

Session: Seafood Networks

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In 1871, the Fish Commission, the precursor to NMFS, was charged with studying “the decrease of the food fishes of the seacoasts and lakes of the United States, and to suggest remedial measures” (Guinan and Curtis, 1971). Additionally, the Magnuson-Stevens Act underscores the importance of fish as food¹. Over the past 140 years, copious amounts of research energy has been expended studying fish populations and suggesting remedial measures; however, comparatively little has examined the place of fish and fisheries inside the food system.

SSB seeks to increase the agency's understanding of role of fishing in the US food system and how these networks and distribution systems in turn support sustainable fisheries and resilient coastal communities. We are also interested in the connections between seafood networks and distribution systems and their connections with US health and nutrition policies. This leads us to pose research questions about the chain of custody once fish is landed, marketing innovations, and reliance on international markets. Also included in this research area are questions about the determinants of the price of seafood and consumer preferences related to seafood products.

SSB uses a wide range of methods and data to improve our understanding of fish as seafood. For example, some projects have used routinely-collected, fishery-dependent data to tackle these questions (Lee and Thunberg, 2013; Stoll *et al*, 2015; Ardini and Lee, 2017). Others have collected and analyzed primary-source data that is not regularly collected by NMFS, a time-consuming and often expensive endeavor (Brinson *et al*, 2011; Georgianna *et al*, 2017). Still others (Love *et al*, 2017) synthesize internal data, external data, and existing literature.

By answering these questions, we can account for the human interactions with our living marine ecosystems that occur after fish are landed, improving our science in support of fisheries management. For example, this allows Social Impact Analyses to include consideration of more than fishermen and fishing communities; better allowing decision makers to understand how regulations affect the nation. Understanding how consumers value and demand seafood allows SSB to include consumers in addition to producers, in benefit-cost analysis in support of fisheries policymaking (Lee and Thunberg, 2013; NEFMC, 2017).

These activities support the strategic initiatives at NEFSC and at NOAA. Improving our knowledge of economic and sociocultural factors in marine resource management supports NEFSC's Strategic Science Plan's theme of Science in Support of Ecosystem-Based Fisheries Management. By understanding “the linkages among biological, physical, and human components of marine, estuarine, and riverine ecosystems and the goods they provide,” this research improves our capacity to “evaluate ecological and

¹The first definition in the MSA of optimum yield is “the amount of fish that which will provide the greatest overall benefit to the nation, particularly with respect to food production and recreational opportunities, and taking into account the protection of the ecosystem.” National Standard 1, states that “management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the United States fishing industry.”

social outcomes of potential environmental and management change,” in direct support of NOAA’s “Healthy Oceans” goal identified in the Next Generation Strategic Plan.

This area of research requires a mix of disciplines from both inside and outside SSB. To be most effective, it requires expertise from outside SSB through collaboration both inside and outside the agency. The collection of appropriate data poses some challenges. Some of this research requires extensive interviews, which are logistically difficult and require cooperation from interviewees. Other barriers to accurate data include concern for privacy and confidentiality in business practices. Decreased response rates is a problem not unique to economic studies, but a widely shared challenge in survey research.

A recent research project underscores the disconnects and missed opportunities for fisheries to contribute to public health (Love *et al*, 2017). This new area of research broadens our understanding of the social and economic sustainability of fisheries systems. Achieving “the greatest overall benefit” from the nation’s fisheries will require continued cross-disciplinary research into the role of fish as part of the food system, along with development of partnerships with other agencies.

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