



4.10 Other considerations

4.10.1 Courtesy

The responsibility of skippers and boaters is to help others and to respect the rights and wishes of others. A matter of common courtesy, manners and customs. It involves:

- reducing speed to eliminate wash, when approaching vessels docked or at anchor and protecting shore lines,

- requesting permission to raft alongside another vessel, if no docking space is available,



- putting up sufficient fenders when given permission to raft alongside,

- requesting permission to walk across the other boat's deck to reach the dock,

- leaving the anchorage or dockage quietly, and offer a word of thanks when casting off,

- making allowances for wind shifts, and keep clear of other boats' anchor rodes when anchoring,

- requesting permission to dock before doing so, or going ashore immediately to report in when visiting a yacht club,

- following safe and courteous practices when using a searchlight,

- keeping noise levels low and at proper times so not to disturb other boaters and those on shore,

- not discharging noxious grey water in anchorages and moorings, and

- not discarding rubbish except in proper depositories, and leaving anchorages and moorings as neat and tidy as you found them.

4.10.2 Reporting Environmental Incidences

If you notice someone polluting the water with oil, garbage or other pollutants, either accidentally or with wilful intent, report it immediately to the Coast Guard or other authority without delay. That person is responsible for the costs of clean up and could be subject to heavy fines and penalties.

Remember: We have not inherited the Earth from our fathers, we are borrowing it from our children. (Lester Brown)



Burnaby Power & Sail Squadron

A Member of the Canadian Power & Sail Squadrons - Pacific Mainland District

Safe Environmental Boating

A contribution by P/R/C Raymond Berry, N. Chairman of the Canadian Power & Sail Squadrons Environmental Subcommittee, brought to our attention by S/Lt Pat Brandlmayr, AP, the Pacific Mainland District Environmental Officer.





without proper cleaning. Report suspected new infestations of plants or animals to any the regional environment office.

There are products on the market which will clean and protect vessels and equipment from carrying contamination to the next boating location, including zebra mussel control products. Use them.

4.8 Shore protection

We are currently going through the sixth major species extinction in the history of the earth. This is due both to pollution and, much more extensively, to the destruction of habitat. We are all aware of the loss of fisheries, a significant contributor being the loss of spawning grounds as well as overfishing. The loss of bird and animal populations is also well known. Part of the difficulty is that there is insufficient known about the extent of habitat which a species requires to maintain itself. With the death of one species there may be a significant loss to the food chain of either a predator or prey leading to further dislocations in the wildlife and/or plant life.



On the shore there will be habitat for animals, birds, amphibians, reptiles, a wide range of life - different species depending upon the region and location. It is important to avoid disturbing habitat as much as possible and to exercise caution and restraint when landing in an unknown area. Be especially aware of bird nesting areas and seal pupping areas. Do not land on or approach to the point of disturbance as this can lead to the abandonment of young. Local Park wardens are a good source of information on sensitive wildlife areas and times. Birds will sometimes congregate in large numbers during migration, and boaters should be aware that letting their dog for a run to 'play' with the shorebirds is a particularly harmful practice as the birds are diverted from their essential window of opportunity to fatten up for long migration flights.

Similarly boating through rafts of surf scoters or other waterbirds causing them to fly away, is draining them of energy and food gathering time.

Surprisingly, small quiet craft such as kayaks can be the most disturbing to wildlife as they can approach much closer without warning and cause a panic reaction when spotted. Talking softly or tapping the side of the boat to gently warn of your presence and not approaching on a direct course are ways to reduce stress to wildlife.

Beaches should be left unspoiled for others to enjoy, including the wildlife. Consider bringing a camp stove rather than burning wood. If you do build a beach fire, keep it small, well away from the upland area which may have a buildup of dry combustible



Safe Environmental Boating

by P/R/C Raymond Berry, N, Chairman, Environmental Sub-Committee, Canadian Power & Sail Squadrons.

1. GENERAL

Over the past fifty years there has been a slowly growing understanding about the serious effects which are occurring in the environment. Fundamental changes to air, land and water have become evident. Concern about the air we breathe, the water we drink and the food we eat, from land and sea, has resulted in action to reduce this impact on the environment, to correct or improve current conditions and to learn ways in which we can prevent further damage and perhaps enhance positive environmental change.

Those who are concerned about the environment, and that includes the majority of people, are doing what they can to improve the situation - developing and using recycling programs, composting, reducing excessive use of energy, water and natural resources and generally learning how best to live with less destructive activity. These same people carry these attitudes with them as boaters, taking care to have as little adverse impact on the environment as possible and making a special effort to improve conditions.

In view of the havoc being created by human activity, recreational boating seems a minor problem but in those areas in which they congregate, marinas, anchorages and waterways, recreational boaters are a major contributor to environmental change.

Environmental issues relative to boating activity fall into five categories:

The handling of fuels, lubricants and coolants. These are particularly noxious and detrimental to the environment, as is well known. The responsibility of boaters is to prevent spillage and the entrance of such products into waterways or shore installations.

Discharge of sewage or noxious grey water. Inland waterways whether fresh or salt are particularly vulnerable to such discharge and government regulations have been enacted and continue to be enacted across the country to restrict discharge.

Boat maintenance. There is a very large number of products on the market for cleaning and maintaining vessels. Some are less harmful to the environment and careful assessment of the products to be used, whether cleaners, polishes, paints or whatever, should be made to reduce environmental impact.





Brass	Worcestershire sauce or paste of equal parts vinegar, salt and water. Rinse well
Chrome	Clean with apple cider vinegar, polish with baby oil
Copper	Lemon juice and salt - wait and rinse
Lexan	Cup vinegar, 250ml water soft cloth, polish dry
Shower	Wet - sprinkle with baking soda
Refrigerator	Wipe with cloth dipped in baking soda
Windows	One cup vinegar, liter warm water - wash rinse squeegee or use baby shampoo and squeegee
Toilet	Baking soda, brush. Cup of vinegar left overnight in head reduces salt build up
Decks and floors	Cup vinegar, 4 liters hot water - scrub, swab, mop. Will remove any polish
Small rusted articles	1 part molasses, 9 of water - let soak till clean (may take several days)

4.3 Ecologo products

These carry the three dove symbol which indicates a significant degree of acceptability but doesn't mean the product is harmless. The advantage of these products is that their manufacture has been assessed for environmental consideration as well. This should be the second level of attack on difficult cleaning tasks if granny's cleaners don't work.



4.4 "Biodegradable"

Biodegradable products should be next on the list to use, if the others aren't doing the job. "Biodegradable" means the product will break down in the environment due to biological action but may still produce harmful components. In addition, surface active agents are in all soaps and detergents to create suds - they attach to fishes' gills, destroying the ability to breathe.

4.5 Products to Avoid and those to use

Those products which contain chlorine found in bleach and other cleaning products (which forms the basis of dioxin and other deadly compounds) and those which contain phosphates should not be used. Even "phosphate-free" products can still contain up to 1% phosphates.

Read labels, look for non-toxic, chlorine free, phosphate free products. Ask for EcoLogo products. In addition there are products which have won awards for being environmentally friendly, such as the new Shell Nautilus Boat Cleaner and Bilge Cleaner. If you have trouble finding environmentally sound products try in "Natural" food or herbal product stores where such products are readily available



Don't rely on an automatic shut off.

Have absorbent materials ready. A spill from these tanks will likely be in the water. There are pads, sheets and absorbent substances on the market and it is wise to carry some of these in case of an inadvertent spill. Be prepared! Do not use soap or detergent to disperse fuel spills it spreads the fuel, does not absorb it, is worse for the environment and is against the law.

Use a no spill fuel saver which temporarily attaches with suction cups to the vent to catch overflow which can be poured back into the tank.

Check fuel lines and fittings to ensure there are no leaks.

Fuel spills are to be reported to the Coast Guard without delay.

2.1.2 Portable fuel tanks

Follow refuelling procedures and do not overfill.

Have absorbent materials ready and wipe up spills.

Make certain fittings on the tank and hoses are secure.

Don't transfer fuel between tanks when on the water.

Carry reserve fuel in a container which connects to the engine.

2.1.3 Engine maintenance

Oil, fuel or coolant in the bilge indicates a leak and every precaution should be taken to tighten fittings and correct the problem.

Keep the bilge clean so that automatic bilge pumps do not pump oily water overboard, which is against the law. Keep oil absorbent pads to soak up spills in the bilge at all times and check often.

Installation of an overboard oil protection system will assure that no pollution occurs from an inadvertent spill.

If a large spill does occur it must be pumped into an enclosed container and properly disposed of.

When changing oil and coolant, preparation should be made to prevent spills, placement of absorbent pads to catch drips, and a clean up should be carried out afterwards.

Use of synthetic biodegradable oils and lubricants is recommended especially in fittings exposed to the water.

Propylene glycol antifreeze is less harmful than ethylene glycol and therefore is preferable.



The Burnaby Squadron Boating Guide Series is a public contribution from the Burnaby Power & Sail Squadron, a member of the Canadian Power & Sail Squadrons, Pacific Mainland District, to the advancement of "Safe Boating through Education".

The Boating Guides are the result of articles and instructional material prepared by members of the Burnaby Squadron, and contributions received from other members of the Canadian Power & Sail Squadrons and United States Power Squadrons.

The Boating Guide Series is divided into the following categories

BB - Boating Basics	NA - Navigation
EL - Electronics	PR - Marine Protocol
EN - Environment	RA - Radio Communications
GN - General	RR - Rules and Regulations
MA - MAREP	SS - Seamanship

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What is Canadian Power & Sail Squadrons (CPS)?

Canadian Power & Sail Squadrons (CPS) is a nationwide organization of boating enthusiasts. Their aim is to increase boating safety and enjoyment by providing instruction in all phases of seamanship and navigation, both power and sail.

It is a charitable, membership-type organization, incorporated under the Companies Act of Canada. Except for a small, paid staff - all teaching and administrative work is done by volunteers. CPS is non-governmental, non-regulatory and non-military. It is not restricted to boat owners, nor owners of large yachts. Purely and simply, it is a dedicated group interested in increasing safety and pleasure on the waterways, through education.

Visit the CPS website site for more information: <http://www.cps-ecp.ca>



vegetation. Do not burn plastics as they generate toxic compounds. When done, remove traces of the fire pit, making absolutely certain the fire is extinguished, collect and dispose of litter in a refuse bin or take it home, and dismantle temporary structures.

In some sensitive or heavily used areas it is not appropriate to bury human or pet excrement and it should be packed out.

There are some concerns that burning saltwater driftwood can generate dioxins, which are potent toxins.

Leave the shore at least as well as you found it and if there is refuse it would be very commendable to cart it away if that is possible.

Recycle, reuse, and reduce unnecessary waste.

Design of docking and shore facilities is a complex topic beyond the scope of this document, but boaters should be aware that options which leave the natural shore and upland intact will reduce habitat loss. Infilling the shore area, creating hard walls and removing natural vegetation can all have profound effects on aquatic species.

4.9 Disposal Issues

In carrying out these various environmental protection actions you will be left with the need to dispose of hazardous substances. They should only be disposed of in appropriate facilities:

Used oil	Most service stations Some public docks and marinas
Oil filters	Canadian Tire Automotive centres Some service stations
Oil absorbents	Usually where oil filters are collected Special household waste depots
Contaminated or stale gas	Service stations - check first Special household waste depots
Solvents and thinners	Special household waste depots
Antifouling paint	Special household waste depots
Batteries	Battery retailers Local recycling depots
Antifreeze	Service stations Special household waste depots

Check with local authorities about the disposal of hazardous substances.





Protection of in-shore waters. Care must be taken in anchorages, marinas and shore line installations to reduce bottom disturbance due to anchoring, erosion due to wake, or the inadvertent transplant of “foreign” animal (e.g. zebra mussels) or plant species (e.g. European watermilfoil).

Shore Protection. One of the most detrimental environmental circumstances currently is the destruction of habitat for birds and animals. Every attempt should be made to disturb habitats as little as possible and to leave shorelines as they were when the vessel arrived.

Environmental safety is equivalent to boating safety. Every boater must be concerned about safety and every vessel has an environmental impact - it is up to skippers and crews to make certain that the environmental impact is minimal and that the environment does not suffer from boaters’ enjoyment of their use of the waters.

2. HANDLING OF FUELS, LUBRICANTS AND COOLANTS.

The surface of the water, especially of the sea, is particularly vulnerable to hydrocarbon spills because the toxicity of these substances immediately kills the surface life, the most important of the water since it is the most abundant plant and animal source, basic to the food chain. Spills like that of the Exxon Valdez are spectacular but in a single year it is estimated that North American recreational boaters put more than 1 billion litres of hydrocarbon pollution into the water - 15 times the Valdez spill.



2.1 Fuels

It is important to follow refuelling procedures carefully and avoid spills - not topping the tank - and completely wipe up spills when they occur. With gasoline spills evaporation occurs rapidly, reducing the area of surface water toxicity, but are especially dangerous since the high volatility of gasoline make explosion or fire imminent. Diesel fuel spills are not as dangerous, because of lower volatility, but they spread further, last longer and do more water surface damage.

2.1.1 Inboard tanks

Most marina fuel dispensers can pump fuel much faster than many boats fill pipes are able to handle. “Kickback”, “burping” or fine spray from the filler pipe is a major source of fuel spills, so take it easy.

Know how much fuel you need, reduce flow as the level approaches full and stop before reaching it so there is no overflow. *Remember that fuel expands on warm days.*



4.6 Bottom and Topside Work

Environment Canada’s Best Management Practices booklet should be a must for anyone contemplating work on the boat. Maintaining a vessel with the environment in mind means using the most environmentally sound products, hard anti-fouling or non-fouling paints, for example, laying drop sheets to catch residue from sanding or scraping so that it can be disposed of properly. Do the work ashore to minimize toxic residue entering the water. Use sanders, grinders and other tools which have dust collection fittings in place. This will help protect the person doing the work as well as the environment. Unused paint and other liquid waste should not be poured down storm or other drains but should be disposed of at appropriate facilities. Check in the area for numbers to call to find out how best to dispose of hazardous substances.

4.7 Protection of in-shore waters

4.7.1 Shoreline

Conditions are different in the varied locations across Canada, but the principles are the same. In anchorages marinas and shoreline installations care should be taken to reduce bottom disturbance and erosion due to wake. River and stream estuaries, small inlets, and on either coast, tidal ocean shores, provide spawning areas for fish and other aquatic animals and birds and should be approached with caution and protected to the degree possible - especially during spawning and nesting. Marine plants provide habitat for juvenile fish and other marine creatures. Enclosed bays and narrow channels experience very little exchange of water and tend to accumulate pollution.

In the seaway and on the coasts there are marine mammals to protect - whales, porpoises, seals, sea lions and on all waters those creature which live in and on the edge of the sea or lake.

4.7.2 Introduction of “foreign” aquatic species

The introduction of species of aquatic plants and animals and associated pathogens, in new locations can cause major economic and ecological harm. The transport of live bait has led to the introduction of new species in lakes and streams for many years - often to the detriment of species already there. The transport of plant material, such as Eurasian watermilfoil, an exceedingly vigorous perennial plant, displaces many native water plants choking fresh waters, obstructs swimming, boating and fishing, impedes flood control, water conservation and irrigation. To prevent its spread, remove all plant material from the boat, wet well, motor, trailer, and anchor and dispose of it away from the water.

The introduction of zebra mussels in the Great Lakes is well known and the spread of this nuisance is occurring due to the transport of vessels from location to location





2.1.4 Outboard engines

Conventional 2-stroke outboard engines discharge up to 25% of their fuel/oil mixture straight into the water; 20 gallons of fuel used leaves 5 gallons in the water. More recent 2 cycle engines are more efficient, use less lubricant but are still terrible polluters. 4-stroke engines are more efficient and are quieter. Discharge regulations governing outboard engines are being enacted in several jurisdictions in North America but are not universal as yet.



Use synthetic lubricants which are biodegradable including 2-stroke outboard oil such as Shell Nautilus 2-stroke oil which carries the EcoLogo designation.

3. DISCHARGE OF SEWAGE AND GREY WATER

3.1 Sewage

Regulations governing the discharge of sewage are different in each jurisdiction in North America. In Canada, for example, in the Great Lakes and many inland waterway no sewage discharge is permitted. On the West Coast there are specific “no discharge zones” but discharge is permitted in open waters. In many US jurisdictions discharge is not permitted but in many areas regulations are similar to the West Coast, identifying certain locations for no discharge. In most “no discharge areas”, pump out stations are provided, in some cases at no charge, in others a charge may be levied.

It is essential to determine what regulations are in force in the area in which you plan to cruise so that proper holding tank or toilet equipment is in place to meet regulations. In some jurisdictions, in the Great Lakes and Northwest US areas, holding tanks with *no discharge capability* are mandatory. If one cruises into such a jurisdiction it is essential to disable the over board discharge system so no inadvertent discharge will occur which would make the skipper subject to serious fines.

3.2 Grey water.

Grey water is the water which is used for other purposes aboard, cleaning, washing dishes or clothes, showering or washing etc. It is essential to avoid the use of cleaning substances containing phosphates or chlorine. Choose soaps and detergents carefully, and use as little as possible. Products bearing the EcoLogo designation and those purchased in “natural” food stores will carry information about the contents of the



substance being used and allow a careful selection. There is growing concern about grey water discharge and the likelihood that in future it will be prohibited.

4. BOAT MAINTENANCE

Keeping your boat clean is a challenge to the devoted environmentalist. Many cleaning products contain phosphates and other toxic chemicals. The claims made by manufacturers are quite confusing and “biodegradable”, “natural” or “environmentally friendly” are not very meaningful or helpful. The remains from biodegradable products may be harmful, it is no longer “natural” if it is in a bottle or a tin and if it is “made from natural” materials it may be changed or processed in such a manner to make it toxic. In fact some “natural” products are, in themselves toxic. If it says “wear rubber gloves” don’t use the product unless, for some reason, its use is unavoidable. *Develop an approach to the process of cleaning which takes in the following considerations:*

4.1 Keep it clean

The longer the time between cleaning, the greater the oxidization and accumulated grime, the more difficult the task, the “stronger” the cleaning substance needed and the more frustrating to bring it back to the desired appearance.

4.2 Use the least harmful products

Start with granny’s secret cleaners, the one’s off the kitchen shelf, which are listed below with the uses to which they may be put. Used on a regular basis, without leaving the task too long they do the job at a fraction the cost of the more sophisticated and toxic stuff. Prepare some of these cleaners and try them yourself to gain a realistic appraisal of their use. Some work better than others, as is the case with most products.



Before launching, for those in central Canada, or when hauled for service, for those on the coast, give the boat a thorough cleaning on land in an area where the run-off won’t enter the waterway.

Apply a good coat of wax, polish the hull. Water and grime will cascade off a well-waxed boat.

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| To bleach | Borax or hydrogen peroxide |
| To polish wood | Three of olive oil one white vinegar |
| To scour | Baking soda |
| To clean: | |
| Fibreglass stain | Paste of baking soda and salt |
| Aluminum | 2 tbls cream of tartar, one liter water |