Marina Pollution Prevention Manual

University of California Cooperative Extension
County of San Diego Farm & Home Advisor Department
Sea Grant Extension Program
5555 Overland Avenue, Building 4
San Diego, California 92123
(858) 694-2845

August 1995

Updated, Electronic Edition February 2003

ACKNOWLEDGMENTS

We wish to thank the people and groups who provided extensive assistance in developing this manual and the enclosed publications:

✯ San Diego County Sea Grant Extension Program Boating Pollution Prevention Project Steering Committee
✯ California Technical Advisory Committee on Non Point Source Pollution for Marinas and Recreational Boating
✯ San Diego Dockmasters Group

David Bear, Bear Underwater Service
Cal Callagahan, San Diego Yacht Club
Don Hadley, Oceanside Harbor District
Jim Haussener, San Leandro Marina
Barth Hudiburgh, Proline Paint Company
David Kennedy, Sub-Aquatic Service
Eric Leslie, Harbor Island West Marina
Libby Lucas, Environmental Health Coalition
Deborah Mason, Mission Bay Marina
Shaun McMahon, Shelter Cove Marina
Peter Michael, California Regional Water Quality Control Board
Tom Nielsen, Nielsen Beaumont Marine
David Paige, Pettit Paint Company
Greig Peters, California Regional Water Quality Control Board
Jim Peugh, Audubon Society
Bill Roberts, Shelter Island Boatyard
Steve Scheiblauer, Monterey Harbor
Frank Szafranski, Courtaulds Coatings

We also wish to thank Jay Bower (San Diego Yacht Club), Bill Allayaud (California Coastal Commission), Suzanne Marr and Jovita Pajarillo (US Environmental Protection Agency), who encouraged us to undertake this project, Mary Butterwick, who served as USEPA Project Officer, Chris Dewees (University of California Sea Grant Extension Program Leader), Diane Wallace, Jeannie O'Neill-Ferlito, Kathy Carrington, Vicki Long and Kim Beaird (University of California Cooperative Extension), who provided administrative support, and the many others who provided information, advice, encouragement and review.

Authors:

Clay B. Clifton, Program Representative
Erika J.A. McCoy, Program Representative
Jamie A. Miller, Program Representative
Leigh T. Johnson, Marine Advisor
University of California Cooperative Extension
5555 Overland Avenue, Building 4
San Diego, California 92123 (858) 694-2845

Cover Illustration:

View of Commercial Basin, 1988*
in San Diego Bay

by George Manglallan, County of San Diego Farm & Home Advisor Department

*** now designated America's Cup Harbor**

University of California Cooperative Extension, Sea Grant Extension Program
County of San Diego, Farm & Home Advisor Department

CALIFORNIA SEA GRANT

Publication Nos. UCSGEP-SD 95-5 (original, print edition)
UCSGEP-SD 03-2e (updated, electronic edition)

Printed on Recycled Paper

This work is sponsored in part by NOAA, National Sea Grant College Program, Department of Commerce, under grant numbers NA36RG0537 and NA06RG0142, project number A/EA-1, through the California Sea Grant Program, in part by United States Environmental Protection Agency, under grant numbers NW009982-01-0, in part by the California State Resources Agency, in part by the University of California Agriculture and Natural Resources and in part by the County of San Diego. The views expressed herein are those of the authors and do not necessarily reflect those of the sponsors or any of their sub-agencies. The U.S. government may reproduce and distribute for governmental purposes.

University of California, United States Department of Agriculture, United States Department of Commerce and County of San Diego cooperating.

TABLE OF CONTENTS

The following publications that are mentioned in this manual are available at http://seagrant.ucdavis.edu

Clean Boating Tips

Underwater Hull Cleaner Best Management Practices

Clean Boating Guide

Selecting Underwater and Topside Maintenance Services for Your Boat

Selecting a Hull Paint for Your Boat

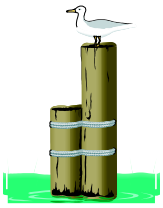
Boating Pollution Economics & Impacts

What You Need to Know about Nontoxic Antifouling Strategies for Boats

Marina Pollution Prevention Manual is formatted with selected, blank pages and alternating, offset margins. It can be printed on both sides of the paper and then punched or stapled in the left margin.

I. Introduction

This manual is intended to assist California marina managers, dockmasters and harbor masters in designing custom pollution prevention plans for their facilities. Each marina is unique; the number of slips and staff, types of boats moored, climate, tidal flushing, runoff from the land and local regulations vary widely.



Preventing pollution will promote abundant marine life and a healthy boating environment. A well designed pollution prevention program can assist marinas and yacht clubs in demonstrating compliance with regulations and managing liability for spills and wastes.

Pollution sources addressed include:

☆ Oil and fuel
☆ Sewage
☆ Marine debris (garbage & plastics)
☆ Marina & vessel cleaning & maintenance

The general objectives of the policies and procedures suggested in this manual are:

Promote good marina water & sediment quality, abundant marine life and a clean boating environment

Minimize pollutants entering marina water and sediments

Encourage tenants, staff and contractors to use best management practices to prevent pollution

In developing a Pollution Prevention Plan for your marina, develop policies and procedures for each type of marina pollution. Consider how you will communicate them to staff, tenants and maintenance contractors. Plan actions to be taken with regard to tenants or contractors who repeatedly ignore your policies & procedures.

The information in the manual & related publications is provided on an educational basis to assist marina managers in reducing pollution. Adapt it to suit your situation. Do not use it as a stand alone guide. Ask your Regional Water Quality Control Board, other regulators and tidelands leasing agency to meet with you and review your plan for adequacy in meeting their specific requirements.

POLLUTANTS & REGULATORS

The following list is provided as a general summary of agencies that regulate pollution generated in marinas. It is not intended to be an exhaustive list; there may be other agencies that regulate marina pollution. Contact the agencies for specific requirements and penalties. Pollution discharges may result in civil or criminal penalties.

❂ Responsible local agencies may vary.

Petroleum / Hazardous Waste Spills & Clean Up
US Coast Guard,
California Dept. of Fish & Game
Harbor Police ❂

Hazardous Wastes
California Dept. of Toxic Substances Control
County Dept. of Environmental Health, Waste Management, etc. ❂

Marine Debris (garbage & plastics)
Harbor Police ❂
US Coast Guard

Boat Sewage
Harbor Police ❂

Hull Paints (containing copper or TBT)
California Dept. of Pesticide Regulation
County Dept. of Agriculture, Weights, and Measures

Non Point Source Pollution
(broad range of pollutants)
Regional Water Quality Control Board
California Coastal Commission
Local governments

The nonpoint source pollution program was mandated by Congress in 1990 [22,23]. Federal guidelines provide an initial voluntary period for marinas, boaters & maintenance contractors to implement best management practices for preventing pollution. The program covers all forms of pollution from marinas & recreational boating. The Plan for California's Nonpoint Source Pollution Control Program was published in January 2000. You can find it online at http://www.swrcb.ca.gov/nps/protecting.html Click on Volume I: NPS Program Strategy & Implementation Plan (1998-2013). Management Measures for marinas and recreational boats are on pp. 131-146. Contact the California Coastal Commission and Regional Water Quality Control Board offices about current marina pollution prevention requirements.

Information in the manual & enclosed publications was drawn from & requested by marina managers, harbor & dock masters, boating association leaders, boatyard operators, underwater hull cleaners, government agency staff, environmentalists, scientists, paint manufacturers, boating supply dealers, boating pollution prevention guides & discussions of the California Technical Advisory Committee on Pollution from Marinas & Recreational Boating. The enclosed publications are intended to be used with the manual & distributed to staff, boaters & contractors.

MANUAL CONTENTS

Section II. Marina Pollution Sources & Solutions lists pollution sources, pollution prevention planning considerations and practices to prevent, reduce and control pollution. Suggestions should be modified to suit the marina & its tenants.

Section III. Hazardous Waste Management & Spill Response discusses considerations for hazardous waste disposal & spill first response.

Section IV. Marina Staff Procedures & Training contains ideas for developing procedures and training staff.

Section V. Local Agency & Service Contacts provides contact information for selected regulatory agencies and marina services in San Diego County. If you are located in another area, use it as a guide for developing a contact list for your region.

References Cited lists specific information sources used in preparing this manual.

For More Information... lists publications that address some topics in depth & sources of current publications.

You are welcome to use the following brochures on our website to educate boaters, staff and contractors. Would you please send us an email telling how our manual and brochures have been helpful to you? Thank you! ltjohnson@ucdavis.edu

✦ **Clean Boating Tips**
2-page summary of wastes to contain, pollution prevention tips, pollutants, regulators and spill reporting information for boaters, marina managers and maintenance workers

✦ **Underwater Hull Cleaner Best Management Practices**
Pocket guide to environmentally friendly underwater hull cleaning practices

✦ **Clean Boating Guide**
4-page boater's pollution prevention guide

✦ **Selecting Underwater and Topside Maintenance Services for Your Boat**
2-page boater's guide to communicating with in-slip maintenance contractors about environmentally friendly practices

✦ **Selecting a Hull Paint for Your Boat**
4-page guide to hull paint characteristics, environmental considerations & relative costs

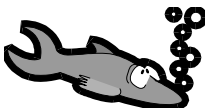
✦ **Boating Pollution Economics & Impacts**
4-page guide to economic & environmental benefits of preventing boating pollution

✦ **What You Need to Know about Nontoxic Antifouling Strategies for Boats**
12-page guide to antifouling policies, nontoxic strategies & environmental effects of copper paints.

II. Marina Pollution Sources and Solutions

WHERE TO BEGIN?

Dealing with all the possible pollution sources in your marina can seem daunting. A good way to begin is by reviewing your existing policies & procedures. You are probably already doing a lot to prevent, reduce & control pollution.



Answering a few questions will help you get started on some of the major pollution management issues:

1. How are you handling the following potential sources of pollution:
   a. Fuel docks
   b. Plastics and garbage
   c. Vessel sewage & bilge water
   d. Marina maintenance
   e. Vessel maintenance

2. Are your fuel docks supervised by staff? Do they know how to prevent spills? Are materials handy and staff ready for first response to spills?

3. Regarding vessel maintenance:
   a. What types and how much work do you allow to be done in the slips?
   b. How are you handling vessel maintenance contractors?

4. How are you handling hazardous wastes produced by staff, tenants and contractors?

5. How are you educating about pollution prevention and communicating about problems with staff, tenants & contractors?

6. What information is included on signs? Are they located for best effect?

7. Do you and your staff look for potential pollution problems as you walk the docks? Do you prohibit people from leaving things on the docks?

A QUICK LOOK

Here is a summary of pollution sources & solutions to be discussed in this section:

1. OIL and FUEL POLLUTION

Spills - Clean up, if staff are certified; Prevent, contain and report spills from:
Fueling stations - supervise stations
Oil changes - use clean practices; dispose waste properly
Bilge water - provide pumpout facilities; dispose waste properly;
Engine repair - use clean practices and oil change services; dispose waste properly

2. SEWAGE POLLUTION

Direct discharge - use shoreside restrooms, holding tanks & pumpout services

3. MARINE DEBRIS (Garbage and Plastics)

Plastics, trash, garbage - use shoreside containers

4. BOAT CLEANING and MAINTENANCE IN THE SLIP

Sanding - contain sanding chips and dust
Painting - prevent spills, dispose leftover paints and solvents appropriately.
Cleaning - prevent spills, dispose products appropriately and use “greener” alternatives
Exterior teak and trim - use best cleaning practices; use less caustic products
Underwater hull cleaning - select less toxic paint at haulout; use best cleaning practices

5. MARINA MAINTENANCE

Marina maintenance produces many of the pollutants listed above, so it is not covered in a separate section. Adapt the information presented to develop policies and procedures for marina maintenance.

PREVENT, REDUCE AND CONTROL

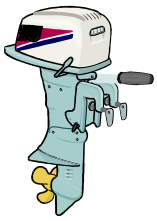
1. OIL and FUEL POLLUTION

▸ Engine Work

Engine oil is one of the most toxic compounds boaters can introduce to the marine environment. Engine repair can release oil into marine waters, affecting marine larvae and plankton living in the top layer of water. A single pint can cover an acre of the marina's surface.[20]

Consider requiring contractors to sign a clean worker contract and show proof of business license & insurance.[9,13,14]

If your marina does not have waste oil receptacles inform tenants that it is illegal to dispose oil and filters anywhere except at a permitted recycler or hazardous waste disposal facility. This includes leaving them in or by the dumpster or pouring oil into storm drains or marine waters.



Require that engine parts be washed over a container or in a parts washer, not over the water or ground. Dispose wash water as a hazardous material.[12]

▸ Fuel Dock Operation & Maintenance

Have an employee supervise the fuel dock.[13]

Keep fuel nozzles with automatic back pressure shut-off in good condition. If you do not have automatic shut-off, do not use holding clips to keep fuel flowing freely.[3]

Ask or require boaters to install "whistles" to warn when fuel tank is nearly full.[3] Ask them not to "top off" tanks.[7]

Oil haulers and recyclers pick up fuel for recycling. Ask the local fire department for fire code requirements. See **Section V. Local Agency & Service Contacts**.

▸ Fuel and Oil Spills

Fuel and oil spills that reach the water must be reported to the US Coast Guard.
Clearly post the phone number for staff, boaters and visitors:
1 (800) 424-8802

Keep a containment boom and absorbent pads in a locker near the fuel dock for first response to spills.[4]

▸ Bilge Water Discharge

Inform staff, tenants and contractors that discharging bilge water contaminated with oil, fuel, or other regulated contaminants is illegal. Post location of the nearest bilge pumpout service, if your marina does not have one.

Keep oil absorbent pads available for tenants to remove oil from bilge water. Dispose the pads as hazardous waste once they are saturated.[2]

Collect oil contaminated by water, fuel, or engine fluids for proper disposal. If your marina does not collect waste oil, post the location of the nearest collection facility.

▸ Waste Disposal

Careless engine maintenance, poor fueling habits and improper disposal of oil and contaminated bilge water release more oil into marine water each year than the Exxon Valdez spill.[20]

Recycle or dispose waste oil, fuel, contaminated bilge water and products for their clean up as hazardous waste. See **Section III. Hazardous Waste Management and Spill Response**.

2. SEWAGE POLLUTION

Post signs prohibiting the discharge of head waste and pet waste from boats. Inform boaters that it is illegal to dump untreated sewage inside the 3 mile territorial limit of the United States.[20]

Consider requiring new liveaboard tenants to have adequate holding tanks, not just portable toilets.[10]

Provide maps of pumpout stations and restrooms. Provide referrals to mobile pumpout services. See **Section V. Local Agency and Service Contacts**.

Encourage boaters to use marina restrooms, not boat heads.

Educate boaters via billing inserts, signs, newsletters and handouts to use pumpout stations and not to discharge head waste

If your marina has a pumpout station, post its location, hours, clear instructions, pump type (centrifugal, diaphragm, vacuum) and where to call for service if it is out of order.

Well maintained pumpout stations are important in preventing sewage discharges to marina waters. Regularly inspect, log inspections and promptly arrange repair of marina pumpout stations.

Here is a simple test for pumpout station efficiency: Every week, time how long the pumpout station takes to empty a 5-gallon bucket of water; 30-35 seconds is OK, 45 seconds is not.[7]

Report sewage spills to the Harbor Police or similar agency. See **Section V. Local Agency and Service Contacts**.

3. MARINE DEBRIS
(Garbage & Plastics)

▸ MARPOL Treaty

Educate staff, boaters and contractors via billing inserts, newsletters, signs, handouts and personal contacts that the MARPOL Treaty prohibits discharging garbage, trash and plastics into marine waters.

✪ The MARPOL Treaty prohibits dumping any of the following within 3 nautical miles of the U.S. coastline:[15]

- garbage (food wastes)
- plastics
- trash (non-plastic)
- packaging
- line
- nets
- fish cleaning wastes

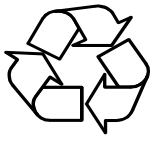
Advise boaters that:

¤ all boats over 26 feet long **must** display the MARPOL placard in a visible location.

¤ all boats over 40 feet long **must** display the placard **and** have a written Waste Management Plan on board. [20]

▸ Waste Disposal

Trash, food, fish cleaning wastes, packaging materials, lines and nets should be disposed onshore.



If your marina recycles, have boaters recycle green, brown and clear glass, newspapers, plastic and aluminum in proper containers.

Report illegal discharges to the U.S. Coast Guard **1 (800) 424-8802** or local harbor police.

4. BOAT MAINTENANCE and CLEANING IN THE SLIP

▸ Things That Make You Go Gray!

Dock and vessel maintenance and cleaning are loaded with potential for washdowns, spills, overspray, dusts, chips, scrapings, hull paint plumes, etc. to release pollution. Boaters ask why they have to worry about small amounts of pollution. This "miscellaneous" pollution can be reduced to manageable limits with a few, broad policies and simple rules.

Have everyone follow 3 simple rules:
NOTHING IS LEFT ON THE DOCK
NOTHING GOES IN THE WATER
NEVER SPRAY PAINT [4,7]

The managers who use these rules explain:

¤ If nothing is on the dock, nothing can be knocked or blown over or off of the dock!

¤ Everyone (managers, staff, tenants and contractors) can remember a few rules!

▸ Marina or Boatyard?

Another way to simplify the task of controlling pollution is to decide what type and how much maintenance and cleaning you will permit in the slip. Some marinas limit projects to less than 10% of the boat surface; some allow up to 25%. Educate boaters, staff and contractors on this policy. Require boaters to take larger projects to an onshore service with proper equipment and pollution controls.[6,10,20]

▸Who Can Work in Your Marina?

If you provide referrals to underwater hull cleaners, topside maintenance and other services, ensure they are known to be professional and responsible for their work.

Consider requiring service companies to sign a "Clean Worker" contract and keep it on file. Some marinas report that requiring contractors to have a business license and insurance results in fewer problems.[9,13,14]

Consider whether to permit only maintenance services that use best management practices for preventing pollution.

Some underwater hull cleaners use best management practices to reduce pollution release and hull damage. Some are setting up certification programs & providing lists of certified hull cleaners to marinas and harbors. See the online **Underwater Hull Cleaner Best Management Practices**.

▸ What to Use?[11]

"Environmentally friendly" products can reduce the potential for pollution if spills occur or if paint is rubbed off the hull. Require staff and encourage others to use cleaning products that are less caustic or toxic. Encourage boaters to consider less toxic antifouling paints at haulouts. Post information on cleaning products, such as:

- Avoid products that contain ammonia, lye, bleach or petroleum distillates.
- Use phosphate free and biodegradable soaps & less caustic cleaners.

▸ For the Details

Design policies, procedures and education programs for staff, boaters and contractors. Be ready to answer questions on the benefits of preventing pollution. Information in the enclosed publications will help you design policies, procedures and an education program. You may copy and distribute them or request camera ready masters. Most have space for your logo & organization name.

III. Hazardous Waste Management & Spill Response

LIABILITY

Marina and vessel maintenance and cleaning activities produce some hazardous wastes. Be aware of the laws and your liability for hazardous wastes and spills. Contact your local Environmental Health Department's Hazardous Materials Management Division, Office of Waste Management or similar agency for information on responsibility for waste management, disposal methods, collection stations, etc.. See **Section V. Local Agency and Service Contacts**.

PRIMARY WASTE SOURCES

- **Oil and fueling activities**
- **Boat cleaning, painting, and maintenance activities**

Hazardous wastes foul marina waters and harm marine life. (See the online **Boating Pollution Economics and Impacts**). Waste types common to marinas include:[19]

- Oil & fuel spills
- Oils & grease from engine repair
- Bilge & wash waters
- Paint & varnish dust & chips
- Paint residue containing antifouling toxicants, such as cuprous oxide or tributyl tin)
- Caustic paint strippers & alkaline or acidic cleaners
- Organic solvents, such as paint thinner, chemical strippers & parts cleaners

BENEFITS of REDUCING HAZARDOUS WASTES

Reducing hazardous waste cuts operating costs and liability by:

- Lowering the chances that wastes will be improperly disposed & require costly cleanup
- Protecting staff, tenant and contractor health & safety by reducing exposure to toxic & caustic substances.

HOW TO REDUCE HAZARDOUS WASTE

▸ Best Management Practices

Consider establishing best management practices to reduce, recycle and reuse hazardous materials in your marina. See suggestions in manual **Sections II. & IV.** and the online **Clean Boating Guide**.

Encourage staff, tenants and contractors to follow the "LC" principle for cleaning activities:

(Use) Less toxic or caustic & Less of it
Contain it and Clean it up

▸ Encourage Recycling

Reusing or recycling hazardous materials can reduce the amount of waste produced in your marina.[19]

Uncontaminated and unmixed waste solvents, thinners, oils and fuels are recyclable. Materials contaminated by solvent, water, paint, thinner or nonhazardous material may not be recycled and are more expensive to dispose. Ask boaters to place hazardous wastes in separate, labeled containers to prevent contamination and take them to collection centers.

Also, encourage boaters to exchange excess paints, thinners, varnishes, etc. or donate them to schools, community theaters, etc..[11]

HAZARDOUS MATERIAL STORAGE AND DISPOSAL

Marina managers need to determine:

• Whether government agencies or private companies can provide hazardous material collection and spill clean up (**Option I**)

• Or whether the marina must undertake collection, storage and disposal of hazardous wastes generated by tenants (**Option II**).

Marinas that choose Option II must obtain permits, build special storage facilities, maintain records, obtain specialized training for their staff and incur liability.[7,9,14] Ask authorities for requirements!

OPTION I.

Many marinas place responsibilities on tenants for disposing of hazardous wastes. If this is your policy, post signs and tell boaters often that they must dispose hazardous materials at licensed collection centers. Explain that waste oil, used oil filters, batteries, paints, solvents, anti-freeze, etc. are hazardous wastes. Ask your county Environmental Health Department, Office of Waste Management or similar agency for a complete list of materials that are considered hazardous wastes. Refer boaters to:

1) County or city Environmental Health Department, Waste Management Office, Water Department or similar agency for information on household hazardous materials collection stations or events that accept small amounts of such wastes from individuals.

2) Local automotive shops that accept used oil and batteries. See **Part V, Local Agency and Service Contacts**. Tell boaters **not** to mix waste oil with any other products.

Many waste oil collection centers do **not** accept contaminated oil.

Work with other marinas and local authorities to develop a convenient and effective system for collecting hazardous wastes from boaters and marinas. For example, consider arranging a weekly pickup at several marinas. Have staff & tenants bring wastes they generate each week to the pickup site at the appointed time.[4,9,10,13,14]

OPTION II.

Following are some considerations for marinas that decide to store hazardous waste and clean up spills. Check with authorities for specific requirements.[8,17]

▸ HAZWOPER Training For Staff

Staff that handle, store, dispose and clean up hazardous wastes must be certified under the Hazardous Waste Operations and Emergency Response (HAZWOPER) training program.

University Extension at the University of California, Davis offers HAZWOPER 40-hour basic courses and 8-hour refresher courses. Visit www.extension.ucdavis.edu and click on Program Areas, then Hazardous Materials Management Courses. Click on the course title for a description and fees. A certificate of completion and a card are issued for each course. Call (530) 757-8602 for questions and for information on holding a group class at your facility.

▸ Evaluate Your Storage Facility[17]

If your marina stores hazardous wastes, review the following questions in evaluating the storage area. Also check with regulatory agencies to ensure your storage area meets their requirements.

Are hazardous materials stored properly, i.e., segregated by content, covered, labeled with

sufficient space for visual inspection, and on pallets? Pallets raise containers off the floor and prevent corrosion of containers by moisture on the concrete.

Are there separate, clearly labeled containers for used antifreeze, paints cans, and solvents?

Does the storage area have a concrete floor and berm to contain spills?

Is there an assigned, periodic inspection routine?

Consider using larger containers for waste storage. Alternatives to 55 gallon drums include polyethylene containers enclosed in a rigid wire mesh. These containers have a larger capacity, are portable, reusable, and can be outfitted for top or bottom discharge, cleaning access, and locking.

Oil filters must be drained for 24 hours into a pan. This oil may be recycled.

▸ **Are the facility and the staff prepared to handle a hazardous waste spill ?**

Develop an oil spill response plan that includes:[17]

Who - Clearly identify who is responsible for taking action

What - What action should be taken during an oil spill event and what equipment and supplies should be deployed

Where - Where spill response equipment and supplies are located in the facility

How - Instructions for the use and disposal of this equipment and supplies

Have employees been trained in the proper procedures for handling hazardous wastes?

Keep spill clean up materials in a cabinet or locker next to prime spill areas. Use lockers for storing booms, pads, fire extinguishers and copies of your spill contingency plans.

Avoid improper disposal by providing waste oil receptacles. Tell boaters that waste oil must not be mixed with other wastes or water and to cover it to protect it from rainfall.

Post signs telling boaters to report spills to:

U.S. Coast Guard National Response Center: **1-800-424-8802**.

Tell staff:[5]

✔ Clean spills and leaks immediately. Do not hose down.

✔ If an oil spill reaches the water, deploy oil containment booms.

✔ Use dry clean up methods, such as oil absorbent pads. Do not use straw.

✔ Location of booms and oil absorbent pads.

✔ Absorbent pads can be used again. Dispose used pads as hazardous waste.

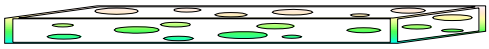
PRIMARY SPILL RESPONSE

Reduce the chance of a spill by establishing the policy, “Nothing goes on the docks.”[7]

Even marinas without a formal spill clean up program need to be able to contain spills while awaiting assistance from the Coast Guard or other clean up agency.

Modify the guidelines in Option II to suit your situation.

Fuel or oil spills that reach the water must be reported to the US Coast Guard. Clearly post the phone number for marina staff, tenants and contractors:
1 (800) 424-8802



Keep a containment boom and absorbent pads in a locker near the fuel dock for first response to spills.[4]

Do not apply soap or detergents to spilled oil. **When oil enters the water, it can be soaked up with oil absorbent pads.**

Oil absorbent pads can be used many times. To reuse the pad, wring it thoroughly and dispose the liquid as hazardous waste. When the pad will no longer absorb oil, wring it out and dispose it as hazardous waste.[5]

DOCKMASTER CHECKLIST FOR WASTE REDUCTION[17]

The following questions can help you evaluate your capability to reduce hazardous wastes and the attendant costs and liability:

Does your marina have an established waste reduction program? Is a specific employee assigned to oversee its success? Does the program have a set goal?

Is management fully aware of current local, state, and federal regulations relating to hazardous waste material disposal, treatment and recycling?

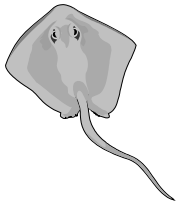
Do you conduct or send employees to education programs on how to avoid excessive waste generation? Are there employee incentive programs?

Follow the motto:[7]

Educate
Communicate
Contain
Clean Up

Are marina staff, tenants and contractors aware that the following should **not** be thrown in the dumpster:

- engine oil, new or used
- antifreeze
- paints, varnishes, solvents
- pesticides, etc.



Do marina tenants know the location of hazardous waste collection sites or recycling centers (for used oil)?

Refer them to the county Environmental Health Department, Office of Waste Management or similar agency for dates and locations of Household Hazardous Waste collection events. See **Section V. Local Agency and Service Contacts**.

HAZARDOUS WASTE MANAGEMENT PLANNING ASSISTANCE

Some counties may provide a list of general hazardous waste requirements or a sample hazardous materials business plan. Inquire whether your county or city Environmental Health Department, Office of Waste Management, Water Department or similar agency can provide such assistance. See **Section V. Local Agency and Service Contacts**.

Some insurance companies provide hazardous waste management information in safety planning documents for their clients. Some may have specific safety planning guidelines for marinas.

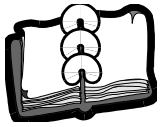
IV. Marina Staff Procedures & Training

Training helps employees to recognize and understand pollution sources, related problems & best management practices (BMPs) for solving or preventing problems. Remember to incorporate employee and tenant feedback into training manuals & sessions.[5]

This section includes training suggestions common to all areas of marina pollution, as well as some specialized suggestions for specific sources of pollution. Use or adapt them in developing procedures and training suitable for your facility.

GENERAL STAFF TRAINING

Develop a training schedule appropriate to your situation. Consider current staff expertise, turnover rate, numbers of staff and tenants, recent experience with pollution incidents, etc..[10]



Consider organizing regional training for managers and staff on pollution prevention and other topics, to promote consistency and avoid duplication of effort.[13]

Train staff on:

•Marina BMPs and policies regarding pollution prevention.

•How to recognize activities and practices of boaters and boat service companies that create or discharge pollution.

•How to communicate with boaters regarding pollution creating activities and how to inform them of best management practices

•What is required of and how to monitor vessel service companies working in the marina.

•How to report pollution problems needing staff or management attention. Consider posting a pollution report clipboard that successive shifts can use to check the status and actions needed to resolve problems.[10] A sample pollution report form is included in this section.

1. OIL and FUEL POLLUTION

See **Section III. Waste Management & Spill Response, Option II** for staff training suggestions if your staff has undergone the Hazardous Waste Operations and Emergency Response training certification ("HAZWOPER").

Post information telling boaters how to report spills. Call the U.S. Coast Guard National Response Center **1-800-424-8802**.

2. SEWAGE POLLUTION

Instruct staff how to inspect & repair pumpout equipment and maintain a monthly schedule.

Tell staff to:

✔ Post signs telling boaters to inform the dockmaster immediately when the pump breaks down and how to make such reports.

✔ Inform boaters of the closest pumpout station location if there is not one at the marina.

3. MARINE DEBRIS (Garbage & Plastics)

Teach staff to tell boaters:
•where trash can be disposed
• that overboard trash disposal is illegal under the MARPOL Treaty. [15]

4. BOAT CLEANING and MAINTENANCE IN THE SLIP

Instruct staff how to recognize cleaning and maintenance practices of boaters and boat service companies that create or discharge pollution.

Tell Staff to watch for:

- ✔ Colored plume in the water when a vessel is being cleaned underwater. Colored "plumes" or clouds should **not** occur; they indicate paint has been rubbed off the hull.*
- ✔ Bilge water discharged with a sheen.
- ✔ Sanding, painting, varnishing, cleaning **without tarps** or other methods to prevent drips, dust, wash water, etc. from reaching the water.
- ✔ Recognize environmentally harmful cleaners. Tactfully ask tenants and contractors to use environmentally friendly or biodegradable cleaners. Recognize, look for and tactfully tell boaters when too much cleaner is being rinsed into the water.

Also see Sections II. and III. of this manual and the online **Clean Boating Tips** and **Clean Boating Guide**. Visit our nontoxic antifouling strategies project online: http://seagrant.ucdavis.edu

5. Marina Maintenance

Marina maintenance employees must follow the same guidelines and best management practices as boaters to avoid polluting marina waters.

Train marina staff to recognize situations with the potential for pollution (spills, overspray, wind blown dusts, etc.) as part of their regular duties.[6]

Guidelines for maintenance employees can be summarized as follows:

All marina & vessel maintenance workers must follow three rules:

- ✓ **Nothing** is left on the dock (so nothing can spill or blow over or off the dock)[7]
- ✔ **Nothing** (paint chips, sawdust, sanding dust, cleaning solvents, concrete dust, etc.) goes into the water[4]
- ✔ **No** spray painting allowed under any conditions[4]

Also see Sections II. and III. of this manual and the online **Clean Boating Tips** and **Clean Boating Guide**.

SPEAKING with BOATERS

Teach staff tactful methods to communicate rules and regulations of your marina. Boaters may not see their actions as polluting. Boater education techniques used by various marinas include:

- Signs at appropriate locations; concentrated at fuel docks, pumpout stations, and dumpsters.
- Newsletters
- Boater BMPs in rental contract
- Marina bulletin board
- Informal contacts & warnings
- Warning letters
- Charging tenants for clean up and disposal

When problems develop with a particular tenant, some marinas use variations on this procedure[6,7]:

1. Bring the problem to the boater's attention and provide information on better practices.

2. Mail the tenant a written notice**.** A letter reduces confrontation between staff and tenants. Log the mailing.

3. Talk to the boater if the problem persists. Explain why their actions are a problem, e.g., safety hazard, unsightly, etc.

4. Remove the problem from the dock and charge the boater for removal or clean up costs.

5. Ask the tenant to leave if the problem continues.

SPEAKING with CONTRACTORS

Determine a policy that is appropriate for your marina. Some marinas require contractors to have a business license and insurance.

If they notice a contractor using practices that are creating pollution or have the potential to pollute, they ask to see the contractor's license and insurance. Those without these documents may be asked to leave. If they have them, they are issued one warning and asked to leave if the problem continues.

Consider whether you would use such a policy. Also consider whether you would prefer staff to communicate directly with contractors or whether they should apprise you of the situation, so that you can handle it directly.

Train staff according to your policy and procedures.

TRAINING LOGS

Maintain records of staff training workshops, classes, etc., conducted to educate marina staff on best management practices for boaters and the marina itself.

Training logs should include training dates, topics, participating employees, instructor(s), manuals or other materials provided. A sample training log is included in this section.

MARINA STAFF CHECKLISTS

Following are examples of items you may wish to include on checklists for monitoring the docks. The Marina and Recreation Association has developed a comprehensive set of sample checklists. See **Section V. Local Agency and Service Contacts.**

Is the fueling dock supervised?

✔ For fuel nozzles without automatic shut-off on, hold dispenser by hand; **do not** insert a clip to keep flowing freely.[3]

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

Are boaters, marina maintenance workers, and contractors using best management practices to avoid pollution?

✔ Watch for boaters discharging bilge water with a sheen. This indicates the bilge water is contaminated with oil and should not be discharged. Report oil sheens from vessels to the U.S. Coast Guard.

✔ Watch to be sure boaters and maintenance contractors are not washing cleaning debris (paint chips, sanding dust, soap, etc.) into the water.

✔ Watch for boat cleaning projects to be sure they are using tarps and vacuums to collect cleaning debris.

✔ Watch for sewage discharge from boat heads and in the marina. Sewage discharges are illegal and should be reported to the Harbor Police or U.S. Coast Guard.

✔ Regularly inspect supplies of booms and oil absorbent pads for first response to spills.

✔ Watch for underwater hull cleaning that discharges colored clouds or "plumes" into the water. Colored plumes should **not** occur; they indicate paint has been rubbed off the hull.

✔ New, nontoxic bottom paints do not release copper to marina waters. Because they don't stop fouling growth, they need to be cleaned more often, but may last longer.

Nontoxic antifouling strategies may become a requirement in coastal marinas with a high concentration of boats and poor tidal flushing.

Visit our Internet site to learn about:

☆ Changes in antifouling policies

☆ Our nontoxic antifouling strategies demonstration project

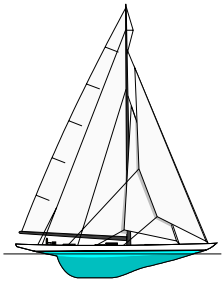
☆ Our brochure "What You Need to Know about Nontoxic Antifouling Strategies for Boats"

☆ And other educational materials, such as our cost comparison of copper-based vs. nontoxic boat bottom paints.

http://seagrant.ucdavis.edu

Are marina staff aware of current laws and regulations pertaining to water pollution?

A number of agencies regulate pollution generated in marinas. See the list in **Section I. Introduction** and contact information in **Section V. Local Agency and Service Contacts**. Contact these agencies if you have specific questions regarding water pollution regulations. Pollution discharges may result in civil or criminal penalties.



POLLUTION REPORTS & ACTIONS LOG

FACILITY NAME:_____

REPORT DATE	STAFF REPORTING	PROBLEM DESCRIPTION	ACTION TAKEN	ACTION DATE	STAFF HANDLING

FILE COMPLETED PAGES:_____

OTHER INSTRUCTIONS:_____

PAGE INTENTIONALLY LEFT BLANK

STAFF TRAINING LOG

FACILITY NAME:_____

TRAINING DATE	TRAINING TOPICS	TRAINING MATERIALS USED	STAFF TRAINED	COMMENTS

□ TRAINING ROSTERS ATTACHED FOR (DATES):_____

□ TRAINING MATERIALS ATTACHED FOR (DATES):_____

PAGE INTENTIONALLY LEFT BLANK

V. Local Agency and Service Contacts

This information pertains to San Diego County. If you live in another area, use this section as a guide to preparing a local contact list. Marina managers and dockmasters can aid their tenants in reducing marina pollution by providing basic information such as locations of pumpout stations, and numbers to call regarding hazardous waste disposal/collection events, as listed below. This list is not exhaustive; it includes only those agencies and services which have come to our attention during the preparation of this publication. Update and expand this list as needed.

SEWAGE PUMPOUT STATIONS

(Updated February 2003)

Table V-1. San Diego Bay [21]

FACILITY	LOCATION	PHONE
Shelter Island Harbor Police Dock	1401 Shelter Island Dr., San Diego	619-686-6272. 24 hours Free
Pearson's Marine Service	2435 Shelter Island Dr., San Diego	619-222-7084. 7:30-6pm. Free with fuel or small fee without
Marina Cortez Fuel Dock	1880 Harbor Island Dr., San Diego	619-296-2331. 8am - 5pm. Free with fuel or small fee without
Harbor Island West Fuel Dock	2040 Harbor Island Dr., San Diego	619-291-6443. 7am - 5:30pm. $5 or $3 with fuel.
Loew's Crown Island Marina	4000 Coronado Bay Road, Coronado	619-575-SAIL Center Dock for public use. $10
Glorietta Bay Marina	1715 Strand Way, Coronado	619-435-5203 8am - 5pm $5
California Yacht Marina (for tenants only)	640 Marina Parkway, Chula Vista	619-422-2595. Tenants have key.
Marriott Marina Boat Side Services (portable, call to set appointment)	385 West Harbor Drive, San Diego	619-523-1167 Call ahead
Chula Vista Marina (for tenants only)	550 Marina Parkway, Chula Vista	619-691-1860 8:30am-4pm No fee. Call ahead
Sunroad Marina (for tenants only)	955 Harbor Island Dr., San Diego	619-574-0736. 9am-5pm Free to public-Office has key
Sheraton East Marina (for tenants only)	1380 Harbor Island Dr., San Diego	619-692-2249 Call ahead Portable unit.
National City Launch Ramp	3300 Goes No Place, Chula Vista	619-686-6272 Unattended Free

Table V-2. Mission Bay

FACILITY	LOCATION	PHONE
Marina Village	1842 Quivira Way, San Diego	619-224-3125 24 hours Free
Islandia Fuel Dock	1441 Quivira Road, Pacific Beach (San Diego)	619-222-1164 6am - 6pm $5.
Sea World Marina	1660 South Shores Rd., San Diego	619-226-3915 9am -5pm $5.

Table V-3. Oceanside Harbor

FACILITY	LOCATION	PHONE
Small Craft Harbor	1540 Harbor Drive North, Oceanside	760-435-4000 24 hours Free

OIL & BATTERY RECYCLING

San Diego Oil Recycling Hotline 858-694-7000
Selected stores of automotive businesses:
(Contact the business to confirm they are recycling oil and batteries):

LOCATION	STORE	ADDRESS	PHONE
Chula Vista	Pep Boys	1142 Broadway Street	619-426-2133
El Cajon	Jiffy Lube	539 North 2nd Street	619-441-0110
Encinitas	Auto Zone	120 Leucadia Blvd.	760-942-2662
Escondido	Valvoline Instant Oil Change	2109 E. Valley Parkway	760-741-1236
Fallbrook	Auto Zone	1081-95 S. Mission Rd.	760-728-5974
Imperial Beach	Kragen Auto Parts	1220 Palm Avenue	619-429-1303
La Mesa	Firestone	5577 Lake Murray Blvd.	619-462-3280
National City	Kragen Auto Parts	1202 E. Plaza Blvd.	619-474-3312
Oceanside	Pep Boys	2041 Mission Avenue	760-721-1608
Poway	Auto Zone	13397 Poway Road	619-748-8564
Ramona	Kragen Auto Parts	1935 Highway 67	760-789-7109
San Diego	Valvoline Instant Oil Change	4805 W. Point Loma Blvd.	619-221-5949
San Diego	Firestone	1136 C Street	619-233-7121
Vista	Auto Zone	1410 N. Santa Fe Avenue	760-806-9784

Information provided by the Integrated Waste Management Board
http://www.ciwmb.ca.gov/UsedOil/

HAZARDOUS MATERIALS CONTACTS BY TOPIC

(Updated February, 2003)

Waste Disposal
For information regarding the next San Diego Regional Household Hazardous Material collection date call: **San Diego County Hazardous Waste Hotline** **877-713-2784**

Fire Safety
City of San Diego Fire Department Hazardous Materials Management 619-533-4300

Reporting Sewage Spills
San Diego Harbor Police 619-686-6272
San Diego Port District Environmental Management 619-686-6254

Reporting Hazardous Waste Spills or Discharges
U.S. Coast Guard (Fuel/oil, hazardous waste spills, or plastics) 800-424-8802
HAZMAT/County Environmental Health Department (fuel, other hazardous substances) 619-338-2284

For more information on Hazardous Waste Management
The following publications are available to the public as pdf files from the San Diego County Environmental Health Services, Hazardous Materials Division website:
http://www.sdcounty.ca.gov/deh/hmd/publications.html
Disclosure of Hazardous Waste Information Bulletin
Hazardous Waste Tank Systems
General Hazardous Waste Requirements (also in Spanish)
Hazardous Materials Business Plan
List of Certified Local Labs

HAZARDOUS MATERIALS CONTACTS BY ORGANIZATION NAME

STATE AND FEDERAL AGENCIES

NPS Program Requirements
California Coastal Commission Water Quality Unit 415-904-5200
California Coastal Commission Legislative Office 916-445-6067
Regional Water Quality Control Board 619-467-2952

Hazardous Materials Regulation
Cal EPA Department of Toxic Substances Control 800-698-6942

Spill Clean Up
US Coast Guard 800-424-8802
Department of Fish & Game,
Oil Spill Prevention and Response Office 916-327-9948

SAN DIEGO COUNTY AGENCIES

Hazardous Materials Generation and Storage
Department of Environmental Health Services 619-338-2231
A. Hazardous Materials Management Program: hazardous material generation and storage

B. Site Assessment & Mitigation: storage tank regulation

Copper based and TBT Hull Paints

Department of Agriculture, Weights & Measures	858-694-2739

Household Hazardous Waste

Waste Management Department, Refuse Disposal	858-573-1418
San Diego County Hazardous Waste Hotline	800-246-1233
San Diego County Hazardous Materials Management Program	619-338-2284

MARINE RELATED ORGANIZATIONS

San Diego Unified Port District	619-686-6272
Sea Grant Extension Program	858-694-2845
Marina and Recreation Association	209-334-0661
California Clean Boating Network (c/o California Coastal Commission)	415-904-5214
San Diego County Water Quality Status	619-338-2073

References Cited

The following sources provided information that is incorporated throughout this document, as well as where specifically noted. Some material was found in multiple sources, not necessarily noted.

1. Bear, David N. (1989) Letter to the San Diego Unified Port District regarding Best Management Practices for Underwater Hull Cleaning; Bear Underwater Service, Inc.

2. Bleier, Anne. KECO Pump-A-Head, Inc. Personal communication.

3. Buller, Pat. (1995) *Clean Marina + Clean Boating + Clean Water Partnership*. Puget Soundkeeper Alliance. Seattle, WA.

4. Callaghan, Cal. San Diego Yacht Club. Personal communication.

5. Camp, Dresser & McKee, et al (1993) *California Storm Water Best Management Practices Handbook*, Municipal, Volume 1.

6. Hadley, Don. Oceanside Harbor District. Personal communication.

7. Haussener, Jim. San Leandro Marina. Personal communication.

8. Johnson, Chris (1993) *A Hazardous Waste Resource Manual for the Marine Service Industry*. Puget Sound Alliance. Seattle, WA.

9. Kolb, Ruth. San Diego Unified Port District, Environmental Management Department. Personal communication.

10. Leslie, Eric. Harbor Island West Marina. Personal communication.

11. Lucas, Elizabeth (1991) *Baywatch, A Guide for Boaters*; Environmental Health Coalition. San Diego, CA.

12. Marin County Office of Waste Management (1993) *Pollution Prevention at Marinas*; Marin County Office of Waste Management. Marin County, CA.

13. Mason, Deborah. Mission Bay Marina. Personal Communication.

14. McMahon, Shaun. Shelter Cove Marina. Personal communication.

15. NOAA Technical Memorandum (1988) *Dealing with Annex V - Reference Guide for Ports*. NMFS F/NWR -23.

16. Nielsen, Tom. Nielsen Beaumont Marine. Personal communication.

17. Office of Pollution Prevention and Technology Development (1993) *Hazardous Waste Minimization Checklist and Assessment Manual for Marine Ship and Pleasure Vessel Boatyards*. California Department of Toxic Substances. Sacramento, CA.

18. Steve Scheiblauer. Monterey Harbor Department. Personal communication.

19. SCS Engineers (1989) *Hazardous Waste Minimization Audit Study of Marineyards for Maintenance and Repair*; Prepared for California Department of Health Services, Alternative Technology and Policy Development Section; Sacramento, CA.

20. "Soundwatch, An Environmental Guide For Boaters" (1993) *48° North, The Sailing Magazine*. Seattle, WA.

21. Southwest Research Associates (1994) *Draft Environmental Assessment Report for the 1995 America's Cup Match*. San Diego, CA.

22. United States Environmental Protection Agency (1993) *Coastal Nonpoint Pollution Program -- Program Development and Approval Guidance*. Washington, DC.

23. United States Environmental Protection Agency (1993) *Guidance Specifying Management Measures For Sources of Nonpoint Pollution in Coastal Waters*. Washington D.C.