

DATA INTEGRATION, ANALYSIS, AND FORECASTING FOR COASTAL AREAS: AN OVERVIEW OF USGS PORTALS AND TOOLS

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The sustainability of coastal areas is being affected by climate change, sea level rise, and modifications to land use and hydrologic systems. To prepare for and respond to these drivers of change, coastal managers and planners need the most current data available, an understanding of temporal and spatial trends, information about how current and historical data compare, and forecasting tools. Providing these types of information and tools to help managers and policy makers foster sustainable and resilient communities and ecosystems is a central component of the U.S. Geological Survey's (USGS) mission. The USGS has developed many online tools to make data and analyses readily available, including the National Water Information System Mapper, which provides real-time and historical surface-water quality and water-level data for both surface water and groundwater as well as surface-water discharge data. The Total Water Level and Coastal Change Viewer combines water level predictions (including wave run-up) with local beach slope and dune observations to forecast the probability of coastal dune erosion, overwash, and inundation. The Coastal Data and Analysis Tool hosts a variety of data types from surface-water and groundwater monitoring sites as well as assessments of temporal and spatial trends in those data. This presentation will provide an overview of these USGS web portals with a specific focus on their applicability for resilience planning in the coastal areas of South Florida.

PRESENTER BIO: Dr. Root is a hydrologist with the U.S. Geological Survey Caribbean-Florida Water Science Center. She has extensive experience working on groundwater chemistry and groundwater-surface water interaction projects. She has 15-years of prior experience in academia where she taught hydrogeology and water resources courses and supervised graduate student research.