NWS Wave Detail Experiment: Modernizing the Coastal Waters Forecast

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The National Oceanic and Atmospheric Administration's (NOAA) National Weather Service (NWS) National Wave Team and Marine Services Program has developed a new experimental product (https://www.weather.gov/marine/wavedetail) that provides added wave detail with more clarity for marine users and partners to support better decision making. Multiple coexisting wave systems are common at any point in the ocean, each containing its unique height, period, and direction. Details on each of these wave systems provide valuable information for marine customers. For example, a very short period wave system moving parallel to the coast may provide significant hazards to small and flat bottom vessels leaving an inlet. Meanwhile, longer period waves moving towards the shore produce shoaling hazards near the coast. There are a multitude of similar scenarios that are of interest to various marine users.

Mariners need significant wave height to quickly gauge the accuracy of a forecast based on buoy observations, and they also need the height, period, and direction of the wave systems that make up the significant wave height. Based on feedback and advancements in the Nearshore Wave Prediction System (NWPS) (https://polar.ncep.noaa.gov/nwps), the proposed updated wave component of the Coastal Waters Forecast (CWF) includes significant wave height and the option to include additional wave detail of the main wave systems. The NWS currently has several different ways of describing waves. The new experimental product will offer more consistency of the CWF across the nation while providing mariners with valuable enhanced wave information.