

# PROTECT OUR WATERS FROM AQUATIC INVASIVE SPECIES

## Inspection and Cleaning Guidelines

Dock & Lift • Watercraft • Trailers • Pontoons • Waterski Boats • Jet Skis  
Kayaks, Canoes & Stand Up Paddle Boards • Sail Boats • Float Planes  
Dive Gear • Hunting Gear • Fishing Gear



# Safeguarding Minnesota's Waters

Over the past 30 years, we have seen Aquatic Invasive Species (AIS) move into our lakes and rivers. Our water bodies are currently infested with the species below, and more threats are on the horizon. If we are not vigilant about keeping Aquatic Invasive Species out, we might find ourselves with lakes and streams that do not provide the food, recreation, or aesthetic opportunities that Minnesota is historically known for providing residents and visitors. Where we live and work, the places we vacation, our recreational activities, how we relax and play with our kids, are all being affected nationally by the spread of Aquatic Invasive Species. Minnesota is the "Land of 10,000 Lakes"!

**The key to this is YOU...and the public's ability to "Clean, Drain, and Dry" their watercraft and equipment so as not to move these Aquatic Invasive Species around Minnesota and the Upper Midwest United States.**



Curly-leaf pondweed



Zebra mussels



Eurasian flowering rush



Faucet snails



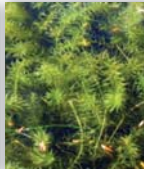
Spiny waterflea



Eurasian watermilfoil



Silver asian carp



Hydrilla



Rusty crayfish



Viral Hemorrhagic Septicemia



For More Information Visit: [www.protectyourwaters.net](http://www.protectyourwaters.net)

For Information on MN AIS Laws Visit:

[www.dnr.state.mn.us/invasives/laws.html](http://www.dnr.state.mn.us/invasives/laws.html)



# New Mussel Threat

Invasive mussels are a problem because they form dense, destructive colonies that encrust almost any underwater surface. Irrigation pipes, watercraft hulls, and boat engines are just a few common targets. Zebra and Quagga mussels also reproduce quickly. An adult female mussel can produce up to a million eggs each year. Newly hatched mussels (called “veligers”) are invisible to see in water and will easily latch onto almost any surface (such as your boat) in the water. Adult mussels can live for up to 30 days in water that collects in boats, equipment, or damp environments. They can also live for many days out of water; they simply clam up! Veligers can live up to 27 days in standing water in boats without a food source See [www.100thmeridian.org](http://www.100thmeridian.org) for information. When leaving known infested waters—all boats with air conditioning, personal sanitation, wash down systems and ballast tanks must be decontaminated at a MN DNR approved boat/equipment decontamination facility as water is difficult to completely drain from these systems and cannot air dry. So, as boaters and anglers visit other uninfested lakes, live mussels may travel with them and spread to these new waters.

**This is what we all must STOP.**



## Potential Damage

Large colonies of this invasive mussel already infest many popular recreational lakes in Minnesota. Further spread into other Minnesota water bodies could:

- **Destroy your favorite fisheries.** Invasive mussels have decimated fisheries by consuming critical plankton, collapsing food webs and “clearing” the water of vital nutrients and plankton.
- **Pollute shorelines and recreational areas.** Mussels have razor-sharp shells that wash up on shorelines and beaches, resulting in cut feet (pets too) and other unpleasant recreational problems. Decaying mussels have a nasty stench and can cause human health hazards.
- **Ruin your boat and equipment.** Mussels will grow all over your boat and motor, including the lower unit, intake valves, cooling systems, and through-hull fittings, will cause motors to overheat leaving you with high repair costs.
- **Cost millions of dollars to control, contain and eradicate.** It could cost tens of millions of dollars to remove zebra mussels from critical water and power facilities and infrastructure in Minnesota. Those costs will most likely result in higher utility bills and /or taxes for mussel eradication and containment, not to mention increasing maintenance costs that may be passed on to the public.

*For Information on MN AIS Laws Visit:*  
[www.dnr.state.mn.us/invasives/laws.html](http://www.dnr.state.mn.us/invasives/laws.html)  
Also visit: [www.100thmeridian.org](http://www.100thmeridian.org)



# Basic Inspection and Cleaning Checklist

To help stop the accidental spread of Aquatic Invasive Species (AIS), the most effective ways to kill AIS are by drying, or freezing, or using a MN DNR approved boat washing decontamination facility. Take the following actions with your boat and equipment after you exit the water and before you enter a new water recreation area:

1. **Remove the boat from the water and move away from the launch ramp** to clean, inspect and drain your boat, trailer, and wet equipment.
2. **CLEAN off (remove) all plants, debris, mud, or animals from boat, trailer, and wet equipment. Use a brush if necessary.** Scrub hull of watercraft using a stiff brush.
3. **INSPECT all exposed surfaces on your boat and trailer and wet equipment.** AIS (seeds, spores, plant shards, veligers, mussels, animals) frequently collect in cracks and crevices on equipment. Take special care to inspect your trailer's tires, rims, fender wells, bumpers, axles, support rollers, and other places that could hide AIS. **Carefully feel your boat's hull** for any rough or gritty spots, which may be young mussels that have settled on your boat and cannot be seen. Microscopic Quagga/Zebra mussels will feel like sandpaper or sesame seeds.
4. **DRAIN all water from your boat (pull all plugs) and wet equipment to prepare it for drying. Make sure water circulation systems (pumps, hoses) or containers (coolers, sample containers) are drained, including motor cooling systems, ballasts, livewells, bilges, and all internal pipes or lines where water has traveled.** There are many places inside a motor that retain water even after draining. The best solution to date is to dry according to the 100th Meridian dry time standards or freeze over winter. For your boat motor, let the lower unit down for 1 minute, so water in it drains out (raise the lower unit before driving away to avoid damage), since its low operating temperature is suitable for mussel survival. Keep in mind that when a boat is launched and the motor started, it discharges retained water into the new water body, so draining is critically important.
5. **DRY boat/equipment completely, ideally in the sun on a hot day, until "bone dry"** to kill undetected AIS. Some AIS species can live out of the water for as long as 30 days. Don't forget about anchors, ropes, life jackets, nets, water skis, clothing, footwear or other items that have been in the water. See chart below for dry times to kill most AIS species.

*These are **minimum** recommendations under the best drying circumstances in the open air, in full sun, and with all hatches open.*

#### Time of Year for Minnesota

Summer: July & August (80°F-100°F)

Early Summer & Early Fall: June & September (60°F-80°F)

Late Spring & Early Fall: May & October (40°F-60°F)

Winter

#### Dry Time - Consecutive Days\*

7+ days

21+ days

30+ days OR

Freezing for 3 days (72 Hours)

**\*\*ADD 7 drying days when humidity is over 50% when temperatures are between 32°F and 95°F.**

6. **Instead of drying**, you can use a **MN DNR-approved boat washing service locations** to apply hot water (140°F) to wash your boat and trailer and to flush your motor, bilge, ballast, and livewells before launching to another waterbody. **Contact the MN Department of Natural Resources for approved boat washing service locations at [https://webapps15.dnr.state.mn.us/ais\\_decon\\_sites](https://webapps15.dnr.state.mn.us/ais_decon_sites)**

# General Inspection and Cleaning

**Boat Exterior:** Entire hull, floor, transom walls, ballast tanks, ropes and lines, anchors, lights, pitot tube, depth sounders, trim tabs, cavitation plates, thru-hull fittings, depth transducers, water intakes and outlets.

**Motor:** Entire exterior housing, propeller, propeller shaft, propeller shaft support, propeller guards, Propulsion units, lower unit, gimbal area, water intakes and outlets.

**Equipment and Contents:** All fishing nets and other fishing equipment, lines and ropes, float belts, life jackets, float cushions, water skis and tow ropes, ski gloves, equipment lockers, waterfowl decoys and camouflage blinds, clothing and footwear, floats, fenders, dock guards, inner tubes and other inflatable items, downriggers and other fishing equipment, bait containers/buckets and live wells, trolling motors, and internal ballast tanks.

**Trailer:** Trailer frame, axles, license plate and holders, lights and wiring, fenders, hangers, trailer tires and wheels, rollers and bunks, wiring, springs, pockets and hollow spaces.

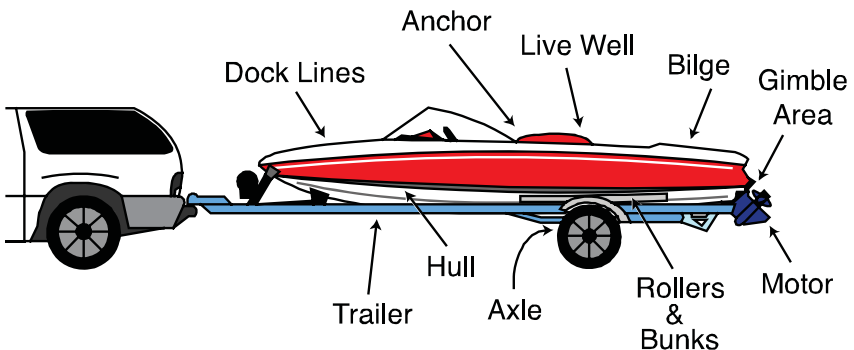
Click here to watch a video on how to clean your boat  
<http://www.100thmeridian.org/Video/Clean.asp>



Utah State Parks



Utah State Parks



***All boats and trailers should be cleaned, drained and dried!***



Photos Utah State Parks & California Department of Fish and Game

Drain the engine, dry the motor well, check the prop and system components, clean trolling motors, make sure everything is drained and dried. Remove all aquatic plants.

1. **Completely drain all water from the motor cooling system.** This is exactly the same as draining the motor at the end of boating season to prevent freezing in the engine cooling system. Failure to do this can result in mussels growing inside the engine block and in the lines carrying cooling water to and from the motor. The consequences can be overheating, resulting in serious damage to the motor, in addition to transporting the mussels to the next body of water.
2. **Some Inboard and stern-drive motors can only be drained using special equipment and procedures.** Follow the motor manufacturers instructions or obtain the services of a qualified service technician.
3. **Be sure to check the trailer** for aquatic plants and other areas on the boat like bow lights.



***Trailered boats are the primary way that Aquatic Invasive Species are introduced to unconnected water bodies.***

***DNR Designated Infested Waters List:***  
[files.dnr.state.mn.us/eco/invasives/infested\\_waters.pdf](https://files.dnr.state.mn.us/eco/invasives/infested_waters.pdf)



# Pontoons and House Boats

1. **Complete the Basic Inspection and Cleaning checklist.**
2. **Completely drain and dry all water systems that use lake/river water**, including your air conditioning, personal sanitation, and washdown systems. Note: sewage must be disposed of at a pump-out facility or dump station. The longer your boat has been in the water, the more likely the chance that these systems have been contaminated.
3. **Take special care to protect system components** including water supply and discharge lines, filter screens, pumps, valves, and associated parts. Small passages in the air conditioning radiator core are highly susceptible to being plugged by mussels.



Utah State Parks

All areas that can hold water should be drained and dried. Pontoons should be inspected for mussels, settlers, and aquatic plants that may have mussels attached.

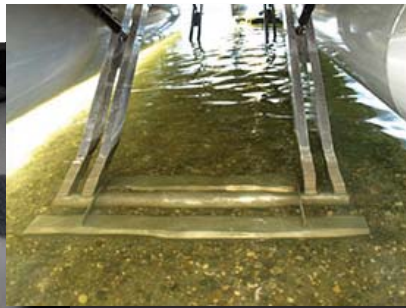


Utah State Parks



Utah State Parks

Boats should be thoroughly cleaned. Those contaminated with mussels should be washed, scraped, drained and dried. Dry time may be between seven days in hot, dry Minnesota summers and up to 30 days in cool moist weather.



Sea Legs™ require special attention. They must be free of aquatic plants and lake debris before transporting them on public roadways. These devices are very difficult to decontaminate, and it is recommended that users allow 21 days of drying time between lakes.

***Boats that are slipped and moored on infested waters run a greater risk of having zebra mussels attached.***

# Water Ski and Wake Board Boats

1. **Complete the Basic Inspection and Cleaning checklist.**
2. **Drain water** from every internal ballast tank system.
3. **Resume normal ballast system operation** when you go boating again. Be sure to winterize the boat when boating season ends.



Southern California Marine Association



Ski boat covers open.



Ski boat ballast water lines.



Ballast system water pump, water lines, and caps should all be flushed and cleaned.



Trim tabs on transom.

***Remember to clean your ski gear as well. Dry ropes, life jackets, wet suits, skis and tubes between use.***



# Jet Skis / Personal Watercraft

1. **While still in the water**, avoid running the engine through aquatic plants near the boat access. After the engine has stopped, turn the watercraft over and pull plants from the water-intake area (this may be easier than crawling under the watercraft while trailered to check for plants). Check the edges of the grate over the water-intake area.
2. **Remove the watercraft from the water and away from the launch ramp.**
3. **Complete the Basic Inspection and Cleaning checklist.**
4. **Start and run the engine for 5 to 10 seconds**, to blow out any excess water contaminants and vegetation from the underbody jet drive system (the dark, damp closed area of the impeller provides an ideal environment for exotic plants and animals to survive).
5. **Stop the engine, and remove all plants, mud, and other contaminants** out of the steering nozzle and the rest of the hull.
6. **Check underneath the watercraft for plants and mud**, especially the water intake area (including the edges of the intake grate).
7. **Dry any pockets** that may be wet or holding water.
8. **Drain water from ballasts.**
9. **Inspect your trailer and any other sporting equipment** (ropes, tubes, wet suits, life vests) for aquatic plants and mud, and remove before you leave the access.



Photo Utah State Parks

Personal watercraft should be drained of all water, washed, and dried.

The steering nozzle should be inspected for aquatic plants that might have mussels



Photo Utah State Parks

# Kayaks, Canoes, and Stand Up Paddle Boards

1. **Complete the Basic Inspection and Cleaning checklist.**
2. **Inspect and clean** any components that apply specifically to the craft, gear, paddles, floats, ropes, anchors, dip nets, and trailer before leaving water access.
3. **Scrub** exterior watercraft surface using a stiff brush.
4. **Rinse** exterior of boat, and trailer, with high pressure, hot (140°F) water.
5. **Drain** water from Watercraft, sponges, bailers, and water containing devices.
6. **Allow the craft to dry thoroughly, ideally in the sun on a hot day (7-30 days depending upon temperature and humidity) until bone dry with all hatches open** before using it in any other water body.
7. **Completely dry inflatables** and other recreational items *before* storing.

**TIP:** Wear quick-dry footwear or bring a second pair of footwear with you when portaging between water bodies.

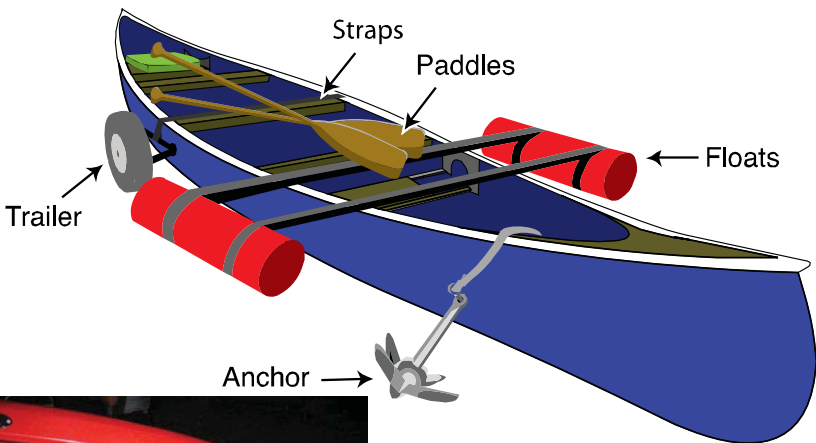


Photo California State Parks

Kayaks, canoes and all inflatables need to be cleaned, drained, and dried.

Any equipment that goes into the water needs to be inspected and cleaned.



Photo California Department of Fish and Game

# Sailboats

1. **Complete the Basic Inspection and Cleaning checklist. Give special attention to the centerboard, bilge board wells, rudderpost, transom, keel, fittings, trailer, and other equipment *before leaving the water access.***
2. **Drain** water from craft, sponges, bailers, air conditioning, personal sanitation, wash-down systems, and other water containing devices. The longer your boat has been in the water, the more likely the chance that these systems have been contaminated. **Note:** sewage must be disposed of at a pump-out facility or dump station.
3. **Scrub** exterior watercraft surface using a stiff brush.
4. **Rinse** exterior of boat, and trailer, with high pressure, hot (140°F ) water.
5. **Allow the craft to dry thoroughly, ideally in the sun on a hot day (7-30 days depending upon temperature and humidity) until bone dry with all hatches,** before using it in any other water body.
6. **Take special care to inspect and thoroughly dry system components** including water supply and discharge lines, filter screens, pumps, valves, and associated parts. Small passages in the air conditioning radiator core are highly susceptible to being plugged by mussels.

Boats that are slipped and moored at infested waters run greater risk of having young and adult mussels. Boaters should check their boats for mussels and vegetation that could carry mussels.



Jeff Peltier



Pelican Lake Yacht Club, Jeff Peltier



Jeff Peltier

# Float Planes

## 1. Before entering the aircraft:

- **Inspect and clean off** aquatic plants, mud, or attached mussels, snails or other animals from all exterior surfaces of floats, wires or cables, and water rudders. Also, check the dock lines, transom, bottom, chine, wheel wells, and float step area. **Scrub** with a stiff brush. **Rinse** landing gear with high pressure, hot (140°F ) water.
- **Pump** water from floats, holes, wheel wells and any other compartments or areas that contain water before takeoff. Always cycle the wheels and rudder before leaving the dock and again after taxing into open water.

## 2. Before take-off check:

- Avoid taxing through heavy surface growths of aquatic plants before takeoff; Re-inspect for any visual sign of aquatic vegetation. If your aircraft must taxi through areas of weed/plant beds to reach open water, you will likely need to manually clear plants a second time off of the floats, cables, or water rudders.
- Raise and lower water rudders several times to remove any attached plants.
- Make sure all floats remain as dry internally as possible during takeoff

## 3. After take-off:

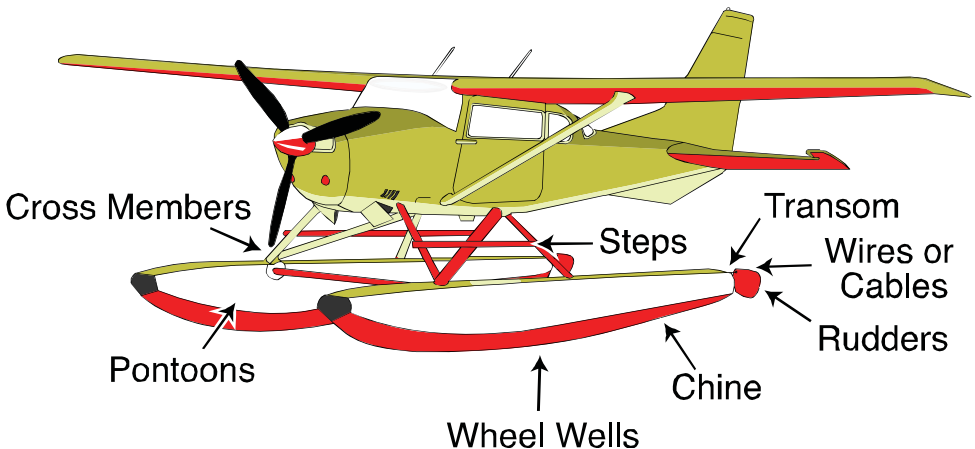
- Raise and lower water rudders several times to free any remaining plant fragments over the waters you left or over land.
- If plants remain and are still visible on floats, cables, or water rudders, return to the lake you left and clean them off.

*If used in known AIS infested waters runway land (if equipped) or trailer and clean aircraft as soon as possible.*

## 4. Storage/Mooring:

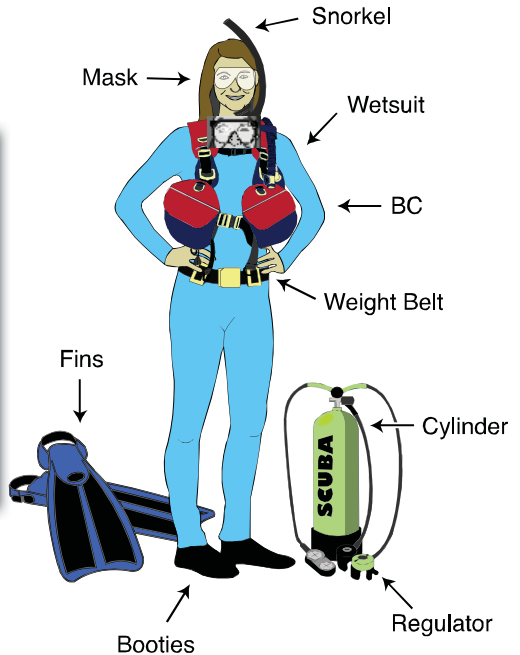
- Remove aircraft from the water whenever practical to better facilitate self-inspection, drainage, removal, cleaning and drying.

Watch video on how to clean float planes:



# Dive & Snorkel Gear

1. **Inspect and clean off all gear** including wet suits, dry suits, fins, regulators, buoyancy compensation (BC) devices, cylinder, masks, gloves, boots, snorkels, weight belt and any other dive gear.
2. **Thoroughly clean and scrub all regulators, BCDs, wet suits, masks, snorkels, and any other dive gear**, making sure to clean both the inside and outside of BCD to ensure no mud or organic matter is present - use a brush if necessary. Rinse inside and outside of gear.
3. **Soak all equipment in a bucket or bathtub full of hot water.** Allow sufficient soaking time for all components to reach the water temperature. Repeat the soak with fresh hot water. You may also soak gear used in freshwater dives in 3.5% salt solution ( $\frac{1}{2}$  cup salt/gallon water) for 30 minutes. Consult equipment manufacturer for recommended AIS decontamination/cleaning products and methods.
4. **Drain water** from BC, regulator, cylinder boot, motor, and any water containing devices before leaving water access.
5. **Allow gear, suit, and other equipment to completely dry for several days, ideally in the sun on a hot day, before diving in different waters.** Longer is better. **Consider using two sets of gear** if possible, alternating between sets every other day. **If feasible, freeze your equipment for 72 hours** to kill any remaining microscopic AIS.



# Hunting Gear

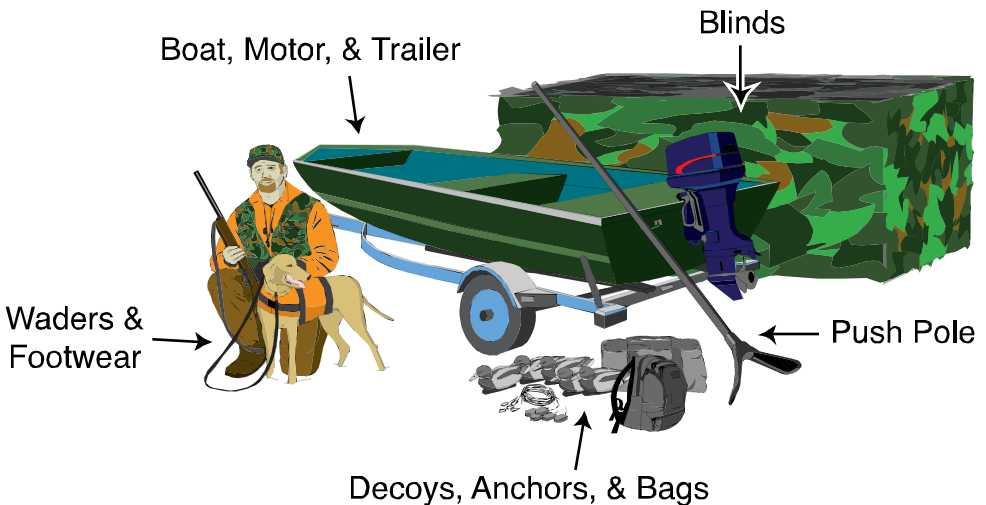
1. **Complete the Basic Inspection and Cleaning checklist. Inspect and clean** off waders, hip boots, ropes, nets, buckets, boat motor, trailer, ATV's push poles, decoys, decoy lines, and anchors. Check all gear that could potentially hide water (mussel veligers) & plants.

**\*\*Hunting Dogs** – inspect and clean its paws and carefully wash away visible mud or foreign matter. Give your dog a good bath and comb it to remove any remaining invasives.

2. **Thoroughly clean and scrub all gear and equipment** making sure to clean both the inside and outside to ensure no mud or organic matter is present - use a brush if necessary. Rinse inside and outside of gear.

3. **Allow gear and other equipment to dry for several days, ideally in the sun on a hot day, before using in different waters.** Longer is better. **Consider using two sets of gear** if possible, alternating between sets every other day. **If feasible, freeze your equipment for 72 hours** to kill any remaining microscopic AIS.

**\*\* Remember that wetlands are just as susceptible to Aquatic Invasive Species as lakes.**



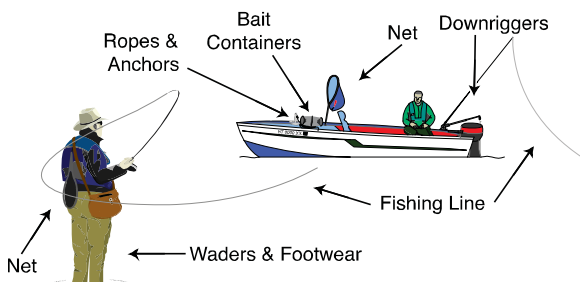
[www.lakegeorgeassociation.org/what-we-do/Invasive-Species/documents/cleanwetsuitscleanwaterlowrescard.pdf](http://www.lakegeorgeassociation.org/what-we-do/Invasive-Species/documents/cleanwetsuitscleanwaterlowrescard.pdf)

[www.usbr.gov/mussels/prevention/docs/EquipmentInspectionandCleaningManual2012.pdf](http://www.usbr.gov/mussels/prevention/docs/EquipmentInspectionandCleaningManual2012.pdf)

***Use elliptical and bulb-shaped anchors to avoid snagging aquatic plants.***

# Fishing Gear

1. **Complete the Basic Inspection and Cleaning checklist. Inspect and clean off** plants, animals, and mud from gear and equipment including waders, footwear, ropes, anchors, bait traps, dip nets, downrigger cables, fishing lines, lures, buckets, and field gear *before leaving water access*. Check all gear that could potentially hide water (mussel veligers) & plants. **Drain** water from boat, motor, bilge, bladder tanks, livewell and portable bait containers *away from ramp*. Anglers using boats should refer to "Basic boat inspection and Cleaning checklist".
2. **Allow gear and other equipment to completely dry before using in different water bodies.** Mussel veligers can survive on equipment if left damp.
3. **Drain all water from bait buckets away from the water body and dry out.** Dispose of unused bait, fish parts, worms, and packing materials in the trash or bag it up and take with you to dispose of in the trash. NEVER put left over, unwanted bait into any water body or dump on land. When keeping live bait, drain bait container and replace it with spring or dechlorinated tap water. Don't add other live fish or water to the bait container. Fish caught for eating or taxidermy should be cleaned away from the water and placed on ice.
4. Don't forget to **drain all water from the livewell.** Dry with all hatches open and exposed to air, and ideally in sunlight until bone dry.
5. **Thoroughly clean and scrub all gear and equipment** making sure to clean both the inside and outside to ensure no mud or organic matter is present - use a brush if necessary. Rinse inside and outside of gear.
6. **Allow gear and other equipment to dry for several days, ideally in the sun on a hot day, before using in different waters. Consider using two sets of gear** if possible. **If feasible, freeze** your equipment for 72 hours to kill any remaining microscopic AIS.
7. **Use** non-felt soled boots instead of felt-soled footwear to further reduce the risk of spreading AIS.



***Drain bait buckets at boat landings.***

# Docks, Lifts, Swim Rafts and Mooring Buoys

Docks, Boat Lifts, Swim Rafts, and Mooring Buoys are of particular concern because they sit in water for extended periods, giving zebra/quagga mussels an opportunity to attach themselves.

1. **If you buy or sell a used boat lift, dock, or swim raft, inspect it for mussels and let it dry for at least 21 consecutive days in open air and full sun** before moving it to the next water body.
2. **Thoroughly inspect all surfaces of your boat lift, dock or swim raft.** If you find any mussels, scrape them off and kill them by crushing them. Dispose of the remains in the trash.
3. **Remove all plants and mud** from your boat lift, dock or swim raft. Dispose of all material in the trash.
4. **Use a Lake Service Provider** that has a permit from the Minnesota DNR to take your dock and lift in and out of the water. They have been properly trained by the DNR to avoid spreading Aquatic Invasive Species.



List of DNR Permitted Lake Service Providers  
[files.dnr.state.mn.us/rlp/permits/lsp/lsp-permits.pdf](https://files.dnr.state.mn.us/rlp/permits/lsp/lsp-permits.pdf)



Zebra mussels attached to lift

**Minnesota law requires a 21 consecutive day drying time before placing a dock, boat lift or swim raft or water-related equipment in another water body.**