LENFEST OCEAN PROGRAM

A research project
December 2018

SUPPORTING SCIENCE AND COMMUNICATING RESULTS.

NEW RESEARCH TO DEVELOP GUIDANCE FOR ADAPTING TO SHIFTING FISH STOCKS

Climate change is altering the distribution of marine species, causing many to shift away from traditional fishing grounds. When a population shifts, managers must decide who should be allowed to catch the fish in their new location. This can pose challenges, such as difficult trade-offs between fairness and economic efficiency. For example, it might be considered fair to preserve the access rights of the fishermen who currently target the population, but it might be more economically efficient to reallocate access to fishermen who operate nearer to the new location.

To help managers address this challenge, the Lenfest Ocean Program is supporting Dr. Andrew Pershing, with colleagues at the Gulf of Maine Research Institute (GMRI), to review how various regions and countries have responded to shifting fish populations. They will then develop guidance to inform ongoing deliberations on this issue in the U.S. Northeast and Mid-Atlantic.

To ensure their work is relevant and useful, the researchers will convene an advisory body of managers and stakeholders from the U.S. Northeast and Mid-Atlantic. These advisors will give feedback on the research questions and preliminary findings, as well as suggestions for issues the researchers should consider.

> **"CLIMATE CHANGE IS CAUSING FISH TO MOVE ACROSS THE MAP. OUR GOAL IS TO DEVELOP ALTERNATIVES FOR HOW FISHERIES COULD ADJUST TO SHIFTS THAT ARE ALREADY UNDERWAY."**
>
> Andrew Pershing

DEVELOPING GUIDANCE BASED ON EXPERIENCE

Managers have several options for responding when there is a shift in a fish population, or stock. For example, the Atlantic States Marine Fisheries Commission allocates a fixed proportion of the total allowable summer flounder catch to each state, but it allows fishermen to travel to catch the species as it shifts, provided they bring it to port in their home states. In contrast, U.S. and Canadian managers reallocate Georges Bank haddock between the two countries to align with the shifting distribution, but they do not let fishermen cross the international boundary to fish.

In this project, the research team will characterize different types of allocation systems used across multiple fisheries and policy contexts around the world, and compare their experiences adapting to shifting stocks. The research team will then describe a range of options for adaptation and provide guidance on the benefits and challenges of each. They will refine this guidance based on input from the advisory body and from focus groups of fishermen and managers.

THE RESEARCH PLAN

The research project will have four phases:

1. **Develop categories.** The team will create categories of responses to shifting stocks by surveying research and policy documents from the United States, the European Union, Norway, Canada, Australia, and potentially elsewhere. Categories may be based on factors such as who receives the allocation (e.g. states, groups of fishermen, or individuals), the basis for allocation (e.g. past landings, auction, negotiation), and whether fishermen are allowed to cross jurisdictions to fish.

2. **Categorize fisheries.** The researchers will assign major fisheries around the world into one of the categories created in phase 1. In addition to analyzing management plans and related documents, the team will interview key participants in each fishery.

3. **Identify benefits and challenges.** The team will identify fisheries that have undergone climate-related shifts and compare and contrast their responses. They will then relate these responses to the categorization from phase 2 to explore the benefits and challenges of each allocation system.

4. **Evaluate options.** The researchers will hold a series of focus groups with fishery stakeholders in the U.S. Northeast and Mid-Atlantic to gather input on options for adapting to shifting fish stocks. These discussions will follow GMRI's "Fish Tank" format, an informal convening intended to elicit open exchange and creative ideas. The final output of this phase will be an evaluation of a range of allocation options, informed by stakeholder feedback.

The project will continue through 2021. It aims to produce two peer-reviewed publications that discuss climate stressors and classify different allocation schemes. The research team also aims to present its guidance for adaptation to shifting stocks directly to management bodies in the U.S. Northeast and Mid-Atlantic.

Contact

For any questions, please contact Emily Knight, Manager, Lenfest Ocean Program, at eknight@lenfestocean.org. To learn more about this research and stay up to date on our latest projects, follow us on Twitter @lenfestocean or sign up for our newsletter at lenfestocean.org.

Summer flounder (*Paralichthys dentatus*). Photo Credit: NOAA Fisheries

RESEARCH TEAM

- Dr. Andrew Pershing, GMRI
- Dr. Lisa Kerr, GMRI
- Jonathan Labaree, GMRI

Cover Photo: Juvenile haddock from a resource survey tow in the checker aboard the NOAA Ship Albatross IV, Fall 2003. Photo courtesy of NOAA.

901 E Street NW,
Washington DC 20004

E info@lenfestocean.org
P 202.540.6389

lenfestocean.org

Lenfest Ocean Program was established in 2004 by the Lenfest Foundation and is managed by The Pew Charitable Trusts

SUPPORTING SCIENCE AND COMMUNICATING RESULTS.