



CLEAN BOATER TIP SHEET

WASTEWATER CONTAINMENT & DISPOSAL

All boats generate wastewater. Sources include marine toilets, laundry/dishwashing facilities, and bilge waste. Raw or poorly treated boat sewage is harmful to human health. Typhoid fever, hepatitis, cholera, gastroenteritis, and other waterborne diseases may be passed directly to people who swim in contaminated waters. People may also become infected by eating fish contaminated with viruses and other micro-organisms contained in sewage discharge.

Sewage is also harmful to water quality because it stimulates the growth of bacteria that feed upon organic wastes. Those bacteria use up oxygen as they consume the wastes, which reduces the amount of oxygen available to fish and other forms of aquatic life. Furthermore, the nutrients in sewage promote excessive algae growth. As the algae multiply, they block life-giving sunlight from reaching rooted aquatic plants. When the algae die they create another problem--dead algae are decomposed by bacteria, which further reduces levels of dissolved oxygen.

Please follow the tips listed below to make sure that you dispose of wastewater properly.

The Law

According to federal and state law, discharge of sewage (raw or partially treated) is not allowed into any body of water in Wisconsin, with the exception of portions of Lake Superior. All vessels must have a means of containing sewage, and vessels with installed toilets must have a Marine Sanitation Device (MSD). Type III MSD systems are the only legal MSDs for boats in Wisconsin waters--the use of type I or type II systems is prohibited. Therefore, type I and type II systems must be disabled, and any y-valves must be locked down. The following describes each class of MSD system:

- Type I systems mechanically cut solids and disinfect waste. They must bear a U. S. Coast Guard certification label.

- Type II systems are similar to Type I systems. The difference is that Type IIs treat sewage to a higher standard and generally require more space and energy. Type II systems also must have a Coast Guard certification label.
- Type III systems do not discharge sewage. Holding tanks are the most common Type III system. Incinerating systems are another option. A Coast Guard label is not required.

What Can You Do?

Handling Vessel Sewage

- ☞ Before heading out on the lake, use the restroom facilities at the marina. Use shoreside toilets rather than boat heads whenever possible.
- ☞ Use the marina's pump-out or dump station. These should be well marked. If there is not a pump-out or dump station at the marina in which you launch or moor, check with marina management. They may have a cooperative agreement to use another marina's pump-out station.
- ☞ Always radio ahead to find out the operation hours for a particular pump-out facility.
- ☞ Know your MSD to prevent accidental dumping.
- ☞ Use environmentally friendly additives for your MSD. Check with your marina operator for suggested additives.
- ☞ Maintain your MSD. Have your MSD inspected regularly to ensure that it is functioning properly.
- ☞ Keep the disinfectant tank full, use biodegradable treatment chemicals, and follow the manufacturer's suggested maintenance program.
- ☞ Do not dispose of fats, solvents, oils, emulsifiers, disinfectants, paints, poisons, phosphates, diapers, and other similar products in your MSD.

Holding Tanks

- ☞ Install a holding tank. For most recreational boats with facilities or an installed toilet, a holding tank (Type III system) is preferable.
- ☞ Use good plumbing to control holding tank odor. Fiberglass and metal tanks are highly resistant to permeation. Specially labeled flexible “sanitation hoses” and PVC piping are also highly impermeable. Keep the number of connections to a minimum and make sure that seals are tight.
- ☞ Use enzyme-based products in your holding tank to further control odor. Enzymatic products use biological processes instead of harsh chemicals to break down sewage. Be sure to pump out and rinse your holding tank prior to initial use of an enzyme product if you have used chemical-based odor control additives in the past. Chemical residues may interfere with the effectiveness of enzyme-based products.
- ☞ Avoid holding-tank products that contain quaternary ammonium compounds (QACs) and formaldehyde. These products may disrupt the function of municipal sewage treatment plants receiving wastewater from marina pump-out stations.

Portable Toilets

- ☞ If you have a small vessel, consider buying a portable toilet to contain raw sewage. Remember, it is against the law to dispose of raw sewage into any waters of Wisconsin.
- ☞ Empty portable toilets at the pump-out station. Do not dump the waste into marina toilets.



Pump-out station at Port Washington Marina, UW Sea Grant Institute.

Graywater

- Graywater includes soaps and detergents from boat showers and dishwashing and laundry facilities. These soaps, even those labeled as “biodegradable,” contain substances harmful to marine life.
- ☞ Use shoreside showers, dishwashing stations, and laundry facilities whenever they are available.
 - ☞ Use low-nitrogen and phosphorous-free detergents for onboard laundry, dish washing, and general cleaning.
 - ☞ Use all soaps and cleaners sparingly by using a little extra “elbow grease.”

Bilges

- Bilges can be a major source of wastewater pollution in marinas. They tend to collect engine oil, fuel, antifreeze, transmission fluid, and lubricants—all of which may contain pollutants known as petroleum hydrocarbons as well as other toxic elements and metals. When the bilge pump is activated manually or automatically, these pollutants are pumped overboard into the water. Additional bilge water concerns and good boating practices are included in the Wisconsin Clean Boater Tip Sheet titled “Fuel & Oil Control.”
- ☞ Avoid discharging bilge water that has an oily sheen.
 - ☞ Use bilge socks to collect floating oil and fuel in the bilge.
 - ☞ Replace these pads when they are heavily saturated or soiled.
 - ☞ Install a bilge pump switch that leaves an inch or two of water in the bilge.
 - ☞ Install a bilge water filter to your boat’s bilge. Filters will remove oil and fuel from the water.



Bilge sock (BoatU.S. Foundation).

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ENGINE MAINTENANCE

The general maintenance of boat engines can generate pollutants and waste products that can be harmful to the environment. Some of these potential pollutants include solvents, paints, lubricants, oil, antifreeze, fuel, batteries, and bilge switches that contain mercury. Proper use, storage, and disposal practices are crucial to keeping these pollutants out of the environment. As a boater on Wisconsin waters, you can be an active steward of this valuable resource by implementing these engine-maintenance practices:

Routine Engine Maintenance

Routine engine servicing often requires the handling of toxic substances such as oil and solvents. Care must be taken while the cleaning is done.

- ☞ Check with marina staff to find out where engine maintenance is allowed at the marina.
- ☞ Clean the work area with absorbent materials and a broom, instead of hosing the work area down.
- ☞ Ask if your facility has a collection area for boat maintenance waste from boaters (used oil filters, waste oil, lead-acid batteries, etc.). If not, take them to a household hazardous waste facility or used oil recycling center.
- ☞ Pre-clean engine parts with a wire brush to eliminate the need for solvents.
- ☞ If you must use solvents, use volatile organic compound-free (VOC-free) solvents.
- ☞ Keep the use of engine cleaners to a minimum. Parts cleaning should not be done in the bilge or over open ground or water. It should be done in a container or parts washer where the dirty fluids can be collected and recycled.
- ☞ In order to catch the oil spilled during filter removal, slip a plastic bag over the filter and then remove it.
- ☞ Drain oil filters for at least 24 hours, and take them to an oil recycling or hazardous waste center. A new Wisconsin law prohibits disposing of oil filters in the trash.

- ☞ Dispose of all used oil and materials that have been soaked with oil at the marina's hazardous waste disposal area.
- ☞ Keep engines properly tuned for efficient fuel consumption, clean exhaust, and lower operating costs.
- ☞ Keep your engine clean. It makes it easier to spot and correct small leaks before they become big problems.
- ☞ When undertaking maintenance, wipe up spills so that they do not get pumped overboard with bilge water.
- ☞ Keep an oil absorption pad in the bilge or below the engine to collect spilled products.
- ☞ For spill-proof oil changes, use systems that remove crankcase oils through the dipstick tube. Ask your marina manager if the marina has this service available.
- ☞ Do not discharge oil into the water—it is prohibited by law. All boats 26 feet or longer are required to have a sign regarding oil pollution control regulations posted in the engine compartment. These signs are available at most marine supply stores.

Winterizing your boat

- ☞ Do not use the green-colored ethylene glycol antifreeze, which is highly toxic and can kill animals that ingest it. Instead, choose the blue, pink, or clear-colored propylene glycol antifreeze, which is less toxic.
- ☞ Fill fuel tanks to 90 percent of capacity during winter storage to reduce condensation buildup and prevent leaks as tank contents expand during warmer weather in spring.
- ☞ Consider adding a fuel stabilizer so that you will not have problems disposing of stale fuel in the spring.
- ☞ Flush and collect winterizing agents and antifreeze from the engine prior to launch each season and recycle or dispose of them properly. Check with marina management for recycling/disposal containers. It is illegal to “blow out” antifreeze into the water.

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HULL MAINTENANCE

As a boat owner, you are well aware of the care your investment requires. In order to keep your boat safe, reliable, and attractive, you must continually clean and maintain it. As you do so, you can minimize environmental impacts by following the hull maintenance recommendations listed below.

Routine Hull Maintenance

- ☞ If your marina allows do-it-yourself boat maintenance on site, perform repairs and maintenance activities in designated areas and follow your marina's "yard rules."
- ☞ When working in marinas, use the specially designated sanding and painting areas. Check with the marina manager for the location and proper use of these areas.
- ☞ Work indoors or under cover whenever wind could potentially blow dust and paint into the open air.
- ☞ Do not work on your hull near the water.
- ☞ Avoid cleaning your boat bottom when it is in the water because toxic antifouling hull paint may be removed and washed into the water.

Sanding, Grinding, or Scraping

Sanding and painting can create environmental hazards if not conducted in a controlled area. Many antifouling paints are made with toxic chemicals designed to leach out and prevent bottom growth on the hull. When concentrated amounts of these materials are allowed to escape from hull maintenance and repair areas, there is a potential for environmental harm. Solvents, thinners, and brush cleaners can harm the environment if improperly handled. These materials contain cancer-causing agents and have a tendency to sink in the water, degrading water quality and damaging aquatic life and the aquatic environment.

- ☞ Use environmentally friendly tools, such as vacuum sanders and grinders, to collect and trap dust. Some marinas have this equipment for rent; check with the manager.
- ☞ Clean up all debris, trash, sanding dust, and paint chips immediately following any maintenance or repair activity. Dispose of the debris in your regular trash at home or in designated receptacles at your marina.
- ☞ Use a drop cloth beneath the hull to catch sanding dust and paint drops when working over unpaved surfaces. Do not sand on windy days.

- ☞ When sanding or grinding hulls over a paved surface, vacuuming or sweeping loose paint particles is the preferred clean-up method. Do not hose the debris away.
- ☞ Use a dust-free sander if possible. It will reduce clean-up time and is more enjoyable to use because you won't be breathing in harmful paint dust. Ask your marina manager if dust-free sanders are provided through the marina.
- ☞ If you are not using a dust-free sander, use tarps or filter cloth to help collect your scraps.

Painting and Varnishing

Boat paint contains harmful components, including metals, solvents, and dyes. Precautions must be taken to prevent paint and paint chips from ending up in the water. You can play an important role in protecting water quality while painting your vessel by following these simple tips:

- ☞ Buy paints, varnishes, solvents, and thinners in sizes that can be used within one year to avoid having to dispose of stale products. Share leftover paint and varnish with other boaters. Take unused products to a hazardous waste facility or ask your marina manager where to dispose of them.
- ☞ When possible, use water-based paints and solvents.
- ☞ Switch to longer lasting, harder or nontoxic antifouling paint at your next haul out. Select a bottom paint developed for freshwater lakes and rivers. Check with your marina operator for recommended paints appropriate for freshwater use.
- ☞ Paints and solvents should be mixed far from the water's edge and transferred to work areas in tightly covered containers of one gallon or less.
- ☞ Keep in mind that solvents and thinners can be used more than once by allowing the solids to settle out and draining the clean product off the top. Dispose of dried settled solids in your regular trash at home or in designated receptacles at your marina.
- ☞ Thoroughly dry all empty paint cans and old brushes before disposing of them in the trash.
- ☞ Don't wash rags containing solvents, paints, thinners, or teak treatment. Dispose of them in the trash.



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NON-TOXIC CLEANING ALTERNATIVES

While baking soda, vinegar, lemon juice, and vegetable oils are far less harmful than bleaches, scouring powers, or detergents, they may still be harmful to marine life. Use cleaning products sparingly and minimize the amount discharged into

the water. Never dispose of any cleaning products down the thru-hull drain; dispose of them on shore. The following list provides non-toxic alternatives to typical cleaning products for your boat and home:

| Products | Alternative |
|--------------------------|--|
| Chlorine Bleach | Borax or baking soda and water. |
| Air Freshener | Leave out an open box of baking soda. |
| Disinfectants | One half-cup of borax in one gallon of water. |
| Scouring Powders | Baking soda. Or rub the area with one-half lemon dipped in borax, then rinse. |
| General Cleaner | Baking soda and vinegar. Or lemon juice combined with Borax paste. |
| Floor Cleaner | One cup vinegar + 2 gallons of water. |
| Window Cleaner | One cup of vinegar + 1 quart of warm water. Rinse and squeegee. Or rub glass with newspaper. |
| Toilet Bowl Cleaner | Use toilet brush and baking soda. |
| Aluminum Cleaner | 2 tablespoons of cream of tartar + 1 quart of hot water. |
| Brass Cleaner | Worcestershire sauce. Or a paste made of equal amounts of salt, vinegar, and water. |
| Copper Cleaner | Lemon juice and water. Or a paste made of lemon juice, salt, and flour. |
| Chrome Cleaner/Polish | Apple cider vinegar to clean; baby oil to polish. |
| Stainless Steel Cleaner | Baking soda or mineral oil for polishing; vinegar to remove spots. |
| Fiberglass Stain Remover | Baking soda paste. |
| Mildew Remover | Paste made of equal amounts of lemon juice and salt, or white vinegar and salt. |
| Drain Opener | Dissemble or use plumber's snake. Or flush with several quarts of boiling water + one-quarter cup baking soda + one-quarter cup vinegar. |
| Wood polish | Olive or almond oil. (Interior walls only.) |
| Hand cleaner | Baby oil or margarine. |
| Head & Shower | Baking soda; brush thoroughly. |
| Rug/Upholstery Cleaner | Dry corn starch sprinkled on; vacuum. |

Adapted from: Buller (1995) and MA Department of Environmental Management, Environmental Hazards Management Institute.

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BOAT CLEANING

In order to keep your boat safe, reliable, and attractive, you must properly clean and maintain it. You can minimize environmental impacts by following the recommendations listed here.

Some of the common solvents and cleaners that are used by boaters can cause harm to the aquatic environment if care is not taken during their use. Some cleaning products contain harsh chemicals such as chlorine, ammonia, and phosphates that can harm fish and wildlife. Chemicals contained in cleaners or antifouling paints can accumulate in aquatic organisms. That is, they become more concentrated as they are ingested successively by animals higher up on the food chain and ultimately may be consumed by a variety of wildlife or humans. While there may be little harm in cleaning a single boat, consider what can happen when many boaters in the marina are doing the same thing. Because marinas are located in a sheltered environment, pollutants tend to build up within their basins.

As a boater on Wisconsin waters, you can be an active steward of our valuable natural resources by implementing these vessel-cleaning practices:

Clean Carefully

- ☞ Whenever possible, clean as much of your boat as you can before launching it for the season. Wash the boat on land in a contained area where the wash water can be collected and treated or soak into the ground. Don't wash your boat on a paved surface that allows the water to flow into a storm sewer and then into the nearest stream or lake.
- ☞ Collect all paint chips, dust, and residue. Dispose of them in your regular trash at home or in designated marina receptacles.
- ☞ While on the water, wash your boat above the waterline by hand with a sponge and plain water. If you do this frequently enough, you won't need to use harsh chemicals as often.
- ☞ If washing with water does not work, try natural cleaners, such as lime juice, borax, and baking soda. See the list of alternatives outlined in the Wisconsin Clean Boater Tip Sheet titled "Nontoxic Cleaning Alternatives."

- ☞ Use cleaning products that are environmentally friendly (e.g., nontoxic and phosphate-free). Always follow the instructions on the label and test the product in an inconspicuous area. Use the products sparingly and only when "elbow grease" is not working.
- ☞ When detergents are necessary, use soaps that are phosphate-free, biodegradable, and nontoxic. Beware of biodegradable cleaners that may still be toxic. All soaps should be used sparingly because even nontoxic products can be harmful to wildlife.
- ☞ Avoid detergents that contain ammonia, sodium hypochlorite (bleach), chlorinate solvents, petroleum distillates, and lye.
- ☞ Avoid cleaning your boat below the waterline while it is in the water.
- ☞ Do not use cleaning solvents on your boat when it is in the water.
- ☞ Wax your boat, if appropriate. A good coat of wax prevents surface dirt from becoming ingrained.
- ☞ Clean teak with a mild soap and abrasive pad, nylon brush, or bronze wool.

Recycle Regularly

- ☞ Become knowledgeable about disposal procedures for waste and hazardous materials at your marina.
- ☞ Bring used solvents and waste gasoline to local hazardous waste collection points.
- ☞ Recycle used oil, oil filters, and antifreeze.

Be a Conscientious Consumer

- ☞ Read product labels. Labels convey information about the degree of hazard associated with a particular product. For example, DANGER equates to extremely flammable, corrosive, or toxic; WARNING indicates that the material is moderately hazardous; and CAUTION signals a less hazardous product. Select products that contain no warning or which merely CAUTION consumers.
- ☞ Be wary of unqualified general claims of environmental benefit, e.g., "ozone friendly." A better, more meaningful label would read, "This product is 95 percent less damaging to the ozone layer than past formulations that contained chlorofluorocarbons (CFCs)."



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SOLID WASTE CONTAINMENT AND DISPOSAL

Solid waste, such as bottles, cans, fishing line, plastic bags, six-pack holders, boat shrink wrap, and other refuse, can injure or kill aquatic life and birds by trapping or entangling them. Not only is trash unsightly and dangerous to wildlife, it can also foul props or water intakes of boats or other equipment.

The Law

Congress passed a law in 1987 to protect our waterways from garbage. The Marine Plastic Pollution Research and Control Act (MPPRCA) regulates the disposal of garbage within United States lakes, rivers, and bays. The act states that it is illegal to discharge plastic materials into any body of water and restricts the overboard discharge of garbage.

Contain Trash

- ☞ Don't let trash get thrown or blown overboard.
- ☞ If trash blows overboard, retrieve it. Consider it "crew overboard" practice.
- ☞ Pack food in reusable containers.
- ☞ Buy products without plastic or excessive packaging.
- ☞ Don't toss cigarette butts overboard. They are made of plastic (cellulose acetate).
- ☞ Don't toss fishing line overboard.
- ☞ Purchase refreshments in recyclable containers and recycle them.
- ☞ Properly dispose of all trash on shore. Take it home or leave it in a dumpster at the marina.

Controlling Solid Waste

- ☞ If you see a problem with trash or hazardous waste at the marina, contact a marina staff member immediately.
- ☞ Have a waste container on your boat. Your policy should be to carry out what you carry in. Be a good neighbor and pick up trash that you come across, either floating in the water or on land.

- ☞ Use recyclable containers and reusable bags. Minimize the use of plastic wrap and disposable bags on your boat.
- ☞ Find out if your marina recycles shrink wrap used for winter boat storage. Recycle your shrink wrap if possible.
- ☞ Properly dispose of unwanted waste chemicals through the household hazardous waste collection program in your community.
- ☞ Clean up after your dog and deposit all pet waste in a trash can or appropriate receptacle.
- ☞ Use the marina trash cans and recycling bins. Replace the lids after using them so that waste does not blow out of the cans or bins.
- ☞ Cut the rings of six-pack holders prior to disposal.

Fish Waste

Fish cleaning may damage water quality if the wastes are discarded into the poorly flushed marina basin. Fish waste has an unpleasant smell and is unsightly. In addition, decomposing fish waste reduces oxygen levels, which harms aquatic life. Disposing of fish waste in the marina basin is prohibited. Avoid problems by following these tips:

- ☞ Find out what your marina's fish cleaning and disposal policy is.
- ☞ Double bag waste and dispose of it at home or in a dumpster at the marina designated for fish waste.
- ☞ Clean your fish at a fish-cleaning station – not at the dock – to keep the marina and water cleaner, keep odors down, and reduce nuisance birds and pests.
- ☞ Compost your fish waste if your marina has a waste composting program.
- ☞ Avoid feeding wild birds, including ducks, geese, and seagulls, in the marina. Feeding birds encourages them to flock to the marinas and become long-term residents. Bird waste can contaminate water and create a mess on boats and walkways.

Recycle Regularly

- 🗑️ If you need to dispose of or recycle hazardous waste, including used oil, absorbent pads, paints, and solvent, ask the marina staff where this material may be properly handled.
- 🗑️ Recycle cans, glass, newspapers, antifreeze, oil, and lead batteries.
- 🗑️ Bring used monofilament fishing line to recycling bins at your tackle shop or marina.
- 🗑️ Become knowledgeable about disposal procedures for waste oils, filters, absorptive materials, and other hazardous materials at your marina.

Proper Waste (Solid and Liquid) Disposal

Always check first with your marina operator for proper disposal or recycling of wastes at the marina or other locations. All of the following materials can be properly disposed of at a household hazardous waste (HHW) facility. Otherwise, dispose of the following items according to the recommendations listed below:

| Waste Product | Disposal Method |
|------------------------------------|--|
| Oil | Recycle or take to a waste oil collection facility. |
| Oil Filters | Puncture and hot drain for 12 hours. Recycle oil and canister at a HHW or oil collection facility. |
| Antifreeze | Recycle or send to a HHW facility. |
| Paint and Varnish | Allow to dry completely and solidify. Dispose of in regular trash. |
| Solvents, Gasoline, and Pesticides | Bring to a HHW facility. |
| Expired Emergency Flares | Bring to local fire department or a HHW facility. |
| Batteries | Recycle or bring to a HHW facility. |



UW Sea Grant Institute.



Fish cleaning station at Port Washington Marina, UW Sea Grant Institute.

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FUEL & OIL CONTROL

Petroleum in or on the water is harmful and, in some cases, fatal to aquatic life such as fish, birds, and invertebrates. Oil can enter water intakes and affect drinking water, and a gasoline spill poses a significant fire and explosion hazard. Gasoline and oil may also contain cancer-causing chemicals, including benzene and PCBs. In addition, spilled oil is unsightly and can stain the shoreline. Floating petroleum is particularly bad because it blocks sunlight from reaching underwater plants and blocks the exchange of oxygen at the water's surface, which is harmful to fish and aquatic plants.

The Law

The Federal Water Pollution Control Act prohibits the discharge of oil of any kind into or upon the navigable waters of the United States, including the Great Lakes. This includes any discharge that causes a film, sheen, discoloration, sludge, or emulsion on or beneath the surface of the water.

In Case of a Spill

- ☞ If you see a leak of hazardous waste (e.g., fuel or oil) or if you experience a spill, stop the spill at the source and contact the marina staff immediately.
- ☞ Contain the spill.
- ☞ Immediately notify the marina and the Coast Guard if you cause a spill – it's the law. Call the National Response Center at (800) 424-8802.
- ☞ Do not use emulsifiers or dispersants (soap) to treat or disperse a spill; this is prohibited by federal law and may result in a significant fine.
- ☞ If you do have a spill while fueling or see a leak of hazardous waste, clean it up with an oil absorbent material such as a pad, boom, or pillow. Dispose of the used absorbent material appropriately.

Fueling Practices

Gas or diesel may be spilled during the act of fueling as backsplash out of the fuel intake or as overflow from the vent fitting. Spills of this sort harm aquatic life, waste money, and can result in stains on the hull and damage to the gel coat and striping. Follow these tips to avoid problems:

- ☞ Have a trained attendant supervise or fuel your vessel for you.
- ☞ Never leave the fuel hose unattended when fueling.
- ☞ Fill tanks to no more than 90 percent capacity—fuel that is drawn from cool storage tanks will expand as its temperature rises. Don't top off your tank. It will cause a gasoline spill.
- ☞ To prevent spills from the tank vent, install a fuel/air separator or an air whistle in your tank line. Ask the marina staff if they know who can provide this service.
- ☞ To determine when the tank is 90 percent full, listen to the filler pipe, use a sounding stick, and be aware of your tank's volume. Use your hand to feel for air escaping from the vent. You will feel and hear an increase in air flow as the tank approaches full.
- ☞ Rather than filling your tank upon your return to port, wait and fill it just before leaving on your next trip. This practice will reduce spills due to thermal expansion because the fuel will be used before it has a chance to warm up.
- ☞ To fill portable tanks, remove them from your boat and fill them at the pump in a collection pan, where spills are less likely to occur and easier to clean up.
- ☞ Use a spill collection bottle over the fuel vent to catch fuel backsplash, if the marina has one available. Place an absorbent pad or container over the fuel fill or under the fuel vent to collect accidental overflow.
- ☞ Slow down at the beginning and end of fueling.

Bilge Maintenance

Engine oil tends to accumulate in bilges. If no precautions are taken, the oil is pumped overboard along with the bilge water. Discharging oily water is illegal. To avoid fines and to protect water quality, follow these tips:

- 🔧 Keep your engine well turned to minimize the amount of oil that is released. Be sure there are no leaking seals, gaskets, or hoses.
- 🔧 Keep an oil absorption pad or bilge sock in the bilge or below the engine to absorb spilled oil.
- 🔧 Replace used oil absorbent materials regularly.
- 🔧 Look for contractors or marinas that offer a bilge pump-out service.
- 🔧 Do not treat oily water with detergents. Soaps pollute and make spill clean-up impossible. You may be fined for using soaps to dissipate oil.

Disposal of Oil-Absorbent Materials

The disposal of used oil-absorbent material depends on what type of product it is and how it was used:

- 🔧 Engine oil filters and oil absorbent materials will be banned from Wisconsin landfills starting January 1, 2011.
- 🔧 Standard absorbents saturated with oil or diesel may be wrung out over oil recycling bins and reused (if they are saturated with oil or diesel only, not gasoline!).
- 🔧 Always check with the marina operator before disposing of any used material. Call your municipal solid waste department or WNDR regional office for oil recycling locations in your area.

Recycle Regularly

- 🔧 Bring used solvents and waste gasoline to local hazardous waste collection days or check with your marina for collection.
- 🔧 Never dump waste oils and engine coolants on the ground or into storm drains, dumpsters, or open waters.
- 🔧 When disposing of petroleum-based products, such as fuels and engine oils, keep them separate from each other and from other substances, such as antifreezes, solvents, and water. This lowers the disposal cost charged to your marina or collection facility by preventing the creation of mixed “hazardous wastes.”

Emissions Control

Marine engines – especially two-stroke outboard motors – produce the highest average level of hydrocarbon exhaust emission after lawn and garden equipment. Hydrocarbon emissions contribute to ground-level ozone, a known health risk, and greenhouse gases that contribute to climate change. Follow these tips to help your engine operate as efficiently as possible:

- 🔧 Use the gas-to-oil ratio recommended by the engine manufacturer. Too much oil can foul spark plugs and too little can lead to increased engine wear or even failure. Use premium two-cycle engine oil (TC-W3 or TC-W4). Premium oils improve engine performance and reduce pollution because they burn cleaner, contain more detergents, and prevent formation of carbon deposits.
- 🔧 Use gasoline with the octane level recommended by the engine manufacturer.

Preventive Equipment

Commercial products are available that can help you prevent spills and reduce emissions. Actions you can take include:

- 🔧 Install a fuel/air separator along your vent line. These devices allow air, but not fuel, to escape through a vent opening.
- 🔧 Attach a safety nozzle to portable gas cans used to fill outboard engines. These nozzles automatically stop the flow of fuel when the receiving tank is full.
- 🔧 To prevent oily bilge water from being discharged, install a bilge pump switch that leaves an inch or two of water in the bilge. Alternatively, connect a bilge water filter to your vessel’s bilge pump. Filters will remove oil, fuel, and other petroleum hydrocarbons from the water.
- 🔧 When it is time to buy a new engine, select a fuel-efficient, low-emission model.



*Fuel bib
(BoatU.S. Foundation).*

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AQUATIC INVASIVE SPECIES

Our nation's waters are under attack by aquatic invasive species, also called "exotic" or "non-indigenous" because they are not native to our waters. Many came from Europe and Asia in the ballast waters of ships, and they are spreading at alarming rates. In many cases, they are having negative effects on our native species, habitats, and water quality.

Some species, like zebra and quagga mussels and Eurasian watermilfoil, are spreading as "hitchhikers" on boats and other recreational equipment. Whenever you leave a body of water without cleaning your equipment, you may be taking one of these harmful organisms with you. If you then travel to other waterways, you could inadvertently be spreading that invader. As a boater on Wisconsin waters you can be an active steward of our valuable resources by implementing these practices:

Before Leaving the Boat Launch

- ☞ Inspect your boat, trailer, and equipment and remove any plants, sediment, and animals.
- ☞ Drain, on land, all water from the motor, livewell, bilge, and transom well. Some invasives may not be visible to the naked eye.
- ☞ Bait buckets can transport invasive species and fish diseases. Do not empty your bait bucket into the water. Empty your bait bucket in the trash to help prevent the spread of invasive species and fish diseases.

After Leaving the Boat Launch

- ☞ Wash your boat, tackle, trailer, and other equipment with hot (104°) tap water or a high-pressure sprayer to kill or remove any exotic species not visible at the boat launch. Or, allow your boat and other equipment to dry thoroughly in the sun for at least five days before moving to another body of water – some invasives can survive for long periods of time out of water.

- ☞ If you have used your watercraft where a fish disease called viral hemorrhagic septicemia (VHS) has spread (check with your local Wisconsin Department of Natural Resources [WDNR] office or Wisconsin Sea Grant), disinfect the outside and inside of your watercraft and your gear after using them. Mix one cup bleach in 10 gallons of water and brush/mop your watercraft and trailer surfaces. Test this diluted bleach solution in an inconspicuous location prior to applying to the entire watercraft and trailer. Keep the surface wet for five minutes, then rinse with water. Disinfection should occur on land away from lakes, rivers, and storm drains because chlorine is toxic to aquatic life.

Other Helpful Practices

- ☞ Do not use fish parts as bait or chum. This practice encourages the spread of VHS and other fish diseases.
- ☞ Help prevent the spread of invasive species and fish diseases by not transferring water, fish, fish eggs, or other aquatic organisms between waterways.
- ☞ Learn what aquatic invasive species look like by viewing images of aquatic invasive species at <http://www.iisgcp.org/NabInvader/sgnisimages/CATALOG1.HTM>. Know how to identify Eurasian watermilfoil, round goby, zebra mussel, quagga mussel, spiny waterflea, bighead carp, silver carp, phragmites and purple loosestrife, to name a few. Know which waterways are infested, and report any new infestation to Wisconsin Sea Grant at (920-683-4697) or your local WDNR service center.
- ☞ For further recommendations on controlling the spread of aquatic invasive species, including any permit requirements for applying control methods, talk with the staff of WDNR's Divisions of Fisheries Management and Wildlife Management as well as staff from Wisconsin Sea Grant.



CLEAN BOATER TIP SHEET

SPRING START-UP: ANTI-FREEZE COLLECTION AND DISPOSAL

Spring is in the air and you are anxious to launch your boat for the season. What do you do with the used anti-freeze? Help keep our lakes and rivers clean and healthy by following these steps for proper anti-freeze collection and disposal. Foremost, make sure you always use propylene glycol anti-freeze (pink, blue or clear) rather than the more toxic, green ethylene glycol anti-freeze.

Why is it illegal to discharge anti-freeze into Wisconsin waters?

Although propylene glycol (pink, blue or clear) anti-freeze is safer, it still can be harmful to fish and other aquatic life, especially when multiple boats flush their engines and holding tanks near boat docks, which are close to the spawning grounds of many species of fish. Waste anti-freeze also can contain heavy metals or fuel from engines that can classify it as hazardous waste. Anti-freeze dumping in open waters has been known to cause fish-kills.

Anti-freeze Collection and Disposal Tips

Engine

1. Begin at a location away from open waters.
2. Check your bilge and clean out any oil if present with a bilge pillow or absorbent pad.
3. Attach a hose directly to your intake port (inboards and some inboard/outboards) or use a flushing kit (ear muffs) for engines without a port. Attach the other end of the hose to a water source. Attach a second hose over the exhaust port and place the other end into a 5 gallon bucket or hold a bucket to catch the anti-freeze as it exits the engine. Have another 5 gallon bucket ready to switch the hose when the first bucket is full.
4. Turn on the water and start your engine. Collect the water and anti-freeze mix in the two buckets, and then let the remaining water drain on the ground until the engine is up to temperature.
5. Turn off the engine and water.

6. Dispose of the diluted anti-freeze at a marina or automotive center that accepts and recycles anti-freeze. The initial 5 gallon bucket may contain anti-freeze suitable for reuse next winter. If recycling is not available, pour into a sanitary sewer (toilet or basement drain) that goes to a local sewage plant for treatment. **Do NOT pour it into a storm sewer.** These discharge directly into streams, lakes or wetlands. Never dump it in a septic system.
7. If you notice any water or oil leaks during this process, your engine may need service.

For boats with large engines, do not try to flush antifreeze on your own. Please take your boat to an experienced service technician.

Freshwater Holding Tank

1. Connect a hose to the sink faucet or place a funnel with a hose attached under the faucet and place the other end into a 5 gallon bucket.
2. Turn on the faucet and start filling the bucket.
3. Collect the anti-freeze until the water runs clear.
4. Dispose in the same manner as #6 above.

Sewage Holding Tank

In spring use the head as usual and pump out when needed. This anti-freeze and sewage mix will go directly to a sewage treatment plant.

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- 👉 Now you're off to a great start to the boating season.
 - 👉 Thanks for taking a little time and effort to keep our waters clean and to protect fish spawning grounds.
 - 👉 Make sure you have your updated boater registration and appropriate safety gear.
 - 👉 Find more tip sheets for cleaner boating at <http://www.wisconsincleanmarina.org/Default.aspx?tabid=61>