Through this research, we are working with commercial harvesters to identify ways to reduce the incidental intake of Atlantic Sturgeon with minimal impact to commercial fishing.

Conservation Engineering and Modeling Approaches to Improve Seafood Sustainability

Who cares and why?

The successful management of fisheries requires management of both aquatic resources and humans. Unfortunately, resource managers have often struggled with finding the correct balance between exploitation and conservation. These imbalances have created ecological challenges for our marine fisheries as well as economic struggles for many coastal communities. These challenges are highlighted in the ongoing issues that surround the conservation of federally protected species including the Endangered Atlantic Sturgeon. The Mid-Atlantic region continues to play a leading role in seafood production although concerns over increased restrictions to diminish bycatch of ESA listed species have led some industry groups to question their continued viability in the face of enhanced protection measures.

What has the project done so far?

Field trials on large mesh sink gillnets employed in the Monkfish fishery have been conducted. After a total of three field seasons, the research team concluded that modifications to gillnets were a viable option to reduce the incidental take of Atlantic Sturgeon while still allowing harvesters to land Monkfish at commercially viable rates. By reducing the vertical profile of the gillnet by >75% , commercial harvesters significantly decreased Atlantic Sturgeon incidental takes while not appreciably impacting the landings of Monkfish and Winter Skates. We hope that by partnering with commercial harvesters, we can help implement novel conservation engineering approaches to improve the long term sustainability of our nation's seafood supply.

Impact Statement

Large mesh sink gillnets employed in the Monkfish and Winter Skate fisheries can be modified to allow landings of targeted species while reducing the landings of federally endangered Atlantic Sturgeon.

An 88% reduction in the vertical profile of standard large mesh sink gillnets significantly reduced the bycatch of Atlantic Sturgeon and did not appreciable reduce the landings of target species.

What research is needed?

Field trials to assess the post-release survival of incidentally taken Atlantic Sturgeon are needed as well as fine-scale behavioral studies to examine the interaction between sturgeon and anchored nets. This work is planned for the fall of 2014 and the spring of 2014. Additionally, through collaboration with the University of Delaware and the Lenfest Ocean Program, Delaware State University will be developing actionable models that will allow commercial harvesters to weigh the relative risks of fishing in a specific location based on a suite of environmental characteristics. This information will be provided in a real-time manner and will hopefully decrease human/sturgeon encounters.

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Strategic Priority – Animal health/products/production; environmental stewardship

Additional links: http://www.umes.edu/ard/Default.aspx?id=46285

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