

Best Available Technologies for Aquatic Invasive Species Spread Prevention:

A guidebook by NH LAKES for boat access site owners and partners



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With nearly 1,000 lakes and ponds and approximately 17,000 miles of rivers and streams, New Hampshire is a boating paradise!

Section 1: Introduction - What and Who is This Guide for?

This guide is for public and private owners of boat access facilities on New Hampshire's nearly 1,000 lakes and ponds and approximately 17,000 miles of rivers and streams. There are more than 400 public federal and state-owned access sites where residents and visitors can launch motorboats, sailboats, canoes, kayaks, paddleboards, and other watercraft into the water. And, there are at least a couple hundred town and privately-owned boat access sites scattered around the state as well. New Hampshire is a boater's paradise!

While New Hampshire boasts some of the best boating opportunities in the region (and possibly in the nation) boating activity can also bring along with it unwanted opportunities. These include the opportunity for invasive plants and animals to spread from waterbody to waterbody. In fact, the primary way invasive species spread from waterbody to waterbody in New Hampshire is through transient boating activity—boats that are used in more than one waterbody during a boating season. This applies to motorized and non-motorized boats (including canoes, kayaks, and paddle boards, too!).

Here's the good news—boat access site owners (and their local partners) can help boaters prevent the spread of invasive species. There are many spread prevention tools, technologies, and programs that can be offered to boaters before launching and after coming out of the water.

By providing invasive species spread prevention tools, technologies, and programs, boat access sites owners (and their partners) will:

- raise boaters' awareness about aquatic invasive species prevention methods;
- help boaters comply with state aquatic invasive species prevention laws;
- provide for improved safety for boaters when moving around boats and trailers to conduct invasive species prevention activities; and,
- provide the local waterbody (and other waterbodies) with increased protection from the spread of invasive species.

NH LAKES is here to help boat access site owners! We know that each access site is different—the invasive species spread prevention technology or approach that is best-suited for one access site might not be the best at another. NH LAKES can help access site owners determine, on a site by site basis, what spread prevention practices are best. We can help them find funding and partners to help install tools and technologies and deliver spread prevention programs. And, we can work with access site owners on the adoption of municipal ordinances requiring boaters to utilize aquatic invasive species spread prevention practices if they are provided at an access site. Contact us at 603.226.0299 or info@nhlakes.org to discuss the possibilities!

NH LAKES is the only statewide nonprofit organization dedicated to keeping New Hampshire's lakes clean and healthy, now and in the future. We work with partners, promote clean water policies and responsible use, and inspire the public to care for our lakes. We firmly believe that more can and must to be done to prevent the spread of invasive species so that New Hampshire's lakes, ponds, rivers, and streams continue to be a boating paradise for the thousands of state residents and visitors who enjoy them each year!

Section 2: Aquatic Invasive Species – The Basics You Need to Know First

How do invasive species spread?

Boats, trailers, and recreational gear that have not been adequately cleaned, drained, and dried between waterbodies can allow invasive plants (like variable milfoil) and invasive animals (like the zebra mussel and Asian clam) to hitchhike from waterbodies infested with these species to uninfested waterbodies. When a boater leaves an infested waterbody (and doesn't clean, drain, and dry their boat, trailer, and gear) and then launches into another waterbody, hitchhiking plants and animals fall off or are flushed out of the boat (from engines, live wells, bilges, and ballast bags or tanks) into the waterbody. Once back in the water, these species can continue to grow and may start a new infestation. We know this because new invasive species infestations in waterbodies are typically first established near boat access sites.



Invasive plants can travel from waterbody to waterbody by hitchhiking a ride on boats, trailers, and recreational gear.
(Photo source: www.des.ny.gov)



Invasive animals can travel from waterbody to waterbody by microscopic-sized larvae hitchhiking a ride in as little as a drop of water trapped in bilges, live wells, engines, and ballast bags and tanks.
(Photo source: www.des.ny.gov)

What's the problem with invasive species in the water?

Infestations of invasive plants and animals can cause serious problems in waterbodies. Not only do they crowd out native plants and animals, they affect people by fouling boating, swimming, and fishing areas, and by reducing shoreline property values and tourism activity.

Specifically, infestations of invasive species in waterbodies make boating unpleasant, difficult, and even dangerous by:

- encrusting and clogging access facilities, including docks and ramps, with dense beds of shells and plants;
- littering the nearshore area of access sites with sharp, smelly shells and slimy, rotting vegetation;
- making navigation difficult through dense plant beds;
- damaging boat engines and components by sucking up plant fragments and shells; and,
- encrusting the bottom of boats with shells, sometimes causing boats to sink under their added weight!

Once they gain a foothold in a waterbody, invasive plant infestations are expensive to manage and nearly impossible to get rid of. Infestations of invasive animals in waterbodies are typically impractical to manage and impossible to get rid of.

What is the state of invasive species in New Hampshire's waters?

Currently, approximately 85 New Hampshire waterbody systems (including lakes and rivers) contain infestations of invasive species, with some systems being infested with up to six different species! As of summer 2018, these infestations included a total of nine different plant and animal species, as follows:

- Invasive Plants

- Variable milfoil (73 systems)
- Fanwort (9 systems)
- Eurasian milfoil (6 systems)
- European naiad (5 systems)
- Curly-leaf pondweed (5 systems)
- Brittle naiad (1 system)
- Water chestnut (2 systems)
- Brazilian elodea (1 system)

- Invasive Animals

- Asian clam (6 systems)

Note: This listing does not include the Chinese Mystery Snail, an invasive animal that is documented in dozens of systems and is likely found in several more.

For information on the location of specific infestations, refer to Appendix A.



Variable milfoil is an invasive plant that has clogged marinas, boat ramp access sites, and other areas in approximately 73 New Hampshire waterbodies.
(Photo source: www.des.nh.gov)



The Asian clam is an invasive animal that has littered the sandy bottom of at least six New Hampshire waterbodies.
(Photo source: UC Davis)

Here's the good news: Most of New Hampshire's approximately 1,000 lakes and ponds and several thousand miles of rivers and streams have, thus far, evaded the introduction of invasive species.

But, here's the bad news: Many of the most highly used lakes and rivers in New Hampshire contain at least one invasive species. And, during recent summers, the spread of invasive animals—in particular, the Asian clam—appears to be on the rise. While the Asian clam is currently documented by the New Hampshire Department of Environmental Services in six waterbodies, biologists believe that there may be many more infestations of this species that have not yet been discovered.

What boat access sites are at highest risk for spreading aquatic invasive species by transient boat traffic?

Boat access sites in New Hampshire that have been determined to be at highest risk for the spreading invasive species by transient boat traffic include the following:

- motorized boat access sites on the 'big six' destination lakes (lakes larger than 4,000 acres in surface area—Lake Winnepesaukee, Lake Umbagog, Squam Lake, Newfound Lake, Lake Winnisquam, and Lake Sunapee);
- 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 animals (this does not include lakes infested with the Chinese mystery snail).

For a listing of specific boat access sites determined to be at high risk, refer to Appendix B.

What is being done to prevent the introduction and spread of invasive species in New Hampshire by boating activity?

- **Laws:** Laws have been adopted to help prevent the introduction and spread of aquatic invasive species into New Hampshire waterbodies by boating activity. Under state law:
 - It is illegal to distribute, sell, import, purchase, propagate, negligently transport, or introduce a total of twenty-eight exotic invasive plants into New Hampshire waterbodies, and there are violations for doing so. (NH RSA 487:16-b)
 - It is illegal to transport any aquatic plants (native, exotic, or invasive) to or from any New Hampshire waters on the outside of boats, vehicles, and equipment. (NH RSA 487:16-c)
 - When leaving a waterbody, boaters are required to drain boats and other water-related equipment that holds water, including live wells and bilges. In addition, all drain plugs, bailers, valves, or other devices used to control the draining of water from ballast tanks, bilges, and live wells must be removed or opened while transporting boats and other water-related equipment. (NH RSA 487:16-d)

For more information on aquatic invasive species laws, refer to Appendix C.

- **Education:** Education efforts are also being implemented in New Hampshire to help boaters prevent the spread of invasive species. These activities include the following:
 - **Signage:** The New Hampshire Department of Environmental Services provides complimentary signs for posting at access sites that instruct boaters to clean, drain, and dry, boats, trailers, and gear before launching and after coming out of the lake. (If your local access site doesn't have a sign, call the department at 603-271-2248.)
 - **Watercraft Inspection Programming:** At approximately 100 of the most highly used boat access sites in the state, employees and volunteers trained as watercraft inspectors through the NH LAKES Lake Host™ Program teach boaters how to prevent the spread of invasive species. (If your local access site isn't being covered through the Lake Host™ Program, refer to Section 4 and Appendix F of this guide, visit www.nhlakes.org, or call 603-226-0299 to learn more including how to start a program.)



Despite state laws and education activities, boaters continue to arrive at New Hampshire access sites with boats, trailers, and gear that have not been cleaned, drained, and dry, some of which contain visible fragments of invasive plants and animals and standing water which could contain microscopic invasive animal larvae.

If boats at high risk for spreading aquatic invasive animals arrive at access sites in New Hampshire, there are currently no sites equipped with decontamination technology. In some areas of the state, a car wash may be located nearby to help boaters clean off, but likely not decontaminate (i.e.; 'kill' aquatic invasive species), boats, trailers, and gear.

Keeping in mind that it can take just one boat with a fragment of an invasive plant launched into a waterbody or a few drops of water with a single invasive animal larva to cause a widespread waterbody infestation, this is alarming!

What more can be done at your local access site to prevent the spread of aquatic invasive species?

The operation of a mandatory watercraft inspection and decontamination program at every boat access site in the state would provide New Hampshire's waters with the highest level of protection from the spread of aquatic invasive species. Mandatory inspection programs with decontamination provisions are implemented in many regions of the western United States, and in some regions in New York and Vermont. This approach, however, is not currently practical to implement on a statewide basis in New Hampshire for many reasons.

With that said, there are many opportunities for New Hampshire boat access site owners (and their local partners) to offer best available practices and technologies to help boaters prevent the spread of invasive species.

The aquatic invasive species spread prevention practices and technologies discussed in this guide include the following:

- Clean and Drain Areas and Tools (refer to Section 3)
- Watercraft Inspection Programming (refer to Section 4)
- Watercraft Wash Stations for Cleaning and/or Disinfection (refer to Section 5)

Section 3: Incorporate Clean and Drain Areas

Boat access site owners are encouraged to design or modify access sites by designating or creating aquatic invasive species prevention areas. By providing boaters with a designated area, visual reminders, and tools for completing invasive species prevention activities, boat access site owners will:

- raise boaters' awareness about invasive species prevention methods;
- help boaters comply with state invasive species prevention laws;
- provide the local waterbody (and other waterbodies) with increased protection from the spread of invasive species; and,
- provide for improved safety for boaters when moving around boats and trailers to conduct invasive species prevention activities.

Clean and drain areas are self-serve areas for boaters that are relatively low cost options for access site owners. Since these areas do not need to be staffed, they can be available whenever the access site is open. These areas can also be used in combination with watercraft inspections provided by trained inspectors (refer to Section 4), and, in certain cases, boat washing services provided by trained inspectors (refer to Section 5).

It should be noted, however, that clean and drain areas and their component parts can be subject to accumulation of litter, vandalism, and theft. And, when not staffed by attendants or inspectors, clean and drain areas may be misused or underutilized by boaters.



A clean and drain area with sign, disposal bin, and pavement stencil/parking box.

(Source: Minnesota Department of Natural Resources)

Locating Clean and Drain Areas

Considerations when constructing or modifying a boat access site to include clean and drain areas include the following:

- Clean and drain areas are best placed on the way into the access site and/or on the way out.
- If already existing, watercraft 'make-ready' lanes and 'tie-down' lanes can be good places to site clean and drain areas.
- The site should be level and drainage water from watercraft should run away from the waterbody, preferably into a designated infiltration area.
- Allowing for safe and efficient traffic flow at the site should always be considered when siting clean and drain areas.
- The clean and drain area should stand out from the rest of the access site. This can be accomplished with the use of pavement markings/stencils and signage providing directions and instruction.

Tool and Technology Options for Clean and Drain Areas

Options for incorporating technology (i.e.; tools and equipment) when constructing or modifying a boat access site to include clean and drain areas include the following:

- **Hanging racks with tools to aid in invasive species prevention activities**
 - plant removal tools (litter pickers—rods with hooks on the end—can be purchased or made)
 - sponges for soaking up water from live wells, bait wells, and bilges and wiping down interior surfaces
 - wrenches for removing drain plugs
 - towels for drying off exterior surfaces
 - plastic scrapers (for exteriors with encrusted debris, including potential growth of Zebra mussels)

Note: Tools will periodically need to be cleaned and/or replaced as they are utilized (and, in some cases, taken away from the site).



- **Garbage and compost bins for boaters to put materials removed from their watercraft or trailer**
 - Separate garbage bins should be provided adjacent to compost bins to minimize the need for then manual separation of non-biodegradable materials when cleaning out the compost bin
 - Signage with appropriate disposal instructions is recommended, as follows:
 - Examples of materials that can be placed in compost bins include aquatic vegetation, mussels, bait bucket water, and unwanted bait
 - Unwanted fishing worms (considered invasive species) should be placed in the garbage bin

Note: Collected materials will need to be disposed of properly by access site owner or owner's designee.



- **Racks for paddle craft**
 - It is important to note that paddle craft (canoes, kayaks, paddle boards) can also spread invasive species as water can get trapped in compartments and plant fragments can get stuck on paddles, skegs, rudders, cords, lines, and anchors.
 - To facilitate the cleaning and draining of paddle craft, clean and drain areas could include racks that allow boaters to easily elevate, prop up, and roll vessels.

Signs and plant removal tools placed near specimen removal bins help boaters remove and properly dispose of invasive species and other materials. (Source: Minnesota Department of Natural Resources)

- **Infiltration areas to absorb drain water**
 - Clean and drain areas should be situated so that drain water from live wells, bait wells, bilges, engines, ballast bags and tanks, and other compartments is directed away from the waterbody, preferably into a designated infiltration area.
 - Access site owners who wish to construct infiltration areas within 250-feet of the waterbody high water mark, or within a jurisdictional wetland resource area, may need to obtain one or both of the following permits from the New Hampshire Department of Environmental Services:
 - **Shoreland Program Permit:** Required for projects involving excavation, fill, or construction activities within 250 feet of lakes and ponds greater than 10 acres in size
 - For more information:
 - (603) 271-2147
 - shoreland@des.nh.gov
 - <https://www.des.nh.gov/organization/divisions/water/wetlands/cspa/index.htm>
 - **Wetlands Program Permit:** Required for excavating, removing, filling, dredging, or constructing any structures in or on any bank, flat, marsh, or swamp in and adjacent to any waters of the state
 - For more information:
 - (603) 271-2147
 - <https://www.des.nh.gov/organization/divisions/water/wetlands/permit-standard-dredge-fill.htm>
- **Watercraft Cleaning Station to aid in cleaning, draining, drying and disposal**
 - Clean-Drain-Dry-Dispose (CD3) Watercraft Cleaning Stations are self-contained waterless units that offer boater-operated equipment designed to reduce the spread of aquatic invasive species by cleaning, draining, drying, and disposing of all hitchhiking fragments and trapped water.
 - CD3 units provide a wet/dry vacuum and tethered cleaning tools for boaters to remove material and water from vessels. Boaters can vacuum material and standing water with a 30-foot hose. An additional garbage or compost option at the site is recommended to contain plant and bait disposal. To dry, the station has a hose that dispenses high-pressure air to remove excess water and particulates from vessels, trailers, and gear.
 - Users can access online educational materials from CD3 and learn about cleaning techniques on their smart phones. The software associated with CD3 can also geo-locate users and provide them location-specific information. With geo-location, CD3 provides specific instructions for cleaning based on the types of invasive species threatening or inhabiting the local waterbodies.

- CD3 provides internet-uploaded analytics to the owner in real time. The owner can remotely monitor station use, waste levels, and service needs. Maintenance for these stations is minimal and they are easily winterized by draining and covering to prevent rusting.
- Four models are currently available for purchase, including stationary and trailered, and grid-connected and solar powered models.
- Lease-to-own financing options are available.
- For more information, refer to Appendix E and visit <http://www.cd3station.com>.



Clean-Drain-Dry-Dispose (CD3) Waterless Cleaning Stations provide free tools empowering boaters to take action to prevent the spread of invasive species. The stations are waterless. User-operated cleaning equipment includes a wet/dry vacuum, blower, and tethered hand tools. Exterior graphics and online instructional resources for the boater can be customized to the launch site. (Source: www.cd3station.com)

Section 4: Offer Watercraft Inspection Programming

Boat access site owners are encouraged to offer, or have a local partner (such as a lake association or conservation commission) offer, a watercraft inspection program at access sites. By providing trained inspectors to teach boaters the steps they can take before launching into the water and after coming out of the water to prevent the spread of invasive species, boat access site owners (and their local partners) will:

- raise boaters' awareness about invasive species prevention methods;
- help boaters comply with state aquatic invasive species prevention laws; and,
- provide the local waterbody (and other waterbodies) with increased protection from the spread of invasive species by inspectors and boaters physically removing plants, animals, and other debris attached to watercraft and trailers.

Watercraft Inspection Programming in New Hampshire

The Lake Host™ Program is an aquatic invasive species education and spread prevention program administered by NH LAKES in cooperation with boat access site owners and local partner groups throughout New Hampshire. Approximately 100 of the most highly used boat access sites throughout the state are staffed each summer with a total of nearly 800 Lake Host Inspectors—approximately 300 NH LAKES seasonal employees and 500 local volunteers.

Trained NH LAKES Lake Host Inspectors:

- educate visiting boaters about aquatic invasive species (plants and animals);
- teach boaters the 'Clean, Drain, and Dry' method for preventing the spread of aquatic invasive species;
- survey boaters regarding recent and future boating activities and invasive species spread prevention measures taken;
- conduct courtesy boat and trailer inspections of all watercraft (motorized and non-motorized) about to be launched and all watercraft being taken out of the water to remove all hitchhiking plant and animals fragments and other debris;
- remind boaters to always open/remove drain plugs before trailering from the ramp and to leave all drain plugs open/out while transporting; and,
- send suspicious species fragments collected to the New Hampshire Department of Environmental Services for identification.



NH LAKES Lake Hosts teach boaters at access sites throughout the state how to prevent the spread of invasive species—plants and animals.

Between 2002 and 2018, Lake Hosts conducted just over one-million watercraft inspections and made nearly 1,600 'saves' of aquatic invasive plant or animal specimens that were about to enter or had just left a waterbody.

How to Participate in the Lake Host Program

If your boat access site is not staffed by trained Lake Hosts to help boaters prevent the spread of invasive species, NH LAKES encourages you to start a program and suggests partnering with a local community group—such as a local lake association, municipal conservation commission, or other locally-organized volunteer group—to staff the access site. NH LAKES offers different program models, as follows:

- **Boat access sites (motorized or non-motorized) open to the general public:**
 - Owners of boat access sites open to the general public are invited to participate in the Lake Host™ Payroll Grant Program administered by NH LAKES. NH LAKES provides ('sets aside') grant funding to cover the salaries and benefits of individuals hired as NH LAKES employees to work as Lake Host Inspectors at local access sites open to the public. Participating groups are required to match their payroll award by a minimum of 100% by providing volunteer labor and/or by contributing funding to extend Lake Host employee coverage at the access sites. NH LAKES provides all training, outreach materials, and payroll services. Funding for the payroll grant award programs comes from the New Hampshire Department of Environmental Services' Exotic Species Prevention Grant Program which is funded by a portion of the revenue generated by in-state boat registration fees. Funding for the payroll grant program may also come from foundations, municipalities, and individuals.
 - NH LAKES can train local volunteers to staff the access site along with or in lieu of employees.
- **Boat access sites (motorized or non-motorized) not open to the general public:** Owners of boat access sites not open to the general public are invited to participate in NH LAKES Lake Host™ Program on a non-payroll grant award basis.
 - NH LAKES can hire and train individuals to work as Lake Host employees at ramps not open to the general public, provided that the local group provides funding to cover the cost of salaries and associated taxes, statutory benefits including insurances, and payroll and program fees.
 - NH LAKES can train volunteers to staff the access site along with or in lieu of hired employees.

For more information about the NH LAKES Lake Host™ Program, refer to Appendix F or contact NH LAKES at (603) 226-0299 or lakehost@nhlakes.org.



Trained Lake Host inspectors teach boaters with non-motorized and motorized watercraft how to prevent the spread of invasive species.

Section 5: Offer Watercraft Wash Stations for Cleaning and/or Decontamination

Owners of boat access sites that have been determined to be high risk sites for the spread of invasive species by transient boat traffic are encouraged to offer, at a minimum, clean and drain areas at the site. To provide the highest level of protection, they could offer (or have a local partner group offer) an inspection program which incorporates boat wash services to increase invasive species spread prevention. High risk access sites in New Hampshire include the following:

- motorized boat access sites on the 'big six' destination lakes (lakes larger than 4,000 acres in surface area—Lake Winnepesaukee, Lake Umbagog, Squam Lake, Newfound Lake, Lake Winnisquam, and Lake Sunapee);
- 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 animals (this does not include lakes infested with the Chinese mystery snail).

For more specific information on locations of high risk access sites refer to Appendix B.

By providing trained inspectors to conduct boat wash services for vessels at high risk sites, boat access sites owners (and their partners) will:

- raise boaters' awareness about aquatic invasive species prevention methods;
- help boaters comply with state aquatic invasive species prevention laws;
- provide the local waterbody (and other waterbodies) with increased protection from the spread of invasive species by inspectors physically removing plants, animals, and other debris attached to watercraft and trailers; and,
- if offering wash services with water of sufficient pressure and temperature to decontaminate (i.e.; kill plants and animals), provide the local waterbody (and other waterbodies) with the highest level of protection from the spread of invasive species.

Generally, boat washing (for cleaning and decontamination) should be performed for watercraft departing waterbodies infested with an invasive species or for arriving watercraft at waterbodies not infested with an invasive species. The use of soaps, detergents, bleaches, or other chemicals are not recommended for use in conjunction with any kind of wash station.

Locating Wash Station Areas

Considerations when constructing or modifying an access site to include a wash station include:

- A boat wash station is best placed close to where traffic goes into and out of the launch site, but not in a location where it interferes with the flow of traffic. There should be adequate space for boaters and inspectors to perform wash activities safely.
- The wash station area should be visually obvious and stand out from the rest of the access site. Pavement markings, cones, and signs can be utilized to provide direction and a safe area.
- The site should be level and drainage water from watercrafts and washing activities should flow away from the waterbody, preferably into a designated infiltration area or containment pad.

- For fixed wash stations, an on-site clean water source must be available.

Types of Wash Stations

A handful of different types of boat wash stations are being used throughout the country to aid in the prevention of the spread of invasive species from waterbody to waterbody. Wash stations are used to rinse off the exterior of boats and trailers, and rinse out the bilge, storage areas, and, in some cases, flush motors, live wells, bilges, and ballast bags and tanks. Depending on the temperature and pressure of the water used, the system can provide cleaning services (aiding in the removal, but not killing of the removed organisms), or decontamination services (aiding in the removal and killing of removed organisms). And, these stations can consist of permanent or semi-permanent units (typically requiring plumbed water and electrical hookups) or be fully mobile self-contained units.

- **Stationary wash stations providing watercraft cleaning services (cold water, low pressure units):** Wash stations that offer cold, low pressure water can be used by boaters on a self-serve basis. These types of systems typically consist of a garden hose, local water supply, and an infiltration area. As with any self-service facility, periodic maintenance is required.
- **Stationary wash stations providing watercraft cleaning services (cold water, high pressure units):** Wash stations that offer cold, high pressure water should be operated by a trained inspector to minimize the potential for boater injury and damage to the watercraft. These systems typically consist of a garden house connected to a local water supply and a conventional pressure washer, and an infiltration area.



The Town of Madison, New Hampshire, in conjunction with the Silver Lake Association of Madison (SLAM), constructed a wash station at the Silver Lake Town Boat Ramp. The station has a gravel drainage bed, pump house, and cold water pressure washer. It is manned every day from Memorial Day weekend until Labor Day by NH LAKES Lake Hosts under the direction of SLAM. A regular garden hose is provided on the side of the pump house for boater use when the Lake Host is not on duty to run the pressure washer. There is no fee for boaters and, as a municipally-owned ramp, a municipal ordinance requires that boaters utilize the wash station.

- Wash stations providing watercraft decontamination services (hot water, high pressure units):**
 Wash stations that provide water of sufficient temperature and pressure provide decontamination services for vessels effectively 'kill' hitchhiking invasive species. To achieve decontamination, the U.S. Federal Aquatic Nuisance Species Task Force recommends spraying the boat hull and external surfaces with high-pressure (2,500 psi) hot water (140 degrees Fahrenheit) for 10 seconds and flushing motors and interior compartments with hot water (120 degrees Fahrenheit) for two minutes. Decontamination systems must be operated by a trained inspector to prevent personal injury and damage to the watercraft. In addition, inspectors must wear appropriate personal protective equipment.

Decontamination wash stations typically consist of a fresh water source, a pressure washer system (motorized pump sprayer), and a heating mechanism (burner). They sometimes include a holding tank(s) for water, a containment pad for wastewater, a vacuum or sump pump mechanism for water recovery, and, in some instances, a multistage filtration system for recovered water.

- Mobile Decontamination Systems**

Mobile systems provide access site owners (and their operators) flexibility with their boat wash programs. These systems generally require less maintenance and have fewer long-term operational and maintenance costs than fixed or semi-fixed wash systems. Mobile systems, often placed on trailers and moved to and from locations by pick-up trucks, can be situated on flat areas at or in close proximity to launches during the boating season and can be removed and stored inside garages or existing infrastructure during winter months. These systems have a relatively small and temporary footprint on a site.



A mobile decontamination unit and containment mat.
 (Photo source: Minnesota Department of Natural Resources)

The presence of plumbed water or electricity hookups is not necessary for most mobile systems, as most have the option to include portable tanks that can carry wash water and have generators to run the pressure wash system. Set up generally requires a few minutes.

Containment of wastewater from mobile systems can be handled in a variety of ways. The most common form of containment is a plastic (or similar) mat with foam or water filled, flexible walls that hold wastewater from washes. When these mats are full, pumps handle the transfer of water into a storage tanks. These mats can be rolled up and stored when not in use. Trailers

and trucks can drive over these mats for washes in a drive-through fashion. The use of a temporary mat does not require obtaining a permit from local or state authorities.

Wastewater can also be infiltrated into a properly constructed gravel infiltration pad or other infiltration area located away from the waterbody where rinse and drain water soak into the ground and not flow back into the waterbody. The construction of an infiltration area may require a Shoreland and/or Wetland permit from the New Hampshire Department of Environmental Services.

For more information on mobile decontamination systems, including commonly used systems, refer to Appendix G.

When Should Watercraft be Decontaminated?

Time and resources available at an access site will determine whether watercraft decontamination is possible. Circumstances that should result in serious consideration of decontamination include the following:

- Incoming watercraft:
 - there are visible invasive species on the watercraft, trailer, vehicle or other equipment, or vectors for invasive species spread are present (i.e.; mud on an anchor) that cannot be removed effectively by hand;
 - the watercraft arrived undrained, including standing water in any compartments, since being used last in another waterbody; or
 - the watercraft was last used in a waterbody infested with an invasive animal or in an unknown waterbody.
- Exiting watercraft:
 - the watercraft is leaving a waterbody infested with an aquatic invasive animal; or
 - there are visible invasive species on the watercraft, trailer, vehicle or other equipment, or vectors for invasive species spread are present (i.e.; mud on an anchor) that cannot be removed effectively by hand.

Watercraft Decontamination Procedures

Inspectors trained in decontamination procedures will allow access site owners to provide the waterbody the highest level of protection from the spread of invasive species. These procedures include:

- **Standing Water Decontamination:** This protocol is performed to kill microscopic invasive species in standing water that can't be fully drained from the vessel. This decontamination applies to interior compartments that contain water or have equipment that have come in contact with the waterbody.

- **Motor Flush:** This is performed to remove standing water that may still be inside of a motor that was not fully drained.
- **Plant Decontamination:** This should be performed whenever plant material cannot be removed from the vessel or trailer by hand. This decontamination is localized and requires using 140 degree Fahrenheit hot water only on the areas where plant material is located.
- **Exterior Decontamination for Suspected or Known Invasive Species:** This should be performed when mussels, unidentifiable bumps, or other invasive species are detected on the vessel.

For specific step-by-step decontamination instructions, refer to Appendix H.



An inspector using hot water high temperature spray on the underside of a boat hull in order to complete a full decontamination. (Photo source: Minnesota Department of Natural Resources)

Section 6: Contact Information to Get You Started!

If you have made it to this point in the guide, you must be interested in what aquatic invasive species prevention practices are best for your local boat access site!

As discussed previously, NH LAKES can help access site owners determine, on a site by site basis, what spread prevention practices are best. We can also help access site owners find funding and partners to help implement these activities. And, we can work with access site owners on the adoption of municipal ordinances requiring boaters to utilize aquatic invasive species spread prevention best available technologies if they are provided at access site (refer to Appendix D).

Don't delay, contact us today!

NH LAKES
17 Chenell Drive, Suite One
Concord, NH 03301
603-226-0299
info@nhlakes.org www.nhlakes.org



And, here's some information so that you can take a look to see what cleaning and wash stations might be suited to your local access site!

- Clean and drain area materials tools

Clean. Drain. Dry. Product Catalog
Wildlife Forever
763-253-0222

<https://www.wildlifeforever.org/wp-content/uploads/2017/05/CD2-Catalog-2018-Final-LR.pdf>

CD3, General Benefit Corporation
612-467-9441
StopAIS@CD3station.com
<http://www.cd3station.com>

- Wash Station Information

Hydro Engineering, Inc.
800-247-8424
<https://www.hydroblaster.com>

Hydro Tek Systems, Inc.
800-274-9376
<https://www.hydrotek.us/aquatic-invasive-species-decontamination-equipment/>

Superior Cleaning Equipment, Inc.
602-257-1357
<https://sceclean.com/shop/pressure-washers/product/landa-ecos-trailer/>

Section 7: Resources We Accessed to Provide this Guide for You

These resources were accessed during June – November 2018:

CD3, General Benefit Corporation. (2017). CD3: Frequently Asked Questions.

<https://www.cd3station.com/cd3-tech-faq/>

Minnesota Department of Natural Resources. 2018. Watercraft Decontamination Manual.

ftp://ftp.dnr.state.mn.us/pub/eco/watercraft_insp/Level%20%20Watercraft%20Decontamination%20Manual%202018.pdf

New Hampshire General Court. Rules. FISH AND GAME. CHAPTER 207. THE IMPORTATION, POSSESSION AND USE OF ALL WILDLIFE. <http://www.gencourt.state.nh.us/rsa/html/xviii/207/207-mrg.htm>, accessed 10/12/18

New Hampshire General Court. Rules. FISH AND GAME. CHAPTER Fis 800.THE IMPORTATION, POSSESSION AND USE OF ALL WILDLIFE

http://www.gencourt.state.nh.us/rules/state_agencies/fis800.html, accessed 10/12/18.

New Hampshire General Court. Rules. Env-Wq 1303.02 Prohibited Exotic Aquatic Weeds.

<https://www.gencourt.state.nh.us/rsa/html/l/487/487-mrg.htm>, accessed 10/25/18

NH LAKES. (2017). Options for Preventing the Spread of Aquatic Invasive Species with the aid of Boat

Cleaning and Wash Stations in New Hampshire, <https://nhlakes.files.wordpress.com/2018/03/nh-lakes-recommendations-for-increased-aquatic-invasive-species-spread-prevention-programming-in-new-hampshire-full-report.pdf>

State of New Hampshire, Revised Statues Online. (10/12/18). TITLE L

WATER MANAGEMENT AND PROTECTION, CHAPTER 487 CONTROL OF MARINE POLLUTION AND AQUATIC GROWTH. <https://www.gencourt.state.nh.us/rsa/html/l/487/487-mrg.htm> accessed 10/12/18

States Organization for Boating Access. (2015). Construction and Integration of Aquatic Invasive Species

(AIS) Prevention Areas at Recreational Boating Facilities, <http://www.sobaus.org/pdf/AIS-Best-Management-Practices-FINAL.pdf>.

Vermont Department of Conservation. (2018). Vermont Public Access Greeter Program Manual,

<https://dec.vermont.gov/sites/dec/files/wsm/lakes/ans/docs/VWIPs%202018.pdf>

Section 8: Appendices – Additional Information for You

Appendix A: New Hampshire Waterbodies Infested with Aquatic Invasive Species

Appendix B: New Hampshire Boat Access Sites at High Risk for Serving as a Pathway for the Spread of Aquatic Invasive Species

Appendix C: New Hampshire Aquatic Invasive Species Laws

Appendix D: NH LAKES Model Municipal Ordinance for Aquatic Invasive Species Prevention Utilizing Best Available Technology

Appendix E: CD3 Watercraft Cleaning Station Information Specifications

Appendix F: NH LAKES Lake Host Program Summary

Appendix G: Decontamination Unit Specifications

Appendix H: Step-by-Step Guidelines for Watercraft Decontaminations
















Appendix A: New Hampshire Infested Waterbodies List

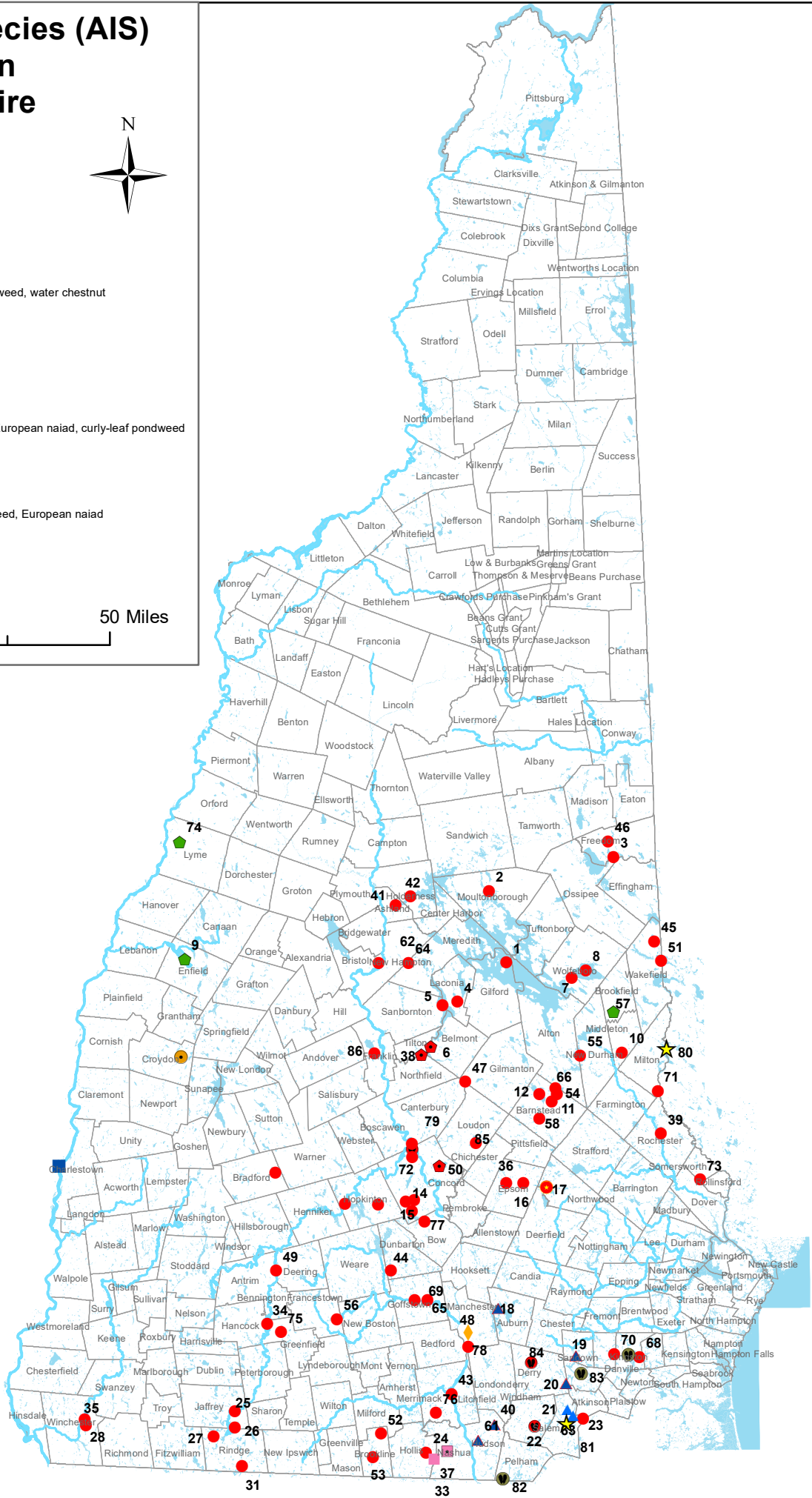
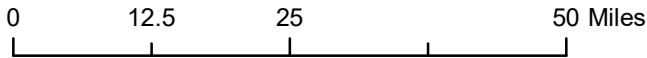
Aquatic Invasive Species (AIS) Infestation in New Hampshire

Legend

AIS Infestations

Type

-  Asian clam
-  Brazilian elodea
-  Curly-leaf pondweed
-  Eurasian milfoil
-  Eurasian milfoil, European naiad, Didymo, curly-leaf pondweed, water chestnut
-  European naiad
-  Fanwort
-  Variable milfoil
-  Variable milfoil, Asian clam
-  Variable milfoil, Curly-leaf pondweed
-  Variable milfoil, Eurasian milfoil, fanwort, water chestnut, European naiad, curly-leaf pondweed
-  Variable milfoil, European naiad
-  Variable milfoil, curly-leaf pondweed
-  Variable milfoil, fanwort
-  Variable milfoil, fanwort, Eurasian milfoil, curly-leaf pondweed, European naiad
- Town_Boundaries_polygons
- NH_Hydrography_polygons
- State_Boundary



Map prepared by NH DES
Exotic Species Program
Updated October 2017

Numbers correspond to separate
key which lists waterbody
name and town.

Appendix A

New Hampshire Waterbodies Infested with Aquatic Invasive Species (as of October 2017)

(Note: This listing does not include the Chinese Mystery Snail, an invasive species documented in several waterbodies statewide.)

Map #	Waterbody (TOWN)	AC	BE	BN	CLP	EM	EN	FW	VM	WC
21	Arlington Mill Reservoir (SALEM)							x		
35	Ashuelot River (WINCHESTER)								x	
51	Balch Lake (WAKEFIELD)								x	
58	Barnstead Parade Pond/Suncook (BARNSTEAD/ PITTSFIELD)								x	
84	Beaver Lake (DERRY)	x							x	
45	Belleau Lake (WAKEFIELD)								x	
20	Big Island Pond (DERRY)							x	x	
15	Big Turkey Pond (CONCORD)								x	
16	Bixby Pond (EPSOM)								x	
54	Brindle Pond (BARNSTEAD)								x	
23	Captain Pond (SALEM)								x	
86	Chance Pond Brook (FRANKLIN)								x	
25	Cheshire Pond (JAFFREY)								x	
22	Cobbetts Pond (WINDHAM)	x							x	
39	Cocheco River (ROCHESTER)								x	
29	Connecticut River (CHARLESTOWN)				x	x	x			x
26	Contoocook Lake (JAFFREY)								x	
49	Contoocook River (VARIOUS LOCATIONS)								x	
7	Crescent Lake (WOLFEBORO)								x	
85	Crooked Pond (LOUDON)								x	
46	Danforth Pond (FREEDOM)								x	
24	Flints Pond (HOLLIS)								x	
28	Forest Lake (WINCHESTER)								x	
69	Glen Lake (GOFFSTOWN)								x	
44	Gorham Pond (DUNBARTON)								x	
87	Great Pond (KINGSTON)	x								
66	Halfmoon Pond (BARNSTEAD)								x	
32	Hopkinton Lake/Dam (HOPKINTON)								x	
43	Horseshoe Pond (MERRIMACK)								x	
55	Jones Pond (Stumpfield Pond) (NEW DURHAM)								x	
60	Kimball Pond (HOPKINTON)								x	
64	Lake Pemigewasset (MEREDITH)								x	
2	Lees Pond (MOULTONBOROUGH)								x	
36	Little Suncook River (EPSOM/NORTHWOOD)								x	
14	Little Turkey Pond (CONCORD)								x	
11	Locke Lake (BARNSTEAD)								x	
70	Long Pond (DANVILLE)								x	
82	Long Pond (PELHAM)	x								
9	Mascoma Lake (ENFIELD)					x				
18	Massabesic Lake (AUBURN)							x	x	
30	Massasecum Lake (BRADFORD)								x	
52	Melendy Pond (BROOKLINE)								x	
59	Merrimack River (MULTIPLE TOWNS)	x							x	
81	Milville Lake (SALEM)						x			
37	Mine Falls Pond (NASHUA)				x	x	x	x	x	
31	Monomonac Lake (RINDGE)								x	
57	Mountain Pond (BROOKFIELD)					x				
33	Nashua River (NASHUA)				x	x	x	x	x	x
76	Naticook Lake (MERRIMACK)								x	
80	Northeast Pond (MILTON)			x						

New Hampshire Waterbodies Infested with Aquatic Invasive Species (as of October 2017)

(Note: This listing does not include the Chinese Mystery Snail, an invasive species documented in several waterbodies statewide.)

Map #	Waterbody (TOWN)	AC	BE	BN	CLP	EM	EN	FW	VM	WC
17	Northwood Lake (NORTHWOOD)						x		x	
48	Nutts Pond (MANCHESTER)		x							
4	Opechee Lake (LACONIA)								x	
3	Ossipee Lake (Broad Bay) (FREEDOM)								x	
61	Ottarnic Pond (HUDSON)							x	x	
75	Otter Pond (GREENFIELD)								x	
79	Oxbow Lake (CANTERBURY)								x	
27	Pearly Pond (RINDGE)								x	
62	Pemigewasset River (SANBORNTON)								x	
19	Phillips Pond (SANDOWN)							x	x	
78	Pine Island Pond (MANCHESTER)								x	
65	Piscataquog River (GOFFSTOWN)								x	
74	Post Pond (LYME)					x				
53	Potanipo Lake (BROOKLINE)								x	
34	Powder Mill Pond (HANCOCK)								x	
68	Powwow Pond (KINGSTON)								x	
40	Robinson Pond (HUDSON)							x	x	
47	Rocky Pond (GILMANTON)								x	
67	Rockybound Pond (CROYDON)				x					
56	Scobie Pond/Haunted Lake (FRANCESTOWN)								x	
71	Spaulding Pond (MILTON)								x	
42	Squam Lakes (HOLDERNESS/ASHLAND)								x	
41	Squam River (ASHLAND)								x	
13	St Paul's School Pond (CONCORD)								x	
12	Suncook Lakes (BARNSTEAD)								x	
10	Sunrise Lake (MIDDLETON)								x	
77	Turee Pond (BOW)								x	
50	Turtle Pond (CONCORD)								x	
72	Upper Goodwin Pond (CONCORD)								x	
83	Wash Pond (SANDOWN)	x								
8	Wentworth Lake (WOLFEBORO)								x	
73	Willand Pond (DOVER)								x	
63	Wilson Lake (SALEM)							x		
1	Winnepesaukee Lake (ALL TOWNS)								x	
38	Winnepesaukee River (TILTON)				x				x	
5	Winnisquam Lake (MEREDITH/BELMONT)								x	
	TOTAL =	6	1	1	5	6	5	9	73	2

Code	Species Name
AC	Asian Clam
BE	Brazilian Elodea
BN	Brittle Naiad
CLP	Curly-leaf Pondweed
EM	Eurasian Milfoil
EN	European Naiad
FW	Fanwort
VM	Variable Milfoil
WC	Water Chestnut

Appendix B: New Hampshire Boat Access Sites at High Risk for Serving as a Pathway for the Spread of Aquatic Invasive Species

Appendix B: New Hampshire Boat Access Sites at High Risk for Serving as a Pathway for Aquatic Invasive Species Spread

Source: NH LAKES. (2017). Options for Preventing the Spread of Aquatic Invasive Species with the aid of Boat Cleaning and Wash Stations in New Hampshire, <https://nhlakes.files.wordpress.com/2018/03/nh-lakes-recommendations-for-increased-aquatic-invasive-species-spread-prevention-programming-in-new-hampshire-full-report.pdf>

NH LAKES recommends that the installation of cleaning stations (such as the CD3) or wash stations be prioritized to serve boaters using boat access sites that are generally thought to be at higher risk for serving as a pathway for AIS introduction (into the local waterbody or other waterbodies), particularly relative to the introduction/spread of invasive animals.

We have provided a listing of boat access sites that we suggest 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. In this listing, we have also provided information relative to the number of motorized boat launches on the local lakes and the status of AIS infestations within the waterbody (not including the invasive Chinese mystery snail).

- **Motorized boat access sites on the ‘big six’ destination lakes (lakes larger than 4,000 acres in surface area)**
 - Lake Winnepesaukee
 - Several public and private motorized access sites and marinas exist, including:
 - Alton Public Dock & Ramp (Town of Alton, owner)
 - Back Bay Boat Landing (Town of Wolfeboro, owner)
 - Center Harbor Town Dock and Beach (Town of Center Harbor, owner)
 - Ellacoya State Park Boat Access (NH Dept. of Natural and Cultural Resources, owner)
 - Glendale Docks (Town of Gilford, owner)
 - Harilla’s Landing (NH Department of Transportation, owner)
 - Lane Road Public Boat Ramp (Town of Tuftonboro, owner)
 - Lees Mills Boat Ramp (Town of Moultonborough, owner)
 - Libby Museum Boat Ramp (Town of Wolfeboro, owner)
 - Long Island Boat Ramp (Town of Moultonborough, owner)
 - Lovejoy Landing (Town of Meredith, owner)
 - State Landing (Town of Moultonborough, owner)
 - Town Docks (Town of Wolfeboro, owner)
 - Town Landing (Town of Meredith, owner)
 - Union Wharf Boat Ramp (Town of Tuftonboro, owner)
 - AIS Infestation Status
 - Lake listed as infested with variable milfoil in multiple locations
 - Lake Umbagog
 - Motorized boat access sites include:
 - Androscoggin River Boat Ramp, Errol Dam (NH Fish and Game Dept., owner)

- Magalloway River Boat Ramp (US Fish and Wildlife Service, owner)
 - Umbagog Boat Access Facility (NH Fish and Game Dept., owner)
 - AIS Infestation Status
 - No known infestations
- Squam Lakes
 - Motorized boat access sites include:
 - Squam Lakes Boat Access Facility (NH Fish and Game, owner)
 - Squam Lakes Association (Squam Lakes Association, owner)
 - Several town beaches serve as informal boating access sites.
 - AIS Infestation Status
 - Listed as infested with variable milfoil
- Winnisquam Lake
 - Motorized boat access sites include:
 - Winnisquam Access Facility (NH Fish and Game, owner)
 - several private boat ramps owned by for-profit marinas
 - AIS Infestation Status
 - Lake listed as infested with variable milfoil
- Newfound Lake
 - Motorized boat access sites include:
 - Newfound Lake Boat Access Site (NH Fish and Game, owner)
 - AIS Infestation Status
 - No known infestations
- Lake Sunapee
 - Motorized boat access sites include:
 - Burkhaven Harbor Boat Ramp (Town of Sunapee, owner)
 - Georges Mills Boat Ramp (Town of Sunapee, owner)
 - Newbury Station Marina (private for-profit owner)
 - Sunapee Harbor Boat Ramp (Town of Sunapee, owner)
 - Sunapee State Park Boat Ramp (NH Department of Natural and Cultural Resources, owner)
 - AIS Infestation Status
 - Lake was previously listed for variable milfoil
- **Motorized boat access sites within or in close proximity to state parks on lakes**
 - Great Pond, Kingston
 - Kingston State Park
 - Two adjacent motorized public access sites off of Main Street (one owned by NH Fish and Game and owned by Town of Kingston)
 - Lake listed as infested with Asian clam (2017)
 - Hopkinton-Everett Reservoir, Hopkinton
 - Clough State Park (Federal/NH Dept. of Natural and Cultural Resources, owner)

- Stumpfield Marsh Boat Ramp (Federal)
- Everett Lake Boat Launch ((Federal/NH Dept. of Natural and Cultural Resources, owner)
- Lake listed as heavily infested with variable milfoil
- Lake Francis, Pittsburg
 - Lake Francis State Park (NH Dept. of Natural and Cultural Resources, owner)
 - Route 3 Access (NH Dept. of Natural and Cultural Resources, owner)
 - No known AIS infestations
- Echo Lake, Franconia
 - Franconia Notch State Park Boat Ramp (NH Department of Natural and Cultural Resources, owner)
 - No known AIS infestations
- Otter Pond, Greenfield
 - Greenfield State Park Boat Ramp (NH Department of Natural and Cultural Resources, owner)
 - Lake listed as infested with variable milfoil
- Lake Sunapee, Sunapee
 - Mount Sunapee State Park Boat Ramp (NH Department of Natural and Cultural Resources, owner)
 - Lake was previously listed for variable milfoil
- Lake Winnepesaukee, Gilford
 - Ellacoya State Park Boat Ramp
 - Lake listed as infested with variable milfoil
- Newfound Lake, Bristol
 - Wellington State Park Boat Ramp (NH Fish and Game, Owner)
 - No known AIS infestations
- Pawtuckaway Lake, Nottingham
 - Pawtuckaway State Park (motorized boat ramp is located just outside of park, Fundy Access Site, owned by NH Fish and Game)
 - Lake listed as infested with variable milfoil
- Lake Umbagog
 - Umbagog Lake State Park Boat Ramp
 - No known AIS infestations

- **Motorized and non-motorized public and private boat access sites on waterbodies infested with invasive species of animals (this does not include lakes infested with the Chinese mystery snail)**
 - Beaver Lake, Derry
 - Access sites
 - NH Fish and Game Water Street launch
 - Gallien's Town Beach is operated by the Town and town residents and their guests are allowed to launch non-motorized boats
 - Lake listed as infested with Asian clam (2017)
 - Cobbetts Pond, Windham
 - Access sites
 - No formal motorized public access sites
 - The town beach is used to carry in boats
 - Lake listed as infested with Asian clam
 - Great Pond, Kington
 - Access sites
 - Two adjacent motorized public access sites off of Main Street (one owed by NH Fish and Game and owned by Town of Kington)
 - Cartop public access at Kingston State Park (NH Dept. of Natural and Cultural Resources, owner)
 - Lake listed as infested with Asian clam (2017)
 - Sunset Lake (a.k.a. Wash Pond), Hampstead
 - Access sites
 - Town beach is used to launch boats by town-issued permits only (permits are issued to waterfront property owners and anyone with deeded lake rights)
 - Sunset Park Campground provides access for campers to launch paddle craft
 - Lake is listed for Asian clam infestation
 - Long Pond, Pelham
 - Access sites
 - No formal motorized public access sites
 - Cartop boat access for town residents at Veteran's Park, Pelham (NH)
 - Paved commercial ramp near the Tyngsboro/Dracut town line (MA) allows launching for a fee
 - Lake is listed for Asian clam infestation

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

Appendix C: New Hampshire Aquatic Invasive Species Laws

Appendix C: New Hampshire Invasive Species Laws

Source: <https://www.gencourt.state.nh.us/rsa/html/l/487/487-mrg.htm> accessed 10/12/18

New Hampshire Clean Lakes Program NH RSA Section 487:15

487:15 Purpose. – The general court recognizes that rapidly escalating pressures of shorefront development and recreational uses of public waters have placed increasing strains upon the state's lake resources, thereby accelerating the eutrophication process in many of our public lakes through nuisance growths of aquatic macrophytes (aquatic plants) and phytoplankton (algae) and thus posing a threat to water quality. The general court further recognizes that transporting boats from one water body to another increases the risk of inadvertent transport of aquatic nuisance species, some of which are invisible to the unaided eye. This risk can be reduced by inspecting and draining all boats and water-related equipment upon leaving state waters. The general court further recognizes the need to restore, preserve and maintain the state's lakes and ponds in order that these significant environmental, aesthetic and recreational assets will continue to benefit the social and economic well-being of the state's citizens.

Source. 1990, 143:2, eff. June 18, 1990. 2016, 227:1, eff. Jan. 1, 2017.

Section 487:16

487:16 Definitions. –

In this subdivision:

I. "Department" means the department of environmental services.

I-a. "Exotic aquatic species of wildlife" means wildlife, as defined in RSA 207:1, XXXV, that:

(a) Depend on a freshwater aquatic environment; and

(b) Are not naturally occurring in New Hampshire or have not become established in New Hampshire as a result of an intentional introduction program by a state agency.

II. The term "exotic aquatic weeds" includes only those species of vascular aquatic plants which were not part of New Hampshire's native aquatic flora before 1950. *Cabomba caroliniana* and *Myriophyllum heterophyllum* are examples of exotic aquatic weeds.

III. "Federal program" means the federal Water Pollution Control Act, 33 U.S.C.A. 1324, the federal clean lakes program (P.L. 92-500, section 314), as amended, now known as the Water Quality Act of 1987 (P.L. 100-4), as amended.

IV. "Commissioner" means the commissioner of the department of environmental services.

V. "Aquatic plants" means plants that are adapted to live in freshwater aquatic environments, also referred to as aquatic macrophytes.

Source. 1990, 143:2. 1996, 228:98, 99. 1997, 185:2, eff. Jan. 1, 1998. 2015, 164:1, eff. Aug. 25, 2015. 2016, 227:2, eff. Jan. 1, 2017.

Section 487:16-a

487:16-a Exotic Aquatic Weed Prohibition. – No exotic aquatic weeds shall be offered for sale, distributed, sold, imported, purchased, propagated, transported, or introduced in the state. The commissioner may exempt any exotic aquatic weed from any of the prohibitions of this section consistent with the purpose of this subdivision.

Source. 1997, 185:3, eff. Jan. 1, 1998.

Section 487:16-b

487:16-b Exotic Aquatic Weed Penalties. – It shall be unlawful to offer for sale, distribute, sell, import, purchase, propagate, negligently transport, or introduce exotic aquatic weeds into New Hampshire waterbodies. Notwithstanding RSA 487:7, any person engaging in such an activity shall be guilty of a violation.

Source. 1999, 204:3, eff. Jan. 1, 2000. 2016, 227:3, eff. Jan. 1, 2017.

What are exotic aquatic weeds? Exotic aquatic weeds include only those species of vascular aquatic plants which were not part of New Hampshire's native aquatic flora before 1950. This list contains 28 exotic plants:

Latin Name	Common Name(s)
All <i>Myriophyllum</i> species	Milfoils or feather-foils
All <i>Cabomba</i> species	Fanworts
<i>Hydrilla verticillata</i>	Hydrilla or Anacharis
All <i>Trapa</i> species	Water chestnut
<i>Potamogeton crispus</i>	Curly-leaf pondweed
<i>Lythrum salicaria</i>	Purple loosestrife
<i>Phragmites australis</i> or <i>P. communis</i>	Common reed
<i>Egeria densa</i>	Brazilian elodea
<i>Hydrocharis morsus-ranae</i>	European frogbit
<i>Butomus umbellatus</i>	Flowering rush
<i>Najas minor</i>	European naiad
<i>Nymphoides peltata</i>	Yellow floating heart
<i>Crassula helmsii</i>	Swamp stonecrop
<i>Epilobium hirsutum</i>	Great willow herb or hairy willow herb
<i>Glyceria maxima</i>	Reed sweet grass or manna grass
<i>Hygrophila polysperma</i>	East Indian Hygrophila
<i>Ipomoea aquatica</i>	Water spinach
<i>Iris pseudocarus</i>	Yellow iris or yellow flag iris
<i>Lagarosiphon major</i>	African oxygen weed
<i>Limnophila sessiliflora</i>	Ambulia
<i>Marsilea quadrifolia</i>	Water fern
<i>Myosotis scorpiodes</i>	Water forget-me-not
<i>Sagittaria japonica</i>	Double flowering arrowhead, Japanese arrowhead, or old world arrowhead
<i>Sagittaria sagittifolia</i>	Giant sagittaria
<i>Typha gracilis</i>	Slender cattail
<i>Typha laxmanii</i>	Dwarf cattail or Laxman's cattail
<i>Typha minima</i>	Miniature cattail or micro-mini cattail
<i>Salvinia molesta</i>	Giant salvinia

Section 487:16-c

487:16-c Transport of Aquatic Plants or Exotic Aquatic Weeds On Outside of Boats, Vehicles, and Equipment. – No person shall negligently transport any aquatic plants or plant parts or exotic aquatic weed or weed parts to or from any New Hampshire waters on the outside of a vehicle, boat, ski craft as defined in RSA 270:73, trailer, or other equipment.

Source. 2016, 227:4, eff. Jan. 1, 2017.

Section 487:16-d

487:16-d Draining of Water Conveyances. –

I. When leaving waters of the state, a person shall drain his or her boat and other water-related equipment that holds water, including live wells and bilges.

II. Drain plugs, bailers, valves, or other devices used to control the draining of water from ballast tanks, bilges, and live wells shall be removed or opened while transporting boats and other water-related equipment, if the vessel is so equipped.

III. Commercial enterprises transporting boats for off-site storage, maintenance, or repairs, and emergency response vehicles and their related equipment are exempted from paragraphs I and II, however all such exempt commercial enterprises shall drain all water-related equipment holding water and live wells and bilges prior to transporting the equipment to another water body.

Source. 2016, 227:4, eff. Jan. 1, 2017.

Section 487:16-e

487:16-e Penalties. – Notwithstanding RSA 487:7, any person who violates RSA 487:16-c through 487:16-d shall be guilty of a violation punishable by a fine of \$50 for a first offense, \$100 for a second offense, and \$250 for any subsequent offense. The authority to enforce these sections shall extend to all peace officers in the state of New Hampshire.

New Hampshire Prohibited Exotic Aquatic Weeds

Source: <https://www.gencourt.state.nh.us/rsa/html/l/487/487-mrg.htm> accessed 10/25/18

Env-Wq 1303.02 Prohibited Exotic Aquatic Weeds.

Subject to Env-Wq 1303.03, the following exotic aquatic weeds shall not be offered for sale, distributed, sold, imported, purchased, propagated, transported, or introduced in the state, pursuant to RSA 487:16-a, because they pose a substantial threat to native species in the state:

- (a) Butomus umbellatus, commonly referred to as flowering rush;
- (b) All Cabomba species, including but not limited to Cabomba caroliniana and commonly referred to as fanworts;
- (c) Crassula helmsii, commonly referred to as swamp stonecrop
- (d) Egeria densa, commonly referred to as Brazilian elodea;
- (e) Epilobium hirsutum, commonly referred to as great willow herb or hairy willow herb;
- (f) Glyceria maxima, commonly referred to as reed sweet grass or manna grass;
- (g) Hydrilla verticillata; commonly referred to as Hydrilla or Anacharis;
- (h) Hydrocharis morsus-ranae, commonly referred to as frogbit;
- (i) Hygrophila polysperma, commonly referred to as East Indian hygrophila;
- (j) Ipomoea aquatica, commonly referred to as water spinach;
- (k) Iris pseudocarus, commonly referred to as yellow iris or yellow flag iris;
- (l) Lagarosiphon major, commonly referred to as African oxygen weed;
- (m) Limnophila sessiliflora, commonly referred to as ambulia;
- (n) Lythrum salicaria, L. virgatum, L. alatum and their cultivars, commonly referred to as purple loosestrife;
- (o) Marsilea quadrifolia, commonly referred to as water fern;
- (p) Myosotis scorpioides, commonly referred to as water forget-me-not;
- (q) All Myriophyllum species, including but not limited to Myriophyllum heterophyllum, Myriophyllum spicatum, and Myriophyllum aquaticum, and commonly referred to as milfoils or feather-foils;
- (r) Najas minor, commonly referred to as European naiad;
- (s) Nymphoides peltata, commonly referred to as yellow floating heart;
- (t) Phragmites australis or P. communis, commonly referred to as common reed;
- (u) Potamogeton crispus, commonly referred to as curly leaf pondweed;
- (v) Sagittaria japonica, commonly referred to as double flowering arrowhead, Japanese arrowhead, or old world arrowhead;
- (w) Sagittaria sagittifolia, commonly referred to as giant sagittaria;
- (x) Salvinia molesta, commonly referred to as giant salvinia;
- (y) All Trapa species, commonly referred to as water chestnuts;
- (z) Typha gracilis, commonly referred to as slender cattail;
- (aa) Typha laxmanii, commonly referred to as dwarf cattail or Laxman's cattail; and
- (ab) Typha minima, commonly referred to as miniature cattail or micro-mini cattail.

Source. (See Revision Note #1 at chapter heading for Env-Wq 1300) #8703-A, eff 9-5-06; ss by #10696, eff 10-18-14 (See Revision Note #2 at chapter heading for Env-Wq 1300)

TITLE XVIII
FISH AND GAME

CHAPTER 207
GENERAL PROVISIONS AS TO FISH AND GAME

Import, Possession, or Release of Wildlife

Section 207:14

207:14 Import, Possession, or Release of Wildlife. –

I. No person shall import, possess, sell, exhibit, or release any live marine species or wildlife, or the eggs or progeny thereof, without first obtaining a permit from the executive director except as permitted under title XVIII. The executive director shall have the authority to determine the time period and any other conditions governing the issuance of such permit. The executive director may refuse to issue a permit if he determines that such issuance may pose significant disease, genetic, ecological, environmental, health, safety, or welfare risks to persons, marine species or wildlife.

II. The executive director shall adopt rules, pursuant to RSA 541-A, to administer this section and relative to the importation, possession, exhibition, sale or release of all marine species and wildlife, including, but not limited to:

- (a) Size, sex, number and quantity.
- (b) Transportation, within or through the state of New Hampshire.
- (c) Sale, inspection, processing, recordkeeping and marking.
- (d) Method of keeping.
- (e) Areas of release.
- (f) Method of release.
- (g) Method of taking.
- (h) Permit fee schedules.
- (i) Appropriate definitions.

III. The executive director may establish a list of marine species or wildlife or the eggs or progeny of such marine species or wildlife which may be exempted from any or all of the provisions of RSA 207:14.

IV. Except where otherwise provided, any person who violates this section or any rule adopted under this section shall be guilty of a violation and guilty of an additional violation for each marine species or wildlife possessed contrary to the provisions of this section.

Source. 1935, 124:1. RL 241:13. RSA 207:14. 1963, 164:1. 1969, 71:1. 1973, 304:1. 1979, 90:1. 1986, 214:2. 1990, 122:2. 1992, 171:3. 2003, 112:4, eff. Aug. 5, 2003.

Section 207:14-a, 207:14-b

207:14-a, 207:14-b Repealed. – [Repealed 1992, 171:12, I, eff. June 7, 1992.]

CHAPTER Fis 800 THE IMPORTATION, POSSESSION AND USE OF ALL WILDLIFE

Statutory Authority: RSA 207:14, RSA 211:62-e, RSA 211:64 and RSA 212:25

Fis 803.04 Prohibited Species - Importation.

(a) No person shall import wildlife that has been designated as prohibited pursuant to Fis 803.04(b) or Fis 803.05(b).

(b) For the purposes of this part, the following species or groups of wildlife shall be designated as prohibited:

- (1) The following invertebrates:
 - a. Zebra mussels (*Dreissena polymorpha*, *D. bugensis*);
 - b. Spiny waterflea (*Bythotrephes cederstroemi*);
 - c. Fishhook waterflea (*Cercopagis pengoi*);
 - d. All non-indigenous crayfish; and
 - e. Asiatic clam (*Corbicula fluminea*);

- (2) The following fish:
 - a. Walking catfish (*Clarias batrachus*);
 - b. White amur/grass carp (*Ctenopharyngodon idella*);
 - c. Black carp (*Mylopharyngodon piceus*);
 - d. European rudd (*Scardinius erythrophthalmus*); and
 - e. Round goby (*Neogobius melanostomus*);
 - f. Tubenose goby (*Proterhinus marmoratus*);
 - g. Ruffe (*Gymnocephalus cernuus*);
 - h. Snakeheads (Family: Channidae)
 - i. Bighead carp (*Hypophthalmichthys nobilis*); and
 - j. Silver carp (*Hypophthalmichthys molitrix*);

Source. #5721, eff 10-14-93 (renumbered by #6889, formerly Fis 803.041), EXPIRED: 10-14-99

New. #8893, eff 6-5-07 (from Fis 803.03); amd by #10541, eff 4-1-14; paras. (a) and (b)(1)-(3) EXPIRED: 6-5-15; ss by #10868, INTERIM, eff 6-25-15, EXPIRED: 12-22-15

New. #11029, eff 1-26-16

Fis 804.03 Prohibited Species - Possession.

(a) No person shall be issued a permit to possess wildlife that has been designated as prohibited as specified in Fis 804.03(b) or Fis 804.04(b).

(b) For the purposes of this part, the following species or groups of wildlife shall be designated as prohibited:

- (1) The following invertebrates:
- a. Zebra mussel (*Dreissena polymorpha*, *D. bugensis*);
 - b. Spiny waterflea (*Bythotrephes cederstroemi*);
 - c. Fishhook waterflea (*Cercopagis pengoi*);
 - d. All non-indigenous crayfish; and
 - e. Asiatic clam (*Corbicula fluminea*); and

Source. (See Revision Note at chapter heading for Fis 800) #5507, eff 11-20-92; ss by #6191, eff 2-22-96; ss by #6889, eff 11-21-98, EXPIRED: 11-21-06

New. #8767, INTERIM, eff 11-22-06, EXPIRED: 5-21-07

New. #8893, eff 6-5-07; amd by #10541, eff 4-1-14

New. #10868, INTERIM, eff 6-25-15, EXPIRED: 12-22-15

New. #11029, eff 1-26-16

**Appendix D: NH LAKES Model Municipal Ordinance for Aquatic Invasive Species
Prevention Utilizing Best Available Technology**

Appendix D: NH LAKES Model Ordinance for Aquatic Invasive Species Prevention

Section 1. PURPOSE

Pursuant to RSA 41:11-a, the purpose of this ordinance is to prevent the introduction and spread of aquatic invasive species into (or out of) [Insert Lake Name] within the Town(s)/City(s) of [Insert Municipality Name], New Hampshire.

Protecting the public and private economic resources, wildlife, and the natural beauty of the lake is paramount to the overall welfare of the community. One small fragment of plant matter or one microscopic animal larvae can infest a lake with an aquatic invasive plant or animal that can be nearly impossible to eradicate. Infestations of aquatic invasive species degrade water quality, reduce property values, hinder recreation, reduce tourism, and are expensive to manage.

Section 2. REQUIREMENTS

This ordinance requires that all watercraft and trailers entering or exiting the lake at the [Insert Name] boat launch facility be subject to the aquatic invasive species prevention treatment options provided at that site or as instructed there (by an attendant or as described in writing), in order to use this boat access facility to access or exit the lake. Treatment options may include adherence to, and inspection confirmation of clean, drain, and dry practices, up to and including a hot water, high pressure wash treatment (if made available).

The requirements of this ordinance are in addition to state law requirements relative to the transport of aquatic plants or exotic aquatic weeds on the outside of boats, vehicles, and equipment (RSA 487:16-c) and draining of water conveyances (RSA 487-d).

Section 3. IMPLEMENTATION

The best available treatment option for the prevention of aquatic invasive species is a hot water, high pressure wash of the watercraft, trailer, and any associated equipment. The next best available treatment option is a low pressure wash from a hose with the warmest available water. If no wash treatments are available, the next best treatment option is a cleaning station with tools to clean, drain and dry. If no wash station or cleaning station are available, the next best treatment option is towel cleaning and drying the watercraft. Watercraft operators should always conduct a visual and tactile inspection of the watercraft to remove plant and animal fragments and to open all drain plugs when trailering.

Section 4. ENFORCEMENT AND PENALTIES

It is unlawful and in violation of this ordinance not to use the best available treatment at boat access facility at [INSERT ADDRESS] to prevent the spread of aquatic invasive species upon entering and exiting the waterbody.

Any person who violates this ordinance shall be guilty of a violation punishable by a fine of \$50 for a first offense, \$100 for a second offense, and \$250 for any subsequent offense. The authority to enforce these

sections shall extend to all peace officers in the state of New Hampshire. The fine shall be paid to [INSERT APPROPRIATE AGENCY] within [INSERT NUMBER OF DAYS].

Section 5. AVAILABILITY OF ORDINANCE

The ordinance will be on file at [INSERT LOCATION NAME AND ADDRESS] and available to any member of the public. It will also be posted at the boat access facility at [INSERT LOCATION NAME AND ADDRESS].

Section 6. EFFECTIVE DATE

This ordinance takes effect on [INSERT DATE] as attested to the signatures of [INSERT TITLE(S) OF MUNICIPAL OFFICIALS] below.

TEMPLATE

Appendix E: CD3 Watercraft Cleaning Station Information Specifications



CD³ Waterless Cleaning Systems

Clean-Drain-Dry-Dispose: CD³ Systems empower boaters to prevent spread of invasive species with user-operated, waterless cleaning equipment. Four models available:



1. CD³ Station

Grid-connected, for unlimited use. Tools include wet/dry vacuum, air blower, tethered hand tools & LED lights. Unit has concrete base with 220 volt, 30 amp service required.



2. CD³ Wayside

Solar powered or 120v for sites with ~100 boats/day. Fast-install option available with precast base.



3. CD³ Trailer

Mobile unit with ratchet down base, removable wheels & storage deck. Solar powered or recharge option with 120v smart charger.

My CD³ Software + Invasive WiFi

All systems are internet connected to provide use data and save on O&M. Invasive WiFi option provides boaters local lake information via a digital kiosk.



4. CD³ Outpost

Tethered hand tools & solar powered lights. Best suited for smaller or overflow launch areas. A precast base is an option for quick, easy install.

SALE or LEASE CONTACT
stopAIS@cd3station.com
612-467-9441
www.cd3station.com

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My CD3 Station Launch Analytics

Updated 12/2017

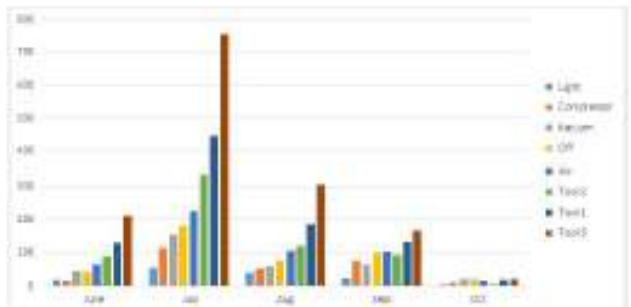
My CD3 Station Launch Analytics is the brains behind CD3 Stations. Our Internet of Things (IOT) software platform uses remote monitoring to provide owners with real-time use data and automates maintenance that saves on annual operational costs.

My CD3 Station software adds value in the following ways:

- **Tool Use Data**- My CD3 Station provides date, time and totals on each tool used in an easy to navigate online platform.
- **Vacuum Tank Monitoring + Service Requests** - Upon reaching 80% capacity, My CD3 Station automatically contacts your septic company to schedule a clean out, saving on unnecessary pump outs.
- **Tools Alerts Optimize Maintenance** - If tools are not used for 48 hours - My CD3 Station will send an alert to a service provider or employees indicating the tool may be malfunctioning.
- **Boater CD3 "Check in" and "Check Out"**
For an additional cost, My CD3 Station can be used for boaters to "check in/out" of a lake.

\$1,000 One-Time Setup & \$750 per year*

*Cellular plans are used to communicate data and included within My CD3 Station annual fee.



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CD3 Waterless Cleaning Stations

General Data Sheet

Updated 12/2017

General Description: User-operated, waterless, public cleaning equipment for free use to clean, drain, dry and dispose of aquatic invasive species on watercraft, trailer or any other gear.

Equipment Name: CD3 Waterless Cleaning Station

Model Number: CD3-9001

Equipment Dimensions: 90 inches long, 36 inches wide, 70 inches tall (top base), 10' (top light)

Electrical Service: 240V, 1 phase, 60 hertz, 30 amp, NEMA 10-30 outlet box (included), 10 gauge wire routed from 30 amp service.

Equipment Rating: UL 508 approved, 30 amp panel NEMA 10-30 plug cord

Cellular Internet Connection: LTE high speed wireless communication

Software Platform: www.mycd3station.com Station use data and maintenance alerts

Weight: 950 lbs (vacuum tank empty)

Mounting Base Requirements: 5000 psi, reinforced concrete 100" L x 40" W x 4" T

**Full installation, please review: *CD3-9000 Base and Electrical Install Specifications*

Equipment Tool Type, Capabilities and Function: Use instructions at www.stopais.com

Flood Lights	2 top mounted, 2 bottom stereo mounted, LED, 5000 Lumens.	Push On, 10 minute auto-off. Use count internet connected.
Air Blower	Stainless steel, hand operated blower with 35' recoil hose. 90 PSI, chip blow back tip and meets OSHA 1910.242(b) standards.	Push On/Off, 2 minute auto-off. Use count internet connected.
Wet/Dry Vacuum	Hand operated vacuum. 141 CFM, 140" lift. 35" of 2" crush proof, UV resistant hose. 100 gal tank.	Push On/Off, 2 minute auto-off. Use count internet connected.
Hook, Brush Squeegee	Hand tool to assist in removal of weeds on trailer, boat and other equipment. 50' auto recoil tether.	Pull to use. Use count internet connected.
Boat Plug Wrench	Hand tool to assist in removal of boat plugs. 50' auto recoil tether.	Pull to use. Use count internet connected.
Reach Tool	Hand tool to assist in removal of weeds on trailer, boat and other equipment. 50' auto recoil tether.	Pull to use. Use count internet connected.

**All tools height, reach and pull weight meet 2010 ADA Standards for Design

**For maintenance please review: *CD3-9001 User Manual*

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CD3 Waterless Cleaning Systems Operations & Maintenance Annual Costs

Updated 12/2017

CD3 Waterless Cleaning Systems are ruggedized equipment designed to last 7+ years. Software connected allows for automated maintenance alerts which save money on labor. Outlined below are seasonal operation basics, electrical costs, vacuum tank clean out, tool replacement, and winterization procedures:

My CD3 Software: Internet connected to monitor use and functionality, Cd3 Software counts each use, save on labor to schedule service
\$750 per year



Electrical Consumption: Grid connected CD3 Stations consume 10-25 kWh per month,
\$10-15 per month.

Vacuum Tank Service: At 80% tank capacity (300- 400 boats cleaned) software automatically schedules septic service provider pump out
\$50-75/service.



Tool Replacement: My CD3 Software provides tool tamper alerts. Quick connect tool systems provide easy replacement.
\$10-\$40 each tool

Winterization: System shutdown includes final pump out of vacuum tank, switch "off" breakers, wrap in vinyl winter cover.



\$1,000-1,200 per year*

*Based upon 180 day-boating season and ~1500 boats/year using CD3 Station in .

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CD3 Systems Lease Term Overview

Updated -Summer 2018

Leasing CD3 Systems allows for a lower initial cost and thus continued budget flexibility. The lease results in the ownership of the equipment after the lease terms are fulfilled.

Estimated lease cost for \$29,675 sales quote:

Term Period:	24 month	36 month	48 month
*Payment:	\$1,355	\$930	\$715

Details

- 1st payment and \$200 doc fee due at lease inception.
- \$1 (One Dollar) buyout.
- Fair market value options available
- Payments do not include tax (if applicable)

**Above is an estimated cost. CD3 equipment cost is contingent upon model and accessories. Cost for concrete pad and electrical connectivity is not included. Exact terms are available upon request.*

To begin - please request a formal quote from CD3 Team:

www.cd3station.com/contact-us

For specific lease terms, please contact:

Brian Hansen
Executive Sales and Leasing
3650 Annapolis Lane N #105
Plymouth, MN 55447
763-746-8585 Office
Brian@executiveleasingllc.com



CD³ Watercraft Cleaning Station

Empower boaters to stop invasive species with user operated watercraft cleaning equipment

User Operated

- Waterless cleaning system
- Free public use
- Low maintenance equipment

Remote Sensing & Maintenance

- Cellular connection to internet
- Software monitors use
- Operational alerts

Online Instructions & Education

- Easy to follow use steps
- Boat style specific
- Regionally customizable

\$19,500

50% at purchase, 50% at delivery



CD³ General Benefit Corporation

Find out more: www.cd3station.com

Contact us: stopais@cd3station.com

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Appendix F: NH LAKES Lake Host Program Summary

NEW HAMPSHIRE LAKES ASSOCIATION (NH LAKES) LAKE HOST™ PROGRAM

Goal: To prevent the introduction and spread of aquatic invasive species—plants and animals—in New Hampshire lakes and ponds.

Target Audience: Resident and out-of-state recreational boaters who launch onto freshwater resources.

Objectives: To place trained Lake Hosts at boat launch sites to: educate visiting boaters about aquatic invasive species by distributing brochures, answering questions, and completing a brief boater survey; conduct courtesy boat and trailer inspections of vessels entering and leaving waters; show boaters where to look for hitchhiking aquatic invasive plants and animals encourage them to conduct self-inspections according to the “Clean, Drain & Dry” method; remove and properly dispose of all plant and animal material and other debris found, and; send samples of suspicious species removed from vessels to the New Hampshire Department of Environmental Services (NHDES) for identification.



Program Need: Aquatic invasive species infestations make recreation in and on lakes, ponds, and rivers dangerous and unpleasant, they disrupt the ecological balance of waterbodies, reduce shoreline property values through the reduction of aesthetic and recreational uses of the water body, and are difficult and expensive to control once they infest a waterbody. The main way invasive aquatic plants and animals are spread in New Hampshire is through the transportation of plant fragments or animal larvae on boats and trailers from infested waterbodies to uninfested waterbodies.

Background: In 2002, NH LAKES received a two-year grant from the National Oceanic and Atmospheric Administration (NOAA) as a result of an appropriation secured by U.S. Senator Judd Gregg. The grant supported a comprehensive aquatic invasive plant education and prevention program involving the creation of two videos, the development of plant identification cards, and the staffing of public motorized boat ramps with trained Lake Hosts. Also in 2002, state legislation was passed to raise boat registration fees by three dollars, effective January 1, 2003. The money collected by this increase, approximately \$300,000 per year, would fund milfoil and other exotic plant prevention and research activities through a grants program administered by NHDES. Up to two-thirds of this amount would be available annually as grants to support exotic aquatic species education and prevention activities (such as the Lake Host™ program). In 2010, this amount was legislatively amended to up to three-quarters.

Lake Host Program Statistics Summary (as of 12/7/2017)

Year	Groups	Paid Hosts	Volunteer Hosts	Lakes with Lake Hosts	Ramps Staffed	Inspections Conducted	'Saves' of Invasive Species	Federal Funds	State Funds	Foundation Funds	Local Funds (hard cash & cash-equivalents)	TOTAL
2002	38	102	59	37	45	15,878	9	\$260,100	-	-	\$37,155	\$297,255
2003	46	149	167	45	59	26,583	7	\$10,000	\$165,000	-	\$112,382	\$287,382
2004	51	190	216	50	61	31,629	17	\$85,300	\$150,000	-	\$151,238	\$386,538
2005	56	175	318	56	61	34,878	54	\$35,000	\$185,000	-	\$200,756	\$420,756
2006	57	204	353	56	66	34,860	54	\$117,000	\$185,000	-	\$183,179	\$485,179
2007	68	221	429	64	83	44,183	157	\$117,000	\$185,000	-	\$292,017	\$594,017
2008	70	240	470	70	88	55,924	224	\$89,206	\$161,000	-	\$334,061	\$584,267
2009	71	236	420	71	86	53,796	297	\$89,206	\$123,333	\$4,000	\$341,535	\$558,074
2010	74	230	517	74	90	64,661	268	\$0	\$133,367	\$22,000	\$393,273	\$548,640
2011	73	219	475	74	92	68,429	39	\$0	\$169,000	\$23,000	\$404,751	\$596,751
2012	77	238	500	78	100	77,261	137	\$0	\$200,000	\$14,500	\$486,455	\$700,955
2013	81	247	500	82	103	77,806	153	\$0	\$210,000	\$18,259	\$494,248	\$722,507
2014	80	258	500	82	102	83,663	58	\$0	\$230,000	\$22,500	\$503,170	\$755,670
2015	80	285	507	82	103	92,184	48	\$0	\$226,500	\$24,000	\$517,227	\$767,727
2016	82	264	545	83	104	89,960	28	\$0	\$252,000	\$24,000	\$526,251	\$802,251
2017	80	271	400	81	101	94,222	22	\$20,117	\$261,000	\$27,000	\$546,193	\$854,370
Total						945,917	1,572	\$822,989	\$2,836,200	\$179,259	\$5,523,147	\$9,362,339

Additional Funding Sources: Alden N. Young Trust (2011-2017); Badger Monadnock Fund (2011); EPA Healthy Communities Grants (2005); EPA New England Office (2003); EPA Supplemental Environmental Project (2017); NH DES Watershed Assistance Grant (319 Clean Water Program); NOAA (2004, 2006, 2008, 2009); Saul O'Sidore Foundation (2010); TransCanada (2009-2017); and an anonymous private foundation (2010).

As a result of the program, the following ‘saves’ have been made of aquatic invasives entering or leaving a waterbody:

- **Beaver Lake** (Derry): Fanwort (2008, 2009), Variable milfoil (2008, 2011), Eurasian milfoil (2012)
- **Bow Lake** (Northwood): Variable milfoil (2003, 2005), Eurasian milfoil (2005, 2009), Fanwort (2015), Milfoil species (2014)
- **Clough Pond** (Loudon): Variable milfoil (2005)
- **Connecticut River** (Hinsdale): Eurasian milfoil (2010), European naiad (2010)
- **Conway Lake** (Conway): Variable milfoil (2011), Eurasian milfoil (2014)
- **Crescent Lake** (Acworth): Eurasian milfoil (2003, 2012), Fanwort (2003)
- **Crystal Lake** (Enfield): Water chestnut (2005), Eurasian milfoil (2010)
- **Deering Reservoir** (Deering): Eurasian Milfoil (2013), Variable milfoil (2014)
- **Dublin Lake** (Dublin): Eurasian milfoil (2016)
- **Eastman Lake** (Grantham): Eurasian milfoil (2010)
- **First Connecticut Lake** (Pittsburg): Variable milfoil (2014)
- **Gilmore Pond** (Jaffrey): Water chestnut (2005), Fanwort (2016)
- **Goose Pond** (Canaan): Eurasian milfoil (2007), Variable milfoil (2009)
- **Granite Lake** (Nelson/Stoddard): Curly leaf pondweed (2009, 2011); Eurasian milfoil (2011, 2013); Variable milfoil (2011)
- **Great East Lake** (Wakefield): Eurasian milfoil (2006, 2008), Fanwort (2010), Variable milfoil (2007-2010, 2013)
- **Highland Lake** (Stoddard): Eurasian milfoil (2005), Variable milfoil (2015)
- **Island Pond** (Stoddard): Variable milfoil (2013)
- **Jeness Pond** (Northwood): Variable milfoil (2005)
- **Lake Francis** (Pittsburg): Variable milfoil (2014)
- **Lake Massabesic** (Auburn): Fanwort (2013), Variable milfoil (2012, 2014)
- **Lake Monomonac** (Rindge): Eurasian milfoil(2004, 2017); Curly leaf pondweed (2004), Variable milfoil (2004-2008, 2014)
- **Lake Opechee** (Laconia): Water chestnut (2016-2017)
- **Lake Ossipee** (Ossipee): Eurasian milfoil (2010), Variable milfoil (2009, 2011, 2012, 2016)
- **Lake Potanipo** (Brookline): Fanwort (2010), Variable milfoil (2010-2012; 2017)
- **Lake Sunapee** (Sunapee): milfoil (2005), Eurasian milfoil (2006-2009, 2015), Variable milfoil (2007), Fanwort (2016) Zebra mussel (2017)
- **Lake Waukewan** (Meredith): Eurasian milfoil (2003), Variable milfoil (2007, 2008)
- **Lake Wentworth** (Wolfeboro): Variable milfoil (2008)
- **Lake Wicwas** (Meredith): Variable milfoil (2010)
- **Lake Winnepesaukee**: Fanwort (2003, 2007); Variable milfoil (2004, 2007-2012, 2014-17), Eurasian milfoil (2012)
- **Lake Winnisquam** (Laconia): Variable milfoil (2008, 2015-2017)
- **Little Lake Sunapee** (New London): Variable milfoil (2011), Curly-leaf pondweed (2015)
- **Lovell Lake** (Wakefield): Variable milfoil (2006, 2007, 2013)
- **Merrymeeting Lake** (New Durham): Variable milfoil (2007, 2010, 2012, 2013, 2014, 2015), Water Chestnut (2012)
- **Mirror Lake** (Tuftonboro): Chinese mystery snail (2014)
- **Newfound Lake** (Bristol): Curly-leaf pondweed (2015), Eurasian milfoil (2006, 2009, 2010, 2011, 2014, 2015), Fanwort (2003, 2006, 2013), Variable milfoil (2002, 2006, 2007, 2008, 2009, 2014, 2015), Water Chestnut (2009, 2010), Water naiad (2014)
- **Northwood Lake** (Northwood):Curly leaf pondweed (2007),Eurasian milfoil (2007),Variable milfoil (2008, 2010-2011, 2013-2014, 2016-2017)
- **Nubanusit Lake** (Nelson/Hancock): Curly leaf pondweed (2009), Eurasian milfoil (2002, 2004), Variable milfoil (2007, 2008)
- **Ottarnic Pond** (Hudson): Chinese mystery snail (2015), Curly leaf pondweed (2013), Fanwort (2005-08, 2012-2016), Variable milfoil (2006, 2007, 2010-2016)
- **Pawtuckaway Lake** (Nottingham): Common reed (2007), Curly leaf pondweed (2010, 2013, 2014), Eurasian milfoil (2009-2012, 2014-2015), Fanwort (2009, 2011), Variable milfoil (2007-2010, 2012-2017), Water chestnut (2008, 2014)
- **Pleasant Lake** (Deerfield): Eurasian milfoil (2011), Variable milfoil (2004, 2007, 2013, 2016)
- **Pleasant Pond** (Francestown): Curly leaf pondweed (2009), Eurasian milfoil (2006); Variable milfoil (2011, 2013, 2014)
- **Pow Wow Pond** (Kingston): Chinese mystery snail (2013), Variable milfoil (2013, 2015)
- **Robinson Pond** (Hudson): Chinese mystery snail (2013, 2017), Fanwort (2004, 2006-2014, 2016), Variable milfoil (2004-2014, 2016-2017), Eurasian milfoil (2012)
- **Silver Lake** (Madison): Variable milfoil (2002, 2004, 2006)
- **Lake Skatutakee** (Harrisville): Eurasian milfoil (2005)
- **Spofford Lake** (Chesterfield): Eurasian milfoil (2002, 2005, 2008, 2011, 2013); Variable milfoil (2011)
- **Squam Lake** (Holderness): Chinese mystery snail (2015), Curly leaf pondweed (2009), Eurasian milfoil (2007), Fanwort (2013)
- **Suncook Lake** (Barnstead): Variable milfoil (2009, 2013)
- **Swanzy Lake** (Swanzy): Variable milfoil (2011), Eurasian milfoil (2012), Water chestnut (2014)
- **Thorndike Pond** (Jaffrey): Variable milfoil (2015)
- **Webster Lake** (Franklin): Eurasian milfoil (2011, 2012, 2014), Fanwort (2010), Variable milfoil (2009), Curly leaf pondweed(2012)

For More Information or to start a program in your community: Contact NH LAKES at (603) 226-0299, or info@nhlakes.org.

Appendix G: Decontamination Unit Specifications

ProTowWash TRAILERS

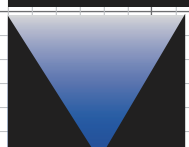
MOBILE SELF-CONTAINED WATER TANK TRAILER SYSTEM



Choose a cold or hot water wash skid to be factory plumbed and assembled on trailer. (T300 trailer shown with SS pressure washer and hose reels.)



SELECT THE SET-UP THAT IS RIGHT FOR YOU

 **HYDRO TEK**

ProTowWash® TRAILERS

DESIGNED TO MATCH YOUR HYDRO TEK WASHER PERFECTLY

Portrays a professional image to your customers and frees up your tow vehicle for other tasks.



■ Powder Coated Steel Frame:

The frame is constructed with a heavy-gauge steel structural tube spine for extra rigidity.

■ Suspension:

Torflex axles deliver up to 300% more wheel travel than leaf spring axles to create a smooth ride over rough terrain. This adds to the life of your power washer and reduces fatigue on your tow vehicle. T300EE, T400EE, T500EE have electric brakes on both axles to comply with commercial use D.O.T.

■ Tank:

Choose from trailers with 200 gallons up to 540 gallons of water storage. Hydro Tek's exclusive seamless polyethylene supply tanks with hold down straps provide secure water storage. Dual tanks on the 400 and 540 gallon trailer provide baffling to reduce water sloshing and also allows for the water tank to be split to carry two different types of fluid. Pump Seal Saver Bypass installed on most trailers to recirculate cool water from the bulk tank into your pressure washer pump.

■ Lights/Wiring:

Tail lights are water tight sealed and recessed for added protection from road hazards. All wiring is routed through the trailer spine to eliminate damage from road hazards. Electric brake trailers have a brake controller ready 7-prong plug.

■ Storage:

The integrated storage tube for spray wands and large (47"x22"x10") storage box at the rear of the trailer offers ample area to store wands, hoses and other accessories. Additional storage options available.

■ Coupler/Chains/Jack:

Save time every time you hook up the trailer to your tow vehicle with an oversized wheel that allows for easy movement of the trailer. All trailers include safety chains and a wheeled jack that quickly swings up and out of the way.

■ Water Filter/Valves/Hoses:

High capacity water filter with 1/2" water drain valve supplies clean water to the pump to increase pump life. Complete plumbing and hoses, sized properly to your Hydro Tek washer, are included. Hoses are routed through grommets in the trailer frame to protect from chaffing and road hazards. High water tank shutoff included.

■ Customize with your choice of accessories:

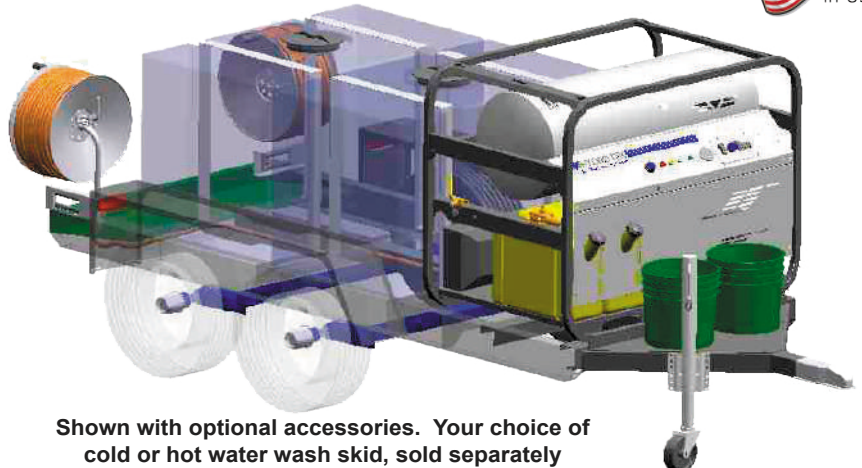
3-way ball valve, Stainless hose reels, Light bar, Bucket/chemical rack, Chrome wheels, sand hopper, chemical tank, Custom trailer color, alternate hitch choices, additional storage options, Hydro Vacuum wastewater filtration systems



Optional stainless, pivoting hose reel swings to five positions for convenient hose use in any direction.



Recover and Reuse your wash water with the addition of a Hydro Vacuum® trailer mounted filtration system.



Shown with optional accessories. Your choice of cold or hot water wash skid, sold separately



T200



T300



T400



T500



Tank Skid



Dual Skid Trailer

Specifications

Model	Capacity	Axle	GVWR	Brakes	Class ¹	Length
T200N	200 Gallons	Single	3500#	None	II	125"
T200E	200 Gallons	Single	3500#	Electric	II	125"
T250E (for SS)	270 Gallons	Single	3500#	Electric	II	125"
T300N	270 Gallons	Tandem	4400#	None	III	130"
T300S	270 Gallons	Tandem	4400#	Surge	III	130"
T300EE	270 Gallons	Tandem	4400#	Electric	III	130"
T400S	400 Gallons*	Tandem	6000#	Surge	IV	156"
T400EE	400 Gallons*	Tandem	6000#	Electric	IV	156"
T500S	540 Gallons**	Tandem	7000#	Surge	IV	168"
T500EE	540 Gallons**	Tandem	7000#	Electric	IV	168"

* Equipped with (2) 200 gallon tanks ** Equipped with (2) 270 gallon tanks

¹ Class II = 3500#, Class III = 5000#, Class IV = 6000# or 7500#

Dual Skid Trailers (available through special order dept, for SC, SCU, SCX)

T50DS	270 Gallons	Tandem	7000#	Surge	IV	168"
T50DE	270 Gallons	Tandem	7000#	Electric	IV	168"

Tank Skids

T185T	200 Gallons	For CPS, SS, SC, and SCU skids			74"
T270T	270 Gallons	For CPS, SS, SC, and SCU Skids			80"

Specifications may vary, consult dealer for available trailer accessory options

Check your local or state entities for trailer brake requirements.

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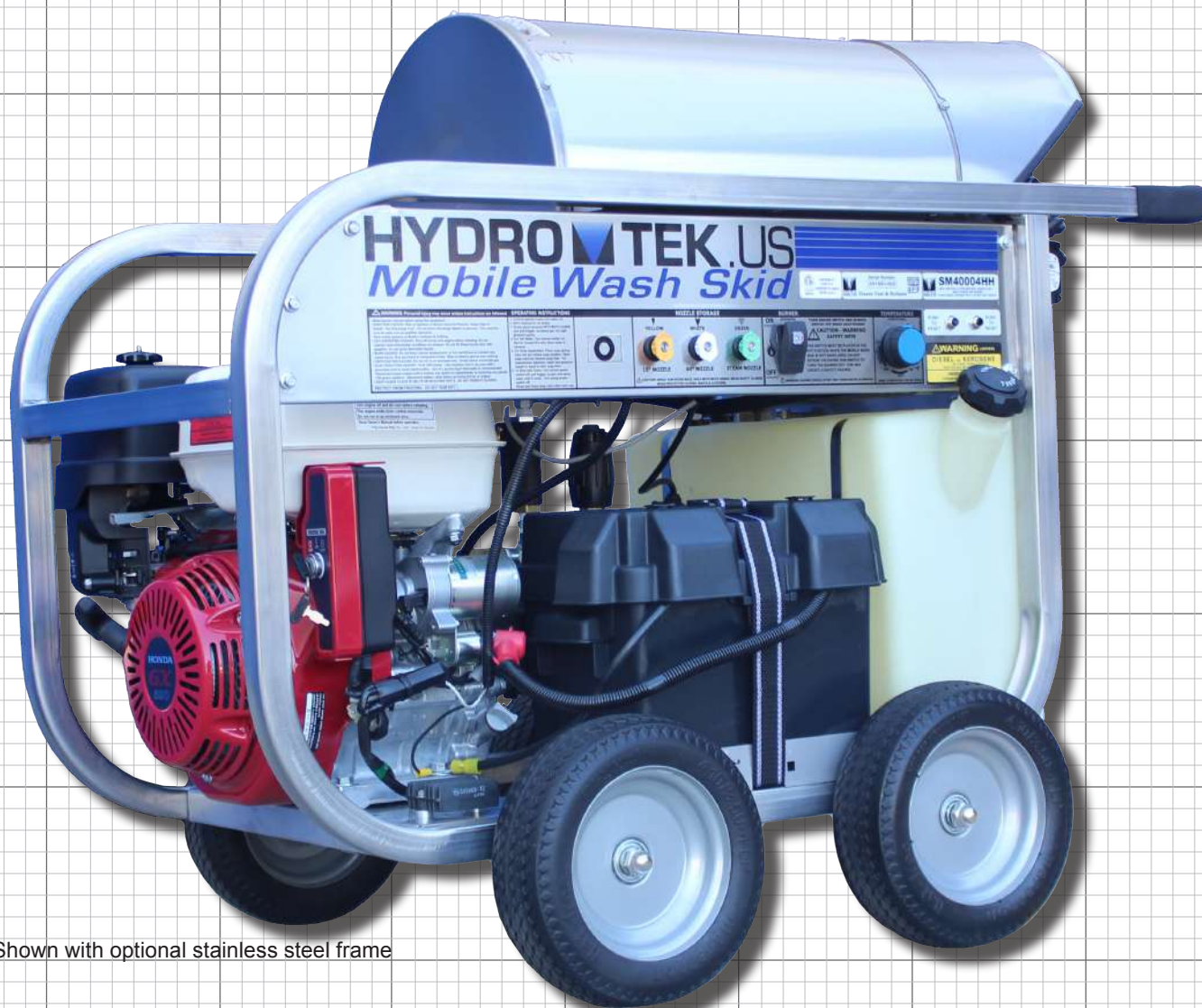
CLEANING EQUIPMENT MFG.

2353 Almond Ave. Redlands, CA 92374
 phone 800.274.9376 or 1.909.799.9222
 www.hydrotek.us fax 909.799.9888

Trailer Series 2/15 Hydro Tek ©

SM PORTABLE WASH SKID

SM SERIES: DIESEL HEATED, GAS ENGINE



Shown with optional stainless steel frame

YOUR COMPACT & PORTABLE SOLUTION TO TACKLE GRIME

HYDRO TEK

PORTABLE WASH SKID

HOT/COLD/STEAM - GAS ENGINE: with 12-volt diesel burner

SM
SERIES



■ Rugged Steel Frame:

Hydro Tek's 1 1/4", heavy gauge steel frame is durable for rough terrain and has integrated handles for maneuverability. (Shown with stainless steel frame option)

□ Stainless Steel Panel, Coil Housing, and Burner Cover:

These rugged and durable panels offer lifetime rust and corrosion resistance and keep your machine looking like new for years to come.

□ Simple to Use Controls:

Lighted rocker switch, adjustable thermostat and other controls are located on an easy to reach panel. Includes a panel mounted, resettable circuit breaker to protect the electrical system of your pressure washer.

■ Commercial Engines:

These single cylinder, air cooled, commercial Honda engines are fuel efficient and easy to start. Electric start engine on SM40004HH, Pull start engine on SM30003HH.

■ Open Frame Design:

The open design allows for quick access to all components for fast refueling and periodic maintenance.

■ Fuel Tanks:

The Honda engine powered wash skid has an integrated unleaded fuel tank. The burner diesel tank is a heavy duty "roto-molded" rust free tank with fuel filter to protect against contaminated diesel fuel.

■ Nonintegrated, Remote Mounted Unloader:

The unloader is separate from the pump, nonintegrated, eliminating heat failure and vibration.

■ SpiraLast™ Coil:

The coil is a Hydro Tek manufactured SpiraLast™ heating coil. Robotically fused 1/2" schedule 80 steel pipe is cold rolled to protect the steel pipe from fatigue and the spiral coil is then surrounded by ceramic insulation and stainless enclosure with double-wall end caps. Ask your dealer about the Lifetime Coil Warranty.

■ Portability:

The SM Series comes standard with four airless tires for moving the machine right to your wash site. Maneuver through glass, nails and other sharp job site objects worry & flat free.

■ Flexible, high intensity 12V Diesel Burner System:

Sophisticated 12V burner system transforms available power from system to fire the diesel burner. This efficient burner system, with PowerLight ignitor, provides maximum burner performance. No outside power source is required.

■ Direct Drive Pump:

Triplex, ceramic plunger pumps for a long life of industrial duty use.

■ More Standard Features:

- Burst disc technology for operator safety
- Adjustable temperature up to 250°F
- Heavy duty wand/gun, 50' high pressure hose, quick release nozzles
- Snap lid battery box



Shown with optional stainless steel frame



Specifications

Model	PSI	GPM	Temp.	CC	Engine
SM30003HH	3000	3.0	250° F	270*	GX270 Honda Gas
SM40004HG	4000	3.5	250° F	389	GX390 Honda Gas

* pull start engine

Specifications may vary, consult factory for custom models.

Dimensions: 36"l x 28"w x 37"h

Optional Accessories...

Hour meter, downstream soap injection kit, stainless frame option, sealed AGM battery, Frame-mountable, pivoting stainless hose reel (requires jumper hose)



HYDRO TEK
CLEANING EQUIPMENT MFG.

2353 Almond Ave. Redlands, CA 92374
phone 800.274.9376 or 1.909.799.9222
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SM SERIES 5/16 Hydro Tek ©

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Watercraft Decontamination Systems AIS Prevention

Watercraft Decontamination Systems, Consulting, & Training

Hydro Engineering Inc, pioneers of prevention technologies, can provide:

- On-site appraisal of your prevention needs
- AIS prevention program planning assistance
- Decontamination systems, fixed, mobile or portable
- Equipment supply, delivery, and maintenance support
- Start-up and operational verification to OEM specifications

We Provide:

- Watercraft decontamination procedural training and certification
- Complete preventative maintenance program (PMP)

Your organization provides:

- Decontamination location site preparation
- Utilities as required; power, water, fuel
- Inspection and decontamination personnel
- Provisions for training



Contact the experts at
Hydro Engineering Inc
865 W 2600 S
Salt Lake City, UT 84119
800.247.8424
801.972.1181 outside USA

Visit hydroblaster.com
to see options and accessories



hydroblaster.com



Since 1980, Hydro Engineering Inc. of Salt Lake City, Utah has maintained a goal of continuous improvement. We are the premier manufacturer of wash rack systems worldwide!



Wash / Collect / Recycle

Hydroblaster - Industrial Pressure Washers
Hydrokleen - Filtration and Recycling Systems
Hydropad - Steel, Above Ground Wash Racks
AUWS - Automatic Undercarriage Wash System

Hydro Engineering Inc is registered ISO9001:2008 and equipment certified to UL, CE & CSA Standards.

LANDA ECOS 7000 TRAILER

LANDA®



The Landa ECOS trailer is an environmentally friendly mobile wash and reclaim system that cleans and recycles the dirty water from pressure washing for safe disposal or reuse.

SKU: [1.103-825.0](#)

Categories: Pressure Washers, Pressure Washer Trailer Systems



If you're looking for a "green" solution to wastewater disposal, Landa patented and revolutionary ECOS Mobile Wash and Reclaim System should be right up your alley. This environmentally friendly, patented mobile wash system combines a hot water pressure washer with a wastewater recovery and filtration system atop a trailer unit, making it simple to dispose of the gray wastewater from your pressure washing operation, or recycle and reuse it. You'll be in compliance with most municipal regulations, and will be doing your part to help conserve our precious natural resources. Contract cleaners, municipalities, and ports can all benefit from the addition of an ECOS mobile wash system to their stable of equipment.

Features

- Durable Swing-Away Tongue (rated for 7,500 lbs) with 2-5/16 inch Ball Coupler, 7-pin Electrical Trailer Plug and heavy-duty 2,000 lb. capacity Swivel Jack, allows trailer to be stored in smaller area.
- Four 15-inch Chrome Steel Wheels with 205/75/R15 tires on Tandem Axles rated at 3,500 lbs each (7,000 lbs total) with Electric Brakes on both axles and battery operated Breakaway Kit for added safety.
- Insulated, springloaded Trigger Gun and insulated, dual-lance Variable Pressure Wand make it easy to switch between detergent wash and rinse modes.
- Locked compartment includes Dual Fuel Tanks for gasoline engine (17 gal.) and diesel burner (17 gal.), Junction for Downstream Detergent Injector and space for two detergent buckets.

- Safety Features including redundant devices such as a Rupture Disk, and hightemperature shut down to guard against any build up of excessive pressure or heat.
- Patent pending Trans-Heat Technology captures exhaust from the engine to preheat water by up to 15°F providing better fuel efficiency.
- 30 in. x 7 ft. Galley with step/tailgate has storage for Vacuum Hose underneath the floor.
- Two Hose Reels hold up to 100 ft. of highpressure hose and 75 ft. of low-pressure hose.
- Revolutionary Vacuum/Water Reclaim System with 50 feet of 2-inch vacuum hose and draggable, non-tipping suction head provides continuous suction of wash water.
- Four Polyethylene Water Tanks provide 400 gallons of clean water and are linked for even distribution. Main Control Valve System includes easy to use valve flow diagram for controlling water distribution. Feed Pump with pressure-sensing switch alleviates wear and tear on main pump.
- Filter Recovery System includes a 40 gal holding tank with a 50 micron Pre-Filter Sock, a 20 micron Pleated Cartridge Filter, a 5 micro Carbon Filter, and an Oil Skimmer Bag. Clean water is directed to selected tanks for reuse, or can be discarded or dumped directly to drain, pending local EPA requirements.
- Conveniently placed Locked Control Panel includes key start, choke, Burner On/Off Switch, Adjustable Thermostat, and an Hour/Tech Meter to indicate engine speed and total operating time. Also includes reclaim pump and vacuum motor switches and Low Point Drain for water tanks.
- Honda GX660 Engine and Landa Pump with 7-year warranty provide 4.7 GPM at 3500 PSI of cleaning might.
- Landa Duracoil with stainless steel top wrap and 5-year warranty heats water using high-efficiency 120-volt Burner.
- Heavy-Duty 4,000 Watt Generator produces reliable 120V AC power to the burner and vacuum.
- Four Color-Coded Quick-Couple Nozzles made of hardened stainless steel are mounted near hose reel for ready access.

Source: <https://sceclean.com/shop/pressure-washers/product/landa-ecos-trailer/>

Appendix H: Step-by-Step Guidelines for Watercraft Decontaminations

Appendix H: Step-by-Step Guidelines for Watercraft Decontaminations

Adapted from:

Minnesota Department of Natural Resources. 2018. Watercraft Decontamination Manual.

ftp://ftp.dnr.state.mn.us/pub/eco/watercraft_insp/Level%20%20Watercraft%20Decontamination%20Manual%202018.pdf

Vermont Department of Conservation. (2018). Vermont Public Access Greeter Program Manual,

<https://dec.vermont.gov/sites/dec/files/wsm/lakes/ans/docs/VWIPs%202018.pdf>

When should decontaminations be performed?

Circumstances that should result in serious consideration of a watercraft decontamination include:

- Incoming watercraft:
 - There are visible aquatic invasive species on the watercraft, trailer, vehicle or other equipment, or vectors for AIS are present (i.e.; mud on an anchor) that cannot be removed by hand.
 - The watercraft arrived undrained since being used last in another waterbody, including standing water in any compartments
 - The watercraft was last used in a waterbody infested with an aquatic invasive animal or in an unknown waterbody
- Exiting watercraft:
 - The watercraft is leaving a waterbody infested with an aquatic invasive animal.
 - There are visible aquatic invasive species on the watercraft, trailer, vehicle or other equipment, or vectors for AIS are present (i.e.; mud on an anchor) that can't be removed by hand.

Watercraft Decontamination Procedures

- **Standing Water Decontamination:** This protocol is performed to kill microscopic AIS in standing water that can't be fully drained from the vessel (zebra and quagga mussel veligers, spiny waterflea eggs). This decontamination applies to interior compartments that contain water or have equipment that have come in contact with the waterbody. The interior compartments include, but are not limited to: live wells, bait wells, bilge areas, and ballast tanks. These interior compartments of a watercraft should be decontaminated if they have been on a waterbody infested with Asian clam, zebra mussel, or spiny waterflea within the past five days. Equipment includes: anchor, mooring and anchor lines, personal flotation devices, swim platforms, inflatables, down-riggers, planing boards, water skis, wake boards, ropes, ice chests (used for bait or for holding fish), fishing gear, bait buckets, and stringers.
- **Motor Flush:** A motor flush is performed to remove high-risk standing water that may still be inside of a motor that was not fully drained. This procedure should only be performed if the watercraft in question has been on a body of water with an infestation of Asian clam, zebra mussel, or spiny waterflea within the past five days.
- **Plant Decontamination:** This decontamination should be performed whenever plant material cannot be removed from the vessel or trailer by hand. This decontamination is localized and requires using 140°F hot water only on the areas where plant material is located.

- **Exterior Decontamination for Suspected or Known AIS:** This protocol should be performed when adult or settler mussels, unidentifiable bumps, or other AIS are detected on the vessel. This decontamination is often the most complicated and ensures that the watercraft exterior has been completely decontaminated. In many cases, this will be combined with standing water decontamination to ensure a complete decontamination of the vessel, inside and out.

Watercraft Decontamination Equipment Terminology

Ballast Hose

A ballast hose can attach via a fitting to an extension hose. This hose is used to fill some ballast tanks by inserting the hose into the through-hull fitting that connects to the ballast tank.



Extension (or Accessory) Hose

This hose connects to the trigger assembly, and is used to connect various decontamination tools.



Fake-a-Lake

A fake-a-lake tool is used to flush water through inboard engines, or to fill ballast tanks while a watercraft is out of the water.



High Pressure Wand

The high pressure wand is used to spray pressurized water to help remove stuck plant fragments.



Low Flow Diffuser

The diffuser hose allows low-flow water to pump from the decontamination unit. This tool is used to decontaminate sensitive equipment, external surfaces, and internal compartments.



Motor Muff

Motor muffs are used to decontaminate inboard-outboard, and outboard engines by providing water to the intake.



Trigger Assembly

The trigger assembly is attached directly to the decontamination unit's hose, and is used to start and stop the flow of water.



Hand-held Thermometer

Infrared temp gun used to gauge water temperature exiting watercraft.



Brush for Removing AIS and Plastic Scraper

Brushes with nylon or plastic bristles can be used for AIS removal. Harsh bristle materials, such as metal, should be avoided.



Reclaim System

Some decontamination units will have reclaim systems that consist of a vacuum, reclaim tank, and filters, to allow decontamination water to be re-used.



Step-by-Step Guidelines for Watercraft Decontaminations

- **Standing Water Decontamination of Interior Compartments**

1. Follow the standard operating procedures for your decontamination unit.
 - Check all fluid levels of the decontamination unit.
 - With the trigger squeezed, start the unit and purge the water until it runs clear.
2. Turn on the engine and the burner and measure the temperature of the water until the desired temperature is reached (120° F).
3. Start the decontamination by having the boat operator open all interior compartments that need to be decontaminated and remove plugs. Flush each compartment. Use a laser thermometer and measure the temperature at the through-hull discharge port for that compartment. Continue flushing until the exit temperature of the water reaches 120°F for 30 seconds. Be sure to keep the tip of the attachment close to the sides of the compartment to prevent temperature loss.
4. Next, if equipped, have the boater turn on the discharge pump for the compartment, and run hot water through the pump system until discharge water reaches 120° F for 30 seconds.
5. Turn off the decontamination unit when you have completed decontaminating all necessary interior compartments. Turn the burner off first, then allow the engine to run until cool water is discharged, and then turn off the key.
6. Note “standing water decontamination of compartments” in the comment section of the Lake Host data sheet. Remind the boater to CLEAN, DRAIN, AND DRY their vessel.



- **Standing Water Decontamination of Outboard Motors and Inboard/Outboard Engines–Motor flushes**

Ensure that your decontamination station has clamp-style motor muffs for flushing of outboard and I/O motors. Follow these steps to decontaminate these engines:

1. Attach the hose to the end of the wand (quick connect fitting).
2. Attach the muff attachment to the hose.
3. Make sure the motor/engine is completely lowered. Place the muffers so that all the intake openings are completely covered. If all intakes cannot be completely covered, then motor decontamination should not proceed so as not to damage the motor's impeller.
4. Start the decontamination unit following the standard operating procedures.
5. Start the water by engaging the trigger. Check to make sure the intake openings are still covered on both sides and that the muffers are tight.
6. Stand clear of the propeller and have the boat operator start the motor/engine in neutral.
7. Flush the engine until the water temperature is 140°F for 120 seconds when measured by a laser thermometer at the discharge port(s).
8. Have the boat operator turn off the motor/engine.
9. Remove the muffers and allow the motor/engine to completely drain before being raised.
10. Turn off the decontamination unit when you have completed decontaminating all necessary interior compartments. Turn the burner off first, then allow the engine to run until cool water is discharged, and then turn off the key.
11. Note "standing water decontamination of compartments" in the comment section of the Lake Host data sheet. Remind the boater to CLEAN, DRAIN, AND DRY their vessel.



Standing Water Decontamination of Inboard Engines and their Bilges

All inboard intakes, which are located on the bottom of the hull, have a cover over the opening that protects the engine from sucking up large particulates. Locate the intake opening before proceeding.

1. Attach the hose to the end of the wand (quick connect fitting) and then attach the fake-a-lake attachment.
2. The fake-a-lake must be placed snugly against the bottom of the hull covering the intake port for the inboard.
3. Start the decontamination unit following the standard operating procedures.
4. Start the water by engaging the trigger.
5. Stand clear of the propeller and have the boat operator start the engine in neutral.
6. Flush the engine with low pressure water until the exit temperature of the water is 140°F for two minutes when measured with a laser thermometer at the discharge port(s).
7. Have the boat operator turn off the engine.
8. Remove the fake-a-lake from under the boat; disconnect the hose from the wand.
9. Turn off the decontamination unit when you have completed decontaminating all necessary interior compartments. Turn the burner off first, then allow the engine to run until cool water is discharged, and then turn off the key.
10. Note “standing water decontamination of compartments” in the comment section of the Lake Host data sheet. Remind the boater to CLEAN, DRAIN, AND DRY their vessel.



- **Standing Water Decontamination of Ballast Tanks**

1. Attach the hose to the end of the wand (quick connect fitting) and then attach the fake-a-lake attachment.
2. The fake-a-lake must be placed snugly against the bottom of the hull covering the intake port for the ballast tank. You may need the boat owner's assistance in identifying ballast intake ports. DO NOT begin a ballast tank flush without being certain that you have identified the correct inflow port.
3. Start the decontamination unit following the standard operating procedures.
4. Start the water by engaging the trigger.
5. Have the boat operator turn on the intake ballast pump. Fill it up with low pressure or until the exit water temperature reaches 120°F. If there is no ballast tank discharge pump, flush the ballast tanks with 120°F water for at least 3–5 minutes.
6. When the discharge water reaches 120° F, have the boat operator turn off the intake ballast pump. Release the trigger to stop the water flow.
7. Have the boat operator turn on the ballast tank discharge pump to drain the tank as much as possible.
8. Repeat these steps for every ballast tank. Ask the boater if they have multiple tanks.
9. Turn off the decontamination unit when you have completed decontaminating all necessary interior compartments. Turn the burner off first, then keep the wand trigger depressed until cool water is discharged, and then turn off the key.
10. Note "standing water decontamination of compartments" in the comment section of the Lake Host data sheet. Remind the boater to CLEAN, DRAIN, AND DRY their vessel.



- **Step-by-Step Procedure for Plant Decontamination**

During the entrance and exit inspection, any plant or plant fragment must be hand removed and properly disposed of away from the lake by the inspector or boat operator. However, there may be a situation when plant material is caught between the hull of the vessel and the trailer bunk or roller, or is wrapped around the propeller or transducer, and can't be completely removed by hand. In these cases, decontamination of affected areas should be performed.

1. Start the decontamination unit using the standard operating procedures for your unit.
2. Apply low pressure 140°F water directly to the plants or plant fragments for 15 seconds.
3. Decontaminate areas where plants are located and can't be removed:

- Trailer's carpeted bunk: Use 140°F water at low pressure. Move the low pressure hose slowly along the length of the bunk. Keep the tip of the wand/diffuser close to the bunk to maintain an even temperature.
- Trailer's frame and rollers: Use 140°F water at high pressure. Move the wand/diffuser slowly along the length of the trailer. Keep the tip of the wand/diffuser close to the trailer to maintain an even temperature.
- Propeller: Use 140°F water at high pressure. Be thorough and remove 100% of the plant material.
- Transducer: Use 140°F water at low pressure. The wiring and "water wheel" attached to this instrument dictate that low pressure is used in order to prevent damage.
- Interior compartments. Follow standing water decontamination protocol.



4. Turn off the decontamination unit when you have completed decontaminating all necessary interior compartments. Turn the burner off first, then keep the wand trigger depressed until cool water is discharged, and then turn off the key.
5. Note "plant decontamination" in the comment section of the Lake Host data sheet. Remind the boater to CLEAN, DRAIN, and DRY their vessel.

- **Exterior Decontamination for Suspect or Confirmed AIS**

If you suspect that you have found mussels or other AIS you should decontaminate all affected areas. For an exterior decontamination, all affected parts of the vessel must be exposed to hot water at the appropriate temperature and pressure to ensure the AIS are dead and removed. If an exterior decontamination is warranted, then it is likely that the watercraft should also have inside compartments and the motor flushed.

1. Follow the standard operating procedures for your decontamination unit. Check all fluids on the decontamination unit to make sure it is ready to operate.
2. Connect the wand to the hose. Start the decontamination unit using the proper operating procedures for your unit.
3. Ensure water temperature reaches 140°F, unless sensitive areas (i.e. rubber hoses) are being treated. In that case, ensure water temperature is 120°F.
4. Decontaminate the exterior of the hull and trailer. Connect the 40° nozzle with the use of the quick connect to the end of the wand. Start the decontamination unit. Keep the wand at a 45° angle and work methodically in one direction. On trailers, be sure to decontaminate the openings of the tubular frames. Do not use the wand to “scrub” the hull. Keep the tip of the wand within 12 inches of the hull and trailer as you move around the boat. Water temperature decreases approximately 15 to 20° per foot of distance when sprayed from a power nozzle.

WARNING: Use low pressure on all carpeted areas, decals, electrical connections, gimbal area on the inboard/outboard engine, interior compartments, transducers, and depth sounders and their wiring.

5. Turn off the decontamination unit when you have completed decontaminating all necessary interior compartments. Turn the burner off first, then allow the engine to run until cool water is discharged, and then turn off the key.
6. Note “exterior decontamination” in the comment section of the Lake Host data sheet. Remind the boater to CLEAN, DRAIN, and DRY their vessel.

