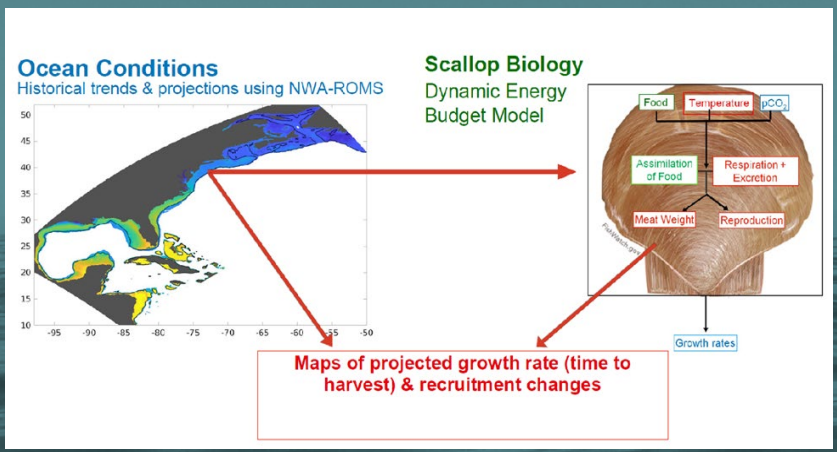
Warming Waters and Changing Ocean Conditions for the Commercial Sea Scallop Fishery

2024 WORKSHOPS: March 19, 21, 22

Learn about potential changes where you fish!

We are a multidisciplinary team working to understand how changing ocean conditions affect the Atlantic sea scallop fishery, and how the fishing industry and communities can prepare for and adapt to those changes.

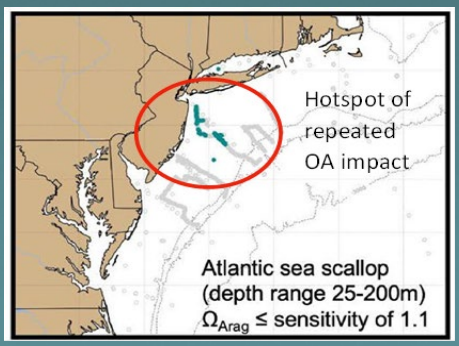


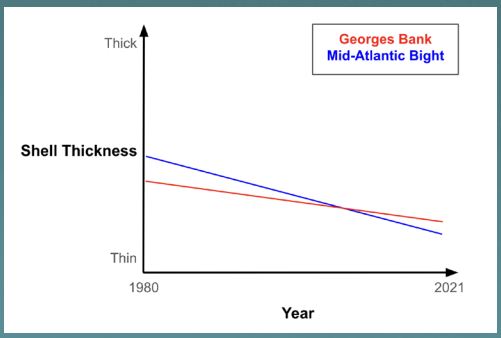
Changing ocean conditions can impact scallop biology and recruitment

Ocean Acidification (OA): Carbon dioxide (CO2) from the air added to seawater changes the water chemistry, reducing pH and carbonate levels in the ocean. Calcium carbonate is usually abundant or supersaturated in oceans so scallops can build shells, but ocean acidification can reduce the saturation (Ω) level of available calcium carbonate making it harder for scallops to repair and grow shells. The fishery is already seeing changes with scallops in the Gulf of Maine and New Jersey experiencing periodic impacts of OA.

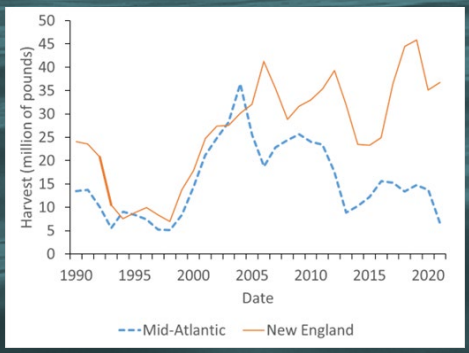
How do These Changes Impact Sea Scallops?

The negative effects of both warmer water and increased ocean acidification put stress on scallops to properly develop shells and have enough energy to reproduce. Preliminary results from energetic models for Georges Bank suggest that future OA and warming may cause scallops to reach a smaller ultimate length with potential impacts on reproduction. Initial findings from a study of shell thickness over time suggest that shells have thinned since the 1980's, especially in the Mid-Atlantic scallop range. This result may have implications for future harvest techniques.





How do Fishing Communities Adapt to These Changes?



To understand fishing community vulnerability to climate change, we analyze management decisions, historical landings & fishing effort shifts over time. Our conversations with fishermen have suggested there is an ability for the industry to adapt to challenges, and this informs our understanding of the adaptive capacity of the fleet.

Contact us for 2024 Workshop Details!

Contact Susan Inglis: singlis@cfrfoundation.org or Victoria Thomas vthomas@cfrfoundation.org for more information.

Scan the QR code for project details