

A High-Resolution Future Wave Climate Projection for the Northwestern Atlantic

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A high-resolution wave climate projection for the Northwestern Atlantic has been conducted to help assess possible regional impacts under an RCP8.5 climate forcing scenario. Here, NOAA WAVEWATCH III is utilized to resolve the Northwestern Atlantic and US Eastern Coast at approximately 21 km and 7 km, respectively. Hourly wind field forcings are provided by MRI-AGCM 3.2S at a 21 km/lat resolution and the increased temporal frequency and spatial resolution allow for better modeling of large storm events. Climatological (25-year) significant wave height differences between future and historical periods indicate that a seesaw effect will occur, with decreases occurring in the Northwest Atlantic and Gulf of Mexico and increases occurring in the Caribbean Sea. Other notable changes include decreases in incident shoreline energy along the US East Coast. Further details of the projection will be discussed, including underlying wind field changes and extreme wave statistics.

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