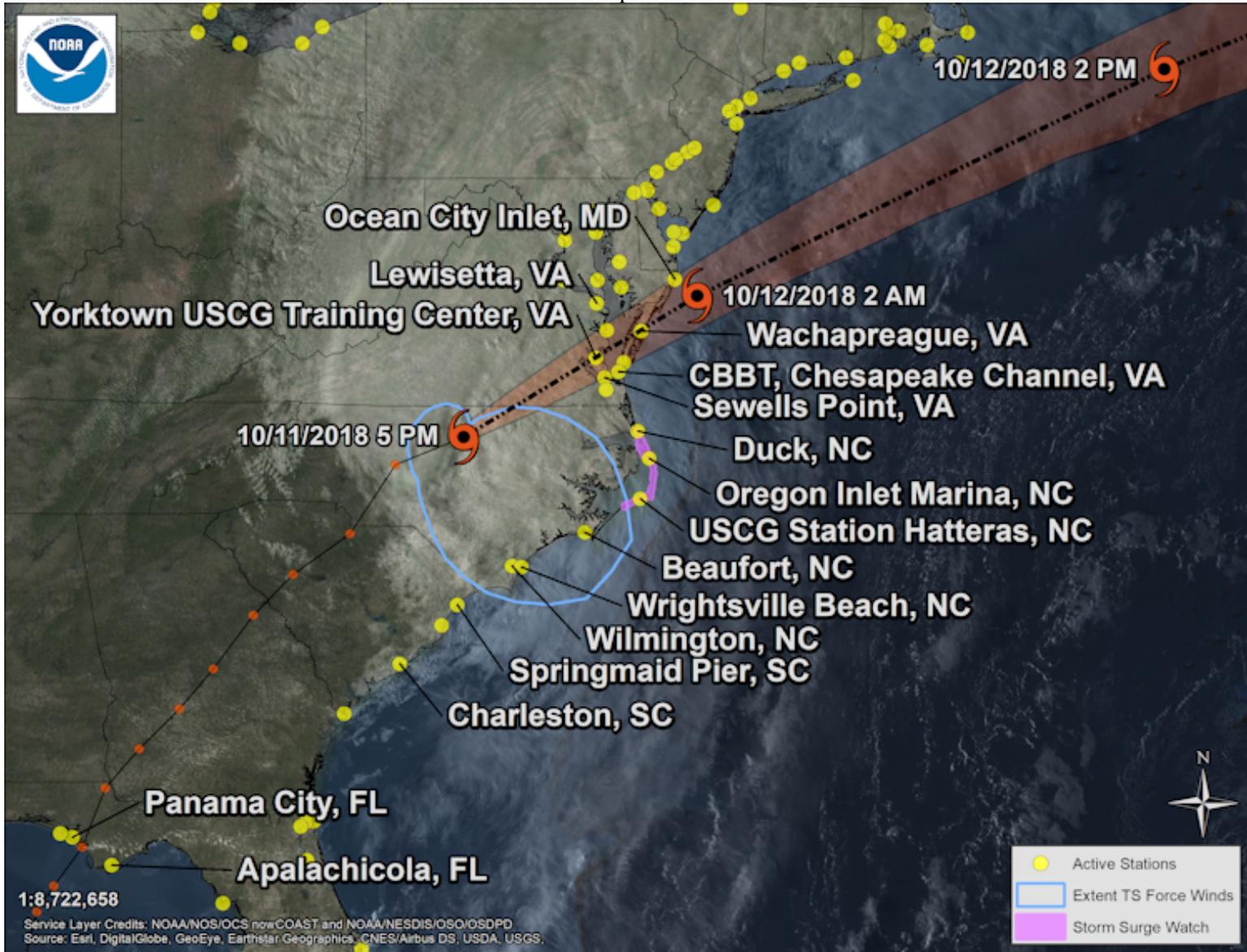


Tropical Storm Michael QuickLook  
Posted: 18:00 EDT 10/11/2018

NOAA and NOAA Partnership Stations Relative to the Storm



### Storm Analysis

As of 10/11/2018 18:00 EDT, water levels along the Atlantic coast from North Carolina to Maryland and within Chesapeake Bay are moderately elevated by about a foot. However water levels at Wilmington within the Cape Fear River are presently measuring between 2.5 and 3 feet above normal tide levels. Water levels at Beaufort, NC and Oregon Inlet Marina, NC are also rising and are measuring about 1.5 feet above tide predictions. Water levels at locations south of Tropical Storm Michael where winds have shifted and are blowing out of the west (offshore) are

seeing water levels below normal tide levels.

Winds from North Carolina to the entrance to Chesapeake Bay are increasing and range between 20 and 35 knots with some higher gusts. Barometric pressure is falling from Wilmington, NC northward and has begin to increase along the South Carolina coast.

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 real-time and historical inundation information for select stations affected by this storm, please visit Coastal Inundation Dashboard. For additional data, please see the Center for Operational Oceanographic Products & Services website.

For more information or archived products and reports, please visit the Storm QuickLook Homepage.

Analyst: PFF

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Select National Hurricane Center Advisory:

Tropical Storm Michael Advisory Number 21  
NWS National Hurricane Center Miami FL AL142018  
500 PM EDT Thu Oct 11 2018

...MICHAEL PRODUCING LIFE-THREATENING FLASH FLOODING ACROSS PORTIONS OF NORTH CAROLINA AND VIRGINIA...  
...DAMAGING TROPICAL STORM FORCE WIND GUSTS OCCURRING OVER PORTIONS OF VIRGINIA AND CENTRAL AND EASTERN NORTH CAROLINA...

SUMMARY OF 500 PM EDT...2100 UTC...INFORMATION

-----  
LOCATION...36.1N 78.8W  
ABOUT 20 MI...35 KM NNW OF RALEIGH NORTH CAROLINA  
MAXIMUM SUSTAINED WINDS...50 MPH...85 KM/H  
PRESENT MOVEMENT...NE OR 50 DEGREES AT 24 MPH...39 KM/H  
MINIMUM CENTRAL PRESSURE...990 MB...29.24 INCHES

WATCHES AND WARNINGS

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CHANGES WITH THIS ADVISORY:

The Tropical Storm Warning south of South Santee River South Carolina has been discontinued.

SUMMARY OF WATCHES AND WARNINGS IN EFFECT:

A Storm Surge Watch is in effect for...  
\* Ocracoke Inlet North Carolina to Duck North Carolina

A Tropical Storm Warning is in effect for...  
\* South Santee River South Carolina to Duck North Carolina

\* Pamlico and Albemarle Sounds

A Tropical Storm Warning means that tropical storm conditions are expected somewhere within the warning area.

A Storm Surge Watch means there is a possibility of life-threatening inundation, from rising water moving inland from the coastline.

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 OUTLOOK

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At 500 PM EDT (2100 UTC), the center of Tropical Storm Michael was located near latitude 36.1 North, longitude 78.8 West. Michael is moving toward the northeast near 24 mph (39 km/h), and this motion is expected to continue with an increase in forward speed through tonight. A turn toward the east-northeast at an even faster forward speed is expected on Friday and Saturday. On the forecast track, the center of Michael will move across eastern North Carolina and southeastern Virginia this evening, and move into the western Atlantic Ocean tonight.

Maximum sustained winds are near 50 mph (85 km/h) with higher gusts. Michael is forecast to intensify as it becomes a post-tropical low over the Atlantic late tonight and Friday.

Tropical-storm-force winds extend outward up to 230 miles (370 km), primarily over water to the southeast of the center. A wind gust of 53 mph (85 km/h) was recently reported at Danville, Virginia, and a gust of 56 mph (91 km/h) was reported at Burlington, North Carolina. A sustained wind of 51 mph (81 km/h) and a gust of 59 mph (94 km/h) at the Johnny Mercer Pier in Wrightsville Beach, North Carolina.

The estimated minimum central pressure based on recent surface observations is 990 mb (29.24 inches).

HAZARDS AFFECTING LAND

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

Sound side of the North Carolina Outer Banks from Ocracoke Inlet to Duck...2-4 ft

**WIND:** Tropical storm conditions are occurring over portions of northeastern South Carolina and central and eastern North Carolina. Damaging tropical-storm-force wind gusts are occurring across portions of central North Carolina and southern Virginia and will spread across northeastern North Carolina and eastern Virginia this evening and tonight.

Gale- to storm-force winds are expected over portions of southeastern Virginia, extreme northeastern North Carolina, and the Delmarva Peninsula late tonight and Friday morning when Michael becomes post-tropical off the Mid-Atlantic coast.

**RAINFALL:** Michael is expected to produce total rain accumulations of 4 to 7 inches from north-central North Carolina, into south-central to southeast Virginia, including the southern Delmarva Peninsula. Isolated maximum totals of 9 inches are possible in North Carolina and Virginia. This rainfall could lead to life-threatening flash floods.

Rainfall totals of 1 to 3 inches expected across the coastal northern Mid-Atlantic and southern New England.

TORNADOES: A few tornadoes are possible through this evening from northeastern North Carolina across southeast Virginia into the Delmarva Peninsula.

NEXT ADVISORY

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Next intermediate advisory at 800 PM EDT.

Next complete advisory at 1100 PM EDT.

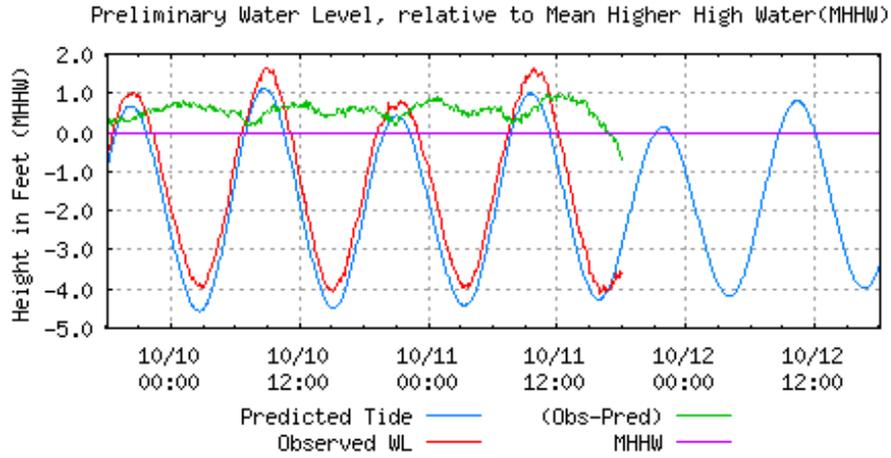
\$\$

Forecaster Brown

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.

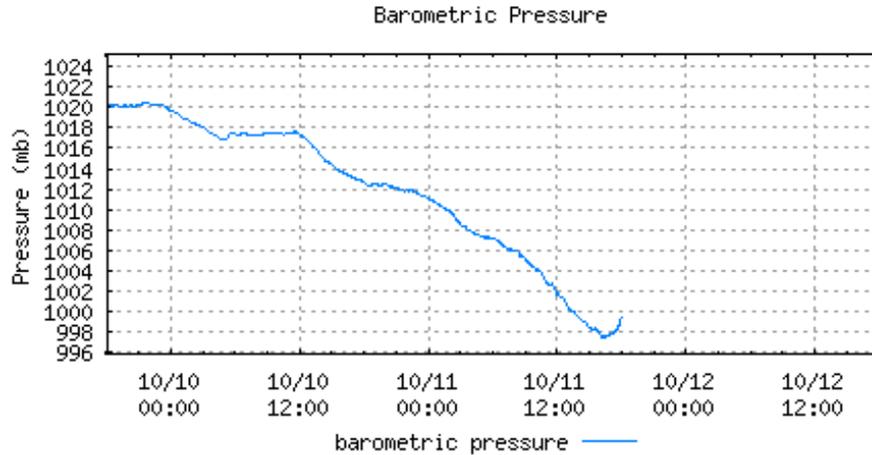
Jump to: [Wrightsville Beach - Water Level](#), [Wrightsville Beach - Barometric](#), [Wilmington - Water Level](#), [Wilmington - Barometric](#), [Beaufort, Duke Marine Lab - Water Level](#), [Beaufort, Duke Marine Lab - Winds](#), [USCG Station Hatteras - Water Level](#), [USCG Station Hatteras - Winds](#), [Oregon Inlet Marina - Water Level](#), [Oregon Inlet Marina - Winds](#), [Duck - Water Level](#), [Duck - Winds](#), [CBBT, Chesapeake Channel - Water Level](#), [CBBT, Chesapeake Channel - Winds](#), [CBBT, Chesapeake Channel - Barometric](#), [Sewells Point - Water Level](#), [Yorktown USCG Training Center - Water Level](#), [Yorktown USCG Training Center - Winds](#), [Lewisetta - Water Level](#), [Lewisetta - Winds](#), [Wachapreague - Water Level](#), [Wachapreague - Winds](#), [Ocean City Inlet - Water Level](#), [Ocean City Inlet - Winds](#), [Ocean City Inlet - Barometric](#), [Springmaid Pier - Water Level](#), [Springmaid Pier - Barometric](#), [Charleston, Cooper River Entrance - Water Level](#), [Charleston, Cooper River Entrance - Winds](#), [Apalachicola - Water Level](#), [Apalachicola - Winds](#), [Panama City - Water Level](#)

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



Last Observed Sample: 10/11/2018 18:00 (EDT). Data relative to MHHW  
**Observed: -3.62 ft. Predicted: -2.94 ft. Residual: -0.68 ft.**  
Historical Maximum Water Level: Oct 4 2015, 2.97 ft.  
Next High Tide: 10/11/2018 21:52 (EDT), 0.14 ft.

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



Last Observed Sample: 10/11/2018 18:00 (EDT)  
**Barometric Pressure: 999.4 mb**

NOAA/NOS/CO-OPS 8658120 Wilmington, NC

Last Observed Sample: 10/11/2018 17:54 (EDT). Data relative to MHHW

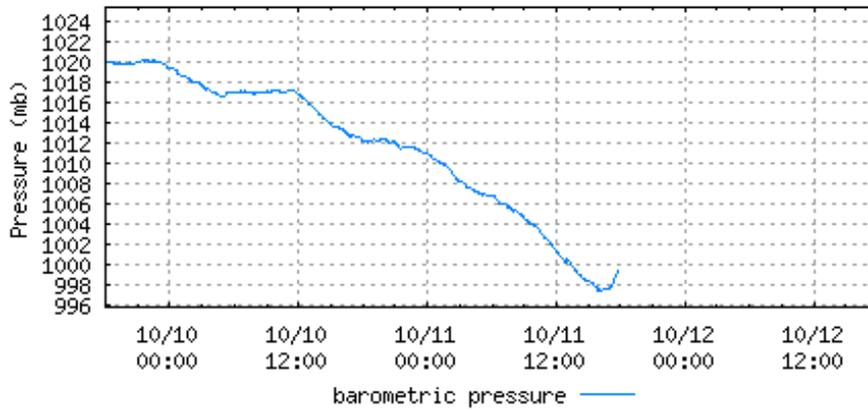
Observed: -1.37 ft. Predicted: -4.22 ft. Residual: 2.85 ft.

Historical Maximum Water Level: Oct 8 2016, 3.48 ft.

Next High Tide: 10/12/2018 00:17 (EDT), -0.02 ft.

NOAA/NOS/CO-OPS 8658120 Wilmington, NC

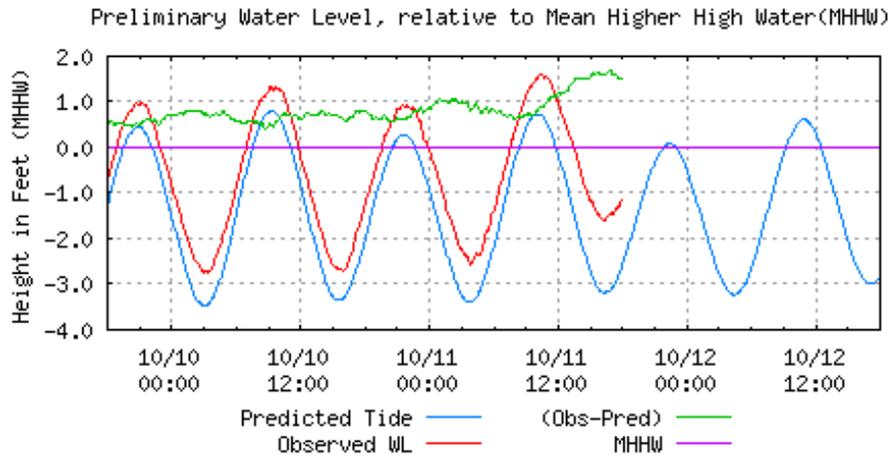
Barometric Pressure



Last Observed Sample: 10/11/2018 17:54 (EDT)

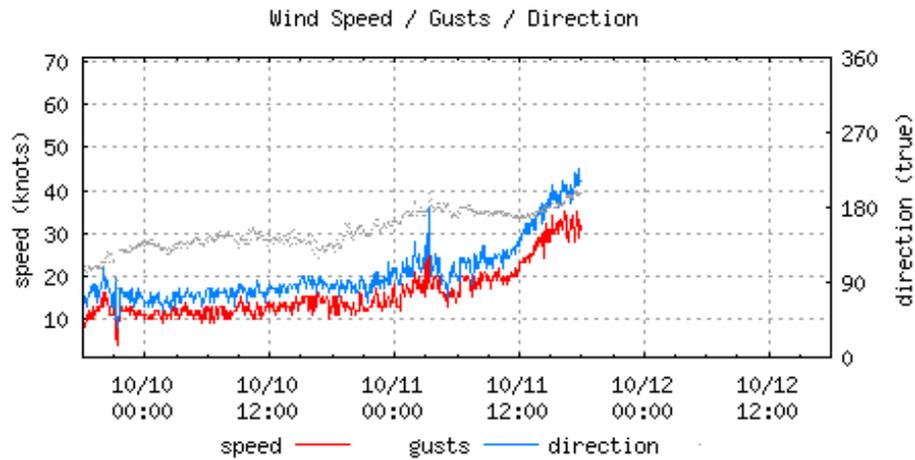
Barometric Pressure: 999.9 mb

NOAA/NOS/CO-OPS 8656483 Beaufort, Duke Marine Lab, NC



Last Observed Sample: 10/11/2018 18:00 (EDT). Data relative to MHHW  
**Observed: -1.11 ft. Predicted: -2.58 ft. Residual: 1.47 ft.**  
Historical Maximum Water Level: Sep 19 1955, 3.39 ft.  
Next High Tide: 10/11/2018 22:24 (EDT), 0.09 ft.

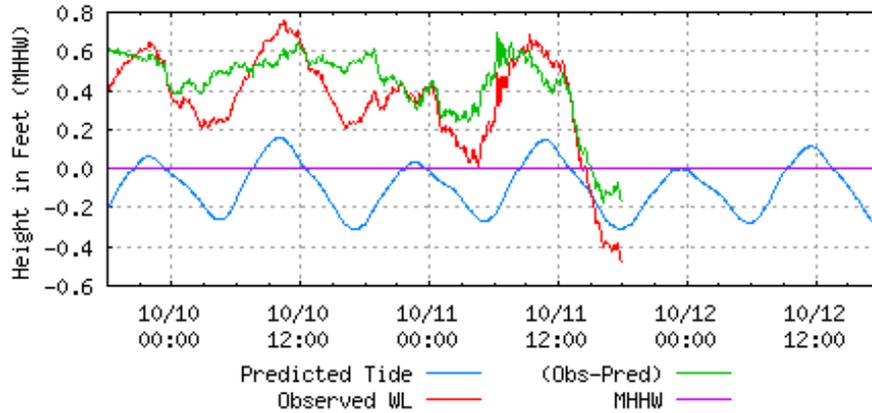
NOAA/NOS/CO-OPS 8656483 Beaufort, Duke Marine Lab, NC



Last Observed Sample: 10/11/2018 18:00 (EDT)  
**Wind Speed: 32 knots Gusts: 41 knots Direction: 197° T**

NOAA/NOS/CO-OPS 8654467 USCG Station Hatteras, NC

Preliminary Water Level, relative to Mean Higher High Water(MHHW)



Last Observed Sample: 10/11/2018 18:00 (EDT). Data relative to MHHW

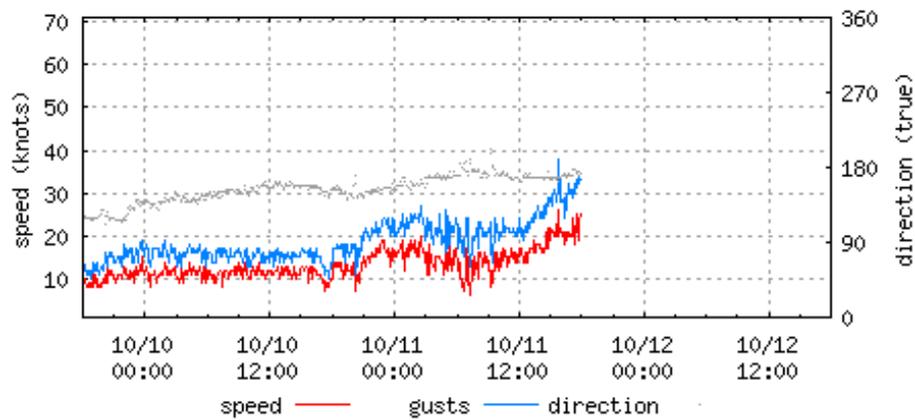
Observed: -0.47 ft. Predicted: -0.31 ft. Residual: -0.16 ft.

Historical Maximum Water Level: Oct 9 2016, 5.76 ft.

Next High Tide: 10/11/2018 23:24 (EDT), 0.00 ft.

NOAA/NOS/CO-OPS 8654467 USCG Station Hatteras, NC

Wind Speed / Gusts / Direction

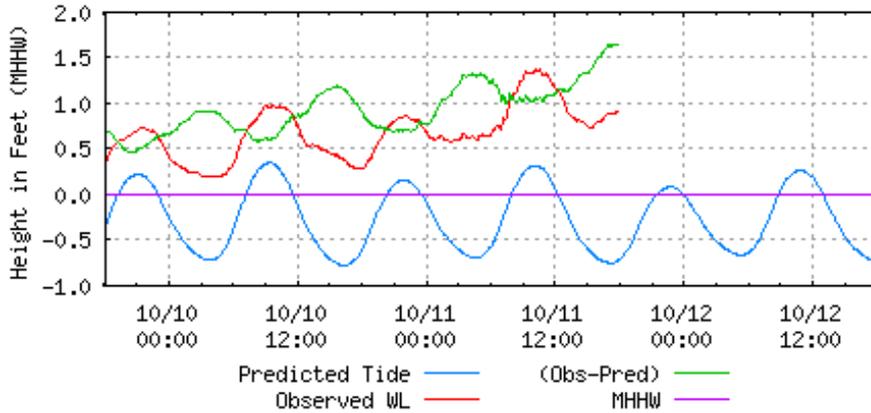


Last Observed Sample: 10/11/2018 18:00 (EDT)

Wind Speed: 25 knots Gusts: 33 knots Direction: 175° T

NOAA/NOS/CO-OPS 8652587 Oregon Inlet Marina, NC

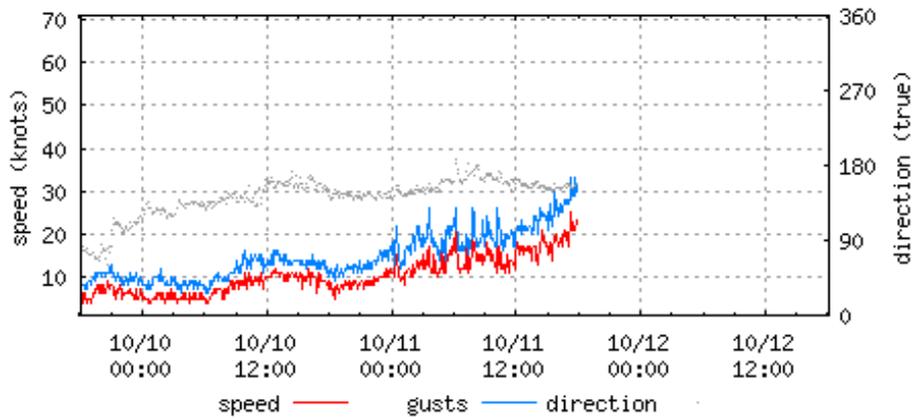
Preliminary Water Level, relative to Mean Higher High Water (MHHW)



Last Observed Sample: 10/11/2018 17:54 (EDT). Data relative to MHHW  
**Observed: 0.93 ft. Predicted: -0.72 ft. Residual: 1.65 ft.**  
 Historical Maximum Water Level: Aug 28 2011, 6.31 ft.  
 Next High Tide: 10/11/2018 22:44 (EDT), 0.08 ft.

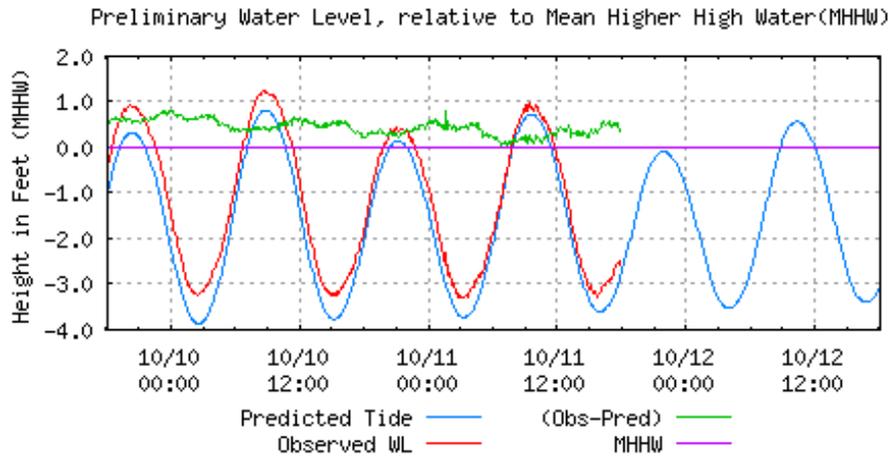
NOAA/NOS/CO-OPS 8652587 Oregon Inlet Marina, NC

Wind Speed / Gusts / Direction



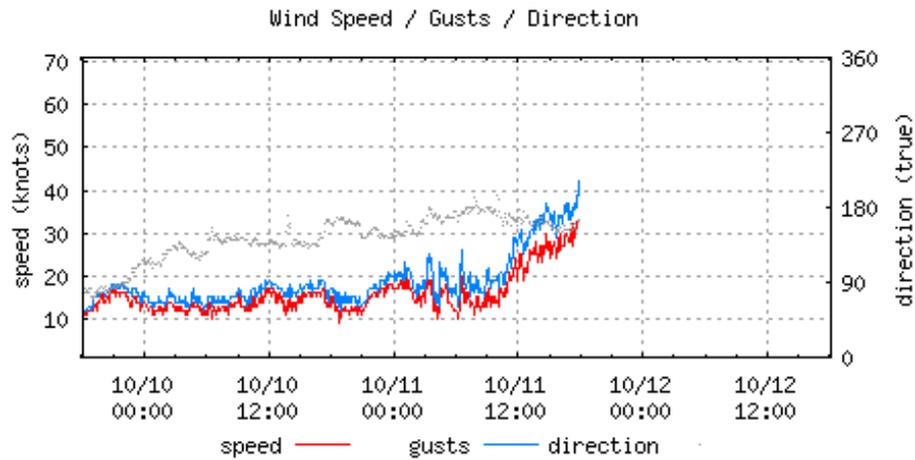
Last Observed Sample: 10/11/2018 17:54 (EDT)  
**Wind Speed: 20 knots Gusts: 29 knots Direction: 158° T**

NOAA/NOS/CO-OPS 8651370 Duck, NC



Last Observed Sample: 10/11/2018 18:00 (EDT). Data relative to MHHW  
**Observed: -2.35 ft. Predicted: -2.76 ft. Residual: 0.41 ft.**  
 Historical Maximum Water Level: Sep 18 2003, 4.13 ft.  
 Next High Tide: 10/11/2018 21:53 (EDT), -0.09 ft.

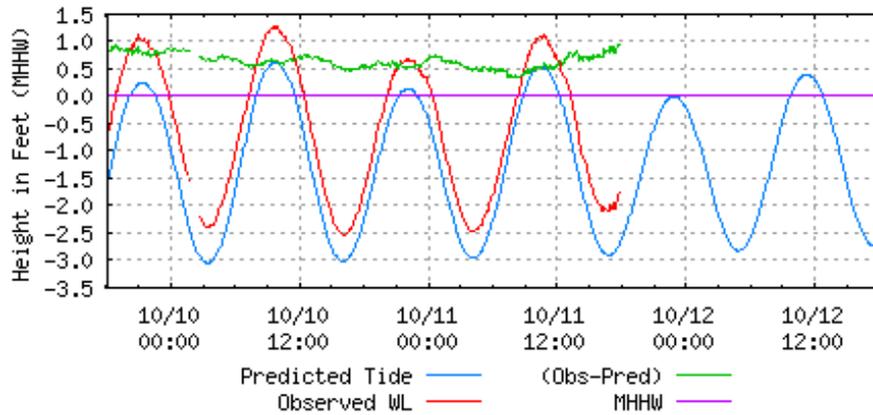
NOAA/NOS/CO-OPS 8651370 Duck, NC



Last Observed Sample: 10/11/2018 18:00 (EDT)  
**Wind Speed: 33 knots Gusts: 40 knots Direction: 157° T**

NOAA/NOS/CO-OPS 8638901 CBBT, Chesapeake Channel, VA

Preliminary Water Level, relative to Mean Higher High Water(MHHW)



Last Observed Sample: 10/11/2018 17:54 (EDT). Data relative to MHHW

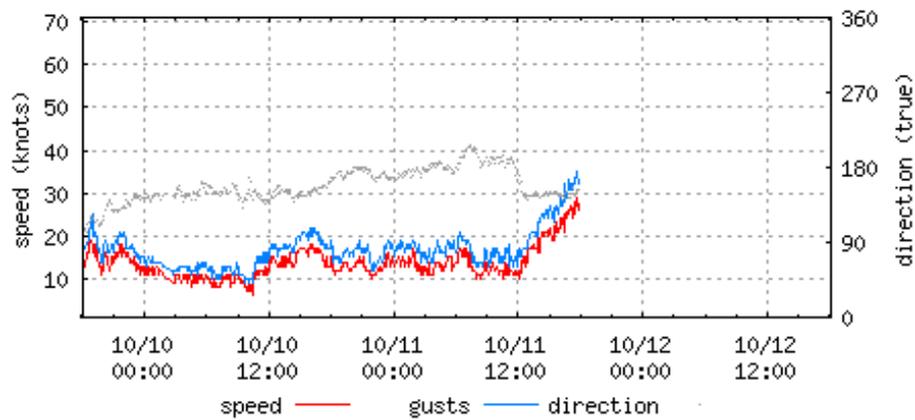
Observed: -1.75 ft. Predicted: -2.67 ft. Residual: 0.92 ft.

Historical Maximum Water Level: n/a

Next High Tide: 10/11/2018 22:51 (EDT), -0.01 ft.

NOAA/NOS/CO-OPS 8638901 CBBT, Chesapeake Channel, VA

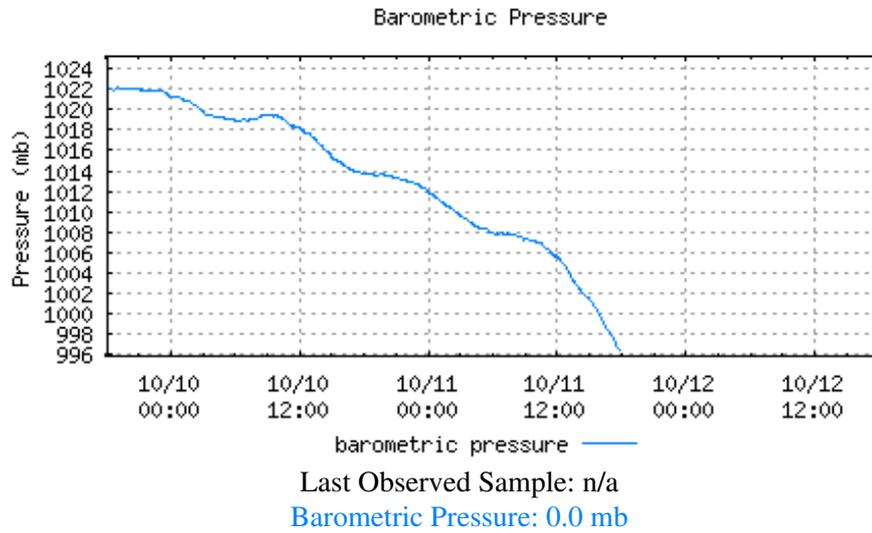
Wind Speed / Gusts / Direction



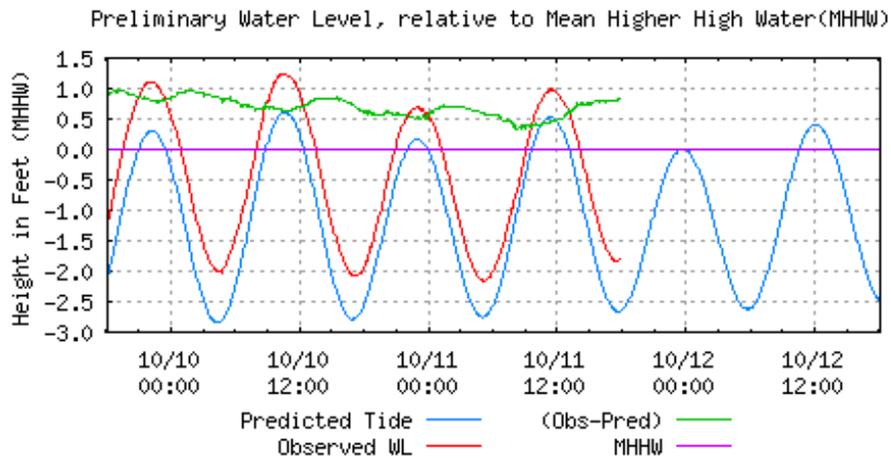
Last Observed Sample: n/a

Wind Speed: 0 knots Gusts: 0 knots Direction: n/a° T

NOAA/NOS/CO-OPS 8638901 CBBT, Chesapeake Channel, VA



NOAA/NOS/CO-OPS 8638610 Sewells Point, VA



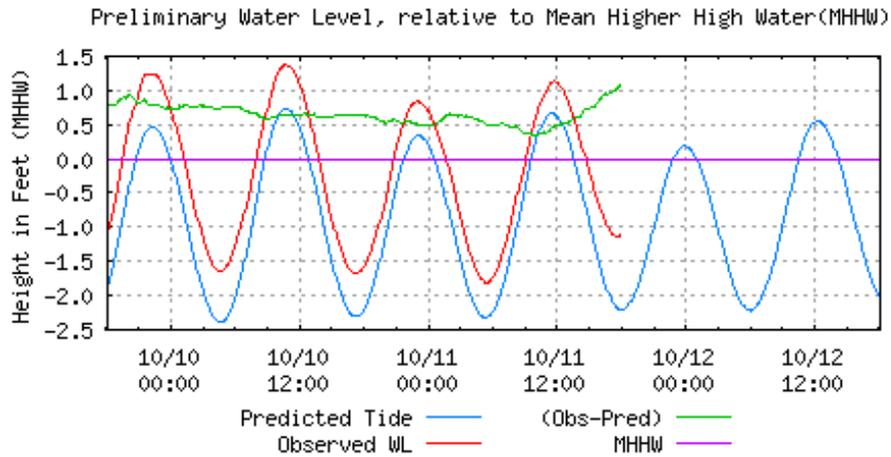
Last Observed Sample: 10/11/2018 17:54 (EDT). Data relative to MHHW

Observed: -1.83 ft. Predicted: -2.66 ft. Residual: 0.83 ft.

Historical Maximum Water Level: Aug 23 1933, 5.26 ft.

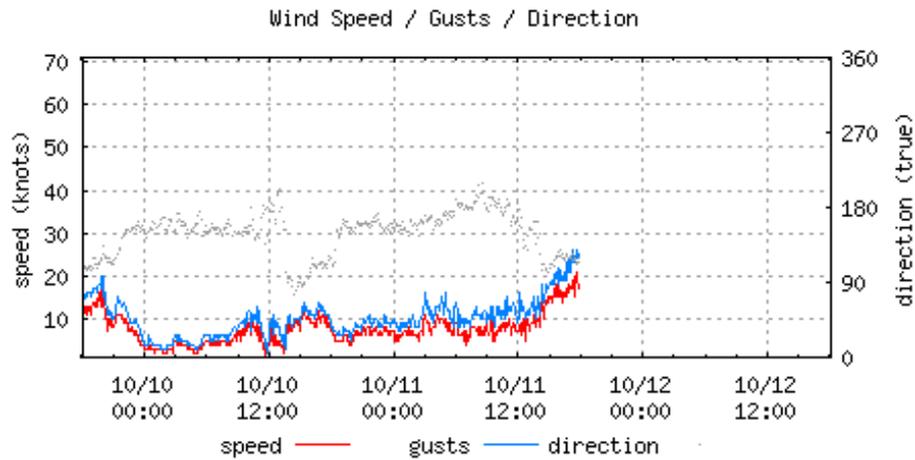
Next High Tide: 10/11/2018 23:42 (EDT), 0.01 ft.

NOAA/NOS/CO-OPS 8637689 Yorktown USCG Training Center, VA



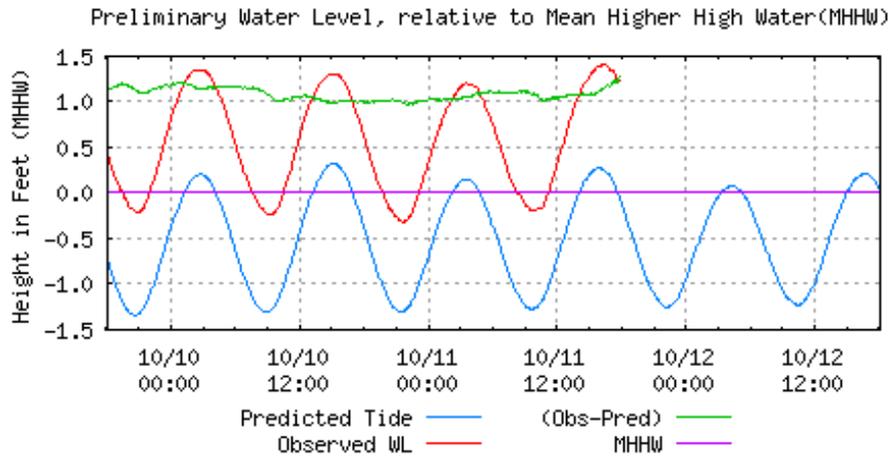
Last Observed Sample: 10/11/2018 17:54 (EDT). Data relative to MHHW  
**Observed: -1.12 ft. Predicted: -2.21 ft. Residual: 1.09 ft.**  
 Historical Maximum Water Level: Nov 13 2009, 4.27 ft.  
 Next High Tide: 10/11/2018 23:53 (EDT), 0.19 ft.

NOAA/NOS/CO-OPS 8637689 Yorktown USCG Training Center, VA



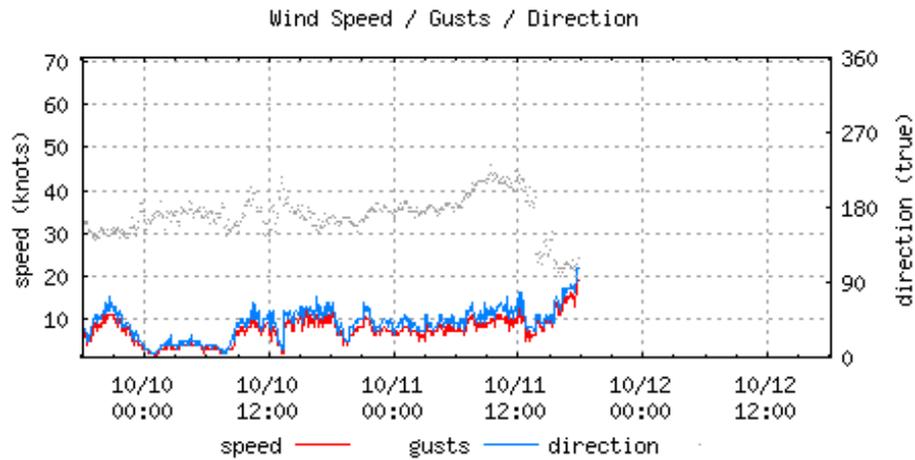
Last Observed Sample: 10/11/2018 17:54 (EDT)  
**Wind Speed: 18 knots Gusts: 25 knots Direction: 118° T**

NOAA/NOS/CO-OPS 8635750 Lewisetta, VA



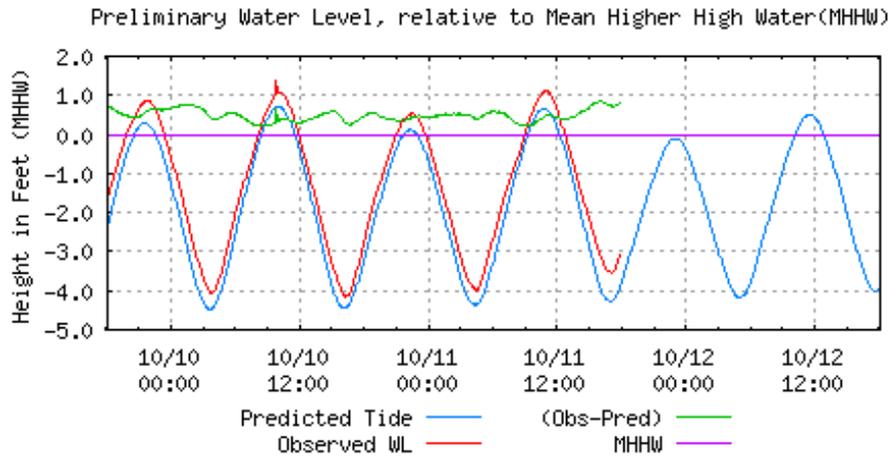
Last Observed Sample: 10/11/2018 17:54 (EDT). Data relative to MHHW  
**Observed: 1.20 ft. Predicted: -0.09 ft. Residual: 1.29 ft.**  
 Historical Maximum Water Level: Sep 1 2006, 4.14 ft.  
 Next High Tide: 10/12/2018 04:17 (EDT), 0.08 ft.

NOAA/NOS/CO-OPS 8635750 Lewisetta, VA



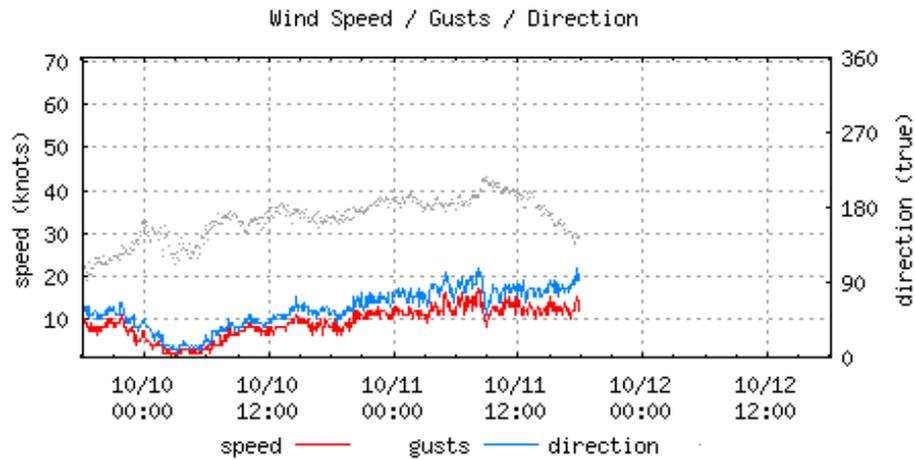
Last Observed Sample: 10/11/2018 17:54 (EDT)  
**Wind Speed: 16 knots Gusts: 18 knots Direction: 116° T**

NOAA/NOS/CO-OPS 8631044 Wachapreague, VA



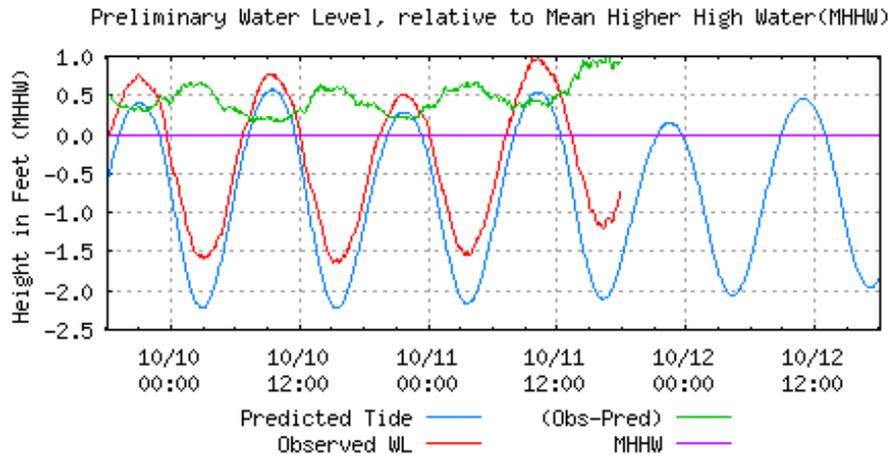
Last Observed Sample: 10/11/2018 18:00 (EDT). Data relative to MHHW  
**Observed: -2.96 ft. Predicted: -3.80 ft. Residual: 0.84 ft.**  
 Historical Maximum Water Level: Feb 5 1998, 4.41 ft.  
 Next High Tide: 10/11/2018 23:02 (EDT), -0.10 ft.

NOAA/NOS/CO-OPS 8631044 Wachapreague, VA



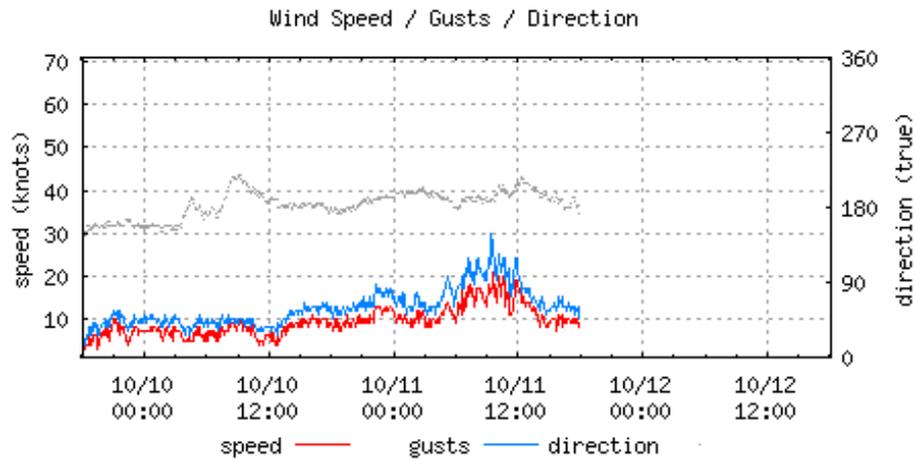
Last Observed Sample: 10/11/2018 18:00 (EDT)  
**Wind Speed: 15 knots Gusts: 20 knots Direction: 142° T**

NOAA/NOS/CO-OPS 8570283 Ocean City Inlet, MD



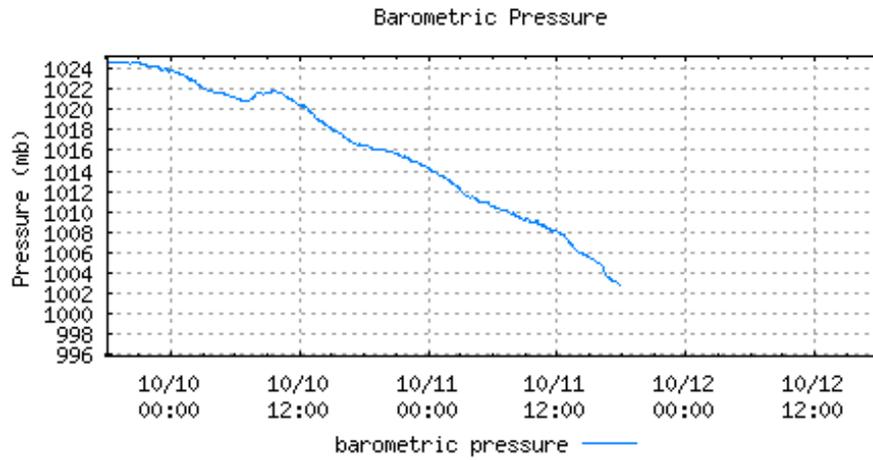
Last Observed Sample: 10/11/2018 17:54 (EDT). Data relative to MHHW  
**Observed: -0.74 ft. Predicted: -1.66 ft. Residual: 0.92 ft.**  
 Historical Maximum Water Level: Feb 5 1998, 3.61 ft.  
 Next High Tide: 10/11/2018 22:27 (EDT), 0.15 ft.

NOAA/NOS/CO-OPS 8570283 Ocean City Inlet, MD



Last Observed Sample: 10/11/2018 17:54 (EDT)  
**Wind Speed: 8 knots Gusts: 10 knots Direction: 173° T**

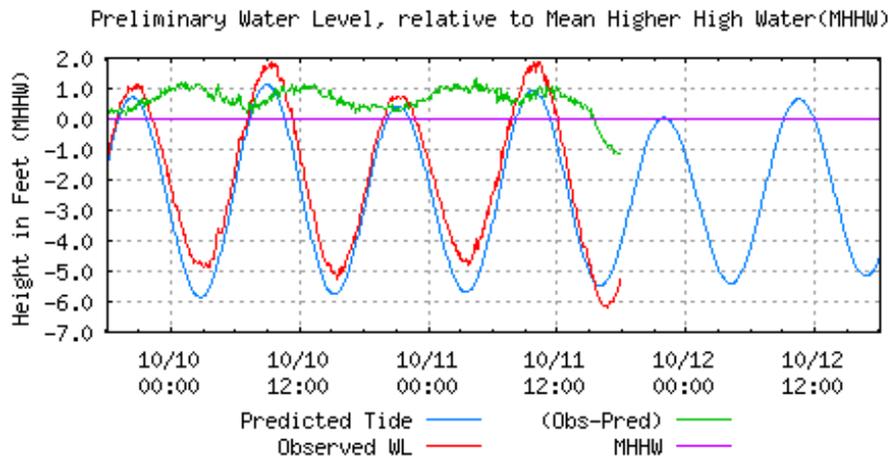
NOAA/NOS/CO-OPS 8570283 Ocean City Inlet, MD



Last Observed Sample: 10/11/2018 17:54 (EDT)

Barometric Pressure: 1002.8 mb

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



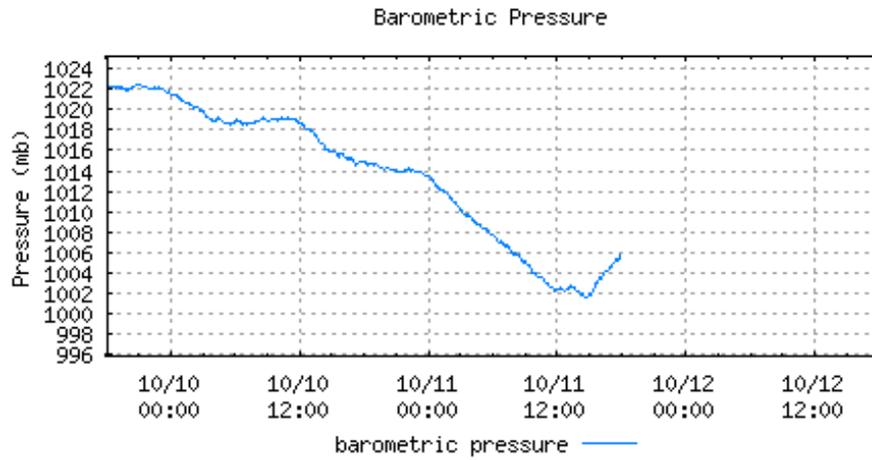
Last Observed Sample: 10/11/2018 17:54 (EDT). Data relative to MHHW

Observed: -5.30 ft. Predicted: -4.17 ft. Residual: -1.13 ft.

Historical Maximum Water Level: Sep 21 1989, 8.77 ft.

Next High Tide: 10/11/2018 21:57 (EDT), 0.05 ft.

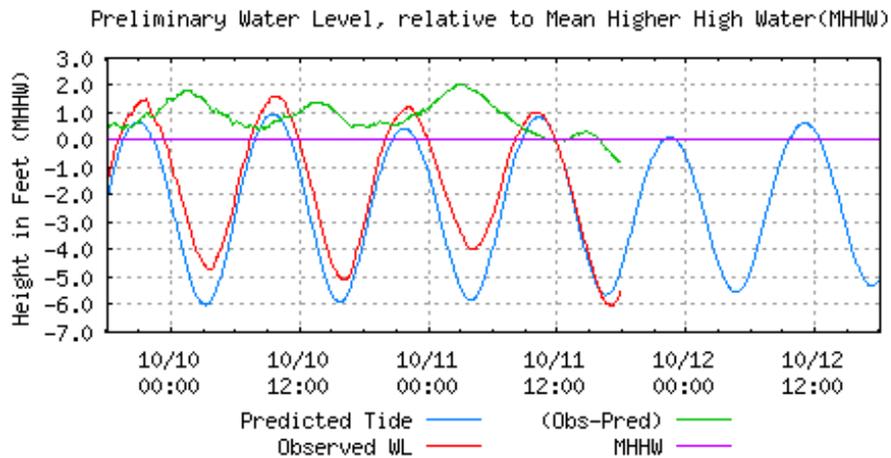
NOAA/NOS/CO-OPS 8661070 Springmaid Pier, SC



Last Observed Sample: 10/11/2018 17:54 (EDT)

Barometric Pressure: 1005.7 mb

NOAA/NOS/CO-OPS 8665530 Charleston, Cooper River Entrance, SC



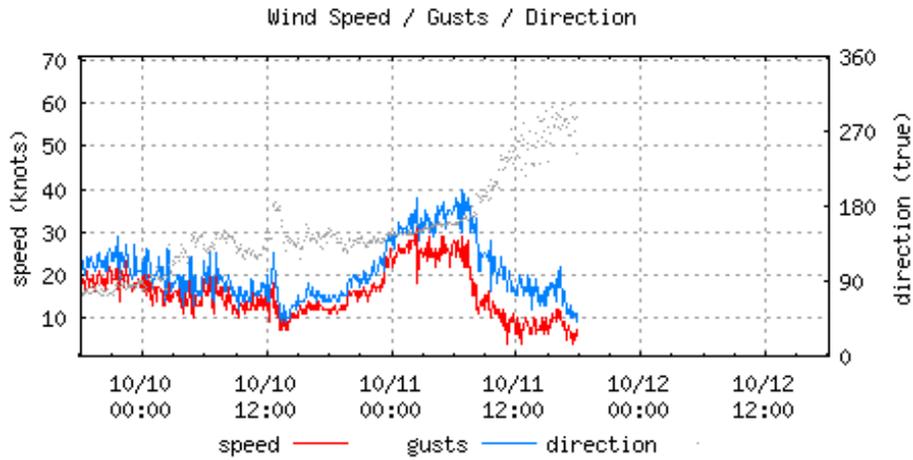
Last Observed Sample: n/a. Data relative to MHHW

Observed: n/a Predicted: n/a Residual: n/a

Historical Maximum Water Level: n/a

Next High Tide: 10/12/2018 02:29 (UTC), 0.11 ft.

NOAA/NOS/CO-OPS 8665530 Charleston, Cooper River Entrance, SC

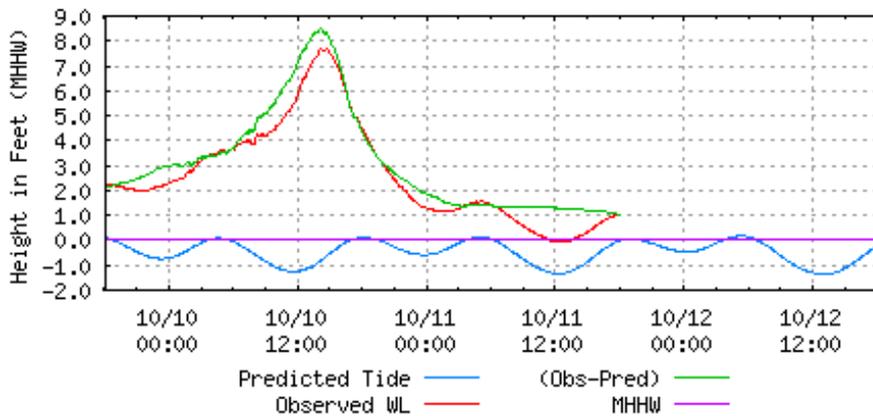


Last Observed Sample: 10/11/2018 17:54 (EDT)

Wind Speed: 7 knots Gusts: 11 knots Direction: 243° T

NOAA/NOS/CO-OPS 8728690 Apalachicola, FL

Preliminary Water Level, relative to Mean Higher High Water (MHHW)



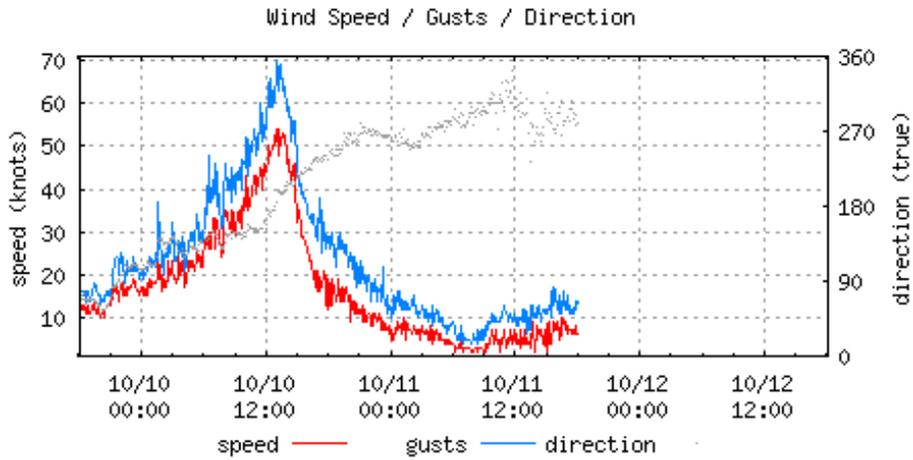
Last Observed Sample: 10/11/2018 18:00 (EDT). Data relative to MHHW

Observed: 1.03 ft. Predicted: -0.01 ft. Residual: 1.04 ft.

Historical Maximum Water Level: Jul 10 2005, 6.43 ft.

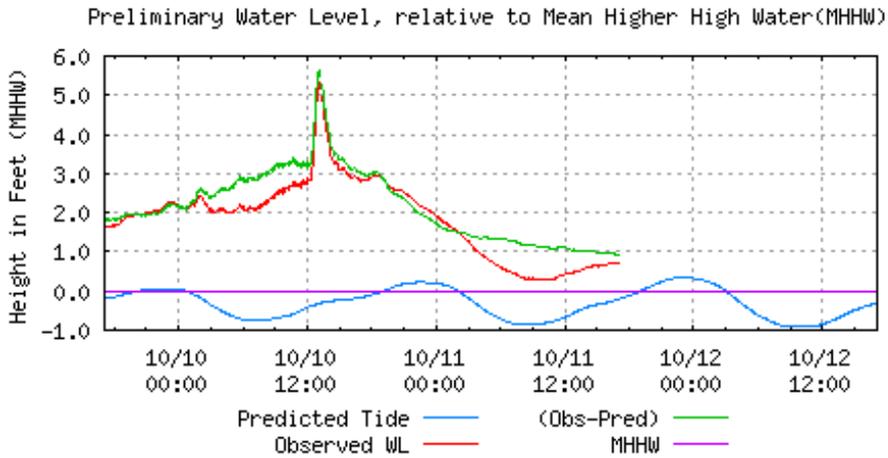
Next High Tide: 10/11/2018 19:04 (EDT), 0.05 ft.

NOAA/NOS/CO-OPS 8728690 Apalachicola, FL



Last Observed Sample: 10/11/2018 18:00 (EDT)  
 Wind Speed: 6 knots Gusts: 14 knots Direction: 280° T

NOAA/NOS/CO-OPS 8729108 Panama City, FL



Last Observed Sample: 10/11/2018 17:00 (CDT). Data relative to MHHW  
 Observed: 0.70 ft. Predicted: -0.21 ft. Residual: 0.91 ft.  
 Historical Maximum Water Level: Oct 4 1995, 5.72 ft.  
 Next High Tide: 10/11/2018 22:59 (CDT), 0.35 ft.

Latest Water Level Observations on MHHW

Station ID	Station Name	Date/Time	Observed Water Level	Predicted Tide	Residual Water Level	24 Hour Maximum Storm Tide
8658163	Wrightsville Beach, NC	10/11/2018 18:00 (EDT)	-3.62 ft	-2.94 ft	-0.68 ft	1.64 ft
8658120	Wilmington, NC	10/11/2018 17:54 (EDT)	-1.37 ft	-4.22 ft	2.85 ft	2.39 ft
8656483	Beaufort, Duke Marine Lab, NC	10/11/2018 18:00 (EDT)	-1.11 ft	-2.58 ft	1.47 ft	1.60 ft
8654467	USCG Station Hatteras, NC	10/11/2018 18:00 (EDT)	-0.47 ft	-0.31 ft	-0.16 ft	0.69 ft
8652587	Oregon Inlet Marina, NC	10/11/2018 17:54 (EDT)	0.93 ft	-0.72 ft	1.65 ft	1.38 ft
8651370	Duck, NC	10/11/2018 18:00 (EDT)	-2.35 ft	-2.76 ft	0.41 ft	0.98 ft
8638901	CBBT, Chesapeake Channel, VA	10/11/2018 17:54 (EDT)	-1.75 ft	-2.67 ft	0.92 ft	1.12 ft
8638610	Sewells Point, VA	10/11/2018 17:54 (EDT)	-1.83 ft	-2.66 ft	0.83 ft	0.98 ft
8637689	Yorktown USCG Training Center, VA	10/11/2018 17:54 (EDT)	-1.12 ft	-2.21 ft	1.09 ft	1.13 ft
8635750	Lewisetta, VA	10/11/2018 17:54 (EDT)	1.20 ft	-0.09 ft	1.29 ft	1.41 ft
8631044	Wachapreague, VA	10/11/2018 18:00 (EDT)	-2.96 ft	-3.80 ft	0.84 ft	1.13 ft
8570283	Ocean City Inlet, MD	10/11/2018 17:54 (EDT)	-0.74 ft	-1.66 ft	0.92 ft	0.97 ft
8661070	Springmaid Pier, SC	10/11/2018 17:54 (EDT)	-5.30 ft	-4.17 ft	-1.13 ft	1.89 ft
8665530	Charleston, Cooper River Entrance, SC	10/11/2018 17:54 (EDT)	-5.55 ft	-4.78 ft	-0.77 ft	1.22 ft
8728690	Apalachicola, FL	10/11/2018 18:00 (EDT)	1.03 ft	-0.01 ft	1.04 ft	4.47 ft
8729108	Panama City, FL	10/11/2018 17:00 (CDT)	0.70 ft	-0.21 ft	0.91 ft	2.96 ft

Center for Operational Oceanographic Products & Services (CO-OPS) | National Ocean Service (NOS)  
National Oceanic and Atmospheric Administration | U.S. Department of Commerce