

Maritime Clean Boating Guide





Bluenose Coastal Action Foundation (BCAF) is a non-profit, community based organization addressing environmental issues in the Lunenburg County watershed.

Since 2000, BCAF has been working to promote environmentally responsible boating practices. Our Clean Boating Project aims to raise awareness about cleaner boating alternatives available to boaters in the area.

Through the Clean Boating Program, pump-out stations for boating sewage have been established in Mahone Bay, Bridgewater, Lunenburg and Chester, Nova Scotia. These facilities allow boaters to pump out raw sewage into the town's sewage treatment facility for proper disposal rather than discharging into coastal waters.

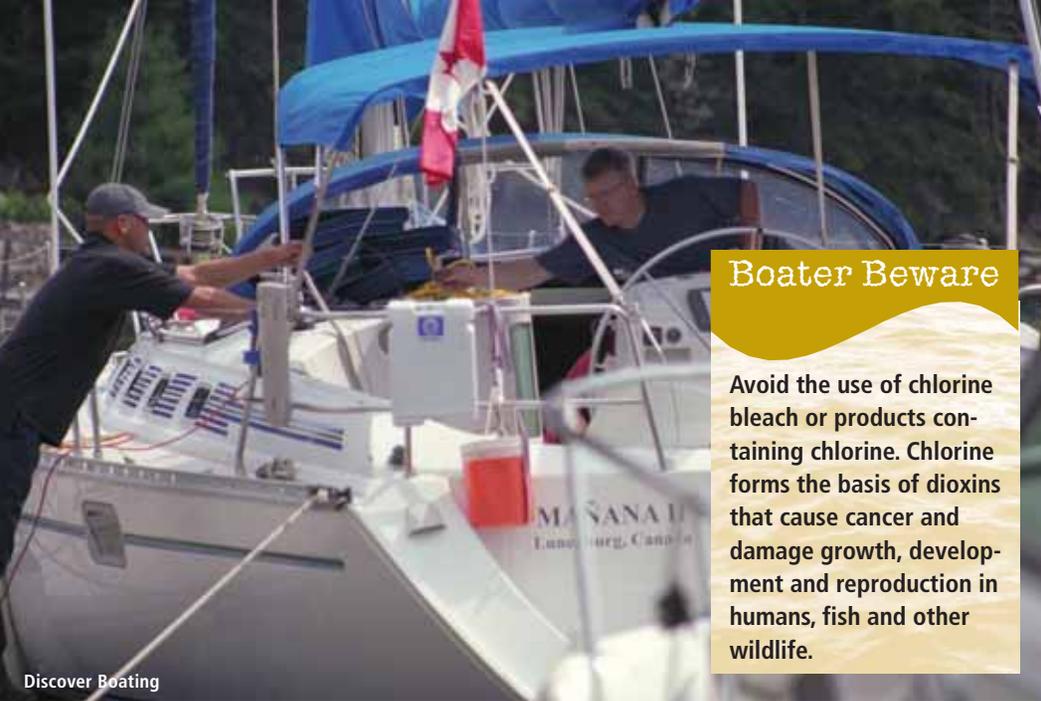
The purpose of this guide is to provide maritime boaters with a practical guide to environmentally friendly boating practices. Happy Clean Boating!



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Boater Beware

Avoid the use of chlorine bleach or products containing chlorine. Chlorine forms the basis of dioxins that cause cancer and damage growth, development and reproduction in humans, fish and other wildlife.

Try using high pressure water to clean your boat. If that doesn't work, old-fashioned cleaning methods are often the most environmentally friendly and cheapest alternatives. Some easy and inexpensive alternatives to using toxic products are listed below.

Natural Cleaning Product Alternatives

OBJECTIVE	NATURAL CLEANING ALTERNATIVE
Floor Cleaning	1 cup white vinegar in 2 gallons of water.
Window Cleaner	1 cup vinegar in 1 quart of water, rinse and squeegee.
Head Cleaner	Use baking soda and scrub with a brush.
Shower Cleaner	Wet surface with water, sprinkle on baking soda and rub surface with cloth.
Aluminum Cleaner	2 tbsp. cream of tartar in 1 quart of hot water.
Chrome Cleaner/Polish	Apple cider vinegar to clean; baby oil to polish.
Fiberglass Stain Remover	Baking soda paste.
Drain Opener	Disassemble or use a plunger and/or a plumber's snake. (* <i>toxic substances should not be used in a thru-hull drain</i>).
Toilet	Scrub hard with baking soda and a brush. A cup of vinegar left overnight in the head will reduce the accumulation of salt.
Brass	Worcestershire sauce or paste made of equal parts vinegar, salt and water. Rinse.
Lexan	Cup of vinegar, pint water, soft cloth. Polish dry.
Mildew Remover Paste	Use equal parts of lemon juice and salt, or vinegar and salt.
Wood Polish	3 parts olive oil and 1 part white vinegar; almond or olive oil (<i>interior unvarnished wood only</i>).
To Bleach	Borax or hydrogen peroxide (* <i>avoid chlorine bleach</i>).

Water Craft Maintenance & Repair

Pollution prevention is key to a healthy coastal environment.

CLEANING YOUR BOAT

Cleaning Tips

- Keep your boat waxed. Rinse with fresh water and brush after each use. This will decrease the amount of chemical products required for cleaning since growth and grease will not adhere and accumulate.
- **DO NOT** use any products that contain chlorine, phosphates or ammonia. Degreasers dry the natural oils fish need for their gills to take in oxygen. See the next page for safer cleaning alternatives.
- Try to use dry slips and boat lifts to reduce the amount of cleaning done in the water.
- Ask your marina or marine store to stock biodegradable spray-type cleaners that do not require rinsing.



Maritime Morsel. The Atlantic Ocean makes up 28% of the world's oceans.

EcoLogic Products

The Environmental Choice Program encourages the supply of products and services that are more environmentally responsible and helps organizations and consumers buy “green.” The program provides a listing of products and services that are third-party verified and certified environmentally responsible. These products are easily recognized by the EcoLogo symbol. There are a wide variety of cleaning supplies for your boat and your home. For a list of products, check out the EcoLogo website at www.environmentalchoice.com.

Some retailers in Nova Scotia who sell EcoLogo products include:

- Canadian Tire Corporation
- IMP Group Ltd.
- Leckie’s Maine Equipment
- Loughheads Heating Oil Ltd.
- The Binnacle
- Sawlor Fuels Ltd.
- Barco MMOS



Gray Water

Gray water is water that is contaminated with soaps and detergents which results from showering and washing dishes. Phosphates in soaps disrupt the nutrient balance in the water which lead to an increase in algae growth. This results in a reduction of oxygen in the aquatic environment making it difficult for aquatic life to flourish. To prevent this:

- Limit the amount of water you use for showers and dish cleaning. Use on-land showers and laundry facilities whenever possible.
- Use phosphate-free soaps.
- If your boat does not have a gray water tank, have one installed and have it pumped regularly.
- **DO NOT** pour used Varsol or paint thinners down any drain whether it is a black or grey-water holding tank.

Repair and maintenance is a very important for keeping your boat in optimum shape. Regular maintenance check-ups on your boat can decrease future problems that may arise unexpectedly, as well as reduce the amount of pollution your boat contributes to our environment.

ENGINE MAINTENANCE

- Keep engines well tuned, inspecting for leaks and inconsistencies.
- Inspect lines and hose connections for deterioration. Prevent lines from chafing.
- Wash parts over a bucket; **DO NOT** wash over the water.
- Place a tray lined with bilge pads under the engine to collect any excess oil drips.

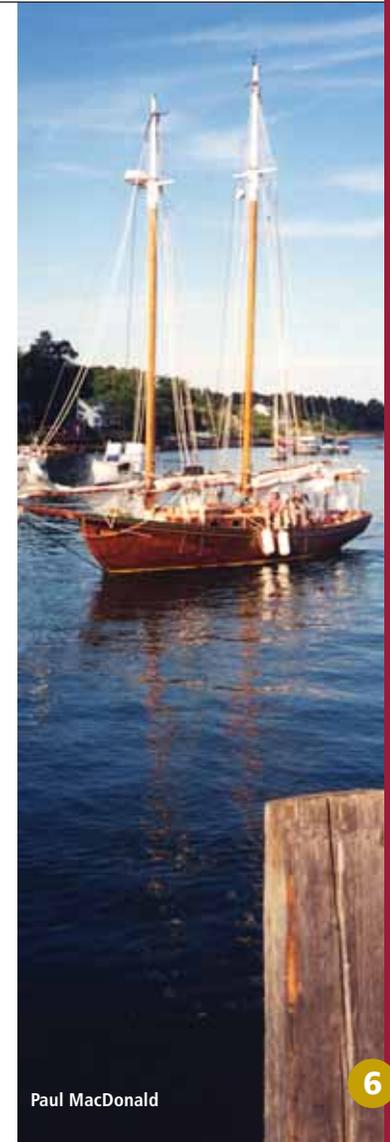
SANDING & PAINTING

Pollution affects everyone...

Sanding

Sanding and scraping pollutes the air with harmful chips and paints. Repainting your boat increases the amount of toxic fumes released into the air, but following proper techniques for this area of boat maintenance will reduce the amount of harmful effects on our environment.

- Wear a facemask when working with toxic chemicals and dust.
- Always sand and scrape onshore, preferably in a designated work area to avoid paint chips and particles from entering the water.
- Wipe down sanded areas with a damp rag.
- When possible, set a tarp between the boat and the dock when working on the water to catch any falling debris. To collect dust and paint particles, use a vacuum sander.
- Sweep or vacuum any loose particles in the working area and place debris in the trash.
- Try to pick a day when there is no heavy breeze.



Painting

- Do all work within the slip. Reverse the boat in the slip to work on the other side. Cover the area between the boat and the dock with a tarp to catch drips. Clean and dry the tarp when finished so it can be used for other jobs.
- Mix the required amount of paint for the job. Mix all paint on land, not on the dock. Seal paint cans tightly.



Boater Beware

There are alternatives to anti-fouling paint that do not contain toxins or biocides. One such product is called 'marine skin' which is a coating designed to replace bottom paint entirely. Other non-toxic products have been developed and are now available on the market. More information about these products can be found by searching the internet.

Anti-Fouling Bottom Paints

Consider alternatives to using anti-fouling paints to paint the hull of your boat. Anti-fouling paints contain toxic metals such as copper, mercury and arsenic and pesticides and biocides, all of which result in toxic pollution of the aquatic environment.

Instead, use regular marine grade paint or paint containing vinyl, silicone, Teflon, or organic ingredients such as cayenne pepper and coat below the water line with wax. The wax will decrease drag and guard against fouling organisms. Protect the paint surface regularly with a coat of slick bottom wax.

- Have absorbent pads within reach for any accidental spills. Use drip pans and trays to catch all paint drips. Put paint container into a sturdy larger container to keep paint from being knocked over.
- **DO NOT** paint in a strong breeze. Dust and debris will collect and dry on the surface. Spray paint will blow onto everything in a breeze so choose a calm day.
- Reuse paints, varnishes and solvents whenever possible. Donate unused portions of solvents to fellow boaters or local community groups.
- Allow unused paint to dry before disposal. This prevents the chemicals from dispersing. Paints, varnishes and thinners are hazardous waste products. These toxic products must be disposed of at a hazardous waste collection site. Report any incidents such as paint spills to the Canadian Coast Guard at 1-800-565-1633.



Boating Operations

Everything you take out on the boat must come back on the boat.

WASTE DISPOSAL & HAZARDOUS WASTE

Waste Disposal

- Keep all loose items – garbage, plastic bags, beverages and other articles – stowed away to prevent them from falling into the water. Recycle on land.
- Carry a trash bag and **never dump any of your garbage overboard**. Dispose of all trash into garbage cans and dumpsters.
- Pick up any debris in the water or on shore and deposit into trash containers.
- Dispose of all recyclables such as glass, aluminum, plastic, newspapers, batteries and oil in the appropriately marked containers on land.
- Encourage your marina to provide recycling and trash bins.

Maritime Morsel. The Atlantic was the first ocean to be crossed by ship.



Hazardous Wastes

- Properly dispose of all hazardous waste materials. Ask marina operators for their policies on proper disposal of hazardous waste. If warranted, ask your marina or yacht club to improve its environmental standards.
- **DO NOT** mix or place hazardous wastes with non-hazardous wastes.
- The Hazardous Waste Depot in Lunenburg will accept hazardous waste for residents of the Municipality of the District of Lunenburg.
- Residents of Chester Municipality can drop off hazardous wastes at the municipal landfill. Be sure to clearly mark hazardous waste materials for proper disposal and recycling.
- Recycling and composting programs may vary throughout the Maritimes depending on where you live. Nova Scotia is divided into seven different solid waste-resource management regions. For information about hazardous disposal options in your area, contact the Resource Recovery Fund Board Nova Scotia Helpline at 1-877-313-RRFB (7732).

Hazardous Waste Disposal Methods

MATERIAL	BEST DISPOSAL METHOD
Absorbent Pads & Materials	Wring out and re-use. Dispose of liquid with used oil. When no longer useable, collect pads in leak resistant containers for proper disposal.
Aerosols	Dispose at Lunenburg Hazardous Waste Depot (HWD).
Anti-fouling Paints	Paint removed from the hull of boats should be carefully collected and placed in a container for proper disposal.
Empty Paint Containers	Dry, crush flat and place in dumpster.
Batteries	Collect separately and store upright and off the ground in a safe area. Return the battery to wholesaler, lead recycler, local recycling depot or Lunenburg HWD.
Cleaners	Do not add to used oil tank or pour into drains. Dry the empty containers and recycle. Accepted at Lunenburg HWD.

MATERIAL	BEST DISPOSAL METHOD
Empty Antifreeze Containers	Dry, empty containers may be accepted by local recycling municipalities.
Antifreeze, Used	Do not add to used oil tank or pour into drains. Recycle on site or dispose at the Lunenburg HWD.
 Boater Beware	
Gasoline, Diesel & Kerosene	DO NOT mix with waste oils or pour into drains. Accepted at Lunenburg HWD. Dry empty containers should be crushed flat and placed into dumpster if not recyclable.
Oil Filters	Crush and drain into a container with a grated top for at least 24 hours. Store drained oil filters in a separate container. Transfer drained oil into used oil storage tank. Drained oil filters are accepted at the Lunenburg HWD.
Oil, Used Transmission, Engine, Hydraulic & Greases	Collect in used oil storage tank for recycling or reuse as heating fuel on site. All N.S. retailers selling motor oil are required to provide a place for you to bring back used oil. Ask your retailer or call 1-800-565-4383. Do not use as a dust suppressant on roads. Do not pour into drains or dumpsters. Dry, empty containers can be recycled or placed in the dumpster.
Paints	The Lunenburg HWD will accept used paints. Dry empty containers can be placed into the dumpster if not recyclable.
Propane Tanks	Refill and reuse. Collect and return to propane supplier if out of date (max. 10 years). Non-refillable cylinders are accepted at the Lunenburg HWD.
Solvents	Allow sediments to settle, then re-use. DO NOT add to used oil tank or pour down drains. Solvents are accepted at the Lunenburg HWD.



Managing Sewage Waste

Vessel sewage (blackwater) is a pollutant when discharged without proper treatment into the water.

TAKING CARE OF SEWAGE

Why is raw sewage from boats harmful to our coastal waters?

- The sight of raw sewage in our waters is repulsive.
- Nutrients in sewage result in an increase in algal growth, which in turn causes a decrease in dissolved oxygen, making it difficult for marine life to flourish.
- Raw sewage contains organisms which cause illnesses such as gastroenteritis, hepatitis, typhoid, cholera and dysentery. People may contract serious ailments and diseases if they come in contact with contaminated water, or if aquatic cultures, such as mussels or clams are contaminated and then consumed.
- Treated vessel sewage may contain chemical additives such as chlorine and formaldehyde.

Maritime Morsel. Vessels suspected of illegally releasing oil or other toxic substances into the marine environment can be detained for investigation and prosecuted. Visit www.marinepollution.gc.ca/en/menu.htm.



Marine Sanitation Devices

There are four types of marine heads or marine sanitation devices (MSDs) which treat and discard sewage.

Marine Sanitation Device (MSD) Type I – macerates sewage solids until they are no longer visible. This broken up sewage is then treated with chemicals to kill bacteria and is then discharged overboard. NOTE: There are growing concerns about the environmental effects of the chemicals used in these devices.

Marine Sanitation Device (MSD) Type II – more sophisticated and expensive than TYPE I, it treats the sewage to a higher degree with maceration and biological decomposition. This option is less harmful to the environment than MSD Type I.

Boater Beware

Boat holding tank waste is more toxic than municipal sewage. Since marine toilets use less water for each flush, the amount of bacterial pollution (faecal coliform) from one weekend boater's discharge of untreated sewage is equal to the amount from the treated sewage of 10,000 people during the same time period.

Marine Sanitation Device (MSD) Type III (holding tank) – prevents sewage from being discarded overboard. This method involves storing the sewage in a holding tank and discharging the holding tank contents into a pump-out facility located onshore. (see Holding Tanks section for more information).

Portable Self Contained Toilets (Port-o-Potties) – a great fit for a smaller boat. They should be emptied at a pump-out station or proper disposal site.

Holding Tanks

A holding tank system is the best way for boaters to reduce the amount of sewage discharged into our waters. However, this may only be an option if there are adequate pump-out facilities on-shore.

The availability of pump-out facilities is increasing throughout Nova Scotia. The pump-out symbol shown on the map on page 15 is internationally known and it means that a pump-out station is available to boaters.

YOU SHOULD KNOW... Regulations regarding sewage discharge from boats are undergoing public hearings of proposed revisions in 2004. For more information, visit the Transport Canada website at www.tc.gc.ca.



PUMP-OUT FACILITY



After Pumping

- Carefully disconnect the hoses from your boat, holding the hose upright to avoid spillage.
- Replace the cap on the deck fitting and tighten securely.
- When finished be careful not to let the suction hose dangle in the water.
- Rinse the suction hose in a bucket of water and allow this water to be sucked by the pump facility. Never clean the suction hose in the coastal waters.
- Wash your hands to avoid contamination.

HOW TO CONTROL HOLDING TANK ODOUR...

- Avoid chemical additives or bleach in your holding tank. Never use products containing formaldehyde, ammonia or chlorobenzene. These toxic chemicals kill the helpful bacteria which are working to decompose the waste. This slows the process down and introduces very harmful chemicals into the sensitive marine environment.
- Safer products are available including enzyme or bio-active treatments. Biological treatments work to feed naturally occurring bacteria in sewage which makes them work faster to break it down and reduce odours. Some product names available are EcoEthic Holding Tank Treatment, SEPTA-FLUSH, ACTIZYME-RV and Marine Tank Treatment, Aqua Zyme, Biologic, BLUE Lagoon, Tela-BLAST, Zymo P & Zymo L.
- Remember to look for the EcoLogo label as mentioned on page 5.
~ From *Promote Green Boating! An initiative of Camp Green, Canada!*

TIPS ON PUMPING OUT

Before Pumping

- Read the instructions posted at the pump-out facility or ask for assistance.
- Wear waterproof gloves.
- Keep a bucket and a sponge close at hand while pumping.
- Moor the boat securely to the dock.
- Turn off the boat engine.
- Slowly open the cap to the tank to release the pressure in the holding tank.
- **DO NOT** leave the boat unattended while pumping.



Maritime Morsel. There are 365 islands in Mahone Bay, N.S. – one for every day of the year! These glacier formed drumlin islands comprise over 800 hectares of coastal landscape. They were formed over 10,000 years ago as the Wisconsin ice-sheet retreated, leaving behind predominately northwest-southeast aligned drumlins. These islands provide a variety of coastal habitats which support an array of wildlife such as Atlantic puffins, ospreys and colonies of terns, cormorants, gulls and great blue herons.



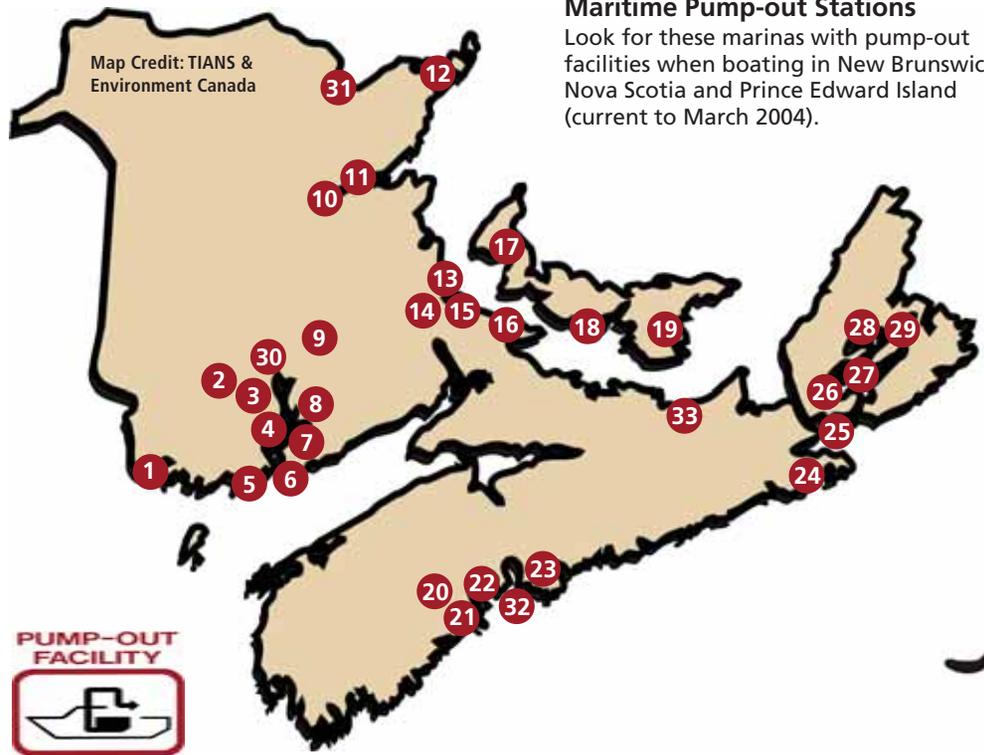
Just a Few More Reminders

- Use onshore facilities whenever possible. Dispose of pet and diaper waste properly.
- Make sure your holding tank system is working properly.
- If your boat is not equipped with a holding tank, convert your boat from a thru-hull discharge system to a holding tank system.
- Empty your holding tank regularly at pump-out stations or hire a mobile pump-out service.

New Brunswick

1. St. Andrews Market Wharf, 506-529-5170
2. Mactaquac Provincial Park Marina, 506-363-4747
3. Oromocto Boat Club, 506-459-5255
4. Gagetown Marina, 506-488-1992
5. Saint John Marina, Ltd., Ketepec, 506-738-8484
6. Millidgeville Marina (RK Yacht Club), Saint John, 506-632-0186
7. Rothesay Yacht Club, 506-642-7065
8. Belleisle Bay Marina, Hampton, 506-832-7373
9. Chipman Marina, 506-339-6601
10. Miramichi Boat & Yacht Club, 506-773-9949
11. Station Wharf Marina, Miramichi, 506-778-9198
12. Camping Marina, Bas Caraquet, 506-726-8900 **pump truck available*
13. Sawmill Point Boat Basin Marina, Bouctouche, 506-743-1100
14. Shediac Bay Marina, 506-532-7007
15. Pointe du Chêne Marina, Shediac, 506-532-6800
16. Cocagne Cape Port Authority Marina & Cocagne Marina, 506-576-9256
30. Regent Street Wharf, Fredericton, 506-455-1445
31. Bathurst Marina, 506-548-4423

Keep our water clean. Use pump-outs!



Prince Edward Island

17. Quarter Master Marine, Charlottetown, 902-566-4454
18. Silver Fox Yacht Club, Summerside, 902-436-2153
19. Cardigan City Wharf, 902-583-2198

Nova Scotia

20. Bridgewater Marine Terminal, 902-624-9888
21. Scotia Trawler Equipment/Marina, Lunenburg, 902-634-4331, 1-877-902-6070
22. Mahone Bay Government Wharf, 902-624-6151
23. Dartmouth Yacht Club, 902-468-6050
24. Guysborough Waterfront Marina, 902-533-2052
25. St. Peter's Lions Marina, 902-535-2729
26. Dundee Marine, West Bay, 902-345-0555
27. Barra Straight Marina, Grand Narrows, 902-622-1313
28. Baddeck Marina, 902-295-243
29. Cape Breton Boat Yard, Baddeck, 902-295-2644
32. Chester, 902-275-1312
33. Hector Quay Visitor's Marina, Pictou, 902-485-5390



Installing a Holding Tank

For detailed information and instructions on installing a holding tank, visit <http://www.dnr.state.md.us/boating/pumpout/systemsguide/install.html>.

This site covers system design, what size and shape holding tank to choose, deck fittings, piping, vent fittings and line filters, etc. You may wish to contact your local boatyard for installation inquiries.

MSD MAINTENANCE TIPS

To reduce the amount of problems associated with marine heads, proper installation is essential. General maintenance after installation is very important and will reduce odours and other associated problems. Below are some suggestions to help maintain your marine head.

- Regularly fill the bowl halfway with warm water and add some biodegradable laundry detergent. Flush this mixture through the system. Continue with the same amount of warm water and add a small amount of mineral or baby oil. The oil will help keep all rubber parts of the toilet in good working condition.
- Do not use household products such as toilet bowl cleaners, drain cleaners, bleachers or deodorants because they will attack and swell up the rubber parts of the marine head. Use products that are designated for marine toilets.
- On manual toilets, smear a little Teflon-based waterproof grease on the pump's piston rod to prolong the life of the piston rod seal.
- A leak in the discharge line can result in seawater seeping back into the toilet. This is a major culprit for calcium build up in the toilet, which decreases the effectiveness of the toilet making it much harder to flush and more prone to clogging. The more promptly leaks are repaired, the more efficient your system will work.
- To treat clogging, simply add a dose (0.5L) of vinegar (acetic acid) once a month. This will help keep the lines clean. If clogging persists, add a 10% solution of Muriatic (hydrochloric) acid to the bowl. This stronger treatment will dissolve calcium deposits. The solution is working when you hear a fizzing sound. Repeat until the bowl and drain are free of calcium. Muriatic acid can be found at yacht shops and hardware stores.
- To avoid clogging a toilet, place all waste toilet paper into another receptacle. Buy short fiber toilet paper. This paper breaks down much faster than ordinary toilet paper, reducing the amount of clogging the toilet experiences.



- Never use drain cleaners to remove clogs. These cleaners will attack the internal parts of the toilet. One alternative is adding water and letting it sit overnight. This length of time should be enough for the clog to break down. Also, an instrument called a 'plumber's snake' can be tunneled through the hoses starting at the sewage manifold in the engine room. This is where the hose is most likely to be clogged and can be dislodged using the 'snake.'

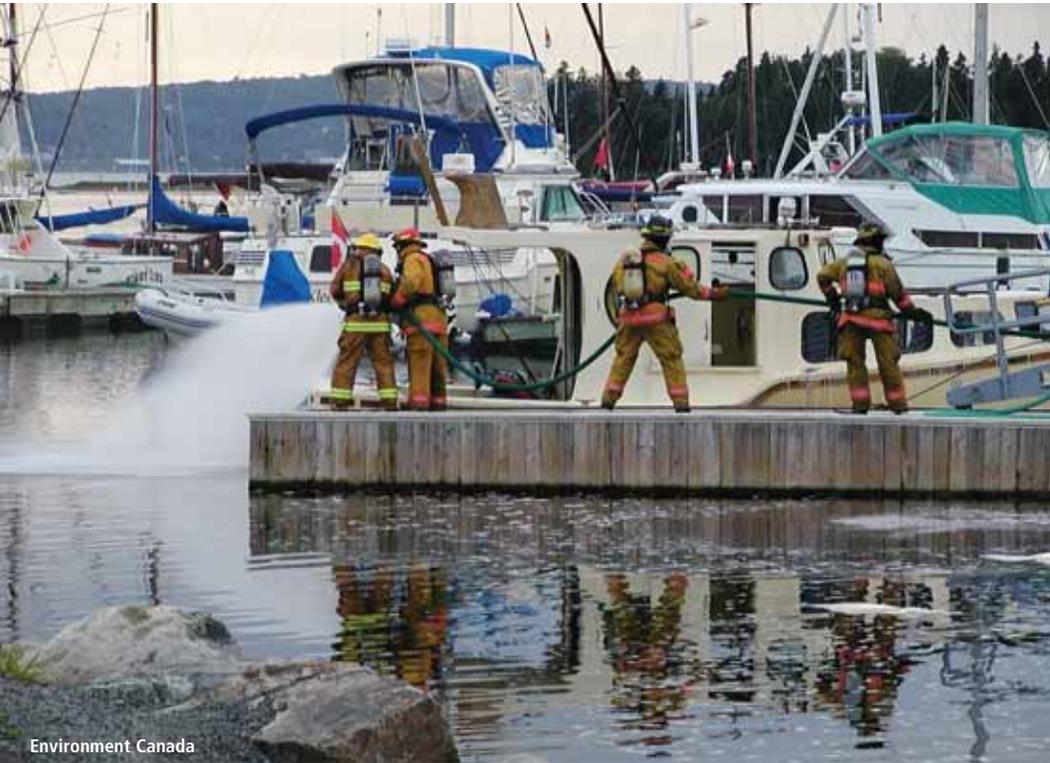


Michael Ernst

Maritime Morsel. Coastal bays and inlets are used increasingly for culture of fish and molluscs, primarily mussels. Development tends to cluster in areas with suitable harbours and availability of water for disposal of wastes. Coastal waters can be polluted by human and animal faeces through sewage and land wash. A single mussel may filter up to 300 times its weight in one hour. As a result, bacteria and viruses can be concentrated in the shellfish to much higher levels than those found in the surrounding waters. This becomes a public health concern because many potentially harmful bacteria and viruses can be ingested when people eat contaminated shellfish and become ill.

~ *The Natural History of Nova Scotia, Vol. Two*





Environment Canada

Fuel Spill Prevention

Your boating experience is more pleasurable in unpolluted waters.

PROPER FUELING TECHNIQUES

Diesel, gas and petroleum lubricants are deadly to the marine environment. Fueling promotes the release of gasoline, oil or diesel (i.e. hydrocarbons) into our air, on our land and into our waters. Hydrocarbons float on the surface of the water making it impossible for aquatic life to breathe oxygen at the water surface.

Using proper fueling techniques reduces the amount of hydrocarbons entering the marine environment. Some techniques are listed below.

Before You Start Refueling

- Make sure your boat is securely moored to the dock.
- Turn off the engine to avoid the risk of a fire.
- Have absorbent pads accessible during fueling.
- Assign at least two spotters to watch the tanks to indicate when they are full.

While Refueling

- Do not leave the nozzle unattended while fueling.
- Use caution while fueling and pay close attention not to overfill your tank. Listen to your boat; it will bubble when the tank is full.
- Use a vent collection device while fueling. These devices collect vapour that escapes into the air. Gasoline expands when heated, so if the tank is topped off without a ventilation device then the fumes will rise into the air.
- Consider installing a “whistle” to indicate when the tank is nearly full.

After Refueling

- Return the hose and nozzle to the gas pump.
- Replace the fuel cap on the boat and secure tightly.
- Clean up all spills immediately.

Boater Beware

Recreational boating in North America contributes up to **ONE BILLION litres/year** of hydrocarbon and oil pollution in coastal waters. That's 15 times the amount of the Exxon Valdez Oil spill!



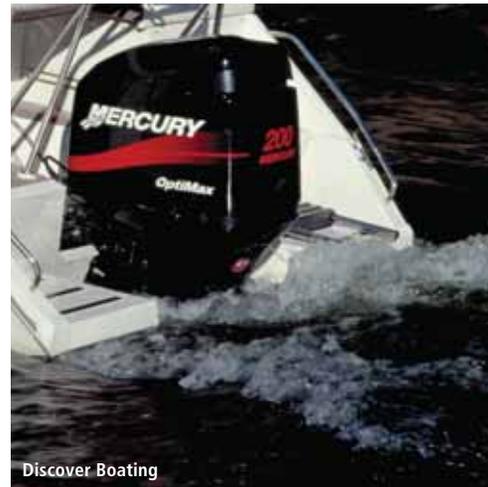
Environment Canada

BILGE CLEANING

Bilge tanks collect engine oil, fuel, anti-freeze and transmission fluid and therefore comprise a significant source of marine pollution. By following the proper cleaning techniques suggested below, you can reduce opportunities for polluted bilge water from entering the water.

- Practice prevention: avoid messy cleanings of the bilge! Keep your boat's engine well tuned. Regularly check gaskets, seals, hoses and connections for any leaks or drips. Be sure to change oil filters regularly.

- Only use automatic bilge pumps when required and when the bilge contains only water.
- Keep oil absorbent pads in the bilge at all times. Bilge pads and sponges are effective at keeping the bilge clean as they absorb oil and repel water. When pads are saturated with oil, use gloves and wring out the oil into a container for recycling. Re-use the pads. Used pads are considered a hazardous waste product.
- Water/oil separators can also be used to soak up excess oil hydrocarbons from the bilge. Another alternative is to use drip pans with oil absorbent pads while cleaning the bilges.
- If you notice fuel or lubricant in your bilge, turn off your bilge pump **IMMEDIATELY** so it will not pump the contaminated water overboard.
- **DO NOT** use soaps or detergents while cleaning the bilge. Use bio-bilge or enzyme cleaners to clean the bilge as a last option.
- If possible, trailer your boat to a designated area that provides containment before removing bilge.



Discover Boating

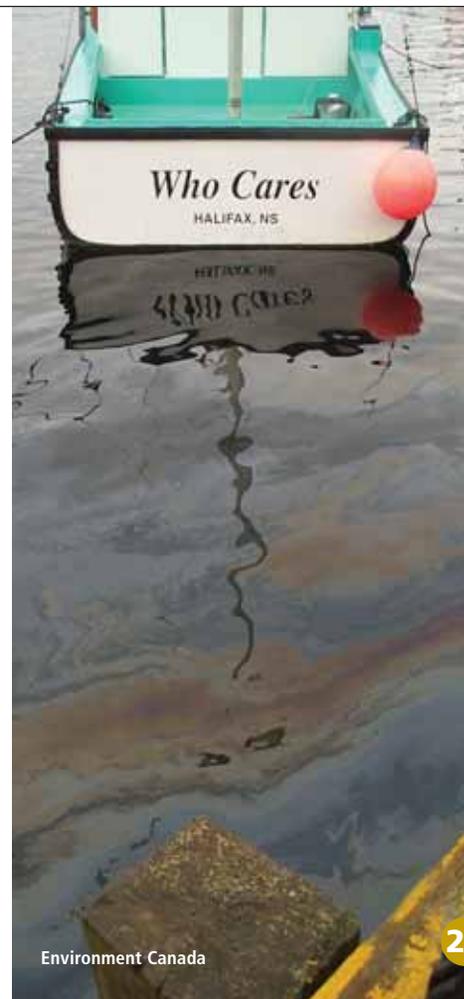
YOU SHOULD KNOW...

An estimated 30% of all fuel and oil used in two-stroke engines ends up in the water. Choose more efficient engines such as four-stroke engines and lean-burn two-stroke engines. Fuel injection systems improve fuel economy and reduce pollution and air emissions.

SPILL CLEANUPS

If a spill occurs:

- Terminate the source of the spill.
- If you overfill your tank, wipe up excess fuel with a rag. Give your soiled rag to the marina operator to dispose of properly.
- **DO NOT** hose the extra fuel into the water.
- If the spill is small, use dry clean up methods such as oil absorbent pads.
- **DO NOT** apply detergents or soaps to clean up the spill. Applying these products merely masks the spill and sinks the oil to the sea floor making clean up difficult.
- If the spill is large and out of control, contact the marina operator/manager, the **Canadian Coast Guard, 1-800-565-1633**, or on **VHF channels 16**.



Environment Canada

Boater Beware

Avoid spilling even one drop of fuel! Chemicals present in fuel become up to 50,000 times more toxic when they react with sunlight – killing plankton and other species that are essential for a healthy marine environment.

Environment Canada



Maritime Morsel. The highest tides on earth are found in the Bay of Fundy east of New Brunswick. The channeling effect of the bay is responsible for the amazing difference between high tide and low tide which, during spring tides, can reach 53.5 feet. This is almost as tall as a four-story building!



Sensitive Areas

Tread gently... preserve our natural coastal environments.

RESPONSIBLE BOATING

A few simple measures can be taken to minimize disturbance on wildlife and habitats:

- Stay at least 100 metres away from bird colonies, whales, porpoises and other marine mammals.
- Reduce your wake by decreasing boat speed to 5 km/hr when within 100 m of shorelines. This will minimize noise pollution and shoreline erosion, both of which adversely affect bird breeding, nesting and feeding behaviors and coastal habitats.

- Always travel parallel to whales – do not cross their path. Pay attention to minimize your wake and engine noise.
- Clams and mussels are filter feeders and are very sensitive to pollution. Never discharge sewage or other pollution in shellfish areas.
- Enclosed bays and narrow channels have little exchange of water and tend to accumulate pollution. Never discharge pollution in these areas.
- Be careful where you drop your anchor – avoid vegetated areas. Avoid operating in small tidal creeks, in very shallow water and other environmentally sensitive areas such as sea grass beds and in water depths of 3 feet or less. Sea grasses provide food and shelter for many important fish and invertebrates.
- Avoid docking or beaching in mud flats and along vegetated shorelines. These areas are important habitats for crabs, clams, fish and other organisms important in the aquatic food chain.



Ted D'Eon

Maritime Morsel
Roseate terns are at the northern limit of their range in Canada where they are found only on the Atlantic Coast of Nova Scotia. These birds nest in colonies on coastal islands and shores with other tern species. Young fledge in early

August and disperse to staging areas along the northeastern coast of the US before migrating further south for the winter. The roseate tern was declared an endangered species in Canada in 1999. Their survival is threatened by hunting, predation and pollution. They are very sensitive to disturbance. If bothered, they may abandon their nests leaving their young susceptible to predation. Please remain at least 100 m away from all tern colonies and be sure to remove all garbage as it attracts gulls. Bluenose Coastal Action Foundation initiated a recovery project for roseate terns in Mahone Bay in 2003.





Special Considerations for Small Craft

Exploring the coast with care...

RESPECT THE NATURAL ENVIRONMENT

Boaters who enjoy exploring our beautiful coasts via smaller craft have the privilege of accessing areas where larger boats cannot venture. The following are special considerations for smaller boats.

Tread Lightly

- Stay at least 100 metres from nesting birds or other wildlife.
- Leash your dog – have control of your dog as deer and other wildlife can live on coastal islands.
- Avoid walking on plants and dunes. Leave all vegetation as you find it. Do not take any wildlife or fossils from any islands or coastal areas.

- Be aware of the breeding seasons of birds and seals. The best boating weather usually coincides with the bird breeding season. Try to avoid panicking breeding seabirds into flight.

Leave No Trace

- Do not litter! Your garbage will attract gulls and other mammals that prey on nesting birds. Furthermore, pick up any litter you see on coastal islands. Do not burn cans or plastic. Take out all your litter for proper disposal.
- Do not leave behind any food scraps as these attract scavenging animals and birds.
- Be careful in your toilet hygiene. Do not urinate within 30 metres of fresh water and dig a hole to bury your waste. Burn toilet paper if safe to do so.

Camping on Coastal Islands

- Use biodegradable soap.
- Use ropes (not nails) to hang tarps, etc. Remove all ropes. Disassemble primitive furniture and structures before departing.
- Keep fires to a minimum, always below high tideline (never in the forest). Do not burn wood any thicker than your wrist and ensure the fire has burned out completely before you leave the area. Never abandon a fire.





Winterizing

An ounce of prevention...

OFF SEASON CHECKLIST

Winterizing protects your boat and may reduce mechanical troubles in subsequent boating seasons. Some areas you should concentrate on are:

Fuel: Before winter or during hauling out procedures, place a fuel stabilizer in your diesel fuel tank. This chemical reduces deterioration of the fuel quality in the tank. Since you will not have to discard any of the fuel in the tank the following spring, you can leave the tank *almost* full. This reduces condensation thereby preventing corrosion and provides room for expansion of the fuel when the weather warms. For safety precautions, remove all gasoline tanks and store in a cool, safe area.

Oil: Change the oil before winter storage. This will eliminate residual acids and moisture in the crankcase, which will reduce problems the following boat season. A marina can do this or it can be a do-it-yourself job – *just remember to dispose of the oil properly*. Refer to the section on disposal of hazardous wastes.

Batteries: Batteries are considered hazardous waste once their life warranty has been exceeded. Proper winter storage of battery cells can optimize battery life. To do this, top off battery water levels with distilled water and fully recharge. Clean terminals with baking soda, rinse with cold water, and wipe dry. Coat terminals and cable ends with petroleum jelly to prevent corrosion. Do not store batteries on concrete as it will drain the them. Instead, store on a shelf or wooden surface board in a cool garage. **REMEMBER:** *Be sure to recycle old batteries.* See the Hazardous Waste Disposal Table on page 9.

Antifreeze: Use low-toxic propylene glycol-type antifreeze. This antifreeze can be used safely in hoses and holding tanks. Avoid ethylene glycol antifreeze. **REMEMBER:** *Properly dispose of any used antifreeze.* Refer to the table on page 10 for the disposal of hazardous wastes.

Heads

- Close the suction seacock and disconnect this section of hose. Dip the hose in a can of antifreeze (available from hardware stores). Use propylene glycol as opposed to ethylene glycol. It is less harmful to the environment and unlike alcohol, it does not swell up rubber parts within the toilet system.
- Flush the toilet with antifreeze until it washes the whole bowl and allow it to flow out the discharge line. The toilet can be pumped dry or be left with antifreeze in it. Holding tanks and treatment systems must be drained and winterized separately.
- Close the discharge seacock, disconnect the hose and drain it.
- All hoses should be drained of water. If water is suspected in sink hoses, fill with vodka instead of antifreeze. This will not be harmful if traces are left next season.

Boat Covers

Boats are best stored with covers over them during the winter. Shrink-wrap works well but tarps are the better alternative for environmentally friendly boaters.



Maritime Morsel. Numerous bays and inlets dot the coastline of Nova Scotia. The largest include Mahone Bay; the smallest are coastal inlets such as Herring Cove, near Halifax. The majority of inlets and harbours were formed as the result of submergence of river valleys. Physical conditions in coastal water bodies tend to be warmer, more estuarine, and more sheltered than exposed sections of the ocean coastline. Consequently, they have animal and plant communities that differ from those found on the open coast. Also, these areas have relatively low flushing rates compared to the open water. ~ *The Natural History of Nova Scotia, Volume Two*

Boater Beware

THINGS YOU CAN DO TO PREVENT THE SPREAD OF BIO-INVADERS

Before moving your boat from one water body to another, remove any mud, plants or animals you see attached to your gear, hull and lines. Leave anything you remove at the unloading site.

Dry off your gear. Invasive organisms can be transported in water that is left in the bottom of boats, motors, scuba tanks and regulators, and other receptacles.

Clean up. Use hot water (40°C) or water at high pressure to clean off hulls, trailer and other equipment that has come into contact with water. Give your dog a good scrubbing and brushing before letting him or her travel with you to the next lake or water body.

Drop the pH. For things you can't clean off with hot water, try dipping them in vinegar for 20 minutes. Be sure to protect your eyes.

Keep it in. Don't dump soil, bait or bait water into water bodies unless they came from that water body. Either put them in the garbage or bury/compost them far away from water and storm drains.

~ *Between the Issues*, Fall 2003, Vol. 1(4),
Stop the Spread of Aquatic Bioinvaders,
Ecology Action Centre, Halifax, N.S.

Hauling Out

Exotic species (also known as aquatic bio-invaders) travel by way of 'hitch-hiking' on boats, trailers and boat gear. These organisms negatively impact native species by competing for food and habitat or by carrying disease and parasites.

Dead man's fingers is an example of a bioinvader in Atlantic region. This green seaweed from Asia takes over the habitat of native kelp beds, an important habitat for lobsters and sea urchins.

To prevent the spread of aquatic nuisance species remove all plant fragments from boat bottoms, trailers, propellers, bait wells, fishing tackle, dive gear, etc. and properly dispose in an upland facility.



Discover Boating



Discover Boating

For More Information

ON CLEAN BOATING & THE ENVIRONMENT

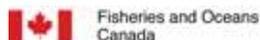
Bluenose Coastal Action Foundation	www.coastalaction.org
Environment Canada	www.ec.gc.ca
Canadian Coast Guard	www.ccg-gcc.gc.ca
Bluenose Canadian Power and Sail Squadrons	www.cps-ecp.ca
Go for Green ~ The Active Living and Environment Program	www.goforgreen.ca
The Ontario Marine Operators Association	www.OMOA.com
Georgia Strait Alliance	www.GeorgiaStrait.org
Transport Canada	www.tc.gc.ca
Department of Fisheries and Oceans	www.dfo-mpo.gc.ca
Protect Our Waters	www.protectourwaters.org
Tourism Industry Association of Nova Scotia	www.tians.org

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Clas Larsson

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