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Southeast River Forecast Center Overview and Evolving Water Forecast Services

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National Weather Service
Southeast River Forecast Center

June 18, 2026



NWS Hydrologic Services From Outlook to Forecast to Warning



National Water Center (NWC)
Weather Prediction Center (WPC)
National Hurricane Center (NHC)



River Forecast Centers (RFC)



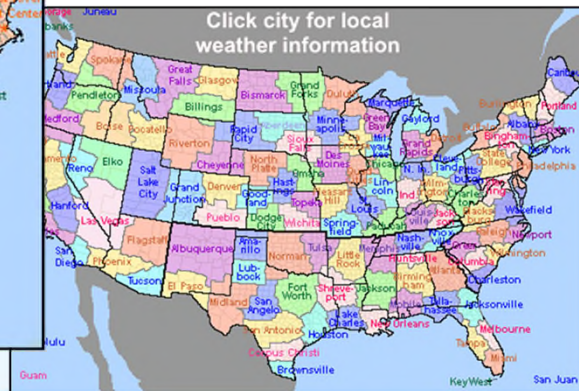
Weather
Forecast Offices
(WFO)

National

Regional

Local

RFCs and WFOs Regional to Local Hydrologic Services



Current SERFC Staff Academic Profile



Degrees Conferred

14 BSs

7 MSs

1 MBA

1 PhD



Areas of Study



Atmospheric Science: 5

Meteorology: 4

Civil Engineering: 4

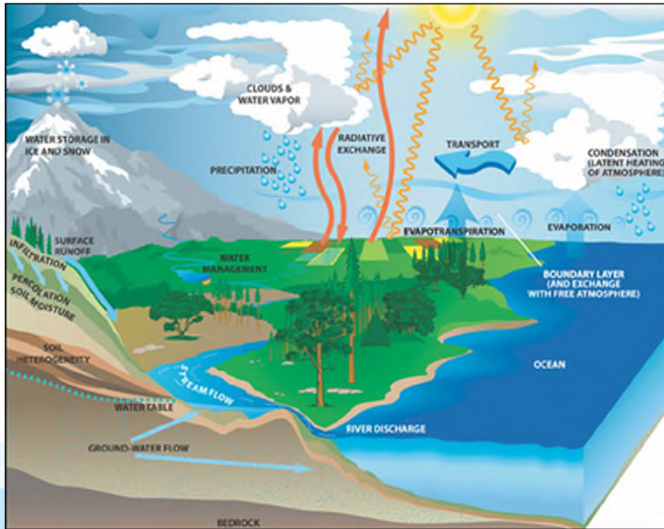
Geography: 3

Mathematics: 2

Hydrology: 2

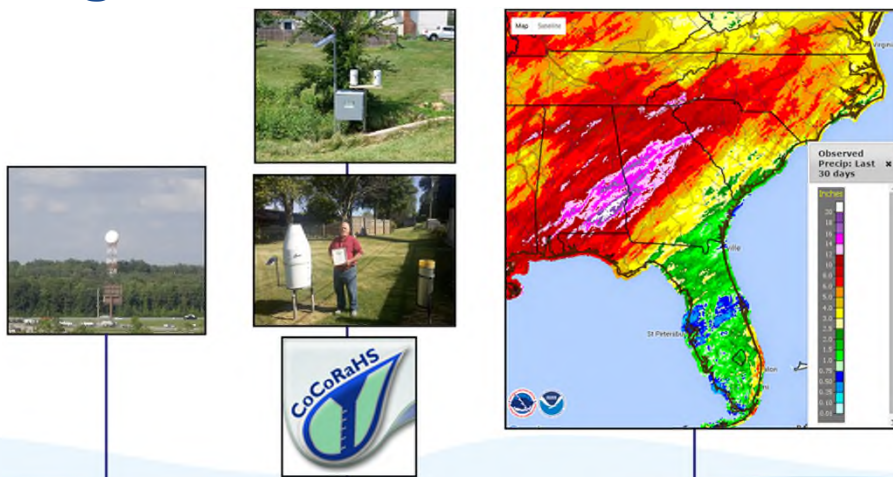
Geology, Earth Systems,
Information Systems, MBA: 1

SERFC Water Modeling



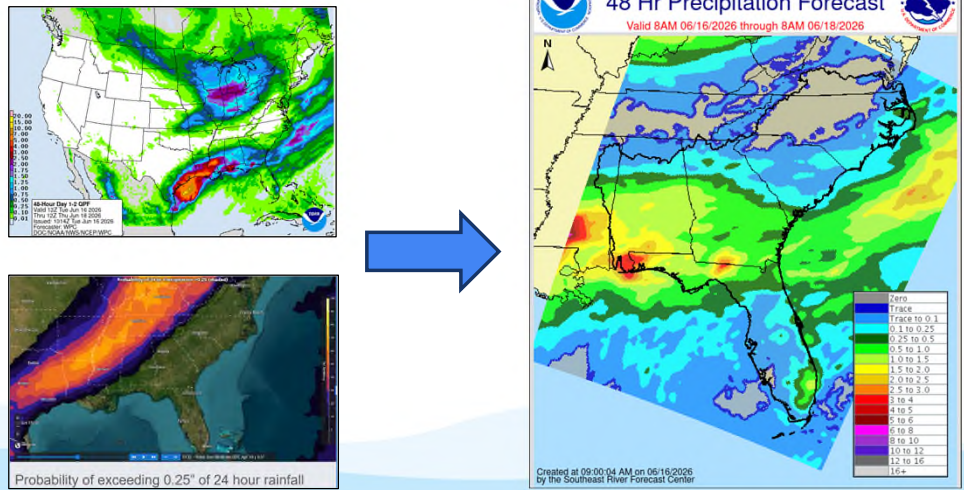
- Internal/External Models and Data
- Observed and Forecast
- Rely on key partnerships with USACE, USGS, Hydropower, state of SC, public/others

SERFC Hydrometeorologists Provide Real-time Forcing Data for Water Forecasting

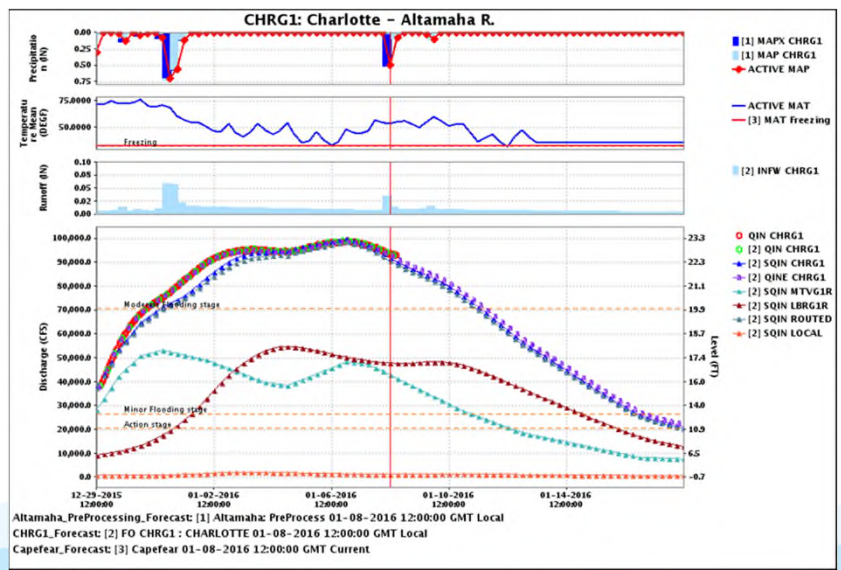


Hourly radar estimates...biased by observations...results in optimum gridded estimates!

SERFC Hydrometeorologists Evaluate Models and Forecast Guidance to Provide Future Forcing Data for Water Forecasting

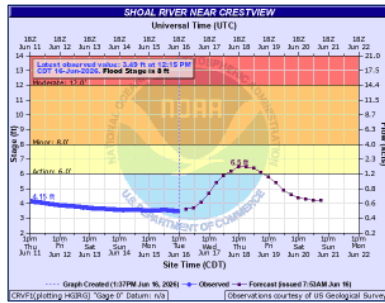


Hydrologic Forecasting

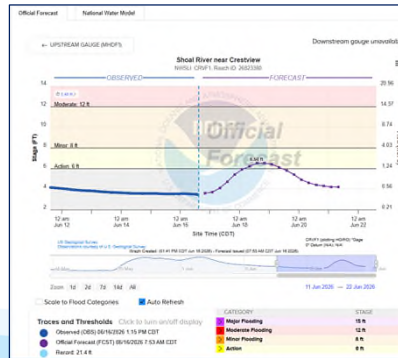


...what the hydrologic forecaster sees.

Hydrologic Forecasting

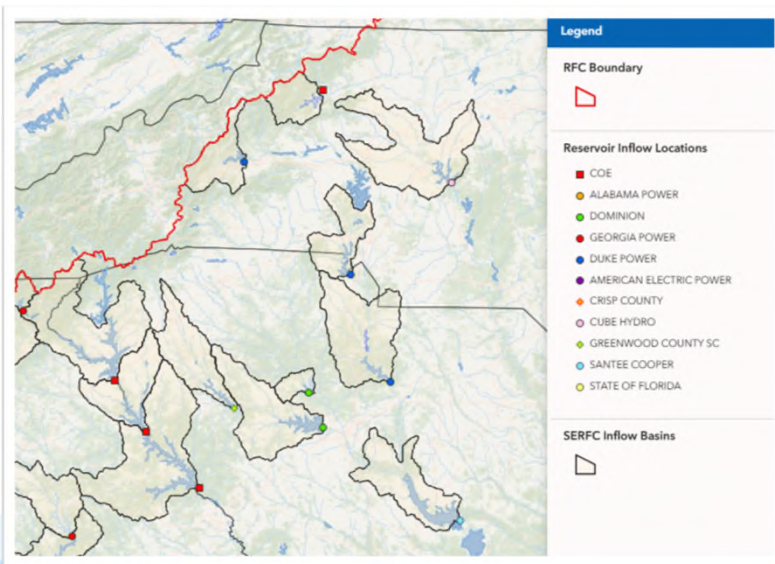


...what the public sees.



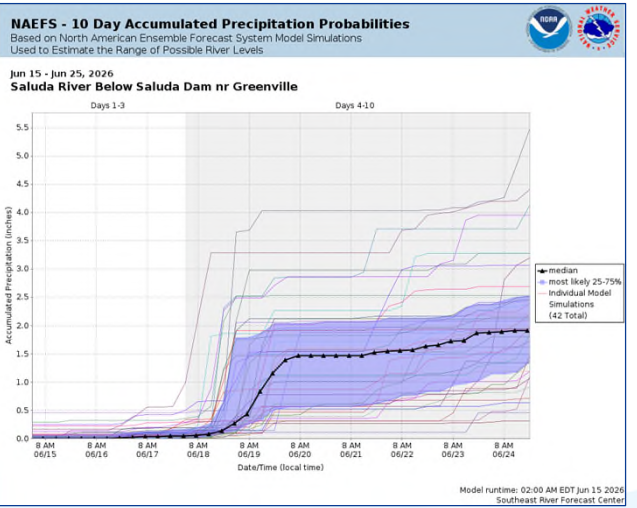
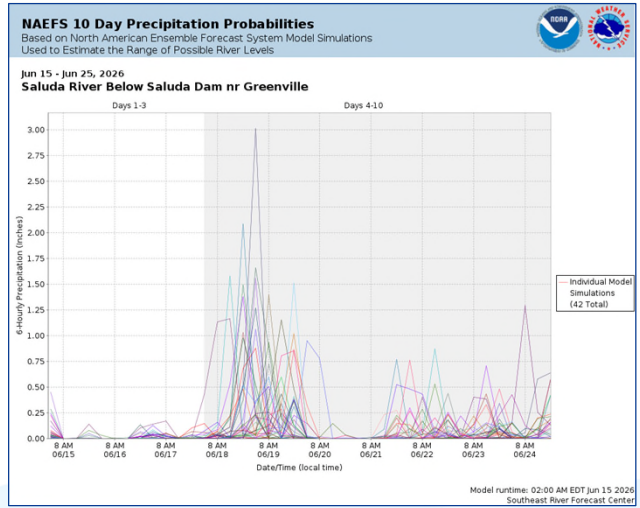
- Flood Impacts[®]**
- 214 - Hurricane Georges-Water in homes at Trevor Court and Antioch Roads. Highway 85 floods. Buildings underwater in Highway 85 roadside park. Highway 90 bridge flooded.
 - 15 - Water in Trevor Court. Some homes in Rattle Snake Bluff become flooded.
 - 14 - Residential flooding in the Trevor Court area.
 - 13 - Homes on south bank of river begin to flood near Crestview.
 - 12 - Residential areas on the south bank of river near Crestview become isolated. Rattlesnake Bluff Road closed.
 - 11 - Flooding becomes a threat to the Trevor Court and Rattlesnake Bluff areas.
 - 10 - Some flooding of trailers north of the Okaloosa Correctional Institute. Water surrounds home on Sowel Road.
 - 8.5 - Water in yards on Sowel Road.
 - 8 - Minor flooding of low lying areas.

Reservoir Modeling and Partnering

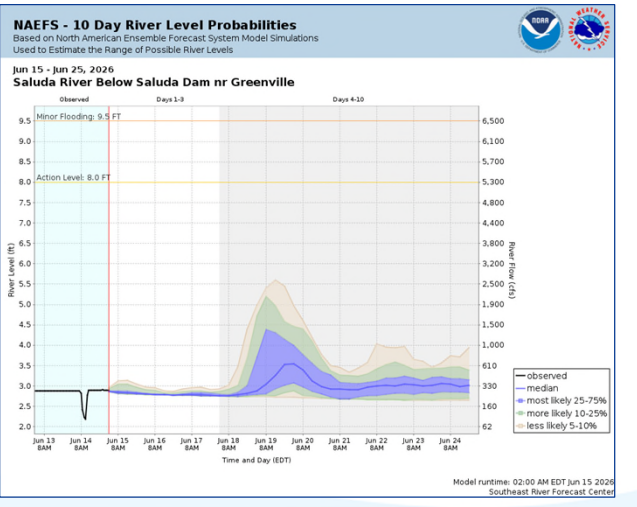
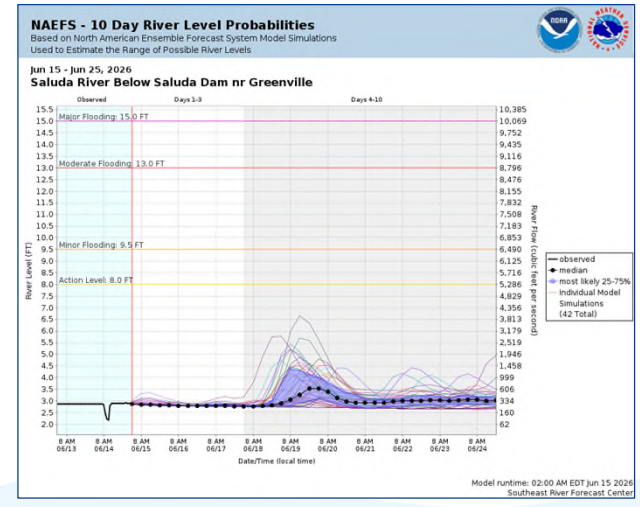


- Santee River Basin**
12 Reservoirs
Bridgewater (Duke) to Marion/Moultrie (Santee Cooper)
- Pee Dee River Basin**
3 Reservoirs
W Kerr Scott (USACE) to Blewett Falls (Duke)
- Savannah River Basin**
7 Reservoirs
Burton (Georgia Power) to Thurmond (USACE)

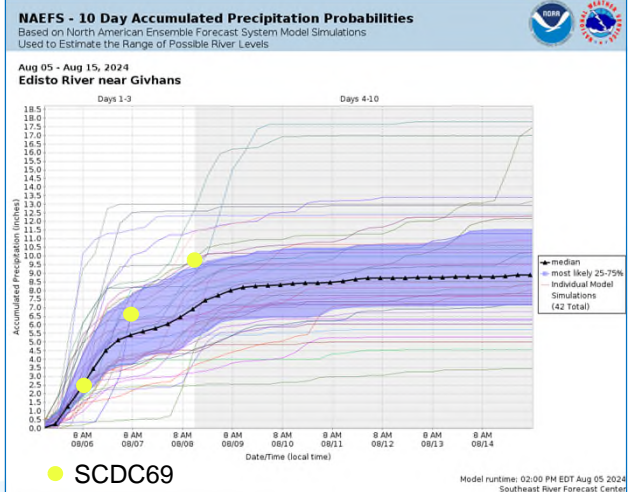
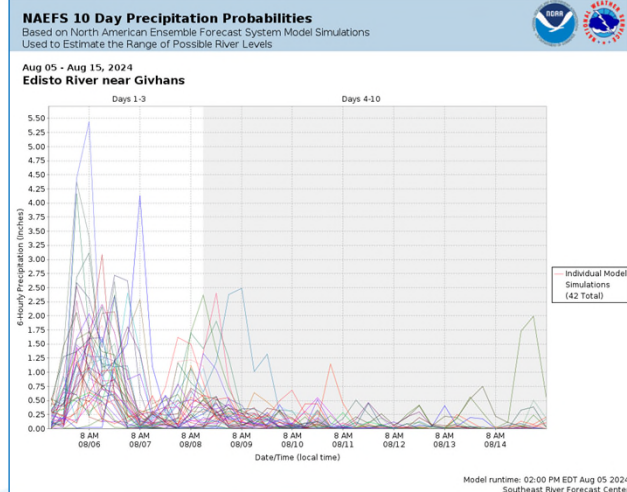
Ensemble Simulations: GSLS1 Precipitation 06/15/2026



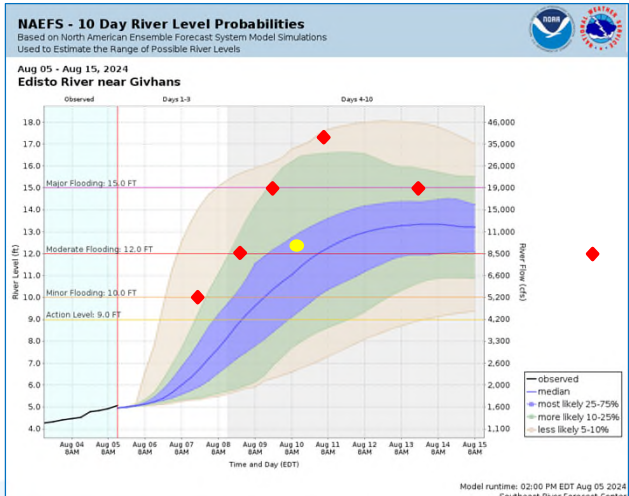
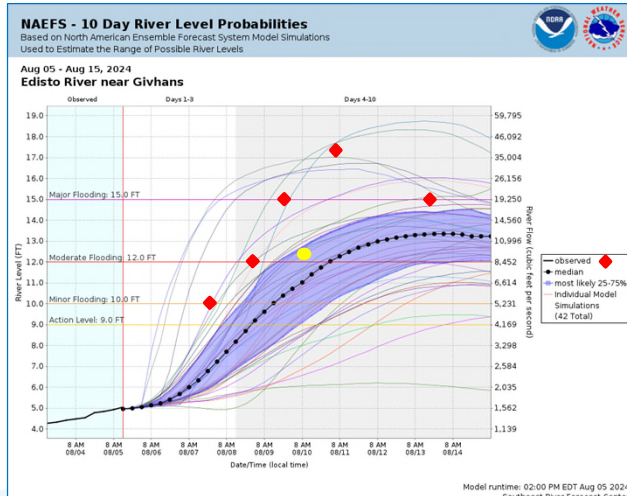
Ensemble Simulations: GSLS1 Streamflow 06/15/2026



Ensemble Simulations: GIVS1 Precipitation 08/05/2024/12Z Debby



Ensemble Simulations: GIVS1 Streamflow 08/05/2024/12Z Debby



- ◆ Observation crossing category
- Max 5-day forecast ordinate on 8/5 at 12Z

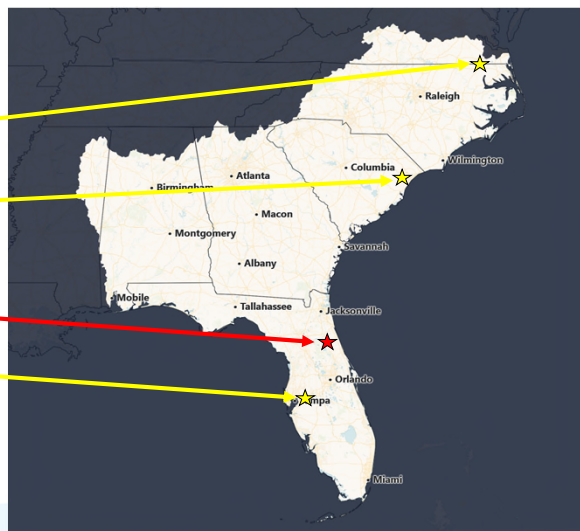
Coastal Coupled HEC-RAS Models

Blackwater River, NC/VA

Pee Dee - Waccamaw River, SC

St. Johns River, FL
(under development)

Alafia River, Hillsborough County, FL

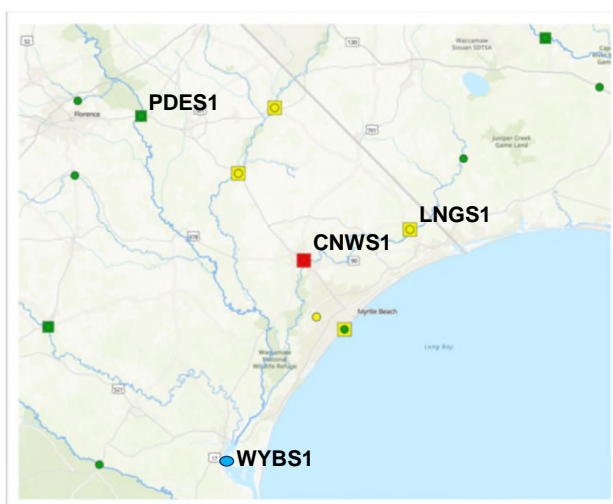


Waccamaw HEC-RAS Model: 1-D to 2-D

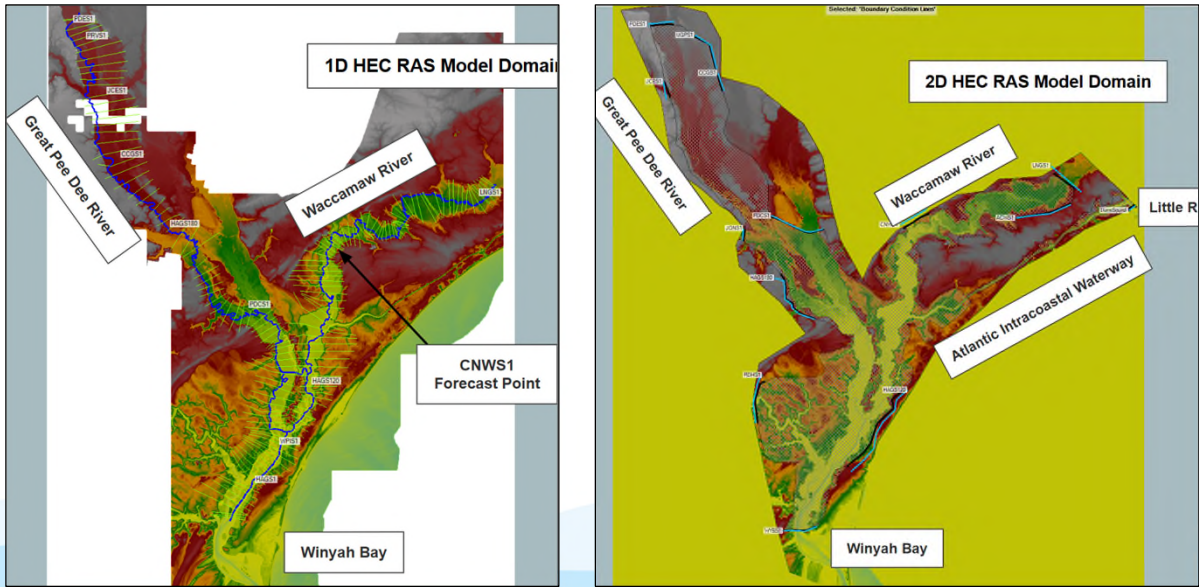
Originally a 1D model calibrated for water level forecasting at Conway, SC, many requests for forecasts at Socastee, Bucksport and downstream to Georgetown required a more robust model. Recent efforts, enabled by access to improved bathymetric data from USACE's Lindsey Larocque as part of the [Waccamaw FRM study](#), have allowed SERFC to convert the model to 2D and re-calibrate based on recent events. This allows us to better capture the complexity at the Waccamaw-Pee Dee-Atlantic Intracoastal Waterway confluence.

This model framework uses an unstructured mesh and topobathymetric DEM to simulate the complex coastal interactions in the model domain.

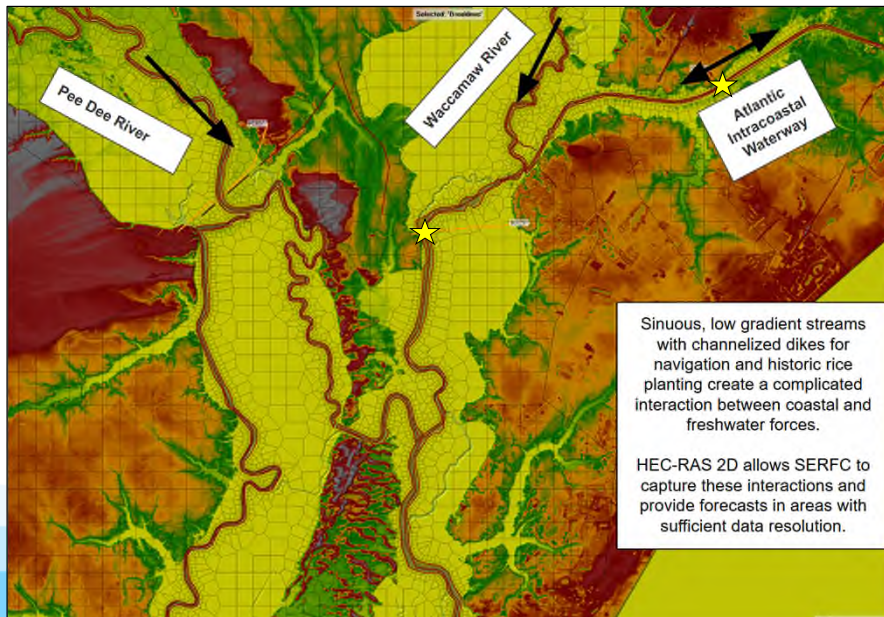
SERFC is in the process of integrating this model into real-time operations at this time.



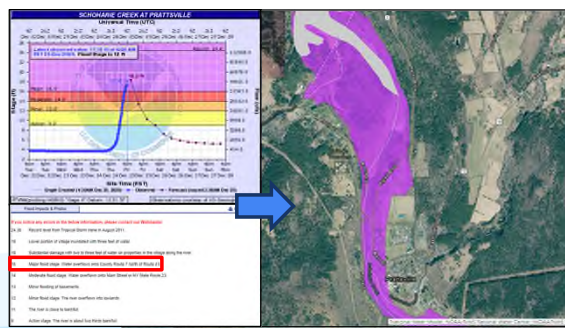
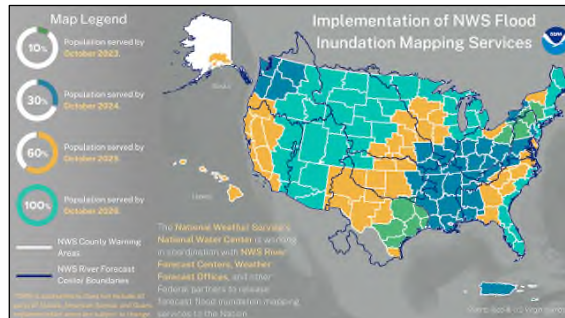
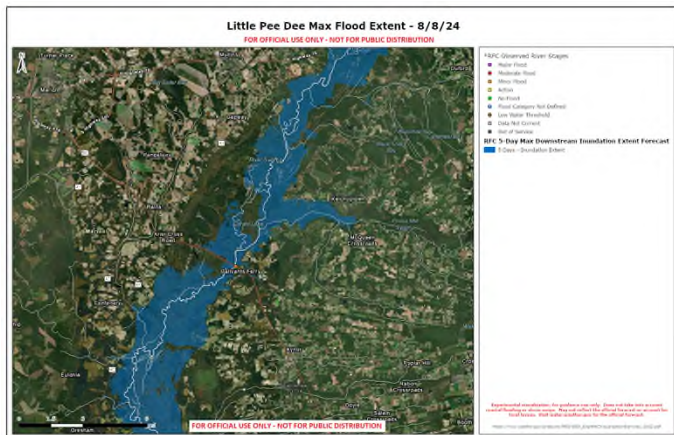
Waccamaw HEC-RAS Model: 1-D to 2-D



Waccamaw HEC-RAS Model: Coastal Coupling to Winyah Bay and ICW



NWS Flood Inundation Mapping (FIM) “...putting water on a map...”



Contact Information

Southeast River Forecast Center

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facebook.com/NWS_SERFC

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