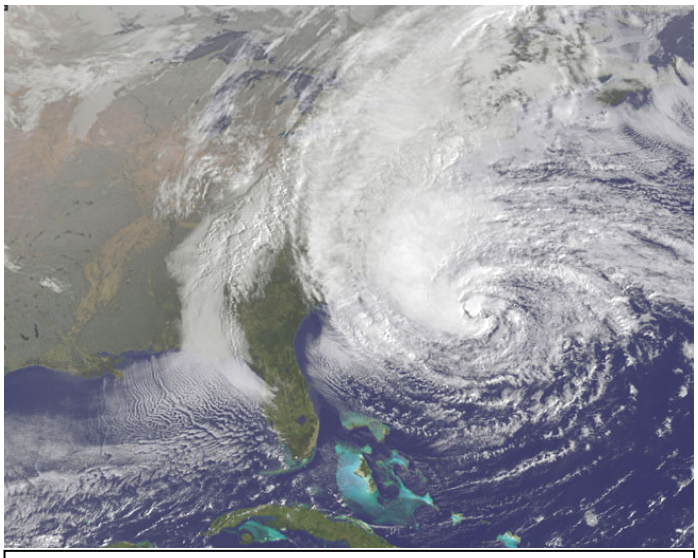
Wave observations and Hurricane Sandy, October 2012

The Coastal Data Information Program (CDIP) is an extensive network for monitoring waves and beaches along the coastlines of the United States that is federally funded by the US Army Corps of Engineers (USACE) and for certain sites, cost shared with the US Navy and US Integrated Ocean Observing System (IOOS). Based at Scripps Institution of Oceanography, CDIP supports USACE Operations and Maintenance by providing high-resolution observations and models of coastal ocean waves and shoreline change through a network of over 50 wave-monitoring buoys and integrated long-term surveys of beach change.



Hurricane Sandy on October 28, 2012. (Credit: NASA GOES Project)

Since its inception in 1975, CDIP has produced a vast database of publicly-accessible environmental data for use by federal agencies, coastal engineers and planners, scientists, mariners, and marine enthusiasts.

CDIP buoys provide highly accurate wave height, period, and direction information, which are used as input to marine forecasts and incorporated into coastal inundation models. During Hurricane Sandy, the CDIP wave buoy network on the East Coast provided continuous, near real-time wave observations (reported every 30 minutes) without failure or interruption. In fact, over 99% of all data produced by CDIP buoys during the storm were successfully transmitted. These historic data sets will also be available for use by researchers and coastal planners in the future.

Locations CDIP buoys on the East Coast of the US.

The following page shows plots of wave height observed by CDIP's buoys on the East Coast during the last week of October, 2012, as Sandy moved south to north. The chart also lists the single largest wave recorded by each buoy during that same period.

The variances in the size of the average and largest waves at each location underscore the importance of a robust wave observation network in coastal waters, where the impacts of coastal land and bathymetric features can cause large variations in waves over short distances along the coast.

11/1/2012

CDIP buoy name/location and largest single wave* recorded during Sandy:

Plots of significant wave height recorded by CDIP buoys on the East Coast during Sandy, from north to south (times in EST):**

CDIP US Army Corps of Engineers IOOS INTEGRATED OCEAN OBSERVING SYSTEM

Jeffreys Ledge, NH
Largest wave: 38.0 feet on 10/29

Block Island, RI
Largest wave: 47.1 feet on 10/29

Cape Charles, VA
Largest wave: 24.9 feet on 10/29

Cape Henry, VA
Largest wave: 26.3 feet on 10/29

Oregon Inlet, NC
Largest wave: 44.0 feet on 10/28

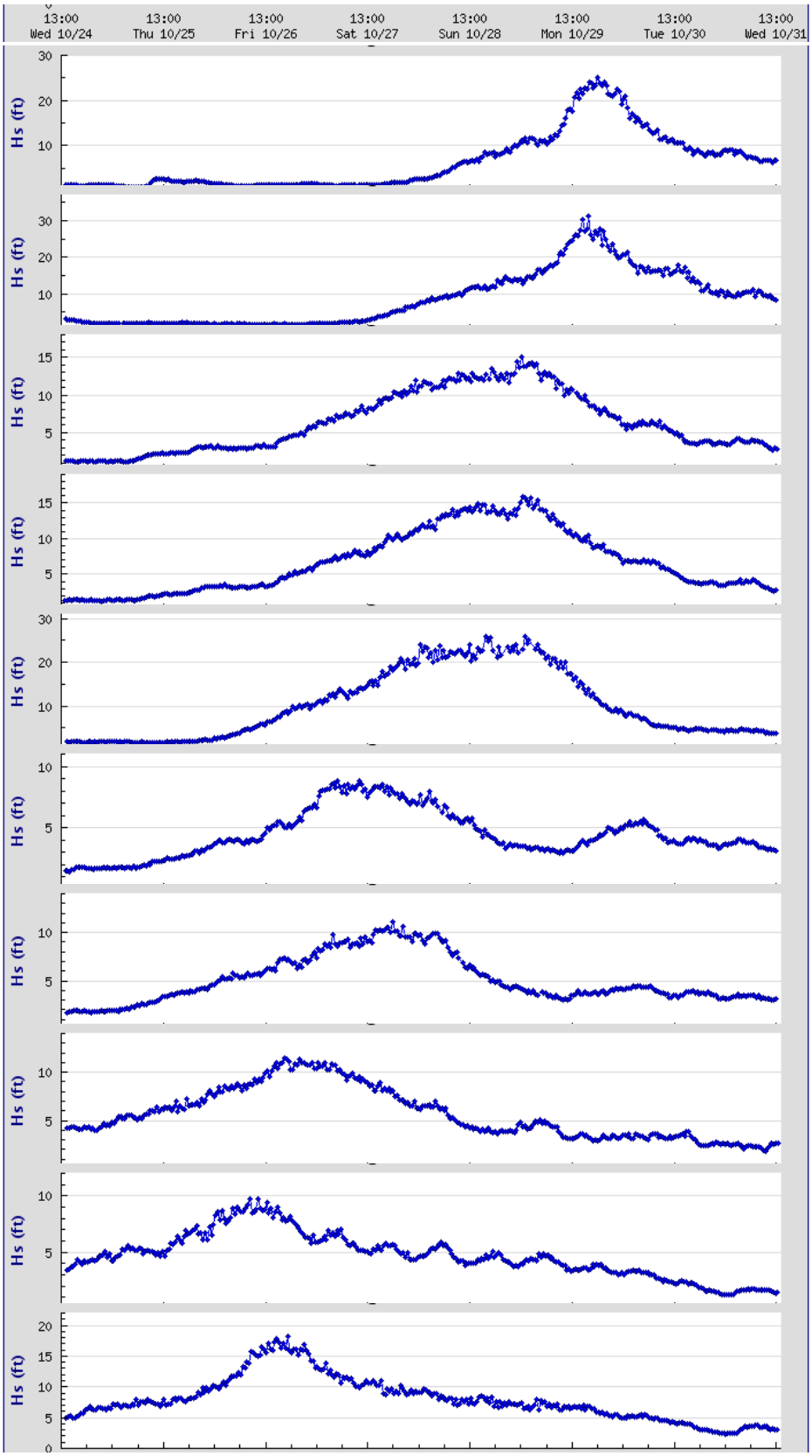
New River Inlet, NC
Largest wave: 14.5 feet on 10/27

Masonboro Inlet, NC
Largest wave: 20.2 feet on 10/27

Fernandina Beach, FL
Largest wave: 19.1 feet on 10/27

Cape Canaveral Nearshore, FL
Largest wave: 12.7 feet on 10/27

Fort Pierce, FL
Largest wave: 28.2 feet on 10/26



*Rounded to nearest .1 foot **Significant wave height is the average height of the one-third highest waves.

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