

Draft Economic Scope of Work

Project Title: Shellfish Market Analysis for Rhode Island Shellfish Management Plan

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Statement of Need: Wild shellfish management in Rhode Island is undertaken by the RI Department of Environmental Management (DEM). The management is aimed to achieve, among other objectives, conserving naturally occurring shellfish populations in RI waters and managing public health outcomes due, in part, to water quality issues. Management is further complicated and made more challenging by economic factors: to a large extent, RI's shellfish management programs are driven by the economic interests of commercial harvesters. Harvesters have long sought a regulatory program that limits access to certain areas in order to meter the flow of product to the market, and extend the season. The reality, however, is that while DEM and the RI Marine Fishery Council annually engage in a regulatory process aimed, in part, at meeting the economic interests of the commercial industry, the process is undertaken without a sound understanding of the market forces affecting those interests.

For any management scheme or regulation to be effective, policy must recognize the market forces at work when evaluating proposed intervention in, or regulation of, shellfish, including harvest timing, volume, and/or harvesting operations. As such, an economic analysis of the Rhode Island shellfish market, and a better understanding of how the management interacts with the market, is essential to guide and support shellfish management policies in Rhode Island.

Overview and Background: As mentioned above, much of RI's shellfish management programs are driven by the economic interests of commercial harvesters, i.e., to meter the flow of product to the market, and extend the season. While such interests influence the market year round, during all seasons, it is particularly true with regard to the winter harvest schedules that are established each year for productive shellfish management areas, such as Greenwich Bay. Accordingly, for areas like Greenwich Bay, the State's regulations establish specific days during the month, and specific hours during the day, from December through April, when the areas are open to harvest, based almost entirely on the economic interests of harvesters.

It seems clear that producers and consumers would mutually benefit by a steady flow of product to the market, yielding price stability. But achieving a steady flow of product for any single shellfish species, say quahog, is nearly impossible because opening and closing the areas due to resource availability and water quality-related issues is inevitable. Thus, the question becomes how to do these in a "sensible" manner, which is to minimize the price volatility. And because the price of a product is determined in the market reflecting all sorts of variables—including

fluctuations in resource availability and consumer demand, as well as the influence of other seafood products—understanding how these variables interact with one another and with managerial interventions is critical.

Scope of Work: One of the key determinants of price is the demand for said product (e.g., quahog) and the demand for related, close substitutes (e.g., clams, scallops, oysters). This is because each purchaser along the supply chain (dealers, processors, retailers) quotes its purchasing price based on the price it anticipates charging to its customers. As such, this project will estimate a multispecies demand system for RI shellfish, specifically wild-harvest quahogs and oyster aquaculture. In particular for quahogs/oysters:

1. We will estimate the relationship between the price of a quahog/oyster and its own quantity sold. This will tell us the sensitivity of price of quahog/oyster, for example, to the volume of quahog/oyster landed.
2. We will also estimate the relationship between the prices of quahog/oyster and other substitutable species (e.g., other clams) and product sources (farmed, import, including from Florida and Virginia). This will tell us (a) which products are the main competitors for quahog/oyster in the market, and (b) the degree in which demands for the quahog/oyster and its competitor products are interdependent.

In conducting the above analyses, we will explicitly incorporate the annual fluctuations in supply (harvest) and demand of these products, and the resulting fluctuations in prices paid to fishermen and by consumers. The role and influence of locally harvested products versus farmed and imported products will also be considered. Future iterations of this analysis will consider species other than quahogs and oysters.

Data: To conduct the above analyses, it is necessary to have data on prices and yields for each shellfish species (quahog and oyster), separated by its origin (local wild harvest, local farmed, imported). For the wild harvest quahog, dealer-reported data, including trip-level landings, is to be made available by RI Department of Environmental Management (DEM) through the Standard Atlantic Fisheries Information System (SAFIS-eDR). We will obtain data on farmed oysters in RI from the Coastal Resource Management Council (CRMC).

We acknowledge that the data needed are confidential, and will be managed accordingly. We have obtained, or will obtain, permission to access these data, and have arranged for secure storage. Any presentation or publication will be handled in a manner to ensure confidentiality in accordance with the relevant confidentiality agreements required. Data on other factors that could affect the demand, such as per household income, will be obtained from publicly available sources such as the US Census Bureau.

Deliverables: A quantitative and qualitative summary of the Rhode Island quahog (wild harvest) and oyster (aquaculture) markets, with a full characterization of the variables that affect the markets.

Timeline: The process to access necessary data is currently underway. Data analyses will be conducted during the summer of 2013. Targeted completion date is December 15, 2013.