



Hurricane Sandy: Seaside, New Jersey

Tile Image: *Location:* Atlantic Coastline -Seaside, New Jersey
Date: October 31, 2012
Source: NOAA

Inset Images: Before and After: Casino Pier Amusement Park, Seaside Heights, New Jersey
Source: AP Wire

Storm Track
Source: NOAA, National Hurricane Center

2012 Hurricane Season

The National Weather Service tracks and records data associated with hurricanes. For the 2012 season, of a total of 19 events recorded between May and October, nine were hurricanes; the other ten were categorized as a Tropical Storm or Tropical Depression.

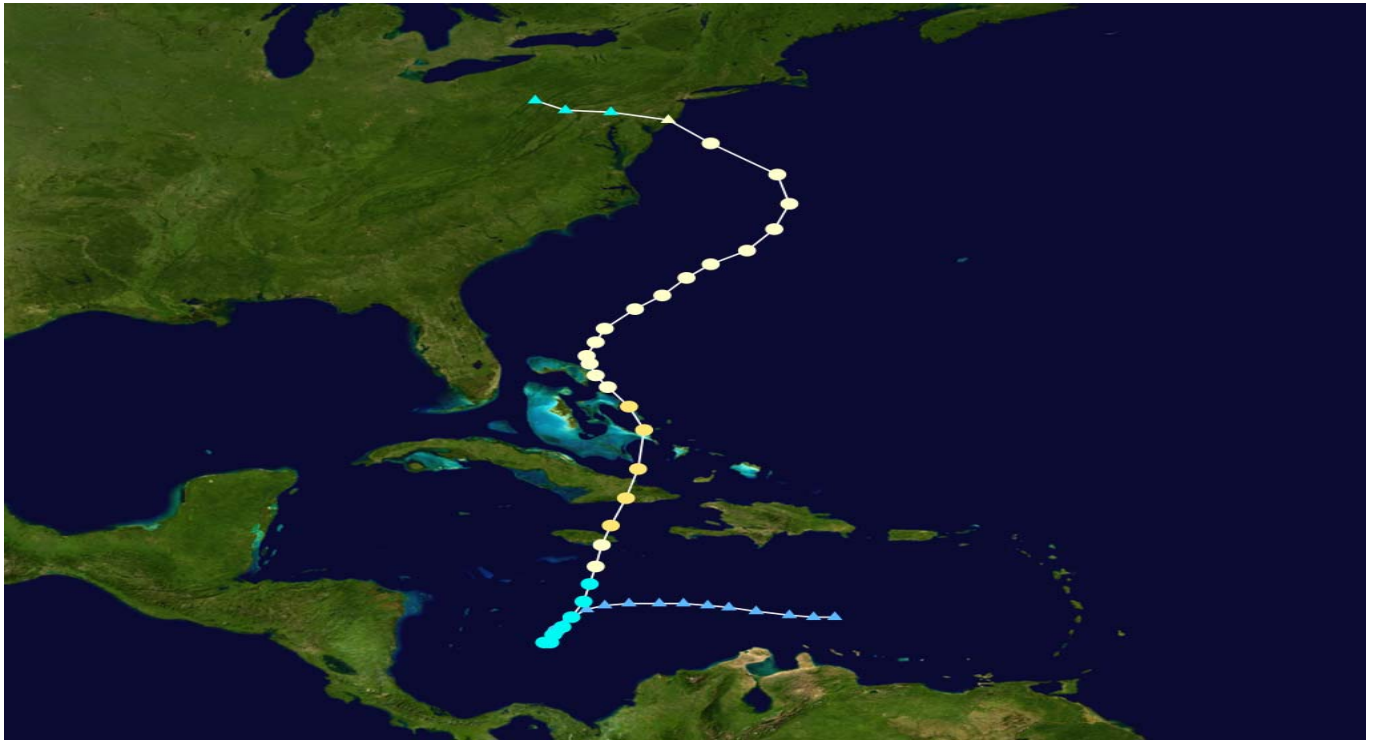
North Atlantic Hurricanes					
Name	Date	Category	Location	Damage (millions USD)	Deaths
CHRIS	JUN 19-22	1	Bermuda, Atlantic Canada	None	None
ERNESTO	AUG 1-10	1	Windward Islands, Jamaica, Central America, Mexico, Yucatan Peninsula	252.7	12
GORDON	AUG 15-20	2	Azores	Minimal	None
ISSAC	AUG 21-SEP 1	1	Leeward Islands, Puerto Rico, Hispaniola, Cuba, The Bahamas, Southeastern United States	~2,000	41
KIRK	AUG28-SEP 2	2	None	None	None
LESLIE	AUG 30-SEP 11	1	Leeward Islands, Bermuda, Atlantic Canada, Iceland, Scotland	Unknown	None
NADINE	SEPT 11- OCT 4	1	Azores	Minimal	None
RAFAEL	OCT 12-17	1	Leeward Islands, Windward Islands, Bermuda, Atlantic Canada	>2	1
SANDY	OCT 22-29	2	Jamaica, Cuba, Hispaniola, The Bahamas, Southeastern United States, Bermuda, Mid-Atlantic States, New England, East North Central States, Southern Ontario, Quebec	~20,000	193 (U.S: 113)

Source: U.S. Department of Commerce, National Weather Service; NOAA: <http://www.nhc.noaa.gov/2012atlan.shtml>

Hurricane Sandy

The inset image shows the 300 mile open water track and landfall of Hurricane Sandy from its origin as a tropical wave in the Western Caribbean and, six hours later, upgraded to Tropical Storm Sandy. As the storm moved northward, it slowly intensified and, on October 24, became a hurricane making landfall near Kingston, Jamaica. Hurricane Sandy reemerged a few hours later into the Caribbean Sea and strengthened into a Category 2 hurricane. Sandy hit Cuba on October 26, weakened to a Category 1 hurricane and on October 26 moved through the Bahamas. Sandy weakened but regained strength to a Category 1 hurricane on October 27. Hurricane Sandy curved north-northwest and moved ashore near Atlantic City, New Jersey as a 'post-tropical cyclone' early on October 29.

In preparation for a 'super-storm', an emergency declaration was signed on October 28 allowing several states expected to be impacted by Hurricane Sandy to request federal aid. Five thousand plus flights were canceled in advance of the storm and 45,000 National Guard and U. S. Air Force personnel were placed on alert to respond to preparations for and aftermath of Hurricane Sandy.



Hurricane Sandy Storm Track

Category: 2

Duration: October 22- October 29

Peak intensity: 110 mph (175 km/h),
940 mbar



New Jersey received severe damage as evidenced by the before and after ground photographs of Casino Pier Amusement Park, Seaside Heights. The pier extended about 300 feet (100 meters) into the Atlantic Ocean.

Initial Impacts

Hundreds of thousands of people were affected by the initial impact and aftermath of Hurricane Sandy. Reports and assessments by state and federal officials and agencies estimate damages in excess of 50 billion dollars. Long-range insurance estimates exposure at approximately 20 billion dollars.



Twenty-four states were affected by Hurricane Sandy. Millions of people were without power. For many states, transit authorities cancelled transportation including buses, trains, and subway systems. New Jersey received the brunt force of the Category 2 hurricane with severe damage along the Jersey Shore. More than 2 million homes lost power

New York experienced damaging storm surge resulting in flooding of streets, tunnels and subways. Trade was suspended for the New York stock Exchange for two days. One hundred homes in the Breezy Point neighborhood of Rockaway, Queens were burned to the ground. Federal offices in Washington DC were closed.

Post Impacts

After Hurricane Sandy came ashore at Atlantic City, it was re-classified as a post-tropical cyclone, commonly called a nor'easter. New York Harbor received the most impact because of the storm's atypical path from the southeast and strong wind curricular forward motion. New Jersey also

experienced strong storm surge because of the storm's size, which caused excess wind, rain, and flooding. Hurricane Sandy hit at high tide and the pounding of the storm continued through three successive high and low tides cycles. The combination of storm surge and astronomical tide cycles resulted in increased storm surge and flooding and caused devastating damage to infrastructure.

The tropical storm force winds moved inland and combined with another weather system resulting in heavy snow in West Virginia, Maryland, and Pennsylvania. Storm warnings were issued for Lake Huron and Lake Michigan because potential wave heights were expected to be between 19 and 36 feet.

Interpretive Learning...

- 1) List two impacts of Hurricanes as observed in the aerial image.
- 2) List two positive impacts of Hurricanes to the marine and terrestrial environments.
- 3) List three relationships between Global Climate Change and Hurricane development.
- 4) What is meant by “resiliency”? How might this coast be resilient in its physical and human environments?

Explore More...

View the video on: The Great 1938 Hurricane

<http://www.youtube.com/playlist?list=PLFA462C06C8FE2000>

View the 'live' wind map:

<http://hint.fm/wind/>

View ESRI: Hurricane Sandy Aftermath

<http://www.esri.com/services/disaster-response/hurricanes/hurricane-sandy-the-aftermap>

Sources:

FEMA: <http://www.fema.gov/sandy>

NOAA: <http://www.nhc.noaa.gov/2012atlan.shtml>;

<http://www.nhc.noaa.gov/archive/2012/al18/al182012.update.10300002.shtml>

U.S. Geological Survey: www.usgs.gov/hurricanes.

http://en.wikipedia.org/wiki/Hurricane_Sandy

<http://newswatch.nationalgeographic.com/2012/11/02/a-timeline-of-hurricane-sandys-path-of-destruction/>

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