



**“LONG-TERM DYNAMICS IN ATLANTIC SURFCLAM POPULATIONS:
THE ROLE OF BOTTOM WATER TEMPERATURE”**

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CCPO

Monday, October 21, 2013

3:30 PM

Room 1202, Engineering and Computational Sciences Building

Abstract

The Atlantic surfclam (*Spisula solidissima*) fishery in the Middle Atlantic Bight (MAB) continental shelf is one of the most valuable single species US commercial fisheries. Since 1997, populations from southern inshore regions of the clam's range have experienced significant mortality events, which have been associated with a general warming of bottom water temperatures along the MAB. The potential linkages between warming bottom temperatures and increased surfclam mortality and/or reduced growth are being addressed using a model that simulates the growth of post-settlement surfclam populations at specific locations on the MAB shelf. External forcing for the growth model is provided by a 50-year simulation (1958-2007) of bottom water temperature obtained from an implementation of the Regional Ocean Modeling System (ROMS) for the Northwestern Atlantic. The simulations show that surfclams experience high mortality during years when bottom water temperatures remain 1-2°C above average conditions for an extended time at each location. These mortality events are more common after 1982, producing an overall decline in the surfclam populations inhabiting the inner shelf area of the southern MAB. Further, simulations show that the magnitude of mortality is moderated by the existing population structure such that older, larger populations experience higher mortality than smaller, younger populations. These results provide insights of how surfclams could respond.

Biography

Diego Narváez received a B.S. degree in Oceanography from the Catholic University of Valparaiso in Chile and M.S and Ph.D. degrees from Old Dominion University. Currently, he is a postdoctoral research associate at the Center for Coastal Physical Oceanography (CCPO) at Old Dominion University, under the direction of Dr. Eileen Hofmann. His current research is part of the NASA-funded U.S. Eastern Continental Shelf Carbon Cycling project and part of a NSF-funded Climate Change and Responses in a Coupled Marine System project.

Reception before seminar at 3:00 PM