

Living and Working with MSX, an Oyster Industry Perspective

An Overview of PEI Industry Priorities Developed from this Workshop

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**PEI Oyster
Processors
Association**



PEI Aquaculture Alliance

- Non-profit organization established in 1998
- More than 150 members
- Umbrella organization representing the:
 - PEI Cultured Mussel Growers Association
 - Island Oyster Growers Group
 - PEI Finfish Association

The PEI Aquaculture Alliance advocates on behalf of the industry, enables important research and development and shares relevant information on current issues and opportunities.



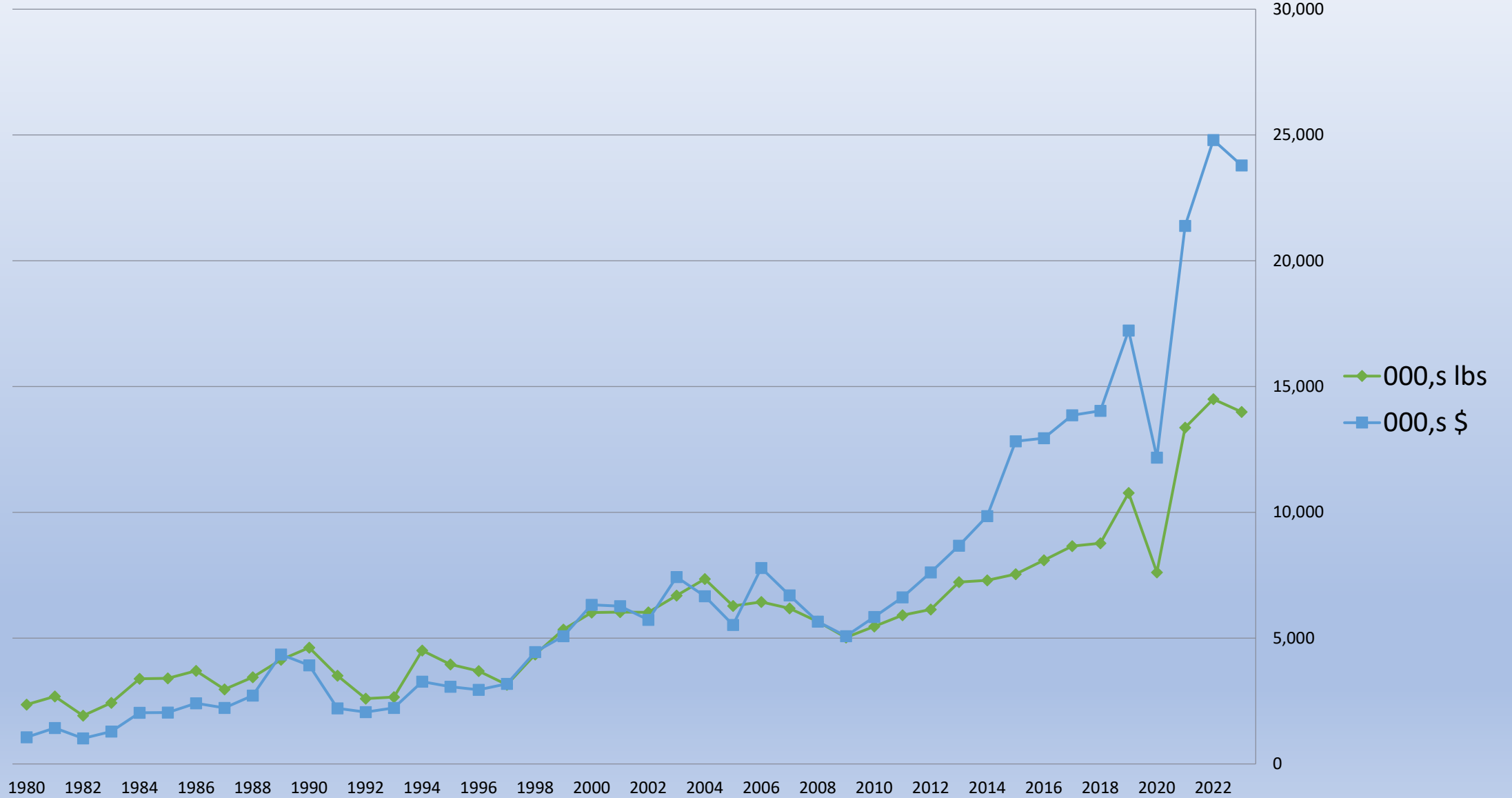
2022 oyster landings* - 14.6 million pounds (80,275,911 pieces), landed value of \$24.8 million

****cultured and fishery combined***

Oyster farming takes place in over 20 bays and estuaries across the whole Island

Oyster production has expanded 125% in the last decade

PEI Oyster Landings & Values 1980-2023



Introduction

- *Living and Working with MSX, an Oyster Industry Perspective* was hosted by the Prince Edward Island Aquaculture Alliance, Prince Edward Island Shellfish Association, Prince Edward Island Seafood Processors Association and Prince Edward Island Oyster Processors Association in response to the recent finding MSX in waterways around Prince Edward Island

The full workshop proceedings are now available to download.

<https://www.aquaculturepei.com/wp-content/uploads/2024/09/Living-and-Working-with-MSX-an-Oyster-Industry-Perspective-Proceedings-Final-1.pdf>

- The workshop provided an update on the current MSX situation in PEI and brought together local fishers, aquaculturists, processors, and researchers with those from other regions along the eastern seaboard who operate in MSX-infected waters or experienced an MSX outbreak in the past (Virginia, Maine and Nova Scotia) along with provincial and federal government agencies and funders.
- Day 1 of the workshop focused on industry's perspectives on MSX, while Day 2 focused on broodstock programs, hatcheries, and research.

Primary priorities

- **Collaboration and input from all industries**

- The sharing of information was repeatedly mentioned. MSX is a cross-industry, cross-regional problem and its management and recovery will advance more quickly with cooperative efforts.

- **Development of MSX resistant seedstocks that are locally adapted**

- Both fishers and aquaculturists emphasized this. It was widely recognized that MSX resistant stocks have been critical for revitalizing the fishing and aquaculture industries in the eastern US and will be needed to ensure a future for the oyster industries in PEI and potentially elsewhere in Atlantic Canada.
- This is a complex goal, requiring breeding programs, and hatchery and nursery capacity. The ownership structure of the genetics of resistant strains, distribution of the genetic lines to industry to ensure accessibility, and the potential for increased cost of hatchery produced stock all need to be determined.

- **Surveillance and testing of MSX prevalence and mortality**

- MSX can be present in the absence of significant mortality events, and therefore all MSX positive areas need to be identified. The aquaculture industry would, additionally, like to gain a better understanding of distribution of MSX in affected areas, including in terms of its prevalence relative to environmental parameters (water temperature profile, salinity, and depth), stock location (surface grown or bottom culture or wild beds) and husbandry methods.
- This information, gained early could help to develop harvest management plans and best practices for growing oysters in the presence of MSX. One of the recognized constraints for surveillance is the unavailability of rapid, local testing. Increased testing capacity, was therefore identified as a need. Hand-in-hand with mortality and MSX prevalence surveillance is the need to better understand the environmental parameters associated with the sample sites to enable correlating patterns of prevalence, mortality, and water quality.

- **Research on husbandry techniques**

- Trials in the Bras D'Or Lake indicate that growing oysters at the surface may reduce mortality. What aspect of surface growing techniques (husbandry of cages, winter temperature, salinity fluctuations, time on bottom, short term temperature exposure, others) caused the reduced mortality.

- **Diversification**

- This avenue was pursued in Virginia as a means to reduce the impact of oyster diseases and may have potential in PEI.

- **Regulatory changes**

- To support operations in the presence of MSX was a common theme proposed as a priority by all industries, Suggestions included: simplify paperwork, expand seed collection areas, increase access to surface culture leases, develop a buy-back program for licenses and re-examine relay practices.

- **Determining the intermediate host**

- Understanding this aspect of the MSX parasite was generally recognized to be helpful with applying controls for movement of the parasite; however, this knowledge will likely not change the short term and long-term needs of the industries, nor accelerate the development of resistant stocks.
- As a result, this was described as a “nice to know” item, rather than a “need to know” item. This conclusion is supported by results in the eastern US where the oyster fishing and aquaculture industries have rebounded in the absence of identifying the intermediate host.

- **Long-term Funding**

- Support at all levels of government will be required to secure operations now, and in days to come. An economic impact assessment of oyster sector stakeholders may be helpful to give context to the significance of MSX to the Island.

Short term actions

- Continued communication with industry by provincial and federal departments to facilitate transition of the industry to the new era of working with MSX.
- Continued collaboration and discussions between and within the fishery, aquaculture, and processing sectors on PEI to determine research questions and refine short term and long terms goals.
- Continued collaboration and discussions with other regions that have experienced an MSX outbreak in the past.
- Collaboration and partnerships with local academia and regulators to develop plans for investigating research questions.
- Development and execution of an enhanced surveillance program for MSX that will clarify province wide distribution in public fishery beds and aquaculture leases.
- Development and execution of an enhanced surveillance program that will identify local distribution patterns for MSX in MSX-positive areas to support the development of practices that can assist the industry to operate in the presence of the parasite.

Short term actions

- Determination of the ownership, development, and funding model for a locally selected strain(s) of MSX resistant broodstock.
- Determination of the ownership, development, and funding model for the hatchery production of MSX resistant seedstock.
- Research on husbandry procedures and environmental parameters that reduce the prevalence of MSX and/or mortality of oysters in MSX positive areas.
- An examination of current regulatory constraints for oyster fishers and growers to determine if there are any restrictions that impede harvesting and growing oysters that may be safely temporarily eased in order to enable operations to survive.
- Continued, ongoing and enhanced technical resource support for fishers, growers, and processors.
- Assessment of the potential for a licence buy-back program for fishers.

Long term actions

- Development and execution of a breeding program(s) to produce a locally adapted, MSX resistant strain(s) of oyster, for both aquaculturists and the public fishery.
- Assessment of the potential and process for public oyster bed restoration.
- Assessment of the potential for alternative species.
- Increase in the local capacity of hatchery production of oyster seed (infrastructure, training, customer base development).
- Assessment of the need for subsidizing seed purchase.
- Increase in the local capacity for nursery grow out of oyster seed (infrastructure, training).
- Training in hatchery techniques, nursery techniques, other changes required to support needed changes in equipment and processes.
- Identification of the intermediate host/vector and mechanism of infection.

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