Conesus Lake Boat Launch

Invasive Species Prevention

Feasibility Study

Table of Contents

Purpose:

Recreational boats are one of the primary methods of transport for aquatic invasive species (AIS) in the Finger Lakes Region. Preliminary results from a University of Wisconsin Madison study on aquatic invasive species and boater behavior indicate that boaters, not waterfowl are the primary vector responsible for the overland transport of aquatic invasive species. No wilderness lakes surveyed in the study turned up any invasive species while researchers found a direct link between the presence of aquatic invasive species and both private and public boat access. A multitude of preventative actions can be employed at areas where boats enter a water body. Conesus Lake has one public boat launch for motorized boats. This report compiles potential invasive species prevention methods in context to the features of Conesus Lake's launch facilities, and the local socioeconomic and political relationships that may influence implementation of these projects. The report concludes with recommendations from the Technical Committee and the Invasive Species Sub-Committee.

Conesus Lake Boat Launch Overview:

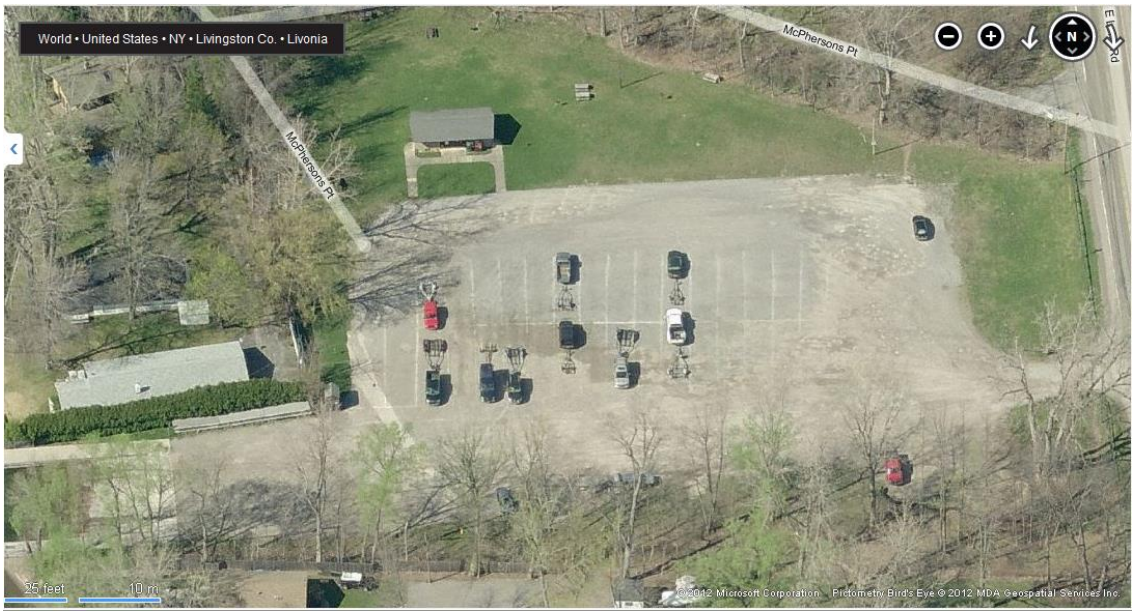
Background: The Conesus Lake Boat Launch is located on East Lake Road in the Town of Livonia. The launch is owned and operated by the New York State Office of Parks, Recreation, and Historical Preservation (NYSOPRHP). The Launch is staffed from late-April through mid-October between the hours of 8 a.m. and 4 p.m. on weekdays and 7 a.m. and 5 p.m. on weekends.

NYSOPRHP Staffing and Operations: NYSOPRHP staffs the boat launch with a parking attendant whose primary responsibility is to collect the parking fee from launch users. There is potential to have booth attendants educated about invasive species during training, in an effort to get verbal information spread to boaters.

2012 Attendance Figures:

May	June	July	August	September	October	2012 yearly total
3,199	4,686	7,750	5,258	2,570	229	23,692

Site Layout and Logistics:



Vehicles enter the launch parking lot via East Lake Road and drive in a counter-clockwise direction, stopping at the attendant booth and to pay parking fees. Boats are then launched and vehicles and empty trailers are parked in the designated parking stalls. On peak days, visitor numbers exceed available parking stalls and vehicles and trailers are parked in the grassy areas to the north and east of the lot and sometimes on the side of East Lake Road.

AIS Prevention Best Management Practices:

Aquatic invasive species have multiple means of being transported on boats. Large plant fragments can drape or get tangled on boat and trailer equipment. These are easy to detect and can be removed physically. Invasive zooplankton and adult and juvenile forms of mollusk species can attach to the smooth sides of boats and be found in the bilge and other areas of the boat that keep water. These "aquatic hitchhikers" are usually not visible to the naked eye and need to be treated with hot water, disinfectant, or left to dry out to be properly decontaminated.

Aquatic invasive species prevention best management practices generally follow a "Clean, Drain, Dry" procedure. If a boat is to be launched into a different body of water before it has a chance to properly dry, a wash with hot water or disinfectant would be needed for complete decontamination. Guidelines for decontamination are as follows:

Clean: Remove all visible plants, animals, fish, and mud from the boat, trailer, or other equipment and dispose of in a suitable trash container or on dry land.

Drain: Drain water from boat, bilge, bladder tanks, livewell, and bait containers.

Dry: Dry boat, trailer, and all equipment completely**.** Drying times vary depending on the weather and the type of material. At least five days of drying time is generally recommended during the summer as a guideline. The 100th Meridian Initiative, a cooperative effort between local, state, provincial, regional and federal agencies to prevent the westward spread of zebra/quagga mussels and other aquatic nuisance species in North America, recommends the following drying times, which take into account local average maximum relative humidity and average minimum temperature for the Finger Lakes area:

- April: 29 days
- May: 19 days
- June: 12 days
- July: 7 days
- August: 7 days
- September: 12 days
- October: 19 days

Decontaminate: If a boat is used sooner than the recommended drying time, one should follow additional steps for decontamination:

- Spray/rinse the boat and equipment with high pressure or hot (140F or higher) water.
- Flush motor with hot water (140F or higher) according to your owner's manual.
- Alternative disinfection options for gear that cannot withstand hot water or if hot water is unavailable (choose one of the following mixtures and rinse with clean water after disinfection):
  - 100% vinegar for 20 minutes
  - 1% table salt solution for 24 hours (2/3 cup of salt mixed with 5 gallons of water)
  - 2% bleach solution for 10 minutes (3 oz. bleach mixed with 1 gallon of water)
  - 5% Dish Detergent solution for 10 minutes (¾ cup detergent to 1 gallon water)
  - Household cleaners such as Fantastik® or Formula 409®, (or any cleaner with the active ingredient alkyl dimethyl benzyl ammonium chloride) for 10 minutes.

(Chemicals must be used in compliance with label directions. Dispose of all cleaning solutions away from surface waters in accordance with label restrictions.)

Existing State Legislation:

The Governor of New York State signed an invasive species transport law into effect in 2012. The law gives the NYSDEC and New York State Department of Agriculture and Markets the authority to regulate the sale, purchase, possession, introduction, importation, and transport of invasive species and established penalties for those who violate such regulations. The law takes effect on September 1, 2013.

The law establishes the following:

- A general permit for prohibited species disposal, control, research, and education
- A list of prohibited species which shall be unlawful to knowingly possess with the intent to sell, import, purchase, transport, or introduce
- A list of prohibited species which shall be unlawful to import, sell, propagate, transport, or introduce except under a permit for disposal, control, research, or education
- A list of regulated species which shall be legal to possess, sell, buy, propagate, and transport but may not be knowingly introduced into a free-living state or introduced by a means that one knew or should have known would lead to the introduction into a free living state

Penalties are as follows:

- First violation: A warning may be issued in lieu of a penalty. Educational materials may be issued. Any subsequent offense is subject to a fine of no less than $250
- Nursery owners, any person who owns or operates a public vessel or commercial fishing vessel shall be subject to a fine upon first offense of no less than $600. Upon subsequent offenses, a fine not less than $2,000 will be issued. Permits may be revoked.

Existing State Agency Programs:

New York State Invasive Species Council:

The NYS Invasive Species Council is a statutory body that was created in 2008 by Title 17, Section 9 of the Environmental Conservation Law. The Council was created to coordinate among multiple State entities and partners in addressing the environmental and economic threats of invasive species. The Council is co-led by the NYS Department of Environmental Conservation (DEC) and the NYS Department of Agriculture and Markets (DAM) and consists of nine state members: the Commissioners of the DEC; DAM; Department of Transportation; Department of Education; Office of Parks, Recreation and Historic Preservation; the Secretary of State, the Chairperson of the New York State Thruway Authority, the Director of the New York State Canal Corporation, and the Chairperson of the Adirondack Park Agency.

The Council meets at least quarterly and is charged with the following tasks:

- Regularly consult with its Invasive Species Advisory Committee.
- Develop a comprehensive plan for invasive species management.
- Provide input on funding priorities.
- Provide input on grant applications.
- Organize and convene a biennial invasive species summit.
- Encourage industries and trade organizations to develop and adopt voluntary codes of conduct.
- Support and encourage Partnerships for Regional Invasive Species Management.
- Report (by 1 January 2010) to the state legislature and the Governor to recommend lists of prohibited, regulated, unregulated species plus a procedure for the review of a unlisted non-native species.

- Reimburse necessary and actual expenses of NYS Invasive Species Advisory Committee members.
- Establish, operate and maintain state-wide GIS database.
- Establish, operate and maintain state-wide information clearinghouse.
- Review and revise relevant state agency and public authority actions and policies.
- Review and reform of relevant regulatory processes.

Title 17, Section 9 also creates an Invasive Species Advisory Committee to provide information, advice and guidance to the Council and membership is comprised of the following organizations:

- Audubon New York
- New York Biodiversity Research Institute
- Cornell University
- Empire State Council of Agricultural Organizations
- Empire State Forest Products Association
- Empire State Marine Trades Association
- Environmental Energy Alliance of New York
- New York Sea Grant
- New York Farm Bureau
- New York Upstate Chapter of the American Society of Landscape Architects
- Lake Champlain Basin Program
- New York Forest Owners Association
- NYS Association of Counties
- Darrin Freshwater Institute, RPI
- NYS Federation of Lakes Association
- New York Natural Heritage Program
- NYS Flower Industries
- NYS Turfgrass Association
- New York City Department of Environmental Protection
- NYS Regional PRISMs (8)
- Soil & Water Conservation Districts
- State University of New York (SUNY) Environmental Science & Forestry
- The Nature Conservancy
- The Wildlife Society

Additional State invasive species agencies and contractors relevant to Conesus Lake Boat Launch:

- New York Invasive Species Research Institute (NYISRI)
- NY Invasive Species Clearinghouse (CCE)
- NYSDEC Office of Invasive Species Coordination
- Finger Lakes PRISM

Evaluation of Prevention Strategy Alternatives:

1. No Action
2. Structural Prevention Strategies
3. Inspection Prevention Strategies
4. Regulatory Prevention Strategies
5. Educational Prevention Strategies
6. Past and Current Prevention Strategies

1. No Action:

Invasive species negatively affect water quality, change lake ecology, impede recreation and pose health threats. These problems can have tangible affects on property values and real property tax revenue. Economic studies on invasive species impacts have shown a 2%-16% range in reductions to lakeshore property values (Zhang and Boyle 2010). Negative impacts to fishing and recreation from invasive species can harm the local economy. Poor recreation and fishing conditions can lead to fewer tourists and visitors traveling to the area. Businesses could be affected. Meals, shopping, entertainment, goods and services, tourism related employment and sales tax revenues could decrease.

Pros:

- Zero cost
- Funding can be used elsewhere

Cons:

- Zero protection from new invasive species
- Very high risk of new introduction
- Very high risk of long term negative economic, recreational and ecological impacts

Cost: No direct cost. Indirect costs due to negative economic impacts of new invasive species introductions.

2. Structural Prevention Strategies:

Weed Disposal

- Trash bucket
- Moving cart
- Wooden stationary weed disposal station

Pros:

- Provides a place for disposal of weed fragments
- Relatively low cost
- Works in concert with watercraft steward programs

Cons:

- Could attract garbage
- Need to determine an agency responsible for disposal

- Stations would have to be placed where fragments would not be washed into lake
- Vandalism
- Does not fully address invasive zoo plankton and mollusk species

Cost: $50-$300

High Temperature Wash station:

- Onsite
- Offsite

Pros:

- Provides the means for boaters to decontaminate mollusk and zooplankton species
- Available for watercraft steward programs

Cons:

- High cost
- Necessary construction
- Need for a trained operator (dangerous water temperature)
- If boat washing is not mandated, costs may not be justified by number of users
- Need for dependable water and electrical source and method of water disposal
- Need to be placed in a location that will both prevent wash water from draining into the lake and fit into the existing traffic patterns at the launch
- Vandalism
- Burns, slips, trips, or damage to equipment could occur if not used properly

Cost: $25,000 + for wash station (does not include construction, ongoing maintenance, utilities and staffing, or possible acquisition of property if offsite)

Logistics:

- Inspection/drain/decontamination should be far enough from the water or boat ramp so that drained water cannot flow into the waterbody
- Ideally located where all boats must pass prior to launch/after exiting
- Site should be far enough away to allow users to get through to the launch ramp
- Semi permeable ground surface such as gravel or dirt so that water absorbs into the ground or evaporates off
- Must be in secure facility where the decontamination station is locked up overnight or when inspectors aren't present
- Must be protected from the elements
- Regular maintenance will be needed
- Need to winterize or store equipment in freezing temperatures
- A water and electrical source are needed
- Trained staff supplied with proper safety equipment are needed to operate both portable and permanent units
- Existing site size and orientation presents limitations

3. Inspection Prevention Strategies:

Unmanned Outreach and Education Promoting Self Inspection:

Pros:
- Zero cost for inspectors
- No necessary regulations

Cons:
- Low rate of participation
- Easy to miss
- Proven to be ineffective at preventing new introductions

Cost: $0 (reflects cost of inspections, cost of signage, handouts, and/or structures covered in other sections)

Voluntary Inspections by Paid Stewards:

Pros:
- No new regulations needed
- Effective means to find most larger invasive species (plants and mature mussels)
- Steward presence effectively promotes invasive species awareness

Cons:
- Intermediate level protection for lake due to voluntary nature of inspections and no enforcement to require decontamination
- Difficulty staffing launch during all operating hours
- Moderate Cost
- Access to a consistent funding source

Cost: $5,000-$10,000 per steward, per year ($12.00 per hour rate plus equipment and handout materials for FLI watercraft stewards)

Mandatory Inspections:

Pros:
- Highest level of protection for the lake
- Best chance to minimize long-term economic and ecological impacts to lake
- Proven effective in western states
- Relatively low hassle to returning boats and lakeshore residents

Cons:
- Very high cost
- Likely increase in existing fees or new fees to launch users and/or the general public
- New regulations needed
- Could discourage visitors to the lake due to potential fees
- Potential lost local tourism and sales tax revenue if visitor numbers diminish

Cost: $100,000-$150,000 per year

Examples of Mandatory Boat Inspection Programs:

- Massachusetts – Quabbin Reservoir
- California- Seven lakes including Lake Tahoe
- Minnesota
- Colorado – Lake Pueblo
- Wyoming
- Idaho
- Oregon
- North Dakota
- Washington
- New York – Lake George (pending)

4. Regulatory Prevention Strategies:

Counties in both the Adirondacks and Finger Lakes regions have enacted local legislation prohibiting the transport of aquatic invasive species between waterways by boat and/or trailer. In these jurisdictions, the laws are used primarily as educational and motivational tools for invasive species prevention, rarely being enforced.

- County Invasive Species Transport Laws (Warren, Schuyler, Tompkins, Essex)
- Town and Village laws and regulations (Adirondacks – Lake Pleasant, North Elba)

Pros:

- Provides enforcement for invasive species prevention programming
- Allows boat stewards to report boaters who launch without an inspection
- Penalties provide additional incentive to comply with clean boat practices

Cons:

- Difficult to enforce
- Public may not be receptive to increased regulations
- Need signage and PR to inform the public of new laws
- Additional funding needed for enforcement

Logistics:

- Requires public hearing
- Requires environmental review

5. Educational Prevention Strategies:

- Programmable Electronic Message Board - $1,000-$10,000
- Local FM radio station broadcast (100 yards) - $50-$150
- ILIDS (Appendix B) - $7000-$15000
  (Records a 10 second video clip of every boat being launched and sends it wirelessly to the manufacturer for review. An audio message is also given to boater. It can be used to enforce regulations when an attendant is not present)
- Kiosk $500-$1000

- Banner - $500-$1,500
- Laminated poster signs $5- $10
- Outreach events: staff time and distribution materials
- School Education: staff time and distribution materials

Pros:

- Promotes invasive species awareness and clean boat practices
- Relatively low cost for most methods

Cons:

- Some signage may be easy to overlook
- Vandalism
- Signs may fade or need updating over time

6. Past and Current Prevention Strategies:

In 2012 and 2013, public education pamphlets were left with the boat launch attendant for distribution to boaters. In addition, laminated "Stop Aquatic Hitchhikers" signs were posted at the launch. The signs alerted boaters to their role in spreading invasive species and gave instructions on how to decontaminate a boat.

The Invasive Species Sub-Committee and Public Education and Outreach Committee will carry over these public educational efforts for future years. In addition to the continued programming, the Finger Lakes Institute will be providing a paid boat steward to the Conesus Lake Boat launch as part of their 2013 Watercraft Stewardship Program funded through the Great Lakes Restoration Initiative. Grant funding covers 15-20 paid steward hours per week, with hours concentrated during peak boating times.

The boat steward's role is both educational and environmentally preemptive. He/she will speak with incoming boaters about invasive species and provide voluntary boat inspection and manual decontamination of visible mud and vegetation. Boater participation in this program is voluntary and a boat may launch without inspection. Without additional cleaning and decontamination equipment located at the launch, decontamination will mostly be limited to what is visible to the naked eye. The decontamination of microscopic invasive species such as zooplankton and early life stages of mussels would benefit from additional chemical or high heat decontamination measures.

Recommendations for Conesus Lake:

2013 – Boat Stewards and Assessment:

2013 is the inaugural year for the Finger Lakes Institute Boat Launch Stewards program on Conesus Lake. In addition to on the ground promotion of invasive species awareness and boat inspections, the Watercraft Steward program includes data collection on invasive species removal and public perception. The Invasive Species Sub-Committee will assess the provided data and determine potential programming for future years. In addition to the Watercraft Steward Program, the Sub-Committee is working on additional signage and weed disposal stations for the boat launch.

In most states where mandatory invasive species inspection programs exist, the programs were adopted gradually, starting with education and awareness campaigns and voluntary inspections. Not until a large proportion of the public was in support of invasive species prevention did any mandatory or regulatory programs proceed. Increasing invasive species awareness through the Watercraft Steward Program could create a climate where the public will be more receptive and encouraged by any additional invasive species prevention programming in the future. The CLA, Invasive Species Sub-Committee, and NYSOPRHP are also exploring the potential for high visibility "Clean, Drain, Dry" signage at the boat launch in cooperation with the Conesus campaign.

The extent of public support for invasive species transport laws or mandatory boat decontaminations is currently unknown. Assessment of the Watercraft Steward Program data and results from a Hobart William and Smith Colleges sponsored Boater survey will provide the Conesus Lake Watershed Council with a better picture of the rate of boats and invasive species entering at the boat launch and the ability to perform a more accurate cost-benefit analysis on potential structural or regulatory prevention strategies.

2014 –

Data gathered during the 2013 field season will be presented to the Watershed Council to inform any potential changes or increases in scope for programming for 2014. The presence of the 2013 boat launch stewards will have increased local public awareness and positive reception to invasive species prevention potentially paving the way for additional prevention measures at the boat launch such as disposal and decontamination structures, more permanent signage and/or local transport laws. It is recommended to continue working with the Finger Lakes Institute on the continuation and sustainability of the Watercraft Steward Program in addition to monitoring the status and implementation of both local transport laws in other counties and the recent New York State invasive species regulatory law.

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