



ALLIANCE™

[.https://www.globalseafood.org](https://www.globalseafood.org)**Responsible
Seafood**
ADVOCATE

Intelligence

Can environmental DNA combat deadly parasites threatening Canada's oysters?

21 May 2025

By Responsible Seafood Advocate

Tool would detect and track deadly MSX and Dermo parasites

Genome Atlantic and Genome Canada have announced \$800,000 (U.S. \$573,000) in funding for a new environmental DNA (eDNA) research project to help Canada's shellfish sector better defend against two major parasitic threats: *Multinucleate sphere Unknown X* (MSX) and *Perkinsus marinus* (Dermo). By identifying these parasites early, the project seeks to prevent outbreaks, protect oyster stocks and support the sustainability of the shellfish industry.

The project will focus on developing a water-based genetic surveillance tool to help the industry, provincial governments and regulators detect and track these deadly parasites before they visibly impact oyster populations. It will also generate valuable data to be used in epidemiological models to better understand and predict transmission rate and distribution in areas where the parasites are found.

"During the COVID-19 pandemic, Canadians saw these surveillance tools in action, monitoring wastewater for levels of the SARS-CoV-2 virus in communities," said Rob Annan, president and CEO of Genome Canada. "Genome Canada is investing in these new projects to build capacity for future



Genome Atlantic and Genome Canada have announced \$800,000 (U.S. \$573,000) in funding for a new environmental DNA (eDNA) research project to help Canada's shellfish sector better defend against MSX and Dermo parasitic threats. Photo credit: John Hillis, Truefaux Films

pandemic preparedness, ongoing public health monitoring and stronger environmental protection for our country."

Environmental DNA and RNA (collectively referred to as eDNA) are genetic materials that organisms shed into their surroundings, including water, soil and air. eDNA surveillance is a non-invasive method for assessing the health of ecosystems and communities, generating data that supports timely, evidence-based decisions in areas such as biodiversity monitoring, pathogen detection, antimicrobial resistance tracking and forensic analysis.



(<https://link.chtbl.com/aquapod>).

MSX, caused by the parasite *Haplosporidium nelsoni*, affects oysters by slowing their growth and increasing mortality rates, but it does not pose any risk to human health or food safety. Dermo is a serious oyster disease caused by the parasite *Perkinsus marinus*, leading to high mortality rates in both farmed and wild oysters.

This research project comes at a critical time, as Prince Edward Island's (PEI) spring oyster season is underway and local fishers are reporting significant impacts from MSX. In July 2024, the deadly MSX parasite was detected in wild oysters from Bedeque Bay, Prince Edward Island, marking the first confirmed case in the area. The project's findings could offer oyster growers and regulators valuable tools and insights to better detect and manage parasite risks in the future.



Damaging MSX parasite detected in P.E.I., threatening oyster growers

The destructive MSX parasite has been detected in oysters from Bedeque Bay, P.E.I., threatening the island's oyster industry.



Global Seafood Alliance

Parasites pose a serious threat to Canada's fishing industries, with early, rapid and comprehensive detection critical to managing outbreaks. MSX devastated the Bras d'Or Lake oyster industry in Cape Breton over two decades ago and has caused significant mortality in parts of Prince Edward Island since its detection in July 2024, followed by confirmation in New Brunswick in November. Dermo, already responsible for large oyster losses along the eastern seaboard, has now also been identified in some areas of New Brunswick and Nova Scotia.

[Read more about the project here \(https://genomecanada.ca/project/development-of-edna-techniques-for-msx-and-dermo-surveillance/\).](https://genomecanada.ca/project/development-of-edna-techniques-for-msx-and-dermo-surveillance/)

Author



RESPONSIBLE SEAFOOD ADVOCATE

editor@globalseafood.org (<mailto:editor@globalseafood.org>)

Copyright © 2025 Global Seafood Alliance

All rights reserved.