

# CFRF NEWSLETTER

MAY 2023

ISSUE 22

## Project Results: Piloting the N-Viro Dredge in the Southern New England Sea Scallop Fishery



We have officially completed the at-sea trials of our N-Viro Dredge Phase II project! Last year, we conducted at-sea trials aboard three Limited Access General Category vessels out of Point Judith, RI (F/V Brooke C, F/V Harvest Moon, and F/V Mister G) in which we tested gear modifications in an attempt to improve the scallop catch rate of the N-Viro dredge; however, no tested modifications were able to improve upon the performance of the original N-Viro dredge.

During this most recent Limited Access vessel trip, which was conducted in partnership with the F/V Karen Elizabeth out of Point Judith, we compared 90 paired tows of the vessel's own 15' Turtle Deflector dredge and six N-Viro dredge frames. Unfortunately, the N-Viro dredge was not able to maintain a scallop catch rate comparable to that of the Turtle Deflector dredge; however, it did select for larger sized scallops and had lower bycatch rates than the Turtle Deflector dredge.

You can learn more about the project [here](#). Thanks to the [NOAA Fisheries Sea Scallop Research Set-Aside Program](#) for supporting both phases of this project.

## Project Update: Assessing the Vulnerability of the Atlantic Sea Scallop Social-Ecological System

This project looks at how vulnerable the sea scallop fishery, both scallops and the communities that rely on them, are to ocean acidification and warming. Our second year of workshops with fishing communities were well received with active and productive discussions. The results from these workshops are used to shape research questions to answer the next year.

Last year, fishermen mentioned they thought scallop shells were getting thinner, so this year we presented early results from a new analysis of archived scallop shells looking at shell thinning trends with changes in ocean conditions. We also handed out a field guide (photo on the right) asking fishermen to use the QR code to report changes they see in scallop shell condition. Scallop fishermen: please feel free to download the guide to learn more about this issue and get involved in this research!

We are producing a 2-page summary from the workshops with research updates that will be ready for distribution later in the year and posted on our [project webpage](#)!

**A Field Guide to observing impacts of OA on Sea Scallops on the East Coast of the US**

What is Ocean Acidification (OA)?  
When carbon dioxide (CO<sub>2</sub>) from the air is added to seawater, it changes the water chemistry, which reduces the pH and carbonate levels in the ocean. OA makes it energetically more difficult for marine calcifiers (like Sea Scallops) to generate a shell that requires carbonate.

Saturation state (Ω) is a measure of how close they are to an energetic threshold! Ω < 1.0 (Lower Ω) can result in less energy available for growth.  
Image © Michael Miller

What about Sea Scallops? Can we observe impacts of OA on Sea Scallops in the field?

Growth ring discoloration  
Color changes

Preliminary evidence from lab work suggests yes! Much like other bivalves, the shell of Sea Scallops experiences color changes, bleaching, and thinning with lower saturation states (Ω, a measure of carbonate concentrations in seawater)

Other bivalves do the same thing... Scallops are not alone

Have you seen these changes in scallop shells? Join one of our workshops

Where can I find out more information on OA?

## Project Update: Lobster and Jonah Crab Research Fleet



Since 2013, 35 different fishing vessels have collected data for the Lobster and Jonah Crab Research Fleet, and we are excited to welcome Ebben Howarth of the F/V Deborah H, out of Block Island, RI, as our newest Fleet member!

Since the start of the program, participants have sampled over 205,000 lobsters and 121,000 Jonah crabs. This important data has been incorporated in the stock assessment for lobster as well as the in-progress assessment for Jonah crab.

In addition to biological data, this Research Fleet also collects temperature data, and to date, the Fleet has collected over 4.7 million temperature readings. Temperature data were previously recorded using VEMCO Minilog data loggers, but this year the Fleet is transitioning to ZebraTech Moana TD sensors that will record both temperature and depth information. Check out the [project webpage](#) for more information on the participants and the data they collect!

## Welcome to the Newest Members of our Team

We are excited to introduce the newest members of the CFRF team, Linus Stolz and Sophie Bacas!

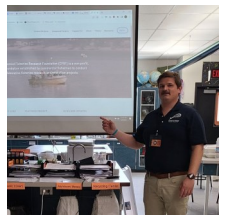
Linus joined the CFRF in April as our Data Manager. Linus has a MS in Marine Resource Management from Oregon State University. Here at the CFRF, he provides us with essential information technology support and works on database management and data analysis.



Sophie is our Administrative Assistant Intern for the summer. She recently graduated with dual degrees in Marine Affairs and Environmental and Natural Resource Economics from the University of Rhode Island, and she is helping us with a wide range of administrative work related to our many research projects.

## Education and Outreach

- Several CFRF staff attended the [Massachusetts Lobstermen's Association](#) annual weekend in Hyannis, MA in March. In addition to our outreach booth, David Bethoney and Mike Long hosted a seminar highlighting the value of lobstermen's involvement in research, using the CFRF Lobster and Jonah Crab Research Fleet as an example. Thanks to everyone who attended and joined in on the discussion!
- In May, Annabelle Leahy successfully defended her Masters thesis at the University of Rhode Island Graduate School of Oceanography! Annabelle worked with Dr. Jeremy Collie to analyze data from the CFRF's [Southern New England Cooperative Ventless Trap Survey](#) and [SFWF Ventless Trap Survey](#). We are thankful for all of her hard work going on surveys and working with this data the past two years!
- Linus Stoltz recently visited an Oregon high school to talk about careers in Cooperative Research and give a demonstration to students on oceanographic equipment. This was in support of the [Oregon Marine Scientist and Educator Alliance](#), an OR Sea Grant program where scientists are partnered with K-12 educators and tasked with creating a lesson plan using [Next Generation Science Standards](#)!
- In case you missed it: We recently released a summary video for our project to [pilot automatic squid jigs in Southern New England](#)! Check out the video to learn more about the project and let us know what you think!
- Don't forget to follow us on [Instagram](#), [Facebook](#), and [Twitter](#) for regular updates on our work!



### CONTACT Us

**Mail: P.O. Box 278, Saunderstown, RI 02874**  
**Fax: (401) 515-3537      Phone: (401) 515-4892**  
**Office: 2<sup>nd</sup> Floor, Building #61B**  
**East Farm Campus, URI, Kingston, RI 02881**