Dean's Colloquium

Mr. Noah Tait, Senior, Undergraduate Student
Department of Marine and Environmental Science

When: Wednesday, February 1st, 2023
Where: Turner 129
Time: 3:30 – 3:50 pm, Q&A: 10 min.

Title: Exploring Fisheries Policy Options to Control Invasive Catfish in Chesapeake Bay Using Ecopath with Ecosim

Abstract: Introduced to Chesapeake Bay tributaries to bolster recreational fishing, the blue catfish (***Ictalurus furcatus***) has become an invasive apex predator. Capable of exerting top-down forces on Bay trophic webs, they pose a threat to several fisheries-significant species, including the blue crab and fishes such as menhaden and shad. This project focuses on the use of a dynamic mass-balanced ecosystem modeling software, Ecopath with Ecosim (EwE), supplemented with NOAA Fisheries data, to simulate the effects that blue catfish have on the trophic systems of the Bay over time and the interactions between fisheries and ecosystems. EwE allows for the exploration of policy options such as catch quotas, and marine protected areas to optimize for fishery health and economic stability. By exploring policy options for economically incentivizing the capture of blue catfish by recreational and commercial fisheries, the primary objective of reducing the population to a sustainable level can be reasonably accomplished. If the invasive blue catfish population can be reliably controlled through EwE-informed management strategies, then blue crab populations will increase, at least in principle. By extension, preliminary data suggests that patterns relevant to the interaction between blue catfish and blue crabs will be applicable to future, more complex interactions involving menhaden and shad, as well as other key members of Chesapeake Bay food web.

Bio: Noah Tait received his B.S. degree in Biology from Old Dominion University in the summer of 2021. Since, he has joined Hampton University as a Graduate Fellow of NOAA's Living Marine Resources Cooperative Science center, where he is pursuing his M.S. in Biological Sciences with a concentration in Marine and Environmental Science. He is working under and being mentored by Dr. Tunde Adebola. The goal of his research is to further develop a model of fisheries of the Chesapeake Bay, exploring policy options to mitigate ecological harm caused by the invasive blue catfish (*I. furcatus*). Noah has grown up in the Chesapeake Bay area for his entire life, and his interest in the Bay's ecosystems are sparked from an upbringing in the area. Noah hopes to take his experiences in his master's degree and as an LMRCSC fellow, and apply them in a career in fisheries management, helping to develop sound practices and policies for sustainable management of estuarine natural resources.