

## The Education Program at the New Jersey Sea Grant Consortium

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# UNDERSTANDING STORM SURGE

## Storm Surge Watches and Warnings

At the start of the 2017 Hurricane Season, the National Weather Service (NWS) began to issue Storm Surge Watches and Warnings to alert people who live along the Gulf or Atlantic Coast of the United States about potential life threatening flooding from hurricanes or tropical storms moving towards land. Rightfully so since storm surge is the #1 cause of death during a tropical storm or hurricane. Storm surge watches and warnings were created to help people understand the difference between storm surge and tropical storm and hurricane watches and warnings. Storm surge is severe flood water that is a threat to life and property, and it accompanies tropical storms and hurricanes. Tropical Storm and Hurricane Warnings only account for wind speed, and NOT flood water!

**So what do these watches and warnings mean? A Storm Surge Watch** means there is a *possibility* of a life-threatening flood of rising water moving inland associated with an ongoing or potential hurricane or tropical storm. The watch is generally issued about 48 hours, or possibly more, before surge water may approach.

**A Storm Surge Warning** means there is *imminent danger* of life-threatening flooding from rising water moving inland from the shoreline somewhere within the specified area, generally within 36 hours, caused by an ongoing or potential tropical storm or hurricane.

The watches and warnings may be issued earlier when other conditions such as when tropical storm-force winds begin and are expected to limit the time available to take protective actions for surge (e.g., evacuations). The watches and warnings may include areas that may not see life threatening flooding surge but may become isolated by water because areas around them may receive life threatening flooding. The watches and warnings may stay in affect after the storm passes since unrelenting winds along a shoreline can continue to push water inland and up into waterways, including bays and estuaries, well after the major part of the storm has passed.

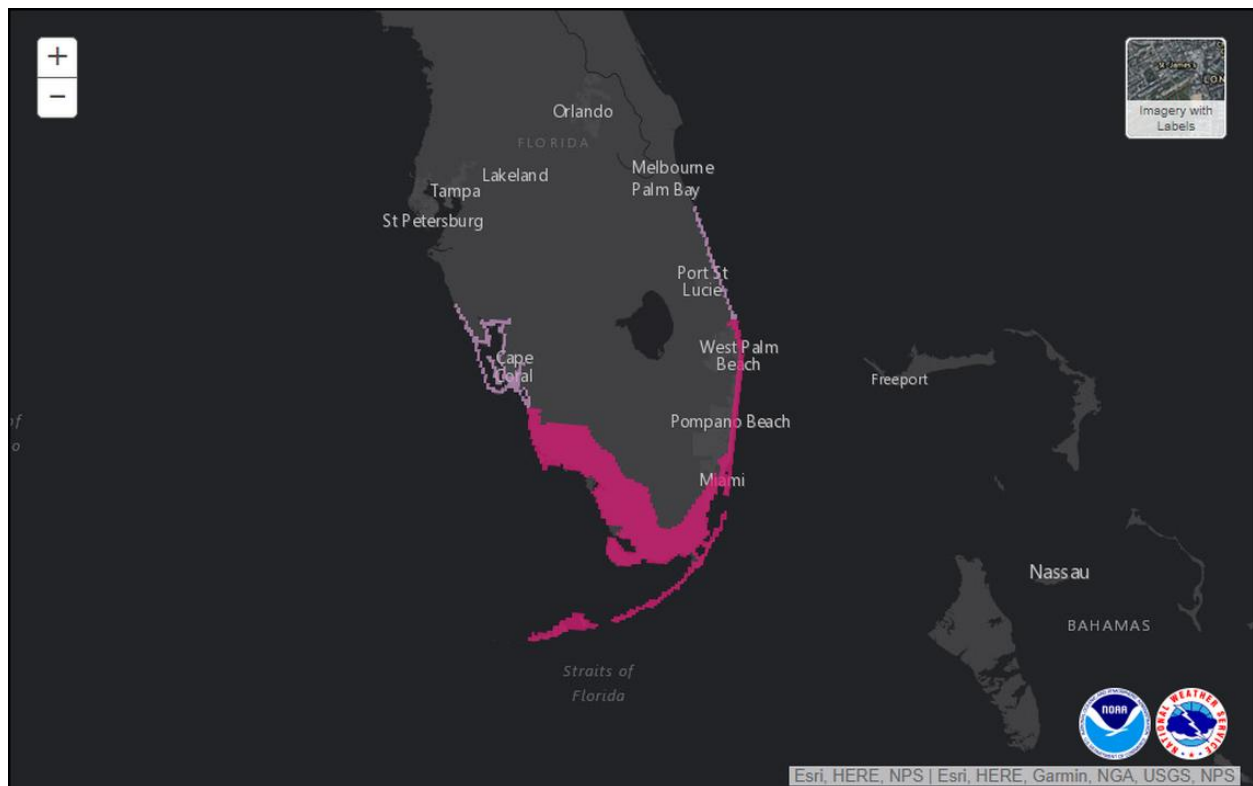
## What the difference between a Coastal Flood Watch or Warning and a Storm Surge Watch or Warning?



The New Jersey Sea Grant Consortium (NJS GC) is an affiliation of colleges, universities and other groups dedicated to advancing knowledge and stewardship of New Jersey's marine and coastal environment. NJS GC meets its mission through its innovative research, education and outreach programs. For more information about NJS GC, visit [njseagrant.org](http://njseagrant.org).

Storm Surge Watches and Warnings are issued when there is a potential for **life-threatening** flooding caused by tropical storms or a hurricane. Coastal flood advisories are issued for coastal flooding that is not expected to be life-threatening and can be issued in areas adjacent to a storm surge watch or warning. Flood advisories are used to alert the public for all other coastal flooding threats. For example, coastal flood watches and/or warnings may be issued for unusually high tides, or when there are persistent onshore winds that have pushed water into places it does not normally go. Also note that the storm surge watches and warnings will not be issued during extra-tropical storms, otherwise known as Nor'easters, which are strong cyclonic winter storms along the Atlantic coast of the United States. The NWS will issue Coastal Flood Warnings during these storms.

A graphic depicting the areas under a Storm Surge Watch or Warning will be released at least 48 hours before the threat of a storm surge and until at least a half an hour after the threat of a storm surge passes. The maps are updated every 6 hours with each new National Hurricane Center (NHC) advisory update. Below is the graphic issued during Hurricane Irma in September 2017 showing the Storm Surge Watch and Warning areas in Florida. These maps will be available on the NHC website ([www.hurricanes.gov](http://www.hurricanes.gov)) whenever these watches/warnings are in effect, and will have pan and zoom capabilities. The watch and warning does not tell how high storm surge water levels will be, but the watch and warning does mean flood conditions could become life threatening.



Storm Surge Warning and Watch Map of Florida issued during Hurricane Irma on 9/8/17 by the National Hurricane Center.

	<b>STORM SURGE WARNING</b>
	<b>STORM SURGE WATCH</b>

**\*For more information about storm surge, including lesson plans and other teaching materials for educators, see New Jersey Sea Grant Consortium’s curriculum module [“Understanding Storm Surge.”](#) (“How Meteorologists Predict and Measure Storm Surge” is included in this publication to provide more information on how Storm Surge is forecasted.)**



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