



Center for Operational Oceanographic Products and Services
NATIONAL OCEAN SERVICE

Intro to the Bathymetry Data Working Group of the CCCoP



Coastal.Coupling@noaa.gov

Coastal Coupling Community of Practice

The Impetus

Over 100 million people living in U.S. coastal areas do not have access to accurate information about critical water-related issues, such as floods, droughts, and poor water quality because contemporary operational forecast models do not appropriately capture the complexity of combined freshwater, estuarine, and ocean processes.

This challenge is too great for any single organization to undertake alone. The community has the knowledge and resources needed to meet this issue but must work together across organizational boundaries to leverage each other's knowledge, resources, capabilities, and enthusiasm.



Coastal Coupling Community of Practice

Mission



Coupling of models to better represent earth system processes across the coastal zone and provide improved predictions of water levels, flow timing and duration, currents, sediment, and water quality variables, etc.



Actionable information on water levels, flow timing and duration, currents, sediment, and water quality variables provided to stakeholders in timely, accessible and user-friendly formats.



Accelerated national coverage of integrated water prediction capabilities through the adoption of community research and models that acknowledge stakeholder-driven requirements.

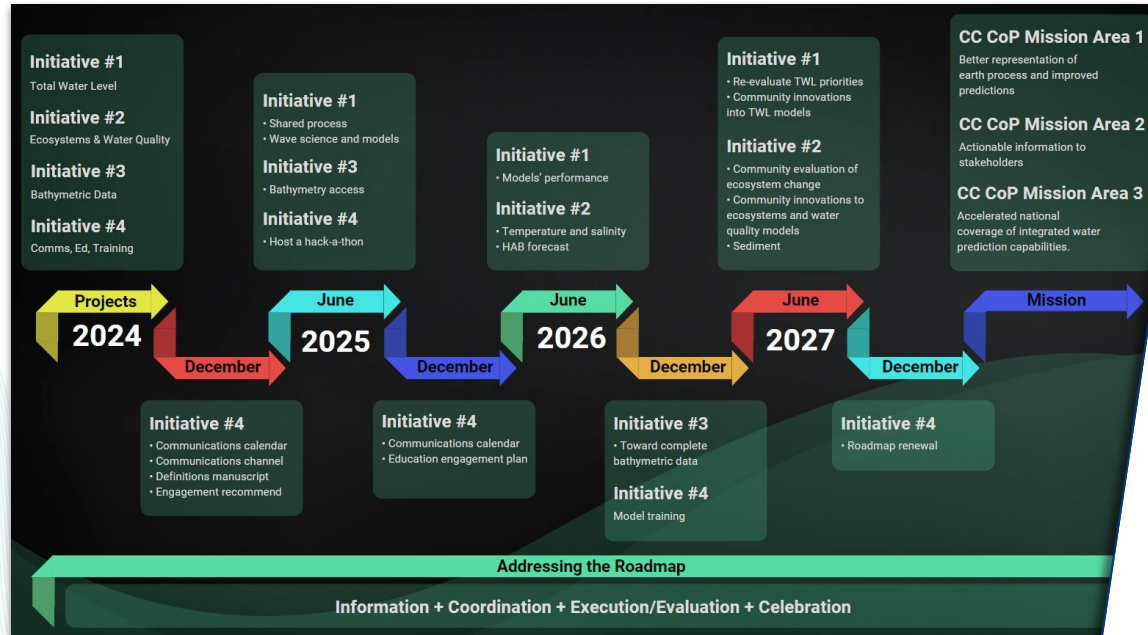
Coastal Coupling Community of Practice

Executive Committee and Alternates

Affiliation	Executive Committee Member (Alternate)
USACE	Chris Massey (Ahmad Tavakoly)
USGS	Meg Palmsten (Mark Buckley)
NOAA/NWS/RFC	David Welch (Geoffrey Walters)
NOAA/NWS/OWP	David Valley (Jeff Dobur)
NOAA/NWS/OWP	Vacant
NOAA/NOS	Vacant
NOAA/NOS/NCCOS; CIROH	David Kidwell (Rebecca Atkins)
UNC-CH	Rick Luettich (Lauren Grimley)
UA; CIROH	Hamed Moftakhari

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Roadmap: from Initiatives to Working Groups



INITIATIVE #4, COMMS TIMING AND MILESTONES	KEY STEPS AND LEADS FOR IMPLEMENTATION	KEY STEPS AND LEADS TO MONITOR AND EVALUATE
tackle. The community has a core suite of educational materials, courses, learning modules, student exchanges and related to modeling, science, tools, services, etc. The community knows which communities of practice are for what. All communities of practice are amplifying funding and collaboration opportunities on behalf of related communities. The community is improving the ways in which coastal information, predictions, and forecasts are packaged and disseminated. Table 2.4. Communications, Education, and Training timing, milestones, implementation, monitoring, and evaluating the picture of our success and the big picture outcomes (table inspired by the <i>Australian Academy of Science</i> (2023)).		
04 A QUICK-START GUIDE [Temporary: How will we get started?] Begin with the quick-start actions below to launch the four initiatives. Then, continue with enthusiasm.		
WHICH ACTION?	BY WHOM?	BY WHEN?
04.1 Write one scoping document for each initiative to capture the additional technical details offered in the 2023 CC CoP Annual Meeting and the 2024 CC CoP Executive Committee Retreat	CC CoP Coordinator	May 31, 2024
04.2 Volunteer to chair one of the four initiatives	At least four Executive Committee Members	June 30, 2024
04.3 Invite someone to Co-chair your initiative	The four Executive Committee Members	June 30, 2024
04.4 Convene the first meetings for each of the four initiatives to include the following agenda, at a minimum (presumes 90 minutes):	CC CoP Coordinator, with Co-chairs for each of the initiatives	August 31, 2024
[15 minutes, Information] Hello and introductions [15 minutes, Coordination] What's possible for the CC CoP as we succeed in our initiative? [15 minutes, Execution] Is there anything in our initiative that we could choose not to do? [30 minutes, Execution] For each of our upcoming milestones, who is interested in taking a lead? With which activities? How will others join you? [15 minutes, Celebration] Next actions and acknowledgements		
04.5 Lead the process for quarterly evaluations of the Roadmap (below)	CC CoP Coordinator	September 30, 2024

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Total Water Level Working Group

Determine the state of TWL modeling

- Develop a TWL model inventory
- Inviting members of CoP to join
- Survey
- State of the science peer-reviewed paper

Co-lead: Meg Palmsten

Co-lead: Vacant

Ecosystem and Water Quality

Tentative goals:

- Expand CoP membership
- Survey eco modelers and forecasters
 - Update the roadmap
 - Provide OWP with eco modelers and forecasters requirements
- Establish communications with eco modelers and forecasters

Webinar to highlight NOAA eco modeling and forecasting activities and products

Co-lead: David Kidwell (Rebecca Atkins)

Co-lead: Vacant

Coastal Coupling Community of Practice

Communication, Education and Training

Contribute to a terminology document:

Create a model verification and validation checklist and repository (GitHub):

- including test cases with model agnostic descriptions along with model specific setup and results

Develop shared curricula, training materials or lesson plans on coastal models and tools

Co-lead: Hamed Moftakhari

Co-lead: Chris Massey

Co-lead: Cristina Urizar

Bathymetric Data

Contribute to a complete national set of bathymetric data:

- DEMS such as CoNED, CUDEM, NWM hydrofabric bathy often incomplete in rivers/streams
- Other sources for stream and river data?
- Discussing use of bathy data in HEC-RAS models to correct rivers/streams in national DEMs

Webinars:

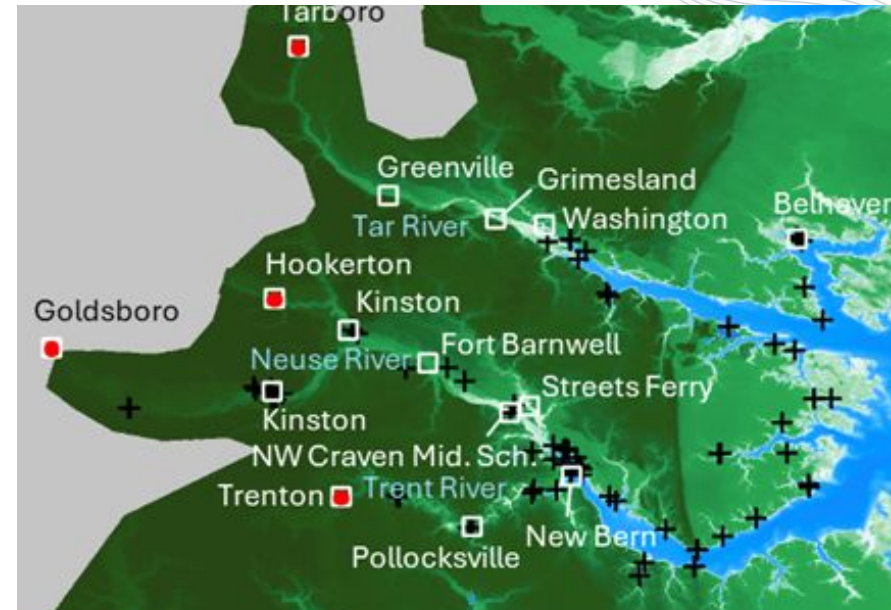
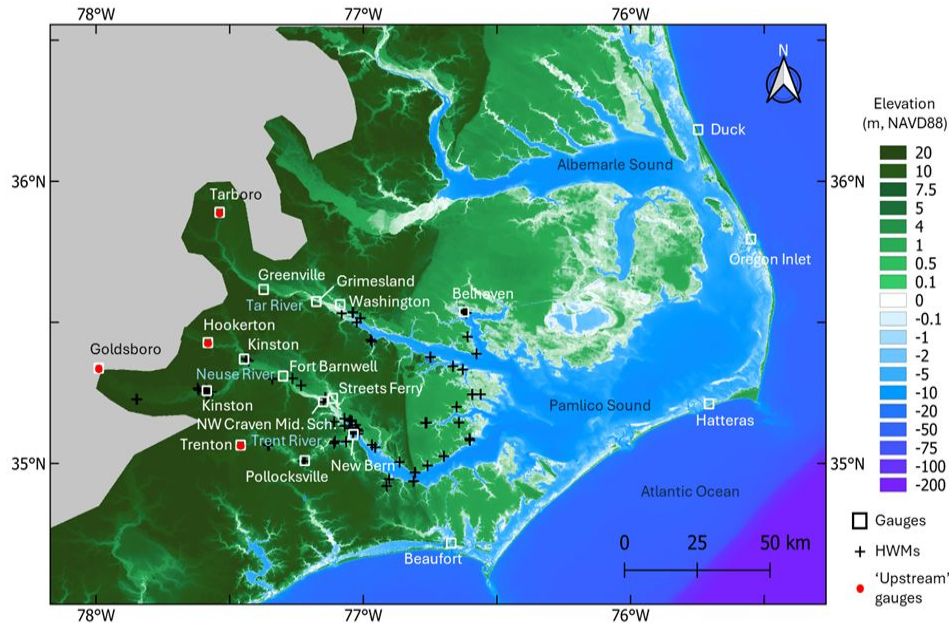
- NWM hydrofabric
- Leveraging HEC-RAS data for compound flood modeling in NC

Co-lead: Rick Luettich

Co-lead: David Welch

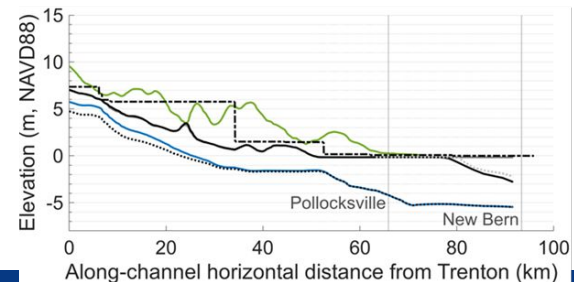
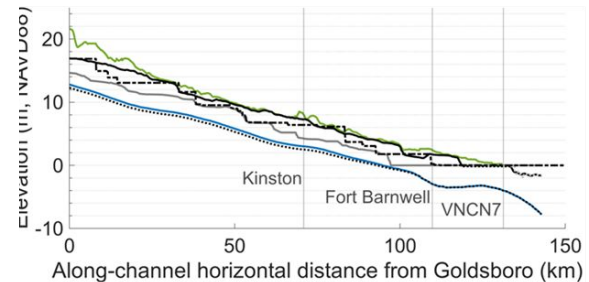
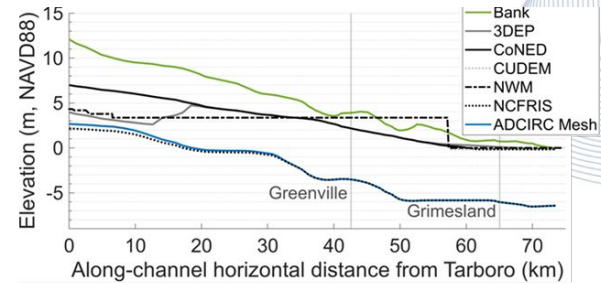
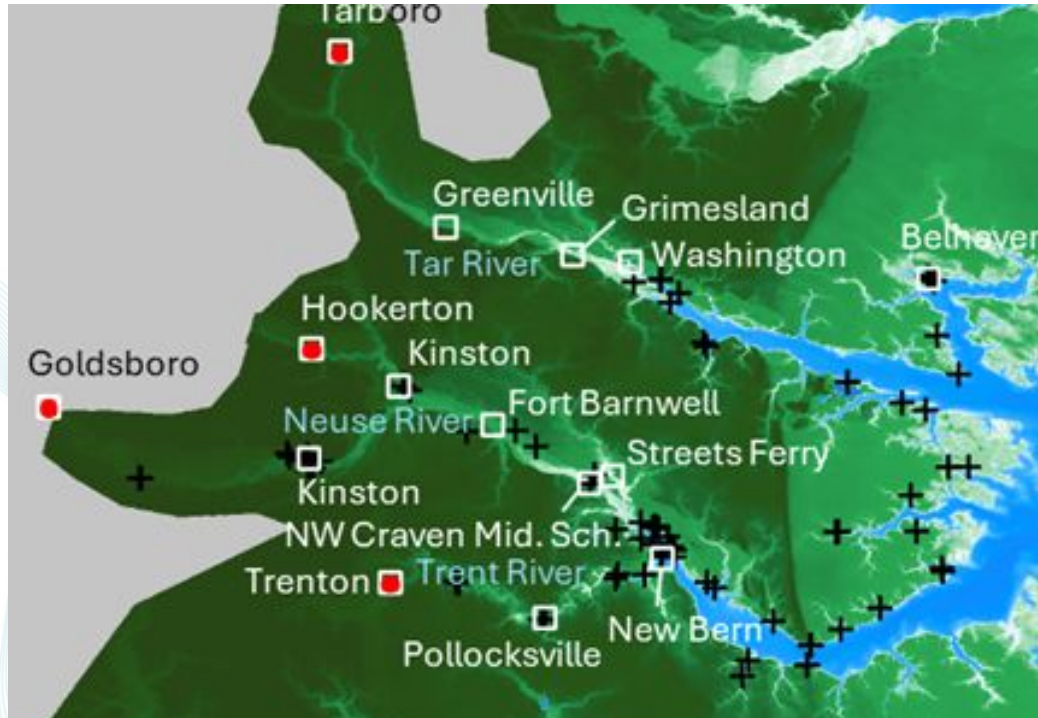
Bathymetric Data Example: Eastern North Carolina

Tar, Neuse, Trent Rivers



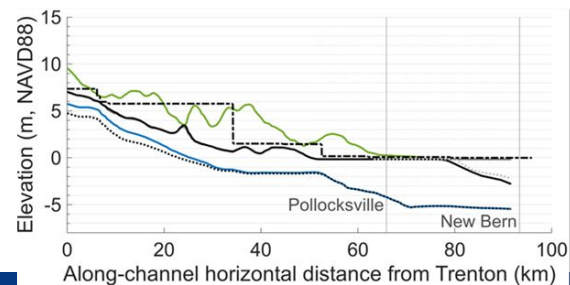
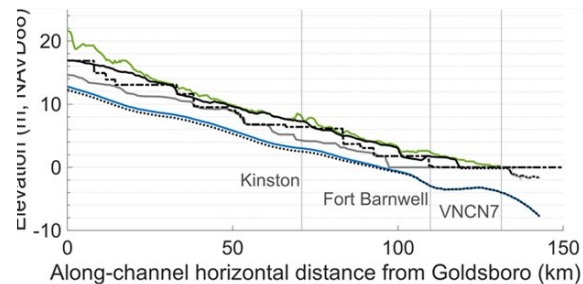
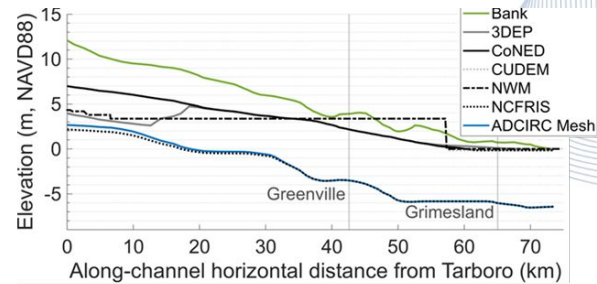
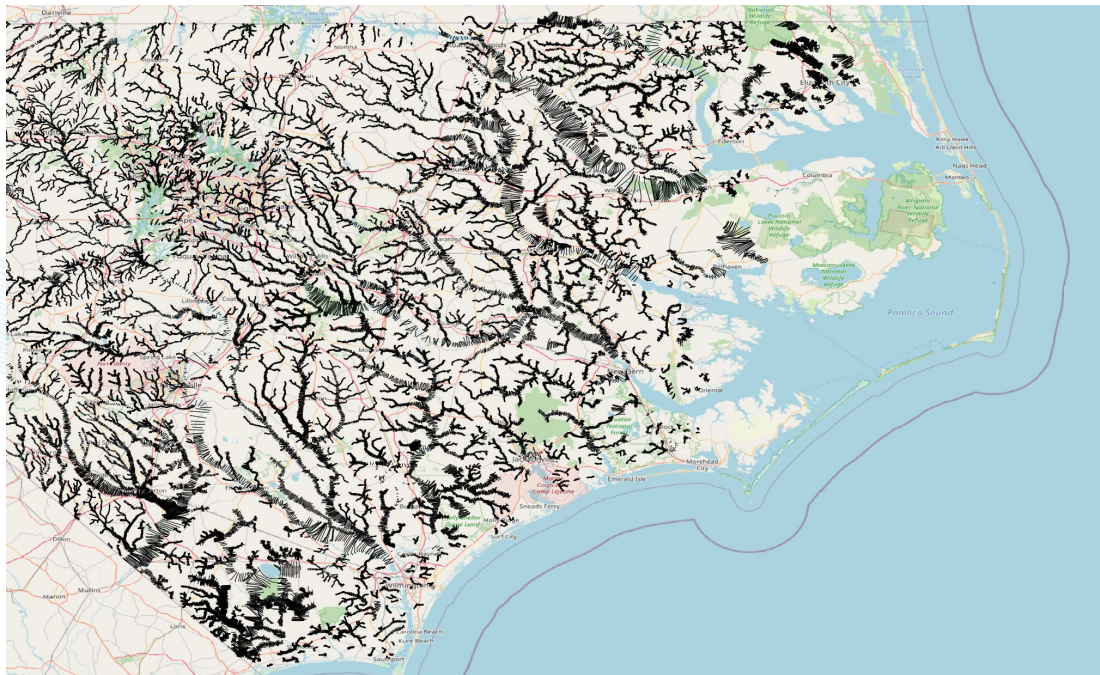
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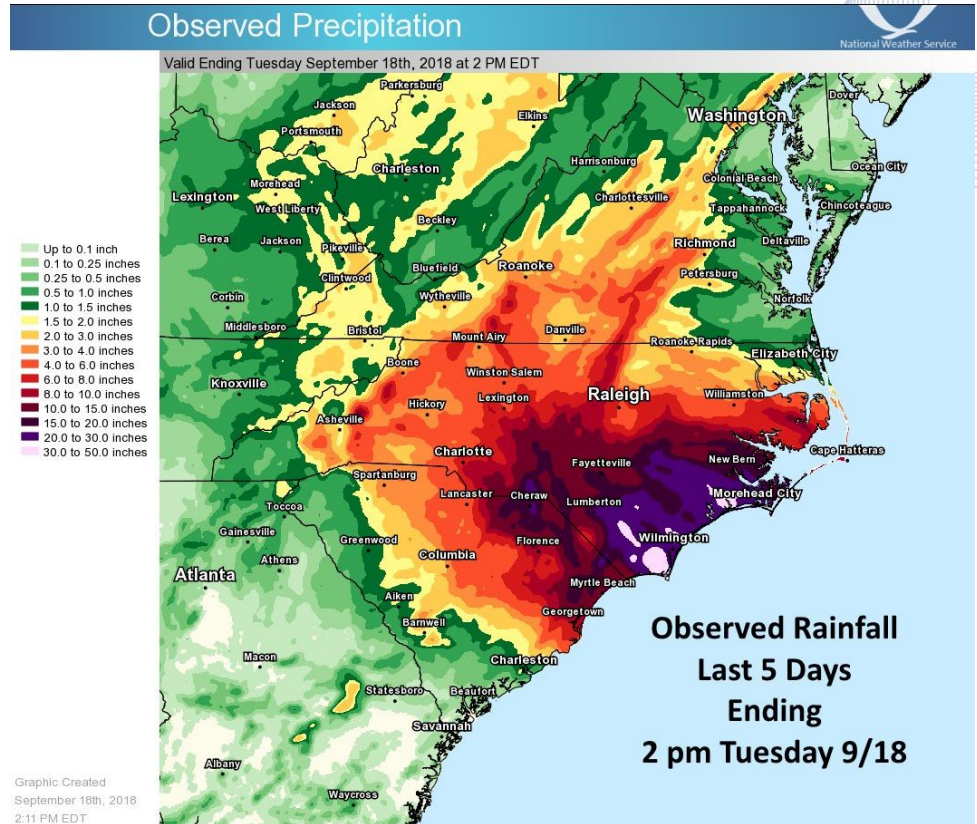
Bathymetric Data Example: Eastern North Carolina

NC FRIS HEC RAS Models



Bathymetric Data Example: Eastern North Carolina

Hurricane Florence 2018



Bathymetric Data Example: Eastern North Carolina

Hurricane Florence 2018 ADCIRC Results - corrected bathymetry

