Storm Analysis
As of 10/8/2016 12:00 EDT, water levels from northern Florida to North Carolina are rising or remain elevated due to Hurricane Matthew. Water levels from Charleston, SC to Duck, NC generally range from -0.8 to 4.0 ft above predicted tide levels.
Water levels along the Florida coast also remain elevated but are slowing decreasing as Hurricane Matthew pushes northward. Water levels range from -0.5 to 2.4 ft above predicted tide levels.

The NOS stations at Red Bay Point within St. Johns River and Fort Pulaskis, GA have been removed from this product as the stations were likely damaged or destroyed during the storm.

Winds from Charleston, SC to Duck, NC range from 20 - 30 kts with gusts during this period measured at over 40 kts.

Barometric pressure continues to fall as Hurricane Matthew approaches South and North Carolina.

Water Level and Meteorological plots available below are updated automatically. A line denoting Mean Higher High Water (MHHW) is displayed to provide an approximate indication of when flooding inundation may occur.

For additional data, please see the Center for Operational Oceanographic Products & Services website. For more information or archived products and reports, please see the Storm QuickLook Homepage.

Analyst: LBA

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NATIONAL HURRICANE CENTER PUBLIC ADVISORY: BULLETIN

HURRICANE MATTHEW ADVISORY NUMBER 42
NWS NATIONAL HURRICANE CENTER MIAMI FL AL142016
1100 AM EDT SAT OCT 08 2016

...MATTHEW MAKES LANDFALL SOUTHEAST OF MCCLELLANVILLE SOUTH CAROLINA...
...SERIOUS INLAND FLOODING EVENT UNFOLDING...

SUMMARY OF 1100 AM EDT...1500 UTC...INFORMATION
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LOCATION...33.0N 79.4W
ABOUT 55 MI...90 KM SSW OF MYRTLE BEACH SOUTH CAROLINA
ABOUT 100 MI...165 KM SW OF CAPE FEAR NORTH CAROLINA
MAXIMUM SUSTAINED WINDS...75 MPH...120 KM/H
PRESENT MOVEMENT...NE OR 55 DEGREES AT 12 MPH...19 KM/H
MINIMUM CENTRAL PRESSURE...967 MB...28.56 INCHES

WATCHES AND WARNINGS
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CHANGES WITH THIS ADVISORY:

None.

SUMMARY OF WATCHES AND WARNINGS IN EFFECT:
A Hurricane Warning is in effect for...
* North of Altamaha Sound to Surf City

A Hurricane Watch is in effect for...
* North of Surf City to Cape Lookout

A Tropical Storm Warning is in effect for...
* North of Surf City to Duck
* Pamlico and Albemarle Sounds

For storm information specific to your area, including possible inland watches and warnings, please monitor products issued by your local National Weather Service forecast office.

DISCUSSION AND 48-HOUR OUTLOOK
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At 1100 AM EDT (1500 UTC), the center of Hurricane Matthew was located near latitude 33.0 North, longitude 79.4 West. Matthew is moving toward the northeast near 12 mph (19 km/h), and this motion is expected to continue today. On the forecast track, the center of Matthew will continue to move near or over the coast of South Carolina today, and be near the coast of southern North Carolina by tonight.

Maximum sustained winds are near 75 mph (120 km/h) with higher gusts. Although weakening is forecast during the next 48 hours, Matthew is expected to remain near hurricane strength while the center is near the coasts of South Carolina and North Carolina.

Hurricane-force winds extend outward up to 25 miles (35 km) from the center and tropical-storm-force winds extend outward up to 185 miles (295 km). Sustained winds of 53 mph (85 km/h) with a gust to 69 mph (111 km/h) has been observed at a private weather station near Winyah Bay, South Carolina, within the past hour. A wind gust to 58 mph (93 km/h) was recently reported at Charleston, South Carolina. Strong wind gusts are also occurring well inland in North and South Carolina. Laurinberg, North Carolina, recently reported a wind gust of 55 mph (89 km/h).

The minimum central pressure reported by an Air Force plane was 967 mb (28.56 inches).

HAZARDS AFFECTING LAND
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WIND: Hurricane and tropical storm conditions are expected to continue over the warning area in Georgia and South Carolina this afternoon, and spread northward elsewhere within the warning area through tonight.

Hurricane conditions are possible within the Hurricane Watch and Tropical Storm Warning area in North Carolina by tonight or Sunday morning, with tropical storm conditions expected later today.

STORM SURGE: The combination of a dangerous storm surge, the tide, and large and destructive waves will cause normally dry areas near the coast to be flooded by rising waters moving inland from the shoreline. The water could reach the following heights above ground if the peak surge occurs at the time of high tide...

Charleston, SC to Cape Fear, NC...5 to 7 ft Cape Fear to Duck, NC, including portions of the Pamlico and Albemarle Sounds...2 to 4 ft
Along the Georgia and South Carolina coasts southwest of Matthew's center, inundation caused by Matthew's storm surge will slowly recede today.

The deepest water will occur along the immediate coast in areas of onshore winds. Surge-related flooding depends on the relative timing of the surge and the tidal cycle, and can vary greatly over short distances. Large waves generated by Matthew will cause water rises to occur well in advance of and well away from the track of the center. For information specific to your area, please see products issued by your local National Weather Service forecast office.

There is a danger of life-threatening inundation during the next 36 hours along the coast from Altamaha Sound, Georgia, to Bogue Inlet, North Carolina as well as from Cape Lookout to Salvo, North Carolina including portions of the Pamlico Sound. There is the possibility of life-threatening inundation during the next 48 hours from Bogue Inlet to Cape Lookout, North Carolina and from Salvo to Duck, North Carolina including portions of the Albemarle Sound. For a depiction of areas at risk, please see the Prototype National Weather Service Storm Surge Watch/Warning Graphic. For information specific to your area, please see products issued by your local National Weather Service forecast office.

The Prototype Storm Surge Watch/Warning Graphic is a depiction of areas that would qualify for inclusion under a storm surge watch or warning currently under development by the National Weather Service and planned for operational use in 2017. The Prototype Graphic is available at hurricanes.gov.

RAINFALL: Matthew is expected to produce total rain accumulations of 8 to 12 inches near and east of Interstate 95 in South Carolina and North Carolina, with possible isolated maximum amounts of 15 inches. Matthew is expected to produce 2 to 6 inches of rain over central South Carolina, western North Carolina, and southeastern Virginia. In all of these areas rainfall may result in life-threatening flooding and flash flooding.

TORNADOES: A couple of tornadoes are possible through early tonight along the coast of North Carolina.

SURF: Swells generated by Matthew will continue to affect portions of the east coast of Florida during the next few days, and will spread northward along the southeast U.S. coast through the weekend. These swells will likely cause life-threatening surf and rip current conditions. Please consult products from your local weather office.

NEXT ADVISORY
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Next intermediate advisory at 200 PM EDT.
Next complete advisory at 500 PM EDT.

Forecaster Avila

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WTNT44 KNHC 081500

HURRICANE MATTHEW DISCUSSION NUMBER 42
NWS NATIONAL HURRICANE CENTER MIAMI FL AL142016
1100 AM EDT SAT OCT 08 2016

Aircraft reconnaissance and land-based radar data indicate that the center of circulation has crossed the coast of South Carolina near the Cape Romain National Wildlife Refuge.
The cloud pattern associated with Matthew is beginning to acquire some extratropical characteristics. The wind field is expanding, and the area of heavy rains is now northwest of the center. Data from NOAA and Air Force reconnaissance aircraft around 1200 UTC indicated that the surface winds have decreased to around 65 kt. (Very recent SFMR winds of 78 kt were taken over shallow water where the instrument is affected by shoaling and provides unreliable output).

Most of the global models, primarily the GFS and the UKMET, forecast that Matthew will become entangled with a cold front, and the new NHC forecast calls for Matthew to become absorbed within this frontal system within the next couple of days. During the next 12 to 24 hours, while the Matthew is hugging the US coast and taking on a more extratropical structure, the tropical-storm-force winds are expected to expand and strengthen in the western semicircle and continue to affect portions of the coast within the warning area.

Matthew is already embedded in the mid-latitude westerly flow and is moving toward the northeast or 050 degrees at 10 kt. The steering pattern is forecast to persist for the next day or two, and on this basis the NHC forecast moves the cyclone eastward until it becomes absorbed. Previous NHC official forecasts followed the EMCWF in keeping the cyclone a distinct entity longer and looping it southward, but even if this the case the system will likely be only a broad area of low pressure.

Due to the degradation of Matthew's radar signature, the hourly Tropical Cyclone Updates will not longer be issued.

KEY MESSAGES:

1. As Matthew's structure changes, the system's strongest winds will shift to the back side of the circulation. These winds will persist over land even after the center begins to move away from the coastline, and has also increased the threat of storm surge in portions of the North Carolina Outer Banks. Please see the Prototype Storm Surge Watch/Warning Graphic for a depiction of the areas at risk.

FORECAST POSITIONS AND MAX WINDS

INIT 08/1500Z 33.0N 79.4W 65 KT 75 MPH
12H 09/0000Z 33.6N 78.0W 60 KT 70 MPH
24H 09/1200Z 34.0N 75.5W 60 KT 70 MPH
36H 10/0000Z 34.0N 73.0W 50 KT 60 MPH...POST-TROP/EXTRATROP
48H 10/1200Z 33.0N 72.0W 40 KT 45 MPH...POST-TROP/EXTRATROP
72H 11/1200Z...DISSIPATED

Forecaster Avila

For the purpose of timely release, data contained within this QuickLook have undergone a "limited" NOS Quality Assurance/Control; however, the data have not yet undergone final verification. All data subject to NOS verification.
Wilmington - Barometric, Wilmington - Air/Water Temp, Beaufort - Water Level, Beaufort - Winds, Beaufort - Barometric, Beaufort - Air/Water Temp, Duck - Water Level, Duck - Winds, Duck - Barometric, Duck - Air/Water Temp, Fernandina Beach - Water Level, Fernandina Beach - Winds, Fernandina Beach - Barometric, Fernandina Beach - Air/Water Temp, Mayport (Bar Pilots Dock) - Water Level, Mayport (Bar Pilots Dock) - Winds, Mayport (Bar Pilots Dock) - Barometric, Mayport (Bar Pilots Dock) - Air/Water Temp, Dames Point - Water Level, Dames Point - Winds, Dames Point - Barometric, Dames Point - Air/Water Temp, Southbank Riverwalk, St Johns River - Water Level, I-295 Bridge, St Johns River - Water Level, I-295 Bridge, St Johns River - Winds, I-295 Bridge, St Johns River - Barometric, I-295 Bridge, St Johns River - Air/Water Temp, Racy Point, St Johns River - Water Level, Racy Point, St Johns River - Winds, Racy Point, St Johns River - Barometric, Racy Point, St Johns River - Air/Water Temp
Last Observed Sample: 10/08/2016 12:24 (EDT). Data relative to MHHW

- Observed: -1.09 ft. Predicted: -0.56 ft. Residual: -0.53 ft.
- Historical Maximum Water Level: Sep 21 1989, 6.76 ft.
- Next High Tide: 10/08/2016 13:39 (EDT), -0.29 ft.

Wind Speed: 25 knots Gusts: 36 knots Direction: 317° T
NOAA/NOS/CO-OPS 8665530 Charleston, SC

Barometric Pressure

Last Observed Sample: 10/08/2016 12:24 (EDT)
Barometric Pressure: 991.2 mb

NOAA/NOS/CO-OPS 8665530 Charleston, SC

Air / Water Temperature

Last Observed Sample: 10/08/2016 12:24 (EDT)
Water Temperature: 76.3° F Air Temperature: 73.8° F
NOAA/NOS/CO-OPS 8662245 Oyster Landing (N Inlet Estuary), SC

Last Observed Sample: 10/08/2016 12:18 (EDT). Data relative to MHHW
Observed: 4.56 ft. Predicted: -0.70 ft. Residual: 5.26 ft.
Historical Maximum Water Level: Aug 26 2011, 2.40 ft.
Next High Tide: 10/08/2016 14:28 (EDT), -0.16 ft.

NOAA/NOS/CO-OPS 8661070 Springmaid Pier, SC

Last Observed Sample: 10/08/2016 12:18 (EDT). Data relative to MHHW
Observed: 2.39 ft. Predicted: -0.66 ft. Residual: 3.05 ft.
Historical Maximum Water Level: Jan 1 1987, 3.65 ft.
Next High Tide: 10/08/2016 13:24 (EDT), -0.39 ft.
**NOAA/NOS/CO-OPS 8661070 Springmaid Pier, SC**

**Wind Speed / Gusts / Direction**

- Wind Speed: 1 knots
- Gusts: 10 knots
- Direction: 118° T

**Barometric Pressure**

- Barometric Pressure: 985.0 mb

Last Observed Sample: 10/08/2016 12:18 (EDT)
NOAA/NOS/CO-OPS 8661070 Springmaid Pier, SC
Last Observed Sample: 10/08/2016 12:18 (EDT)
Water Temperature: 77.2° F Air Temperature: 75.4° F

NOAA/NOS/CO-OPS 8658163 Wrightsville Beach, NC
Last Observed Sample: 10/08/2016 12:24 (EDT)
Data relative to MHHW
Historical Maximum Water Level: Sep 25 2008, 2.81 ft.
Next High Tide: 10/08/2016 13:11 (EDT), -0.00 ft.
NOAA/NOS/CO-OPS 8658163 Wrightsville Beach, NC

Last Observed Sample: 10/08/2016 12:24 (EDT)

Wind Speed: 39 knots  
Gusts: 44 knots  
Direction: 142° T

NOAA/NOS/CO-OPS 8658163 Wrightsville Beach, NC

Last Observed Sample: 10/08/2016 12:24 (EDT)

Barometric Pressure: 995.0 mb
Last Observed Sample: 10/08/2016 12:24 (EDT)
Water Temperature: 79.3° F Air Temperature: 80.1° F

Last Observed Sample: 10/08/2016 12:24 (EDT).
Data relative to MHHW
Next High Tide: 10/08/2016 14:57 (EDT), -0.35 ft.
NOAA/NOS/CO-OPS 8658120 Wilmington, NC

Barometric Pressure

Last Observed Sample: 10/08/2016 12:24 (EDT)
Barometric Pressure: 995.8 mb

NOAA/NOS/CO-OPS 8658120 Wilmington, NC

Air / Water Temperature

Last Observed Sample: 10/08/2016 12:24 (EDT)
Water Temperature: 74.1° F Air Temperature: 77.4° F
Last Observed Sample: 10/08/2016 12:24 (EDT). Data relative to MHHW


Historical Maximum Water Level: Sep 14 2005, 3.01 ft.

Next High Tide: 10/08/2016 13:36 (EDT), 0.03 ft.

Last Observed Sample: 10/08/2016 12:24 (EDT)

Wind Speed: 24 knots Gusts: 32 knots Direction: 122° T
NOAA/NOS/CO-OPS 8656483 Beaufort, NC

Barometric Pressure

Last Observed Sample: 10/08/2016 12:24 (EDT)
Barometric Pressure: 1002.2 mb

NOAA/NOS/CO-OPS 8656483 Beaufort, NC

Air / Water Temperature

Last Observed Sample: 10/08/2016 12:24 (EDT)
Water Temperature: 73.8° F Air Temperature: 78.3° F
Last Observed Sample: 10/08/2016 12:30 (EDT). Data relative to Mean Higher High Water (MHHW)

- Observed: 0.64 ft.
- Predicted: -0.26 ft.
- Residual: 0.90 ft.

Historical Maximum Water Level: Sep 18, 2003, 4.13 ft.
Next High Tide: 10/08/2016 13:04 (EDT), -0.20 ft.

Last Observed Sample: 10/08/2016 12:30 (EDT)
Wind Speed: 22 knots
Gusts: 26 knots
Direction: 78° T
NOAA/NOS/CO-OPS 8651370 Duck, NC

Barometric Pressure

Last Observed Sample: 10/08/2016 12:30 (EDT)
Barometric Pressure: 1009.4 mb

NOAA/NOS/CO-OPS 8651370 Duck, NC

Air / Water Temperature

Last Observed Sample: 10/08/2016 12:30 (EDT)
Water Temperature: 74.1° F Air Temperature: 75.9° F
Last Observed Sample: 10/08/2016 12:30 (EDT). Data relative to MHHW
- Observed: -1.57 ft. Predicted: -1.22 ft. Residual: -0.35 ft.
- Historical Maximum Water Level: Oct 2 1898, 6.94 ft.
- Next High Tide: 10/08/2016 14:33 (EDT), -0.19 ft.

Last Observed Sample: 10/08/2016 12:30 (EDT)
- Wind Speed: 12 knots
- Gusts: 16 knots
- Direction: 263° True
Last Observed Sample: 10/08/2016 12:30 (EDT)
Barometric Pressure: 1007.3 mb

Last Observed Sample: 10/08/2016 12:30 (EDT)
Water Temperature: 76.3° F Air Temperature: 78.3° F
Last Observed Sample: 10/08/2016 12:30 (EDT). Data relative to MHHW
Observed: -0.41 ft. Predicted: -0.27 ft. Residual: -0.14 ft.
Historical Maximum Water Level: Sep 27 2004, 2.47 ft.
Next High Tide: 10/08/2016 14:13 (EDT), 0.26 ft.

Last Observed Sample: 10/08/2016 12:30 (EDT)
Wind Speed: 19 knots Gusts: 25 knots Direction: 279° T
NOAA/NOS/CO-OPS 8720218 Mayport (Bar Pilots Dock), FL

Barometric Pressure

Last Observed Sample: 10/08/2016 12:30 (EDT)
Barometric Pressure: 1007.7 mb

Water Temperature: 77.2° F  Air Temperature: 80.1° F
Last Observed Sample: 10/08/2016 12:30 (EDT). Data relative to MHHW

- Observed: -0.51 ft. Predicted: -0.30 ft. Residual: -0.21 ft.
- Historical Maximum Water Level: Sep 17 2001, 2.40 ft.
- Next High Tide: 10/08/2016 14:31 (EDT), 0.50 ft.

Last Observed Sample: 10/08/2016 12:30 (EDT)

Water Temperature: 80.6° F  Air Temperature: n/a
NOAA/NOS/CO-OPS 8720226 Southbank Riverwalk, St Johns River, FL

Last Observed Sample: 10/08/2016 12:24 (EDT). Data relative to MHHW
Observed: 0.64 ft. Predicted: -0.92 ft. Residual: 1.56 ft.
Historical Maximum Water Level: Sep 27 2004, 3.44 ft.
Next High Tide: 10/08/2016 15:00 (EDT), -0.06 ft.

NOAA/NOS/CO-OPS 8720357 I-295 Bridge, St Johns River, FL

Last Observed Sample: 10/08/2016 12:30 (EDT). Data relative to MHHW
Observed: 1.62 ft. Predicted: -0.10 ft. Residual: 1.72 ft.
Historical Maximum Water Level: Sep 27 2004, 3.46 ft.
Next High Tide: 10/08/2016 16:27 (EDT), 0.62 ft.
NOAA/NOS/CO-OPS 8720357 I-295 Bridge, St Johns River, FL

Wind Speed / Gusts / Direction

- Last Observed Sample: 10/08/2016 12:30 (EDT)
- Wind Speed: 9 knots
- Gusts: 19 knots
- Direction: 299° T

NOAA/NOS/CO-OPS 8720357 I-295 Bridge, St Johns River, FL

Barometric Pressure

- Last Observed Sample: 10/08/2016 12:30 (EDT)
- Barometric Pressure: 1007.5 mb
NOAA/NOS/CO-OPS 8720357 I-295 Bridge, St Johns River, FL

Last Observed Sample: 10/08/2016 12:30 (EDT)
Water Temperature: 78.4° F  Air Temperature: 81.5° F

NOAA/NOS/CO-OPS 8720625 Racy Point, St Johns River, FL

Last Observed Sample: 10/08/2016 12:30 (EDT)  Data relative to MHHW


Historical Maximum Water Level: n/a

Next High Tide: 10/08/2016 20:48 (EDT), 0.56 ft.
NOAA/NOS/CO-OPS 8720625 Racy Point, St Johns River, FL

Last Observed Sample: 10/08/2016 12:30 (EDT)
Water Temperature: 80.6°F Air Temperature: n/a
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<tr>
<th>Station ID</th>
<th>Station Name</th>
<th>Date/Time</th>
<th>Observed Water Level</th>
<th>Predicted Tide</th>
<th>Residual Water Level</th>
<th>24 Hour Maximum Storm Tide</th>
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<tr>
<td>8665530</td>
<td>Charleston, SC</td>
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<td>-1.09 ft</td>
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