Coastal Resilience
Sea Level Rise Viewer
Surging Seas Risk Finder

Use These Tools to Assess Sea Level Rise Impacts

Nature Conservancy, The National Oceanic and Atmospheric Administration (NOAA) Coastal Services Center and Climate Central all work to help communities become more resilient. Each organization has developed a tool to assess sea level rise impacts, and this fact sheet shows how the tools are both distinct and complementary. To see more resilience-related products, visit the Digital Coast at www.csc.noaa.gov/digitalcoast.

Coastal Resilience Tool – *http://coastalresilience.org/tools*
Built by the Nature Conservancy, this tool is where ecological, social, and economic information can be viewed alongside sea level rise and storm surge scenarios in specific geographies. This tool uses – in many geographies – custom, dynamic high-resolution sea level rise and flood data. In addition, geographies have plug-in tools ("apps") that address specific coastal issues and help users visualize potential nature-based adaptation solutions. As such, this tool is less about data availability and download, and more about providing social, economic, and ecological assessments for decision makers in specific geographic areas. These detailed analyses results help communities identify nature-based solutions for reducing vulnerabilities and disaster risk.

Sea Level Rise Viewer – *www.csc.noaa.gov/digitalcoast/tools/slrviewer*
This NOAA tool provides a first look at a community's potential exposure to inundation from coastal flooding and sea level rise and provides nationally consistent data for download or consumption via map services. The digital elevation models (DEMs) that form the base maps are conditioned specifically for mapping inundation and have been used in selected coastal resilience efforts and for storm surge modeling and mapping by the National Hurricane Center. These DEMs are available for download. NOAA's primary objectives for this tool are to provide a consistent, national viewer and open access to the data that local communities need to address their needs. The viewer includes full coverage for the contiguous U.S. in 2014.

Surging Seas Risk Finder – *http://sealevel.climatecentral.org*
Climate Central built this public web tool to help communities, planners, and leaders better understand sea level rise and coastal flood risks. The multi-part tool provides local sea level rise and flood risk projections, searchable interactive maps, "fast look" community reports, data downloads, and exposure tabulations by zip codes, municipalities, counties. Exposure assessments cover over 100 demographic, economic, infrastructure and environmental variables using data drawn mainly from federal sources, including NOAA, USGS, FEMA, DOT, DOE, DOI, EPA, FCC and the Census. Maps are based primarily on elevation data supplied by NOAA and used in NOAA's Sea Level Rise Viewer.

Quick Reference for Comparing These Tools

Coastal Resilience Decision Support Tool	Sea Level Rise and Coastal Flooding Impacts Viewer	Surging Seas Risk Finder
www.coastalresilience.org	www.csc.noaa.gov/digitalcoast/tools/slrviewer	sealevel.climatecentral.org
Purpose		
To compile and deliver Web-based planning tools that incorporate nature-based solutions for disaster risk reduction and climate adaptation	To provide a visual screening tool and nationally consistent data to help communities visualize and plan for exposure to sea level rise and more frequent tidal flooding	To provide a multi-part web tool to help communities, planners, and leaders better understand sea level rise and coastal flood risks to diverse populations and assets over time.
Geographic Coverage		
Local and regional tool available for the following domestic and international locations:	National tool that is complete for the following regions:	National tool that is complete for the following regions:
• Gulf of Mexico and multiple bays (in TX, MS, LA, AL, FL, FL Keys)	• Gulf of Mexico (TX, MS, AL, FL)	• Gulf of Mexico: FL to date (TX, MS, AL to be released by end of summer 2014)
• West Coast (Puget Sound, WA, Ventura County, CA)	• West Coast (CA, OR, WA)	• West Coast: CA, OR, WA
• East Coast (NY, CT, NJ); Emerging sites in NC and Eastern Shore VA	• East Coast (FL, GA, Eastern Shore VA, DE, MD, PA, NJ, NY)	• East Coast: FL, NJ, NY, New England States (GA, SC, NC, VA, DE, MD, PA to be released by end of summer 2014)
• Caribbean (USVI, Grenada, St. Vincent and the Grenadines)	• Pacific (HI, CNMI, Guam)	• Pacific (HI to be released by end of summer 2014)
• Central America (Mesoamerican Reef)	• Caribbean (PR, USVI)	
• A global and national U.S. application	• The US Northeast, rest of Mid-Atlantic, and Southeast will be completed in 2013. Alaska and Louisiana timeline TBD due to data availability and quality issues.	• Alaska and Louisiana timeline TBD due to data availability and quality issues
Key Distinctions		
High-resolution, dynamic visualization of coastal and floodplain inundation scenarios at selected geographies	A bathtub visualization across all coastal areas of contiguous US, and selected islands	A bathtub visualization across all coastal areas of contiguous US, HI, and AK

Uses the best local science and data available at any given location, without respect to uniformity across locations	Uses uniform methods and data for all locations	Uses uniform methods and data for essentially all locations (filling gaps with best available elevation data)
Depending on geography, sea level rise scenarios are based on various emission scenarios and specific time increments, or as one-foot or one-meter increments above mean high water irrespective of time	Sea level visualizations are provided at one-foot increments (0-6 feet) above mean higher high water irrespective of time.	Maps are based primarily on sea level visualizations supplied by NOAA and used in NOAA's SLR Viewer. Maps display static water levels up to 10 feet above the local high tide (MHHW).
Includes storm surge scenarios derived from regional Sea, Lake, and Overland Surges from Hurricanes (SLOSH) or MIKE21 model outputs for some geographies; Chronic shallow coastal flooding information not included	Includes flood frequency information based on local National Weather Service field office thresholds for shallow coastal flood warnings; Storm surge data not included	Includes flood frequency information based on local National Weather Service field office thresholds for shallow coastal flood warnings; Storm surge data not included
Socio-economic exposure map based on Social Vulnerability Index (SOVI) data and potential structural damage estimates from Federal Emergency Management Agency HAZUS model runs in some geographies	Socio-economic exposure map based on Social Vulnerability Index (SOVI) data and block group level economic data from US Census and Bureau of Labor Statistics	Socio-economic exposure map based on Social Vulnerability Index (SOVI) data, plus population density, race/ethnicity, per capita income, and property value layers.
Marsh and mangrove migration analyses at specific sites based on Sea Level Affecting Marshes Model (SLAMM) runs or other GIS methods	Marsh migration analysis available for all geographies based on NOAA coastal land cover data and migration rules modified from the Sea Level Affecting Marshes Model (SLAMM)	Does not provide analysis on marsh or mangrove migration.

Miscellaneous Features

Custom applications ("apps") for specific resilience analyses in specific geographies (e.g., natural coastal defense using InVEST model, risk reduction explorers, oyster habitat restoration dashboard)	Displays simulations of sea level rise at local landmarks	Displays levee data from the Midterm Levee Inventory (FEMA/USACE), the best available national levees dataset.
Displays assessment of natural ability of marsh, mangrove, and oyster and coral reefs to protect human communities in some geographies	Associated data provided for download or as mapping services for use by communities as a foundation for further local assessment	Provides custom community "fast look" reports, plus extensive data downloads (excel format) for sea level and flood risk projections, and for any data variable chosen (e.g. road miles), intersected by the administrative area chosen (e.g. city council district)

For more information, please contact:

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