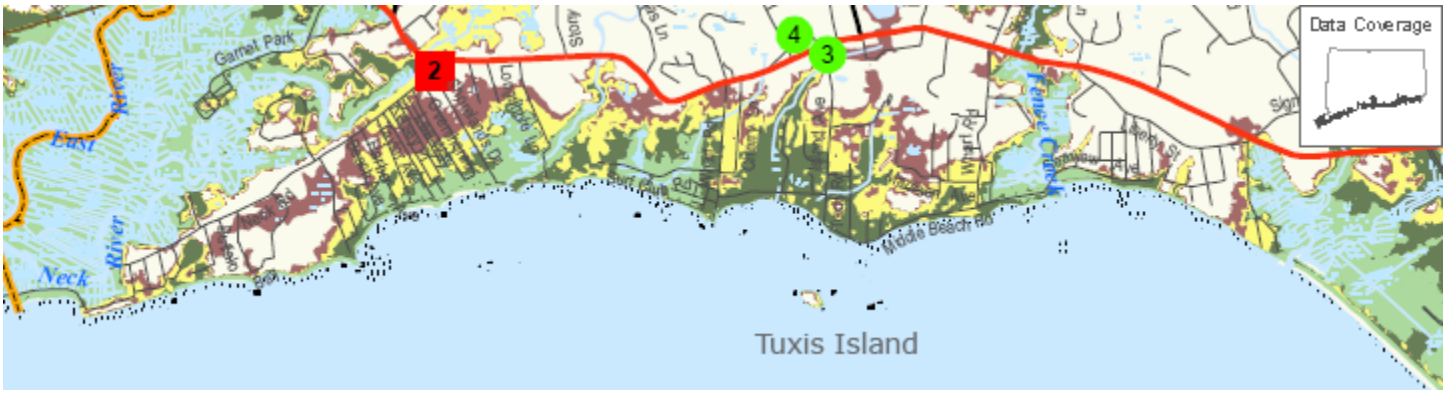
Hurricane Surge Inundation



Description

This information includes Hurricane Surge Inundation areas for category 1 through 4 hurricanes striking the coast of Connecticut with a peak hurricane surge arriving at high mean water. The hurricane surge elevation data used to define these areas were calculated by the National Hurricane Center using the Sea Lake and Overland Surge from Hurricanes (SLOSH) Model. The SLOSH model hurricane surge elevations have an accuracy of +/- 20 percent. The hurricane surge inundation areas depict the inundation that can be expected to result from a worst case combination of hurricane landfall location, forward speed, and direction for each hurricane category.

Purpose

Hurricane Surge Inundation area data are developed to assist federal, state and local emergency management officials planning for and responding to hurricanes.

Legend Description

One of the earlier guides developed to describe the potential storm surge generated by hurricanes is the Saffir/Simpson Hurricane Scale, which assigns a Hurricane Category according to the maximum sustained wind speed within the hurricane. A condensed version of the Saffir/Simpson Hurricane Scale is shown in the table below.

Saffir/Simpson Hurricane Scale	
Category	**Maximum Sustained Wind Speed (mph)**
1	74-95
2	96-110
3	111-130
4	131-155
5	> 155

For each hurricane category, the hurricane surge elevation that results from the worst-case combination of hurricane landfall location, forward speed, and direction at each location along the coast was used in preparing the hurricane surge inundation mapping. This was done for two reasons. First, it is difficult to predict in advance at what location that the hurricane will make landfall. Second, for emergency management planning purposes, it is best to plan for the worst-case, and adjust these activities based on actual conditions.

Therefore hurricane surge inundation areas depict the inundation that can be expected to result from a worst case combination of hurricane landfall location, forward speed, and direction for each hurricane category; and assumed peak hurricane surge arriving at mean high water.

Hurricane Surge Inundation Areas

	Category 1
	Area inundated by a hurricane category 1 storm. A hurricane category 1 storm has a maximum sustained wind speed of 74-95 mph.
	Category 2
	Area inundated by a hurricane category 2 storm, which would also include. A hurricane category 2 storm would inundate this area and the category 1 areas shown on the map. A hurricane category 2 storm has a maximum sustained wind speed of 96-110 mph.
	Category 3
	Area inundated by a hurricane category 3 storm. A hurricane category 3 storm would inundate this area and the category 1 and 2 areas shown on the map. A hurricane category 3 storm has a maximum sustained wind speed of 111-130 mph.
	Category 4
	Area inundated by a hurricane category 4 storm. A hurricane category 4 storm would inundate this area and the category 1, 2, and 3 areas shown on the map. A hurricane category 4 storm has a has a maximum sustained wind speed of 131-155 mph.

Use Limitations

The Sea, Lake, and Overland Surges from Hurricanes (SLOSH) model was developed by the National Weather Service to calculate potential surge heights from hurricanes. The SLOSH models for Connecticut were run by the Storm Surge Group, National Hurricane Center, National Centers for Environmental Prediction, National Oceanic and Atmospheric Administration, Miami Florida. The SLOSH model calculates the hurricane surge elevation that would result from over 500 combinations of hurricane category, landfall location, forward speed, and direction. Hurricane surge elevations were determined by the National Hurricane Center using the NY2 and PVD SLOSH model basins, and assumed peak hurricane surge arriving at mean high water.

Users should recognize that there are accuracy limitations inherent to each of the data sources used to create maps that depict the hurricane surge inundation areas. The SLOSH model hurricane surge elevations have an accuracy of +/- 20 percent. The vertical accuracy of all LiDAR elevation data is approximately +/- 1 foot, and the horizontal accuracy is approximately +/- 3 feet. When displayed in the background for reference, the river, stream, lake and pond features included in the hydrography data from the Connecticut Department of Energy and Environmental Protection are only suitable for mapping at scales not more detailed than 1:24,000 scale (1 inch = 2,000 ft). The horizontal (positional) accuracy of the shoreline shown for hydrography features is less accurate than the horizontal accuracy of the LiDAR elevation data used to generate hurricane surge inundation areas so discrepancies exist when these are both shown together on a map. Also, similar discrepancies can be expected to occur even between more

horizontally accurate street and orthophotography data and the hurricane surge inundation areas.

Therefore, the maps should be used as a general guide, rather than an absolute representation, as to which areas can expect to be inundated (flooded) by worst-case hurricane storm surge for a particular hurricane category. In addition, users should note that there may be areas that are not shown to be inundated by hurricane surge, but are in fact surrounded by hurricane surge. Those areas may become isolated by hurricane surge.

Related Information

Hurricane Evacuation Study funds are provided by the Federal Emergency Management Agency, the U.S. Army Corps of Engineers and the States. Local community officials and agencies provide valuable data and coordination throughout the study at their own expense.

The Authority for the U.S. Army Corps of Engineers' participation in this study is Section 206 of the Flood Control Act of 1960 (Public Law 86-645). The Federal Emergency Management Agency's participation is authorized by the Disaster Relief Act of 1974 (Public Law 93-288). These laws authorize the allocation of resources for planning activities related to hurricane preparedness.

Data Collection Date

The hurricane surge inundation area data was published by the U.S. Army Corps of Engineers in June, 2008.

The primary ground elevation data source was LiDAR data created by Terrapoint LLC for the Federal Emergency Management Agency. That data was supplemented where needed by ground surface LiDAR data created by Terrapoint LLC for the State of Connecticut. LiDAR data for coastal Connecticut except for the Connecticut River valley was collected December 16-18, 2006 by Terrapoint LLC for FEMA. It was collected in leaf-off conditions at low tide. LiDAR data for the Connecticut River Valley was collected from May 8, 2004 through June 16, 2004 by Spectrum Mapping under contract to ENSR International for FEMA. Statewide LiDAR coverage was collected in April, 2000 by TerraPoint for the State of Connecticut.

Status

Complete, no updates planned.

Map Scale

See Use Limitations section above.

Contact

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Additional Documentation

Hurricane Surge Inundation – CT ECO Basic Data Guide

Hurricane Surge Inundation GIS Metadata – Contains technical documentation describing the Hurricane Surge Inundation area data for Connecticut and the data sources, process steps, and standards used to collect, process and store this information in a geographic information system (GIS).

Originators

U.S. Army Corps of Engineers, New England District
Federal Emergency Management Agency
National Oceanic and Atmospheric Administration
Connecticut Department of Emergency Management and Homeland Security

GIS Data Download

The Hurricane Surge Inundation GIS data is downloadable from DEEP GIS Data.

Connect GIS and AutoCAD software to this information online using the Hurricane Surge Inundation CT ECO Map Service.