

Clean Boating Guide



Pollution Prevention Practices

Preventing pollution can be as simple as using good maintenance practices and less caustic or toxic products. It's a way to keep your boating environment clean, promote healthy fish & shellfish and cut environmental cleanup costs (see our publication, **Boating Pollution Economics and Impacts**).

This pamphlet suggests ways to reduce pollution in your marina. In deciding what practices to use, consider whether you will hire someone or do the work yourself. Ask about your marina's pollution prevention policies.

Many vessel cleaning and maintenance products, such as paint residue, solvents, and engine cleaners, are toxic to marine life in the water and sediments. These products and their leftovers should be disposed as hazardous waste. The last section has information on the collection & disposal of these products.

OIL AND FUEL POLLUTION

ENGINE MAINTENANCE



- Ask your marina manager what types of maintenance projects are allowed in the slip. Ask about rules for contractors or do-it-yourself work in the marina.
- Keep engines well tuned & efficient.
- Keep special, oil-absorbent pads, pillows, etc. in the bilge and a containment pan or tray under the engine.
- Regularly inspect and fix small leaks.

- Inspect lines and hoses for deterioration; prevent lines from chafing.

- Don't wash parts over the water. Wash over a bucket or in a parts washer.⁶

BILGE WATER

Bilge water becomes a problem if the engine leaks oil into the bilge. It is illegal to pump water contaminated with oil overboard.

- Prevent oil from entering the bilge. The engine maintenance practices described above can help prevent bilge contamination.
- If you notice fuel or lubricant in your bilge, turn off the bilge pump immediately, so contaminants don't enter the water.⁶
- Soak up oil that enters the bilge with special, oil-absorbent pads, pillows, etc. Secure them to prevent clogging or fouling the bilge pump and sensor. Check saturation of the absorbent periodically. When fully saturated, remove the absorbent, place it in a leak-proof bag or container and dispose it as hazardous waste.⁹ Ask your marina manager for information on hazardous waste collection facilities.

SPILL PREVENTION AND CLEAN UP

- If fuel nozzles do not have automatic shutoff, hold the dispenser by hand; do not insert a clip to keep fuel flowing freely.²
- Install a "whistle" in the line to warn when fuel tank is nearly full; do not top off.
- Contain spills and stop the source.⁴

Clay Clifton, Erika McCoy, and Jamie Gonzalez Program Representatives, and Leigh Johnson, Marine Advisor
University of California Cooperative Extension-Sea Grant Extension Program,
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- Use dry clean up methods such as oil absorbents. Do not use straw.⁴

- Clean up spills and leaks immediately. Do not hose down spills or leaks.

- If an oil spill reaches the water report it to the Coast Guard at **1-800-424-8802** or VHF/FM Radio Channel 16.

- It is illegal to apply soap or detergents to an oil spill in the water.

DISPOSAL

- New or used engine oil and oil filters are hazardous wastes. Every marina designs its own policies for the collection and disposal of these materials. Ask about your marina's policy on hazardous waste disposal.

- Some automotive shops accept used oil, oil filters and batteries for recycling. Oil filters must be drained into a pan for 24 hours before being recycled. Ask your marina manager to refer you to shops that collect these materials, or to the local hazardous waste collection facility.

- Never contaminate used oil with another toxic substance such as engine cleaner, gasoline, diesel or transmission fluid. Contaminated oil is more expensive to dispose.³



- Oil absorbent materials should be disposed as hazardous waste.

SEWAGE POLLUTION

- Do not discharge sewage in marina waters.

- Store sewage in holding tanks. Dispose regularly at pumpout stations, or hire a mobile pumpout service.

- Ensure MSD Type II systems work properly and discharge only when underway and a sufficient distance offshore. Ask the Coast Guard for rules on offshore discharge. MSDs should **not** be discharged in the marina.

- Use shore-side restrooms rather than boat heads, whenever possible.²

MARINE DEBRIS (Garbage & Plastics)

Boaters can remember two simple rules to prevent overboard disposal:

- “Pack it in, pack it out”. Everything that is not eaten should be returned to shore for disposal.



- If you wouldn't swim in it, don't put it in the water.

BOAT CLEANING AND MAINTENANCE IN THE SLIP

Follow these procedures for small to moderate-sized projects (ask your marina manager what is allowed in the slip). Take larger projects to a boatyard.

If you hire a maintenance service, they must follow marina rules. Because you may be responsible for the actions of your contractor, ask them to use environmentally protective methods such as those described on this page and our publication *Selecting Underwater and Topside Maintenance Services for Your Boat*.

SANDING

- Wipe down small amounts of sanding dust with a damp rag.

- Cover the area between the boat and the dock with a plastic sheet or tarp to catch debris. Reverse the boat in the slip to work on the other side. Reuse plastic sheet or tarp after cleaning and allowing it to dry.⁷

- Use sanding equipment with a dust containment bag. Sweep or vacuum all residual sanding dust and dispose it as hazardous waste.



- Plug scuppers to contain dust and debris.

- Don't sand underwater or in a heavy breeze.

PAINTING

- Cover the area between the boat and the dock with a plastic sheet or tarp to catch drips. Reverse the boat in the slip to work on the other side. Reuse visquine or tarp after cleaning and allowing it to dry.

- Mix only enough paint for the job. Mix paints on land, not on the dock. Avoid spills and drips as you walk along the dock.



- Use drip pans and containment trays to catch drips and spills. Keep absorbent pads and thinner on hand to clean up spills.

- Seal containers tightly when not in use. Don't paint in a heavy breeze.⁷

- If you do accidentally spill paint or varnish into the water, it must be treated as a hazardous waste spill. Reporting the incident and clean-up procedures are the same as for a fuel or oil spill.^{6,7} Call the Coast Guard at **1-800-424-8802** or VHF/FM Radio Channel 16.

- Reuse paints, varnishes and solvents whenever possible. Toxic products must be disposed at a hazardous waste collection event or permanent collection facility.

- Donate leftover paints and varnishes to fellow boaters or to a local theater group, church or school.⁵

- Pour only as much thinner as needed into a smaller container and use it up. This will avoid contaminating the rest.

- Reuse thinner and solvents. Let contaminants in the solvent settle, decant clear solvent into a new container for reuse. Dispose sludge as hazardous waste.

CLEANING

- Use or ask your topside maintenance services to use environmentally friendly cleaning products. Avoid those containing ammonia, lye, sodium hypochlorite, chlorine or petroleum products.

- Use only phosphate free and biodegradable

soaps. Even these soaps may be harmful to the environment; carefully read labels on products. Also ask marine supply dealers for more information.

- Use soap in moderation. More soap doesn't mean more clean.

EXTERIOR TEAK and TRIM

- Allow teak to fade to gray. Rinse it occasionally with fresh or salt water to remove dirt. This reduces wear and tear from particles under foot.

- Use teak cleaners and soaps sparingly. Solvents in the cleaners eat away at the soft grain of the teak and damage seam compounds.

- Keep caustic cleaners and varnishes out of marina waters. Dispose them as hazardous waste.



- For the look of freshly sanded teak, scrub teak decks with clean salt water and let the sun bleach them.⁵

- Teak trim requires different care than teak decks. Varnished exterior teak lasts longer and provides more protection than an oil finish. Sand and varnish teak trim as needed.

- Contain sanding dust and dispose it as hazardous waste.

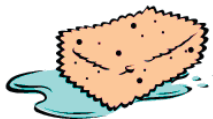
- If you oil your teak trim, minimize or eliminate the use of caustic cleaners before applying oil.

UNDERWATER HULL CLEANING

- Wait 90 days after applying fresh hull paint before having the hull cleaned underwater, due to high initial release of toxicants.¹

- Vessels with soft, rapid sloughing or ablative hull paints should not be cleaned underwater.¹

- Consider using hull paints that are nontoxic or have a lower copper content and a hard or slick surface. This will reduce the release of toxicant into the water. Regular underwater hull cleaning using best management practices will help to control fouling growth between haulouts.⁵



- Nontoxic bottom coatings are recommended to be cleaned twice as often as copper paints. Powered brushes may be needed to clean durable epoxies.⁸

- Use a sponge, soft cloth, or piece of carpet to wipe off soft marine growth. Regular cleaning can prevent hard growth from forming.¹

- Use stainless steel pads or brushes only on unpainted metal areas, never on bottom paint.¹

- Colored “plumes” should not occur in the water during underwater hull cleaning. They indicate paint has been rubbed off your hull.¹

- Return zinc anodes to shore¹ and recycle.

HAZARDOUS WASTE DISPOSAL

- Check your marina lease agreement for boater responsibilities regarding hazardous waste recycling and disposal.

- Ask your marina manager where to call regarding local hazardous waste collection and automotive shops that accept used oil, oil filters, and batteries for recycling.



- For Household Hazardous Waste information and locations call 1-800-CLEANUP or visit www.earth911.org

- In San Diego County, call the Household Hazardous Waste Hotline **1-877-713-2784** for collection facilities and events.

- **Report spills** to your marina manager and to the Coast Guard at **1-800-424-8802** or VHF/FM Radio Channel 16.

References

The following references were used extensively in this document, in addition to the specific citations noted.

1. Bear, David N. (1989) Best Management Practices for Underwater Hull Cleaning; letter to San Diego Unified Port District.
2. Buller, Pat (1995) Clean Marina+Clean Boating+Clean Water Partnership. Puget Soundkeeper Alliance. Seattle, Washington.
3. Hadley, Don. Oceanside Harbor District. Personal communication.
4. Johnson, Chris, Project Coordinator (1993) A Hazardous Waste Resource Manual for the Marine Service Industry; Puget Sound Alliance. Seattle, Washington.
5. Lucas, Elizabeth (1991) Baywatch, A Guide for Boaters. Environmental Health Coalition. San Diego, California.
6. Mann County Office of Waste Management (1993) Pollution Prevention at Marinas; Mann County, California.
7. “Soundwatch, An Environmental Guide for Boaters” (1993) in 48° North, The Sailing Magazine; Seattle, Washington.
8. Johnson, Leigh and Jamie Gonzalez. (2004) *Staying Afloat with Nontoxic Antifouling Strategies for Boats*. California Sea Grant College Program Report No. T-054.
9. Matuk, Vivian. (2007) Environmental Boating Program Coordinator. California Coastal Commission and California Department of Boating and Waterways. San Francisco, California.

Educational Use, Only

This information is provided on an educational basis to assist you in reducing pollution in marina waters. It should not be used as a stand-alone guide. Ask your marina manager or your local regulatory agencies about marina policies and specific pollution control program requirements.

For more information on preventing pollution from boats and antifouling paints and on preventing aquatic invasive species from riding on your boat hull, please visit <http://seagrants.ucdavis.edu>



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