and potentially related) reasons for the absence of the bloom in the WGOM are evident thus far: 1) there was a water mass change that lies outside the envelope of observations from at least the last six years, which were the basis of the ensemble forecast that led to the 2010 prediction; and 2) along-coast surface transport off southern Maine was slower than normal.

The deep basins of the Gulf of Maine were warmer than was observed in 2003 - 2008. This water mass anomaly affects intermediate and surface waters where *Alexandrium* resides. In fact, surface waters were several degrees warmer than in 2008, when a large *Alexandrium* bloom took place. Stratification, nutrient concentrations, grazers, and other factors critical to *Alexandrium* growth could all have been affected. Our [GOMTOX](#) cruise data are being used to assess these factors.

Should we be able to deduce the mechanisms responsible for the lack of a bloom in the WGOM in 2010, those processes could then be included in the population dynamics model. Furthermore, we note that the water mass changes mentioned above relate to the larger scale circulation of the northwest Atlantic, and therefore are observable months in advance of the *Alexandrium* season. Therefore, it is conceivable that forecasts can be made taking into account this type of variability. It is indeed fortunate that GOMTOX cruises were scheduled for 2010, as this will allow us to understand the factors that prevented a bloom and thereby allow us to improve our model.

2010 status reports

[May 2010](#)

2010 observations

[August 5, 2010 - Oceanus update](#)

[August 1, 2010 - Oceanus update](#)

[July 8, 2010 - Oceanus update](#)

[July 4, 2010 - Oceanus update](#)

[June 3, 2010 - Endeavor update](#)

[May 30, 2010 - Endeavor update](#)

[May 9, 2010 - Oceanus update](#)

[May 5, 2010 - Oceanus update](#)

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