AQUATIC INVASIVE SPECIES

VOLUNTEER MANUAL

DEPARTMENT OF NATURAL RESOURCES

AQUATIC INVASIVE SPECIES AND THE VOLUNTEER PROGRAM

Purpose of the Volunteer Program

The purpose of the Aquatic Invasive Species (AIS) Volunteer Program is to educate the public about invasive species at the public access. These interactions at the access serve to teach people about invasive species and provide information on how to properly clean, drain and dry their watercraft or other water-related equipment after each use and dispose of unwanted bait in the trash.

Aquatic Invasive Species Volunteer Manual developed by:

Minnesota Department of Natural Resources

500 Lafayette Road
St. Paul, MN 55155-4025
888-646-6367
or 651-296-6157
Email: WIP.DNR@state.mn.us
mndnr.gov

DEPARTMENT OF NATURAL RESOURCES

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Section 1: Introduction

Aquatic Invasive Species and the Volunteer Program

An Introduction to Your Role as a Volunteer

Your role as a volunteer is to educate watercraft users about the impacts of aquatic invasive species and teach them how to thoroughly inspect their watercraft. You play a key role in changing the behavior of watercraft users by creating new behaviors of checking for AIS every time they enter and leave a public water access. You will talk with watercraft users about Minnesota state laws that relate to aquatic invasive species.

Please remember what your role is as a volunteer and that you are not authorized to conduct or require watercraft inspections. Watercraft users are not required to speak with you; the process is voluntary and meant to be educational. An inspector will not be present for every watercraft launched in the state, so it's important everyone learns the proper steps from each of you. Most watercraft users follow Minnesota's laws, and you can reinforce these positive behaviors by thanking them for taking the time to help prevent the spread of AIS.

Section 2: Volunteer Requirements and Information

Volunteer Requirements

1. All people who wish to be AIS volunteers must attend training, submit a completed background check form and register as Minnesota Department of Natural Resources (MN DNR) volunteers during the training session.
2. All volunteers will complete required safety training.
3. You must submit a schedule for each access you or your group will be volunteering at, in writing, to the MN DNR regional watercraft inspection program supervisor at least seven days before the volunteering is to take place. The schedule can be for the whole summer or a shorter period and may be sent via email. Schedules may be sent by an individual or a group coordinator.
4. Determine if permissions are needed for volunteering at specific accesses.
   a. If the access is owned by the MN DNR, you may do AIS education after you have completed the requirements in steps 1-3.
   b. If the access is not owned by the MN DNR, you must contact the access owner and obtain written permission to perform AIS education there. Please be aware that public accesses may belong to the city, county, township or others, and you will need to contact those entities for permission prior to being at the access. A right of entry form will be provided at training.
5. All volunteers will identify themselves as MN DNR AIS Volunteers. A name tag will be provided.

SAFETY MESSAGE:

Stay aware of your surroundings at all times while at the access.

Priorities at the Access

As a volunteer it is your responsibility to:

Ensure personal and public safety

- Your safety and the safety of the public is your top priority. Many vehicles and boats will be moving around the access. People will be looking under trailers and around watercraft.

Educate the Public

Every contact you make with the public must educate them about the importance of preventing the spread of aquatic invasive species.

The educational message you want to promote is: Clean-Drain-Dispose

- Clean aquatic plants and prohibited invasive species from all water-related equipment.
- Drain lake or river water from all equipment and keep drain plugs out during transport.
- Dispose of unwanted bait in the trash, not in the water.
- Recommended additional action:
  - Dry their boat for five days or more before launching in other waters.

Explain what watercraft users need to do each time they use their watercraft, regardless of what waters they are leaving. Watercraft users should look for the following:

- Plants
- Invasive animals
- Water
- Mud

Impress upon them they have a lot to lose if they do not assist in this effort, both in terms of recreational opportunities (such as damages to water-related equipment, impaired fishing and swimming) and monetary penalties for violating state laws.

Teach them how to self-inspect their watercraft. Walk the watercraft user through the process of how to effectively perform their own inspection each time they use their water-related equipment.

Recommend decontamination when it is needed and educate watercraft users about decontamination options. “Decontaminate” means to wash, drain, dry, or thermally or otherwise treat water-related equipment to remove or destroy AIS.

If you observe a violation or the watercraft user refuses to comply with state laws, do not try to confront them. Contact your Watercraft Inspection Supervisor or a Conservation Officer.

What are Aquatic Invasive Species (AIS)?

Zebra mussels on native mussel

According to the state statutes, “Invasive Species” means a non-native species that:

- Causes or may cause economic or environmental harm or harm to human health; or
- Threatens or may threaten natural resources or the use of natural resources in the state.

AIS can be plants or animals. Invasive aquatic plants are non-native species of plants that have adapted to living in, on, or next to water, and can grow either submerged or partially submerged in water. Invasive aquatic animals require watery habitat, but they do not necessarily have to live entirely in water. AIS plants and animals can threaten native species and aquatic ecosystems; interfere with municipal, commercial and agricultural water supply and distribution; and impair recreational activities.

In their native environments, AIS populations are typically held in check by predators, parasites, pathogens and competitors. However, when they are transported to a new environment that does not have natural checks, and the species have other strong survival attributes, these plants and animals have an advantage over native species. This makes them very difficult to control.

Aquatic invasive species in Minnesota are regulated depending on the legal classification they are given. The two main categories relevant to AIS laws are prohibited and regulated.

According to Minnesota statute, “A person may not possess, import, purchase, sell, propagate, transport or introduce a prohibited invasive species.” Examples include zebra and quagga mussels, faucet snails, invasive carp, round goby, Eurasian watermilfoil and flowering rush. Statute states, “A person may not introduce a regulated invasive species.” Examples include Chinese and banded mystery snails, spiny waterfleas and rusty crayfish.

Many AIS, including zebra mussels, were first introduced into the Great Lakes via the discharged ballast water of ocean-going ships. Once in North American waters and wetlands, these invasive species often “hitch” rides to other bodies of water on the boats, trailers and equipment people transport from place to place. Other AIS were introduced via water gardens, aquariums or other pathways. Although many are from overseas, others are from different parts of the United States.

Some of the most problematic invaders currently in Minnesota are zebra mussels, faucet snails, spiny waterfleas, Eurasian watermilfoil, curly-leaf pondweed and starry stonewort.

Information about all the invasive species in Minnesota is available at **mndnr.gov/invasives.**

Section 3: Types of Water-Related Equipment and Terminology

This section will teach you about the most common types of watercraft and accessories you may encounter.

Common Watercraft

Jon Boat

Jon boats have a flat bottom. Oftentimes they are a drab color, like olive green. Jon boats are simple boats that typically have few internal compartments, if any.

Wakesport Boat

These watercraft are equipped with ballast tanks and typically have an inboard motor. They usually have a tower that attaches to both sides of the vessel and attached storage racks for wakeboards or water skis. These watercraft contain at least one hard or soft tank located underneath the deck which holds a large amount of water in order to make the watercraft heavier as it moves through the water (thus generating a larger wake). Wake sport boats have a series of thru-hull fittings along the hull that discharge ballast water.

Fishing Boat

Fishing boats typically have live wells or bait wells inside. They have a “V” shaped hull and usually have an outboard motor. Brand examples include Lund, Crestliner, Ranger, Stratos, Alumacraft, Nitro, Skeeter, Tuffy, Smoker Craft, Yar-Craft, Triton and Tracker.

Runabout

Runabouts are powerboats that are used for water sports, cruising and fishing. They are typically powered by a sterndrive (inboard-outboard) motor. Runabouts do not have ballast tanks.

SAFETY MESSAGE:

When approaching watercraft be aware of where they are parked and whether they are properly secured. Be sure the watercraft and trailer are not in danger of tipping.

Personal Watercraft (PWC)

Personal watercraft are built for one, two or three people and are nine to fourteen feet long. They have a jet propulsion system.

Pontoon

A pontoon boat is typically a flat-decked vessel that floats and balances by means of two or three large, closed cylinders that are mounted lengthwise.

Please note that the plugs should not be removed from the cylinders unless they have been damaged and contain lake water.

Boat Lift or Similar

A tube-framed device that sits next to a dock and is used to raise or lower a boat into or out of the water.

Canoe

A canoe is a long, narrow boat that is moved by paddles with a single blade.

Cabin Cruiser

A cabin cruiser is a type of watercraft A cabin cruiser is a type of watercraft that provides accommodation for people inside the structure. These watercrafts are complex and may contain tanks for potable (not lake) water, toilets (heads) and air conditioning systems.

Photo credit: Skipp LaJoy

Kayak or Similar

A kayak is a narrow boat occupied by one, two or three people that is moved by paddles with two blades.

Sailboat

This type of watercraft is likely to have a keel or keel box, mast, sail, more rounded hull, rudder and possibly ballast tanks.

Lake Service Provider Transport Barge or Pontoon

LSPs will use a flat-topped boat to transport docks and lifts from the lake. They are usually a modified pontoon with the seating and safety rails removed. They will have a steering column and captain's seat with little else. These may have a crane attached or other equipment on board to lift the equipment onto the boat.

Type of Water-Related Equipment and their Risk Level

- High risk watercraft are watercraft that could have possible attached adult mussels.
  - Examples of equipment are moored boats, boat lifts, docks and weed rollers.
- Medium to high-risk watercraft could have a higher risk of carrying veligers of zebra mussels in water, spiny waterfleas and resting eggs, plants and plants with zebra mussels or other aquatic animals on trailers.
  - Examples of equipment are: wakesport boats with ballast tanks, sailboats with ballast tanks, and fishing boats with live wells.
- Medium risk watercraft are unlikely to have adult mussels or veligers, but plants with animal species attached may be on trailers or caught in intakes.
  - Examples of equipment are smaller boats with outboard motors (no live wells, no ballast tanks) and personal watercraft.
- Low risk watercraft generally do not have water-holding compartments or motors.
  - Examples of equipment are hand-launched watercraft like canoes, kayaks, belly boats and inflatables.

Common Accessories

Anchor

A heavy weight attached to a line; it is used to hold the boat in place.

Bait Bucket

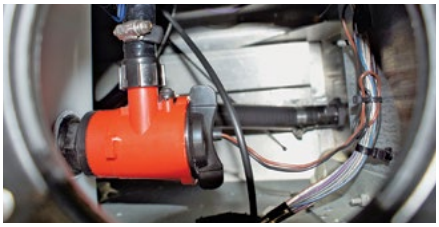
A bucket or other container used to hold water in order to keep minnows or leeches alive while fishing.

Bait Well

A bait well is very similar to a live well. There may be a removable bait bucket inside the bait well.

Ballast Tanks

Ballast tanks are most commonly found on wake sport boats. Multiple thru-hull fittings normally indicate the presence of ballast tanks. Ballast tanks hold lake water to make the watercraft heavier, thus creating a larger wake. A removable, soft ballast tank is pictured here.



Bilge

The bilge is normally in the back of a watercraft at the lowest point. The owner can turn a pump on to discharge water.

Bilge Plug

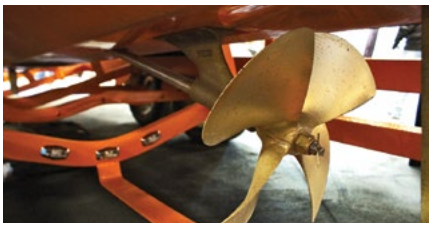
The bilge plug, located on the transom, is used to drain water that has collected in a watercraft's lowest spaces such as the hull and bilge area.

Downrigger

A device used while fishing with the trolling method. A downrigger consists of a pole with a weight connected to a steel cable that is set at a certain depth. A clip, also known as a release, attaches the weighted cable to a separate fishing line with the bait or lure.

Gimbal Area

The area, on the transom, that provides pivoted support to move the lower unit up and down and side to side on sterndrive watercraft.



Inboard Motor

On an inboard motor, the engine block is located inside the watercraft, and the drive shaft and propeller is under the hull of the watercraft.

Jet Engine

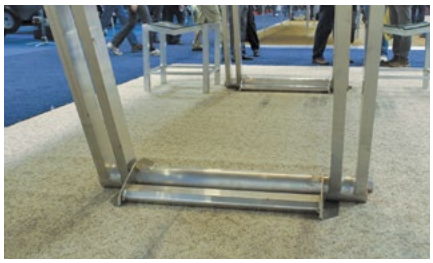
In this propulsion system, water is drawn up from underneath the watercraft into a pump and a jet of water is ejected from a nozzle at the stern to propel the vessel.

Live Wells

Live wells are used to keep fish alive while on the water body. They are likely to be plastic lined storage areas with a removable drain plug.

Outboard Motor

This propulsion system is attached to the outside of the transom. An outboard motor is used for motion as well as steering.



Portable Hydraulic Pontoon Lifts

Hydraulic legs attached underneath pontoon boats that allow the pontoon to be lifted out of the water and adjusted to sit stably. Due to their location underneath the pontoon, please exercise safety when inspecting. Portable hydraulic pontoon lifts are not included in the twenty-one-day dry law for boat lifts.

Shallow Water Anchor

Mounted at the stern (back) of the watercraft, this housing contains a fiberglass rod which is lowered into shallow water and pierces the lakebed in order to anchor the watercraft in place. Used primarily by bass fishermen.

Sterndrive, Inboard-Outboard or I/O Motor

This propulsion system is located inside the watercraft and provides power to the lower unit located on the outside of the transom.

Transducer

An electronic sensing device that provides data for a depth finder.

Transom

Located at the back of the watercraft. The transom is the flat section that connects the two sides of the hull together. The transom is the location for the bilge plug, attachments and the propulsion system.

Trim Tabs

Small surfaces (shelves) that are connected to the transom on a boat. They are hydraulically powered and are used to level the vessel laterally while traveling through the water.

Trolling Motor

Usually consists of a self-contained unit that includes an electric motor, propeller, and controls, and is affixed to an angler's boat, either at the bow or stern. Minn Kota is a brand commonly found in Minnesota.

Section 4: Expectations While Working with the Public

A positive first impression and the knowledge to respond to customers while maintaining a safe work environment are the key requirements to being a MN DNR volunteer. Positively representing the DNR will ensure a public service environment free of disrespectful or unprofessional communications or behavior. Professional behavior and good customer service begins before the interaction! What you say and how you say it are keys to a successful interaction. The impression you give through your body language and appearance are also important to a successful conversation.

Please remember what your role is as a volunteer, and that you are not authorized to require or conduct watercraft inspections. Watercraft users are not required to speak with you; the process is voluntary and meant to be educational.

Visual Impressions

- Volunteers shall appear clean and neat in appearance for each shift.
- Clothing shall be clean and in good condition.
- Articles of clothing, including jewelry, shall not display endorsements of a vulgar, controversial or obscene nature.
- Volunteers shall wear visible identification while working in public use areas.
- It is recommended that personal protective equipment (PPE) be worn while working. Examples include:
  - High-visibility vest
  - Closed toe shoes
  - Sunscreen
  - Hat

SAFETY MESSAGE:

Call 911 or leave the access if you feel it is necessary, or if you feel threatened.

Verbal Impressions

- Volunteers will greet the watercraft user by using a basic greeting when approaching the public. Though each person will have a slightly different way of approaching their visitors, all will include a clear statement identifying themselves as a MN DNR AIS volunteer.
  - For example, “Hi, my name is Mike, and I am a volunteer with the Minnesota DNR providing aquatic invasive species education today.”
- When you approach a watercraft user, remember you’re trying to engage them in a conversation. Be respectful and patient as you talk with them; some watercraft users will be very familiar with this process and others will be new to it.
- Use positive communication and treat individuals in a manner that a reasonable person would find appropriate.

Volunteers will display good judgment and proper behavior that is reasonably expected in public use areas. Disrespectful or unprofessional behavior includes, but is not limited to, smoking during interactions and arguing with visitors. If you are uncomfortable with a situation at any time you should remove yourself from the confrontation.

Section 5: Volunteer Procedures and Protocols

Setting Up at the Access

When arriving at an access, a volunteer should do the following:

1. Locate a safe and legal place to park.
2. Determine a location near the access to set up. Preferably, place a chair so you are on the driver's side of approaching vehicles; this way you won't have to walk around the vehicle. Try to sit in a shaded area, if possible. Do not set up where you will hinder the flow of traffic. Keep in mind you will be contacting watercraft users before they launch their watercraft and before they leave the access. Also note the location should be far enough away from the water so if any water is needed to be drained before launching, it will not run into the water body.

Suggested Equipment List

Safety Equipment

- Hand wipes
- Closed toe shoes
- First aid kit

Personal Items

- Hand wipes
- Hand sanitizer
- Chair
- Sun umbrella
- Sunscreen
- Bug spray
- Cell phone

Educational Materials

Educational materials should be provided directly to the boaters. Do not place flyers or other handouts under window wipers of vehicles at an access.

For a list of approved outreach materials and to order materials visit: **dnr.state.mn.us/invasives/ais/outreach.html.**

- Copy of AIS laws (Volunteer Manual)
- Copies of relevant forms
  - General Permit to Transport Watercraft; **dnr.state.mn.us/invasives/ais_transport.html**
  - General Permit to Transport Boat Lifts, Docks or Other Water-Related Equipment; **dnr.state.mn.us/invasives/ais_transport.html**
  - Suspected AIS Collection Form

Useful Equipment to Recommend to Boaters

- Crescent wrench or needle nose pliers to remove bilge plugs (9/16" socket also useful)
- Extendable mirror to look under the hull for AIS
- Flashlight
- Sponge to remove residual water

Initiating Contact

As the vehicle approaches

- Greet watercraft user.
- Explain you are a volunteer educating people about AIS and how to properly conduct their own self-inspection to prevent the spread of AIS. Share the primary education message, CLEAN-DRAIN-DISPOSE.
- Teach them about the importance of draining water. Explain they will need to empty all water from their boat before transporting; state law requires people to empty bilge areas, ballast tanks, live well(s), bait well(s) and bait containers before transporting equipment.
- Educate on the steps they can take to reduce the risk of spreading AIS and the problems associated with them.
- Provide DNR approved brochures or other educational materials.
- Point out ways the boating public can determine if a waterbody is infested or not:
  - Looking for an orange infested waters sign posted at the access.
  - Looking on the DNR Infested Waters List, **dnr.state.mn.us/invasives/ais/infested.html** (updated quarterly).
  - Keep in mind there are always infested waters we don't know about right away. Remind boaters they should treat each water like it is infested and clean their boats the same way at every waterbody.

When Speaking with Watercraft Users

- Be respectful when communicating with watercraft users. Remember that they are not required to engage with you. AIS Volunteers have no legal authority at an access.
- Focus on teaching them about the self-inspection process.
- Always stay professional. Guide the conversations using facts and not personal opinions.
- If the watercraft user becomes confrontational, disengage, and remove yourself from the situation.
- Do not engage in confrontation of any kind.
- Be systematic and complete education in a timely manner. We don't want to delay watercraft users unnecessarily.

SAFETY MESSAGE:

If a boater wants to learn about self-inspection, ask the driver to turn off the engine and set the parking brake. It is critical to prevent boats or trailers from rolling when owners are looking underneath and behind them. Remind boaters to park out of the flow of traffic in a safe location when conducting their self-inspections.

Self-Inspection of Watercraft and Trailer or Other Water-Related Equipment

- Teach the boater to begin their inspection at the driver's side winch post of the boat trailer.
- Involve the boater in the process, showing them how they can inspect their boat systematically.
- Teach them to look closely for zebra mussels, snails, spiny waterfleas, aquatic plants and other species that may attach to the hull or trailer.
- Have them look inside the watercraft checking for all the same things you're looking for on the exterior.
- Talk about the trailer and the high risk it poses, despite the short amount of time it is in the water. Note that the primary items found on trailers will be aquatic vegetation, and that zebra mussels can also be attached to vegetation.
- Point out high risk areas such as anchor lines, livewells, bilge, lower unit, transom attachments, trailer bunks, wires, and leaf springs.
- Check for drain plugs in livewells or at the back of the boat, remind them about the drain plug law in MN.
- Ask the boater if they are using any live bait and explain they will need to exchange water at the end of their trip if they intend to keep live bait.

Zebra mussels on native watermilfoil

Close up of banded and mystery snail shells

What to do if AIS are found

If at any time a watercraft user is attempting to launch their watercraft with attached invasive species or aquatic plants, try to encourage them to clean off their boat, and explain the law and the impacts it could have. Do not become confrontational. If they launch against your recommendations, don't try to stop them from launching. Contact your Watercraft Inspection Supervisor or a Conservation Officer.

SAFETY MESSAGE:

- Be sure the watercraft and trailer are not in danger of tipping.
- Tell the watercraft user to watch for sharp objects or splinters while they perform their self-inspection. Wear and tear can sometimes create sharp surfaces.
- Have the watercraft user keep an eye out for pinch points while inspecting their watercraft.
- Keep your safety in mind, and always distance yourself from conflict and violent situations. Never encourage confrontation even if you feel very strongly about a subject. You are there as an educator, not an enforcer.
- If your safety is in jeopardy, leave the launch site and contact enforcement.

Section 6: Helping Watercraft Users Go Above and Beyond

It is important to remember that as a volunteer, the most important task is educating the public. You can teach watercraft users about AIS laws and self-inspection processes, but you can also educate them on ways they can go above and beyond what is legally required. These additional steps can further reduce the risk of spreading AIS.

Education and Outreach

Working with watercraft users is integral to your work, and they may be curious about what you are doing. Remember to explain you are a volunteer and are there to help answer questions about AIS, compliance with AIS laws, and tips on the proper protocol for self-inspecting and transporting water-related equipment. If you are unsure of the answer to a question, please refer them to the DNR information number at 1-888-MINNDNR or 651-296-6157.

You can help them adopt good habits during their self-inspection process and promote decontaminations when they are recommended. The DNR is using Community-Based-Social-Marketing (CBSM) to prevent the introduction and spread of AIS. You can too! CBSM is a social science approach to foster sustainable, environmentally beneficial behaviors over the long term. Behavioral science tells us there is often a gap between intention and action. Just because people intend or know they should do something, doesn't mean they always follow through (e.g., how often your dentist suggests that you floss your teeth, vs. how often you actually do). Here is a CBSM strategy you can use to help promote the adoption and consistent practice of desirable AIS prevention behaviors, such as self-inspection or watercraft decontamination.

Gathering Verbal Commitments

A strategy you can use is gathering verbal commitments. Verbal commitments are an essential tool used in a majority of behavior change programs. Social science studies show time and again when people make a commitment to do something, they are more likely to follow through. Simply asking "can I count on you to inspect your watercraft before your next launch?" can influence watercraft user behavior positively. You are a messenger providing needed AIS prevention services at locations where watercraft users prefer to receive information. Your role is critical in helping watercraft users adopt and consistently practice desired AIS prevention behaviors.

Pledge to Protect Minnesota Waters:
dnr.state.mn.us/data/ais-pledge

Exterior Self-Inspection Tips

During your interaction, educate boaters about where to check during their own inspection. Common places to direct boaters' attention to are:

- Trailers hauling water-related equipment
- Watercraft hull
- Motors and engines, including trolling motors, propellers and motor mounts
- Transom, including trim tabs, transducer, intakes and boat plugs
- Instruct them to closely inspect portable hydraulic boat lifts if present on pontoons (see definition on page 13).

Teach boaters to examine each piece of equipment and feel for bumps that may indicate the presence of young zebra mussels. Ask them to carefully check the rear of watercraft, including intakes, upper and lower motor areas and the propeller.

Trailers can also pose a high risk, so remind them to check trailer rails, lights and electrical wires, as well as the license plate and trailer bunks for aquatic plants and invasive species. When they are hauling a lift or dock, ask them to pay particular attention to the undersides where zebra or quagga mussels are commonly found. In addition, portions of boat lifts and docks that contact the sediment should receive additional attention, as these areas commonly pick up bottom material from the lake or river while equipment is in the water.

Interior Self-Inspection Tips

Teach boaters that the interior of all water-related equipment needs to be checked for the presence of invasive species and residual water before transporting.

Below is a list of common equipment and areas to inspect:

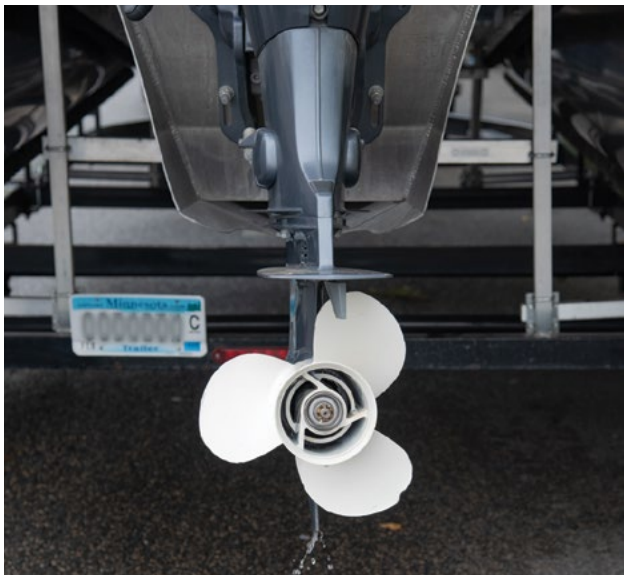
- Live wells and bait wells
- Bilge area near the back of the watercraft
- Hard and soft ballast tanks
- Lines (ropes) and anchors
- Storage areas
- Fenders
- Fishing equipment

Engine Self-Inspection Tips

Watercraft engines use raw water in some parts of their cooling system. Lake or river water is pulled into the engine through intakes, and some of this water can remain inside the engine when it is turned off. Below are some tips for draining these systems; these steps are not legally required but are helpful in further reducing the risk of spreading AIS.

Outboard motors

Outboard motors are self-contained propulsion systems attached to the transom of a watercraft. You will typically encounter these motors in the "up" position and ready for transport when the watercraft is on a trailer. Water may remain trapped inside the lower unit when in this position. During your interaction, you can teach the boater to lower the motor to the vertical position to allow any residual water to drain. To assist in this process, offer to watch the motor to ensure it does not contact the ground. Once residual water stops dripping out (there may not be any), remind the boater to raise the engine back to the "up" position. It is possible for some watercraft to have multiple outboard motors. Smaller outboards, called kickers, can be drained by following the same steps.



Sterndrive or inboard-outboard (I/O) motors

Sterndrive motors look similar to outboard motors. The engine is located inside the watercraft, with the lower unit extending through the transom. The lower unit of sterndrive engines can contain residual water and can be lowered in the same manner as outboards. Teach the owner to lower the motor to the vertical run position to allow any water to drain. To assist in the process, offer to watch the motor to ensure it does not contact the ground. Once residual water stops dripper out (there may not be any), remind the boater to raise the engine back to the "up" position.

Jet-drive motors

This type of propulsion system is most commonly found on personal watercraft and occasionally on larger watercraft. This type of system consists of an engine inside the watercraft and uses a high-speed pump to pull water in through an intake grate and

expel it at a high velocity out through an adjustable nozzle. To remove trapped residual water, educate the boat/personal watercraft owner it is OK to start the jet ski and run the engine for five seconds or less. The boater should rev the engine during this process, which will expel water from the engine, and the motor can then be shut off. Starting engines out of water can raise damage concerns of watercraft users. The process explained here follows similar instructions contained within operator manuals when describing how to flush jet-drive motors with fresh water and will not damage the watercraft.

Inboard engines (direct drive and V-drive)

Inboard engines are located entirely within the watercraft, with only a propeller shaft and propeller extending outside the watercraft (typically located underneath the hull). While this engine type also contains residual water, removing this water is difficult. The best way to treat this water is by conducting an engine decontamination. If boaters are going to be placing the watercraft in another body of water within twenty-four to forty-eight hours, you can help them find a decontamination unit nearby. This is an optional way for boaters to go above and beyond to further reduce the risk of spreading AIS but is not required. Do not start these engines out of the water.

Trolling motors

Trolling motors are small, electrically powered motors located near the bow, or on the transom of some watercraft. During the self-inspection process, remind the boater to pay close attention to the propeller areas of trolling motors since it is possible vegetation is wrapped around them.

Tips for Draining

- Drain plugs must be removed, and bailers, valves or other devices used to control the draining of water from ballast tanks, bilges, live wells and bait wells must be opened while transporting water-related equipment.
- Water can drain from water-related equipment as it is leaving a water access.
- Pontoons are air holding compartments and not intended to hold water. Plugs do not need to be removed from them when they are transported unless they are damaged and contain water.
- If water is found by the boater during an entering self-inspection, and the plugs are in place, the water should be drained. The watercraft needs to drain the water at a location far enough away from the lake to ensure it does not flow back into the lake. You can help determine the best location to drain watercraft.
- If the bilge area of a watercraft cannot be visually inspected, a good tip to share is that bilge pumps can be activated to determine if there is any water present. Similarly, if the watercraft has a ballast tank (such as on wake sport boats), the watercraft user should remove the plug and drain all water or activate the ballast tank pump until no water is expelled. On an entering self-inspection if water is present in either of these locations, remember to inform the user that water should be drained away from the lake.
- Sponges or towels are a good recommendation for the boater to keep with them to use if residual water is found in any area that cannot be drained.
- If a known decontamination unit is accessible, you could inform them of their options, as it can help treat this water. Decontamination locations can be found at **mndnr.gov/decon**.

Tips for Working at Accesses with Inspection Tools

Some accesses are equipped with stations that provide tools to help watercraft users inspect their watercraft, and remove plants, invasive animals and water. If you volunteer at these accesses, it is helpful to teach watercraft users about the stations and encourage their use.

Section 7: Decontamination

Watercraft and other water-related equipment may have residual water unable to be drained or attached AIS which are not easily removed. In these scenarios, decontamination offers an effective way to reduce the spread of AIS.

Decontamination by definition is a process used to kill, destroy or remove aquatic invasive species and other organic material that may be present. When visible plants or organisms are removed from the interior or exterior of a watercraft or equipment by simple means, such as with human hands or tools, the process is considered manual. A process that involves hot water and/or high pressure to kill and remove AIS from watercraft or equipment is considered mechanical. The DNR and local government units have decontamination units and stations that are available to the public. The units and stations are staffed with authorized inspectors that perform the decontamination at no charge. Additionally, some companies may offer decontamination services for hire. Boaters can seek out mechanical decontamination at any time for a courtesy decontamination. To find locations near you visit: **mndnr.gov/decon**.

Section 8: Interacting with Lake Service Providers

Who are Lake Service Providers?

At times volunteers may encounter lake service providers at accesses.

Lake service providers (LSPs) are businesses hired to install, remove, decontaminate, fix or rent/lease water-related equipment in Minnesota waters. Common examples are dock and lift installers, marinas, watercraft hauling/storage, irrigators, resorts and outfitters. LSPs come in a wide variety of business types, sizes and locations ranging from a large marina with lots of staff, equipment, trucks and trailers to a small dock installation company with a few seasonal staff and a couple of trucks with trailers.

LSPs must have an owner or manager complete permit training and obtain a permit from the DNR every three years. Their staff must also complete online employee certificate training every three years. It's good to get to know the lake service provider businesses in your area; there are some you may see daily and others may show up just occasionally. You can reiterate the important role they play in helping to prevent the spread of AIS.

Lake Service Provider Permit Authorities

LSPs have additional exemptions in their permit that regular watercraft users do not. These exemptions include:

1. **Transport authority.** LSP permits include one-way transport authority for water-related equipment from zebra mussel and faucet snail infested waters. This authority allows them to transport equipment with attached zebra mussels or faucet snails back to their business address or other decontamination addresses listed in their permit to decontaminate the equipment thoroughly. The equipment must be decontaminated before transporting from the decontamination site – even if it's being transported back to the same lake or river. LSP transport authority does not include aquatic plants or other AIS. If they need to haul other contaminated equipment not covered in the LSP permit, they need additional transport permits for commercial businesses.
2. **Drain plug exemption.** LSP permits allow the business to transport inboard or inboard-outboard watercraft back to the decontamination addresses listed on their permit with the drain plug in place to properly dispose of contaminated bilge water away from lakes and rivers.

Section 9: How to Report a Potential New Infestation

At the access you will communicate with the public in a variety of ways. You may be approached by a member of the public who believes they have found new AIS, or you may see an invasive species not known to be in the water body you are working at. If this happens to you, you will want to be sure to take very specific notes and forward the information to the DNR as soon as possible. For either situation you will want to fill out the Suspected AIS collection form in section 12 of this manual.

If someone is reporting a possible new infestation to you:

Be as specific as possible when collecting location information: GPS info, location on a map, address of property nearby, color of cabin or dock nearby, etc. Ask for contact information from the citizen reporting the infestation and ask if they have photographs. Email the completed Suspected AIS collection form and any photographs to **wip.dnr@state.mn.us.**

SAFETY MESSAGE:

Remember as a volunteer you are not authorized to legally require inspections or decontaminations. If you see or suspect a violation, your safety and the safety of the public is your number one priority.

If someone has attached zebra mussels or other AIS and is leaving a waterbody not known to be infested with that species, follow these steps:

Put a sample in a plastic bag and keep it in a cool place (a cooler in your car or refrigerator at home). Call the watercraft inspection supervisor for your area and they will, if possible, pick it up and bring it in to the office to be identified.

Note the following information on the plastic bag:

1. Date
2. Water body
3. Describe where it was found (e.g., on a boat, on a trailer, growing in a water body, caught by a fisherman on their line, etc.).

Contact Information for DNR Staff

Minnesota Department of Natural Resources AIS Specialists and Watercraft Inspection Program Staff Directory

DNR.state.mn.us/invasives/AIS/contacts.html

Section 10: Minnesota Aquatic Invasive Species Laws

Selected Minnesota Laws Related to Water-related Equipment, Watercraft Inspections, and Decontamination

July 1, 2015

M.S. 84D.01 DEFINITIONS.

Subd. 1a. Aquatic invasive species affirmation.
"Aquatic invasive species affirmation" means an affirmation of the summary of the aquatic invasive species laws of this chapter that is part of watercraft licenses and nonresident fishing licenses, as provided in section 84D.106.

Subd.3a.Decontaminate.
"Decontaminate" means to wash, drain, dry, or thermally or otherwise treat water-related equipment in order to remove or destroy aquatic invasive species using the "Recommended Uniform Minimum Protocols and Standards for Watercraft Interception Programs for Dreissenid Mussels in the Western United States" (September 2009) prepared for the Western Regional Panel on Aquatic Nuisance Species, or other protocols developed by the commissioner.

Subd.8b. Inspect.
"Inspect" means to examine water-related equipment to determine whether aquatic invasive species, aquatic macrophytes, or water is present and includes removal, drainage, decontamination, or treatment to prevent the transportation and spread of aquatic invasive species, aquatic macrophytes, and water.

Subd.8c.Inspector.
"Inspector" means: (1) an individual trained and authorized by the commissioner to inspect water-related equipment under section 84D.105, subdivision 2, paragraph (a); or (2) a conservation officer or a licensed peace officer.

Subd.18a. Water-related equipment.
"Water-related equipment" means a motor vehicle, boat, watercraft, dock, boat lift, raft, vessel, trailer, tool, implement, device, or any other associated equipment or container, including but not limited to portable bait containers, live wells, ballast tanks except for those vessels permitted under the Pollution Control Agency vessel discharge program, bilge areas, and water-hauling equipment that is capable of containing or transporting aquatic invasive species, aquatic macrophytes, or water.

M.S.84D.02 INVASIVE SPECIES MANAGEMENT PROGRAM FOR AQUATIC PLANTS AND WILD ANIMALS.

Subdivision 1. Establishment.
The commissioner shall establish a statewide program to prevent and curb the spread of invasive species of aquatic plants and wild animals. The program must provide for coordination among governmental entities and private organizations to the extent practicable. The commissioner shall seek available federal funding and grants for the program.

M.S.84D.10 WATERCRAFT REQUIREMENTS AND PROHIBITIONS.

Subdivision 1. Launching prohibited.
A person may not place or attempt to place into waters of the state water-related equipment, including aquatic plant harvesting or control equipment that has aquatic macrophytes, zebra mussels, or prohibited invasive species attached except as provided in this section.

Subd. 3. Removal and confinement.
(a)A conservation officer or other licensed peace officer may order:

(1) the removal of aquatic macrophytes or prohibited invasive species from water-related equipment, including decontamination using hot water or high pressure equipment when available on site, before the water-related equipment is transported or before it is placed into waters of the state;

(2) confinement of the water-related equipment at a mooring, dock, or other location until the water-related equipment is removed from the water;

(3) removal of water-related equipment from waters of the state to remove prohibited invasive species if the water has not been listed by the commissioner as being infested with that species;

(4) a prohibition on placing water-related equipment into waters of the state when the water-related equipment has aquatic macrophytes or prohibited invasive species attached in violation of subdivision 1 or when water has not been drained or the drain plug has not been removed in violation of subdivision 4; and

(5) decontamination of water-related equipment when available on site.

(b) An order for removal of prohibited invasive species under paragraph (a), clause (1), or decontamination of water-related equipment under paragraph (a), clause (5), may include tagging the water-related equipment and issuing a notice that specifies a time frame for completing the removal or decontamination and re-inspection of the water-related equipment.

(c) An inspector who is not a licensed peace officer may issue orders under paragraph (a), clauses (1), (3), (4), and (5).

Subd.4. Persons transporting water-related equipment.

(a) When leaving waters of the state a person must drain water-related equipment holding water and live wells and bilges by removing the drain plug before transporting the water-related equipment off the water access site or riparian property.

(b) 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 water-related equipment

(c) Emergency response vehicles and equipment may be transported on a public road with the drain plug or other similar device replaced only after all water has been drained from the equipment upon leaving the water body.

(d) Portable bait containers used by licensed aquatic farms, portable bait containers when fishing through the ice except on waters designated infested for viral hemorrhagic septicemia, and marine sanitary systems are exempt from this subdivision.

(e) A person must not dispose of bait in waters of the state.

(f) A boat lift, dock, swim raft, or associated equipment that has been removed from any water body may not be placed in another water body until a minimum of 21 days have passed.

M.S.84D.105 INSPECTION OF WATER-RELATED EQUIPMENT.

Subdivision 1. Compliance inspections.

Compliance with aquatic invasive species inspection requirements is an express condition of operating or transporting water-related equipment. An inspector may prohibit an individual from placing or operating water-related equipment in waters of the state if the individual refuses to allow an inspection of the individual's water-related equipment or refuses to remove and dispose of aquatic invasive species, aquatic macrophytes, and water.

Subd.2.Inspector authority.

(a)The commissioner shall train and authorize individuals to inspect water-related equipment for aquatic macrophytes, aquatic invasive species, and water. The commissioner may enter into a delegation agreement with a tribal or local government where inspection authority as provided under paragraphs (b), (g), and (h) is delegated to tribal and local governments that assume all legal, financial, and administrative responsibilities for inspection programs on some or all public waters within their jurisdiction.

(b)Inspectors may visually and tactilely inspect watercraft and water-related equipment to determine whether aquatic invasive species, aquatic macrophytes, or water is present. If a person transporting watercraft or water-related equipment refuses to take required corrective actions or fails to comply with an order under section 84D.10, subdivision 3, an inspector who is not a licensed peace officer shall refer the violation to a conservation officer or other licensed peace officer.

(c)In addition to paragraph (b), a conservation officer or other licensed peace officer may inspect any watercraft or water-related equipment that is stopped at a water access site, any other public location in the state, or a private location where the watercraft or water-related equipment is in plain view, if the officer determines there is reason to believe that aquatic invasive species, aquatic macrophytes, or water is present on the watercraft or water-related equipment.

(d)Conservation officers or other licensed peace officers may utilize check stations in locations, or in proximity to locations, where watercraft or other water-related equipment is placed into or removed from waters of the state. Any check stations shall be operated in a manner that minimizes delays to vehicles, equipment, and their occupants.

(e)Conservation officers or other licensed peace officers may order water-related equipment to be removed from a water body if the commissioner determines such action is needed to implement aquatic invasive species control measures

(f)The commissioner may require mandatory inspections of water-related equipment before a person places or removes water- related equipment into or out of a water body. Inspection stations may be located at or near public water accesses or in locations that allow for servicing multiple water bodies. The commissioner shall ensure that inspection stations:

(1) have adequate staffing to minimize delays to vehicles and their occupants;

(2)allow for reasonable travel times between public accesses and inspection stations if inspection is required before placing water-related equipment into a water body;

(3)are located so as not to cause traffic delays or public safety issues;

(4)have decontamination equipment available to bring water-related equipment into compliance; and

(5)do not reduce the capacity or hours of operation of public water accesses.

(g)The commissioner may authorize tribal and local governments that enter into a delegation agreement with the commissioner to

conduct mandatory inspections of water-related equipment at specified locations within a defined area before a person places or removes water-related equipment into or out of a water body. Tribal and local governments that are authorized to conduct inspections under this paragraph must:

(1) to the extent called for in the delegation agreement, assume legal, financial, and administrative responsibilities for implementing the mandatory inspections, alone or in agreement with other tribal or local governments;

(2) employ inspectors that have been trained and authorized by the commissioner;

(3) conduct inspections and decontamination measures in accordance with guidelines approved by the commissioner;

(4) have decontamination equipment available at inspection stations or identify alternative decontamination equipment locations within a reasonable distance of the inspection station that can bring water-related equipment into compliance;

(5) provide for inspection station locations that do not create traffic delays or public safety issues; and

(6) submit a plan approved by the commissioner according to paragraph (h).

(h) Plans required under paragraph (g) must address:

(1) no reduction in capacity or hours of operation of public accesses and fees that do not discourage or limit use;

(2) reasonable travel times between public accesses and inspection stations;

(3) adequate staffing to minimize wait times and provide adequate hours of operation at inspection stations and public accesses;

(4) adequate enforcement capacity;

(5) measures to address inspections of water-related equipment at public water accesses for commercial entities and private riparian land owners; and

(6) other elements as required by the commissioner to ensure statewide consistency, appropriate inspection and decontamination protocols, and protection of the state's resources, public safety, and access to public waters.

(i) A government unit authorized to conduct inspections under this subdivision must submit an annual report to the commissioner summarizing the results and issues related to implementing the inspection program.

(j) The commissioner may waive the plan requirement in paragraph (g) for inspection programs where authorized inspectors are placed directly at one or more water access sites, with no requirement for a person to travel from the water access for inspection or decontamination, and no local ordinance or other regulation requiring a mandatory inspection before placing watercraft or water-related equipment into a water body or after watercraft or water-related equipment are removed from a water body.

Section 11: Frequently Asked Questions and Scenarios

Q What if a watercraft has lots of zebra mussels, or it is impossible for the owner to bring it into compliance without help?

A1 **If they just arrived at the access:**

Although you do not have the legal authority to deny launch, state laws prohibit the launch a watercraft with zebra mussels attached; tell them why it is against the law and what is at stake. Remember it is also against the law to transport attached AIS on public roadways, therefore they have already broken the law. Provide them with a permit to transport their watercraft to a decontamination location. You should contact your local conservation officer or licensed peace officer regardless of if they choose to launch anyways or not as they were already in violation of state law, and this would be considered an egregious violation.

A2 **If leaving an access:**

Try to provide users with several options to comply with state law. Become familiar with your work area before you arrive at the access, including locations of decontamination units and lake service providers. Always explain the specific issues you have encountered.

- **Option 1:** Watercraft users can be provided a permit to transport their watercraft to a decontamination location.
- **Option 2:** If there is a lake service provider in the area who removes watercraft, you can provide their name to user.

Follow the protocols to complete the suspected AIS collection form if the body of water is not known to be infested with zebra mussels. Report this information to the regional watercraft inspection program supervisor, program assistant and/or invasive species specialist and contact law enforcement as needed.

Q What if a boat contains water?

A1 **If arriving at an access:**

If entering vessels arrive with small amounts of water, but have all drain plugs removed, they are allowed to launch if otherwise in compliance. It is highly recommended that the watercraft users remove any standing water with a towel or sponge prior to launch. Wake sport boats may have ballast tanks present. You can inform the watercraft user that they can verify there is no water present in the tanks by having them activate the ballast tank pumps, or if soft ballast tanks are installed, ask the owner to verify the tanks are empty. Talk to them about the risks residual water poses. Teach the watercraft user to pull away from the launch area and use the ballast tank pumps to empty out as much water as mechanically possible. Tell them this should be done every time they leave a body of water.

A2 **If leaving an access:**

All plugs need to be removed and water needs to be draining on exiting boats, according to law. Wake sport boats may have ballast tanks present. You can inform the watercraft user that they can verify there is no water present in the tanks by having them activate the ballast tank pumps, or if soft tanks are installed, ask the owner to verify that they are empty. Talk to them about the risks residual water poses.

Q What should I do if I see aquatic plants on a watercraft or trailer?

Explain why it is illegal to transport or launch a watercraft with any aquatic plants attached. Remember that duckweed is an exception to this law.

A1 **If they are arriving at the access:**
After educating the user, inform them it is against state law to launch until they have cleaned their equipment off.

A2 **If they are leaving the access:**
Inform the user the plants must be removed before transporting. If there are excessive plants, or if they are stuck in the rollers, tell the watercraft user they could try relaunching their watercraft before they leave to help clear some plant material away.

Q What if a watercraft with attached mussels is exiting a water body not known to be infested with zebra mussels?

A Become familiar with your work area before you arrive at the access, including any infested bodies of water, and what they're infested with. Most public launch sites will have signs showing any invasive species that are present, but the most reliable source of information is the "Infested Waters" list, located on the DNR website. If, to the best of your knowledge, the waterbody you are volunteering at is uninfested, explain to the user why there is an issue. Ask to take samples, utilizing the "Suspected AIS Collection" form located in section 12 of this manual. It will walk you through any information needed. Contact your regional watercraft inspection program supervisor.

Q Isn't the spread of zebra and quagga mussels inevitable anyway?

A No. States that have implemented education and inspection programs have significantly slowed or even stopped the spread of these species. Even if we only slow the spread of mussels, each year they are contained could save us tens to hundreds of millions of dollars of taxpayer money. Also, preventing the spread of zebra and quagga mussels will protect our waters, native wildlife and fish for that many more years while ongoing research develops tools to control these species.

Q Aren't zebra and quagga mussels actually good for fishing?

A No. They significantly impact many fish species by removing most of the nutrient base. Zebra and quagga mussels are filter feeders that eat small plankton which is the backbone of the aquatic food web. In some cases, game and commercial fish populations have declined after the introduction of zebra mussels.

Q Don't zebra and quagga mussels improve water quality?

A They increase water clarity, not necessarily water quality. They do clear the water significantly, but that is not necessarily a good thing. These mussels eat the good algae and leave behind problematic algae. Increased water clarity can also enable aquatic plant species to grow in more areas of a water body which, along with problematic algae, impacts water quality by causing taste and odor problems in drinking water.

Frequently Asked Questions and Scenarios Cont.

Q Isn't there anything that eats these mussels?

A These mussels are controlled by natural predators in their native environment, but so far no biological controls have been effective on this continent. Some ducks and fish do eat zebra mussels, but not in quantities that reduce zebra mussel populations. Some predatory fish from their native waters were introduced to the Great Lakes, but they did not control the zebra mussels there. In fact, these species had major negative impacts on other fish species such as smallmouth bass. The public should never introduce new fish predators.

Q Can zebra and quagga mussels be spread by birds?

A Research studies have shown that birds are not a significant factor in transferring these species to new watersheds. Most of the new locations where zebra and quagga mussels have been found are high-use boating areas. Moving watercraft and water-related equipment is the primary method of spreading these species in the U.S., and it is the one factor we can control.

Q Should I stop boating in Minnesota lakes and reservoirs infested with zebra or quagga mussels?

A No. You just need to take extra precautions to Clean and Drain your watercraft completely between infested waters and other places where you like to boat. If you properly follow the CLEAN-DRAIN-DISPOSE prevention steps, you can safely move your boat between waters. Additionally, drying watercraft and equipment for five days can reduce the risk of spreading AIS.

Q Are zebra and quagga mussels harmful to humans?

A Not directly. They do not present any direct health risks to humans when they are in a waterway. If there is a large population of mussels in a lake, then the shoreline can be littered with sharp shells.

Q Can you eat zebra and quagga mussels?

A No, you shouldn't. As the mussels filter in food and water, they accumulate heavy metals in their bodies. The high heavy metal content has been toxic to some birds that eat them. This means we can't harvest these mussels for human consumption in order to get rid of them.

Q How can I get educational materials to hand out to watercraft users or the public?

A You can go to the DNR website in the Aquatic invasive species page and click on outreach materials or go to this link **dnr.state.mn.us/invasives/ais/outreach.html**. You can also request a certain number of different publications to hand out for free. There are examples of the different publications also on this web page.

Section 12: Forms

DEPARTMENT OF NATURAL RESOURCES

MINNESOTA DEPARTMENT OF NATURAL RESOURCES
General Permit 2015-003

One-way Authorization to Transport Watercraft with Prohibited Invasive Species or Aquatic Plants attached for Cleaning or Storage
(Minnesota Statutes 84D.05 Subd. 1(5) and 84D.11 Subd. 2d)

Eligible Permittees: Watercraft owners transporting their watercraft with prohibited invasive species and/or aquatic plants attached for cleaning or storage purposes. This permit applies only to individuals transporting equipment as part of a non-commercial activity; individuals or businesses who provide such services for hire or as a benefit of membership in an organization may be required to have a lake service provider permit (see **www.dnr.state.mn.us/lsp/index.html** for more information).

Scope: This general permit authorizes watercraft owners to transport their watercraft with prohibited invasive species attached to a repair or winter storage location where the prohibited invasive species will be removed and disposed. This general permit is valid only for one-way transport on one day.

Conditions: The watercraft owner must take the following measures to prevent the spread of aquatic invasive species during transport and disposal activities covered under this permit:

- remove as many aquatic plants as you can from the watercraft before transport;
- drain all water from the watercraft before transport (Minnesota Statutes 84D Subd. 4(a));
- transport the watercraft directly from the departure address to the destination address; and
- ensure that prohibited invasive species are disposed of in the trash or in a location at least 300 feet from riparian areas, ditches or seasonally flooded lands.

Instructions: The watercraft owner must complete and sign this permit. The watercraft owner must carry the completed and signed form while transporting watercraft with attached prohibited invasive species to the repair or storage location.

Watercraft owner's name: _____

Watercraft license number (if applicable): _____Transportation date: _____

Departure address (or water access name): _____

Destination address: _____

I have read and agree to follow the above permit conditions.

Signature of the Watercraft Owner: _____Date: _____

Rev. 3/1/18

DEPARTMENT OF NATURAL RESOURCES

MINNESOTA DEPARTMENT OF NATURAL RESOURCES
General Permit 2015-004

One-way Authorization to Transport Boat Lifts, Docks, or Other Water-Related Equipment with Prohibited Invasive Species or Aquatic Plants Attached for Repair, Storage or Cleaning (Minnesota Statutes 84D.05 Subd. 1(5) and 84D.11 Subd. 2d)

Eligible Permittees: Owners of equipment such as boat lifts, docks or swim rafts transporting their equipment with prohibited invasive species and/or aquatic plants attached. This permit applies only to individuals transporting equipment as part of a non-commercial activity; individuals or businesses who provide such services for hire or as a benefit of membership in an organization may be required to have a lake service provider permit (see **www.dnr.state.mn.us/lsp/index.html** for more information).

Scope: This general permit authorizes equipment owners to transport a boat lift, dock, swim raft or other related equipment, which has prohibited invasive species attached, to a repair or winter storage location where zebra mussels or other prohibited invasive species will be removed and disposed. This general permit is valid only for one-way transport on one day.

Conditions: The equipment owner must take the following measures to prevent the spread of aquatic invasive species during transport and disposal activities covered under this permit:

- remove as many aquatic plants as you can from the equipment before transport;
- drain all water from the boat lift, dock, swim raft or other equipment before transport (Minnesota Statutes 84D.10 Subd. 4(a));
- transport the boat lift, dock, swim raft or other equipment directly from the departure address to the destination address;
- at the destination location, ensure that prohibited invasive species are disposed of in the trash or in a location at least 300 feet from riparian areas, ditches or seasonally flooded lands; and
- leave the boat lift, dock, swim raft, or related equipment out of the water for 21 days before placing it in a different water body (Minnesota Statutes 84D Subd. 4(f)).

Instructions: The equipment owner must complete and sign this permit. The equipment owner must carry the completed and signed form while transporting equipment with attached prohibited invasive species to the repair or storage location.

Equipment owner's name: _____

Watercraft license number (if applicable): _____ Transportation date: _____

Departure address (from where boat lift, dock, swim raft, or other water-related equipment will be transported):

_____

Destination location (where removal of prohibited invasive species will occur): _____

_____

I have read and agree to follow the above permit conditions.

Signature of the Equipment Owner: _____ Date: _____

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DEPARTMENT OF NATURAL RESOURCES

SUSPECTED AIS COLLECTION FORM

Collector's Name: _____

Vehicle License (not required for citizen reports): _____Organization: _____

Lake Name and Access: _____

Collector's Phone Number: _____ Collector's Email: _____

Date of Collection/Report: ____/ ___ / ___Time of Collection/Report: _____

Reason for Collection (check all that apply):

☐ Visual ID of AIS ☐ Plants on Boat/Trailer
☐ Bumps on Boat/Trailer ☐ Unidentifiable Organic Material

Location of Suspected AIS Prior to Collection:

☐ Watercraft Hull ☐ Motor ☐ Live Well
☐ Anchor ☐ Bilge ☐ Watercraft Interior
☐ In Lake/Reservoir ☐ Other:

Citizen Report Information:

Reporter's Name: _____

Reporter's Phone Number: _____Reporter's E-mail: _____

Suspected Species: _____

Location species seen (be as specific as possible):

Does the reporter have photos? Yes No If yes, email them to: WIP.DNR@state.mn.us

Date Delivered: ____/ ___ / ____

Do Not Write for Lab Use Only

Date received at DNR Office: ____/ ___ / ____

Specimen ID: Date identified: ____/ ___ / ____

Technician: _____ Further analysis needed: _____

Collector contacted with results: _____

COLLECTING SAMPLES

Take a sample for identification and/or law enforcement if:

- You think you have found an aquatic invasive species attached to a watercraft or water-related equipment coming out of a water body which is not known to be in that water.
- You have found a prohibited invasive species on a watercraft or water-related equipment entering a water access.

Steps to follow:
Put sample in a plastic bag and keep it in a cool place (a cooler in your car or refrigerator at home). Call your supervisor and he/she will, if possible, pick it up and bring it in to the office to be identified.

Note the following information on the plastic bag:

1. Date
2. Water body
3. Describe where it was found (e.g., on a boat, on a trailer, growing in a water body, caught by a fisherman caught on his line, etc.).
4. Before removing from a boat or equipment, be sure to take photos. Then get vehicle and boat license numbers, and description of boat and boater. If possible, get the name of the vehicle driver.

Samples for education:
When at zebra mussel waters, if you find native mussels, or anything interesting (like a shoe, anchor rope, fishing equipment) with attached ZM, keep it and turn it into your supervisor ASAP. Your supervisor will then bring it into the office to be preserved for a educational specimen. You should have a copy of the DNR Prohibited Invasive Species Permit issued for Invasive Species Program Staff to transport the species for educational purposes.

Citizen report of new infestation:
Collect contact information for the citizen reporting the infestation; ask if the reporter has photographs and e-mail them to wip.dnr@state.mn.us. When collecting location information be as specific as possible: GPS info, location on a map, address of property nearby, color of cabin or dock nearby, etc. Submit this completed form to your supervisor immediately, and e-mail information to: wip.dnr@state.mn.us

Glossary

Many terms pulled from:

Brown, Elizabeth M., editor. Watercraft Inspection and Decontamination (WID) Manual. Pacific States Marine Fisheries Commission, Portland, OR. 2021. 138 pp.

Aft: A nautical term that refers to the rear or stern of the boat.

Anchor: A heavy object attached to a line and used to moor a vessel to the bottom of the water body.

Anchor Line: A device that connects the anchor to the boat. This could be a rope, chain, or other type of tether.

Anchor Storage: An interior compartment area on the boat, typically in the bow of the boat, where the anchor is stored.

Anti-Cavitation Plate: A flat metal fitting mounted horizontally above the propeller of an outboard motor, which helps direct the flow of water into the propeller and reduces cavitation. Cavitation is the effect caused when air is drawn down into the water by a propeller, resulting in loss of power, overspending of the engine and propeller, and pitting of the metal surfaces of the propeller.

Aquatic Invasive Species (AIS): Aquatic Invasive Species means a nonindigenous species, including their seeds, eggs, spores, larvae, or other biological material capable of propagation, that threatens the diversity or abundance of native species or the ecological stability of infested waters, or commercial, agricultural, aquacultural or recreational activities dependent on such waters.

Bait: Food that is used to entice fish or other animals as prey.

Bait Well: An interior compartment that specifically holds live aquatic bait. Sometimes it is a separate container on the boat or incorporated in the live well compartment.

Ballast Tank (hard or soft): A compartment within a boat, ship or other floating structure that holds water. Adding water (ballast) to a vessel lowers its center of gravity and increases the draft of the vessel. A ballast tank can be filled or emptied to adjust the amount of ballast force.

Bilge: The lowest compartment on a boat where the two sides meet at the keel. The word is sometimes also used to describe the water that collects in this compartment. Water that does not drain off the side of the deck drains down through the boat into the bilge.

Bilge Plug or Drian Plug: A plug located either on the transom wall or in the bottom of the hull that keeps lake water from entering the boat. It must be removed when exiting the water body.

Bilge Pump: A water pump used to remove excessive bilge water. The water that collects in the bilge must be pumped out to prevent the bilge from becoming too full and threatening to sink the boat on the lake or reservoir.

Bow: A nautical term that refers to the forward part of the hull of a boat.

Burner on/off switch: This switch on a decontamination unit activates the burner to heat the water.

Byssal threads: A spider-web like appendage that enables the zebra or quagga mussels to attach to surfaces. Native species do not have byssal threads.

Centerboard: A retractable keel which pivots out of a slot in the hull of a sailboat that is used to provide lift to counter the lateral force from the sails.

Choke: A device on some decontamination units that must be pulled out prior to turning the key to start the engine and pushed in immediately after starting the unit.

Clean: A watercraft, trailer or equipment that does not show visible AIS or attached vegetation, dirt, debris, surface deposits, or non-verifiable water. This includes mussel shells or other biological materials and is inclusive of dirt or other residue that could mask the presence of attached mussels or AIS.

Control: To mitigate against the effects of AIS through reductions in the species population size.

Daggerboard: A retractable keel used by various sailing craft which slides in a casing converting the forward motion into a windward lift, countering the leeward push of the sail.

Decontamination: A process used to kill, destroy, or remove aquatic invasive species and other organic material that may be present in or on a conveyance, to the extent technically and measurably possible.

Decontaminator or Level 2: An individual that is certified to perform watercraft inspection and decontamination for AIS.

Detection: The verified presence of AIS.

Diffuser: This is a decontamination unit attachment that connects directly to the spray gun and is used to provide low pressure hot water for rinsing or flushing with a rubber tip to prevent scratching surfaces.

Drain: To the extent practical, all water drained from any live-well, bait-well, storage compartment, bilge area, engine compartment, deck, ballast tank, water storage and delivery system, cooler or other water storage area on the watercraft, trailer, engine, or equipment.

Drain Plug: see bilge plug

Dreissenids: Dreissenids are the common term associated with the family Dreissenidae which are small freshwater mussels who attach themselves to hard surfaces using byssal threads. Two invasive dreissenid species of interest in North America are the quagga (Dreissena rostriformis bugensis) and the zebra mussel (Dreissena polymorpha).

Dry: No standing water; opposite of wet. A watercraft is completely dry if there is no detectable water on the exterior or interior surfaces of the watercraft, and no dampness can be felt on the interior of the watercraft.

Entering Inspection: See Incoming inspection

Exit Inspection: This is the complete inspection that is performed on watercraft exiting the lake or river. This procedure includes a visual and tactile inspection of all portions of the watercraft, accessories, and trailer that came into contact with water. Verify that the boater has followed the proper procedures to clean off the watercraft and completely drain all compartments prior to leaving.

Exotic: An exotic species is a species that is not native to a given environment that often causes environmental and economic harm.

Fake-a-Lake: This decontamination unit attachment is used for decontaminating inboard engines and ballast tanks. It has a telescoping leg, and the hose attachment threads into the connection on the "plunger," joining the fake-a-lake to the hose to the wand.

Fender: Cushions that prevent a boat from being damaged by rubbing against a dock, or other watercraft. May also be referred to as bumpers.

Full Decontamination: A decontamination procedure that is applied to watercraft with attached zebra mussels, or other suspected AIS. Flush engine with hot water, and flush internal compartments and equipment that may have come in contact with water. Apply a hot water rinse of the hull and use of high pressure to remove attached mussels or other AIS. Physical removal of adult mussels or suspect mussels/AIS.

Gimbal: A pivoted support that allows the rotation (up and down and side to side movement) of the outdrive of an I/O engine and outboard motor.

Hose: This 6-foot hose has a quick connect fitting that connects to the end of the wand. The other end threads into the fake-a-lake or muff attachments needed for a decontamination.

Hull: The body or frame of a boat.

Inboard Engine: A marine propulsion system that is enclosed within the hull of the boat. These have a raw water-cooling system where water from the reservoir is pumped by the engine to cool it. Attached to the hull of the boat is the propeller shaft and propeller which propels the boat through the water. The rudder acts as the "steering wheel" to guide the boat.

Incoming or Entering inspection: This is the complete inspection that is performed on watercraft entering the lake or river. This procedure includes a visual and tactile inspection of all portions of the watercraft and trailer that could come into contact with water.

Infested Water: A water that has an established (recruiting or reproducing) population of AIS.

Inspection: A process to determine whether watercraft or water-related equipment is harboring any organisms or organic materials that may present a risk of spreading AIS risk by physically and visually examining it following the protocols and procedures.

Inspector or level 1: An individual that is authorized to perform watercraft inspection for AIS.

Invasive Species: Invasive species means, with regard to a particular ecosystem, a non-native organisms whose introduction causes or is likely to cause economic or environmental harm, or harm to human, animal, or plant health.

Jet Boat: A boat propelled by a jet of water ejected from the back of the craft. A jet boat draws the water from under the boat into a pump inside the boat. The water then passes through a series of impellers and stators known as stages which increase the velocity of the water flow. The water is then expelled through a nozzle at the stern. Most modern jets are single stage while older waterjets may have as many as three stages. The tail section of the waterjet unit extends out through the transom of the hull above the waterline. This jet stream exits through a small nozzle at high velocity to push the boat forward.

Keel: Runs in the middle of the boat, from the bow to the stern, and serves as the foundation or spine of the structure, providing the major source of structural strength of the hull, which may be fixed or retractable to allow sailing in shallow waters.

Larval: The larvae or initial life free-floating planktonic life stage of a zebra or quagga mussel (and some other molluscs including Corbicula), also called a veliger.

Live Well: An interior compartment found on many boats that is used to keep caught fish alive. It works by pumping fresh water from the water body into the tank, as well as keeping the water aerated.

Live Well Pump: A pump that assists in filling a live well with lake water.

Lower Unit: The bottom portion of an outboard motor or an inboard/outboard engine. The water found in this portion is lake water that has not been heated by the motor/engine.

Macrophyte: An aquatic plant, large enough to be seen by the naked eye.

Microscopic: Too small to be seen by the unaided eye but large enough to be studied under a microscope.

Muffs: Muffs are used to decontaminate the lower unit of an outboard motor or inboard/outboard engine.

Non-Motorized, Hand-Launched Boats: These boats are not launched from trailers, and they do not have engines or motors. They may or may not have compartments or containers that hold water.

Non-Native: A species that has been introduced to a new environment, either intentionally or unintentionally outside of its native range.

Off-Water WID Stations or Locations: WID stations that are not located at a water body (e.g. highways, ports of entry, offices or business locations).

Outboard Motor: A propulsion system for boats, consisting of a self-contained unit that includes engine, gearbox, and propeller. It is designed to be affixed to the outside of the transom and is the most common motorized method of propelling small watercraft. As well as providing propulsion, outboards provide steering control, as they are designed to pivot over the gimbal (mounting bracket) and control the direction of the thrust. The skeg also acts as a rudder when the engine is not running.

Personal Watercraft (PWC): A recreational watercraft that the user sits or stands on, rather than inside of, as in a boat. Models have an inboard engine driving a jet pump that has a screw-shaped impeller to create thrust for propulsion and steering.

Phytoplankton: Plankton consisting of microscopic plants in water.

Pitot Tube: A pressure measurement instrument used to measure the velocity of a boat at a given point and is usually attached to the transom.

Plankton: Passively floating, drifting, or somewhat motile organisms occurring in a body of water, primarily comprising microscopic algae and protozoa, which are often the bottom of the food chain.

Plankton Tow: A cylindrical net with a fine mesh is dropped into a body of water to capture any plankton, veligers, or other organisms in the net, where it can then be analyzed in a lab.

Plant Decontamination: Apply hot water as defined in WID Manual to kill plants that can't be physically removed by hand during inspection.

Port: A nautical term that refers to the left side of the boat as perceived by a person who is in the boat facing the bow.

Prevention: To stop or attempt to stop the introduction of an AIS.

Prop Shaft: The propeller shaft knows by many different names, such as drive shaft, prop shaft, or driveline, and is a component of the drive train, with the purpose of delivering torque from the transmission to the differential, which then transmits this torque in order to move the vehicle.

Quick Connect Fitting: This decontamination unit fitting comes in two parts: (1) the part that is attached to the end of the wand has to have the external circle pressed down before the other portion of the fitting can be inserted; and (2) the external circle then must click in place to make a proper connection.

Rudder; A device used to steer a boat when moving through water which operates by redirecting water that has passed the hull, imparting a turning motion to the craft.

Sailboat: A boat propelled partially or wholly by sail.

Sea Strainer: A filtration device used to prevent solids from reaching internal compartments, such as pumps on engines or ballast tanks.

Settlers: The juvenile stage of Dressenids and some other molluscs that follows the veliger or larval stage and is before the adult stage. As a veliger grows out of the veliger or larval stage, it undergoes a metamorphosis and begins to grow a shell and will settle onto a semi-hard or hard surface to finish developing into an adult. At this stage, the settlers will feel like sandpaper or grit on a boat.

Skeg: A support at the bottom of a rudder.

Spray Gun with Trigger: The spray gun is the controlling mechanism to deploy water out of the decontamination unit. The hose, wand, or diffuser attachment thread directly onto the gun.

Standing Water Decontamination: Hot water flush, rinse, or spray as defined in WID Manual of the exterior or internal compartments that can hold water.

Starboard: A nautical term that refers to the right side of the boat as perceived by a person who is in the boat facing the bow.

Stern: The rear or aft-most part of a boat.

Sterndrive (or Inboard/Outboard (I/O) Engine): A sterndrive is located inboard just forward of the transom (stern) and provides power to the drive unit located outside the hull. The drive unit (or lower unit or outdrive) resembles the bottom half of an outboard motor.

Substrate: 1.) A device used to monitor for the settler stage of zebra or quagga mussels, typically consisting of a black, rough PVC pipe suspended in the water body between a buoy at the surface and a weight at the bottom. 2.) The bottom of the water body, where organisms live the benthos or benthic area.

Thermometer: A device to measure temperature which is essential to the decontamination process and should be used before, during, and after decontamination.

Thermostat: A device that allows the water temperature to be adjusted so that different decontamination temperature protocols and procedures can be adhered to.

Through Hull Fitting: A device that's secured to and creates an opening through the hull, to which a pipe or duct can be attached, allowing the passage of water or gas into or out from the boat.

Trailer: A vehicle that is towed which is designed to launch, retrieve, carry and sometimes store boats. The boat may sit on rollers or carpet depending on the type of trailer.

Trainer: An individual who is certified to train others in watercraft inspection and decontamination for AIS.

Transom Well: Recessed area where water collects that is formed by the transom.

Unverifiable Water: Water that is found within compartments that cannot be visually seen or physically inspected, such as in wells, ballast, bilge, or engines.

Veliger: The initial life stage which is the free-floating larval form of a dreissenid mussel and some other mollusks.

Verifiable Water: Water that is found within compartments that you can see, feel, and physically inspect, such as in wells, or storage areas.

Zooplankton: Plankton consisting of microscopic animals in water.

Notes

DEPARTMENT OF NATURAL RESOURCES

AQUATIC INVASIVE SPECIES AND THE VOLUNTEER PROGRAM

500 Lafayette Road, St. Paul, MN 55155-4025
888-646-6367 or 651-296-6157

mndnr.gov