



## NEW RESEARCH ON ADAPTIVE ALLOCATION FOR TRANSBOUNDARY FISH STOCKS

### INTRODUCTION

When fish stocks shift across jurisdictional boundaries, whether due to warming temperatures, range expansion, or other environmental conditions, it can cause significant management challenges. In the United States, policies for renegotiating allocation of stocks are lengthy and complex, raising issues of fairness and equity among stakeholders and potentially exacerbating the risk of overfishing. Nimbler mechanisms for reallocation – termed “adaptive allocation” – could help managers be more responsive to a fish stock’s shifting distribution. However, there remain questions about what adaptive allocation is and how it could work in practice, especially given concerns surrounding the potential social and economic impacts on fishing communities.

The Lenfest Ocean Program is funding a group of experts coordinated by Dr. Rod Fujita, Environmental Defense Fund (EDF), and Dr. Arielle Levine, San Diego State University, to investigate options for a system of adaptive allocation, including ecological and socioeconomic tradeoffs, for two important fisheries in the U.S. Mid-Atlantic: summer flounder and black sea bass. In addition, the researchers aim to use insights gained about these fisheries to explore other regions where such a system could potentially inform management of transboundary stocks.

### THE NEED TO EXPLORE ADAPTIVE ALLOCATION POLICIES

For some U.S. fisheries, federal and interstate management authorities allocate fishing access in set amounts to individual states, with each state managing their part of the total allowable harvest. These allocations are typically based on the state’s historical harvest. As fish ranges shift, these allocations and the shoreside infrastructure required to process them becomes increasingly disconnected from their new range, generating significantly higher travel costs for fishermen to get to and from fishing grounds. Often only larger boats are able to pursue the fish over longer distances, leaving small vessels behind. And conflict can emerge when states seek access to fish that have newly arrived or now become more plentiful off their shores. These factors make the process of renegotiating allocation challenging for managers and stakeholders alike.

### RESEARCH TEAM

- Rod Fujita, Environmental Defense Fund, Project Co-Director
- Arielle Levine, San Diego State University, Project Co-Director
- Katie Longo, Marine Stewardship Council
- Olaf Jensen, University of Wisconsin
- Scott Crosson, NOAA Fisheries
- Lisa Wainger, University of Maryland Center for Environmental Science
- Chris Dumas, University of North Carolina at Wilmington
- Juliano Palacios, San Diego State University

This project is an outcome of the Lenfest Ocean Program Ideas Lab, a workshop held in October 2019 to identify research priorities for shifting marine species.

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Adaptive allocation policies guided by criteria developed cooperatively by fisheries managers and industry stakeholders and based in current science could help mitigate and/or ease adaptation to these impacts. Such policies must balance the need to adjust allocations to account for changes in the distribution of stocks with the capacity for different fisheries and coastal communities to adapt without experiencing severe economic and social dislocation. Thus, before adaptive allocation is considered, different policy options should be researched and tested to explore these tradeoffs and how to justly manage them.

## RESEARCH APPROACH

The research team will use a stepwise approach to investigate adaptive allocation options, varying in the weight given to changes in a stock's distribution and to historical landings (which would alter the rate at which allocations would change). Stakeholder input and feedback is essential to the success of project outcomes and will be integrated throughout. Researchers will do this by:

### Developing Alternative Adaptive Reallocation Rules

The research team will start by developing a set of experimental adaptive allocation policy options to test for the two fisheries. The options will be developed in close collaboration with fishery managers from the Atlantic States Marine Fisheries Commission (ASMFC) and the Mid-Atlantic Fisheries Management Council (MAFMC), as well as stakeholders involved in these fisheries, to ensure that the options are relevant to ongoing discussions and provide useful information.

### Estimating Retrospective Allocations

Once the researchers have developed a range of adaptive allocation policies for consideration, they will use data on historical stock distributions and state landings to estimate what the allocations under each policy option would have been in the past had that policy been in place.

### Estimating Economic Benefits and Impacts of Allocation Policies

With information on estimated past allocations for different policy options in hand, the researchers will conduct an economic analysis for each option. Using information from federal and state Fisheries Management Plans and other data regarding previous cost-earnings, vessel trips, and fish landings, the researchers will estimate the economic benefits and impacts for commercial and recreational fishing activity supported by the two species under each allocation option.

### Identifying Applications

Finally, the research team will identify other U.S. fisheries that are also experiencing rapid shifts in stock range and investigate current allocation and stock access. They aim to flag fisheries that may be at risk for conflict across jurisdictions. This analysis will reveal other U.S. regions that may benefit from an exploration of adaptive allocation.

## ENGAGING WITH STAKEHOLDERS

Throughout all steps of the project, the research approach and findings will be shared with fishery managers and stakeholders involved in these fisheries. The team will also seek to understand potential social and community impacts of adaptive allocation options through conversations with fishers and other fishing community stakeholders, that can help inform managers of the tradeoffs and benefits of these approaches.

This project started in September 2020 and will span three years.

## CONTACT

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

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901 E Street NW,  
Washington DC 20004

**E** [info@lenfestocean.org](mailto:info@lenfestocean.org)  
**P** 202.540.6389

[lenfestocean.org](https://lenfestocean.org)

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