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Short-Term Forecast of Harmful Algal Blooms on the West Florida Shelf

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A short-term forecast tool is developed to help federal, state, and local end users monitor and manage harmful algal blooms on the west coast of Florida. The short-term forecasts are based on the West Florida Coastal Ocean Model (WFCOM) that downscales from the deep ocean, across the continental shelf and into the estuaries, and the Tampa Bay Coastal Ocean Model (TBCOM) that has resolution high enough to include all of the inlets connecting Tampa Bay, Sarasota Bay and the Intra-Coastal Waterway with the adjacent Gulf of Mexico. Observed *Karenia brevis* cell concentration data are uploaded daily into the WFCOM and TBCOM to generate 3.5 day forecasts of the bloom Lagrangian trajectories on the shelf and in the estuaries. This provides information where red tide may go in the next few days. Noting that the spatial red tide sampling is limited and blooms may be patchy, a more general and user-friendly map is produced to show where a red tide bloom may occur along the coast over the next several days. The tracking tool displays modeled bloom trajectories at the surface and the bottom with five categories of cell concentrations (present, very low, low, medium, and high, each differing approximately by an order of magnitude). The performance of the Lagrangian trajectory model is evaluated with satellite-tracked surface Lagrangian drifters using a skill score that is defined from the normalized cumulative Lagrangian separation (NCLS).