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Granular Bayluscide (gB) Workshop
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ABSTRACT:

The use of lampricides is the cornerstone of the Sea Lamprey Control Program in the Laurentian Great Lakes. While 4-nitro-3-(trifluoromethyl)phenol (TFM; commonly referred to as 3-trifluoromethyl-4-nitrophenol) is used for most treatments, bayluscide 3.2% Granular Sea Lamprey Larvicide (gB) is an alternative formulation that is used in large systems that make TFM applications impractical, in low-flow or lentic environments where TFM disperses poorly, and for population assessments. Although gB applications are assumed to produce 75% larval sea lamprey mortality, field observations by sea lamprey control (SLC) agents suggest that this number overestimates treatment effectiveness. This concern highlights a need to validate the assumed mortality rate and develop a better understanding of how abiotic variables (e.g. water pH, dissolved organic carbon, sorption to sediment, temperature, hydrology) and biotic variables (e.g., physiology, burrowing behaviour) influence sea lamprey sensitivity to gB.

To address these knowledge gaps, a gB workshop was convened in Marquette, MI on December 11-12, 2024. Thirty-eight participants attended, including SLC agents from the U.S. Fish and Wildlife Service (USFWS) and Fisheries and Oceans Canada, researchers from the U.S. Geological Survey's (USGS) Upper Midwest Environmental Sciences Center (UMESC) and the Hammond Bay Biological Station (HBBS), and academic collaborators (Wilfrid Laurier University; Michigan State University). The workshop featured presentations on gB application methods, chemistry, toxicology, non-target effects, and treatment performance, followed by breakout sessions on identifying research priorities and strategies for facilitating greater interaction amongst SLC agents, partner agencies and outside collaborators. Leveraging existing expertise and resources to advance foundational research on gB chemistry and toxicity was emphasized. Improved understanding of environmental influences on gB effectiveness will support more accurate mortality estimates and guide future decisions regarding how, when, and where gB applications take place.