



WATERCRAFT

INSPECTION MANUAL

mi DEPARTMENT OF
NATURAL RESOURCES

AQUATIC INVASIVE SPECIES AND THE WATERCRAFT INSPECTION PROGRAM

What is the purpose of this Aquatic Invasive Species (AIS) Watercraft Inspection Manual?

This manual outlines standard watercraft inspection and decontamination procedures and protocols to prevent the spread of aquatic invasive species in Minnesota by Authorized Inspectors. The procedures and protocols in this manual apply to trailered watercraft and water-related equipment of any kind.

Who should use this manual?
DNR staff and government unit staff trained annually by the Department of Natural Resources.

Watercraft Inspection Manual developed by:

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Spiny waterfleas attached to fishing line. Photo credit: © Jeff Gunderson, Minnesota Sea Grant

Section 1: Introduction

Aquatic Invasive Species and the Watercraft Inspection Program

What are Aquatic Invasive Species (AIS)?

According to 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 introduced non-native species of plants that have adapted to living in, on, or next to water, and that can grow either submerged or partially submerged in water. Invasive aquatic animals require a watery

habitat, but do not necessarily have to live entirely in water. Aquatic invasive 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 doesn't have those natural checks and they have other strong survival attributes, these plants and animals have an advantage over native species, making them very difficult to control.

Purpose and History of the Watercraft Inspection Program

The goal of the program is to prevent the spread of invasive species in Minnesota through watercraft user education, watercraft inspections, and watercraft decontaminations at water accesses.

The Watercraft Inspection Program was created in 1992 in response to legislation proposed by the DNR, MN Lakes Association, and angling groups. In 2011, legislation aimed at strengthening Minnesota's ability to prevent the spread of AIS was signed into law. As a result of this legislation, the DNR can give watercraft inspectors new authority. With these new authorities, inspectors and any licensed peace officer, can do visual and tactile inspections of water-related equipment.

Minnesota statute 84D.01 Subd. 8c defines "inspector" as an:

1. individual trained and authorized by the commissioner to inspect water-related equipment; or
2. conservation officer or licensed peace officer.

Minnesota statute 84D.01 Subd. 8b defines "inspect" as:

1. examine water-related equipment to determine whether aquatic invasive species, aquatic plants, or water is present
2. and includes removal, drainage, decontamination, or treatment to prevent the transportation and spread of aquatic invasive species, aquatic plants, and water.

An Introduction to Watercraft Inspection: Your Role as an Inspector

Your role as a watercraft inspector is to educate watercraft users about the impacts of AIS and how to thoroughly inspect their watercraft. You play a key role in changing the behavior of watercraft users by helping to create new behaviors of checking for AIS each and every time they enter and leave a water access. An inspector will not be present for every watercraft launched in the state, so it's important that everyone learns the proper steps from you. A majority of 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.

Priorities for Watercraft Inspections

As a watercraft inspector, it is your responsibility to:

- **Ensure personal and public safety**
Your safety and the safety of the public is your top priority at all times. Many vehicles and boats will be moving around the inspection area. People will be looking under trailers and all around watercraft.

SAFETY MESSAGE: Make every effort to ensure the safety of all involved during the inspection process.

- **Educate the public**
Every contact you make with the public must educate them about the importance of preventing the spread of aquatic invasive species. Explain what watercraft users need to do each time they use their watercraft, regardless of what waters they are leaving. Inspectors and watercraft users should look for the following:
 1. plants
 2. invasive animals
 3. water
 4. mud



Impress upon them that they have a lot to lose if they do not assist in this effort, both in terms of recreational opportunities (fishing and swimming) and penalties for violating state laws. The educational message is:



CLEAN-DRAIN-DISPOSE

Clean aquatic plants and prohibited invasive species from watercraft.

Drain water from all equipment and keep drain plugs out during transport.

Dispose of unwanted bait in the trash.

Recommended additional actions:

Decontaminate: Rinse with hot water at 120°F for 2 minutes or 140°F for 10 seconds. If needed, spray with high pressure to remove attached invasive species.

- **Perform watercraft inspections**

Occasionally you will be inspecting a large number of watercraft quickly in order to avoid traffic build-ups and watercraft user frustration at the inspection site.

While doing this, you must ensure that you perform inspections the same way each time and are thorough enough to assess the risk of watercraft and all water-related equipment. There is a wide range of risks associated with different types of watercraft and water-related equipment. (See table on page 14.)

- **Support decontamination**

While conducting inspections it will be your job to determine if a watercraft requires decontamination. “Decontaminate” means to wash, drain, dry, or thermally or otherwise treat water-related equipment in order to remove or destroy aquatic invasive species. (See page 28 for detailed information.)

- **If needed, contact enforcement**

In some instances, such as when a watercraft user has launched against your recommendation, you should request the assistance of law enforcement personnel to assist with the situation. Reach out to your supervisor to determine what law enforcement agency to contact in non-emergency situations.

Section 2: Watercraft Types and Terminology

You will encounter many watercraft types in the field, but the survey you will use only has a limited number of options. This section will teach you about the most common types of watercraft you will encounter.



Fishing Boat

This watercraft type will have livewells or baitwells inside. They are “V” hulled and usually have an outboard motor.



Runabout

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



Pontoon

Typically, a flat decked vessel that floats and balances by means of two or three large, closed cylinders that are mounted lengthwise.

Note: plugs should not be removed from the cylinders, and some may have portable hydraulic lift systems installed below the deck.



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 has attached storage racks for wakeboards or water skis. These watercraft contain at least one hard or soft tank located underneath the deck which hold large amounts of water. Wakesport boats often have a series of thru-hull fittings along the hull that discharge ballast water.



Personal Watercraft (PWC)

This watercraft type has an inboard jet engine. Most are designed for two or three people, but new models can hold up to four. Stand-up PWCs were first to see mass production and are popular for single riders. Some new models that are targeted towards fishing may have livewells or baitwells.



Jon Boat

This watercraft type will have a flat bottom. Often times they are a drab color, like olive green. Jon boats are simple boats that typically have few internal compartments, if any. Mainly used for fishing and duck hunting as the flat and shallow hull of the boat allows the users to navigate shallow waters.



Cabin Cruiser

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

Photo credit: Skipp LaJoy



Sailboat

Watercraft likely to have a keel or keel box, mast, sail, more rounded hull, rudder, and possibly ballast tanks, or mechanical bailers.



Canoe

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



Kayak or Similar

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



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.



LSP Transport Barge or Pontoon

Lake Service Providers will use a flat-topped boat to transport docks and lifts across 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.

Engine Types



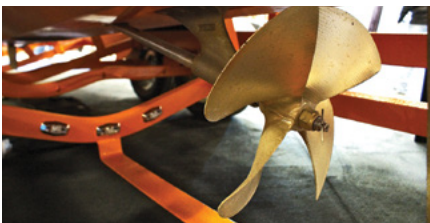
Outboard motor

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



Sterndrive motor; also known as inboard-outboard (I/O)

The engine is located inside the watercraft and provides power to the lower unit located on the outside of the transom.



Inboard motor

The engine block is located inside the watercraft and the drive shaft and propeller is under the hull of the watercraft.



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.

Interior Compartments



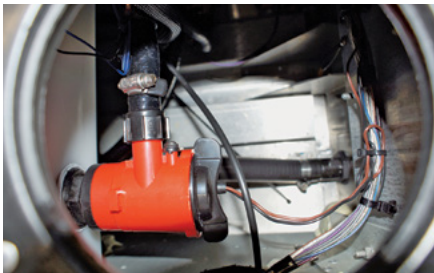
Livewell

Used to keep fish alive while on the water body. Likely to be plastic lined storage areas with a drain plug.



Baitwell

Very similar to a livewell but used mainly for bait. It can be a round container that is removable in a sperate well to the livewell. It can also be part of the livewell that is sectioned off to separate the two different wells.



Bilge

Normally in the back of the watercraft, at the lowest point under the deck or flooring of the watercraft. There is usually a compartment that can be opened to view this area. There generally is a pump to discharge water from this area to keep the watercraft from sinking.



Storage

There are a couple different types of interior storage. Some compartments are lined with plastic to keep stored items dry while others might be carpet lined or have no lining at all.



Ballast tanks

Found on wakesport boats. Ballast tanks hold water to make the watercraft heavier, which creates a larger wake. Ballast tanks can either be soft and stored in an interior compartment, like pictured here, or can be hard tanks that are built into the bilge area of the watercraft.

Equipment



Anchor

Heavy weight attached to a line; used to hold boat in place.



Bait bucket

Bucket or other container used to hold water in order to keep minnows or leeches alive while fishing. Typically made from plastic and yellow in color, these devices have a hinged door to prevent the escape of the angler's bait while fishing.



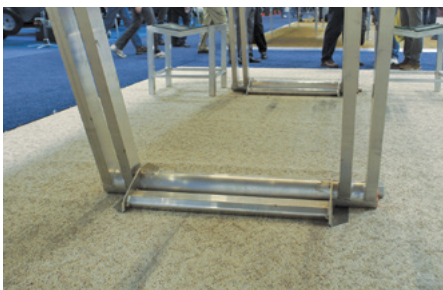
Bait cooler

A specialized insulated container designed to keep live bait healthy and active for extended periods. Some coolers will have a removable basket or netting, so bait can be easily removed from the cooler.



Downrigger

A device used while fishing with the trolling method. A downrigger consists of a pole with a weight connected to a steel cable 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.



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 caution when inspecting. Portable hydraulic pontoon lifts are not included in the 21-day dry law for boat lifts.

Equipment continued



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 to anchor the watercraft in place. Used primarily by bass fishermen.



Transducer

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

Watercraft Terms



Intake grate

Jet engines like those on personal watercraft have an intake grate that allows for water to pass through the engine with the use of an impeller to expel the water at a higher rate to propel the watercraft.

Watercraft Terms continued



Cold water intake

Also known as the freshwater intake or engine intake. This area is under the water when the motor is in operation and will intake fresh water to cool the engine down. Each engine type has a slightly different looking intake and the location will vary.



Bilge plug

The bilge plug, also called the drain plug, is used to drain water that has collected in a watercraft's lowest spaces such as the hull and bilge area. Generally, the bilge plug is located on the transom but can also be located on the bottom of the hull.



Gimbal area

Attaches to the transom providing pivoted support to move the lower unit up and down and side to side on sterndrive watercraft.



Transom

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



Trim tabs

Shelf-like surfaces that are connected to either side of the transom on the watercraft. They are hydraulically powered and are used to level the vessel laterally while traveling through the water.



Section 3: Watercraft Inspection Protocols/Procedures

Watercraft Inspector Authorities

- Inspectors are required to pass annual training by a DNR appointed trainer to maintain inspection authority.
 - This authority can be removed at any time, for any reason.
- Compliance with inspections is a requirement of all watercraft users who operate or transport water-related equipment.
 - Watercraft users are required to submit to an inspection, but are not required to answer any survey questions.
- Inspectors inspect water-related equipment to determine if plants, invasive animals, mud, or water is present.
 - If any of these are found, educate the watercraft user on how to bring the watercraft into to compliance.
- Inspectors are authorized to look at and touch water-related equipment during an inspection, but do not enter watercraft unless they have received permission from the user. Very few inspections require entering a watercraft, and many tasks can be performed with the assistance of the watercraft user.

Water-related equipment includes boats, watercraft, docks, boat lifts, rafts, trailers, and other associated equipment. See page 54 for the complete definition.



Watercraft Inspector Authorities continued...

- Inspectors have authority to inspect internal compartments (e.g. livewells) and should ask the watercraft owner to open internal compartments to verify compliance. Explain to the watercraft user that you are looking for the presence of water, mud, or AIS.
- Inspectors have authority to deny launch under certain circumstances.

Reasons to Deny Launch

Inspectors should only deny launch as a last resort. When denying a watercraft from launching at an access, do not physically stop any user from launching. Safety of the inspector and access users is always the first priority. Inspectors are encouraged to contact law enforcement if the situation escalates. The following is a list of reasons to deny launch:

- A watercraft has plants or invasive animals attached and the watercraft cannot be completely cleaned at the access prior to launching.
- The boat arrived with the drain plug “in”, and water is found in that compartment. The inspector should follow up with the watercraft user and have them drain any water at a location away from the ramp, or provide a sponge to remove any water. Launch is allowed after a re-inspection of the watercraft by the inspector.
- The inspector detects the presence of a livewell, baitwell, or other compartment that may contain water, and the user refuses to demonstrate that the area has been properly drained.
- A watercraft user declines a required part of the inspection process. If this occurs, explain that a visual and tactile inspection is required before they can launch, submitting to an inspection is the quickest way for them to continue on to the water. If needed, inform them that they are not required to answer the survey questions.

Type of Water-Related Equipment	Risk Level
<ul style="list-style-type: none"> • Moored boats, boat lifts, docks, weed harvester 	<p>High Risk Possible adult mussels attached</p>
<ul style="list-style-type: none"> • Ski and wakesport boats with ballast tanks • Sailboats with ballast tanks • Fishing boats with livewells 	<p>Medium to High Risk Veligers of zebra mussels in water, plants, and plants with attached zebra mussels or other aquatic animals</p>
<ul style="list-style-type: none"> • Smaller, day-use, open boats with outboard motors (no livewells or ballast tanks) • Personal watercraft (PWC, Jet Skis) 	<p>Medium Risk Plants and plants with aquatic animals attached. Zebra mussel adults and veligers unlikely</p>
<ul style="list-style-type: none"> • Hand-launched craft: canoes, kayaks, paddle boards, and inflatables 	<p>Low Risk Educate and inspect if workload permits, if dirty from being moored may be risky</p>

Setting Up at the Access

Ideally, watercraft inspections, draining, and decontamination should be located in the same general area. There should be clear control points so that boats can be prevented from launching or leaving until they have been through the inspection and/or decontamination process. When arriving at an access, an authorized inspector will do the following:

1. Locate a safe and legal place to park.
2. Determine where your inspection station will be (these may be pre-assigned).
 - a. Public water access inspection sites should be set up near the launch area. Choose a safe location that avoids traffic congestion.
3. Post the banner, board, or other temporary signage marking the inspection station.
4. Finish setting up your equipment (tablet, chair, or other items).

Speaking with Watercraft Users: Initiating Contact and Starting the Inspection

As you approach the vehicle, begin entering inspection information into your hand-held device. Be sure to enter the correct case number for the access you are working. Detailed information on survey completion is listed on page 34.

As the vehicle approaches wait for them to stop. Greet the watercraft user, identify yourself and the organization you work for, and let them know what you're doing. If the watercraft user stops in a location at the access other than your preferred location, they are not in violation. Walk to the vehicle to perform the inspection where they have stopped if it is in a safe place to do so. Otherwise ask them to move to a safer location.

SAFETY MESSAGE: Ask the driver to place the vehicle in park and encourage them to set the parking brake. This is to prevent boats or trailers from rolling as you and the watercraft user look under and behind the watercraft.

Remember that a primary goal is education, so ask the watercraft user to assist you with the inspection process.

Speaking with the public can be intimidating. Having a script and preparing a message can help you feel comfortable when speaking with watercraft users and will help guide you through the inspection process.

Each inspector will develop their own style of talking with watercraft users, but each inspection should include the following points:

1. Greet all watercraft users in a friendly and professional manner.
2. Introduce yourself, identify your organization, and let them know what you're doing. Example: "Hi, I'm _(name)_ with the _(organization)___Watercraft Inspection Program, and I'm out here today educating watercraft users and performing inspections for aquatic invasive species, plants, and water as required by state law. Our purpose for being out here is to prevent aquatic invasive species from spreading, and to educate watercraft users how to conduct a thorough inspection."
3. Ask them to join you in an inspection of their watercraft and equipment. Be sure to teach them tips on how to conduct their own inspection throughout the process.
4. During the inspection ask the appropriate questions within the DNR survey. If they are reluctant to answer your questions continue on with your inspection as normal. Watercraft users are not required to answer any survey questions. Don't take it personally. It may be helpful to explain why you are asking questions to help put them at ease. Detailed information about the survey questions starts on page 34.
5. During the inspection continue to talk about AIS prevention and point out the various places to look.
6. Give them your final message, ("Remember Clean/Drain/Dispose") and thank them for their time.

Watercraft Inspection Checklist

- Always wear your identifying uniform.
- Be courteous, professional, and friendly at all times.
- Always introduce yourself and your organization.
- Conduct the watercraft inspection with the assistance of the watercraft user(s).
- Tell the watercraft user about AIS prevention, relevant laws, and the inspection process. Education is paramount!
- Share the primary education message, Clean/Drain/Dispose, and explain that it is important to always arrive and leave with their watercraft and gear cleaned and drained.

When Speaking with Watercraft Users:

- Focus on teaching them about our inspection process. You will be recording observational data which will be evaluated at the end of the season, but don't let the survey be the main focus.
- Stay professional at all times.
- 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 inspections in a timely manner. We don't want to delay watercraft users unnecessarily.

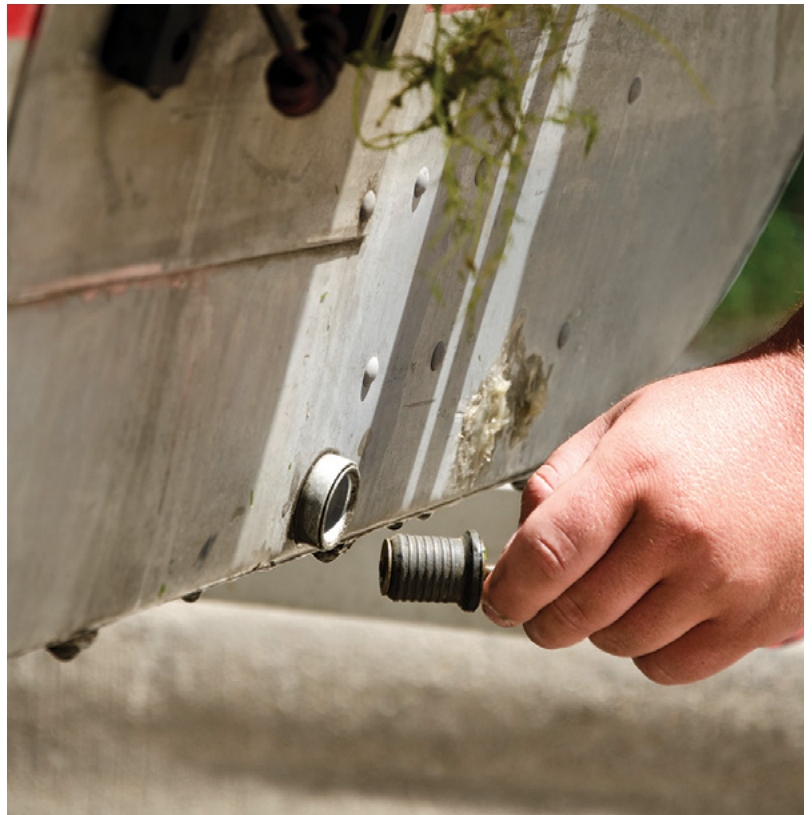
Watercraft Inspection Protocol

The inspection process includes a thorough and complete visual and physical inspection. The time it will take to complete an inspection will vary greatly depending on the type and complexity of the equipment. An inspection should range from three to 10 minutes; more in extreme circumstances. The goal of the inspection is to ensure water-related equipment is clean (free of AIS and water) anytime it enters or exits a water body.

The following sections will describe the protocols for inspecting watercraft entering or exiting water bodies. The steps for both inspections are largely the same. These sections will also serve as handy guides while in the field to review each type individually. As an inspector you will also be responsible for collecting accurate survey information during the inspection.

During an inspection look for:

- 1. Water** in livewells, bilges, bait buckets, ballast tanks, engine/motor.
- 2. Invasive aquatic animals** such as zebra mussels, spiny waterflea, faucet snails.
- 3. Aquatic plants** of all kinds. Other AIS, like zebra mussels, often attach to plants.
- 4. Mud** possibly hiding AIS.



How to Inspect an Entering Watercraft

Step 1: Check all drain plugs and ensure the watercraft is drained.

- a. Under state law water-related equipment must be transported with all drain plugs removed (or in “open” position) before transporting the watercraft on public roads. If they are out, remind the watercraft user to install them before launching. Proceed with the inspection.
- b. If any are in, but no water is present, remind the watercraft user of the law (see page 55) and proceed with inspection. If the access is busy the watercraft user may have placed their plug(s) into the watercraft before you began your inspection. This is all right as long as they state that their plug(s) were out when they arrived at the access. You will still need to verify that there is no water present.
- c. If any drain plugs are in and water is present, instruct:
 - The watercraft user to drain remaining water at a location that is far enough away from the water body to ensure that it does not flow into the water body. Start a new inspection when they return from draining. Deny launch if they refuse to follow these procedures.

Step 2: Inspect the exterior of the watercraft and trailer.

As you begin the visual and tactile inspection, it is important to educate the watercraft user. Explain what AIS are and their impacts such as: aquatic invasive species are plants or animals that come from other places and cause problems for Minnesota’s waters, recreation, and economy. You will also be explaining what you are doing, and what to look for, so that they can inspect their own watercraft. Look the watercraft over and feel the hull with the watercraft user. Both of you should feel the ridges, seams, and recessed bolts of the craft. Young mussels may feel like bumps or sandpaper on the watercraft. If you or the watercraft user feels a rough spot be sure to investigate closer. A magnifying glass can be a helpful tool to determine if these rough spots are young, attached mussels.

- a. Start the inspection at the trailer winch post on the driver’s side. Use the following steps to work your way completely around the watercraft.
 - Look and feel for zebra mussels, snails, spiny waterfleas, aquatic plants, and other species that may be attached to the hull. You are focusing your effort at and below the waterline.
- b. Check rollers and trailer bunks as you work your way around the watercraft for attached plants or other AIS.
 - Removing all plants eliminates the need to identify specific species.
 - Talk about aquatic invasive plants and the problems they can cause. Information about AIS present in Minnesota can be found starting on page 39.
- c. When you get to the trailer fender, look at the axle. Use your flashlight and mirror to check hard to see places, including the opposite side of the axle, for plants.



If the water body is infested, let them know what it is infested with. “Zebra mussels/Eurasian watermilfoil/spiny waterflea are in this lake/river.” The public can find out whether or not a water body is infested by:

- Looking for an infested waters sign posted at the access.
- Looking on the DNR Infested Waters List, dnr.state.mn.us/invasives/ais/infested.html.
- Calling a DNR office and speaking with an invasive species employee.

- Aquatic plants are likely to attach to these hard to see areas.
 - Also check license plates and taillight wires.
- d. At the transom of the watercraft, look closely at the lower unit, intake, trim tabs, transducers, and motor parts that would be below the waterline.
- Use your mirror and/or flashlight to view hard to inspect areas.
 - Run your hand over the hull below the waterline and touch the transom to ensure there are no tiny zebra mussels attached.
 - Educate the watercraft user about the problems zebra mussels can cause.

Step 3: Inspect the interior of the watercraft

- a. Ask the watercraft user to show you any equipment that has contacted the water. Check for plants, snails, mussels, waterfleas, and mud.
- Spiny waterfleas are likely to collect on anchor lines, fishing lines, and downriggers.
 - Check waterfowl decoy lines and anchors for plant material.
 - Check anchors and anchor ropes for mud. Small AIS such as zebra mussels or starry stonewort bulbils could be present in the mud.
- b. Ask the watercraft user to open the livewell(s), baitwell(s), and bilge area. Verify these areas have been drained.
- Never enter a watercraft without the express permission from the watercraft user to do so.

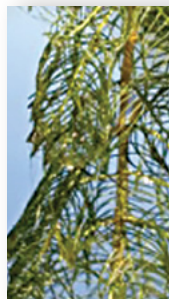
What to do if you find something:

If aquatic plants, mussels, or sandpapery bumps are found on either the watercraft or the trailer, refer to “Reasons to Deny Launch” on page 14.



SAFETY MESSAGE:

- Watch for sharp objects or splinters whenever touching watercraft. Wear and tear can sometimes create sharp surfaces.
- Keep an eye out for pinch points when inspecting trailers and motors.
- Certain shallow water anchors can have a fiberglass pole on the bottom. Be careful not to run your hand across the fiberglass pole..



Did you know?

A small fragment of Eurasian watermilfoil a few inches long can survive several days out of water and infest another lake.

How to Inspect an Exiting Watercraft

Step 1: Remind the watercraft user to remove all drain plugs. This will allow all compartments to drain. Compartments do not have to be fully drained before leaving. Plugs must remain out during transport on public roadways. **It's the law!**

Step 2: Drain the lower unit on outboard or sterndrive (I/O) motors and allow them to drain completely.

- a. Lower the motor or lower unit to the run position.
- b. Tell the watercraft user when to stop lowering the motor to prevent it hitting the ground.
- c. After draining, remind them to raise the motor before transporting to prevent damage.

Step 3: Have the watercraft user drain all bait buckets, if present.

- a. This water must be drained. **It's the law!**
 - They can refill the bait bucket with dechlorinated tap or bottled water if they want to keep their bait.

Step 4: Inspect the exterior of the watercraft and trailer.

- a. Start the inspection at the trailer winch post on the driver's side. Use the following steps to work your way completely around the watercraft.
 - Look and feel for zebra mussels, snails, spiny waterfleas, aquatic plants, sandpaper bumps, and other species that may be attached to the hull. You are focusing your effort at and below the waterline.
- b. Check rollers and trailer bunks for attached plants or other AIS as you work your way around the watercraft.
 - Removing all plants eliminates the need to identify specific species. Remind them to remove all AIS and vegetation before transporting the watercraft. **It's the law!**

- Talk about aquatic invasive plants and the problems they can cause.



- c. When you get to the trailer fender, look at the axle. Use your flashlight and mirror to check hard to see places, including the opposite side of the axle, for plants.
 - Aquatic plants are likely to attach to these hard to see areas.
 - Also check license plates and taillight wires.



- d. At the transom of the watercraft, **look closely at the lower unit**, intakes, trim tabs, transducers, and motor parts that would be below the waterline.
 - Use your mirror and/or flashlight to view hard to inspect areas.
 - Run your hand over the hull below the waterline and touch the transom to ensure there are no tiny zebra mussels attached.

Step 5: Inspect the interior of the watercraft.

- a. Ask the watercraft user to show you any equipment that has contacted the water. Check for plants, snails, mussels, waterfleas, and mud.
 - Spiny waterfleas are likely to collect on anchor lines, fishing lines, and downriggers.
 - Check waterfowl decoy lines and anchors for plant material.
 - Check anchors and anchor ropes for mud. Small AIS such as zebra mussels or starry stonewort bulbils could be present in the mud.
- b. Ask the watercraft user to open the livewell(s), baitwell(s), and bilge area. Verify these areas are draining by removing all drain plugs.
 - Never enter a watercraft without permission from the watercraft user to do so.

After the inspection, if aquatic plants or AIS are removable by hand, complete the removal and allow the watercraft user to leave. If aquatic plants, mussels, or sandpapery bumps are found that are not removable by hand, let them know the watercraft must be decontaminated prior to launching anywhere. Send the watercraft to decontaminate at the access, if available, or give them a permit to transport their watercraft (see Appendix A: General Permits) to another decontamination site of their choosing, if no unit is present.



Spiny waterfleas attached to fishing line.
Photo credit: © Jeff Gunderson, Minnesota Sea Grant



SAFETY MESSAGE:

- Be sure the watercraft and trailer are not in danger of tipping.
- 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. If any safety issues arise at an access, contact your supervisor immediately.



Did you know?

Zebra mussels and other invasive species can attach to aquatic plants.

Gathering Commitments

Another strategy that you can use is gathering commitments. Commitments are an essential tool used in a majority of behavior change programs. Social science studies show time and again that 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 trusted messenger providing needed AIS prevention services at locations where watercraft users prefer to receive information. Your job plays a critical role in helping watercraft users adopt and consistently practice desired AIS prevention behaviors.

Exterior Inspection Tips

During your inspection, educate watercraft users about where to check during their own inspection. Common places to inspect 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;
- Closely inspect portable hydraulic boat lifts if present on pontoons (see definition on page 10).



Young zebra mussels removed from the hull of watercraft.

Teach watercraft users to examine each piece of equipment and feel for bumps that may indicate the presence of young zebra mussels. Carefully check the rear of watercraft, including intakes, upper and lower motor areas, and the propeller. Trailers can also pose a high risk, so carefully check trailer rails, lights, and electrical wires, as well as the license plate and trailer pads for aquatic plants and invasive species.

Pay particular attention to the undersides of lifts and docks where zebra or quagga mussels are commonly found. A mirror can help by allowing you to see in locations you may otherwise miss. In addition, portions of boat lifts and docks that contact the lake bottom should receive additional attention as these areas commonly pick up material from the lake or river while the equipment is in the water.

Interior Inspection Tips

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

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

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



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, and live/baitwells must be opened while transporting water-related equipment.
- Water can drain from water-related equipment as it is leaving a water access.
- Pontoon cylinders are air or gas 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 during an entering inspection, and the plugs are in place, the water should be drained. Have the watercraft user drain the water at a location that is far enough away from the lake to ensure that it does not flow back into the lake. You should determine the best location to drain watercraft at the start of your shift.
- If the bilge area of a watercraft cannot be visually inspected, bilge pumps should be activated to determine if there is any water present. Similarly, if the watercraft has a ballast tank (such as on wakesport boats), the watercraft user should remove the plug and drain all water or activate the ballast tank pump until no water is expelled.
- Sponges or towels are helpful tools to use if residual water is found in any areas that cannot be drained. Decontamination can help treat this water.



Water draining from a lower unit

Bait Buckets and Bait Coolers

When watercraft users are out fishing sometimes they will use live bait. Live bait can be stored in a bait bucket, a bait cooler, or a baitwell located on the watercraft. Water from these containers should be drained. If the watercraft user intends to keep their live bait they need to follow these steps:

- Bring extra bottled or dechlorinated tap water and leave it in their vehicle.
- Before leaving, they need to drain the water from their bait container on land and refill it with the extra water that was left in the vehicle.

If the watercraft user does not want to keep their bait they must dispose of unwanted bait in the trash. If a trash can is not available on site, they need to bring all unwanted bait with them to dispose of in the trash elsewhere. They should never release bait in the water or onto land.

Remember you are educating watercraft users on best management practices and good habits to reduce the risk of spreading AIS. In general, bait water issues are not a reason to contact enforcement, unless there are other AIS violations.

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 on their own. If you work at these accesses you can teach watercraft users about the stations and encourage their use.

Engine Inspection Tips

Watercraft engines use raw water in some parts of their cooling system. Raw water is lake or river water that 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 inspections instruct the watercraft user to lower the motor to the vertical position to allow any residual water to drain. Do not touch the motor or surrounding areas while the watercraft user is raising or lowering the motor and watch the motor to ensure it does not come into contact with the ground. Once residual water stops draining (there may not be any) instruct the watercraft user 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. Instruct the owner to lower the motor to the vertical run position to allow any water to drain. Do not touch the motor or surrounding areas while the watercraft user is raising or lowering the motor and watch to ensure it does not come into contact with the ground. Once residual water stops draining (there may not be any), instruct the watercraft user 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 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 through an adjustable nozzle. In order to remove trapped residual water,

instruct the watercraft user to start the engine and allow it to run for five seconds or less. The watercraft user should rev the engine during this process, which will expel water from the engine, then the motor can be shut off. Watercraft users may be concerned that starting engines out of water can cause damage. You can inform them that this process for clearing the engine of water is recommended by manufacturers.

Inboard engines (direct drive and V-drive):

Inboard engines are located almost 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 watercraft users are going to be placing the watercraft in another body of water within 48 hours, help them find a decontamination unit nearby. This is an optional way for watercraft users to go above and beyond to further reduce the risk of spreading AIS. 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 your inspection check the propeller area of trolling motors for wrapped vegetation.



A trolling motor attached to the bow of a watercraft.



Section 5: Inspecting Lake Service Providers (LSP) and Other Businesses

Who are Lake Service Providers?

Lake service providers are businesses that are hired to install, remove, decontaminate, 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.

There are many other businesses that transport watercraft and water-related equipment at public water accesses but are not considered LSPs. This includes, but is not limited to: aquatic plant harvesters (large machines used like lawnmowers to cut vegetation in the water), hand-harvesters (scuba divers), bait harvesters, herbicide applicators, water appropriators, fishing

guides, etc. It is not your role to ask about permits related to their work, but they are required to follow all AIS laws and comply with watercraft inspectors.

If you feel that a LSP or business is repeatedly or egregiously violating AIS laws, complete a violation report and follow up with your supervisor or DNR's LSP Training Coordinator.

Partnering with LSPs

Lake service providers have varying experience with watercraft inspectors depending on what lakes and rivers they work on and if they use public accesses. As an example, a lawn irrigation company generally sends staff to each home owner's property to install pumps and hoses from the water to the lawn. In this case they don't need to use a public access and don't usually interact with inspectors.

Another example is a watercraft repair business located away from the water. This business will need to use the public access and will have frequent interactions with inspectors. It's good to get to know the lake service provider businesses in your area—the ones that you may see daily and the ones that may show up just occasionally.

At permit training, lake service provider business owners and managers are introduced to the role of watercraft inspectors and told what to expect from you. However, if they aren't used to interacting with inspectors, or have new staff who aren't used to inspections, you may need to help them learn the inspection process. Those of you working with LSPs have the unique opportunity to help them better understand the law when needed but to also build the relationship between authorized inspectors and local businesses to help lower the risk of spreading AIS.

LSP Requirements

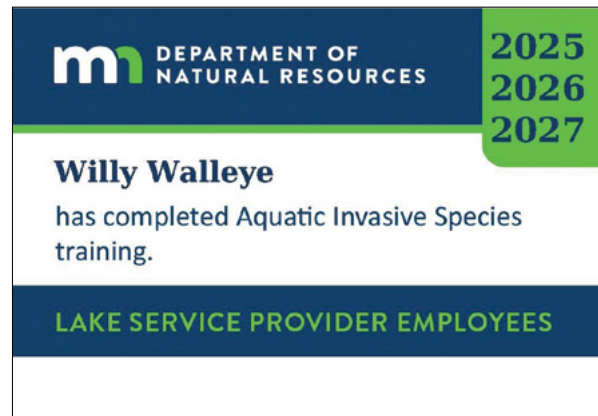
1. Follow AIS laws and go through inspections like all other people using public accesses.
2. Carry a signed copy of their permit with them when doing work.
3. Display a permit sticker in the lower left of the windshield on each vehicle hauling water-related equipment.



Example permit, which should be displayed on the lower left of the windshield of the tow vehicle.

4. Have their employees working with water-related equipment complete online employee certificate training, pass a quiz, and carry a wallet-sized certificate when doing work.

If you aren't sure a business is permitted, you can check the list of those currently permitted at mndnr.gov/lsp.



LSP Permit Authorities

LSPs have additional authorities in their permit that aren't standard for the average watercraft user.

1. Transport authority

LSP permits include one-way transport authority for water-related equipment from zebra mussel and faucet snail 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 in order 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 their decontamination addresses listed on their permit with the drain plug in place in order to properly dispose of contaminated bilge water away from lakes and rivers.

Inspecting an LSP

1. If the water-related equipment you're inspecting is transported by a LSP, complete your inspection following normal protocols while keeping in mind the LSP permit authorities mentioned in the previous section.
2. Make sure to look for the permit sticker on their vehicle's windshield to ensure that their permit is up-to-date. Note the colors and years rotate annually: Blue-Orange-Green-Yellow.

Some LSPs are easily identified because their trucks and trailers, or employee's clothing are marked with the business name; however it is not always obvious. If you're unsure if the watercraft is being towed by a LSP, but think they might be an LSP employee, ask them if they're transporting the equipment for their work.

When inspecting LSPs, select "LSP, Lake Service Provider" in the survey for the last and next water bodies.

Do you need to see proof of all the permit requirements?

If you see a current year sticker displayed in the front windshield of the LSP tow vehicle, you do not need to see any other documentation.

What if they don't have a permit sticker displayed in their window or the one they have is out of date?

Ask the driver of the tow vehicle if they have a copy of their paper LSP permit. On the front of the paper permit it will have the permitted years. If they don't have the paper permit or if it is out of date, contact your supervisor.

What if they are transporting watercraft or water-related equipment and they don't have the proper permits?

Collect as much information as possible and follow up with your supervisor. Helpful information includes the business name, date, time, and location.

What if they arrive in violation of AIS law (e.g. zebra mussels attached)?

If an LSP is found to be in violation of transport requirements, follow violation procedures on page 31. Deny launch to the LSP. Then follow one of the options below:

- have them return to their place of business for decontamination.
- send them for decontamination elsewhere.
- if a decontamination unit is on-site the inspector can offer their services.

For more information on LSPs or to report non-compliance, contact:

Lake Service Provider Training Coordinator
Email: lsp.dnr@state.mn.us





Section 6: Encouraging Decontamination

Watercraft and other equipment often have small amounts of trapped residual water that can be quickly treated at the access to reduce the risk of spreading invasive species. If a decontamination unit is present on-site you can encourage watercraft users to have their equipment voluntarily decontaminated.

Help teach watercraft users about the benefits of decontamination. A simple flush of the livewell and/or engine will only take a few minutes. These simple actions can help reduce the risk of spreading AIS. Inspectors can help increase voluntary decontaminations by proactively encouraging watercraft users to take advantage of free decontamination.

You can refer them to a Level 2 watercraft inspector if one is on-site or to the courtesy decontamination webpage (mndnr.gov/decon) for other locations.

Manual Decontamination

Manual decontamination is the removal of all visible mud, plants, and organisms from the interior and exterior of the watercraft and equipment by hand. A dry time of **five days or more** is often recommended by the inspector after manual decontaminations.

- This can be done by the watercraft user and/or an authorized watercraft inspector.
 - a. Inspectors can also provide a permit (see appendix A) to the watercraft user in order to legally transport the watercraft from the access to a specific location for decontamination.

Mechanical Decontamination

Mechanical decontamination is the use of **hot water and/or high pressure** to remove AIS from a watercraft or equipment.

- This can be completed at the access (if a decontamination unit is available) or at another location.
- This can be performed by a lake service provider, watercraft user, or authorized Level 2 watercraft inspector.
- A separate training is provided for decontamination protocols.
(A separate Decontamination Manual and a Compendium of Watercraft Manufacturer Specific Information describes the decontamination process in more detail and have information specific to types of boats.)



After completing an inspection you will determine whether or not decontamination is needed.

The watercraft inspection survey may tell you that a decontamination is required even when a unit is not present on-site. Follow the on-screen instructions to help educate the watercraft user on next steps. If the watercraft is able to leave and is in compliance with all laws, no further action

is required of the watercraft user. If the watercraft still has attached AIS such as zebra mussels, provide a transport permit and instruct the watercraft user to ensure that the watercraft has all AIS removed before transporting the watercraft the next time.

When a decontamination unit is present on-site refer watercraft users to the on-site Level 2 when any of these scenarios arise.

- Zebra mussels, spiny waterfleas, or other AIS are found attached to the watercraft/equipment
- Suspicious organic material
- Residual water after draining or the watercraft/equipment cannot be drained fully
- Ballast tanks that may contain water
- Aquatic plants attached that cannot be removed by hand
- Watercraft or equipment has been in the water 24 hours or more
- Watercraft or equipment is going to another water body within 48 hours
- A licensed peace officer deems one necessary
- Courtesy decontamination
- Pontoon with attached portable hydraulic lift

Legally Required Decontaminations

State statute allows authorized inspectors, conservation officers, and licensed peace officers to require that mechanical decontamination be completed, when these specific scenarios occur.

Scenario 1: Water-related equipment that has a confirmed presence of zebra mussels, spiny waterflea, or other AIS that will require decontamination for successful removal.

Scenario 2: Water-related equipment that has water present that is unable to be drained. (This does not include residual water on watercraft with ballast tanks. See Scenario 3 for ballast tank protocols.)

Scenario 3: Water-related equipment that has ballast tanks which still contain verifiable water, even after pumping has occurred. **If the tanks contain verifiable water, decontamination will be required.** This step will be required at zebra mussel or spiny waterflea infested waters, on exiting boats only.

Protocols to Follow when a Watercraft User Refuses Decontamination

All refusals to decontaminate should be recorded in the survey and uploaded to the server within 24 hours. Providing additional comments on the refusal is required. Follow up with your supervisor as soon as possible to notify them of the violation for the refusal of a legally required decontamination. Provide a written statement as described in Section 7.





Section 7: How to Document and Handle AIS Violations

As an inspector you will occasionally encounter violations of AIS laws. It is important that you handle these interactions carefully and professionally—remember that the primary goal of an inspector is to educate watercraft users. There are a variety of violations that you may encounter ranging from transporting a watercraft with the drain plug in, to attempting to launch with zebra mussels. Regardless of the violation, keep these key protocols in mind.

- Use these interactions as key moments to teach the watercraft user how to avoid making the same mistakes in the future.
- Know some situations require additional reporting as described here.
- Ask your supervisor about additional reporting procedures for your organization.

SAFETY MESSAGE: Situations involving violations can be a source of conflict that can escalate quickly. Only complete the violation documentation process (e.g., taking survey photos, asking questions) if you feel safe doing so. Remove yourself from the situation if you feel threatened. Develop a plan with your supervisor so that you know who/when to call enforcement for support.



Incoming Watercraft

Complete a thorough inspection of the watercraft and deny launch if all violations cannot be corrected at the access.

- Record in the survey any drain plug, plant or water violations, even if they can be corrected prior to launching the watercraft.

If you find zebra mussels during an entering inspection:

- Do not immediately remove the mussel(s).
- Take specific photos when prompted by the survey, such as a close-up of the mussel(s), the area they were found, and the watercraft including the boat registration.
- Deny launch if all AIS violations cannot be corrected at the access.
- Inform the watercraft user or LSP that an officer might contact them as a follow up.
- Upload the survey to the server within 24 hours.
 - Make sure to record in the survey if it was an LSP that was in violation and note the name of the business in the write-up, if possible.
- Complete a write-up describing the situation (see Violation Report Form in Appendix C) and submit it to your supervisor on the same day of the incident. Here is an example:
 - Violation occurred at 10AM on May 10th at Fish Lake South Access near Maple Grove in Hennepin County. The watercraft was a red ski boat with registration MN1234AA. There were multiple zebra mussels on the motor's lower unit. The watercraft user stated he was not aware they were there and that it came out of Fish Lake last fall; this is his first time launching this season. I was able to remove the dead zebra mussels by hand and allowed the watercraft user to launch. He was driving a black truck with MN license plate ABC123 and was approximately 6' tall with blond hair in his mid-30s. I did not contact enforcement.

Refusal of inspection

Refusals can be verbal and/or physical. They can happen at any time during the inspection process. For an inspection to be considered a refusal you must make direct contact with the watercraft user. This means that you are actively engaging watercraft users about being a watercraft inspector and the inspection process. Every situation is unique, but here are some examples of watercraft users refusing an inspection:

- Avoids the inspection after contact has been made and launched their watercraft without an inspection being completed.
- Declines to open water-holding compartments.
- Verbally says no to the inspection process. E.g. Won't allow you to tactilely inspect the watercraft.
 - This does not relate to the survey questions, as they are optional.

If a watercraft user refuses an inspection:

First try to explain that a visual and tactile inspection is required before they can launch and that you are only looking for AIS, water, or aquatic plants. Letting you complete an inspection safely is the quickest way for them to continue with their day. Inform them that they are not required to answer the questions. If they agree, then continue with the inspection and survey.

If they still refuse, it is unlikely you will be able to complete a survey entry and you will have to document the situation in a separate write-up.

If an **incoming** watercraft user declines a required part or all of the inspection process:

- You have the authority to deny launch.
 - Example: “I understand your perspective of you not wanting me to inspect your watercraft, but MN law does require that you submit to the inspection while I am working here. Would you be willing to allow me to inspect at this time? If not, under the same statute, I am required to deny launch to your watercraft until you comply with the inspection.”
 - If they launch anyways, contact enforcement as soon as possible.
- Inform the watercraft user that an officer might contact them as a follow up.
- Complete a write-up describing the situation (see Violation Report Form in Appendix C) and submit it to your supervisor on the same day of the incident.

If an **exiting** watercraft user declines a required part of the inspection process:

- Use it as an opportunity for education. You can inform them of the laws (e.g., compliance with inspections; draining bait containers and livewells), but it is the watercraft user’s responsibility to take action or risk enforcement action if they are caught/reported.
- Inform the watercraft user that an officer might contact them as a follow up.
- Complete a write-up describing the situation (see Violation Report Form in Appendix C) and submit it to your supervisor on the same day of the incident.

Exiting watercraft with AIS not known to be present

If you find an invasive species not known to be in the lake you’re inspecting at:

- Do not remove the AIS until you have fully completed the inspection and the survey.
- Take specific photos when prompted by the survey, such as a close up of the AIS, the area it was found, and the watercraft including the boat registration.
- Collect the AIS and give it to your supervisor, as it may need further identification. (See Suspected AIS Collection Form in Appendix C.)
- Inform the watercraft user on what you have found and explain that the lake isn’t known to be infested with this species.
 - NOTE: It is possible that you are discovering a new infestation, and the watercraft user may not be violating any laws.
- Ask the watercraft user how long the boat was in the water and where the boat has been previously.
- Upload the survey within 24 hours.
- Complete a write-up describing the situation and submit it to your supervisor on the same day of the incident.

How to Report a Potential New Infestation

Use the form located in Appendix C on page 73. After completing the form, follow up with your supervisor and your local DNR Invasive Species Specialist.

At the access you will communicate with the public in a variety of ways, and you may even be approached by a member of the public who believes they have found new AIS. If this happens to you be sure to take very specific notes and share the information with your supervisor and the DNR ASAP. A sample or photo is required.



Section 8: Completing the Survey

All authorized inspectors will be expected to collect data using official DNR watercraft inspection surveys, which they will complete during their inspection of each watercraft. Surveys are in the form of an electronic application (“app”, which is usually downloaded to a mobile device), or a paper form. Some of the data is observational, while other data is obtained by asking the user. Inspectors have the ability to mark within the survey if a user prefers not to answer.

Collecting accurate data is important. The data you collect in the field is analyzed to improve future inspection efforts. The analysis of the data is then compiled in annual reports by state and local partners, used by researchers to model watercraft user movement and risk, and used as evidence for enforcement action.

Selecting Surveys

A Level 1 inspector will have one primary watercraft inspection survey that they utilize. This survey will typically be labeled “Watercraft Inspection Survey,” preceded by the current year. A version number is often at the end of the title (e.g. Watercraft Inspection Survey v 1.1). Occasionally during the season, new versions of the survey are released. These contain corrections, changes in survey data, or even statute updates. It is important for all inspectors to use the most current version, and can check with their supervisors if they are unsure of what version they are using.

NOTE: The survey is updated annually, make sure you are using the most current version.

If a Level 2 inspector is working in the area with a decontamination unit, oftentimes a watercraft user will be sent directly to them for decontamination of their equipment. When this happens, the Level 2 inspector will utilize another type of survey, called a “Decontamination Survey.” This survey differs from the typical Watercraft Inspection Survey in that it collects data detailing the steps the Level 2 inspector used in order to mitigate the spread of the invasive species.

Filling out the survey

While educating the watercraft user is your top priority when conducting inspections we still need to collect data about the inspection you completed. This data is used to help shape the watercraft inspection program. There are some parts of the survey that you need to pay close attention to when entering the data into your tablet to ensure accurate data collection. The survey will also walk you through the inspection process and help you determine what steps need to be taken next.

Case Numbers

Each time you complete a survey you will need to enter a “Case Number.” The case number is the unique number assigned to a specific access. Minnesota has many water bodies that have the same name and many water bodies have more than one access. The case number indicates what access you are working. Searching by case number instead of lake name greatly reduces the chance for data entry errors. You can get the case numbers that you are working from your supervisor.

An example of a case number is:

Medicine Lake, Hennepin County, 27010401

27 = county number, 0104 = lake ID,

01 = access number

The first one or two digits represents the county number, the middle numbers represent the water body identification number, and the last two digits represents the access number. Counties are numbered alphabetically; be sure to ask your supervisor if you are unsure of the appropriate number.

You can also find a listing of county numbers on page 77.

License Plates

The survey will prompt users to fill in a license plate. This is the license plate of the vehicle that is towing the watercraft or water-related equipment. This data is only used when there is a violation of AIS laws. Sometimes you may come across unique situations such as a vehicle without a license plate. This could be a tractor towing a watercraft, an ATV, a new vehicle, etc. If there is not a license plate, please type NONE into the box where you would type the number. Dealer plates can be entered as is. You will also be asked to select the state where the license plate is from. If the license plate doesn't state a specific state there are other specific options you can select such as Tribal, Government, and Canada.

Last water body/next water body

At the end of each survey it will prompt you to enter the last water body the watercraft user visited and the next water body they will visit. The lakes are listed with the county that they are found in, be sure to select the correct lake and county name. In some cases entering the last lake and next lake names aren't appropriate. If this is the case use one of the options below:

- If the boat is coming from, or going to storage select the “storage” option, no county data needs to be collected.
- If the watercraft user does not know use the “unknown/does not know” answer.
- If the watercraft user is coming from or going to another state, enter the state name. It will appear as the state followed by “out of state.”
- If the watercraft user is a Lake Service Provider (LSP) select the “LSP-Lake Service Provider” for both next/last lake.
- If the watercraft user chooses to not answer your questions you can select “Prefers Not to Answer” for both next/last lake.
- If there is a lake that is not on the list select “Not on this list.”

Taking Photos

The survey will prompt users to capture photos during the inspection process when zebra mussels have been found. The photos will be submitted to law enforcement for additional follow-up. It is important that inspectors take photos that are clear and show what they have observed. If you are not using an electronic survey and find zebra mussels or other attached AIS, take photos, if able, using your own camera and send them to your supervisor within 24 hours.

Desirable Photos

- The first image will be a close up of the mussel(s) found.
- The second image shows zebra mussels attached to the watercraft. The image should show the general location where they are attached to the watercraft.
- The third image will show the watercraft with its registration numbers visible.

Remember to review each photo prior to advancing the survey; the survey will allow you to retake photos if needed.



Upload Survey Results

Surveys are required to be uploaded at least once per week, but it is recommended to upload surveys on a daily basis, to avoid potential loss of data. **Violations MUST be uploaded within 24 hours.**

A Wi-Fi or data connection is required to upload survey data. Press and hold the start button until the administration screen appears. Upload surveys by pressing the "Upload Results" button. When the upload is complete press "Run Current Survey." Alternatively, on the main screen where the start button is visible, tap on the yellow cloud in the lower right of the screen to upload survey results. Sometimes the device is set to automatically upload surveys if a connection is available - ask your supervisor about device settings.



Survey Application Tips

To ensure the survey is working properly:

- Keep the survey application up to date via Google Play Store or the Apple App store.
- Make sure the survey version lists the current year.
- Do not change the device name in the administration menu.
- Report any glitches to your supervisor with screenshots of the issue.



Section 9: Expectations While Working with the Public

A positive first impression, welcoming helpful attitude, and the knowledge to respond to customers while maintaining a safe work environment are the key requirements to being an authorized watercraft inspector. Positively representing both your employer and the DNR will ensure a public service environment that is free of disrespectful or unprofessional communications or behavior.

Professional behavior and good customer service begins before the inspection! What you say and how you say it are keys to a successful inspection, but the visual impression you give through your body language and appearance are just as important to a successful conversation.

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



Visual Impressions

- Inspectors shall appear for each shift in a clean and neat appearance.
- Uniforms shall be clean and in good condition.
- Articles of clothing, including jewelry, shall not display endorsements of a vulgar, controversial, political, or obscene nature.
- Inspectors shall wear visible identification while working in public use areas. Identification needs to include the organization name that has authority to conduct authorized inspections.
- It is recommended that Personal Protective Equipment (PPE) be worn while working as an authorized inspector (as decided by your hiring agency). Examples include:
 - a. High-visibility vest
 - b. Closed-toe shoes
 - c. Sunscreen
 - d. Hat

Verbal Impressions

- Inspectors will acknowledge the watercraft user's presence by using a basic greeting. Though each inspector will have a slightly different way of approaching their visitors, all inspectors will include in their greeting a clear statement identifying themselves as an authorized watercraft inspector, and what organization they represent. For example "Hi, my name is Mike and I am here with Blue Water County conducting watercraft inspections today."
- When you approach a watercraft user, remember that you're trying to engage them in a conversation. Be respectful and patient; some watercraft users will be very familiar with this process, others will be new to the process.
- Use positive communication and treat individuals in a manner that a reasonable person would find appropriate.

Inspectors will display good judgment and proper behavior in public use areas. Disrespectful or unprofessional behavior includes, but is not limited to, sleeping, smoking while conducting inspections, and arguing with visitors. If you are uncomfortable with a situation at any time you should remove yourself from the situation.

Working with Tribal Members

Tribal members have tribal regulations they must follow on tribal lands and within tribal boundaries. On Minnesota public lands, statutes and regulations related to watercraft inspection apply to everyone. If someone says they are a tribal member and are concerned or upset about the inspection process, education is your primary goal. Focus on the common goal of preventing the spread of AIS and protecting lakes and rivers, rather than your authorities. Tribal members, while on tribal lands or within tribal boundaries, may legally refuse an inspection. If this happens walk away and let them resume their activities.



Zebra mussels (not to scale) attached to a native mussel.

Section 10: Aquatic Invasive Species

Your role as a watercraft inspector is to educate watercraft users about the impacts of aquatic invasive species and what they can do to prevent the spread. Invasive species pose a great ecological and financial threat to Minnesota and the introduction of these species can cause significant and irreversible changes to Minnesota waters. This section will cover the biology, impacts and spread of some AIS so that you can educate the public about these issues. It will also provide tips on identification and where to look for species of concern.

Regulations

- **Prohibited invasive species:** Unlawful (a misdemeanor) to possess, import, purchase, transport, or introduce this species except under a permit for disposal, control, research, or education.
- **Regulated invasive species:** Legal to possess, sell, buy, and transport, but it may not be introduced into a free-living state, such as being released or planted in public waters.
- **Infested waters:** The DNR will add a lake, river, pond, or wetland to the infested waters list if it contains an aquatic invasive species that could spread to other waters. To reduce the risk of spreading aquatic invasive species, activities like bait harvest and water use are managed differently in infested waters. Not all AIS trigger an infested waters listing.

Pathways

People spread AIS through various pathways. Some AIS can attach to boats, equipment, and gear that people move from one water body to another. Some AIS are very small and can go unseen in water inside equipment or bait containers. People also spread AIS by releasing bait, aquarium pets, and aquatic plants.



Life Stages

The biology of a species determines how it could be spread. Plants have seeds, reproductive structures, root structures, and fragments that can create new populations. Some animals can move on their own by swimming or crawling. Other animals have eggs or juveniles that are microscopic and can be hidden in water, mud, and debris. Different species and their different life stages can survive out of water (tolerate drying) for days, others for just hours. Inspection protocols and prevention best practices target these characteristics to reduce the risk of AIS surviving transport to another water body.

Finding a New AIS Population

If you or a member of the public thinks they have found an aquatic invasive species new to a water body, follow reporting steps on page 73.

Learn More

Explore the dynamic world of AIS beyond those listed in this section. Learn about current additional species of concern, laws, research, distribution, and more through these online resources.

Species:

- mndnr.gov/qr/AISguide

Laws:

- mndnr.gov/invasives-laws

AIS Identification Guidebook:

- maisrc.umn.edu/guidebook

Distribution:

- EDDMapS.org
- mndnr.gov/infested

Research:

- maisrc.umn.edu/about-ais

Aquatic Invasive Animals

Zebra Mussels (*Dreissena polymorpha*)

Prohibited Invasive Species on the Infested Waters List

Identification

Zebra mussels are small animals with a striped, D-shaped shell that opens like a clam. They are typically one-quarter inch to one and one-half inches long, depending on age, with alternating yellow and brownish colored stripes. Zebra mussels attach to hard surfaces underwater using tiny fibers called byssal threads.



Biology

A single zebra mussel can filter one quart of water per day while feeding primarily on algae. They live underwater, attached to natural and manmade substrates such as rocks, wood, plants, native mussels, pipes, docks, boat lifts, swim rafts, moored watercraft, and other debris. When water temperatures are greater than 54°F, a female can produce 100,000 to 500,000 eggs per year. Fertilized eggs develop into microscopic, free-living larvae

called veligers. After two to three weeks, the veligers settle and attach to a firm surface. Beds of zebra mussels can reach tens-of-thousands within a single square yard.

Origin

The zebra mussel is native to Eastern Europe and Western Russia. The species was unintentionally introduced into the United States Great Lakes through the discharge of contaminated cargo ship ballast water. They were first discovered in the Great Lakes in 1988 and were first confirmed in the Duluth/Superior Harbor in 1989.

Impacts

- Encrust equipment, such as boat motors and hulls, which reduces performance and efficiency and is costly to clean and repair.
- Swimmers and pets can cut their feet on zebra mussels attached to rocks, docks, swim rafts, and ladders.
- Create a costly problem for power plants, cities, and residents when they clog water intakes.
- Filter tiny food particles out of the water, which can reduce available food for larval fish and other animals. This clearer water can lead to increased aquatic plant growth.
- Attach to and kill native mussels.

Control

Facility managers use pesticides to kill zebra mussels in closed systems, such as water-cooling systems of power plants. Many pesticides used in closed systems are not allowed for use in open water. In natural waters, such as lakes or rivers, attempts to control zebra mussels are uncommon and considered experimental.

Where to Look

People spread zebra mussels primarily through the movement of watercraft and water-related equipment. They can attach to anything kept in the water for more than 24 hours. They can survive out of water – less than five days in dry conditions, but up to 21

days in very wet conditions (such as inside dock/lift pipes). They can attach to plants and be found in mud. Microscopic larvae (veligers) can survive in residual water.

- Check and clean parts of equipment (watercraft, docks, rafts, lifts) that were submerged underwater. Mussels prefer attaching in dark locations such as underneath hulls, keels, rudders, trim tabs, water intakes, lower units, raft floats, dock and lift pipes, and wheels, etc.
- Clean plants, mud, and debris from trailers, storage compartments, anchors, and other gear.
- Veligers can be in any amount of water. Check and drain all areas that could contain water such as bilges, livewells, baitwells, bait containers, motors, and ballast tanks.



Spiny Waterflea (*Bythotrephes longimanus*)

Regulated Invasive Species on the Infested Waters List

Identification

Spiny waterfleas are microscopic animals, also known as zooplankton, that live in open water. Adults range from one-quarter to five-eighths inches long and are opaque in color. They have a single long tail with one to four spines and have one large, distinctive, black eye spot. They are often found on fishing equipment in clumps that resemble a gelatinous blob with a texture of wet cotton.



Biology

The spiny waterflea is a predatory zooplankton that eats other zooplankton. They migrate into deeper waters during the day to hide from predators and return to shallower water at night to find food. They produce clones during the summer and eggs in the fall, which will hatch after winter to create the next year's generation. Eggs are resistant to drying and freezing for up to 6 hours. Females carry their eggs and young on their back.

Origin

The spiny waterflea is native to Europe and Asia. The species was unintentionally introduced into the United States Great Lakes through the discharge of contaminated cargo ship ballast water. They were first discovered in Lake Ontario in 1982 and spread to Lake Superior by 1987.

Impacts

- Prey on native zooplankton, which are an important food source for native fishes. In some lakes, spiny waterfleas can cause the decline or elimination of some species of native zooplankton.
- They do not provide a good food source for native fishes, because their long tail and spines make them difficult to eat.
- Clog eyelets of fishing rods, damage gears in fishing reels, and prevent fish from being landed.

Where to look

People spread spiny waterfleas primarily through the movement of watercraft and water-related equipment. They collect in gelatinous blobs on fishing lines and downrigger cables. They can be hidden in water-containing devices, mud, and debris. Adults and eggs will die after 6 hours of being dry.

- Check and clean downrigger cables and fishing lines.
- Clean mud and debris from trailers, anchors, ropes, and other gear.
- Check and drain all areas that could contain water such as bilges, livewells, baitwells, bait containers, motors, ballast tanks, etc.
- Recommend anglers:
 - Use a cloth or towel to clean lines as they reel in their final cast for the day.
 - Dry their watercraft and gear for 6 hours before moving to another water body.



Faucet Snail (*Bithynia tentaculata*)

Prohibited Invasive Species on the Infested Waters List

Identification

Faucet snails are small animals with spiral shells. They are light brown to black, with four to five coils (whorls) in the shell. They grow up to a half inch long and are longer than they are wide. The shell opening is on the right when the shell is pointed up. They have an operculum (“trapdoor”) that covers the opening. The operculum may be missing when the snail is dead and the shell is empty.



Biology

The faucet snail grazes and filters algae from the lake. Populations contain both males and females. Females can produce about 300 eggs which they lay on rocks, wood, and shells. Eggs hatch in three weeks to three months, depending on water temperature. Their lifespan is one to three years. The snail is an intermediate host for three intestinal trematodes, or flukes, that cause mortality in ducks and coots.

Origin

The faucet snail is native to Europe. The species was unintentionally introduced into the United States Great Lakes through contaminated solid ballast of large timber transport ships, or with vegetation used in packing crates. It was first recorded in the Great Lakes in the 1870s and the first inland population in Minnesota was confirmed in Lake Winnibigoshish in 2008.

Impacts

- Act as an intermediate host for intestinal trematodes that can kill ducks and coots. When waterfowl consume the infested snails, the adult trematodes attack their internal organs. There is no evidence that wildlife besides waterfowl are impacted. Anglers can eat fish from faucet snail infested waters without worry of the parasite.
- Compete with native snails for food and habitat.
- May clog water intake pipes and other submerged equipment.

Where to Look

People spread faucet snails primarily through the movement of watercraft and water-related equipment. They can attach to equipment kept in the water. Adults, young, and eggs may be hidden in mud and debris. They can contaminate bait containers. Their operculum allows them to close their shell and survive out of water for multiple days.

- Check and clean parts of equipment (watercraft, docks, rafts, lifts) that were submerged underwater. Gently scrape off adults and eggs, which look like small deposits of gelatinous material.
- Clean mud and debris from anchors, waders, and other gear.
- Dispose of unwanted bait in the trash. Remind anglers they should be prepared to bring unwanted bait with them when they leave, because most accesses do not have trash cans.
- Recommend hunters and anglers scrub waders with a stiff brush to remove debris and avoid the use of felt soled waders.



Banded Mystery Snail (*Callinina georgiana*)

Regulated Invasive Species not on the Infested Waters List

Identification

Banded mystery snails are small animals with a spiral shell. They grow up to one and a half inches tall and are light brown with red/brown horizontal bands that follow the spiral of the shell. The bands may be hidden by algae or sediment. The shell opening is on the right when the shell is pointed up. They have an operculum (“trapdoor”) covering the opening, which is missing when the snail is dead and the shell is empty.



Biology

The banded mystery snail grazes and filter-feeds on dead organic matter, typically on silt and mud substrates. They are called “mystery” snails because females give birth to young, fully developed snails that suddenly and “mysteriously” appear. Their lifespan is about four years. These snails can die off in large numbers and wash up on shore.

Origins

The banded mystery snail’s historic range is the southeastern United States, primarily in the Mississippi River system up to Illinois. The species is commonly imported and sold by the aquarium trade, leading to the potential for illegal release into the wild.

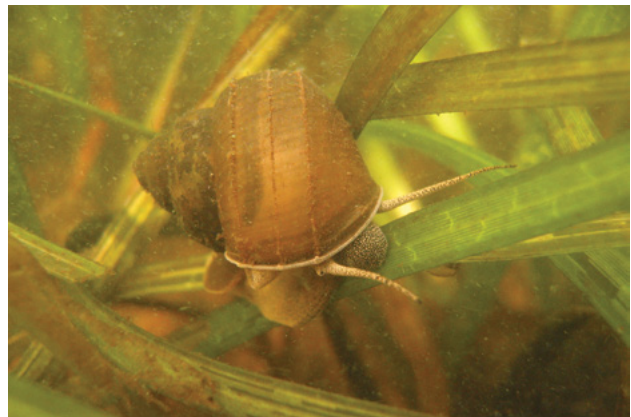
Impacts

- Cause mortality of largemouth bass embryos by invading bass nests.
- Carry parasites that can harm native wildlife.
- Can die-off in large numbers, fouling beaches and shoreland.

Where to Look

People spread banded mystery snails primarily through movement of water-related equipment and illegal release of aquarium pets. Young can be as small as a grain of rice. Adults and young may be hidden in mud and debris. The operculum allows them to close their shells and survive out of water for multiple days.

- Check parts of equipment (watercraft, docks, rafts, lifts) that were submerged underwater. Gently scrape off adults and eggs, which look like small deposits of gelatinous material.
- Clean mud and debris from anchors, waders, and other gear.



Rusty Crayfish (*Orconectes rusticus*)

Regulated Invasive Species not on the Infested Waters List

Identification

Rusty crayfish are small crustaceans with long antennae, two pincer claws, and eight legs. They grow up to five inches long and their body color varies from light to dark brown. A pair of rust-colored spots may be found on either side of the carapace (hard upper shell). Claws are tear-drop shaped and often have black bands adjacent to the orange tips.



Biology

Rusty crayfish are omnivores, consuming many food sources such as plants, animals, organic material, sediment, etc. They prefer areas with rocks, logs, or other debris for shelter. After mating, females can lay between 80 and 575 eggs. Eggs hatch in three to six weeks, depending on water temperature. The young stay with the female for several weeks after hatching. Their expected lifespan is three to four years.

Origin

Rusty crayfish are native to the United States Ohio River Basin. They were likely introduced and spread through the improper use and disposal of live bait. The species is also commonly imported and sold by the aquarium trade, and to schools by biological supply houses, leading to the potential for illegal release into the wild. The first established population in Minnesota was in Lake Superior in the late 1990s.

Impacts

- Destruction of aquatic plant beds.
- Aggressive displacement of native crayfish species.
- Breeds with native crayfish, replacing native crayfish populations with hybrids.
- Compete with fishes for prey and consumes fish eggs.

Where to Look

People spread rusty crayfish primarily by illegal release of aquarium pets and improper use and disposal of live bait. They can be hidden in plants, mud, and debris.

- Dispose of unwanted bait in the trash. Remind anglers they should be prepared to bring unwanted bait with them when they leave, because most accesses do not have trash cans.
- Clean plants, mud, and debris from anchors, waders, and other gear.
- Note: Licensed anglers may collect any crayfish for use as bait on the same water body. They can also harvest up to 25 pounds of any crayfish for personal consumption.



Silver Carp (*Hypophthalmichthys molitrix*)

Prohibited Invasive Species on the Infested Waters List

Identification

The silver carp is a large filter feeding fish that can weigh up to 90 pounds and grow to 50 inches. They are silver in color and can be greenish on their back. They have tiny scales on their body, and no scales on their heads. Their eyes are low set below the mouth. They have large upturned mouths without barbels or teeth. There is a long keel that extends in front and behind the pelvic fins.



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Biology

The silver carp is a filter feeding fish that becomes sexually mature between four and six years old. They spawn when water temperatures are between 62.5°F and 79°F and require flowing water for reproduction. If startled by the sounds of watercraft, silver carp can jump up to 10 feet out of the water.

Origin

Silver carp are native to eastern Asia. The species was imported from China to the United States during the early 1970s to help fish aquaculture operations and improve water quality in retention ponds/sewage lagoons. Large flood events allowed the species to escape into the Mississippi River, where they reproduced and established wild populations. They continue to spread through flood events and through migration within connected river systems.

Impacts

- Compete with native mussels, larval fishes, and paddlefish for similar food sources (plankton).
- Can jump up to 10 feet out of the water when startled. They often jump into boats and injure watercraft users, personal watercraft operators, and water skiers.

Where to Look

People spread silver carp primarily through the improper use and disposal of live bait, as juveniles are difficult to distinguish from gizzard shad and other native baitfish.

- Dispose of unwanted bait in the trash. Remind anglers they should be prepared to bring unwanted bait with them when they leave, because most accesses do not have trash cans.
- Report any occurrences of silver carp to the DNR immediately by taking a photo and making arrangements with the DNR to transport the carp to the nearest fisheries office. Call 651-587-2781 or email invasivecarp.dnr@state.mn.us



Aquatic Invasive Plants

Eurasian Watermilfoil (*Myriophyllum spicatum*)

Prohibited Invasive Species on the Infested Waters List

Identification

Eurasian watermilfoil is a rooted, submerged aquatic plant with green leaves and a variable white to reddish stem. Leaves are feather-like, with four leaves arranged in a whorl (radiating out from a single point) around the stem. Each leaf has 12 to 21 leaflet pairs. Leaflets are typically limp when the plant is removed from the water.

- Eurasian watermilfoil looks similar to many native, beneficial watermilfoils found in Minnesota lakes and rivers.
- Eurasian and northern watermilfoils often hybridize. Hybrids have similar characteristics and require genetic screening to distinguish from non-hybrids.



Biology

Eurasian watermilfoil is a perennial plant that can grow up to 20 feet tall. It creates canopy-like structures as it grows toward the water's surface. It primarily establishes through vegetative fragmentation—a fragment can break off, settle in the sediment, grow roots, and establish a new plant. The plant dies back in the fall, but the root system can survive the winter and begin growing again in the spring.

Origin

Eurasian watermilfoil is native to Europe and Asia. It was discovered in the eastern United States in the early 1900s. The species

was likely introduced and spread through the movement of watercraft and water-related equipment. In Minnesota, it was first recorded in Lake Minnetonka in 1987.

Impacts

- Forms thick mats at the water's surface, which makes water sports and recreation difficult.
- Overtakes habitat and outcompetes native aquatic plants, potentially lowering diversity.
- Provides unsuitable shelter, food, and habitat for native animals.

Control

Management of invasive aquatic plants involving either mechanical removal of plants or application of herbicides to public waters requires a permit from the DNR.

- Mechanical control can be done by cutting or pulling the plant by hand or with equipment such as rakes or cutting blades.
- Herbicide control can be done using herbicides approved for aquatic use.
- Biological control involving a native insect (weevil) is currently being researched.

Where to Look

People spread Eurasian watermilfoil primarily through the movement of watercraft and water-related equipment. Plant fragments can get tangled in equipment. A small fragment can potentially start a new population.

- Check and clean off plants from the trailer (bunks and rollers, axles, near the license plate) and watercraft (keels, rudders, propellers, engines, trim tabs, transducers).
- Clear off plants, mud, and debris from anchors, ropes, and other gear.
- Invasive mussels and snails can attach to plants, so by removing them you reduce the risk of spreading other AIS as well.



Curly-leaf Pondweed (*Potamogeton crispus*)

Prohibited Invasive Species not on the Infested Waters List

Identification

Curly-leaf pondweed is a rooted, submerged aquatic plant with olive-green to reddish-brown leaves and a variable white/green/red stem. Leaves are blunt, wavy and look lasagna-like, with fine toothed edges that grow approximately two to three inches long. Reproductive structures called turions are brown, typically a half-inch in size, and look like sharp, small pinecones.

- Curly-leaf pondweed looks similar to many native beneficial pondweeds found in Minnesota lakes and rivers but can be distinguished based on its serrated leaf edges.



Biology

Curly-leaf pondweed generally grows from the shore to water depths of 15 feet and can grow up to 15 feet tall. It tolerates low water clarity and will readily invade disturbed areas. Turions sprout in the fall, and it is generally the first pondweed to come up in the spring. It typically flowers, fruits, and produces turions in June before dying back in mid-summer.

Origin

Curly-leaf pondweed is native to Eurasia, Africa, and Australia. It was likely introduced when common carp were intentionally introduced into Midwest waters as a game fish in the 1880s. The species was likely spread through the movement of watercraft and water-related equipment. It was first noted in Minnesota around 1910.

Impacts

- Forms dense mats at the water's surface, making water sports and recreation difficult.
- Overtakes habitat and outcompetes native aquatic plants, potentially lowering diversity.
- Provides unsuitable shelter, food, and habitat for native animals.
- Midsummer die-offs can litter the shoreline with dead plants, cause algae blooms, and deplete oxygen. This can lead to fish kills and impacts on other aquatic life.

Control

Management of invasive aquatic plants involving either mechanical removal of plants or application of herbicides to public waters requires a permit from the DNR.

- Mechanical control can be done by cutting or pulling the plant by hand or with equipment such as rakes or cutting blades.
- Herbicide control can be done using herbicides approved for aquatic use.

Where to Look

People spread curly-leaf pondweed primarily through the movement of watercraft and water-related equipment. Plant fragments can get tangled on equipment. Turions may be hidden in mud and debris. A small fragment or turion can potentially start a new population.

- Check and clean off plants from the trailer (bunks and rollers, axles, near the license plate) and watercraft (keels, rudders, propellers, engines, trim tabs, transducers).
- Clear off plants, mud, and debris from anchors, ropes, and other gear.
- Invasive mussels and snails can attach to plants, so by removing them you reduce the risk of spreading other AIS as well.



Starry Stonewort (*Nitellopsis obtusa*)

Prohibited Invasive Species on the Infested Waters List

Identification

Starry stonewort is a bushy, bright green macro-algae. Thin, bright green branch-like structures can be variable in length and are arranged in whorls (radiating out from a single point) around the stem. Branchlets often have uneven forks (one longer than the other) at the tips. It produces white star-shaped reproductive structures called bulbils, the size of a grain of rice on clear threads.

- It looks similar to many native, beneficial grass-like algae, such as other stoneworts and muskgrasses found in Minnesota lakes and rivers but can be distinguished based on its production of star-shaped bulbils.



Biology

Starry stonewort is a macro-algae, meaning it does not have a vascular system like true plants. Each branchlet or stem is a single cell. Bulbils are present throughout the growing season but become most obvious and plentiful in late summer. Starry stonewort may form a dense carpet of material in shallow areas.

Origin

Starry stonewort is native to Eurasia, from the west coast of Europe to Japan. The species was unintentionally introduced into the United States Great Lakes through the discharge of contaminated cargo ship ballast water. The first occurrence in the United States was in 1978 along the St. Lawrence River. It was first confirmed in Minnesota in August 2015, in Lake Koronis and connected Mud Lake (Stearns County).

Impacts

- Forms dense mats at the water's surface, which makes water sports and recreation difficult.
- Overtakes habitat and outcompetes native aquatic plants, potentially lowering diversity.
- Provides unsuitable shelter, food, and habitat for native animals.

Control

Management of invasive aquatic plants involving either mechanical removal of plants or application of herbicides to public waters requires a permit from the DNR.

- Mechanical control can be done by cutting or pulling the plant by hand or with equipment such as rakes or cutting blades.
- Herbicide control can be done using herbicides approved for aquatic use.

Where to Look

People spread starry stonewort primarily through the movement of watercraft and water-related equipment. Fragments can get tangled in equipment and bulbils may be hidden in mud and debris. A small fragment or bulbil can potentially start a new population.

- Check and clean off plants from the trailer (bunks and rollers, axles, near the license plate) and watercraft (keels, rudders, propellers, engines, trim tabs, transducers).
- Clear off plants, mud, and debris from anchors, ropes, and other gear.
- Invasive mussels and snails can attach to plants, so by removing them you reduce the risk of spreading other AIS as well.



Flowering Rush (*Butomus umbellatus*)

Prohibited Invasive Species on the Infested Waters List

Identification

Flowering rush is a reed-like wetland plant that grows one to four feet high. It has pink flowers that grow in an umbrella shape around a flower stalk. Leaves are dark green, extend from the roots, and have a triangular cross-section. Roots are bulb-like and appear to “hug” or cup one another.

- Flowering rush is difficult to identify when not in flower, as it closely resembles many native, beneficial shoreland plants in Minnesota, such as the common bulrush.



Biology

Flowering rush is a perennial plant that grows along shores in shallow, slow-moving water. In deeper water, it can grow in a submerged form that does not produce flowers. It flowers in early summer through mid-fall. Small buds that form in the clusters of flowers can disperse and grow into new plants. The plant reproduces by vegetative spread from its rhizome (an underground stem that sends out roots and shoots from its nodes) in the form of small onion-like buds (bulbils). Bulbils can detach and spread through water currents. Individual pieces of the rhizome can also break off and produce new plants.

Origin

Flowering rush is native to Europe and Western Asia. The first discovery in North America was in the St. Lawrence River in 1897. The species was unintentionally introduced into the United States Great Lakes

through the discharge of contaminated cargo ship ballast water. The species was commonly imported and sold by the water garden trade, leading to the potential for illegal release into the wild. Flowering rush was first confirmed in Minnesota in 1968.

Impacts

- Dense growth along shoreland areas makes it difficult to access open water.
- Overtakes habitat and outcompetes native aquatic plants, potentially lowering diversity.
- Provides unsuitable shelter, food, and habitat for native animals.

Control

Management of invasive aquatic plants involving either mechanical removal of plants or application of herbicides to public waters requires a permit from the DNR.

- Mechanical control can be done by cutting the plant below the water surface several times per summer and removing all cut parts from the water. However, in some instances, cutting has facilitated spread. Hand digging is best for small infestations, especially when water levels are low.
- Herbicide control can be done using herbicides approved for aquatic use.

Where to Look

People spread flowering rush primarily through movement of water-related equipment and illegal release of water garden plants into public waters. The rhizome buds and bulbils can be hidden in mud and debris. Fragments can survive out of water for several weeks.

- Check and clean plants, mud, and debris from trailers, anchors, waders, and other gear.



Purple Loosestrife (*Lythrum salicaria*)

Prohibited Invasive Species not on the Infested Waters List

Identification

Purple loosestrife is a wetland plant with purple flowers arranged on flower spikes. Leaves are lance-shaped with smooth edges arranged in pairs on the stem and rotated 90 degrees from the pair below. A recognizable feature is the woody, square-shaped stem, which is generally four to six-sided. A single plant is made up of multiple woody stems with a thick root system. It spreads primarily by seeds, but pieces of the roots and stem fragments can also produce new plants.

- It looks similar to many native, beneficial wetland plants found in Minnesota shoreland areas and wetlands.



Biology

Purple loosestrife is a perennial plant found in a range of wet soil habitats. It can grow in a couple feet of water or on dry shore near the water. It is commonly found in roadside ditches. Plants range from two to six feet tall, with several half to one foot long flower stalks on a single plant. Plants bloom from early July to September. Roots can send out 30 to 50 shoots, creating a dense web. Each mature plant can produce up to 2.7 million seeds annually. Seeds the size of sand grains are easily spread by water, wind, wildlife, and humans.

Origin

Purple loosestrife is native to Europe and Asia. The species was unintentionally introduced to the United States Great Lakes through contaminated solid cargo ship ballast as well as through the deliberate importation of seeds. Purple loosestrife was sold and planted for decades as a decorative, ornamental plant. The first discovery in the United States was in Lake Ontario in 1869.

Impacts

- Dense growth along shoreland areas makes it difficult to access open water.
- Overtakes habitat and outcompetes native aquatic plants, potentially lowering diversity.
- Provides unsuitable shelter, food, and habitat for native animals.
- Dense root systems change the hydrology of wetlands.

Control

Management of invasive aquatic plants involving either mechanical removal of plants or application of herbicides to public waters requires a permit from the DNR.

- Mechanical control, only recommended for small populations, can be done by digging the plant roots or cutting the flower stalks to prevent seed production.
- Herbicide control can be done using herbicides approved for aquatic use.
- Biological control can be done using beetles which were carefully introduced and have successfully reduced populations across the state. These beetles only eat purple loosestrife and can be collected or reared for release.

Where to Look

People spread purple loosestrife primarily through the movement of equipment and uninformed release of garden plants. Tiny seeds can be hidden in mud and debris. Roadside maintenance equipment can also spread this plant and its seeds.

- Check and clean plants, mud, and debris from trailers, anchors, waders, and other gear.

Invasive Fish Diseases

Contact fish.health.laboratory.dnr@state.mn.us with concerns about fish kills and diseases.



There are many other invasive species of concern in Minnesota and some species that are not here yet that could cause harm to Minnesota waters. Learn more here:



mndnr.gov/qr/AISGuide

Viral Hemorrhagic Septicemia Virus (VHS)

Viral hemorrhagic septicemia virus is a serious pathogen of fresh and saltwater fish. VHS is a rhabdovirus that affects fish of all size and age ranges. It does not pose any threat to human health, but can cause bleeding of fish tissue, including internal organs, and potentially the death of infected fish. Once a fish is infected, there is no known cure.

The clinical signs of VHS may include tissue hemorrhaging, unusual behavior, anemia, bulging eyes, bloated abdomens, and rapid onset of death; however, these symptoms could apply to many different fish diseases. There is no clear visual diagnostic to confirm VHS. Not all infected fish show signs and may become carriers of the disease. The only way to confirm VHS is to test the fish in a lab.





**Section 11:
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, collection and sampling 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 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.
- (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. The delegation agreements may provide for the assumption of legal, financial, and administrative responsibilities for inspection programs on some of 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 create 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.

Frequently Asked Questions and Scenarios

Q What if a watercraft I'm inspecting has lots of zebra mussels, or it is just too hard to clean?

A1 **If they just arrived at an access:**
Inform the watercraft user that they cannot launch. It is important that the user understands what issues you have encountered. Explain to them specifically what you are seeing, and help them understand where the potential threats are.

Give them a permit to transport to a decontamination location. Complete the entire survey, making sure all information is clearly recorded for law enforcement. Contact your supervisor to report the incident, and follow your supervisor's protocol for informing law enforcement.

Even Level 2 inspectors encounter watercraft that are too difficult to decontaminate, and every watercraft that is turned away is an opportunity to educate watercraft users on how to avoid similar situations in the future.

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 remove watercraft, you can provide their name to the user.

Contact your supervisor to report the incident, and follow your organization's protocol for informing law enforcement.

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.

If a wakesport boat with ballast tanks arrives, verify there is no water in the tanks by having the watercraft user activate ballast tank pumps. If soft ballast tanks are installed, ask to verify the tanks are empty. If hard and soft ballast tanks are full, deny launch and send watercraft away from the access to drain. If a decontamination unit is present, send watercraft to the Level 2 inspector to have these systems flushed.

A2 **If leaving an access:**
All plugs need to be removed and water needs to be draining on exiting boats according to law.

Q What should I do if I find 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.



Duckweed (not to scale)

A1 If they are arriving at the access:

After educating the user, inform them that they cannot launch until they have cleaned their equipment off. Once all of the aquatic plants are removed, allow them to launch. If present, a Level 2 inspector can perform a decontamination using hot water to kill any attached plants or invasive animals and high pressure to remove them.

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, watercraft can also be re-launched. If present, a Level 2 inspector can perform a decontamination using hot water to kill any attached plants or invasive animals and high pressure to remove them.

Q What if a watercraft with attached mussels is exiting a water body that is 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 water body you are working at is un-infested, explain to the user why there is an issue.

Complete your survey, making sure to ask how long the watercraft has been in the water, and which water bodies the watercraft has been in before this visit. Inspectors should take pictures and samples, utilizing the "Suspected AIS Collection" form located in Appendix C of this manual. It will walk you through any information that is needed.

If a decontamination unit is present, send their watercraft for a full decontamination. If none is present, provide them with a permit to transport to a decontamination location. Contact your supervisor to report the incident, and follow your organization's protocol for informing law enforcement.

Frequently Asked Questions and Scenarios Cont.

Q Are inspections just an excuse to look in my livewell?

A No. Inspectors are not law enforcement, and they are only looking for AIS. We are at the access to stop invasives from spreading further throughout our state, and educating people on how to find and remove them is our purpose.

If a conservation officer or other licensed peace officer performs an inspection, they are required to address any violations they see.

Q Do the inspections take a long time or cause big traffic back-ups?

A No. Watercraft inspectors are trained to be efficient in order to minimize delays.

Q Isn't the spread of invasive species 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 zebra mussels, each year they are contained could save us tens to hundreds of millions of dollars of taxpayer money. Also, preventing the spread of invasive species 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 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. Clear water also can enable aquatic plant species to grow in more areas of a water body which along with problem algae, impacts water quality, causing taste and odor problems in drinking water.

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.

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 source 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, and Dispose prevention steps, you can safely move your boat between waters. Additionally, drying watercraft and equipment for 5 days can reduce the risk of spreading AIS.

Q How are you going to inspect and decontaminate thousands of boats?

A While we attempt to inspect a large number of watercraft at high risk locations, only those with obvious signs of aquatic invasive species will be decontaminated. This could be plants, mud, or even visible or suspected water. Many decontaminations are done because the watercraft will be launched in another water body within 48 hours.

Q Are zebra and quagga mussels harmful to humans?

A Not directly. They do not represent 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. Due to these toxic metals, we can't harvest these mussels for human consumption in order to get rid of them.

Q What should I do if there is lots of algae, that is not starry stonewort, on a bunk trailer?

A Algae can be hard to remove fully, but you should try to remove as much as possible. If there is a decontamination unit available have the watercraft user speak with the on-site Level 2.

Q What should I do when a watercraft user takes their watercraft off the water to get gas and return the same day?

A Complete your inspection like normal following all protocols. If the watercraft needs to go through a decontamination process, provide an authorization form or have an on-site decontamination completed. Inform the watercraft user they need to be following all AIS laws when they relaunch their watercraft.

Q Do portable, aerated, bait coolers need to be drained even if they don't contain lake water?

A Yes, if the portable bait cooler was taken out on the water on the watercraft. Any water that is not drinking water, transported on a watercraft on the open water has to be drained when exiting that water body. This reduces the risks of AIS being transported from one water body to another. There are also several fish diseases that can be transported by bait fish that could be passed along to native fish if not drained properly.

Q Does it matter if zebra mussels are dead or alive, when found during an inspection?

A No, zebra mussels are a prohibited invasive species, which means that it is illegal to possess them. Dead or alive you will want to report any zebra mussels attached to a watercraft. When zebra mussels are dead they can be removed easier but that is not always the case. Some mussels could still be alive even if they look dead.

Q Is there a certain number of zebra mussels that require a report?

A No, you should report all zebra mussel violations, even if it is just one or two. Zebra mussels can be tiny and hard to see. Many times if you find one there are many others hiding in other areas on the watercraft.

Q Can duck hunters have cattails or reeds on their watercraft for use as camouflage?

A Yes, as long as the cattails and reeds are cut above the waterline of the growing plant. The cattails and reeds then need to be secured to the watercraft above the waterline.

Q As a watercraft inspector, do I have the discretion to not interact with waterfowl hunters who have a firearm and I am not comfortable with conducting an inspection?

A Yes, if you do not feel comfortable around firearms you do not need to interact with the watercraft users. You may ask the watercraft user/hunter to secure their firearms and that you will conduct an inspection after they have secured their firearms. This is not a refusal of an inspection if you decide not to inspect the watercraft if you do not feel safe enough to do so.



Invasive Species Alert

These waters are designated as **INFESTED WATERS** and contain:

Zebra Mussels

(common size: 1/4 to 1-1/2 inch)



Eurasian Watermilfoil

(12-21 pairs of leaflets)



Minnow plant



Minnesota Department of Natural Resources





Appendix A: General Permits

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

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: _____



Appendix B: Recommended Equipment for Inspections

Recommended Equipment for Inspections

A designated inspection area should be identified, with signage identifying its location. This is usually a flag or sandwich board. Inspectors will need to be sure the following equipment and materials are available:

Uniforms

- Staff identification: shirts, badges, name tags, hats, inspection vest, etc.

Safety Equipment

- Insect repellent
- Traffic safety vests
- Sun block
- First aid kit
- Closed-toe shoes

Inspection Equipment

- Survey device with current year survey or paper inspection forms
- Crescent wrench or needle nose pliers to take out bilge plugs (9/16" socket also handy)
- Cell phone with camera
- Hand wipes
- Hand sanitizer
- Paper towels
- Inspection mirrors
- Flashlights
- Magnifying glass
- Clipboards
- Pens
- Grabber tool
- Sponge
- Chairs
- Trash bags
- Plastic scrapper tool

Educational Materials

- Brochures, fliers, identification cards, stickers, etc.
- Boating regulation booklets
- Fishing regulation booklets

Signage

- Banner, flag, or sandwich board
- Directional signs



Appendix C: Watercraft Inspection and Collection Forms

WATERCRAFT SURVEY

Date: _____

Case Number: _____ License Plate Number: _____ License Plate State _____

If zebra mussels were found please make sure you have license number, photograph, and follow up with supervisor

Inspection type: Entering Exiting

Decontamination unit present: Yes No

Watercraft Type (select one): Fishing Boat Runabout Pontoon Wakesport Boat Personal Watercraft PWC
 Jon Boat Cabin Cruiser Sailboat Canoe/Kayak/Similar LSP Transport Barge/Pontoon Boat Lift/Dock/Similar

Drain Plug (select one): In Out **If IN**, did they remove the plug when asked? Yes No

How long was the watercraft in the water: Less than 24 hours More than 24 hours

When do you plan to launch next: Same day (within 24 hours) Next day (24-48 hours) 3-4 days 5 days or more

When has the watercraft user spoken with an inspector:

This season:

If they have been talked with this season than, skip to the inspection of the watercraft.

Never or not this season:

Tell them about AIS as you inspect the watercraft Tell them about EWM Tell them about zebra mussels

Inspecting Watercraft

Are any plants or animals found (check all that apply):

plants zebra mussels spiny water flea snails water mud

other: _____ none

Where were any plants or animals found (check all that apply):

watercraft trailer equipment or accessories (e.g. anchor) zebra mussels on vegetation

Is further decontamination necessary?

Yes, and decontamination unit is available

Yes, and decontamination unit not available (Provide permit and instruct owner to clean their watercraft prior to launching.)

No

If decontamination is being conducted please select the type: Full Partial Courtesy User Refused

What was the last water body visited?

Minnesota lake: _____ Minnesota County: _____

out of state prefers not to answer does not know storage transported by a LSP

What water body do they plan to visit after this trip?

Minnesota lake: _____ Minnesota County: _____

out of state prefers not to answer does not know storage transported by a LSP



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
- Livewell
- 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:

- Date
- Water body
- 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.).

- Before removing from a boat or equipment, be sure to take photos. Then get vehicle and boat license numbers, and description of boat and watercraft user. If possible, get the name of the vehicle driver.

Citizen report of new infestation:

Collect contact information for the citizen reporting the infestation; ask if the reporter has photographs. 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 photos and information to: wip.dnr@state.mn.us

Violation Write-Ups

Please complete a write up when any of the following violations occur (see section 7 for more details on handling violations):

- a. Zebra mussels are found during an entering inspection
- b. Zebra mussels are found during an exit inspection **at a lake not known to be infested.**
- c. A watercraft user refuses a legally required decontamination.
- d. A watercraft user refuses inspection after you attempt to engage them in the inspection process. Do not take photos for this violation.

Required Information:

1. Date/Time
2. Inspector name and phone #
3. Access, county, and nearest city
4. Description of the watercraft
5. Description of the vehicle towing the watercraft with license plate of vehicle
6. Brief description of the watercraft user
7. Description of the violation and situation
8. Was law enforcement contacted for any reason? If so, what happened?
9. Actions of the inspector regarding launch and decontamination. Some examples:
 - a. Boat sent to decontamination on site
 - b. Gave watercraft user an authorization form
 - c. Removed everything by hand and allowed to launch

Examples of a write-up:

- Date: June 12th, 2025 at 8:15AM
- Inspector Info: John Smith 651-555-1234
- Location: Clear Lake North Access, Ramsey County, St. Paul.
- Watercraft: Lund Fishing Boat, MN 5555ZX
- Vehicle towing: MN 539KCD, Black Yukon
- Watercraft user: Older man, white hair and glasses
- Enforcement: Not contacted.

I found plants and plants with zebra mussels attached on a boat trying to enter. The boat had been on Upper Prior 2 days earlier. Plants were found on the trailer and the zebra mussels were on plants on the anchor. I denied them launch and told them about their decontamination options and provided them with an authorization form.

Tennessee Warning

You are being asked to share data on aquatic invasive species violations. The data you are providing is primarily public data. Names, personal email addresses, and personal phone numbers are not public data. The consequence from not supplying the not public data is that enforcement may not be able to take follow-up actions on the violation. Only those with a business need will have access to the data. It will not be shared unless court ordered to or as otherwise provided by law. The public data you provide can be released by the agency in response to a Data Practices Request.

SECTION 1: General Information					
Date of Violation			Time of Violation		
				AM	
				PM	
Inspector Name			Inspector Phone #		
Lake and Access Name			City and County		
Vehicle Make, Model, and Color			Vehicle License Plate		
Boat Registration			Boat Model and Color		
Lake Service Provider?	Yes	No	LSP Business Name		
Enforcement Contacted?	Yes	No	Enforcement Name		
SECTION 2: Decontamination Refusal, if applicable					
Decontamination Unit Present	Yes	No	Legally Required Decon	Yes	No
SECTION 3: Describe the Situation					
Tips: Complete this form with as much detail as possible. Include a description of the driver and a name (if possible).					
SECTION 4: Final Steps					
1. Complete this form (digitally or by hand) or draft an email containing all of the same information, and send a copy to your supervisor on the same day as the incident.					
2. Upload completed surveys, if applicable, on the same day the violation occurred.					

County ID Numbers and Names

01	Aitkin	30	Isanti	59	Pipestone
02	Anoka	31	Itasca	60	Polk
03	Becker	32	Jackson	61	Pope
04	Beltrami	33	Kanabec	62	Ramsey
05	Benton	34	Kandiyohi	63	Red Lake
06	Big Stone	35	Kittson	64	Redwood
07	Blue Earth	36	Koochiching	65	Renville
08	Brown	37	Lac qui Parle	66	Rice
09	Carlton	38	Lake	67	Rock
10	Carver	39	Lake of the Woods	68	Roseau
11	Cass	40	Le Sueur	69	St. Louis
12	Chippewa	41	Lincoln	70	Scott
13	Chisago	42	Lyon	71	Sherburne
14	Clay	43	McLeod	72	Sibley
15	Clearwater	44	Mahnomen	73	Stearns
16	Cook	45	Marshall	74	Steele
17	Cottonwood	46	Martin	75	Stevens
18	Crow Wing	47	Meeker	76	Swift
19	Dakota	48	Mille Lacs	77	Todd
20	Dodge	49	Morrison	78	Traverse
21	Douglas	50	Mower	79	Wabasha
22	Faribault	51	Murray	80	Wadena
23	Fillmore	52	Nicollet	81	Waseca
24	Freeborn	53	Nobles	82	Washington
25	Goodhue	54	Norman	83	Watonwan
26	Grant	55	Olmsted	84	Wilkin
27	Hennepin	56	Otter Tail	85	Winona
28	Houston	57	Pennington	86	Wright
29	Hubbard	58	Pine	87	Yellow Medicine

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.

Baitwell: An interior compartment that specifically holds live aquatic bait. Sometimes it is a separate container on the boat or incorporated in the livewell 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 livewell, baitwell, 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 watercraft user 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.

Livewell: 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.

Livewell Pump: A pump that assists in filling a livewell 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 known 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 Dreissenids 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.

Find FREE decontamination locations here:



mndnr.gov/decon



**AQUATIC INVASIVE SPECIES AND
THE WATERCRAFT INSPECTION PROGRAM**

500 Lafayette Road, St. Paul, MN 55155-4025
888-646-6367

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