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Glider-Based Assessment of the Susceptibility of Important Commercial Fishery Habitats to Ocean Acidification

Laura Wiltsee | Rutgers University

Co-Authors

Elizabeth Wright-Fairbanks | Rutgers University; Travis Miles | Rutgers University and Grace Saba | Rutgers University

Abstract (Oral Presentation)

Ocean acidification has presented great research challenges and has significant societal ramifications that range from economic losses due to the decreased survival of commercially important organisms to the ecological consequences associated with altered ecosystems. However, water column pH measurements are sorely lacking in these valuable fishing regions. Using pH and carbonate saturation state data collected during deployments of a glider equipped with a new deep ISFET (Ion Sensitive Field Effect Transistor)-based pH sensor, we examine carbonate chemistry dynamics in important commercial fishery habitats in shelf waters of the Mid-Atlantic Bight. Specifically, we pair glider data with historical fisheries survey data (i.e., Northeast Fisheries Science Center's Marine Resources Monitoring, Assessment, and Prediction and Ecosystem Monitoring Surveys) to identify whether fishery habitats are susceptible to periods of low pH and/or high temporal pH variability using surf clam, sea scallop, black sea bass, and summer flounder species as examples. The ability to identify and continue monitoring high-risk areas that are more prone to periods of reduced pH and/or high pH variability will enable improved fisheries management of essential habitats in future, more acidic ocean