Prince Edward Island
AQUACULTURE ALLIANCE

Advancing the Sustainable Growth and Prosperity Of Quality Farmed Seafood Production

Protecting PEI's Oyster Industry:

Challenges, Choices, and the Road Ahead

A few weeks ago, I had the opportunity to attend the NACE Conference for the first time alongside eight experienced growers and processors from PEI. It was an outstanding event, with more than 700 participants in attendance. Numerous aquaculture-related businesses took part in the exhibits and trade shows, showcasing services and equipment for shellfish growers, processors, researchers, and hatchery operators. Hearing researchers share their latest findings and ongoing efforts to strengthen and advance the shellfish industry was truly inspiring.

Beyond the formal conference program, we had the opportunity to network with many experts and discuss the current MSX and Dermo challenges facing the oyster industry in PEI. Since researchers and growers in the United States have been managing MSX and Dermo in their waters since 1958, their experience and advice were invaluable. Carter Newell from Maine shared that when MSX first caused oyster mortalities in their region, they immediately transitioned to MSX-resistant hatchery seed and achieved 100% survival with resistant strains.

Canada's pristine waters and ideal growing conditions historically allowed the oyster industry to flourish naturally, often without the need for hatcheries. However, with the emergence of MSX and Dermo, the industry now faces significant challenges and the risk of severe losses if swift action is not taken. MSX was first detected in PEI oysters in July 2024, and with limited understanding of the parasite's behavior and its intermediate host, definitive solutions remain elusive. As a result, oyster mortality in our bays continues to be a serious concern.

Last year, the Government of PEI committed to supporting the oyster industry through this difficult period by exploring multiple options and approaches toward a sustainable solution. One of the key considerations has been the potential importation of resistant seed, broodstock, or gametes, along with careful evaluation of biosecurity risks and the possibility of introducing other unknown diseases. The concern over unintended consequences remains significant.

Given the geographic proximity and similar environmental conditions, Maine has emerged as a potential source to improve the likelihood that imported oysters would adapt successfully to Canadian waters. During our discussions with oyster growers and researchers in Maine, the performance of diploid, triploid, and tetraploid seed — along with the pros and cons of importing each — was a major focus of conversation. Experts consistently emphasized that recovery would require three to four generations of oysters grown in MSX-affected waters, translating to six to seven years of uncertainty for oyster production.

The economic implications extend far beyond oyster growers alone. Fishermen, processors, fabricators, restaurants, and PEI's tourism industry could all be significantly affected if the oyster sector declines, and recovery would take many years.

Several critical questions remain: Should we import resistant seed from Maine?
Developing our own resistant broodstock would take six to eight years, making importation a potentially necessary short-term solution. However, there are serious concerns about the possible transfer of other diseases not yet identified in PEI, such as SUMS, Juvenile Oyster Disease, and DBX. Any movement of seed or broodstock must involve rigorous screening and strict biosecurity protocols. Delays in approvals and screening could force businesses to seek oysters from other sources, putting local farms at risk. Many growers and fishermen are increasingly anxious about the future of their operations.

There are also important biological considerations. PEI oysters are resistant to Malpeque disease, while oysters from Maine may not have been exposed to it, which could affect their survival in PEI waters. While answers can only be obtained through testing, it is critical that this work begin as soon as possible under strictly controlled and biosecure conditions.

Another option discussed was crossing resistant oysters from Maine with PEI survivors from areas of high MSX prevalence. While this approach has strong potential to enhance disease resistance, these oysters may produce limited progeny, which does not promise survivors. Given the urgency of the situation, this line of work should be initiated promptly under controlled, biosecure conditions so that its potential can be properly evaluated without unnecessary delay.

Alternatively, resistant oysters from Maine could be crossed with PEI oysters from areas with low MSX prevalence. This approach may result in higher progeny production; however, because these PEI oysters have not been exposed to intense disease pressure, the strength of disease resistance in future generations may be limited. Even so, this option also warrants immediate, carefully controlled investigation to determine its viability, rather than postponing potentially valuable pathways to recovery.

While it is critical to find timely solutions to stabilize the industry, biosecurity must remain the top priority. We were encouraged to see the setup at Atlantic Aqua Farms' Mook facility in Maine, where Meredith White is working tirelessly and with unwavering dedication to ensure every requirement of the Canadian Food Inspection Agency is met. While Canada is rightly committed to preventing the transfer of any unknown pathogens from Maine to PEI, there is also an urgent need to identify the best path forward as quickly as possible.

Ultimately, the oyster industry will need to learn to live with Dermo and MSX. This will require increased hatchery capacity and investment in new and existing facilities. To keep our industry from dying, a short-term solution is to import seed/ brood stock from the U.S.

For long-term sustainability, it is critical that PEI aggressively invest in and prioritize the development of local expertise and capacity. We encourage our researchers, institutions, and funding bodies to place a clear and immediate focus on shellfish research. We urge our geneticists,

microbiologists, and ecologists to actively prioritize and direct their expertise toward addressing the needs of oysters and the broader shellfish sector. Building robust strength in the oyster industry must become a strategic priority — not only to protect oysters, but to secure the resilience and future of PEI's entire shellfish industry.

Dr. Gaitee Joshua

PEI Aquaculture Alliance