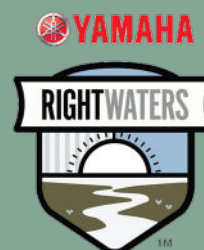
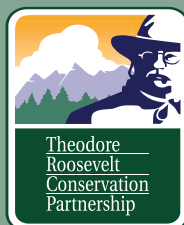


# Aquatic Invasive Species Commission

Report and Recommendations: February 2023

*Improving the Prevention, Eradication, Control,  
and Mitigation of Aquatic Invasive Species (AIS)*



# INTRODUCTION

The introduction and spread of aquatic invasive species (AIS) is one of the foremost challenges facing the United States, altering natural ecosystems, reducing biodiversity, harming water quality, and degrading waterways—with significant impacts on human health and recreational, commercial, and subsistence uses of waterways, fisheries and other natural resources. From invasive fish like silver carp to invertebrates like zebra mussels and nuisance plants like hydrilla, the many challenges that AIS pose come with a steep price tag: an estimated global economic cost of \$345 billion since 1960 – nearly half of which has been incurred in North America. (Cuthbert, 2021<sup>1</sup>)

The impacts of AIS are far-reaching, affecting a broad range of ecosystems, industries, and stakeholders. Invasive zebra and quagga mussels, for example, can damage critical water and power infrastructure. A Great Lakes Commission report in 2012 (Warziniack, T. et al., 2021<sup>2</sup>) found that invasive zebra mussels cause between \$300 and \$500 million in annual damages to power plants, water systems, and industrial water intakes in the Great Lakes region. European green crab prey on native shellfish, undermining recreational, commercial, and subsistence fisheries as well as eelgrass

restoration projects at the cost of \$18.6 to \$22.6 million per year (Abt and Associates, 2008<sup>3</sup>). The outdoor recreation industry has long felt the impact of AIS. Between the ongoing efforts to control sea lamprey in the Great Lakes to the decades-long fight against invasive silver and bighead carp, recreational and commercial fishers and boaters have a deep and challenging history with AIS.

The Aquatic Invasive Species Commission was established by key members of the outdoor recreation industry in early 2022 to help stop and reverse the introduction and spread of AIS in the United States. The AIS Commission is comprised of a diverse group including leading scientists, conservationists, anglers, tribal leaders, boaters, business leaders, and policy experts (SEE APPENDIX A). The AIS Commissioners served on a voluntary basis and over the course of several months conducted a series of listening sessions and meetings (SEE APPENDIX B), during which they received input from experts, including state and federal agency personnel, leading scientists, congressional staff and members, and the fishing industry on various topics to inform this report. The recommendations in this report aim to address major AIS challenges in the United States.

## EXECUTIVE SUMMARY

The current landscape of AIS management in the U.S. includes a patchwork of engagement by dozens of federal agencies, states, tribes, and private entities. Different authorities are often siloed across the prevention, control, containment, and management processes. For example, while the U.S. Coast Guard is tasked with 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. Detection of AIS is shared between federal, state, municipal, tribal, and nongovernmental entities, often acting with minimal coordination and communication and insufficient funding, delaying responses and management, and costing more while being less effective. As AIS do not respect borders and jurisdictions, coordinating prevention, detection, management, control, and eradication activities is a challenging undertaking for the disparate entities involved in the management of our nation's natural resources.

In recent years, numerous efforts by Congress and the White House have attempted 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 convenes 13 federal agencies into a formal coordinating structure. While ANSTF and its regional panels have produced coordinated plans and research, the Task Force currently lacks sufficient capacity to facilitate thorough levels of coordination. The National Invasive Species Act of 1996 (NISA) amended

NANPCA to create a ballast water management program, and subsequent legislation like the Vessel Incidental Discharge Act of 2018 has further regulated vectors for invasive dreissenid (*i.e.*, zebra and quagga) mussels, though more is needed to regulate the spread from smaller commercial and recreational vessels. Executive actions, like Executive Order 13112 signed by President Clinton in 1999, have called on federal agencies to prevent the spread and limit the introduction of invasive species. Executive Order 13112, along with EO 13751 in 2016, created and expanded the National Invasive Species Council (NISC) to provide leadership and oversight of interagency activities, encouraging cooperation among agencies and with nonfederal partners.

However, as no one law governs federal invasive species or AIS management, federal and state agencies struggle to effectively coordinate and fund efforts to prevent, detect, manage, and eradicate AIS. While established AIS continue to impact 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. In most cases, prevention is the only way to effectively control AIS.

In this report, the AIS Commission submits recommendations for a renewed federal approach to addressing the challenges posed by AIS, informed by consultations with leading voices in natural resources policy, scientists, federal, state, and tribal representatives, and recreational stakeholders.



## AIS Commission Priorities

The Commission's recommendations fall under several priorities:

- 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. Enhanced 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 outline an overarching framework for cross-jurisdictional AIS management that can prevent the introduction and spread of new and existing AIS with strategic, innovative, and effective response measures, laws, regulations, and policies.

## AIS Commission

Leading scientists, conservationists, anglers, boaters, business leaders, and policy experts were convened to assess the persistent threat of AIS and identify more effective solutions. The AIS Commission Steering Committee and Members are:

**Martin Peters**, Yamaha

**Jennifer Silberman**, Yeti

**Clay Crabtree**, National Marine Manufacturers Association

**Mike Leonard**, American Sportfishing Association

**Gene Gilliland**, B.A.S.S.

**Chris Edmonston**, BoatUS

**John O'Keefe**, Yamaha

**Heather Hennessey**, Yamaha

**George Cooper**, Forbes-Tate

**Christy Plumer**, TRCP

**Chris Macaluso**, TRCP

**John Arway**, Retired State Director (PA)

**Elizabeth Brown**, NAISMA

**Jason Christie**, Pro Angler

**Kerry Wixted**, Assn. of Fish & Wildlife Agencies

**Jake Dree**, Yeti

**Marc Gaden**, Great Lakes Fishery Commission

**Alanna Keating**, BoatUS Foundation

**Monica McGarrity**, Texas Parks and Wildlife Department

**Mark Menendez**, Pro Angler

**Ish Monroe**, Pro Angler

**Ben Mohr**, Alaska conservationist

**Steve Moyer**, Trout Unlimited

**Stephen Phillips**, Pacific States Marine Fisheries Commission

**Mathew Van Daele**, Sun'aq Tribe of Kodiak

**Nick Wiley**, Ducks Unlimited

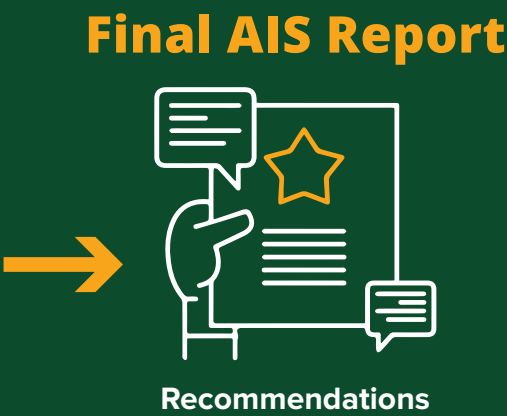
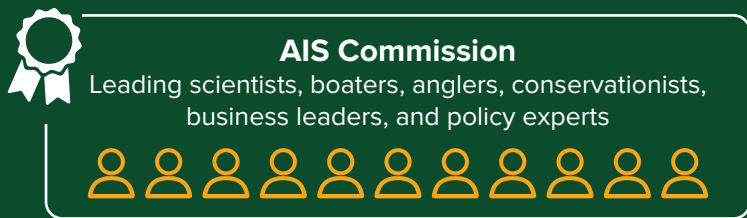
**Drue Winters**, American Fisheries Society

**Dennis Zabaglo**, Tahoe Regional Planning Authority



## AIS Commission: Process & Meetings

The AIS Commission received input from and engaged in dialogue with key stakeholders, federal and state decision makers, and leading experts. The purpose of this collaborative process was intended to assess the current threat from AIS, explore gaps in public policy and funding, and offer recommendations for how AIS can be addressed more effectively at the federal, state, tribal, and regional levels.



Working Sessions to Receive Expert Testimony



**Science**



**Anglers & Boaters**



**Federal Law & Policy**



**State Tribal & Regional Collaboration**

i Cuthbert et al (2021). Science of The Total Environment. Science of The Total Environment. Volume 775. <https://doi.org/10.1016/j.scitotenv.2021.145238>  
ii Warziniack, T. et al. (2021). Economics of Invasive Species. In: Poland, T.M., Patel-Weynand, T., Finch, D.M., Miniati, C.F., Hayes, D.C., Lopez, V.M. (eds) Invasive Species in Forests and Rangelands of the United States. Springer, Cham. [https://doi.org/10.1007/978-3-030-45367-1\\_14](https://doi.org/10.1007/978-3-030-45367-1_14)  
iii Abt and Associates (2008). Ecological and Economic Impacts and Invasion Management Strategies for the European Green Crab. Paper Number: EE-0513. 06/03/2008. <https://www.epa.gov/environmental-economics/ecological-and-economic-impacts-and-invasion-management-strategies-european>