



**Great Lakes Fishery
Commission**

**Remarks of Dr. Marc Gaden, Executive Secretary
Great Lakes Fishery Commission**

in support of

**H.R.8876, the Aquatic Invasive Species Control and Prevention Act of
2026**

House Committee on Natural Resources

Subcommittee on Water, Wildlife, and Fisheries

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My name is Marc Gaden and I am the executive secretary of the Great Lakes Fishery Commission. I am also an adjunct assistant professor at the University of Michigan and an adjunct associate professor at Michigan State University.

I thank Chairwoman Harriet Hageman and Ranking Member Val Hoyle for having me here to testify in support of H.R. 8876, the Aquatic Invasive Species Control and Prevention Act of 2026.

I especially thank Congressman Tim Walberg and Congresswoman Sarah Elfreth for introducing this important legislation, and I thank Natural Resources Committee member Debbie Dingell—in whose district our headquarters lie—for her work as a co-chair of the Great Lakes Task Force. I appreciate the bi-partisan, bi-national support that our delegation gives for all things Great Lakes.

I would like to acknowledge the presence today of the vice-chairman of the Great Lakes Fishery Commission, the honorable Ethan Baker. Mayor Baker is strong advocate for the Great Lakes and had led our commission with an eye towards invasive species prevention and control, science, and cross-border cooperation, include collaboration with Canada and among the states, the Province of Ontario, and Great Lakes Indigenous nations.

THE GREAT LAKES FISHERY COMMISSION (GLFC)

The Great Lakes are shared by eight states, the Province of Ontario, and several Indigenous nations. Day-to-day management of the fishery occurs at the non-federal level (there are no “federal” waters in the Great Lakes), with strong support from federal agencies, municipalities, and NGOs. For most of the region’s history, cooperation across borders was either non-existent or at cross purposes.

Ironically, the sea lamprey, a destructive invasive species, united the jurisdictions. (The harm sea lampreys cause is described below.) Sea lampreys swim across borders with wild abandon and spawn throughout the Great Lakes basin. As they spread in the 1920s through the 1950s, they posed a considerable threat to fishery management because containing and controlling the species required a level of cooperation across borders that was absent and certainly not at all in the culture at the time. The lamprey invasion proved far too large a problem for any one jurisdiction to handle.

By the 1950s, the problems facing the Great Lakes fishery became intolerable, and Canada and the United States agreed to the Convention on Great Lakes Fisheries of 1954. The convention created the bi-national Great Lakes Fishery Commission (GLFC), for which I serve as executive secretary. I report to commissioners who are appointed by the Privy Council of Canada and by the President of the United States. Commissioners and my fellow secretariat staff members implement the Convention, which focuses on fishery science, cross-border cooperation, and sea lamprey control.

The GLFC has played an integral role in helping the state, Tribal, provincial, and federal fishery jurisdictions work well together on the Great Lakes. It is one of the best examples of sound science and good policy working together for the benefit of a valuable natural resource. In addition to the science and cross-border collaboration mandate found in the Convention, the governance arrangement is unique in that it puts a specific agency—the GLFC—in charge of controlling an invasive species, the sea lamprey. Responsibility (and, thus, accountability) for sea lamprey control is unambiguous. This authority stands in sharp contrast to other invasive species that are widely dispersed; where responsibility to act is either vague or, like the pre-convention situation with sea lampreys, too diffuse to make a difference.

THE AQUATIC INVASIVE SPECIES COMMISSION

I had the honor to serve as a member of the Aquatic Invasive Species Commission (AIS Commission) established in 2022 by the Theodore Roosevelt Conservation Partnership and outdoor industry partners; I served at the request of the American Sportfishing Association. I want to thank the association and the outdoor industry for taking this issue seriously and recognizing the critical need to deal with invasive species. The AIS Commission was established to help stop and reverse the introduction and spread of AIS in the United States.

The AIS Commission was composed of a diverse group of leading scientists, conservationists, anglers, Tribal leaders, boaters, business leaders, and policy experts. Commissioners served on a

voluntary basis and, over the course of several months, conducted listening sessions and meetings to gather input from experts, including state and federal agency personnel, leading scientists, congressional staff and members, and boating and fishing industry representatives on a range of topics.

The AIS Commission represented the “who’s who” of the outdoor industry and AIS experts, and produced a report—with recommendations—many of which are reflected in Aquatic Invasive Species Control and Prevention Act, which is the subject of this hearing. I request the executive summary of the AIS Commission’s report be included with my written statement.

AIS AND THE DESTRUCTION THEY BRING

Aquatic invasive species (AIS) remain among the most significant natural resource challenges facing the United States. Their introduction and spread can disrupt native ecosystems, reduce biodiversity, impair water quality, and degrade waterways, with broad consequences for human health and for recreational, commercial, and subsistence uses of fisheries, waterways, and other natural resources.

From invasive fish such as silver carp, to invertebrates such as zebra mussels, and to nuisance aquatic plants such as hydrilla, AIS create wide-ranging, negative ecological and economic impacts. Since 1960, invasive species have imposed an estimated global economic burden of \$345 billion, with nearly half of those costs incurred in North America. The effects of AIS extend across ecosystems, industries, and communities. Zebra and quagga mussels, for example, can damage critical water and power infrastructure. A 2012 Great Lakes Commission report found that invasive zebra mussels cause between \$300 million and \$500 million in annual damages to power plants, water systems, and industrial water intakes in the Great Lakes region. That figure, from a decade ago and related to just one species, is only rising.

European green crab prey on native shellfish, undermining recreational, commercial, and subsistence fisheries as well as eelgrass restoration projects at an estimated cost of \$18.6 million to \$22.6 million per year.

In my own region—the Great Lakes basin—we have a lot to protect and to be concerned about. The Great Lakes are tremendously valuable and worth protecting. Annually, the fishery alone is worth more than \$5.3 billion and has enormous cultural value to the people who live and fish in the region. Like other parts of the nation, AIS pose some of the biggest threats to the Great Lakes, as more than 180 non-native species are present. Many are destructive, costing the region billions of dollars. In the Great Lakes and nationally, the harm inflicted is often irreversible after a species invades and makes that ecosystem home, as the problem spreads and worsens—AIS make more of themselves. The native species are defenseless, like the fish of the Great Lakes were after sea lamprey invaded.

The bi-national Great Lakes Fishery Commission knows well the havoc invasive species wreak on ecosystems. The GLFC is responsible for controlling the noxious sea lamprey, which laid waste to the fishery after it invaded the upper Great Lakes in the 1920s.

Unfortunately, we have not learned lessons that experience has taught:

- More than a century after the sea lamprey invasion, hundreds of millions of dollars have been spent to date to control this destructive species. Control is effective and costs are still only a tiny fraction of the annual value of the fishery, but control is also ongoing.
- Canals—many un-used and useless—continue to be pathways for invaders.
- Commercial ships, which brought the notorious zebra mussel in the late 1980s and brought many other invaders through ballast water, and recreational vessels, still move species within systems and throughout North America.
- Despite high profile invaders like snakeheads, the Asian swamp eel, and Invasive carps, which entered through live trade, a meaningful process still does not exist to assess the risk of organisms prior to importation.

The GLFC, federal agencies, our state and Tribal partners, the outdoor recreation industry, and the people who fish and boat, have long experienced the harmful consequences of AIS. From ongoing efforts to control sea lamprey in the Great Lakes to the decades-long effort to address invasive silver, black, grass, and bighead carps, we have all had a substantial and challenging history with AIS.

A SHORT SUMMARY OF NATIONAL AIS GOVERNANCE

Overall, the current AIS management landscape in the United States consists of a patchwork of engagement by dozens of federal agencies, states, Tribes, and private entities. Authorities are often divided across prevention, control, containment, and management functions. For example, the U.S. Coast Guard is responsible for enforcing ballast water regulations, the U.S. Fish and Wildlife Service (USFWS) leads eradication efforts, and the Departments of Homeland Security and Agriculture oversee biological border controls.

States and Tribes, which manage fisheries, are on the front lines in dealing with AIS and often lack resources to conduct such things as early detection, rapid response, and control. That said, detection responsibilities are shared among federal, state, municipal, Tribal, and nongovernmental entities, often with limited coordination, communication, and funding. This fragmentation can delay responses, increase costs, and reduce the effectiveness of management actions.

Because AIS do not respect borders or jurisdictions, coordinating prevention, detection, management, control, and eradication activities remains a complex challenge for the many entities involved in stewarding the nation's natural resources. But such work is essential, and we must do more.

In recent years, Congress and the White House have undertaken several efforts to address this institutional patchwork. The Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (NANPCA) created the Aquatic Nuisance Species Task Force (ANSTF), which brings 13 federal agencies into a formal coordinating structure. Although the ANSTF and its regional panels have produced coordinated plans and research, the Task Force currently needs more capacity to support the level of coordination required.

The National Invasive Species Act of 1996 (NISA) amended NANPCA to establish a ballast water management program, and subsequent legislation, including the Vessel Incidental Discharge Act of 2018, has further regulated vectors for invasive dreissenid mussels, including zebra and quagga mussels. Although the ballast legislation and practices have significantly reduced the influx of invaders from abroad, we need to do more to address AIS spread from commercial and recreational vessels once they arrive in North America.

Executive actions, including Executive Order 13112 signed by President Clinton in 1999, have directed federal agencies to prevent the spread and limit the introduction of invasive species. Executive Order 13112, along with Executive Order 13751 in 2016, created and expanded the National Invasive Species Council (NISC) to provide leadership and oversight of interagency activities and to encourage cooperation among agencies and nonfederal partners.

Even with all that, because no single law governs federal invasive species or AIS management, federal, state, and Tribal agencies continue to face challenges in coordinating and funding efforts to prevent, detect, manage, and eradicate AIS. As established AIS continue to affect diverse stakeholders and industries, an increasingly interconnected world and changing environmental conditions heighten the risk of new introductions and increase the costs associated with already established invasive species. With globalization and vibrant trade, more species have more opportunities than ever to invade the waters of the United States and spread through the continent.

RECOMMENDATIONS OF THE AIS COMMISSION

It is worth stressing that preventing an AIS introduction in the first place is the best practice. That said, the AIS Commission provided five main recommendations, primarily to deal with species that are already here.

1. **Update federal law and policy:** Amendments to federal law and policy should build on and modernize the existing framework for AIS to enhance prevention, to reduce spread, and to increase management.
2. **Increase federal funding:** Funding to address AIS should be coordinated, strategic, and targeted across federal departments, agencies, and bureaus, in collaboration with states and Tribal organizations, to provide effective tools to address AIS at the regional and watershed levels.

3. **Enhance collaboration:** Interstate, regional, federal-state, Tribal, international, and boating and shipping industry collaboration, communication, and planning is critical to AIS prevention, detection, management, and eradication.
4. **Maintain access to the water:** Laws, regulations, and policies addressing AIS at the federal, state, regional, and Tribal levels should maintain access for boaters, anglers, and other users of our waterways in a manner that seeks to balance the use of waterways with the ecological health and long-term sustainability of critical natural resources.
5. **Increase public education and engagement:** Education of and outreach to the public, especially outdoor users like anglers, boaters, and hunters, and other conservationists, should be conducted to help reduce the persistent threats of AIS in federal, state, and Tribal AIS programs and funding opportunities.

Taken together, these priorities provide a framework for cross-jurisdictional AIS management—one that can help prevent the introduction and spread of both new and established aquatic invasive species through strategic, innovative, and effective response measures, laws, regulations, and policies. Conservationists want to be a part of the solution, and the AIS Commission acknowledged the role the users can play in addressing the problem.

THE AQUATIC INVASIVE SPECIES CONTROL AND PREVENTION ACT

I am pleased to say Mr. Walberg’s and Ms. Elfleth’s Aquatic Invasive Species Control and Prevention Act of 2026 addresses many of the AIS Commission’s recommendations. This bill will strengthen the nation's ability to prevent, detect, and respond to aquatic invasive species. We like to say in environmental management, “an ounce of prevention is worth a pound of cure,” and the provisions within this bill give many ounces of prevention. The Great Lakes ecosystem has shown us that investing in prevention early is far more effective and far less costly than trying to control an invasive species after it becomes established.

Indeed, a central theme of the bill is that preventing establishment is the most effective and fiscally responsible approach to managing aquatic invasive species. Once an invasive species becomes established, eradication is often difficult, costly, and, in many cases, impossible. The economic impacts can include millions of dollars in long-term control efforts, damage to infrastructure, losses to fisheries and recreation, and degradation of aquatic ecosystems.

By investing in early detection, coordinated prevention strategies, and rapid response capabilities, H.R. 8876 seeks to address what to do when a species does arrive. The bill would reduce long-term costs while protecting the nation's waterways, natural resources, and outdoor economy. Preventing or stopping an invasion in its tracks through early detection and rapid response is significantly less expensive and far more effective than attempting to remove an invasive species after it has spread and become established. Most of the time, control—at least selective control like with the sea lamprey—is not even possible, so prevention, early detection, and rapid response are essential.

This legislation expands federal coordination through the Aquatic Nuisance Species Task Force and establishes new programs to support research, technological innovation, and rapid response. Strengthening the Task Force enhances collaboration among federal agencies, states, Tribal governments, regional organizations, academic institutions, and nonprofit partners, helping to reduce duplication of effort and promote a more unified national strategy for addressing aquatic invasive species. Improved coordination facilitates the sharing of data, scientific research, and management practices, allowing agencies to respond more effectively to emerging threats that often cross jurisdictional boundaries. This type of cross-coordination has been a cornerstone of the success achieved in the Great Lakes region, where partnerships among federal, state, Tribal, and regional entities have been critical in identifying and combating emerging threats throughout the Great Lakes Basin. Nationally, this cross-coordination is also critical, as AIS do not respect boundaries.

Building on this collaborative framework, the bill also requires the modernization of national and regional management plans to establish priorities, identify vulnerable ecosystems, and guide prevention and control efforts using the best available science. In addition, it creates a nationwide monitoring program for high-risk waterways, promotes interstate collaboration, and directs the development of a coordinated watercraft inspection and decontamination strategy to help prevent the spread of aquatic invasive species throughout North America before they become established. Together, these provisions strengthen long-term planning, improve early detection, and encourage a more consistent and proactive approach to invasive species management across the country.

If passed into law, this legislation will establish competitive programs to further strengthen invasive species management by investing in the development of innovative detection and control technologies, supporting applied research, and providing funding for rapid response efforts when new infestations are identified. Early investment in research and emerging technologies can increase management effectiveness and reduce long-term control costs. Likewise, dedicated rapid response funding enables resource managers to act quickly while infestations remain localized, increasing the likelihood of successful eradication and preventing invasive species from becoming permanently established.

TECHNOLOGY AND INNOVATION: SEA LAMPREY AS AN EXAMPLE

On the subject of innovation and technology, the GLFC can speak from experience. The GLFC was formed in 1956 and was charged with, among many other duties, developing and implementing a sea lamprey control program. Sea lampreys are formidable parasites. They attach to fish with a suction-cup mouth, anchor themselves with sharp teeth, rasp through scales and skin with a toothed tongue, inject an anticoagulant, and feed on the fish's body fluids. After entering the Great Lakes through shipping canals, sea lampreys found abundant food and few natural predators, and they inflicted devastating damage on the fishery and the people who depended on it.

Today, sea lamprey populations have been reduced by 90 percent in most of the Great Lakes. That success has reduced fish losses from roughly 100 million pounds per year to about 10

million pounds. The \$5.3 billion Great Lakes fishery would not exist as we know it today without sustained sea lamprey control. Indeed, a recent article (Marcy-Quay et al, 2025) in *Fisheries*, a preeminent publication of the American Fisheries Society, notes that during the COVID pandemic, when travel restrictions resulted in significantly reduced sea lamprey control in 2020 and 2021, sea lampreys rebounded in that short time with a vengeance. Control is effective but it must be ongoing or sea lamprey, like the coiled menace it is, will spring back quickly and lethally.

How did the GLFC and its partners achieve this remarkable level of success? Through innovation, persistence, technology, and a sustained binational commitment. The GLFC partners with many agencies including the US Fish and Wildlife Service, Fisheries and Oceans Canada, the US Army Corps of Engineers, the US Geological Survey, academic institutions, and state, Tribal, and Provincial agencies, just to name a few.

The earliest innovations began in the 1930s and 1940s, when scientists learned enough about the sea lamprey's life history to identify and exploit its vulnerabilities. For example, in 1957, after screening more than 10,000 chemicals, scientists discovered two selective lampricides that target sea lampreys while causing minimal harm to fish. Also, beginning in 1970, barriers were integrated into the control program to block sea lamprey migration and reduce the need for lampricide treatments. Long-lived and environmentally unintrusive, barriers are five times more cost effective than other sea lamprey control mechanisms, so they are well worth the investment. Sea lamprey traps, often used in combination with sea lamprey barriers, have been continually improved, including the use of entry ladders designed around the sea lamprey's unusual swimming behavior. And new techniques have been developed, applied, and evaluated for rivers too large to treat using conventional methods, including new lampricides and sea lamprey sterilization.

The GLFC continues to devote resources and attention to innovation because innovation brought us to where we are today; innovation will enable us to keep pace with ever-changing challenges. Several approaches are especially promising:

- **Connectivity and smart sea lamprey barriers and traps:** As dam removal expands, the GLFC is concerned that sea lamprey range could also expand, leading to millions more fish killed each year. At the same time, the GLFC supports barrier removal where it improves fish passage. To reconcile these goals, the GLFC launched FishPass, an initiative to identify smart technologies that pass desirable fish while blocking sea lampreys.
- **Pheromones and alarm cues:** Sea lampreys can detect pheromones—natural odors used for communication—over long distances and at extremely low concentrations. These cues can be used to lure lampreys into traps, and field use has recently been approved, marking a first for a vertebrate species.
- **The sea lamprey genome:** The sea lamprey genome has been sequenced, a major scientific achievement that will allow researchers to tailor control techniques and better exploit vulnerabilities in the sea lamprey life cycle.

CONCLUSION

It is important to stress that the sea lamprey control program would not be the success it is today without the innovative binational governance arrangement that has been in place since 1956. As such, resources for the GLFC to invest in innovation and technology is part of our base program. The Aquatic Invasive Species Control and Prevention Act, I am pleased to note, reflects the value of innovation and technology by establishing a competitive grant program to support rapid response activities to control, monitor or eradicate an aquatic invasive species. We need more of that on a large, national scale.

The GLFC is responsible for sea lamprey control, and accountability is clear; authority is grounded in a binational treaty (the Convention on Great Lakes Fisheries) and in federal law (the enabling Great Lakes Fishery Act of 1956 and the Great Lakes Fisheries Convention Act) in both nations. That authority stands in sharp contrast to other invasive species challenges, where responsibility to act is often unclear or too widely dispersed. The Aquatic Invasive Species Control and Prevention Act takes large steps to further coordinate work that is well established through existing institutions. That work is valuable and, like technology, we need more of it.

Overall, the Aquatic Invasive Species Control and Prevention Act of 2026 is important legislation that reflects many of the recommendations presented by the outdoor industry-led AIS Commission and by experts from throughout the country. Learning lessons from history, the bill promotes more cooperation across boundaries, and it stresses the need for early detection and rapid response, with an emphasis on innovation. AIS pose a national threat, and the response must be at both the local scale (for instance, to conduct early detection and rapid response) and at the regional/national scale (for instance, to drive and share technologies and to prevent the introduction and spread at a continental level). The authorization levels provided in subsection (d), while welcomed, are liable to be stretched quite thin given the need. Money in this area is extremely well spent (prevention of sea lamprey in the 1920s would have saved the Great Lakes tens of billions of dollars in lost fish and in sea lamprey control costs), and the GLFC would support funding levels beyond what is provided here.

I again thank Representatives Walberg and Elfreth for introducing this legislation and thank the committee for today's hearing.