Options for Preventing the Spread of Aquatic Invasive Species with the aid of Boat Cleaning and Wash Stations in New Hampshire

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Executive Summary

The introduction and spread of aquatic invasive species (AIS) into waterbodies threatens recreation, tourism, biodiversity, ecological health, property values, and economic development. AIS are difficult and expensive to control after being introduced into a waterbody. Infestations of AIS reduce shoreline property values, threaten native species, and can make waterbodies undesirable and dangerous for recreation.

While AIS plant and animal infestations exist in approximately 85 waterbody systems in New Hampshire, these waters, along with the rest of New Hampshire's approximately 950+ lakes in the public domain, and several thousand miles of rivers and streams, have, thus far, evaded the introduction of certain particularly undesirable species of aquatic invasive plants and animals. However, with the recently documented spread of the invasive Asian clam into multiple lakes in southern New Hampshire, there may be many more waterbodies in the state that have small-bodied invasive animal infestations than we are currently aware of.

Based on the spread of AIS in New Hampshire to date, and the documented experience in other places, we believe that we must act now to prevent new introductions of AIS that are already found within New Hampshire waterbodies and in those of adjacent states, and to prevent new, and potentially more damaging, invasive species from spreading into our waters as a result of transient boat traffic from waterbody to waterbody.

As requested by the New Hampshire Department of Environmental Services (DES), we have conducted a feasibility study to answer the research question: *What would be a reasonable and feasible program to implement in New Hampshire, relative to utilizing boat wash stations designed to aid in the prevention of the spread of AIS by transient boat traffic?*

We addressed 10 specific questions posed by DES to answer the research question. This is an executive summary of our findings and responses to those questions.

1. ***States Exemplifying Effective Prevention Programs Utilizing Boat Cleaning or Wash Stations***
   There are several waterbodies in the United States for which boat inspection programs are conducted that include a voluntary or mandatory boat wash component to aid in the prevention of the spread of aquatic invasive species. These programs are implemented on a local, regional, or statewide basis. For the purposes of this study, specific programs in California, Colorado, Minnesota, New York, Vermont, and New Hampshire were highlighted.

2. ***Types of Units***
   A handful of different types of boat cleaning and wash units are being used throughout the country to aid in the prevention of the spread of invasive species from waterbody to waterbody. For the purposes of this study, we categorized these systems into 'fixed', 'semi-fixed', and 'mobile' units and discussed infrastructure requirements and the level of decontamination typically achieved with each type of unit.

   Wash stations for boat and trailer AIS cleaning and decontamination generally consist of: a fresh water source and a pressure washer system (motorized pump sprayer); often a heating mechanism (burner); sometimes include a holding tank(s) for water, a containment pad for wastewater, and a vacuum or sump pump mechanism for water recovery; and, in some instances, a multistage filtration system for recovered water. Boat wash stations for AIS can either be permanent or semi-permanent units, typically requiring plumbed water and electrical hookups, or be fully mobile self-contained units.

   Some states and entities offer boaters waterless clean, drain, and dry units for AIS prevention purposes.

3. Cost and Funding Opportunities

Any effective AIS prevention program, whether it involves boat inspectors, cleaning stations, or decontamination stations, requires adequate funding. High-pressure, hot temperature wash stations offering decontamination services are more expensive to set up, maintain, and operate than low-pressure, cold temperature wash stations, or waterless clean, drain, and dry stations. Fixed stations are more expense to set up, maintain, and operate than mobile stations. Any station staffed with paid inspectors is more expensive to operate than non-staffed stations or stations staffed with volunteers.

Throughout the country, a variety of revenue sources—including federal, state, non-governmental, user-fees, and privatization programs—are being implemented to fund AIS spread prevention efforts.

We suggest that there is not currently an adequate funding mechanism (or enough money being generated under current funding mechanisms) in New Hampshire to expand and sustain AIS prevention programming beyond the activities that are currently being provided by DES staff directly and through its partners. To implement and sustain a statewide AIS prevention program that provides for vessel inspection as well as for high-priority boat access sites to be served by cleaning or wash stations, a significant amount of additional funding would be needed.

We suggest that with increases in funding to the Milfoil and Other Exotic Aquatic Plants Prevention Grant Program (NH RSA 487:26) grants could be provided to boating access site owners and their partners for the installation and operation of AIS spread prevention cleaning or wash stations. Increases in funding to the existing Milfoil and Other Exotic Aquatic Plants Prevention Grant Program could come from a few funding approaches, including the following:

- Increasing the overall cost of the New Hampshire boat registration fee and allocating that additional revenue to the prevention grant program,
- Implementing an out-of-state motorboat permit fee (for those boats not registered in New Hampshire) and allocating that revenue to the prevention grant program, and/or,
- Implementing an AIS sticker program for all motorized boats that access the waters of New Hampshire and allocating that revenue to the prevention grant program.

We also suggest that a new grant program could be made available to owners of boating access sites in New Hampshire to maintain and improve existing access sites. The installation, operation, and maintenance of AIS spread-prevention practices, such as cleaning or wash stations and signage, should be the priority of such a grant program. This grant program could be funded by a public access sticker program that requires in-state and out-of-state non-motorized vessel owners that use New Hampshire waters to purchase and display stickers. If the current political climate in New Hampshire does not support a mandatory public access sticker program for non-motorized vessels, we suggest that a voluntary sticker program be considered.

Each potential funding opportunity strategy has pros and cons, and each may be met with varying levels of boater, state agency, and political resistance. We suggest that if new revenue was shared with all the owners of New Hampshire's 600 +/- public access launch sites (such as a grant program administered by NH Fish and Game, with funds directed through the Public Water Access Advisory Board for AIS prevention and other improvements to existing access sites), there could be broader buy-in to such a legislative initiative.

There may also be local, private funding potential at high-risk access sites to support the implementation and operation of cleaning or wash stations, although this is strictly speculative at this point.

The New Hampshire Department of Safety Marine Patrol Bureau would need to be consulted on any new revenue-generating strategies so that they are compatible with federal interstate rules on registration reciprocity.

4. Possible Locations

The placement of a fixed and staffed wash station offering decontamination services at every boat access site in New Hampshire, accompanied by state law or local ordinances requiring that boaters use these stations, would provide our waters with the highest level of protection from the spread of aquatic invasive species. However, to us, this approach appears to be prohibitive in New Hampshire for a variety of reasons including funding, staffing, and site logistic limitations.

We suggest that a New Hampshire approach must instead prioritize the installation and operation of cleaning or wash stations to serve access sites that are at the highest risk for serving as a pathway for the introduction of AIS into the local waterbody or for serving as a source of AIS to other waterbodies through transient boat traffic at the access site. We are not aware of such a risk analysis and prioritization ranking having been conducted for the boat access sites in New Hampshire.

Based on experience administering the Lake Host Program, a courtesy AIS boat inspection program at approximately 100 of what are believed to be the more highly used boat ramps in the state since 2002, we have suggested criteria to designate boat access sites that are at highest risk for serving as a pathway for the introduction of AIS into the local waterbody or for serving as a source of AIS to other lakes through transient boat traffic at the access site. These criteria include the following: Motorized boat access sites on the 'big six' destination lakes (lakes larger than 4,000 acres in surface area); Motorized boat access sites within or in close proximity to state parks on lakes, and; Motorized and non-motorized public and private boat access sites on waterbodies infested with invasive small-bodied animals (this does not include lakes infested with the Chinese mystery snail).

Furthermore, we suggest that vessels utilizing high-risk access sites on waterbodies not infested with small-bodied invasive animals be cleaned or washed prior to launching into the waterbody, and that vessels leaving high-risk access sites on waterbodies infested with small-bodied invasive animals (such as the Asian clam) be cleaned or washed after being taken out of the waterbody, at a minimum.

5. Staffing

The staffing needs associated with cleaning and wash stations for AIS prevention vary widely. In general, wash stations that utilize high-pressure, hot water for vessel decontamination purposes require the highest level of staffing with inspectors (typically paid employees) that are trained, supervised, and covered by insurances. Cleaning stations that provide high or low-pressure cold water, or no water, typically do not requiring staffing, but having inspectors or attendants at the station may increase boaters' use of the station and public awareness. Stations that are staffed with paid employees generally have the highest operating costs.

6. Legislative or Regulatory Considerations

There are many examples of states and entities implementing mandatory or voluntary AIS prevention programs, or a combination of both types of programs. There are pros and cons to each approach.

We suggest that current New Hampshire state law does not provide enough protection to New Hampshire's waters from the introduction and spread of AIS from vessels that were last used in waterbodies outside of the state and that were not drained and/or did not arrive at a New Hampshire waterbody with drain valves and plugs open/out.

We also suggest that the likelihood of boaters utilizing boat cleaning or wash stations would be enhanced with the implementation of state law or local ordinances that require boaters to utilize such stations, when they are provided at boat access sites and when open or staffed (if staffing is required).

We suggest that New Hampshire state law could be enhanced with provisions to establish a program (or programs) that would provide financial assistance for owners of boating access sites to provide cleaning or wash station services for vessels, with requirements that boats being launched or removed at launch sites would need to be treated with these services, as appropriate, if provided.

We do not recommend that boaters be required to pay for AIS cleaning or wash services on a pay-as-you go basis at the boating access site, as this may result in boaters circumventing stations or station hours. In addition, setting up remote and secure payment infrastructure at boating access sites that are not located at places of participating businesses (where there is existing infrastructure) could be costly and difficult.

The passage of municipal ordinances that require boaters to utilize cleaning or wash stations could be an effective approach for the implementation of these and other AIS prevention methods. However, we suggest that the enactment of a state law requiring boaters to utilize cleaning or wash stations at a boating access site, if it is so equipped, would be a more efficient and consistent approach than a system of local ordinances being applied site by site.

7. Station Recommendations

States and other entities throughout the United States utilize a variety of cleaning and wash stations to aid in the prevention of the spread of aquatic invasive species from waterbody to waterbody by transient boat traffic. With grant funding to assist access site owners with at least the initial cost of purchase and operations of an AIS cleaning or wash station unit, there are a variety of units that we suggest would be worthwhile investments. We have provided recommendations for the implementation of the various units based on a number of factors, including the level of AIS spread prevention desired, ease of use by boaters, and available funds for capital costs and operating costs.

8. Pilot Project Recommendations

Before implementing any statewide program(s) that would assist boating access site owners with the installation and operation of cleaning or wash stations to aid in the prevention of the spread of aquatic invasive species in New Hampshire, we recommend a pilot project. We have suggested a few scenarios for pilot project site locations and included information about potential station types, infrastructure requirements, staffing plans, and costs. Suggested locations include state and town-owned access sites on Newfound Lake, Pawtuckaway Lake, Beaver Lake, and Kingston Lake. We have not approached any access site owners or local partners to discuss potential pilot projects.

We suggest that a pilot program for AIS spread prevention with the aid of cleaning and wash stations be implemented over a three year period (2018 – 2020). The number of pilot project sites, types of stations, and staffing plans would be largely determined by the funding available to support the pilot.

To maximize participation in the pilot project, we recommend that access site owners not be required to pay for the purchase or installation of equipment and that boater use of the stations be voluntary and free of charge. Although self-service cleaning stations do not require staffing, we recommend that these stations be staffed with inspectors (paid or volunteer) to assist boaters with utilizing the station and to gauge boaters' ease of use and receptivity to the process of doing so.

During this three-year pilot period, we suggest that a working group comprised of key stakeholder groups be formed with the mandate to develop and introduce legislation to establish sustainable funding mechanisms for the expansion of existing state grant programs and/or the establishment of new state grant programs that would raise revenue to assist boating access site owners with the installation and operation of cleaning and wash stations.

9. Liability Issues

There is some level of potential liability inherent with any agency, organization, or boating access site owner owning and operating a cleaning or wash station. We have provided a matrix highlighting liability issues associated with each type of unit. In general, there is more liability associated with owning and operating a wash station that provides high-pressure, hot water for decontamination services (even offered by trained and employed inspectors) than for low-pressure, cold water wash stations and waterless cleaning stations that provide for boater self-service cleaning services.

10. Additional Information and Research Needed

Before proceeding with a pilot program, we suggest that there is a need for additional information and there are some additional research needs that should be addressed. We have listed these needs.