Workshop on the State of Knowledge Related to Scallop Enhancement

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1.0 EXECUTIVE SUMMARY

Project Title: Workshop on the State of Knowledge Related to Scallop Enhancement

Year Awarded: 2022

RSA Priorities Addressed by This Research: Scallop Recruitment Supplementation

Industry Partners:

For the sea scallop, *Placopecten magellanicus*, the concepts of space and time have emerged as the basis of an effective management tool. The strategy of closing or limiting activity in certain areas for specific lengths of time has proved to be an effective management tool to conserve and enhance the sea scallop resource. In the last decade, rotational area management has provided a mechanism to protect juvenile scallops from fishing mortality by closing areas based upon scallop abundance and age distribution. Approximately half of the sea scallop industry's current annual landings come from areas under this rotational harvest strategy. This success supports an overall management approach that leverages the biology and ecology of the species. High fecundity and larval production, fast growth and limited spatial movement represent attributes that are critical to building and maintaining a sustainable resource. While these attributes underpin the current paradigm in the fishery that is predicated on natural recruitment, a natural progression suggests the exploration of additional approaches to grow the resource.

The concept of growing the U.S. sea scallop resource is motivated by a number of chronic and emerging factors. Natural recruitment variability, offshore wind development, and climate change may constrain the future spatial extent and possibly productivity of the resource. Resource enhancement represents a potential approach that hedges against these negative factors and could result in the stabilization and potential expansion of the scallop resource. This approach is not novel and across the globe scallop enhancement projects have been integrated into scallop management in Europe, Japan, South America, New Zealand, and China in an effort to increase yield and provide a source of stability for fisheries across multiple scallop species (Valderrama and Anderson, 2004; Strand et al., 2016; McMinn, 2020).

On the U.S. East Coast, sea scallop enhancement and aquaculture efforts have been developed with varying levels of success. There have been multiple causative factors for the range of outcomes, with difficulties seen in prior efforts generally related to sea scallop biology, site selection, and the ability to monitor transplanted scallops (Alexander, et al., 2018; Morse et al., 2020). While current and historical efforts do exist at the both the regional and international levels, the geographic scale of the U.S. resource, as well as the extreme offshore environment make this problem somewhat unique. In order to move forward in a measured, efficient, and rational way, we propose to bring together scallop enhancement experts from around the world with stakeholders to discuss the potential benefits, as well as lessons learned from years of experience in scallop enhancement. The proposed workshop will allow stakeholders on the U.S. East coast to learn from and subsequently develop, and refine sea scallop enhancement efforts in the region across wide ranging topic areas that are critical considerations for any enhancement efforts.

2.0 PRELIMINARY RESULTS AND DISCUSSION

This project was recently funded in March of 2022 and as such there are no results yet. Below is an overview of the project scope, objectives and expected deliverables.

A multi-day workshop will be convened in the New Bedford, MA/Providence, RI area during late 2022/early 2023. This location will promote attendance by both global experts in the field, with the proximity to Boston, MA for travel purposes, as well as interested stakeholders from the U.S. East Coast. Invited speakers will include scientists, researchers, fishery managers, industry representatives, and assessment scientists from around the world and from organizations on the U.S. East Coast with experience in scallop enhancement and aquaculture. A steering committee will be formed with representation from relevant organizations currently involved with or that have past experience with topic areas relevant to scallop enhancement on the U.S. East Coast to guide development of the workshop. Other workshop committees will be formed as needed during the planning phase.

The workshop will focus on several key areas of scallop enhancement in relation to the U.S. East Coast:

1. Potential needs for sea scallop enhancement on the U.S. East Coast;
2. Understanding and developing tools to increase and/or improve spat collection, grow out of juvenile scallops, survival of juvenile scallops, and predation impacts;
3. Enhancement site location, selection, and monitoring for both inshore and offshore seeding and aquaculture efforts;
4. Transportation methods for enhancement studies and efforts;
5. Developing advice for standards and best practices for scallop enhancement and aquaculture efforts;
6. Discussion of the economic feasibility of enhancement efforts;
7. Impacts/implications for the wild caught sea scallop fishery; and
8. Policy implications.

Deliverables from the workshop will include:

1. A conference proceedings document summarizing the workshop.
2. A whitepaper articulating the strengths, weaknesses, opportunities, and threats of scallop enhancement for the U.S. federal fishery for *Placopecten magellanicus*.
3. Exploration of a special thematic issue in a relevant peer reviewed journal (e.g. Journal of Shellfish Research, AFS Journal) to document relevant research findings from the workshop across the varied topical areas.

3.0 SPECIAL COMMENTS

We started this project with the acknowledgement that there is existing expertise and long-running efforts with sea scallop culture and enhancement in the U.S. We look to leverage that experience and engage with domestic and international colleagues to build out our understanding of the state of knowledge of enhancement. Ultimately, a positive output of this effort would be to produce an informed roadmap to guide future efforts in the area of scallop enhancement for the U.S. resource/fishery.