



### Upcoming Predicted High Water Events:

- King Tide**  
Jan. 19 - 24, 2019
- Feb. 17 - 21, 2019
- Amplified Tide**  
Mar. 19 - 24, 2019

### Florence batters NC

Hurricane Florence made for an eventful Fall in North Carolina and many communities are still recovering from the impacts. This slow-moving storm made landfall just a few days after the new moon and amplified tides, dumped unprecedented amounts of rainfall, and stalled over the region through multiple high tide cycles. The compounding effects of all of these factors resulted in a record-breaking storm surge, including at Wrightsville Beach where a NOAA tide gauge was reading over four feet above high tide. The NC King Tides Project would like to wish all those affected the very best in the ongoing recovery process and thank all of our dedicated volunteers for your effort in documenting water levels.

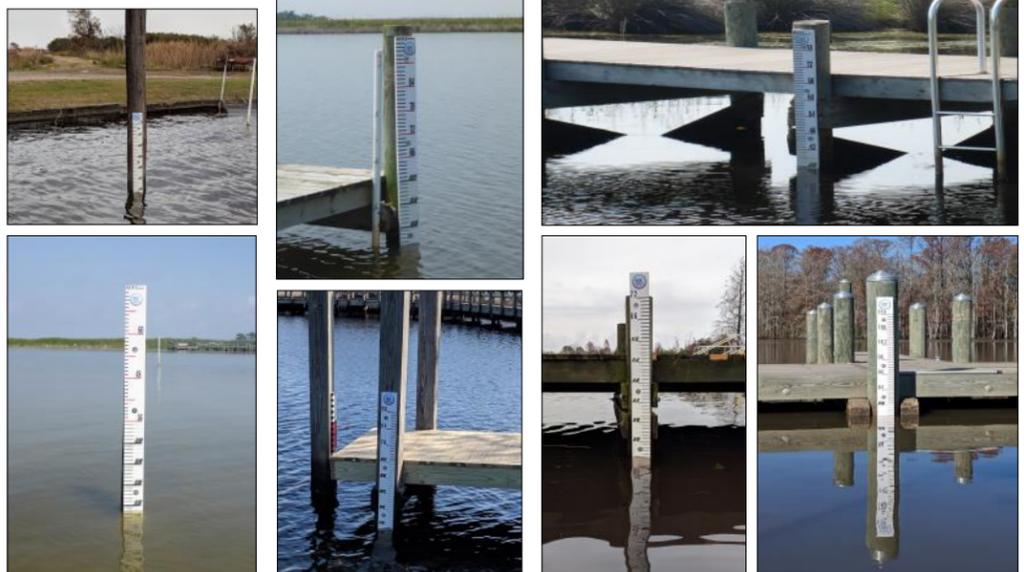
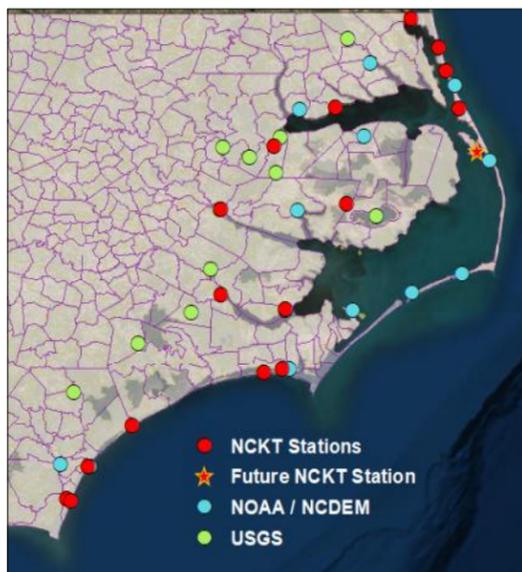
These data are invaluable to researchers and will help to improve model and storm event impacts in the future. The images below were submitted to the *What's your water level?* web app by the Outer Banks Center for Wildlife Education in Currituck. The photos demonstrate the extreme effects of astronomical and meteorological forces on water level.



The new NCKT gauge at the Outer Banks Center for Wildlife Education at low tide during a Super Full Moon King Tide on July 10, 2018 (left) and following Hurricane Florence on September 17<sup>th</sup> & 18<sup>th</sup> (center, right). Original photos have been cropped to fit this page.

### New Citizen Science Water-Level Stations

It has been a busy Summer and Fall for the NCKT Project. As of December 21<sup>st</sup>, seven new Citizen Science Water-Level Stations have been installed in four counties. Our new locations include Mackay Island National Wildlife Refuge, Audubon Pine Island Sanctuary and Center, and the Outer Banks Center for Wildlife Education (Currituck Co.), Kitty Hawk Woods Coastal Reserve Boat Ramp (Dare Co.); the Plymouth Landing Marina across from the Roanoke River Maritime Museum (Washington Co.); Soundside Park in Surf City (Pender Co.); and Lawson Creek Park in New Bern (Craven Co.). We are planning another installation at the North Carolina Coastal Federation in Wanchese. Following this installation, the NC King Tides Project will have installed a total of 20 gauges across coastal North Carolina where data were previously lacking. To learn more about our citizen science water-level monitoring effort and how you can get involved, please visit our website. If you happen to be near any of our public stations, please check them out & report water level!



Above: This map shows NCKT, NOAA, NCDEM, and USGS water level gauges near coastal NC. Top left to right: Water level stations at Mackay Island National Wildlife Refuge, Audubon Pine Island in Currituck, and Kitty Hawk Woods Coastal Reserve. Bottom left to right: Water level stations at Outer Banks Center for Wildlife Education, Soundside Park, Lawson Park, and Plymouth Landing Marina.

### NCKT Collaborates with Students at UNC Chapel Hill

NC King Tides also had the opportunity to collaborate with Dr. Rachel Willis and her students from UNC Chapel Hill this semester. An economist by trade, Dr. Willis studies global freight transportation planning for climate change and leads an APPLS Service-Learning course, *Rising Waters*, which focuses on coastal resilience strategies to sea-level rise. Dr. Christine Voss and the NC King Tides Project hosted the class in October during a site visit to the UNC Institute of Marine Sciences in Morehead City. Students were provided the unique opportunity to observe the impacts of Hurricane Florence first-hand during their tour, which included stops along the Beaufort and Morehead City waterfronts as well as a visit to a local salt marsh site. Students used NC King Tide Project data and photographs to complete independent digital humanities projects focusing on the human dimensions of a changing climate. Please visit Dr. Willis' website to read more about her work and *Rising Waters*.

