

	Coastal Hazards and Climate Variability		Ecosystems: Living Marine Resources and Water Quality						Marine Operations		
	Storm Tracking & Forecasting	Coastal Flooding & SLR	Fisheries	Ocean Sound	Public Health	HABS	Coral Health	Coastal & Ocean Acidification	Marine Safety	Rip Currents	Offshore Resources
Observing Assets											
Current SECOORA Investments											
12 buoys, 4 non real-time stations offshore of NC, SC, and West Florida Shelf (WFS)	X	X	X		X	X			X	X	X
6 coastal stations (Charleston & WFS)	X	X	X		X	X			X		X
20 HFRs distributed from Cape Hatteras, NC to WFS			X			X			X		X
3-5 South Atlantic Bight glider missions annually	X		X	X		X					
Acoustic receivers to detect tagged fish (located on moorings and gliders)			X								
Hydrophones to record sound in the marine environment (located on moorings and gliders)			X	X							X
30 non real-time temperature sensors installed at acoustic receiver locations in south FL			X				X				
Multi-asset HABS monitoring on WFS (ships, gliders, satellite remote sensing)						X					
Support ocean acidification monitoring at the Gray's Reef National Marine Sanctuary							X	X			
7 beach web cameras in NC, SC & FL		X			X					X	

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Observing Assets											
Additional SECOORA Investment Opportunities											
Expand meteorological & physical oceanographic buoy network	X	X			X	X			X	X	
Increase coastal stations to collect meteorological & physical oceanographic core variables	X	X			X	X				X	
Invest in 3-4 ecosystem moorings and add biogeochemical sensors to existing buoys			X		X	X	X	X			
Install webcams at strategic locations		X			X					X	
Use drones to capture images/video footage at regular intervals	X	X			X	X	X				X
Partner with communities to install low cost water level sensors		X									
Increase number of standard and event driven glider missions annually (minimum of 6) to include SAB and GOM	X		X	X		X					
Expand HFR coverage			X				X		X		
Expand non real-time temperature data collection			X				X				
Support continued acoustic tagging and tracking of key species			X								
Leverage Fishery Independent Research Program (MARMAP and SEAMAP) to deploy hydrophones			X	X							X
Install physical oceanographic and water quality sensors at major river entrances and ports					X				X		
Work with partners to deploy Wave Gliders or profiling gliders			X	X		X	X				X
Add wave buoys w/in HFR footprint to validate HFR derived waves	X								X		

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Modeling											
Current SECOORA Investments											
Coupled Northwest Atlantic Prediction System (CNAPS) model provides four-dimensional marine environment nowcasts and forecasts	X		X			X			X		
2019 COMT: link the NOAA NWC National Water Model to coastal ocean models to accurately quantify terrestrial hydrology and ocean to understand compound flooding	X	X				X			X		
Tampa Bay Circulation Model (TBCOM) and the West Florida Coastal Ocean Model (WFCOM) provide marine circulation for the eastern Gulf of Mexico	X		X			X			X		
Additional SECOORA Investment Opportunities											
Incorporate coastal ecosystem data into models to address impacts of storm surge and sea level on natural environments (e.g. marsh, mangroves) and built environment	X	X	X								
Develop model prediction and data analysis tools to quantify seasonal variation of surface and subsurface temperature, salinity, circulation, chl-a, NO3, DO, and other variables			X								
Incorporate HFR data into water quality models			X		X						
Develop high-resolution coupled physical-biogeochemical models to link marine carbonate ecosystem data with oceanographic processes			X				X	X			

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Products											
Current SECOORA Investments											
Marine Weather Portal (MWP)	X								X		
Forecast and hindcast products from the 2019 COMT project	X	X									
Pilot visualization tool with GA DNR to better understand fish movement patterns			X								
"How's the Beach," a tool that provides water quality nowcasts					X						
Additional SECOORA Investment Opportunities											
Expand water quality and beach notification data products regionally to meet stakeholder needs					X	X				X	
Implement a Text-A-Buoy system to access latest ocean and weather information	X								X		
Create soundscape data products for stakeholders			X	X							
Emerging technologies											
Current SECOORA Investments											
Work with partners to develop machine learning techniques			X	X	X						
Additional SECOORA Investment Opportunities											
Evaluate emerging technologies that identify and quantify ocean pollutants (microplastics) and pathogens in coastal and estuarine waters			X		X		X	X			
Work with partners to develop machine learning techniques										X	
Support development and implementation of technologies to detect HAB species and toxins						X					

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Education and Outreach											
Current SECOORA Investments											
The SECOORA Hurricane Resources webpage and individual hurricane (named storm) data pages	X								X		
SECOORA hosted K-12 education materials	X	X							X		
Participate in FACT meetings and host website			X								
Partner with USF and YSI Xylem to host undergraduate student water quality field trips to Clam Bayou station					X						
Maintain the Red Tide Data Resources for Florida webpage						X					
Support regional partnerships based on national and regional concerns (e.g. SOCAN, FACT, SCDRP)		X	X					X			
Additional SECOORA Investment Opportunities											
Support training for fisheries managers in using SECOORA supported data visualization, models and model products			X								
Collaborate with partners to implement citizen science projects			X		X	X					
Expand SECOORA HABS data resources pages beyond Red Tide to provide resources for other HAB events and species						X					
Develop better connections with USCG and USACE for use of HFR data to include provision of training opportunities as needed									X		
Foster partnerships with marinas, fishing and tackle shops, and others to broaden the use of the MWP									X		
Advance outreach and education materials on ocean observing technology through the use of videos on the SECOORA website	X								X		