



NOAA / NOS' Surge & Tide Operational Forecast System (STOFS) upgrade to v2.1.9

The National Ocean Service (NOS) Storm Surge Modeling (SSM) Team performs the planning, research, development, operation and maintenance of a state-of-the-art storm surge modeling portfolio across NOS. The Surge and Tide Operational Forecast System (STOFS, formerly ESTOFS) is a collaboration among the SSM team at the NOAA/NOS/Office of Coast Survey, University of Notre Dame, Virginia Institute of Marine Science and NOAA/NCEP. STOFS contains the two-dimensional depth averaged global component (STOFS-2D-Global) based on the ADvanced CIRCulation (ADCIRC) model core. STOFS also includes a three-dimensional (3D) model component for the Atlantic basin (STOFS-3D-Atlantic) based on the SCHISM model core (Semi-implicit Cross-scale Hydroscience Integrated System Model). The STOFS system runs on NCEP's central computing system (WCOSS). STOFS-2D-Global runs four times daily producing numerical storm surge and tide model forecast guidance globally out to 180 hours. The model is forced by real time output of winds and pressure from the NCEP Global Forecast System (GFS). The domain of the operational STOFS-2D-Global forecast guidance covers the entire globe, including the floodplain of the coastal U.S., the Caribbean area surrounding Puerto Rico, and Alaska. STOFS-3D-Atlantic runs daily to provide one day of nowcast and four days of water level and surface current forecast guidance. STOFS-3D-Atlantic makes use of outputs from the National Water Model to include inland hydrology and extreme precipitation effects on coastal flooding; forecast guidance from the NCEP Global Forecast System (GFS) and High-Resolution Rapid Refresh (HRRR) model as the surface meteorological forcing; and the combined tidal and subtidal water level, and three-dimensional water temperature, salinity, and currents from the NCEP Global Real-Time Ocean Forecast System (G-RTOFS) as the open ocean boundary forcing.

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