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Scallop Aquaculture Research Collaborative Meeting

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Maine Scallops Research Collaborative Meeting Notes

1/22/21

1:00 pm- 3:00pm

Below are the notes from our breakout sessions. We did our best to include broad topics seen across multiple groups and to identify some specific areas for potential synergistic research moving forward.

***Indicate topics that are currently being researched. Future webinars will focus on these topics and current research and results from these efforts. Stay tuned!

Remaining topics will provide the basis for future meetings to identify specific projects for collaborative research opportunities as part of the SRC.

QUESTION 1: RESEARCH & MANAGEMENT PRIORITIES

1. Biotoxins***
 - a. New and cheaper biotoxin testing methods (ELISA)
 - b. Process for getting alternative methods into the policy at DMR and the ISSC
 - c. Affordable testing
 - i. How does DMR determine which industries/species that the Public Health Program will fund testing costs (growing areas / lot testing)?
 - d. differences in wild caught vs. farmed scallops with biotoxins
 - e. Grower education
2. Biofouling***
 - a. Management through washing rings, varied depths
3. Larval Hatchery production***
 - a. Larval nutrition
 - b. Polyploidy
 - c. Broodstock conditioning
 - d. Reduction of larval duration time
 - e. Broodstock selection for disease resistance, growth
 - f. Stock enhancement
 - g. Larval survival
4. Wild Spat***

- a. population dynamics related to wild recruitment
 - b. Spat collection
 - i. Size and location
 - c. Larval behavior
 - d. Population sinks and sources
 - e. Wild population reproduction
5. Collaborative research with industry
 - a. communication and partnerships
 - b. DMR communications with wild fisheries
6. Rotational closure program
 - a. Review of current management strategies (limits, closures, etc.).
 - i. What has been effective and what hasn't?
 - ii. What is the effect of boats coming into productive areas from other less productive parts of the state?
 - iii. Connect with fishermen perspectives
7. Biosecurity
 - a. Baseline health
 - b. Pathogens and disease monitoring
 - c. Tracking movement around the state
8. Public Education and WFD
 - a. Aquaculture and wild fishery
 - b. International Tech transfer
9. Wild population monitoring***
 - a. Meat sizes
 - b. Health
 - c. More frequent survey
 - d. Peak reproductive output?
 - i. how much do we need to keep on bottom to maintain populations?
10. Effects of Climate Change & Other Environmental Factors
 - a. Ocean acidification
 - b. Growth rates
 - c. Food availability

- d. Product quality
- e. Inshore vs offshore
- f. Temperature effects on biofouling, biotoxins and circulation

11. Cultivation and Fishing Methods***

- a. New dredge technology with less environmental impact
- b. ear hanging, lantern nets, Long lines
- c. International tech transfer

12. Marketing

- a. For farmed scallops
- b. For dayboat scallops
- c. Size preferences
- d. Overlap in preference for farmed and wild-caught
- e. Provenance and taste
- f. Maine brand

13. Growth Rates and Meat Quality***

14. Ecosystem services

- a. Water quality remediation
- b. Ecosystem interactions/function

15. Farm Siting***

- a. Conflicts with wild fishery
- b. NIMBY (Not In My Back Yard)
- c. Bottom Mapping - LIDAR
- d. Food availability
- e. DMR leasing for deeper water
- f. Hydrodynamics

QUESTION 2: SYNERGISTIC RESEARCH OPPORTUNITIES

1. Spat collection and considerations

- a. Can we use existing available spat bag data to help understand change over time? We know water has warmed and is more acidic. If there's a long enough time series from spat bags in the same place, can we use spat bag data to help us understand population responses? If there's no evidence, what other drivers should we consider (e.g. predation?)?

- b. Spat collection licenses -- More research around use and efficacy of spat collection licenses
 - c. What are potential areas of competition and potential market conflicts with wild spat collection and product sales between wild and aquaculture?
2. Larval dynamics and recruitment
- a. Relationships and spat settlement, transport dynamics, ecological parameter modeling.
 - b. Linking eDNA or DNA data and oceanographic information - try to understand where spat is moving from farms and from wild populations. Finding the ideal collection areas for collection and release as recruitment enhancement or to be grown out on a farm.***
 - c. Genetic studies that can define sub-populations and inform transport of spat. Do the practices of spat collection result in wild stock enhancement?***
 - d. Efficacy of seed areas for juvenile scallops given their mobility
 - e. Settlement stage for both wild and for growers: what are the environmental conditions that favor wild settlement success and how that can inform husbandry?
 - f. Recruitment studies along the entire coast. Use spat bags? Sentinel monitoring opportunity?
 - g. What impact does spat production from scallop farms have → does it have a positive or negative impact on the wild industry? Does the timing and location of spawning from farms impact wild fishery? ***
 - h. Is there any impact on the wild seed population from harvesting for aquaculture?
 - i. Is there a difference in fertilization success rates in wild scallops vs. farmed scallops? ***
3. Disease
- a. Disease monitoring in both aquaculture and wild populations
4. Hatcheries
- a. Amplifying the genetics through a hatchery → Can we create lineages with higher temperature resilience, benefiting both wild and hatchery caught/reared scallops?
5. Marketing
- a. Marketing efforts -- potential for co-marketing of wild and aquaculture scallops as a Maine brand?

QUESTION 3: POSSIBLE FUNDING SOURCES

1. Aquaculture specific

- a. [US Department of Agriculture](#)
 - b. [Northeast Regional Aquaculture Center](#)
 - c. [East Coast Shellfish Growers](#)
 - d. [Northeast Sustainable Agriculture Research and Education \(SARE\)](#)
2. Federal and State Government
- a. National Oceanic and Atmospheric Administration
 - i. [Saltonstall-Kennedy Program](#)
 - ii. [Office of Aquaculture](#)
 - iii. [National Sea Grant](#)
 - iv. [Maine Sea Grant](#) (**current request for pre-proposals, due Feb 25)
 - b. US [Small Business Innovation Research \(SBIR\) and Small Business Technology Transfer](#)
 - c. Department of Defense (large-scale research that has environmental impacts)
 - d. [Atlantic States Marine Fisheries Commission](#)
 - e. [National Fish and Wildlife Federation](#)
3. Private Foundations and Nonprofits
- a. [Maine Technology Institute](#)
 - b. [Davis Conservation Foundation](#)
 - c. [Sea Pact](#)
 - d. [Island Institute](#)
4. Philanthropic Individuals
5. Other thoughts/questions about funding
- a. Are there other sources for state funding for scallops (both wild and aquaculture)? Lobster license plates as an example - smaller funds to help with projects?
 - b. What about scallop-specific RFP's outside of the Research Set Aside (RSA) program for wild harvest? There are aquaculture specific calls, but some of these emerging interactions between wild and aquaculture could be important.
 - c. Scallop RSAs - may preclude state waters, but Northern Gulf of Maine area will probably be eligible for this next April

QUESTION 4: INFORMATION SHARING & GATHERING

1. SRC events and info
 - a. Webpage
 - b. E-news

- c. Industry outreach through Fishing Groups/Shellfish working group
- d. Newspapers/Magazine
- e. DMR
- f. Maine Sea Grant
- g. Word of Mouth
- h. Radio

2. Scallop Research

- a. Annual Symposium/Conference
- b. Written Research Summaries
- c. In person meetings
- d. Food industry (retailers, restaurants, distributor) exchanges