

High Tide Flooding and NOAA Sea Level Rise Science and Services

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Coastal flood risk within many U.S. coastal communities is rapidly increasing due to decades of sea level rise. In fact, the national rate of nuisance high tide flooding (HTF), which adversely affects public infrastructure, commerce, and public patience, has doubled since year 2000, and continues to accelerate. Annual frequencies of HTF are further exacerbated during El Nino along many coastlines, though due to greater water level, flatter topography and higher rates of relative sea level rise, impacts are most problematic along the U.S. East and Gulf Coasts. Just this past year (May 2018 - April 2019), 12 communities tied or broke their historical HTF records causing all sorts of problems. This year (May 2019 - April 2020), many communities are predicted to break records, with HTF rates upwards of a 190% greater than experienced in 2000. These predictions have come to fruition in many locations already.

In response, NOAA's National Ocean Service (NOS) is advancing its sea level science and services to improve monitoring, tracking, mapping and predicting of HTF and more severe flooding over multiple time horizons for multiple reasons. Decision support is needed not only at forecast time scales (emergency response), but for seasonal (readiness), annual (response budgeting) and multi-decadal (infrastructure upgrades) horizons as well. As sea levels continue to rise and communities flood more often, the demand for targeted multi-year predictions of sea levels and HTF will grow for community planning and preparedness purposes.