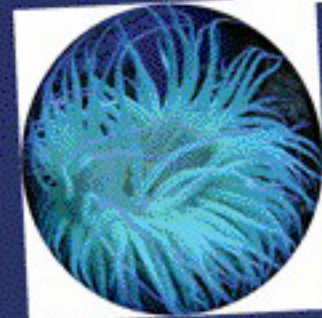
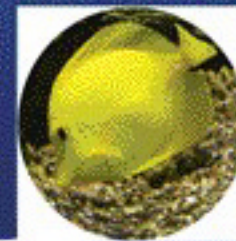


MANAGING BOAT WASTES



*KEEP HAWAII
BEAUTIFUL*

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Alternative Products for Cleaning Your Boat

Battery Acid	Use baking soda to absorb a spill
Bilge Cleaner	Use non-hazardous bilge cleaner available from marine store.
Bleach	As a substitute, try borax powder available at grocery stores
Brass Cleaner	Use vinegar and a clean dry rag to remove tarnish
Drain Opener	Pour ¼ cup baking soda down the drain, follow with ½ cup vinegar. Allow the effervescent mix to bubble for 30 minutes. Finish the job by flushing the drain with boiling water. For tough clogs try using a plumber’s snake.
Fiberglass Stain	Baking soda and water mixed into a paste works great on Formica
Floor Cleaner	Use 1 cup of white vinegar in 2 gallons of water
General Cleanser	Dissolve 1 teaspoon of borax in 1 quart of warm water. For tough jobs use a ½ cup of borax and a splash of vinegar in warm water.
Hand Cleaner	Instead of paint thinner try washing soda (sodium bicarbonate), found in the laundry section of most grocery stores. Washing soda is caustic, so be sure to use plenty of water.
Head Cleaner	Sprinkle with baking soda and scrub with a brush
Mildew Remover	Mix equal parts of lemon juice and salt or vinegar and salt. Use a plastic spray bottle to spray on outside canvas
Paper Towels	Use cloth rags that can be washed and re-used
Port Cleaner	Mix 1 cup of white vinegar in 1 quart of warm water. Put mixture into a plastic spray bottle and spray. To avoid streaking, dry glass with crumpled newspaper
Scouring Powders	Baking soda with a plastic “bun” scrubber works great on porcelain head and shower tiles
Shower Cleaner	Wet surface, sprinkle with baking soda, and scrub



We wish to thank the following organizations for providing source material for this publication:

- ✚ Baywatch: A Guide for Boaters (1991), published by the Environmental Health Coalition in San Diego (619-235-0281).
- ✚ Boaters Guide to Clean Water and Good Times (1988), published by Washington.
- ✚ Environmental Guide for New England Mariners (1989), produced by the Coalition for Buzzards Bay.
- ✚ Managing Boat Wastes, A Guide for Hawai'i Boaters, produced by UH Sea Grant College Program under a grant from the Department of Health (1998 & 1994).
- ✚ Managing Hazardous Wastes, produced by Thurston County Public Works in cooperation with the Washington State Department of Ecology.
- ✚ Rhode Island Sea Grant, Boaters Fact Sheet Puget Soundkeeper: A Boater's Guide to Sound Information, published by The Puget Sound Alliance under a grant from the Municipality of Metropolitan Seattle (METRO) and the Washington State Department of Ecology.
- ✚ Soundwatch: An Environmental Guide for Boaters (1993), published by 48 North, The Sailing Magazine; The California Department of Boating and Waterways.
- ✚ The Hawai'i Guide to Alternatives & Disposal of Household Hazardous Wastes, produced by the Hawai'i State Department of Health, Environmental Health Administration and the Office of Solid Waste Management.
- ✚ What Boaters Can Do to Be Environmentally Friendly, produced by the West Maui Watershed Advisory Committee, Lahaina Harbor Mā'alaea Wharf Advisory Committee and Hawai'i Department of Health Boating Clean & Green (1996), Marine County Hazardous and Solid Waste Management Authority and the Office of Waste Management State Parks and Recreation Commission.

Boating Mishaps Involving Injury

- Fire Dept: 911;
- DLNR-Div. of Conservation & Resources Enforcement: 587-0077 (neighbor islands call Enterprise #5469); Channel 16 VHF
- U.S. Coast Guard Sector Honolulu: (808)842-2606 or 1-800-424-8802

Debris or Litter Issues

- EMERGENCY Hazardous Material Spill or Leak
Fire Dept: 911; U.S. Coast Guard-Sector Honolulu: (808) 842-2606 or 1-800-424-8802
- Fuel and Oil Spills
U.S. Coast Guard Sector Honolulu; (808) 842-2606 or National Response Center: 1-800-424-8802
- Hazards to Navigation
U.S. Coast Guard: (808) 842-2606
- Injured/Stranded Marine Mammals
(NMFS)1-888-256-9840, Sea Turtles (NMFS) (808) 983-5730
Dept. of Land & Natural Resources (DLNR) Division of Conservation And Resource Enforcement (DOCARE): 587-0077; Ocean Dumping of Plastic, Garbage, Paper, and other marine debris U.S. Coast Guard Sector Honolulu: (808) 842-2606.

Sewage Spill/Infectious Waste

- Sewage Spills, notify Honolulu City & County Sewer Maintenance: 523-4423 (24 hrs)
- Infectious Wastes or Other Spills, notify Department of Health-Hazard Evaluation and Emergency Response Office (HEER): 586-4249 or 247-2191 (after hours)

Soap	Use phosphate-free products available at most grocers and health food stores
Wood Polish	For interior wood use one teaspoon lemon juice with two teaspoons vegetable oil. Apply mixture with a clean, dry cloth.

Do

- ✓ try to use alternatives!! They work and can save you money!

Don't

- ⊗ Allow hazardous products to enter the water. These products may cause explosions, may be corrosive, may be flammable and may be poisonous to marine organisms.

Bilge Water

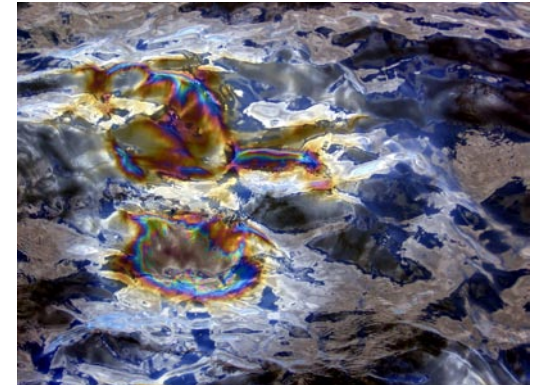
Tiny droplets of multi-colored oil dot the surface of waterways throughout the world. But the commonality does not excuse the long-term impact oil has on the environment. Once in the water oils collect in the sediments and impact marine organisms, from the tiniest microorganism up the food chain to the fish we eat.

These harmful substances commonly enter the marine environment through bilge pumping, fueling and improper response to oil spills.

Many oil spills occur unintentionally when automatic float switches activate due to rain, slow seepage, or other causes of mild water ingress. To avoid these oil spills, raise the float switch a couple of inches. This will allow the bilge pump to discharge water, but keep the oil in the boat until it can be disposed of properly.

Do:

- ✓ Fix small leaks that allow oil to drip into the bilge.



- ✓ Take extra care when you change your oil.
- ✓ Use oil-absorbent pads to capture surface oil. Make sure the oil is completely absorbed. Dispose of used pads in trash.
- ✓ Raise the bilge pump automatic float switch high enough to keep any oil-contaminated bilge water aboard until it can be pumped to a clean container.

Don't:

- ⊗ Don't ever drain engine oil into the bilge and discharge the mixture overboard.
- ⊗ Don't put off repairs to engine and fuel tank leaks.
- ⊗ Don't disable automatic bilge pumps while doing engine repairs.
- ⊗ Don't turn on bilge pumps, unless certain the bilge is clean.
- ⊗ Don't dispose used oil at locations other than approved reclamation sites.
- ⊗ Don't use dispersants, such as dish soaps; dispersants do not remove oil from the water, they only break it down into small, hard to see drops and most dish soaps contain phosphates, which are also damaging to the environment.
- ⊗ Don't discharge bilge water if there is a sheen to it.

Boat and Deck Washing _____



Washing the deck with soap contributes to water pollution, because many soaps and detergents contain phosphates, which promote algae growth. Too much algae robs the water of essential oxygen. Without oxygen, fish cannot survive. In addition, algae growth prevents light from penetrating the water and limits

scuppers with a cloth while working on the deck and wipe up any spills or residues.

- ✓ In order to catch paint scrapings and dripping use drop cloths, pans, containment trays, etc. Dispose of wastes in the trash. Allow empty paint cans to dry out before throwing them away.
- ✓ Haul your boat out annually and periodically pressure wash the hull, this extends the life of your paint.

Don't:

- ⊗ Don't scrub the hull while in the water. This is a "reportable" spill.

Useful Phone Numbers _____

O'ahu numbers given (unless otherwise noted).

Abandoned Boats/Boating Registration DLNR Division of Boating & Ocean Recreation (DBOR)

O'ahu: 587-1963

Kaua'i: 245-8028

Maui: 243-5824

Hawai'i: 329-4215

Moloka'i: 553-1742

Lāna'i: 559-0723

✓ Contact the Coast Guard at 842-2606 (24 hours) to report violations.

✓ Choose reusable items rather than disposables.

Don't:

⊘ Don't discard any garbage overboard.

⊘ Don't discard any plastic over the side.

Paints/Varnishes/ Epoxies/Etc.



Paints come in two basic forms: water-based and oil-based. Water-based paints are considered less dangerous than oil-based paints, which contain carcinogenic solvents. If inhaled, ingested, or absorbed through the skin, solvents can impact human health. The growth of marine organisms on hulls is a common problem faced by boaters. Many bottom paints are designed to self-slough, which means they shed their outer layer and carry away unwanted growth. In addition, many bottom paints contain anti-growth toxins which, when leached into the water, can accumulate in marine organisms. Eventually, these toxins find their way back to us in the fish that we eat.

Do:

✓ Buy only what you need! Mix only what you need! Prepare paints over a drop cloth on land, not on the dock.

✓ Use, or make sure your boat yard uses, the most environmentally-friendly bottom paints available. Ask your vendor to stock “green” products.

✓ Scrape and paint your boat away from the water. Plug the

aquatic photosynthesis. Corals depend on photosynthesis for their survival.

Many soaps and detergents also contain substances that bind to the living tissues of fish. When these substances bind to the fish's gills, fish lose their ability to absorb oxygen and therefore, suffocate. Detergents can also contain heavy metals that accumulate through the food chain.

Do:

✓ Rinse and scrub your boat with a brush after each use. The safest cleaning product available is good, old-fashioned “elbow grease.”

✓ Use alternative products that do not contain phosphates. If you have a fiberglass deck, try cleaning with a baking soda and water mixture.

✓ Use non-toxic, biodegradable cleaners and phosphate-free cleansers.

✓ Use hose nozzles that shut-off when released. These nozzles conserve water and reduce the runoff from boat washing.

Don't:

⊘ Don't use cleaners that contain ammonia, sodium, chlorinated solvents, petroleum distillates, or lye.



Sewage

Human sewage from boats has the potential to pollute waterways and to affect marine animals and plants.

Federal Law states, “All recreational boats with installed toilet facilities must have an operable marine sanitation devise (MSD) on board.”

MSDs include any equipment for installation on a vessel which is designed to receive, retain, treat, or discharge sewage and any

process to treat sewage. MSDs are designed to prevent the overboard discharge of untreated sewage, and they come in three types:

1. **Type I MSDs:** A device that under test conditions produces an effluent having a fecal coliform bacteria count not greater than 1,000 per 100 milliliters and no visible floating solids.
2. **Type II MSDs:** A device that, under test conditions produces an effluent having a fecal coliform bacteria count not greater than 200 per 100 milligrams per liter.
3. **Type III MSDs:** A device that is designed to prevent the overboard discharge of treated or untreated sewage or any waste derived from sewage. Also known as a holding tank, the device is equipped with a pipe to discharge waste overboard when the vessel is three miles from shore, or, preferably, into fixed or floating pump-out facilities.

Vessels greater than 65 feet must use type II or III MSDs. Vessels under 65 feet can use type I, II, or III MSDs. All installed MSDs must be Coast Guard certified, if the boat is to be in compliance. Vessels without installed toilets should use a port-a-potty and:

1. Dispose of the sewage in an onshore sewage facility.

2. Use restrooms and portable toilets ashore whenever possible. Holding tank additives: Type I and Type II MSDs require holding tank additives. They come in a variety of forms and chemical compositions — some of which may be harmful to parts of your toilet system as well as the environment. Read the label carefully to make sure that the products do not contain formaldehyde, formalin, phenol derivatives, ammonia compounds, alcohol bases, or chlorine bleach.



Do:

- ✓ Know the MSD requirements. Federal Law states that sewage can not be discharged overboard unless the vessel is more than three miles offshore. While sailing within three miles of shore vessels

Marine Debris

The ocean is not a dump! Marine debris — plastic, nets, fishing lines, six-pack rings, Styrofoam, etc. — can kill marine life. When seabirds, whales, and other marine creatures ingest plastic they often become sick and die. They can also become entangled in nets or six-pack rings and drown. In 1987, the United States ratified an international treaty addressing the problem of ships dumping their garbage at sea. The treaty, known as Annex V of MARPOL (Marine Pollution Act):

1. Prohibits the disposal of plastics anywhere in the ocean;
2. Restricts the disposal of most other types of refuse materials depending on distance to shore.



In addition, the U.S. Coast Guard requires:

1. Vessels 26 feet and over to prominently display a placard to notify all passengers and crew of Annex V discharge rules and penalties;
2. Vessels 40 feet and over should display the discharge rules placard and prepare a written waste management plan.

Do:

- ✓ Keep all waste on board in proper receptacles. Separate plastics, cans, and glass for recycling. Properly manage your debris so that it will not be blown or washed overboard.
- ✓ Avoid expensive boat engine repairs — keep your trash out of the water! Boat engines can be damaged when propellers or cooling water intakes become entangled with nets and other marine debris.

Lead Acid Batteries



Hawai'i Law (Hawai'i Revised Statutes 342I) prohibits the disposal of lead acid batteries in landfills or abandonment on public or private property. Batteries whose electrolyte has been removed will not be accepted for recycling. Lead Acid Batteries contain two hazards: lead and acid. When released into the environment, these materials

can contaminate the air, water, and soil. Also, lead can be assimilated by animals and plants, and eventually find its way into the food chain and drinking water supply. When ingested or contacted by humans, lead and acid can cause both short- and long-term health problems.

Do:

- ✓ When buying a new battery, return the old one to your vendor. The law requires the vendor to accept it.
- ✓ Store batteries upright in a secure place and check battery and caps often for leaks.
- ✓ Contact the Department of Health, Office of Solid Waste Management, at 586-4240 to report vendors who don't comply. If you have an old battery, contact your local mechanic or parts store. Anyone who sells batteries in Hawai'i is required to take your old battery when you buy a new one.

Don't:

- ⊘ Don't dispose of a battery in the garbage, at a landfill, or on public or private property.
- ⊘ Don't break open the case and/or remove the acid or lead.
- ⊘ Don't store batteries outside; the weather can damage them.

with holding tanks must secure their "Y" valve in a closed position. Boaters can use a wire tie, padlock, or remove the valve handle to prevent accidental discharge.

- ✓ Note* Hawai'i boaters are required to use appropriate pumpout facilities to empty their MSDs.

Don't:

- ⊘ Don't dispose of fats, solvents, oils, emulsifiers, disinfectants, paints, poisons, phosphates, diapers, or other similar products in MSDs.

Harbor Facilities

Ala Wai Small Boat Harbor (O'ahu)

Phone: 973-9727

To use pumpout facilities at the Ala Wai Harbor, go to the Ala Wai fuel dock. You will need to obtain a key from the fuel dock cashier. The facility is located on the far-left end of the dock. Dock hours are from 9 a.m. to 6 p.m. daily.

He'eia Kea Small Boat Harbor (O'ahu)

Phone: 223-3603

The pumpout station is located at the fuel dock. It's open Tuesday through Saturday from 6:45 a.m. to 3:30 p.m., please call ahead to make arrangements. Obtain the key from the harbor office to unlock the pump. After hours the key can be obtained from the Deli next door, from 7 a.m. to 6 p.m. daily.



Ke'ehi Small Boat Harbor (O'ahu)

Phone: 832-3464

The sump pump is located at the loading dock. To use the pump inquire at the harbor office. Sign the harbor log and office personnel will assist you. Office hours are Tuesday through Saturday 7:45 a.m. to 4:30 p.m.

Wai'anae Small Boat Harbor (O'ahu)

Phone: 697-7095

The pump is located on the loading dock. Obtain a key from the harbor master, Tuesday through Saturday 7:45 a.m. to 4:30 p.m.

Kailua-Kona Pier (Hawai'i)

Phone: 329-4215

Call the above number to reach a harbor agent. The agent will assist you with pumpout procedures.

Lahaina Small Boat Harbor (Maui)

Phone: 662-4060

Look for the "pump-a-head" sign on the north side of the fuel dock. Obtain a key from the harbor office during office hours, Monday through Friday 7:45 a.m. to 4:30 p.m.

Nāwiliwili Small Boat Harbor (Kaua'i)

Phone: 245-4586

To arrange for a pumpout, call the harbor master at 245-4536. Office hours are Monday through Friday, 7:45 a.m. to 4:30 p.m.

filter in a plastic bag and put into the trash. Then bring your used oil to a collection facility or recycling center. Oil-absorbent boxes can also be used.

Do:

- ✓ Drain filters into your used oil.
- ✓ Drain at an angle, for 24 hours, while oil is still hot.
- ✓ Dispose of empty oil filters in trash.

Don't:

- ⊗ Don't throw away un-drained filters — drain them first!

Solvents

Most solvents are hazardous because they are flammable and/or toxic. They are, however, commonly used in many boat maintenance products such as resin, paint, paint remover, varnish, shellac, and thinner. When working with solvents avoid skin contact and vapor inhalation.



Do:

- ✓ Use alternative products! Ask your vendor to stock environmentally friendly alternatives! Recycle your own solvents! Let the spent solvent settle until it clears. Decant the liquid portion through a filter. Dispose of the filter in the trash.

- ✓ Keep spent solvent in separate, labeled containers.

Don't:

- ⊗ Don't mix solvents with used oil!
- ⊗ Don't let solvents drain to septic tanks, storm drains, or sewers.

Used Oil



Hawai'i law 342 J (Hawai'i Revised Statutes 342 N) prohibits used oil from entering into local streams, the ocean, storm drains, sewers, or the ground. Also, if used oil is contaminated with a hazardous waste, the whole mixture becomes a hazardous waste. If improperly managed, used oil is a dangerous pollutant. Just 1 quart of oil can contaminate 250,000 gallons of water, and can injure fish, birds, and other aquatic life. In addition, used oil contains toxic components that can cause cancer and other diseases in humans.

Do:

- ✓ Store your oil in a clean, air tight container.

- ✓ Use oil absorbent products, such as oil absorbent boxes available at most hardware stores, to contain any accidental spills when changing your oil



- ✓ Bring your uncontaminated used oil to a collection facility or recycling center. Contaminated used oil will not be accepted.

Don't:

- ⊘ Don't mix used oil with solvents, thinner, paint, anti-freeze, fuel or other hazardous substances.

Used Oil Filters

Used oil filters contain some waste oil. The oil may drain out and cause environmental contamination when disposed in landfills. Some local service stations recycle oil filters. If you can't find one that does, drain the filter into the used oil pan for 24 hours and place the



Fuel

The best way to minimize fuels environmental impact is to use less! When possible, try using the following tips to reduce fuel consumption.

Do:

- ✓ Try to use your sails whenever possible.
- ✓ Balance your load. This enables your boat to plane quickly (applicable for cat and tri-hulls) and reach the desired speed without plowing through the water.
- ✓ Watch the weather. If wind and sea conditions are questionable, it's best to conserve fuel and postpone your trip. Brisk winds and heavy chop can cause fuel to siphon in the tanks.
- ✓ Check your propeller. A damaged prop will waste fuel. Keep propeller blades clean and in good condition. Replace props that have damaged blades. Also, adjust diameter and pitch to your vessel's design (Check with engine manufacturer).
- ✓ Avoid excess idling. Whenever you have to stop, turn off the ignition. A warm engine restarts easily without choking.
- ✓ Slow down. A wide open throttle can increase fuel consumption by 50 percent or more over mid-range speeds. As you "trim" the boat, maintain revolutions per minute (rpms) at the level recommended by the manufacturer.



- ✓ Watch your weight. The lighter the boat and its load, the less horsepower you will need to propel it and the greater your fuel economy. Drain the bilges and holding tanks properly before departure. Store your unneeded supplies or equipment onshore.
- ✓ Plan your trip. A true course is the shortest, the shortest distance not necessarily the shortest time, depending on sea conditions. Any reduction in running time saves fuel.
- ✓ Check the tides. Boating against the tide is like running against the wind — it takes more effort. Make the tides and currents work to your advantage. Reduce wind resistance by keeping canvas bow shelters and bimini tops down and furled until needed.
- ✓ Clean your hull. The less growth on your hull, the less underwater drag there will be on your boat and the less fuel you will use.



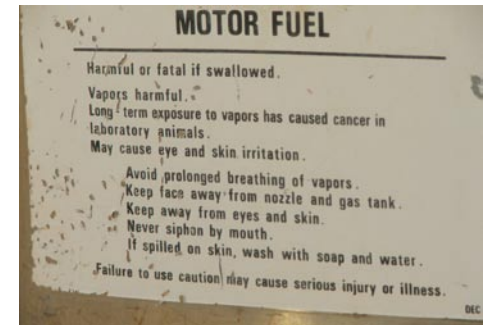
- ✓ Keep the engine tuned. Proper ignition timing and clean spark plugs assure extra mileage. Inspect the carburetor for proper float level, correct jetting, and smooth choke operation. Check the fuel and oil filters regularly. Alcohol-based fuel can cause loss of fuel by deteriorating fuel lines. Call your boat manufacturer to find out if your engine can take alcohol-based fuel. Part of engine maintenance should include an inspection of the fuel lines and carburetor gaskets. Replace bad lines with USCG Type A, alcohol-resistant fuel line hose.
- ✓ Consider a 4-stroke engine! Small outboard 2-stroke engines pollute much more than the new 4-strokes.
- ✓ Listen to the filler pipe to anticipate when the tank is full and to avoid back-splash.

- ✓ Stop pumping at the first sign of fuel escape.

- ✓ Prevent spillage from tank vents, install a fuel/air separator or an air whistle in your tank's vent line.
- ✓ Install fuel tank vents high enough to prevent spills during fueling and during rough weather.

Fuel Spills

The use of dispersing agents such as dishwashing liquids is more harmful to the environment than if the oil was left alone. Use of dispersing agents without the approval of the Captain of the Port is in violation of federal laws; the civil penalty is up to \$27,500.



Any fuel spill (gas, oil, diesel, etc.) that leaves sheen on the water must be reported to the U.S. Coast Guard at 842-2606 or the State's Hazard Evaluation and Emergency Response (HEER) office at 586-4249 or 247-2191 (after business hours). There is no lower limit to the amount of fuel spilled to trigger a call to the Coast Guard or HEER. You must call the Coast Guard to report a spill no matter how small.

If any accidental oil spill occurs notify the Coast Guard at (808) 842-2606, immediately. The Coast Guard will help the boater determine the best clean up method and the boater can minimize their risk of unnecessary fines and adverse environmental impact.

Do not attempt to clean the spill with dispersing agents such as Dawn or Joy soap. The Coast Guard could take oil samples from the spill and the boat. The samples are then sent to a lab and if a positive match occurs fines range from up to \$27,500.

- ⚠ Civil penalty for oil spill up to \$27,500
- ⚠ Failure to notify National Response Center (NRC) and possible criminal sanctions up to \$27,500
- ⚠ Use of dispersants up to \$27,500