



Rick Scott
Governor

PROTECTING OUR FUTURE BECAUSE YOU CARE

The Florida Department of Environmental Protection is committed to protecting the health and cleanliness of our waterways in a manner that imposes less process on the effective operation of the marine industry. First and most importantly, we want to ensure that we provide educational information to boatyards and marinas on pollution prevention measures. These measures will not only benefit our environment, but also, our families and future generations. As a marine operator your participation will be important in achieving these environmental goals. There is a direct link to the future of the marine industry and clean water. As you know, clean water is necessary for your livelihood and the well being of your communities. In this regard, you are a steward protecting your future. We invite your active participation in this important initiative.

To accomplish our mutual goals for our environment, our agency has been working in partnership with both private and public entities in the marine industry to develop a Clean Marina Program. We truly believe that with education comes compliance. We would like to extend a special thanks for the hard work and dedication of the members of the Clean Boating Partnership. If it were not for their tireless effort, this voluntary education program would not be available today. They are: Susan Engle, 2000 Chairperson (President, CEER, Inc., Ft. Lauderdale), Rocky DeSimone, 2001 Chairperson (General Manager, Pensacola Shipyard Marine Complex, Pensacola), Bruce Popham, 2002 Chairperson (Marathon Boatyard, Marathon), Susan Kingston, 2003-2004 Chairperson, Cindy McGinness (Past President, MIA of Greater Tampa Bay, Tampa), Doug Jaren (Owner, Banana River Marine, Merritt Island), Tom Armstrong (General Manager, Regatta Pointe, Palmetto), Don Borum (Hidden Harbor Marina, Sanford), Bronson Lamb III (Lamb Boatyard, Jacksonville), Paul Dodson (International Marine Institute), Don Jackson (Project Coordinator, University of Florida, Sea Grant, Gainesville), David Ray (Executive Director, Marine Industries Association of Florida, Inc., Miami) and Maury Kolchakian (Assistant Director, DEP Division of Law Enforcement). I would also like to thank staff within our agency that provided their expertise and dedication to this program. They are: Alan Bateman, Laura Comer, Lisa Douglass, Eric Ericson, RJ Helbling, Dave Herbster, Charles Johnson, Kris McFadden, Cheryl McKee, Merritt Mitchell, Rose Poynor, Lucia Ross, Ed Russell, Sava Varazo, Deena Wells, Denis Tober, Raoul Clarke, Jan DeLaney, Debbie Hall and Linda McDonald.

ACKNOWLEDGMENTS

Florida offers some of the nation's most scenic coastlines but preventing damage to our seascape requires balanced, common-sense management. Understanding the complexities of our resources and learning how we affect our environment, for better or for worse, will improve how we manage our coastal environment. We have designed the Florida Clean Marina program to introduce you to simple, innovative solutions called *Marina Environmental Measures and Best Management Practices for Boatyards Marine Retailers*.

The following people need to be thanked for their hard work and dedication to the Clean Marina program. They are: John Adair (Ross Yacht Sales, Inc.), Bill Allbright (Florida Council of Yacht Clubs), Claudia Allbright (Florida Council of Yacht Clubs), Tammy Allen (Pinellas County DEM), Pam Anderson (Treasure Harbor Marine), Ilene Barnett (FDEP), Michael Bateman (FDEP), Marty Beksha (Madeira Beach Municipal Marina), Keith Bell (Plantation Yacht Harbor), Connie Bersok (FDEP), Beverly Birkitt (Birkitt Environmental Services), Guy Bising (Marine Industries Association), Kelley Boatwright, Bruce Boler (FDEP), Ed Borham (FDEP), Don Borum (Hidden Harbor Marina), Darryl Boudreau (FDEP), Rebecca Burger (Center for Marine Conservation), Scott Burt (Bay Point Marina), Renee Cain (Hillsborough County EPC), Tom Callahan (Environmental and Marine Products, Inc.), Jennifer Caldwell-Kurka (FDEP), Marlene Castellanos (FDEP), Jeff Cavanaugh (Tierra Verde Marina), Marion L. Clarke (Florida SeaGrant), Raoul Clarke (FDEP), Tim Cleveland (Eco Sound), Ed Cornell (Apollo Beach Power Squadron), Jim Cuthbert (Middle Keys Marine Association), Terry Davis (FDEP), Robert Day (Indian River Lagoon Program), Don Depra (FDEP), J. Rocky DeSimone (Pensacola Shipyard), Walt Dinardo (Palm Beach Yacht Center), Paul Dodson (International Marina Institute), Mary Duncan (DEP, Jack Dunphy (FDEP), Susan Engle (Envirocare, Inc.), Frank Feliciano (FDEP), John Fenton (Imperial Yacht Center), Pam Fletcher (Florida Coastal Management), Robert Frankup (St. Pete, Sail & Power Squadron), Douglas Fry (FDEP), Joni Goodman (Keep Pinellas County Beautiful), Lisa Gordon (FDEP), Alfred Grasso (Palm Beach County Health Department), Andrew Grayson (FDEP), Jane Gregory (FDEP), Gary Greene (Bellingham Marine), Ned Grubb (Keep Pinellas Beautiful), Guy P. Hadley (FDEP), Patti Hancock (FDEP), Mike Hancock (City of Clearwater), Bill Held (City of Clearwater), Ellen Hemmert (Northwest Florida Water Management District), Frank Herhold (Marine Industries Association of South Florida), Michael Hewett (FDEP), Mike Hickey (FDEP), Brett Hinely (Bluewater Bay Marina), Mary Hoppe (National Estuary Program), Nancy Hose (FDEP), Don Jackson (SeaGrant), William Jay (Shell Point Marina), Ted James (Associated Marine Tech), Charles Johnson (FDEP), Pete Kaiser (Kennedy Point Marina), Carla Kappmeyer (FDEP), Robert Kirn (Marine Industries of Tampa Bay), Steven Kent (FDEP), Ted Kiper (Florida Geological Survey), Taylor Kirshenfeld (FDEP), Bob Koerber (Hall of Fame Marina), Larry Krestalude (FDEP), Jennifer Kurka (DEP), Bronson Lamb (Lamb Yatch Center), Coleman Langshaw (Fernandina Harbor Marina), Tony LaPorte (Keep Pinellas Beautiful), Cliff Larsh (Vorco Environmental), Bill Lehr (Enviro Marine), Art Leskowich (FDEP), James Lewis (FDEP), Craig Liney (FDEP), Eric Livingston (FDEP), Lee E. Lyon (Marine Industries of Florida), Owen Mancarella (DEP), Teresa Mantel (Envirocare), David Marris (Weekly Planet Newspaper), Jim Marx (DEP), Terrence McBride (Environmental and Marine Products, Inc.), Mary McCormick, (Halifax Harbor), Cindy McGinnis (Mariner Technologies), Greg McGinnis (Mariner Technologies), Cheryl McKee (FDEP), Amy McKenzie (FDEP), Fred McManus (EPA), Bob Meng (Peninsular Marine), Bill Miller, Eric Miller (FDEP), Scott Miser (Associated Marine Technologies, Inc.), Mary Morris (FDEP), Chris Moser (Panama City Marina), Lisa Mulhall, Marty Murphy (Cracker Bay Boats Works), Greg Nelson, Rick Neves (FDEP), Clete Oakley (Halifax Harbor), Greg O'Connell (FDEP), Marilyn Odom (Eco Sound, Inc.), Barbara Otwell (FDEP), Jodi Painter, Margaret Podlich (Boat/US H2O Trust), Melissa Penn (Walt Disney World), Cathy Petrowsky (Wastrec), Rose Poynor (FDEP), Gene Quinn (Pinellas County DEM), David Ray (Marine Industries Association), Kent Reetz (FDEP), Gus Rios (FDEP), Cliff Rohlke (FDEP), Courtney Ross (Rossyzent Sales), Chris Russell (FDEP), Charles Ryburn (Pinellas Co. Dept. Env. Mgmt.), Bill Sanders (Keep Pinellas Beautiful), John Scarboro (FDEP), Mike Scheinkman (FDEP), Selva Selvendra (Palm Beach, PHU), Joanne Semmer (Ostego Co-Op), Manoj Shivlani (University of Miami), Linda Simurra-Sharp (Coral Reef Park Co.), Don Smith (Palm Beach County Health Department), John Sprague (Marine Industries Association of Palm Beach County), Ken Stanley, Ellen Stere (FDEP), Kerry Swift (FDEP), Mary Tagliareni (FDEP), Steffi Tassos (FDEP), Jack Teague (Monroe County Health Department), Joe Telford (Imperial Yacht Center), Dennis Tober (DEP/Division of Air Resources Management), Jim Tucker (Boat Marina), Duke Turner (Turner Marine of Naples), Louis Vinci (Indian Springs Marina), Christian Wagley (Escambia County), George Wakefield (Halifax Harbor Marina), Denise Washick (Center for Marine Conservation), Robert Watson (Great American Marine), Debbie Weiland (PC Marina), Phil Werndli (FDEP), Les Westerman (Rod & Reel Marina), Loretta Westphal (Manatee Bay Marine, Inc.), Fritz Wettstein (FDEP), John Whitescarver (National Stormwater Center), Candy Whitney (Whitney's Marina), Larry Wiesner (Derecktor Gunnell, Inc.), Robert Wilhelm, (FDEP), Dick Williams (FDEP), Kris Williams (Monroe County Health Department), Dan Williamson (FDEP) Dennis Yound, Debbie Hall (FDEP), Jan DeLaney (FDEP) and Linda McDonald (FDEP).

Information contained within is a result of the best thinking of those acknowledged. It is not designed to provide legal advice or interpretation of any statute rule or regulation. This publication does not necessarily represent the views of EPA, US Fish and Wildlife, NOAA, or FIND.





FLORIDA'S CLEAN MARINA PROGRAM

There is a direct link between the future of the marine industry in Florida and clean water. Clean water is necessary for your livelihood and the well being of your communities. There are nearly 2,000 marinas operating in Florida today and hundreds of thousands of boaters use Florida's water every day. According to the Marine Industries Association of Florida, boating in Florida is a \$10.2 billion dollar water intensive industry that includes marinas, boatyards and boaters. The effects of year-round boating and boat traffic and their related pollutants contribute to constant and growing pressure on the state's fragile aquatic and marine ecosystems. If the waters are too polluted to recreate, then boaters will go elsewhere. Clean water is essential to this multi-billion dollar industry.

According to the 1992 Census of Manufacturers, there was approximately 598 shipbuilding and repairing yards under SIC code 3731. The geographic distribution of this industry is concentrated on the coasts in 24 states. The top states in order are: Florida (390), California, Louisiana, Texas, Washington and Virginia. Most shipyards are small. About 72 percent of the shipyards employ fewer than 50 people, and within these numbers 38% have 9 or less employees.

The aim of the Clean Marina Program (CMP) is prevention. Marinas and boaters may not be aware of the environmental laws, rules and jurisdictions with which they must comply. Compound that with the reality that environmental and operational problems are usually addressed after they happen rather than anticipated. The Clean Marina Program applies to boatyards that repair and convert recreational and small commercial vessels for Florida's waterways. U.S. shipyards are categorized as either first-tier or second-tier. This program addresses second-tier which is comprised of many small and medium-size businesses that construct and repair vessels under 122 meters (383 feet).

The potential fines for environmental violations should also be considered. Besides having an immediate negative impact to your business, you tarnish your reputation in your community as a consequence of a history of environmental violations. The goal of the CMP is Clean Marina/Clean Boatyard/Clean Marine Retailer Designation. Designation lets boaters that use the marina or boatyard know that these businesses adhere to - or exceed program criteria, including *Marina Environmental Measures*. These MEMs have been developed through examination of best management practices around the country and the partnership of Florida's marinas, boatyards, retailers, boaters and government.

Voluntary participation, "pier" pressure and desire to do environmentally conscious activities and reinforcement of current regulatory processes are the common elements. This approach provides opportunities for public and private entities to work together, as well as, provide incentives and remove institutional roadblocks to wise resource stewardship. Among the many benefits gained by participating are: improved cost efficiency of facility operations; it is not unusual to find that manufacturing and repair processes can be streamlined to eliminate pollution costs and profit reducing practices. Reduced waste streams increase profits.

Another way to increase profits is to have a knowledgeable and well trained workforce. The program offers web-based training and workshops and demonstration projects of sound best management practices. Money from grants may be available to offset initial pollution prevention costs.

This program utilized guidance from the U.S. Environmental Protection Agency (EPA) program of National Pollutant Discharge Elimination System (NPDES). The intention of the Florida program is to guide marine repair facilities into compliance with EPA's Multi-Sector Group Permit (MSGP). Please participate and be recognized as a leader in your community by demonstrating that clean operation is not only the right thing to do but the profitable thing to do. The text of these documents were written by the Department of Environmental Protection with the cooperative efforts of the Marine Industries Association of Florida, marine professionals throughout Florida and the United States, Florida SeaGrant, Boat US/Clean Water Trust, International Marina Institute, Florida Council of Yacht Clubs and local agencies.

CLEAN MARINA/BOATYARD/RETAILER COMPONENTS

Pledge Card Marina/Boatyard/Marine Retail owner's signed commitment to pursue and achieve designation.

Program Q&A Program policies in a question and answer format.

Designation Agreement Marina/Boatyard/Retail owner's signed agreement that upon designation the program criteria and policies will continue to be implemented after designation, sampling of water conditions to assess program effectiveness will be allowed and actively promote the program.

Clean Marina Action Plan (CMAP), Clean Boatyard Action Plan (CBAP) or Clean Marine Retailer Action Plan (CMRAP) Working document signed by marina or boatyard owners or retailers to assess facility operations and determine if operations are in accordance with program criteria; the CMAP/CBAP/CMRAP is the planning component committing the owner to positive corrective action by a certain date bringing operations in accordance with program criteria leading to designation.

Marina Environmental Measures This is the collection of goal defined environmental measure that marina owners can use to guide them in achieving designation as a Clean Marina.

Best Management Practices for Boatyards/Retailers This is the collection of goal defined environmental measures that boatyard owners can use to guide them in achieving designation as a Clean Boatyard or Clean Marine Retailer.

Annual Self-Assessment Form Provides the boatyard or marine retail owner a checklist to review on an annual basis facility operations to ensure that program policies and criteria are still in place. The form also provides a record of any deviations that were self-discovered and reported to the Department and what corrective actions were taken to prevent recurrence. This form is kept on file at the boatyard and may be requested by Department staff.

Renewal Confirmation Card Document completed and sent to the Department of Environmental Protection to confirm that a self assessment has been done and that program criteria used to achieve designation are still in place.

Policy Guidelines Document that provides definitions and policies used in the administration of the program.



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FORMATTING AND DEFINITIONS

The goal of CM / CBY / CMRP is *Clean Marina / Clean Boatyard / Clean Marine Retailer Designation*. The designation lets boaters that use the marina/boatyard/retailer know that these businesses meet or exceed program criteria which includes Marina Environmental Measures (MEMs) and Best Management Practices (BMPs). MEMs and BMPs are simple, innovative solutions to day-to-day marina, boatyard and marine retail operations that protect the environment. These MEMs and BMPs have been developed through examination of best management practices around the country and the partnership of Florida's marinas, boatyards, retailers, boaters and government.

Voluntary participation, "pier" pressure and desire to include environmental practice in everyday operations are the common elements. This approach will create opportunities for public and private entities to work together to manage our natural and cultural resources, as well as, provide incentives and remove institutional roadblocks to wise resource stewardship. The text of this document was written by the Department of Environmental Protection with the cooperative efforts of boatyard operators, the Marine Industries Association of Florida, International Marina Institute, Florida Council of Yacht Clubs, marine professionals throughout Florida and the United States, county and local agencies.

The Clean Marina / Clean Boatyard / Clean Marine Retailer Program is using the Marina Environmental Measures (MEMs) and Best Management Practices (BMPs) format that includes a problem statement, a goal statement, ideas for you to use in your marina or boatyard and regulatory requirements (if any, located on back page of applicable BMPs). This document addresses the sources of pollution specific to marinas or boatyards and promotes pollution prevention through voluntary participation. The format is:

PROBLEM:

The problem statement is a declaration of an existing or potential condition which can result in harm to people or the environment.

GOAL:

The goal states the desired response to the problem statement.

IDEAS FOR YOUR FACILITY TO USE:

The suggested ideas describe possible ways to achieve the goal. As a note, these suggested ideas are not the only ideas possible. There are likely to be other approaches not listed here; and if they work use them.

REGULATORY REQUIREMENTS:

Where there are regulatory requirements they are included on the back of each section for your convenience and information. This informs you of any statute or rule that governs the activities of boatyards.

Information contained within is a result of the best thinking of those acknowledged. It is not designed to provide legal advice or interpretation of any statute, rule or regulation. This publication does not necessarily represent the views of EPA, US Fish and Wildlife Service, NOAA, or FIND.



PLANNING FOR EMERGENCIES - THE EMERGENCY FILE

PROBLEM:

A number of situations may occur in a marina or boatyard that require an immediate response. Calling 911 may be appropriate in some instances, but additional staff response is needed in nearly every emergency situation. Without preplanning and training, important steps can be overlooked and without a quick reference guide, the best of intentions may not produce the best actions for solving the occasional, but intense problem.

GOAL:

An Emergency File should be generated specific to your marina or boatyard. It should be organized logically and concisely, covering common and even slightly possible situations that might require quick response.

IDEAS FOR YOUR MARINE FACILITY TO USE:

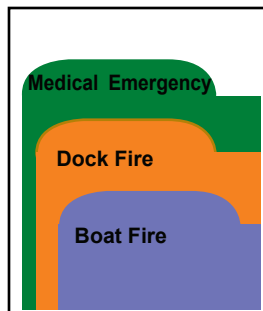
1 Generate basic information regarding how to handle emergencies by conferring with all emergency responders in the area.



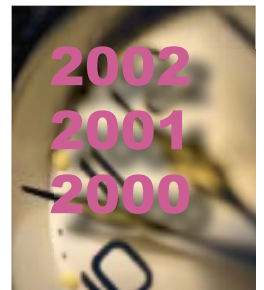
3 Acquaint all employees with the contents of the Emergency or Panic File. Discuss procedures and responsibilities for each situation covered.



2 Compile a set of emergency response procedures, organized under easily understood headings in a notebook or binder called a "Panic" file.



4 Review the contents of the Panic File with all appropriate employees at least once each year. So review the accuracy and completeness of information annually. Evaluate effectiveness, and rewrite any sections as appropriate.



5 Notify Emergency Response to report oil and hazardous substance spills.

**STATE
WARNING
POINT
24 hour
800-320-0519**

**DEP DISTRICT EMERGENCY
RESPONSE OFFICES**

8am - 5pm only

Tallahassee	(850) 245-2010
Pensacola	(850) 595-8300
Jacksonville	(904) 807-3300 (x3246)
Orlando	(407) 893-3337
Tampa	(813) 744-6462
Ft. Myers	(239) 332-6975
Ft. Lauderdale	(954) 958-5575



HURRICANE PREPARATIONS

PROBLEM:

High winds and water during the passage of a hurricane or tropical storm can cause the release of normally secure pollutants into the environment. Hurricane conditions can damage or sink boats that would spill or vent fuel, oil and other chemicals. Marina and boatyard facilities can be impacted by storm conditions causing the release of fuel, oil, chemicals and recyclables.

GOAL:

Upon approach of a tropical storm or hurricane, remove sources of pollution from the potentially affected area.

IDEAS FOR YOUR MARINE FACILITY TO USE:

1 Boats need to be evacuated inland or moved out of slips to open waters or protected waters at the earliest time possible, when it is still safe to move the boats.



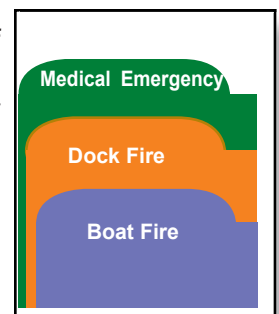
4 Generate basic information regarding how to tasks and precautions that must be taken in preparation for a hurricane.

SEE RESOURCE PAGE 97 FOR MORE DETAIL

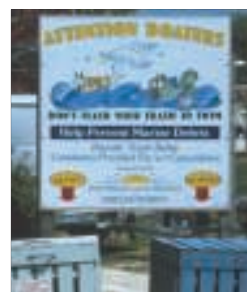
2 Remove portable containers and cans of paint, cleaner, cleaners, petrochemicals, etc. from vessels and the affected area.



5 Compile a set of emergency response procedures, organized under easily understood headings in a notebook or binder called a "Panic" file.



3 Have waste haulers pick up all solid waste, including recyclables when you first hear of the possibility of an approaching storm.



6 Underground or above-ground fuel tanks that could be floated by a storm surge should be fitted with appropriate tie-downs and topped off.



7 Acquaint all employees with the contents of the hurricane plan. Discuss procedures and responsibilities so they can plan accordingly.



9 Acquaint all subcontractors with the contents of the hurricane plan. Discuss procedures and responsibilities so they can plan accordingly.



8 Review the facilities seasonal operations or activities during the hurricane season. Also review the accuracy of information annually.



10 Order and stock emergency equipment and supplies the facility warrants such as extra mooring lines, lumber for fender boards, chafing gear, screw anchors, flashlights, batteries, portable generator, hull patching and repair supplies.





FIRE SAFETY

PROBLEM:

Fires can result from accidents, poor work habits, lack of good housekeeping, negligence or an act of God.

GOAL:

Develop a fire safety plan including training of personal, fire department liaison, prevention, controlling and extinguishing.

IDEAS FOR YOUR FACILITY TO USE:

1 Educate staff to “Be Smart Before You Start”. Post precautionary signs.

Smoking is prohibited in all areas where fuel, paint, resins and all other flammables are stored, dispensed and consumed. This includes enclosed work areas and onboard vessels in the yard.

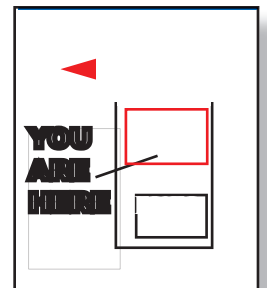
4 Clean up all spills of combustible liquid to avoid



2 Provide and maintain adequate, readily accessible and clearly marked fire extinguishers throughout the yard, especially at fueling stations, paint and resin storage, engine test areas, parts wash tanks, welding stations and work piers.



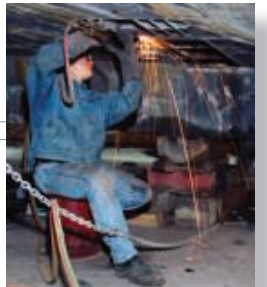
5 Have an evacuation plan to ensure the capability to escape in case of a fire. Clearly mark all exits.



3 Excess catalyzed resins shall be cooled before disposal.



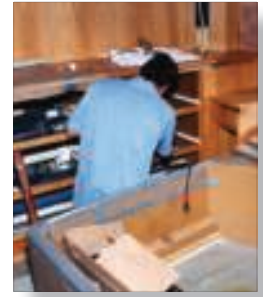
6 Welding, cutting and brazing operations should be done in a designated area. A fire proof containment system needs to be utilized when operating over water.



7 Contact your local fire department for guidance and the marina or boatyard's insurance company for guidance and request a "walk through" of the property.



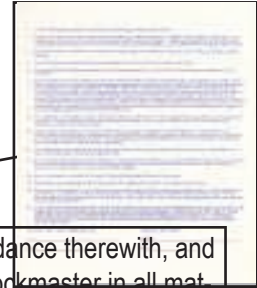
10 Woodworking shop requires good housekeeping (sawdust accumulation and dust collection systems may cause fire hazards).



8 Train personnel on fire safety and how to put out fires.

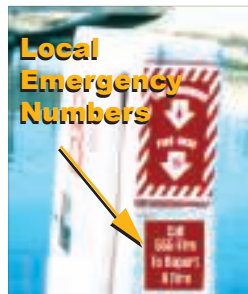


11 Include fire safety language in agreements for tenants and subcontractors.

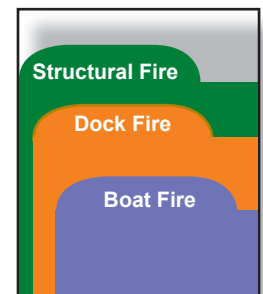


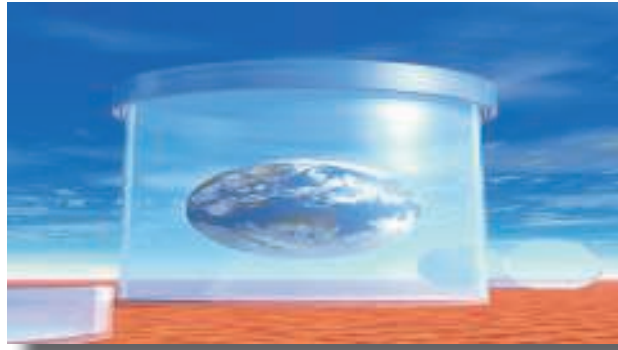
Owner agrees to..., act in accordance therewith, and to follow the directions of the Dockmaster in all matters concerning fire safety procedures

9 Post emergency numbers such as U.S. Coast Guard, local Port Authority and your local fire department in a visible location.



12 Include fire safety procedures in the Panic File (ensure all staff who operate or manage the boatyard are familiar with the contents of the emergency file) with phone numbers of emergency personnel.





PETROLEUM SPILL RECOVERY PLAN

PROBLEM:

Petroleum spills cause pollution and are costly to clean up. Lack of proper containment and a fuel spill response plan can critically delay containing a discharge.

GOAL:

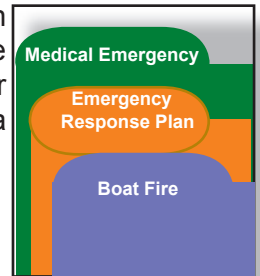
Develop a petroleum spill response and maintain proper petroleum containment. Coordinate this plan with the U.S. Coast Guard, the Florida Department of Environmental Protection and the Florida Marine Patrol.

IDEAS FOR YOUR BOATYARD TO USE:

1 Inform your local harbormaster and fire department about your spill recovery plan and equipment.



3 Have a section "Emergency Response Plan" in the marine Panic File for immediate action at the time of a spill. (See Panic File, page 7)



2 Provide signs informing customers what to do to contain the pollutant in case of a spill if there is no attendant present.

If A Spill Occurs
Block spill access to water with buckets, sorbent pads, dirt dams & rings
Clean up your spills immediately with sorbent materials
NOTIFY MANAGEMENT IMMEDIATELY

Contain oil and diesel and notify appropriate agency, but allow gasoline to gently and rapidly disperse. Call 911 where appropriate.

REGULATORY REQUIREMENTS:

**These regulatory requirements apply to any boatyard that transfers diesel fuel and heavy oils over the water.

1. Develop a petroleum spill recovery plan and train personnel in its use in accordance with Chapter 62N-16 Florida Administrative Code. The plan should be short, with clear directions that can be understood by each employee.

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Components of a Spill Response Plan should address the following:

- Who -** to notify within one hour of a spill:
- | | |
|------------------------------------|-----------------------|
| Your Local Responder | ###-#### |
| USCG National Response Center | (800) 424-8802 |
| STATE WARNING POINT 24 hour | (800) 320-0519 |
| Florida Fish & Wildlife Commission | (800) 342-5367 |
- *367 on your cell phone
VHF – Channel 16
- What -** a Petroleum Spill Response Plan should also include:
 Name, location and hours, telephone #'s, radio frequencies.
 Facility waterfront and vessel characteristics.
 Type and amount of petroleum stored. Name/Phone Numbers of owner and trained personnel designated in charge. Notification responsibilities and procedures.
 A list of spill equipment/capabilities on site.
 Third party cleanup organization.
- When -** Identify when additional resources should be called for assistance and determine when equipment will be inspected and replaced, if necessary.
- Where -** Identify where the petroleum spill response equipment is located in the facility. Identify sources where additional oil response equipment can be quickly obtained (this can include 3rd party cleanup contractors), if it is necessary.
- How -** Train staff on how the equipment should be used and, when necessary, disposed of properly.
 Maintain or have access to containment booms that are 5 times the length of the longest vessel docked and absorbent material to contain the largest potential spill. This equipment may be kept on site or provided and maintained by a contracted petroleum response company provided personnel can begin boom deployment within one hour of a spill.
 The US Coast Guard must be notified any time there is a noticeable sheen present on the surface water.
 Annually review plan with staff and update for any new technology or equipment.

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PETROLEUM CONTROL & CONTAINMENT

PROBLEM:

Petroleum products introduced in the environment are a chronic problem. Small incremental discharges of petroleum products add up to significant impacts. During fueling operations an accidental release may occur through the fuel vent, during bilge pumping and from spills. Oil and grease from the operation and maintenance of engines are also sources of petroleum discharges.

GOAL:

Eliminate or reduce the amount of fuel and oil entering boatyard and surface waters from boat bilges, fuel tank air vents and spills.

IDEAS FOR YOUR BOATYARD TO USE:

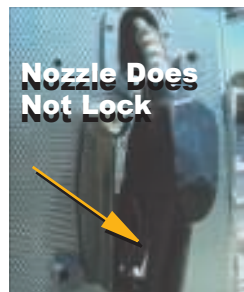
1 Provide signage and pamphlets that stress the impacts from spills and fueling activities. Also detail which precautions should be taken by customers and that customers may be held responsible for cleanup costs. Boater workshops are encouraged to teach these concepts.



3 Promote the use of fuel/air separators on air vent/overflow systems installed on inboard fuel tanks and vent/overflow collection devices.



2 Promote the use of automatic/back-pressure/shut-off nozzles as long as the mechanism that allows unattended fueling is disabled.



4 Promote the use of oil absorbing materials in the bilge areas of all boats with inboard engines. Encourage boaters to examine these materials in their boats at least once a year and replace as necessary. Recycle or dispose of used absorbents in accordance with petroleum disposal regulations. (Use the recycling services of an applicable landfill or recycling center).



Contain oil and diesel and notify appropriate agency, but allow gasoline to gently and rapidly disperse. Call 911 where appropriate.

5 Have absorbent pads readily available at the fuel dock to mop up spills on the dock or on the water (spill response carts with booms, pads and absorbents should be on standby during fueling). Place used absorbents in a closed drum for proper disposal.

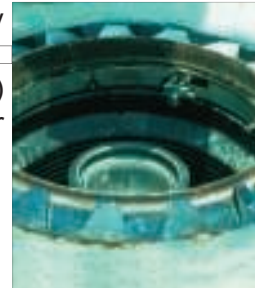


Absorbent pads should be made available in well-marked, easily accessible container or containers at locations near the fuel dock. The harbormaster should be trained in the use of absorbent pads. An inventory of absorbent pads should be kept in the storage area with these products and the supply should be inventoried on a regular basis.

7 Provide impervious fireproof containment trays for use when filling small cans. If possible, the product should be immediately returned to the fuel tanks.



8 Provide secondary containment for piping (double wall piping) and a collection tray under dispensing area.



6 Place containment berms around fixed pieces of machinery that use oil and gas.



9 Provide stationary skids for fueling personal watercraft which will help to eliminate rocking and keep the vessel level in order to minimize spills.



REGULATORY REQUIREMENTS:

1. The Pollutant Discharge Act addresses in Section 376.07, transfers of pollutants; 376.09 Removal of prohibited discharges; and, 376.12 Liabilities and defenses of responsible parties; liabilities of third parties; financial security requirements for vessels; notification requirements, Florida Statutes.
2. Facility owner/operators or designees must be present during fueling and must have direct access to emergency shut off devices. Chapter 62N-16 Florida Administrative Code.
3. Above ground and underground storage tanks (AST/UST) are regulated by Florida Administrative Code, 62-761 and are overseen by local county (which may have rules that are more stringent than the State). As far as local programs and county ordinances, NO COUNTY SHALL HAVE RULES MORE STRINGENT THEN THE STATE REGS. The minority exception being Dade/Broward, Alachua, Indian River and possibly Hillsborough (ordinances in effect prior to the State rule).



2 CYCLE OUTBOARD ENGINE FUELING

PROBLEM:

Incomplete combustion of lubricating oil from outboard engines can release hydrocarbon pollutants to the surface water and air. These releases are commonly the result of an incorrect gas-to-oil ratio (gas:oil) mix during the fueling process which can typically take place at either the boat owner's regular gas station or at the boatyard. A gas:oil ration of 50:1 is considered a standard mixture, providing adequate lubrication and preventing incomplete combustion of lubricating oil from too high an oil concentration. However, as any recreational boater can attest, it is not uncommon to see bluish-white smoke emitting from an outboard engine indicating a too high oil concentration and resulting in the discharge of incompletely combusted hydrocarbon by-products to the environment.

GOAL:

Reduce the emission of incompletely combusted hydrocarbon by-products formed as a result of putting too much lubricating oil in the gasoline while refueling the tanks of outboard engine powered boats.

IDEAS FOR YOUR BOATYARD TO USE:

1 Educate outboard engine owners on the correct gas:oil ratio and stress the importance of keeping this ratio 50:1 or in some cases, 60:1.



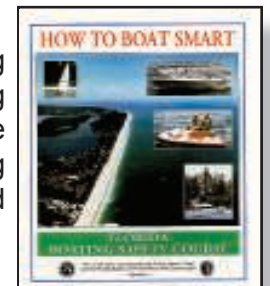
3 Post notices or make pamphlets available at the boatyard, especially at the fuel pumps, to remind outboard engine owners of the 50:1 ratio. Include a comprehensive list of gas:oil amounts for several engine volumes in a table format that is easy to understand (e.g. "y" ounces of oil to "x" gallons of gasoline).



2 Point out the economic benefits with respect to oil cost and engine maintenance, of using correct mixtures.

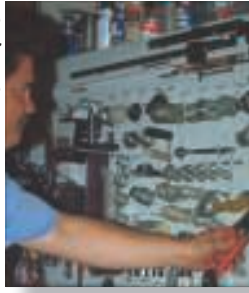
2-STROKE MOTORS USE THE RIGHT MIX TOO MUCH OIL FOULS PLUGS!					
GAS TO OIL RATIO (see owners manual for proper ratio)					
RATIO	1	2	4	6	gallons of gas 1/2 pints
96:1	1/12	1/6	1/3		
48:1	1/6	1/3	2/3	1	of oil
24:1	1/3	2/3	1-1/3	2	
16:1	1/2	1	2	3	

4 Incorporate proper fueling information into boating safety classes, stressing the importance in maintaining a healthy marine and boatyard environment.

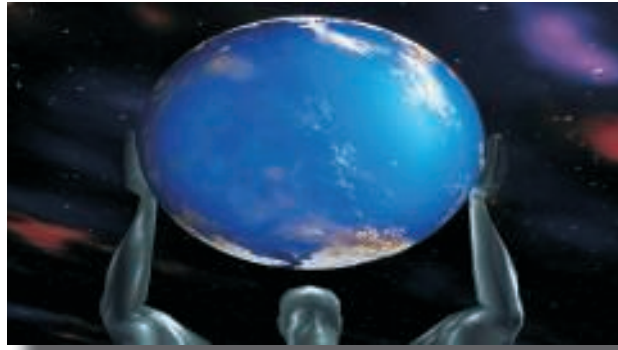


NOTE

5 Use an oil-to-gas measuring device for 2-cycle engines, such as Motor Mate part # 304495. Cost is approximately \$3.00.



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FUEL WASTE MANAGEMENT

PROBLEM:

If boaters do not have a convenient means for properly disposing of items such as stale fuel, the fuel may end up in the environment. Disposed fuel in the dumpster is dangerous and can lead to fines if the material finds its way into the water body or additional removal fees if the hauler considers the material hazardous.

GOAL:

Provide separate, accessible containers for the recycling of waste or stale fuel and the disposal of fuel contaminated absorbent material.

IDEAS FOR YOUR FACILITY TO USE:

1 Provide properly labeled containers which store petroleum products that are readily accessible and can be disposed of appropriately. Keep in mind that boat yards must control what is being placed in the container because, if contaminated with a mixture of fuel and oil, the cost to remove that container escalates.



3 Properly dispose of used petroleum spill response products and maintain records of proper waste disposal.



PROPERLY LABEL CONTAINER

2 All containers used to store petroleum products should have a form of secondary containment. Generally, this backup is provided by constructing a nonleaching berm with an impervious bottom around the containers. Other methods may include a full enclosed holding facility that provides internal secondary containment.

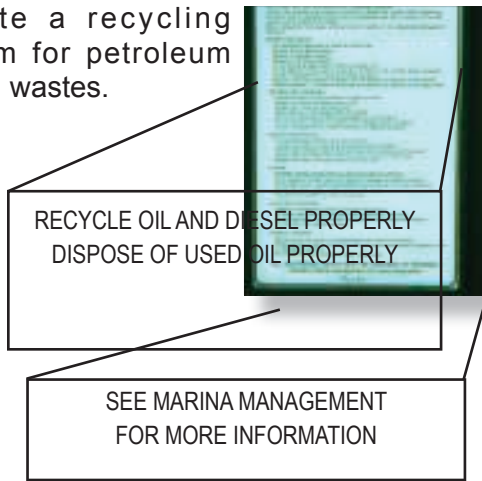


4 Provide recognition or incentives to boaters to comply with proper recycling of stale fuel.



Contact your local DEP District office for information regarding local companies that collect and recycle waste oil, gas, filters, etc.

5 Institute a recycling program for petroleum contaminated wastes.



6 Fuel filters should be drained by placing the filter in a funnel over the appropriate waste collection container to allow the excess petroleum product to drain into the container. Drained filters should be collected and recycled.



REGULATORY REQUIREMENTS:

1. The marina must provide labeled containers for the storage of used oil and used oil filters (40 Code of Federal Regulations 279).
2. Used oil and used oil filters are prohibited from disposal at Florida landfills; they must be recycled (Chapter 62N-710.850 Florida Administrative Code).
3. Used oil and used oil filters must be managed in such a way as to avoid discharges to water or soil. (Chapter 62N-710.400 Florida Administrative Code).



USED OIL AND PETROLEUM MANAGEMENT

PROBLEM:

If your employees, contractors or do-it-yourselfers do not have a convenient means to properly dispose of used oil and fuel, then these pollutants will end up in our environment. Used oil discharges can degrade water quality and threaten aquatic plant and animal life.

Petroleum products introduced in the environment are a chronic problem. Small incremental discharges of petroleum products add up to significant impacts. One gallon of fuel can contaminate over a million gallons of water.

GOAL:

Provide separate, accessible containers for the disposal of used petroleum products. Manage and dispose of used oil and used oil filters properly.

IDEAS FOR YOUR FACILITY TO USE:

1 Provide CLEARLY MARKED designated areas for storage of used oil and other petroleum products. This area should be readily accessible (see Liquid Waste Storage, page 41).



2 Direct marina/boatyard patrons as to the proper management of used oil and used oil filters through the use of signs, pamphlets, mailings, lease/rental agreements and other means.



Many local businesses are Public Used Oil Collection Centers (PUOCCs) and accept small amounts of used oil for free, for the nearest used oil collection center dial 1-800-741-4DEP or visit www.recycleoil.org

Post collection center locations near the waste receptacles so boatyard patrons know where to take their used oil.

Used oil and hazardous waste transporters must demonstrate the required financial responsibility to operate in Florida. For a list of transporters meeting this requirement contact your nearest DEP District office.

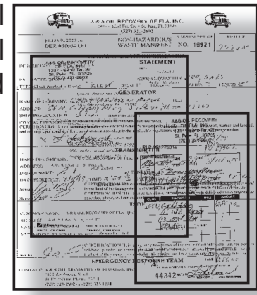
Transmission and hydraulic fluids may be mixed with used oil for recycling.

Registering as a PUOCC increases business and includes some limited exemptions from cleanup liability.

3 Used oil containers must be stored on an oil-impermeable surface. Boatyard operators must control what is being placed into the containers. If fuel is contaminated with oil, the cost to remove this contaminant escalates.



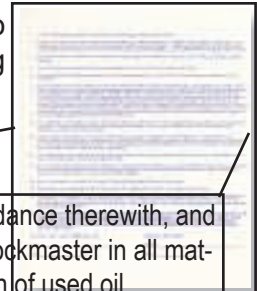
7 Contract with a used oil hauler to have used oil and used oil filters transported off-site for recycling. Maintain records of used oil recycling.



4 All containers used to store petroleum products must be double walled or have a form of secondary containment, with the capacity to hold 110% of the largest container. Structure should be roofed to prevent accumulation of stormwater.



8 Insert language into facility contracts requiring proper used oil management.



5 Institute a recycling program for used petroleum products, such as used oil, used oil filters and other petroleum contaminated wastes.



9 Provide recognition and incentives to those boat owners who use proper used oil management techniques.



6 Used oil or diesel fuel filters should be drained by placing the filter in a funnel over the appropriate labeled waste collection container to allow the excess petroleum product to drain into the container. Drained filters should be collected and recycled.



10 Register with the DEP a Public Used Oil Collection Center (PUOCC).

DEP
Form# 62-701.901
Application for
Registration Used Oil
and Oil Filter

Phone 850-488-0300

website: www.dep.state.fl.us/waste/categories/used_oil/pdf/default.htm

REGULATORY REQUIREMENTS:

1. The boatyard must provide labeled containers for the storage of waste oil and used oil filters (40 Code of Federal Regulations 279).
2. Used oil and used oil filters are prohibited from disposal at Florida landfills, they must be recycled (Chapter 62N-710.850 Florida Administrative Code).
3. Used oil and used oil filters must be managed in such a way as to avoid discharges to water or soil. (Chapter 62N-710.401 Florida Administrative Code).
4. Standards for the registration, construction, installation, operation, maintenance, repair, closure, and disposal of storage tank systems that store regulated substances, and to minimize the occurrence and environmental risks of releases and discharges. Storage Tank Rule (Chapter 62-761 Florida Administrative Code).



BILGEWATER

PROBLEM:

Oil and grease from the operation and maintenance of inboard engines are sources of petroleum in bilges. Discharged bilgewater is a source of pollution in marinas and boatyards.

GOAL:

Minimize the occurrences of contaminated bilgewater and discharges.

IDEAS FOR YOUR FACILITY TO USE:

1 Encourage boaters to check for leaks of oil and fuel into the bilge, and to fix leaks that cause contamination of bilgewater. Boaters should inspect lines and hoses for deterioration, and secure and prevent lines from chafing.

SELECTING THE RIGHT BILGE PUMP

Small boat owners -- Pick the largest bilge pump your boat can accommodate

Check for and repair leaks

Inspect line and hoses

Secure and prevent fuel hoses from chafing

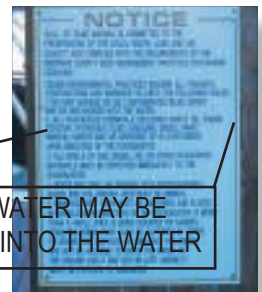
3 Discourage the use of emulsifying soaps such as dish detergent to clean the bilge. Emulsified oil and water will foul the filters of oil/water separators, rendering them inoperative. Investigate cleaning products that are either non-emulsifying or that create unstable emulsifications which have fast "break times" back into distinct oil and water phases.



2 Encourage owners/operators to be aware of how fuel saturated absorbent pads are stored on-site to avoid fire.



4 Educate boaters on the importance of the proper discharge of contaminated bilgewater.



NO BILGE WATER MAY BE DISCHARGED INTO THE WATER

NOTE Some of the new absorbent products on the market are now impregnated with beneficial microorganisms that literally "eat" hydrocarbon-based materials.

5 Encourage the use of absorbent pads or sheets in bilges.



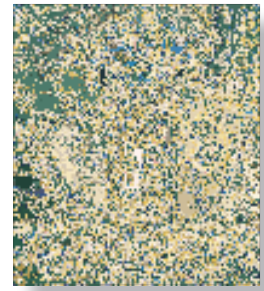
6 Unintended discharges can occur when boats are being removed from the water and the drain plug is pulled. Have boats pull out and away from the water to the boat ramp so bilge water does not drain back into the waterbody. Place absorbants around areas where pollutants can drain into the stormwater system.



7 If oil and/or fuel gets into the bilge, use absorbent pads to remove as much of it from the bilge water as possible. If found, take necessary steps to remove pollutants before removing the plug or drain them ashore into oil/water separators.



8 Provide oil/water separators for boaters to purchase and install in their boats, and/or provide land mounted oil/water separators for boaters to empty their bilges at dockside. Here are several useful points to consider:



a. Bilge water should not be discharged to any waterway or public drain with out proper filtration to separate the oil from the water. Any unfiltered bilge water or oil accumulated by oil/water separators should be treated as waste oil and handled accordingly.

b. Bilge mounted oil/water separators are available from manufacturers for the purpose of filtering oil from the water that accumulated in the bilge. The filtered water is discharged overboard and the oil is contained for proper recovery.

c. Dock or land mounted oil/water separators are also available. A peristaltic or air double diaphragm pump is used to pump bilge water from the bilge to the oil/water separator. Once again, the water is filtered and discharged while the oil is contained for recovery.

d. Do not use a wet-vac system to pump the bilge water from the bilge to the oil/water separator will cause mechanical emulsification of oil and water which will foul the oil/water separator filter and render the system in operative.

e. When the oil/water separator is mounted on a vessel, a boatyard should be able to discharge the filtered water back to the waterway. However, first check local regulations.

f. Land or dock-based oil/water separators have to meet EPA requirements for discharge to municipal facilities. The boatyard could install these systems.

REGULATORY REQUIREMENTS:

1. Pollution discharge restrictions- 33 Code of Federal Regulations 151 prohibits the discharge of any water, substances, or bilgewater which produces a sheen or contains 15 parts per million (or greater) within 12 nautical miles of Florida's coastline or inland navigable waters.
2. Section 376.041, Florida Statutes prohibits the discharge of pollutants into or upon any coastal waters, estuaries, tidal flats, beaches, and lands adjoining the seacoast of the State.
3. Section 403.161(1), Florida Statutes prohibits the causing of pollution in Florida waters.



BOAT CLEANING - IN THE WATER

PROBLEM:

Boatyard employees and boat owners use a variety of boat cleaners, such as teak cleaners, fiberglass polishers and detergents that can contribute pollution and nutrients to the water. Excess nutrients degrade water quality by promoting nuisance aquatic plant growth and reducing dissolved oxygen levels needed for aquatic life. Additionally, scrubbing antifouling paints can release toxic metals into the water which may contaminate boatyard bottom sediments. The removal of contaminated sediments can be very costly.

GOAL:

For boats that are in the water, use cleaning methods that prevent or contain the release of pollutants to surface waters.

IDEAS FOR YOUR FACILITY TO USE:

1 Educate the customers on the negative impact of many traditional cleaners and when possible, supply for sale to boatyard patrons biodegradable spray type cleaners that do not require rinsing.



4 Encourage the use of sponges or soft towels to clean the underwater hull on a regular basis. Avoid in-the-water hull scraping and any abrasive process that occurs underwater that may remove anti-fouling paint from the boat hull.



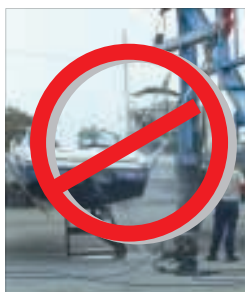
2 When possible, remove the boat from the water and perform cleaning where debris can be captured and properly disposed of. Promote the use of dry slips and boat lifts, in order to reduce the need for in the water cleaning.



5 Wash the boat hull above the waterline by hand. Detergents and cleaning compounds used for washing boats should be phosphate-free and biodegradable and amounts used should be kept to a minimum.



3 Prohibit pressure washing for boat cleaning in or over the water.



6 Prohibit the use of traditional sudsing cleaners that must be rinsed off and discourage the use of detergents containing ammonia, sodium hypochlorite, chlorinated solvents, petroleum distillates, or lye.



7 For boats that are in the water, use cleaning methods that prevent or contain the release of pollutants to surface waters.

CLEAN GENTLY

- Use the least quantity of cleaner, twice as much doesn't mean twice as clean
- Use non-toxic products
- Check our marina store for enviro-friendly products



8 Avoid in-the-water hull scraping and any abrasive process that occurs underwater that may remove anti-fouling paint from the boat hull.



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BOAT CLEANING - OUT OF THE WATER Saltwater Rinsing

Water used to rinse the salt and scum off of boats taken out of the water for upland storage can add pollutants to the surface waters.

GOAL:

Contain rinse water from cleaning and washing of boats on the uplands where possible.

IDEAS FOR YOUR FACILITY TO USE:

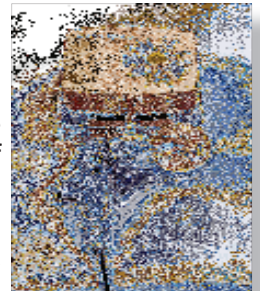
1 Do not discharge wash, rinse or contaminated rinse waters to surface waters or storm drains. Avoid stormwater contamination (Also see Stormwater BMP, page 81).



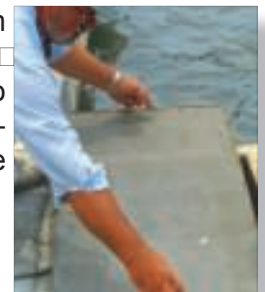
2 Ideally, rinse boats in a designated area designed to contain and collect rinse water for recycling, such as an impermeable surface (sealed asphalt or concrete) with a sloping grade and a drain sump to direct the rinse water to a recycling system. (See page 33)



3 At a minimum, designated areas for boat rinsing should be designed to prevent discharge of rinse water to surface waters and prevent contamination of stormwater. For example, an upland permeable surface such as gravel or grass which allows water to percolate. Solids and debris should be picked up to prevent contamination of stormwater.



4 Wastewater from rinsing and washing may be discharged to infiltration areas or other stormwater treatment systems capable of treating rinse waters (See Stormwater BMP page 81).



Unintended discharges can occur when boats are being removed from the water and the drain plug is pulled. Do not pull the drain plug on boat ramps or over the water. Pull the boat out and away from the water or the boat ramp so bilge water does not drain back into the waterbody. Before pulling the drain plug, bilges should be checked for petroleum or other pollutants which may have collected during operation. If oil or pollutants are found, take necessary steps to remove them before removing the plug or drain them ashore into oil/water separators.

There are a number of treatment components available on the market for recycling of wastewater and for grease and oil removal systems.

5 Rinsewater may be discharged to a wastewater treatment facility. The facility must obtain permission from the operator of the local wastewater treatment facility to discharge wastewater from rinsing to the sanitary sewer.



Contact the local wastewater treatment facility for permission and further guidelines.

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BOAT CLEANING - OUT OF THE WATER **Pressure Washing**

PROBLEM:

Washing and boat bottom cleaning can remove oils and greases, paint chips, barnacles and other sources of water quality degradation. If these contaminants are allowed to flow into the waterbody, toxic heavy metals can pollute the water column and sediments. Additionally, associated organic matter can add to the biochemical oxygen demand (BOD) of the water body and suspended solids may decrease available sunlight for aquatic plant life.

GOAL:

Contain and direct industrial wastewater from washing to a recycling system or to a wastewater treatment facility.

IDEAS FOR YOUR FACILITY TO USE:

1 Do not discharge industrial wastewater from pressure washing to surface or ground waters, storm drains or septic system. Avoid contaminating stormwater with such wastewater by establishing and using a stormwater pollution prevention plan.



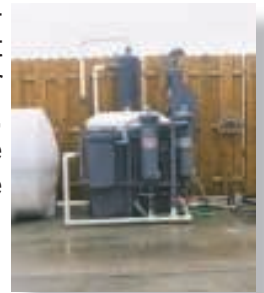
Also see Stormwater BMP Suggested Method #1, page 81. Industrial wastewater cannot be discharged into the environment (surface water, soil, etc.) without a permit from the DEP.

2 Industrial wastewater may be discharged to a wastewater treatment facility. The marina must obtain permission from the operator of the local wastewater treatment facility to discharge industrial wastewater from pressure washing to the sanitary sewer.



Contact the local wastewater treatment facility for permission and further guidelines.

3 If a wastewater treatment facility is not available or the operator refuses to give permission, install a recirculating pressure wash system that recycles the industrial wastewater.



4 Designate shore-side washing and pressure washing areas where wash waters can be collected or contained for treatment or recycling. Areas should have sloping impermeable surfaces (such as sealed asphalt or concrete) which allow waste water from these activities to be recycled for reuse or treated before discharging. Wash and rinse water should be either:



- a. collected for recycling and reuse (see page 111) or;
- b. collected for discharge to a wastewater treatment facility (Contact the local wastewater treatment facility for permission to discharge wash and rinse waters to the sanitary sewer and for further guidelines. If a wastewater treatment facility is not available or refuses to give permission, install a recycling system.) or;
- c. in the case of rinse waters only, discharge to stormwater retention areas capable of necessary treatment or;
- d. pretreatment prior to discharge in accordance with water quality standards, permit required by DEP.

5 Provide and clearly mark designated work areas for pressure washing. Do not permit pressure washing outside designated areas. Do not allow off-site contractors to bring pressure washing equipment on-site unless they understand where and how this activity can be performed.

**Pressure Washing
In This
Area ONLY**

**Contractors see
Boatyard Manager
prior to any work
at this facility**

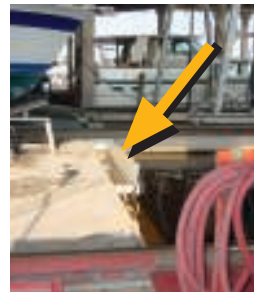
6 A marina may obtain an industrial waste water permit from DEP to discharge wastewater from pressure washing into the environment. An industrial waste permit may require pretreatment of the wastewater and quarterly monitoring to analyze the contaminants that are entering the environment.



7 Make environmentally compatible cleaning products and information available to boaters.



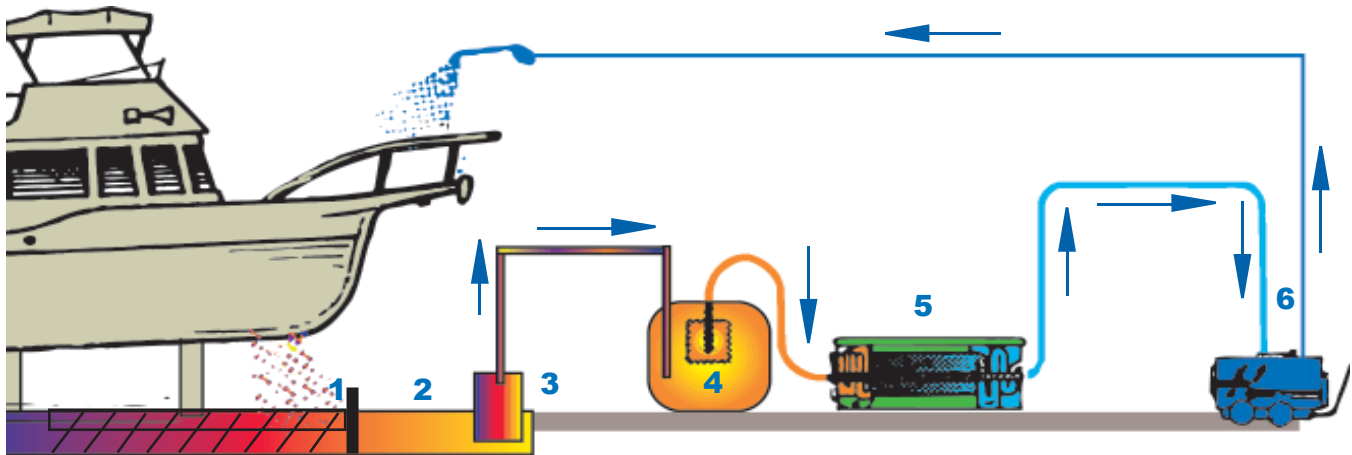
8 Use diagonal trenches or berms to contain and collect wash water at marine railways.



9 Use solid decking, gutters and sumps at lift platforms to contain and collect wash water for possible reuse.



Schematic of Pressure Washing Area



1) Enclosed Area 2) Collection Point 3) Sump Pump 4) Sump Tank 5) Water

Recycles wash water with a submersible sump pump connected to a wash water treatment system and back to a pressure washer, to allow collection of wastewater for recycling and re-use as washwater. Stored recycled wastewater may require chlorination or ozonation for good sanitation and odor control..

Unintended discharges can occur when boats are being removed from the water and the drain plug is pulled. Do not pull the drain plug on boat ramps or over the water. Pull the boat out and away from the water or the boat ramp so bilge water does not drain back into the waterbody. Before pulling the drain plug, bilges should be checked for petroleum or other pollutants which may have collected during operation. If oil or pollutants are found, take necessary steps to remove them before removing the plug or drain them ashore into oil/water separators. Refer to Oil BMP page 23.

REGULATORY REQUIREMENTS:

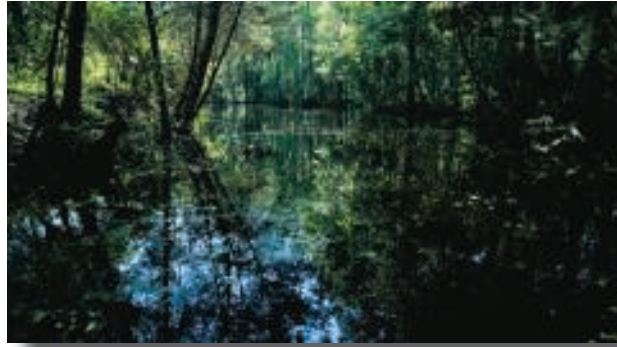
1. Florida's NPDES Stormwater Program*, authorized under Section 403.0885, Florida Statutes (F.S.), regulates point source discharges of stormwater into surface waters of the State or into a municipal separate storm sewer system (MS4) from certain municipal, industrial and construction activities. Marina industry operations included in the definition of industrial activity are:

- Ship and boat building and repair facilities under Standard Industrial Classification (SIC) codes 3731 and 3732.
- Water transportation facilities under SIC code 44xx that have vessel maintenance shops (mechanical repairs, painting, fueling, and lubrication) and/or equipment-cleaning operations. Marinas identified under SIC code 4493, are included in this group. (Note that equipment-cleaning operations include areas where vessel and vehicle exterior washdown takes place.)

Marinas and boatyards that meet the criteria above and discharge stormwater to a surface water of the State or into a municipal separate storm sewer system (MS4) must obtain coverage under the NPDES Stormwater Program with either a Multi-Sector Generic Permit for Stormwater Discharge Associated with Industrial Activity (MSGP) or in some cases, an individual permit.

*It is important to note that Florida's NPDES Stormwater Program is separate from the State's other stormwater/environmental resource permitting programs including Part IV, Chapter 373, F.S. and Chapter 62-25, F.A.C., as well as other local stormwater/water quality programs. For more information on Florida's NPDES Stormwater Program, visit <http://www.dep.state.fl.us/water/stormwater/npdes/index.htm> .

2. In accordance with 62-620.300, Florida Administrative Code (F.A.C.), no person shall discharge wastes to waters without a permit from the Department unless exempted by Department rule or statute. A permit may also be required for certain recycling systems. For more information on Florida's industrial wastewater program visit: <http://www.dep.state.fl.us/water/wastewater/iw/index.htm> .



BOAT CLEANING- EXOTIC PLANTS/SEALIFE

PROBLEM:

Exotic plants and animals may become attached to vessels and trailers and can be accidentally introduced into pristine waterways. Once introduced, exotics can be very invasive and difficult, if not impossible, to control. When exotic plants or animals spread, they contribute to the degradation of water quality and fish and wildlife habitat by outcompeting native species and by shading submerged vegetation. This adversely impacts water quality; recreational and commercial fishing; and presents navigational difficulties as waters can become choked with vegetation.

GOAL:

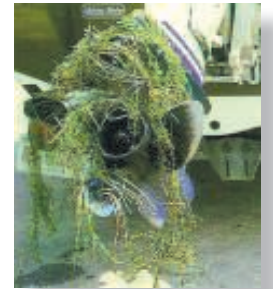
Minimize the introduction of exotic plants and animals, such as water hyacinth, hydrilla and zebra mussels from one waterway to another.

IDEAS FOR YOUR MARINA TO USE:

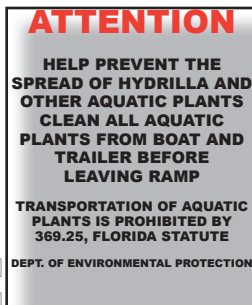
1 Educate the public with signs and pamphlets at all boat ramps and marinas where exotics are a potential problem. Post signs emphasizing the need to inspect vessels thoroughly and to remove exotics from hulls and trailers, particularly below the waterline.



3 Have boaters check bilges, live wells and trailers at ramps to minimize spread of exotics to unaffected areas. Each of these should be empty or the water pumped out and treated for larvae/spore removal. Remove all plant fragments from trailers, props, bait wells, fishing tackle, dive gear, etc., for disposal in an upland facility or receptacle.



2 Emphasize to boaters the need to thoroughly clean trailers and hulls, particularly that part below the waterline and to inspect it after cleaning to insure that no plants or animals are attached. When cleaning boats, exotic organisms on vessel hulls and engines should be removed, collected and discarded to upland disposal sites.



4 Have boaters flush raw water through cooling systems and clean sea strainers before launching boats trailered or motored on other states or nations.



NOTE
For further information on exotic species contact the DEP's Bureau of Aquatic Plant Management, (850) 487-2600.

5 For marinas located in waterways where exotic aquatic plants are present, mainly those in fresh water, provide facilities for complete rinsing of vessels, trailers, bait wells, etc. and for the proper disposal of collected exotic plants and animals.



REGULATORY REQUIREMENTS:

Importation, transportation or release of exotic plants and animals are prohibited or regulated by Section 369.25 (aquatic plants), Section 370.081 (saltwater animals) and Section 372.26 (imported fish)



BOATING- SENSITIVE HABITATS & ENDANGERED SPECIES

PROBLEM:

Vessel operation in shallow water can result in groundings and turbidity (murky water) as a result of props and hulls striking or churning up bottom sediments. Prop dredging can directly pull up and destroy sensitive submerged resources, such as corals and submerged grasses that are extremely valuable as shelter, nurseries, and food for aquatic organisms. Turbidity reduces water clarity, which reduces sunlight penetration through the water column (which can adversely affect the growth of submerged vegetation), and interferes with feeding/respiration by aquatic organisms. Careless operation of motorized vessels can result in injury or death of endangered species, such as manatees.

GOAL:

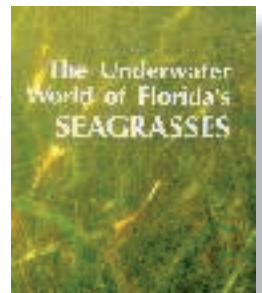
Where necessary, restrict boating activities to avoid shallow waters that may be affected by props and boats hulls, and to reduce the risk of injury or death to endangered species.

IDEAS FOR YOUR MARINA TO USE:

1 Post signs, maps or charts showing the location of known shallow bottoms, speed zones, sea grass beds or the occurrence of endangered species in the vicinity.



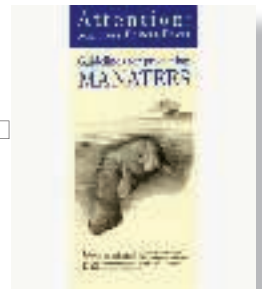
3 Provide educational materials to vessel operators about the damage that may occur from prop dredging, which may cause turbidity and damage valuable underwater resources, such as seagrasses.



2 Maintain private aid to navigation of channels accessing the marina for the protection of the environment and safety of boaters.

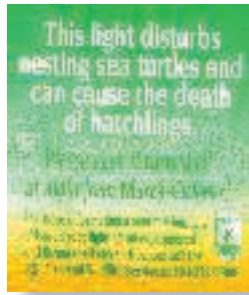


4 Provide educational materials to vessel operators of the risks to endangered and threatened species, such as manatees, from boating.

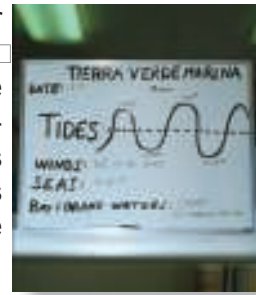


Report manatee, dolphin and marine trutle injuries, deaths, tag sightings or harassments to the Florida Marine Patrol at 1-800-Dial-FMP [342-5367] (*FMP on your cellular)

5 Reduce attractants where possible, such as light, freshwater flows (hoses, etc.) and people feeding or annoying mammals.



6 Install a tide or water level gauge at an easily accessible and visible location in the marina so boaters can see what current tides are. Make current tide tables available for patrons at the facility.



REGULATORY REQUIREMENTS:

1. The manatee is protected under federal law by the Marina Mammal Protection Act of 1972 and the Endangered Species Act of 1973.
2. To catch, molest, injure, kill or annoy or otherwise interfere with the normal activity and well-being of manatee, mammalian dolphins or marine turtles are prohibited by Section 370.12, Florida Statute.
3. Dredging, including inadvertent prop dredging, is regulated under Part IV of Chapter 373 of the Florida Statutes.



SOLID WASTE MANAGEMENT

PROBLEM:

Marinas and boatyards generate various solid wastes that can be a nuisance and an eyesore if not properly containerized. Improper disposal of solid waste can also cause pollution and hazards to wildlife and may lead to fines and cleanup costs. Hazardous wastes and used oil may be improperly placed in solid waste receptacles contaminating the solid waste and posing a threat to human health and safety and the environment.

GOAL:

Manage and dispose of all solid waste properly. Check with your local Solid Waste Authority for information on what materials are allowed in dumpsters, etc.

IDEAS FOR YOUR FACILITY TO USE:

1 Install adequate signs identifying waste disposal practices. Use pamphlets, flyers, newsletters, inserts, and meetings to convey the importance of any environmental precautions that have been instituted in the boatyard.



2 Properly dispose of all trash and sweepings into trash cans and dumpsters. Provide "wind/wildlife-proof" covers for all receptacles.



3 Clean hull maintenance areas regularly to remove trash, sandings, paint chips, etc.



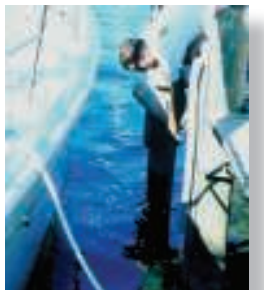
4 Train facility personnel in proper waste management and storage procedures.



5 Provide convenient trash disposal and recycling facilities to boatyard patrons. Covered dumpsters or other covered receptacles are preferred. Ensure an adequate number of receptacles are placed around the boatyard at convenient locations and clearly mark these receptacles.



6 Schedule daily (AM and PM are recommended) "walk-throughs" of the facility, picking up stray litter. Include "netting" debris out of the water. Encourage boaters to assist in this effort, perhaps in the form of monthly recognition of patrons who routinely assist.



7 Implement recycling and trash reduction programs for appropriate materials, such as glass, aluminum, plastic, trash, newspapers, batteries and oil.



9 Organize a shoreline cleanup along to surface body water at boatyard.



8 Provide recognition and incentives to those boaters who use proper waste management techniques.



REGULATORY REQUIREMENTS:

1. On-site solid waste disposal is prohibited unless the facility is a permitted landfill. (Section 403.708, Florida Statutes).
2. Open burning of solid waste is prohibited. (Chapter 62-701.300(3) Florida Administrative Code).
3. Regulations for the prevention of pollution by garbage from ships. MARPOL 73/78 Annex V.
 - A) disposal of all plastics into the sea is prohibited. MARPOL 73/78 Annex V Regulation 3.
 - B) dunnage, lining and packing materials which float can be dumped outside of 25 nautical miles from land. MARPOL 73/78 Annex V Regulation 3.
 - C) Food wastes and all other garbage including paper products, rags, glass, metal, bottles, crockery and similar refuse can be dumped 12 nautical miles from land. MARPOL 73/78 Annex V Regulation 3.
4. The guidelines for the storage and collection of residential, commercial and institutional solid waste. 40 CFR 243.
5. On-site solid waste disposal is prohibited unless the facility is a permitted landfill (Section 403.708, Florida Statutes).
6. Open burning of solid waste is prohibited. (Chapter 62-701.300(3) Florida Administrative Code).



LIQUID WASTE STORAGE MANAGEMENT

PROBLEM:

Boatyards and marinas generate special wastes such as bilge water, used oil, used oil filters, contaminated spill control material, old gasoline, and hazardous wastes such as acetone, paint and parts washing solvents. Mismanaged waste may lead to spills, mixing of incompatible wastes, violations of hazardous waste and used oil regulations. At facilities that are used by outside contractors and do-it-yourselfers wastes are commonly left in the storage area in unlabeled open containers. Releases of liquid waste can degrade water quality and threaten aquatic plant, sea life, human health and safety.

GOAL:

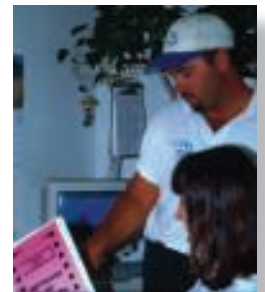
Design a waste storage facility that will contain spills, keep rainwater off of tanks and containers and provide adequate aisle space for container inspections. Manage the storage facility to avoid spills and accidental mixing of incompatible wastes.

IDEAS FOR YOUR FACILITY TO USE:

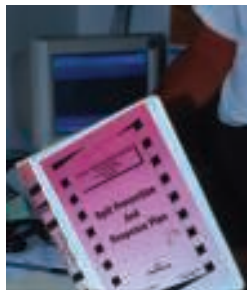
1 Keep the storage unit locked except during times when a trained facility employee is available to monitor proper waste segregation. Some facilities post signs that indicate wastes can only be put in storage under the supervision of facility personnel.



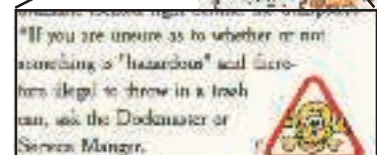
3 Train employees and independent contractors in your waste management policies and your spill contingency plan.



2 Provide a spill contingency plan that spells out how to respond to fires and accidental spills, and what to do with waste containers in case of an approaching hurricane. This plan can be incorporated into the marina/boatyard's fueling contingency plan.



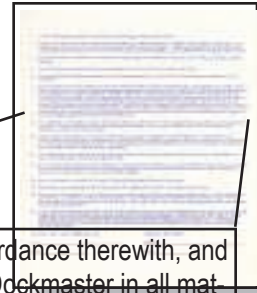
4 Direct facility patrons as to the proper disposal of all liquid waste through the use of signs, mailings and other means.



5 Provide spill control material and empty containers for emergency clean-up.



8 Insert language in facility contracts requiring the proper disposal of liquid waste.

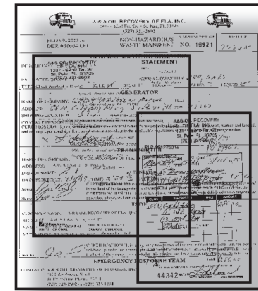


Owner agrees to..., act in accordance therewith, and to follow the directions of the Dockmaster in all matters concerning environmental procedures

6 The waste storage structure should be constructed with berms and a roof to keep rainwater from filling the containment structure. Check with local authorities for fire safety and spacing requirements.



9 Document disposal of liquid wastes.



7 Provide snap top funnels to ensure that containers and tanks are properly closed after adding the waste. (40 CFR 265 Subpart CC reg. may require the use of drums of 26 gallons or less capacity for exemption from the CC emissions requirements for generators).



10 Provide a hazardous waste site that provides access for tenants and boaters to dispose paint and solvent waste during authorized hours. This site could include a closed container or an inflammable cabinet in which paint cans and containers of waste solvent could be placed until a boatyard employee is available to pour the waste into the hazardous waste container. This temporary storage should not accumulate more than 30 gallons.



REGULATORY REQUIREMENTS:

1. Hazardous waste must be managed and disposed of in accordance with Title 40 Code of Federal Regulation Parts 260-268. (See Hazardous Waste Management, page 39).
2. Used oil and used oil filters must be managed and disposed of in accordance with Chapter 62-710 Florida Administrative Code (See Petroleum Control, page 10).
3. Petroleum Contact Water (PCW) destined for product recovery to help ensure that PCW is managed in a manner that is protective of human health and the environment, to encourage conservation of natural resources, and to promote waste minimization. Adoption of these management practices is intended to define when the PCW is managed as a recoverable material and when the PCW is regulated as a solid waste. Petroleum Contact Rule (Chapter 62-740 Florida Administrative Code).



HAZARDOUS WASTE MANAGEMENT Waste Generated by Marinas and Boatyards

PROBLEM:

Improper disposal of hazardous waste can cause harm to human health and the environment and can result in serious penalties and expensive clean-up costs if contamination occurs. Some of the hazardous wastes boatyards may generate include ignitable paint waste, parts cleaning solvents and waste acetone. These three hazardous wastes above may be recycled on-site by using a distillation or filtration unit to reduce waste and recover valuable product. The residue waste from on-site recycling may be hazardous waste. The following hazardous wastes may require special handling, so separate BMPs are included in this document to address these special wastes:

- Waste Distress Signal Flares (see page 65)
- Used Batteries (see page 67)
- Mercury Containing Bilge Pump Float Switches (see page 69)
- Mercury Containing Lamps (see page 71)
- Waste Antifreeze (see page 73)
- Toxic Paint Chips (see page 75)

Some of these wastes are generated by the services provided at the boatyard, either by marina/boatyard staff or outside contractors working at the marina or boatyard.

GOAL:

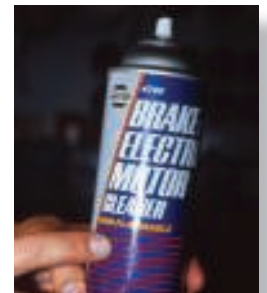
Ensure that all hazardous wastes generated at the marina or boatyard are managed and disposed of properly.

IDEAS FOR YOUR FACILITY TO USE:

1 Design an adequate waste storage facility as described in the Waste Storage BMP on Pg. 41.



2 Use alternative parts washing products that do not contain listed or ignitable solvents. The waste parts washing product may still exhibit hazardous waste characteristics due to hazardous constituents such as lead that are removed during parts cleaning. It is the responsibility of the marina or boatyard operator to test the waste periodically to ensure that it is not hazardous waste.



Hazardous waste transporters must demonstrate the required financial responsibility to operate in Florida. For a list of transporters meeting this requirement contact your nearest DEP District office.

3 Provide spill control material and empty containers for emergency clean-up.



5 Contract with an approved hazardous waste hauler for periodic waste disposal. (FAC 62-730)



4 Segregate wastes to ensure that only waste that is hazardous is handled as such.



6 Use a distillation unit to recycle solvents generated in painting operations and from parts washing to minimize hazardous waste generation. Still bottoms are the solids that are separated out of useable solvent. Still bottoms are usually hazardous waste. Call your nearest DEP District Office Hazardous Waste Section for more information.



7 Use snap top funnels to ensure that containers and tanks are properly closed after waste is added and clearly label containers and tanks in order to avoid mixing incompatible wastes (40 CFR 265 Subpart CC reg. may require the use of drums of 26 gallons or less capacity for exemption from the CC emissions requirements for generators).



REQUIREMENTS for CONDITIONALLY EXEMPT SMALL QUANTITY GENERATORS OF HAZARDOUS WASTE (0 - 220 LBS/MONTH):

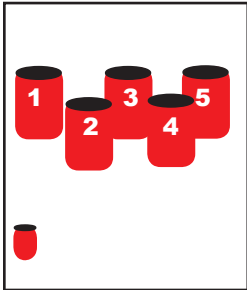
1 The facility operator must determine which waste streams are hazardous using process knowledge, product knowledge or testing. Title 40 Code of Federal Regulations Part 262.11.



3 The facility must ensure delivery of hazardous waste to a proper recycling facility or permitted transfer/storage/disposal facility. Title 40 Code of Federal Regulations Part 261.5.



2 If the facility operator accumulates over 1,000 kg (2,200 lbs/5 drums) of hazardous waste, the boatyard will be regulated as a Small Quantity Generator (see requirements below).



4 The facility must document delivery of its hazardous waste through written receipts which are retained for at least 3 years. Chapter 62-730.030(3), Florida Administrative Code.



REQUIREMENTS for SMALL QUANTITY GENERATORS OF HAZARDOUS WASTE (220 - 2,200 LBS/MONTH):

1 The boatyard must obtain an EPA ID # (call 850/488-0300 for more information). Title 40 Code of Federal Regulations Part 262.12



3 The facility must use a manifest system for hazardous waste shipments and ship only to permitted transfer/storage/disposal facilities. The boatyard may use a reclamation agreement if it meets the requirements of Title 40 Code of Federal Regulations Part 262.20(e)



2 The facility operator must determine which waste streams are hazardous using process knowledge, product knowledge or testing. Title 40 Code of Federal Regulations Part 262.11



4 The facility must not accumulate over 6,000 kg (13,200 lbs/30 drums) of hazardous waste or you will become a large quantity generator and be subject to more stringent standards.



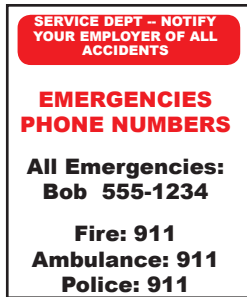
5 The facility must designate an emergency coordinator. Title 40 Code of Federal Regulations Part 262.34(d)(5)



10 The facility must label all containers and tanks with the words *HAZARDOUS WASTE*. Title 40 Code of Federal Regulations Part 262.34(a)(3)



6 The facility must post the phone numbers of the emergency coordinator and the local fire department. The location of fire extinguishers, spill control equipment/material and the fire alarm (if any) are also posted. Title 40 Code of Federal Regulations Part 262.34(d)(5)



11 An accumulation start date must be placed on each hazardous waste container as soon as hazardous waste is placed inside. Title 40 Code of Federal Regulations Part 262.34(a)(2)



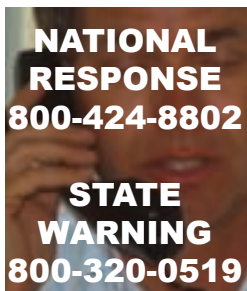
7 The facility must train personnel who handle hazardous waste in proper management procedures and emergency response in case of a spill or fire. 40 Code of Federal Regulations 262.34(d)(5)



12 The facility may not accumulate hazardous waste on-site for more than 180 days and remain a Small Quantity Generator, 40 Code of Federal Regulations 262.34 (d). If the boatyard exceeds 180 days, their status will change to Large Quantity Generator and they will have to comply with more stringent regulations.



8 The facility must follow emergency procedures to address spills, fires, including notifying the National Response Center (800/424-8802) and the State Warning Point (800/320-0519). Title 40 Code of Federal Regulations Part 262.34(d)(5)



13 The facility must maintain hazardous waste containers closed. Title 40 Code of Federal Regulations Part 262.34(d)(2)



9 Hazardous waste disposal and analyses records must be maintained for a minimum of three years. Land Disposal restriction certificates must be retained for a minimum of five years. Title 40 Code of Federal Regulations Parts 262.40(a) and 268.7



14 Incompatible wastes must be segregated. Title 40 Code of Federal Regulations Part 262.34(d)(2)



15 The facility must conduct weekly container inspections and maintain written records of those inspections Title 40 Code of Federal Regulations Part 262.34(d)(2) and Chapter 62-730, Florida Administrative Code



18 The facility must be maintained and operated to minimize the possibility of fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste to air, soil, surface water which could threaten human health or the environment. Title 40 Code of Federal Regulations Part 265.31



16 The facility must provide adequate aisle space for drums, so that they may be inspected for leaks and missing labels. Title 40 Code of Federal Regulations Part 262.34(d)(4)



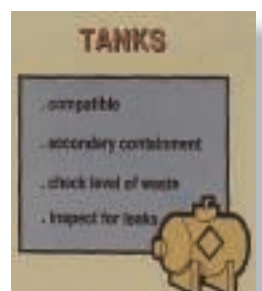
19 The facility must attempt to familiarize local fire department, police and hospitals with the types of hazards and potential emergencies that might occur at the facility. Title 40 Code of Federal Regulations Part 262.34(d)(4)



17 The container must be compatible for the type of waste stored within. Title 40 Code of Federal Regulations Part 262.34(d)(4)



20 If the facility uses tanks to store hazardous waste they must meet the requirements of Title 40 Code of Federal Regulations Part 265 Subpart (for more information call the nearest DEP District Office).



REGULATORY REQUIREMENTS:

1. Hazardous waste must be managed and disposed of in accordance with 40 Code of Federal Regulation 260-268. (See Hazardous Waste Management).
2. Used oil and used oil filters must be managed and disposed of in accordance with Chapter 62-710, Florida Administrative Code (See Petroleum Control, page 15).
3. Compliance monitoring at facilities under the Resource Conservation and Recovery Act with Chapter 62-730, Florida Administrative Code).

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“HOUSEHOLD” HAZARDOUS WASTE MANAGEMENT Hazardous Waste Generated by Marina/Boatyard Patrons/Subcontractors

PROBLEM:

Hazardous waste generated by marina/boatyard patrons may be improperly released onto the ground or into the water if a proper disposal mechanism is not provided. The marina operator may be liable for damages and injuries that might occur should a fire or explosion result from hazardous waste placed in the dumpster. The marina/boatyard operator also may be liable for clean-up costs should environmental contamination occur.

GOAL:

Provide a convenient mechanism for proper hazardous waste disposal for marina/boatyard patrons.

IDEAS FOR YOUR FACILITY TO USE:

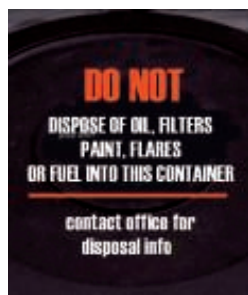
1 Provide clearly marked containers for hazardous waste generated by facility patrons that do maintenance work at the marina. Manage and dispose of hazardous waste in accordance with the regulations.



3 Place or stencil messages by storm drains that indicate the surface water that the drain discharges into. Dumpsters might be less likely to dump if they realize that their favorite fishing water may become contaminated.



2 Post signs by solid waste receptacles that prohibit disposal of hazardous waste.

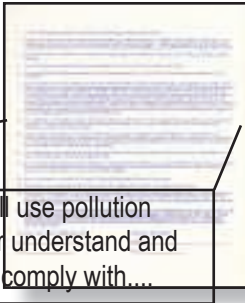


4 If the marina or boatyard does not want to maintain hazardous waste on site, direct marina patrons as to the proper disposal of hazardous waste through the use of signs and mailings. Many counties provide free disposal service for household hazardous waste. Post collection center locations near the waste receptacles so marina patrons know where to take their hazardous waste.



Hazardous wastes generated by recreational boaters are considered household hazardous waste. Household hazardous waste, though exempt from many hazardous waste regulations, must be handled with care and be disposed of properly.

5 Insert language into facility contracts informing the boater proper hazardous waste management.



6 Provide recognition and incentives to those boaters who use proper hazardous waste and used oil management techniques.



REGULATORY REQUIREMENTS:

1. Section 403.161, Florida Statutes prohibits discharges that cause pollution to waters of the State.



PAINTING

PROBLEM:

Painting of vessel hulls or application of topside coatings and activities associated with paint handling may result in the concentrated release of harmful vapors and liquids. Wastes generated from painting activities will probably be hazardous wastes if the paints contain solvents and/or heavy metals (lead, cadmium, barium or chromium). Water based paints containing heavy metals may also generate hazardous wastes. Disposal of hazardous waste is expensive. Mismanagement of hazardous waste can cause pollution of the environment and lead to costly penalties and cleanup costs if discharges occur.

GOAL:

Reduce the amount of harmful vapors released into the air. Minimize the amount of hazardous waste generated by recycling and product substitutions. Properly manage and dispose of all hazardous waste. A hazardous waste determination can be made using product and process knowledge or through waste analyses. Supporting documentation is required.

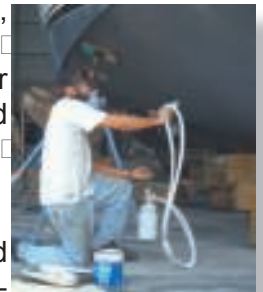
IDEAS FOR YOUR FACILITY TO USE:

1 Vessel painting should be carried out in a manner that is as compatible to the environment as possible. Whenever possible, painting should be done indoors. The method chosen should take into account the particular type of paint to be used, the customer's specifications and the intended look and use of the painted vessel. For example, the use of low solvent/high solid content paints or water-based paints that do not contain environmentally harmful solvents may be used to decrease the release of environmentally destructive vapors into the atmosphere. The use of rollers or brushes may be a consideration as opposed to spray painting.



2 When spray painting, emissions may be reduced by employing operator techniques that ensure a good transfer efficiency of paint to surface. Some of these include:

- Keeping spray guns and lines clean and well-maintained.
- Outdoor spray painting should not be conducted under adverse wind conditions.
- Keeping guns perpendicular to the surface being painted, maintaining a uniform distance from the surface, and moving the gun at a uniform speed to keep spray patterns consistent.



NOTE
Some county environmental programs have ordinances that limit VOC emissions from surface coating operations at boatyards. Though the county program may have delegated authority from DEP to implement and enforce state standards, the state does not implement and generally does not enforce county standards.

3 Painting on land should occur over an impermeable surface and in such a manner that overspray does not fall on open ground or surface water. A boom should be available to contain any overspray that reaches surface waters. Overspray on water must be removed immediately from the surface of the water.



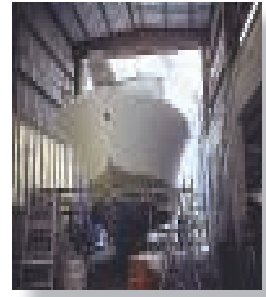
4 Waste solvents from cleaning spray equipment must be placed into a labeled container with a lid to prevent evaporation into the atmosphere. All hazardous waste from painting operations must be properly containerized, managed and disposed of in accordance with hazardous waste regulations (see Hazardous Waste Management BMP, page 43). To avoid exceeding the accumulation time periods, the paint shop can establish a satellite accumulation container (not to exceed 55 gallons) to collect hazardous waste. The container must be labeled and kept closed except when adding or removing waste. Once the container is full, it must be dated with the accumulation start date and moved to the waste storage area so a new satellite container can be started.



5 Empty paint and thinner cans must be completely dry before they are placed in the dumpster for disposal. (Note: Some solid waste management facilities may not accept this waste stream).



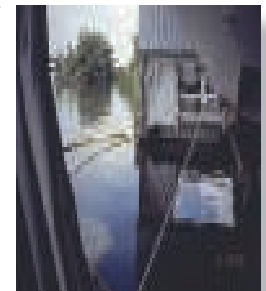
6 Perform major hull and topside work inside buildings whenever possible to assist in containing contaminants, reducing wind dispersal and minimizing exposure to rain and runoff into the waterbody. * Note: Specific OSHA safety precautions may be required.



7 Minimize hazardous waste and get more life out of your product by recycling solvent paint waste with a solvent distillation unit. The distillation bottoms will be hazardous waste and must be managed and disposed of accordingly. The solvent that is recovered can be used to clean equipment, saving the facility the cost of new solvent.



8 If spray painting over water is performed, every effort must be made to keep paint from falling in the water. Some facilities construct wet sheds to contain overspray and keep paint and debris from falling in the water. Wet sheds are enclosed with a roof and curtains to control fugitive emissions. A boat inside a wet shed slip is encircled with floating rafts secured against the hull to capture any falling paint drops, overspray and debris. The area should be boomed such that all overspray that accidentally reaches the water can be collected and removed via skimming or other effective methods.



9 If spray painting is to be done, use equipment such as high-volume-low pressure (HVLP) spray guns which have transfer efficiencies of about 85%. (Transfer efficiency, or TE is the percentage of paint sprayed that actually reaches surface being painted. What doesn't reach the surface is lost as overspray, therefore, the higher the TE, the better paint coverage and lower the paint consumption.



11 As long as the painting operations use less than the regulated thresholds (i.e. 6 gallons of paint per day for the full exemption and 44 pounds per day of VOC for the conditional exemption from Title V) there are no

$$\begin{array}{l} \text{lbs of VOC} \\ \times \\ \text{\# of gallons/} \\ \text{day} \\ = \\ \text{VOC per day} \end{array}$$

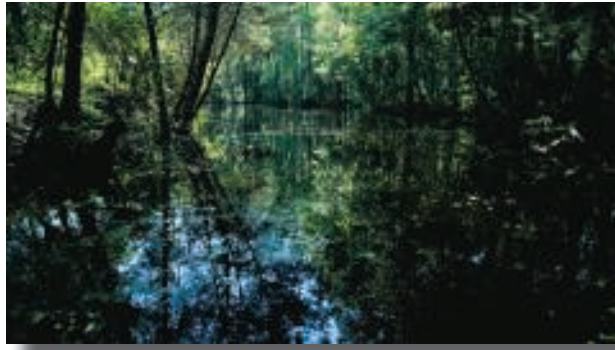
restrictions on what kind of equipment they use to apply the paint or whether they use the equipment inside or outside. You can usually find out how much VOC is in each gallon of paint from the label. Simply multiply the pounds of VOC per gallon by the number of gallons used per day to get the pounds of VOC emitted per day.

10 Solvent soaked rags should be placed in fireproof storage bins and recycled through an industrial laundry service (see Soiled Rags BMP, page 63).



REGULATORY REQUIREMENTS:

1. All hazardous waste generated at the facility must be managed and disposed of in accordance with Chapter 62-730, Florida Administrative Code (See Hazardous Waste Management BMP, page 33).
2. Marine facilities that engage in spray painting may be required to obtain an air operating permit from the DEP or their Local Air Pollution office. The rules pertinent to these regulations are covered in Chapter 62-296, Florida Administrative Code and/or by local regulations or ordinances.
3. Categorical exemption for surface coating operations that use 6.0 gallons or less of coatings per day, averaged monthly. Therefore, if a marina or boatyard totals its coatings used each month and it averages to be equal to or less than 6.0 gallons per day, and the surface coating operation is not subject to any specific regulatory requirement (i.e., the entire facility is not subject to Title V air permitting and the coating operation is not subject to any new regulations that may have been adopted), it is exempted from air permitting. The rules pertinent to these regulations are covered in Rule 62-210.300(3)(a)23, Florida Administrative Code.
4. Rule 62-210.300(3)(c)4., F.A.C., provides a conditional exemption from Title V air permitting for surface coating operations as long as the total coatings used contain 44 pounds per day or less of VOC, averaged monthly. The conditional exemption is provided through a non-Title V general permit. Therefore, a boatyard is qualified to use the surface coating general permit if: the marina or boatyard totals its coatings used for the month (including solvents and thinners) and it averages out to 44 pounds per day or less of VOC; the surface coating operation does not qualify for the categorical exemption mentioned above; it is not subject to any specific regulatory requirements; and it contains no other air emissions activities except those that are exempt from permitting.
5. The Federal Clean Water Act and the Oil Pollution Act of 1990 prohibit the discharge of paint into waters subject to the Coast Guard's or the Environmental Protection Agency's jurisdiction.
6. Pesticide Certification (Department of Agriculture). Applicator Licensure (Chapter 487.046, Florida Statute).



LAND BASED HULL MAINTENANCE PAINT REMOVAL

PROBLEM:

Boat scraping and sanding produce solid waste such as paint chips and dust that can contaminate air, soil, surface waters and bottom sediments. Conducting these operations outdoors increases the potential for pollutants to be dispersed into the environment by wind, rain or runoff. Paint chip accumulation in boatyard soils and sediments has led to hazardous waste contamination and costly clean-ups at some sites.

GOAL:

Adopt pollution prevention measures to prevent the release of contaminants produced during hull maintenance activities from reaching the soil, air and surface waters of the boatyard.

IDEAS FOR YOUR FACILITY TO USE:

1 For outdoor hull maintenance areas that do not have sealed or hard surfaces, the work should be performed over tarps or drop cloths. Special attention should be paid to climatic conditions and tarps should be cleaned by manual sweeping or vacuuming frequently. Waste must be disposed of properly.

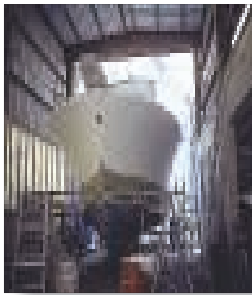


2 Suggested methods for the removal of paints and fiberglass/gelcoat products from wooden and fiberglass hulls are:



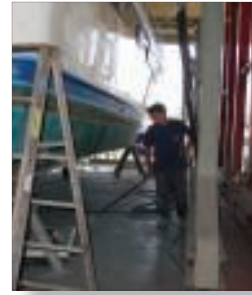
- a. dustless vacuum sanding machines which are highly efficient in reducing airborne dust concentrations. Capturing the dust at the source has many benefits which include the reduction of cleanup time and the volume of any hazardous waste generated. This reduction of hazardous waste in turn will save on disposal fees.
- b. alternative paint strippers such as Peel Away (Sherwin-Williams) or Nu-Strip (Auntie Products, Ltd.).
- c. Mechanical methods such as gel peeling.

3 Perform major hull and topside work inside buildings whenever possible to assist in containing contaminants, reducing wind dispersal and minimizing exposure to rain and runoff into the waterbody.

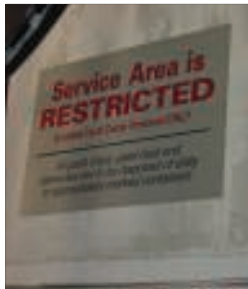


Note: Specific OSHA safety precautions may be required.

6 Require contractors and boat owners to clean up their work area after they have performed a hull maintenance activity.



4 Provide and clearly mark designated work areas for hull scraping and sanding. Ideally these areas should be tarped, or have sealed asphalt or concrete flooring. Locate hull maintenance areas that is a sufficient distance away from the water to prevent escape of water. Only allow work inside such designated areas.



Note: Specific OSHA safety precautions may be required.

7 Require do-it-yourselfers and contractors to use tarps on impervious surfaces.



Owner agrees to..., act in accordance therewith, follow the directions of the Dockmaster in all matters concerning painting procedures including **using tarps on any impervious surface,**

5 Provide clearly marked receptacles for receiving the sandings or paint chips. (See Paint Chips BMP on Page 75 for proper disposal techniques)



8 Use a “billy goat” vacuum to periodically sweep impervious surfaces used for hull maintenance at your yard on a routine schedule.



REGULATORY REQUIREMENTS:

1. Paint chips and sanding dust must be collected for disposal at a permitted landfill. On site solid waste disposal of paint chips and sanding dust on land or water is prohibited, Section 403.708, Florida Statutes.
2. NPDES industrial stormwater permits are required for marinas and boatyards that conduct certain boatyard activities over land that ultimately discharge to surface waters. See page 81, Stormwater Management, for more information.



LANDBASED HULL MAINTENANCE SANDBLASTING

PROBLEM:

Abrasive dry grit used in sandblasting operations to remove paint from ship hulls is a significant source of pollutants entering waterways from boatyard's stormwater. Spent sandblast grit is contaminated with hull paint, which contains toxic heavy metals, such as copper and zinc, that are used as anti-fouling agents.

GOAL:

Adopt pollution prevention measures to prevent the release of contaminants produced during sandblasting from reaching the soil, air and surface waters of the boatyard.

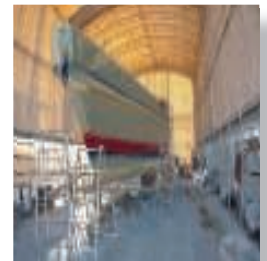
IDEAS FOR YOUR FACILITY TO USE:

1 Suggested methods for the removal of paints and fiberglass/gelcoat products from wooden and fiberglass hulls are:

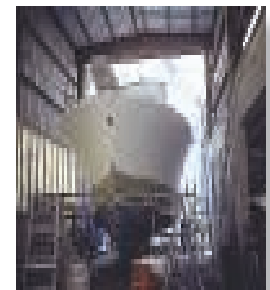
- a. replace traditional sandblasting material (e.g. silica sand) with recoverable and reusable plastic medium blast (PMB) which can remove anti-fouling paint without stripping fiberglass gelcoat (unless desired). Old paint dust is separated from reusable PMB for disposal, resulting in waste minimization and lower hazardous waste disposal fees for your facility. For example, a 50-foot boat generates about 1 gallon of paint dust instead of several gallons of mixed paint and sand for disposal.
- b. for fiberglass hulls, use a sponge blast system which uses urethane foam mixed with plastic chips. The blast media is reusable and the benefits are the same as those listed for plastic mediums and vacuum sanding systems.



2 When sandblasting, the facility must provide “**reasonable and adequate**” measures to contain overspray and sandblasting waste. For example, these practices should be carried out over impervious surfaces and shall not take place under windy conditions. Spray booths, plastic tarp enclosures or other methods should be utilized to prevent residue from being carried into the air or onto surface waters. Sandblasting should be carried out by personnel trained in the proper operation of blasting equipment and should be conducted from the top of the vessel down with the nozzle blast directed downward, except when blasting underneath the vessel or on small parts where it is impractical.



3 Perform major hull and topside work inside buildings whenever possible to assist in containing contaminants, reducing wind dispersal and minimizing exposure to rain and runoff into the waterbody.



Note: Specific OSHA safety precautions may be required.

4 Provide and clearly mark designated work areas for hull scraping and sandblasting. Ideally these areas should be tarped, or provided with a sealed asphalt or concrete floor. Locate hull maintenance areas that are a sufficient distance away from the water to prevent escape of materials into the water. Only allow work inside such designated areas.

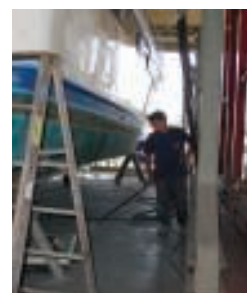


7 Require do-it-yourselfer boat owners and contractors to use tarps or impervious surfaces.



Note: Specific OSHA safety precautions may be required.

8 Requires contractors and boat owners to clean up their work area after they have performed a hull activity.



5 Use a “billy goat” vacuum to periodically sweep impervious surface used for hull maintenance at your yard on a routine schedule.



9 See Paint Chip BMP on Page 75 for proper disposal techniques.



6 The marina or boatyard operator must determine which waste streams are hazardous using process knowledge, product knowledge or testing. Title 40 Code of Federal Regulations Part 262.11.



REGULATORY REQUIREMENTS:

Facilities that engage in sand or grit blasting activities may be required to obtain an air operating permit from the DEP or their Local Air Pollution office. The rules pertinent to these regulations are covered in Chapter 62-296, Florida Administrative Code and/or by local regulations or ordinances.



ENGINE REPAIR AND MAINTENANCE

PROBLEM:

Gasoline engines that are not properly maintained can emit high levels of hydrocarbons, carbon monoxide, nitrous oxides and diesel engines that are not properly maintained can emit high levels of particulate matter into both the air and aquatic environment. Engine service and repair operations generate waste which, when handled incorrectly, can cause human hazards, endanger the environment and be costly to cleanup.

GOAL:

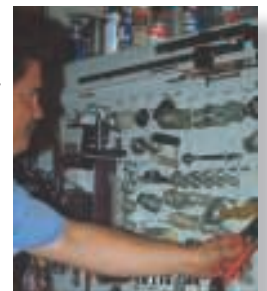
Implement a "low emissions" policy, encouraging boat owners to maintain engine systems in a manner that is friendly to the environment through regular maintenance schedules and tune-ups. Properly handle and dispose of waste generated from engine service and repair.

IDEAS FOR YOUR MARINE FACILITY TO USE:

1 Maintain supplies of absorbent materials for use by boaters, employees or contractors to clean up spills.



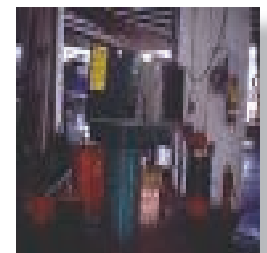
4 Properly maintain engine repair areas and inspect the maintenance area regularly for cleanliness and safety hazards. An ounce of prevention is worth many lawsuits!



2 Provide labeled separate or individual disposal containers for used oil, used oil filters, anti-freeze and stale gasoline.



5 Keep solvent containing parts washers closed when not in use to avoid loss of product and evaporation into the atmosphere. Use solvents with high flash points to reduce evaporation and fire hazard.



3 Distribute informational pamphlets regarding proper management and maintenance practices and train employees on proper waste control and disposal procedures. Post BMPs so everyone knows the facility's maintenance disposal policy.



6 Have all contractors/mechanics sign an environmental agreement which outlines how all materials are to be handled when on marina or boatyard property. Do not allow contractors on the property who do not sign or have violated the terms of the agreement.



7 Replace traditional hydrocarbon-based solvent parts washers with recirculating aqueous-based jets or bio-based parts washers. These units are similar to heavy-duty dishwashers, are completely automatic and clean better and more consistently than manual methods. Because wash water is recycled and reused, waste volume in the way of sludge from the accumulation of grease and dirt, is greatly reduced. Be aware, however, that the boatyard operator is responsible for determining whether or not waste is hazardous prior to disposal.



8 Ask your vendors for parts washers that can filter the solvent to extend its life.



9 Facility service and repair operations should promote lower emissions technology as a primary goal of servicing and repair procedures. Lowered emissions technology promotes the use of manufacturer's recommended guidelines and the proper installation and maintenance of any existing emissions controls contained on marine powering systems.

ATTENTION BOATERS

Introducing 200-hp, Optimax Direct Fuel Injected, two-stroke outboard engines. This new technology injects a high-pressure mixture of fuel and air directly into each cylinder, and provides greatly improved fuel economy, smoother running and a reduction in hydrocarbon and carbon monoxide emissions that exceed government proposals for the year 2006.

10 Following manufacturer's recommended service guidelines could help to identify malfunctioning parts before they cause noticeable or serious damage to the engine or the engine's performance, reducing service costs and lowering excessive uncontrolled emissions to the environment.



11 Preventative maintenance schedules should be encouraged and maintained on a regular basis in order to increase system fuel economy, provide better overall performance, increase engine life and to maintain value of the boat.



12 The US Environmental Protection Agency (EPA) is working to develop and implement emission standards for commercial and recreational marine engines. The marine industry has been working to develop technology for a new generation of low emission, high performance engines. Tampering or over-riding emission systems will not only increase harmful emissions, but will reduce overall performance, fuel economy and system life.



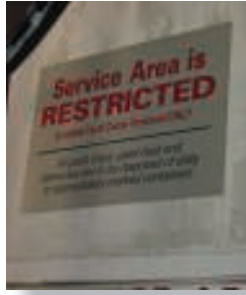
13 Wash engine parts over catch pans or containment/recycling systems to prevent discharge to ground and surface waters.



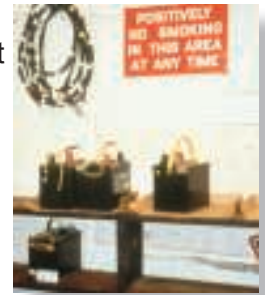
14 Perform major engine repairs indoors or under cover whenever possible.



15 Provide designated shoreside work areas for engine repairs and maintenance and prohibit work outside of those designated areas.



19 Store used batteries with all caps intact, out of the weather in a nonleaking secondary container.



16 Promptly transfer used engine fluids to the proper labeled container; do not leave full drip pans or other open containers around the shop.



20 Wastewater from pressure cleaning or steam cleaning should not be discharged to surface waters. Designate shoreside engine-pressure or steam cleaning areas where wash waters can be contained and collected for treatment or recycling. Such areas should have sloping impermeable surfaces, such as sealed asphalt or concrete, which allow wastewater from these activities to be recycled for reuse or treatment. The use of detergents or solvents as additives for pressure or steam cleaning should be discouraged. Wash or rinse waters should be either:



17 Used engine fluids should be segregated to prevent cross-contamination of waste streams, (i.e. used engine fluids should not be mixed together). Segregating waste streams will allow for the separate recycling of engine oil, transmission fluid, hydraulic oil, gear oil and engine coolants.



18 Recycle, or properly dispose of greasy rags, oil filters, air filters, batteries, spent coolant and degreasers.



- a) collected for recycling and reuse (see Appendix for wash water recycling systems, page 116) or;
- b) collect it for discharge to a wastewater treatment facility (contact the local wastewater treatment facility for permission to discharge the wastewater to the sanitary sewer and for further guidelines. If a wastewater treatment facility is not available or refuses to give permission, install a recycling system.)

21 If your facility's engine maintenance and repair operations generate a lot of used oils and coolants, consider investing in an on-site recycling system which cleans, filters and reconditions used fluids for reuse. If not, look into an off-site recycling service.



23 If your facility does a lot of oil changes, consider purchasing an oil filter crusher (cost = \$1,500 to \$5,000 depending on make and model) so that residual oil can be easily recovered for recycling. The added benefit is that a lot more filters can fit into a disposal drum, enabling the disposal of nearly 1.5 times as many crushed filters per drum.



22 Oil or diesel fuel filters should be drained by placing the filter in a funnel over the appropriate waste collection container to allow the excess petroleum product to drain into the container. Drained filters must be collected in a labeled container and recycled.



24 Plug floor drains that are connected to the storm or sanitary sewer, install a sump that is pumped regularly, if necessary.



REGULATORY REQUIREMENTS:

1. Used oil must be managed in such a way as to avoid discharges to water and soil (see Used Oil Management BMP, page 23). (Chapter 62-710, Florida Administrative Code).
2. Oil changes and hydraulic repairs must be performed in a manner that prevents discharges. (Section 403.751, Florida Statutes).
3. Hazardous wastes must be managed and disposed of properly (see Hazardous Waste Management BMP, page 43). (Chapter 62-730, Florida Administrative Code, Title 40 Code of Federal Regulations Parts 260-268)
4. Properly labeled separate or individual containers must be provided for used oil, used oil filters, and hazardous waste. (Chapter 62-710, Florida Administrative Code and Title 40 Code of Federal Regulations Part 262).
5. It is prohibited to pour liquid waste down floor drains, sinks or outdoor storm drain inlets (Section 403.727, Florida Statutes).



SOILED RAGS

PROBLEM:

Rags soaked with ignitable solvents pose a fire hazard when improperly stored and can be considered hazardous waste.

GOAL:

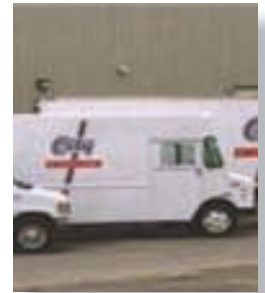
Correctly store and launder rags soaked with ignitable solvents or used oil.

IDEAS FOR YOUR FACILITY TO USE:

1 Store ignitable rags in fire safe, labeled containers until they can be laundered or properly disposed.



3 Contract with a permitted industrial laundry service that will pick up soiled rags and deliver clean rags on a regular basis.



2 Provide cloth rags which can be recycled by an industrial laundry service.



Rags soiled with used oil are subject to State rules for management and disposal of oily wastes. Rags soiled with hazardous waste solvents are subject to hazardous waste regulations if they are not recycled by an industrial laundry service. If a facility decides to launder its own contaminated rags, it should seek permission to discharge the washwater to the local sewage treatment works if it is connected. If it is not connected to a sewage treatment works, on-site rag laundering should not be considered. Some facilities that have laundered their own rags have inadvertently contaminated their septic tank systems and groundwater with solvents.

REGULATORY REQUIREMENTS:

1. Rags soiled with used oil are subject to State Rules for management and disposal of oily wastes (Chapter 62-710.400, Florida Administrative Code).
2. A hazardous waste determination can be made using product and process knowledge or through waste analyses. Supporting documentation is required. Pretreatment requirements for existing and new sources of pollution (Chapter 62-625, Florida Administrative Code).

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DISTRESS SIGNAL FLARE MANAGEMENT

PROBLEM:

Commercial and recreational boaters generate distress signal flares that are damaged, water logged or have outlived their shelf life. The distress signal flares generated by recreational boaters are considered household hazardous waste. Household hazardous waste, though exempt from many hazardous waste regulations, must be handled with care and be disposed of properly. The flares are highly reactive and require proper thermal treatment to render them non-hazardous. If waste flares are improperly placed in the marina dumpster for disposal, the marina may be liable for damages and injuries that might occur due to fire or explosion.

GOAL:

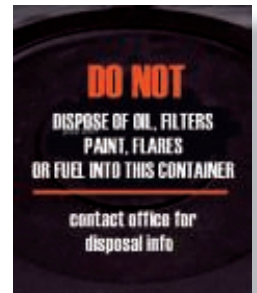
Provide a mechanism for properly managing and disposing of waste safety flares.

IDEAS FOR YOUR FACILITY TO USE:

1 For safe destruction of damaged or out-of-date flares, make arrangements with the local sheriff or fire department for thermal treatment of waste flares generated by boaters at your marina or boatyard.



4 Post signs near solid waste receptacles prohibiting the disposal of waste flares.



2 After notifying the US Coast Guard, use out-of-date flares for boater safety demonstrations.



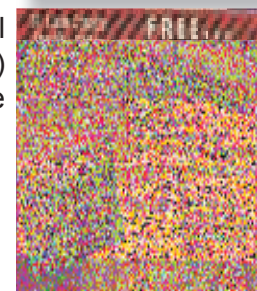
5 If your local or county government already provides a disposal service for waste flares, provide this information to the boaters in your marine facility.



3 Provide a well marked fire safe container for waste flares.



6 Organize (or ask local authorities to organize) a local amnesty day for waste flare disposal.



REGULATORY REQUIREMENTS:

1. Hazardous waste generated by commercial boaters must be managed and disposed of in accordance with the hazardous waste regulations in 40 Code of Federal Regulations 260-268.
2. An “Emergency Thermal Treatment” permit from DEP is required for sheriff or fire department personnel who dispose of waste safety flares (Chapter 62-730.320, Florida Administrative Code). Only a local law enforcement bomb squad experienced in the handling and disposal of explosives may conduct the thermal treatment.



BATTERY MANAGEMENT

LEAD ACID AND MARINE GEL/AUTO AND RECHARGEABLE

PROBLEM:

Lead acid and marine gel batteries are used in auto, truck and boating applications for powering starter motors, other electric motors, lights and accessories. Lead acid batteries contain a wet electrolyte sulfuric acid solution. This acid solution can spill if the cell caps are removed or missing, the battery is not properly anchored down or if the battery case cracks. The acid can damage metal, ropes (lines), personal flotation gear, clothing, eyes and skin. These batteries also contain several pounds of lead, which along with the acid electrolyte, is detrimental to human health and the environment if improperly disposed. Gel cells are similar (same electrolyte sulfuric acid) except they contain a minimum amount of “starved” electrolyte absorbed in the separator or in a gel.

Smaller dry cell nickel-cadmium and sealed lead acid rechargeable batteries are becoming more and more prevalent as power sources, as opposed to single-use alkaline batteries, in portable electronics such as hand held camcorders, navigational instruments, cellular phones, laptop computers and portable power tools. The use of rechargeable batteries is encouraged instead of single-use batteries because it results in less battery waste. However, both nickel-cadmium and small sealed lead acid batteries contain toxic heavy metals that can have negative impacts on human health and the environment. Once in the environment these heavy metals can accumulate in food crops and edible fish as well as appear in drinking water and in the air we breathe.

GOAL:

Educate the boating public and provide for designated secure areas where rechargeable, lead acid or gel batteries that are no longer usable can be stored for recycling. GelCels and lead acid batteries are hazardous waste unless they are recycled, then they are exempt from RCRA regulations.

IDEAS FOR YOUR FACILITY TO USE:

1 Post signs around the facility to alert the public to the disposal ban on lead acid and rechargeable batteries. Include the 1-800-8-BATTERY phone number for nickel-cadmium battery recycling information. Ready made signs and fliers for these batteries may be available from the Rechargeable Battery Recycling Corporation (RBRC). Call 352-376-6693 or check the RBRC website at www.rbrc.org for information. Include the DEP information line phone number of 1-800-741-4DEP and DEP website at www.dep.state.fl.us for help in recycling batteries or other materials.



2 Provide well marked containers where the public can place unusable rechargeable nickel cadmium and small sealed lead acid batteries. Mark the containers “For Rechargeable Battery Recycling Only” and keep the containers closed. If located indoors, these containers could be sturdy cardboard, plastic or fiberglass. If located outdoors, they should be plastic, fiberglass or some other material which does not conduct electricity or absorb water with a lid or cover and protected from the rain. Do not use metal containers.



3 Provide a well marked secure area where lead acid batteries can be brought for recycling. The batteries should be stored on an impervious surface such as concrete, fiberglass or plastic, with sides to contain spilled electrolyte and under cover from rain with all cell caps in place. Lead batteries should not be stored in a manner that exposes them to the elements. Prolonged direct sunlight can weaken the battery casing and lead to an acid release.



5 Participate in the national nickel-cadmium rechargeable battery take-back program offered through the Rechargeable Battery Recycling Corp (RBRC). Call 352-376-6693 for information or check the RBRC website at www.rbrc.org.



4 Periodically place flyers in customer's bills or other correspondence reminding them of the battery disposal ban.



Educational materials, signs, etc. should explicitly target rechargeable batteries in order to minimize the number of single use batteries, e.g., flashlight, radio, etc., which people may put in collection containers. Single use batteries can be discarded into regular trash containers.

NOTE

Emphasize to boaters that batteries and other wastes should not be thrown overboard as this is a direct route to pollution of the waters they enjoy and the fish they catch and eat.

Large wet cell lead acid batteries can usually be picked up and recycled at no charge due to the value of the lead. Usually, the same companies which accept the wet cell lead acid batteries also will accept the small sealed lead acid batteries.

REGULATORY REQUIREMENTS:

It is unlawful for anyone to dispose of lead acid, either the wet cell or small sealed cell and nickel-cadmium rechargeable batteries in the solid waste stream either sanitary landfilling or municipal waste incineration (Sections 403.708(14) and 403.7192, Florida Statutes) or in the waters of the State (Section 403.161, Florida Statutes). Used lead acid batteries are regulated as hazardous waste if these are not carefully managed and recycled.



MERCURY-CONTAINING DEVICES: BILGE PUMP FLOAT SWITCHES AND AC THERMOSTATS

PROBLEM:

Many of the float switches that turn the bilge pumps and shower water storage tank pumps on and off contain as much mercury as about 100 fluorescent lamps. Most air conditioning/heating thermostats do also. Most boats have one or more of these mercury-containing devices. Bilge pump float switches wear out (yearly or sometimes more often) due to the corrosion of wires in marine bilgewater. Some boat owners may not know that these switches, which are encased in white or colored plastic, contain mercury and unknowingly discard these switches as regular trash. Thermostats wear out much less frequently but boat owners and repairers may not be aware that they also contain mercury. Florida law prohibits the disposal of these mercury-containing devices in the regular trash or overboard.

Mercury poisoning affects the central nervous system of vertebrates, including humans. Mercury in the environment moves up the food chain and bio-accumulates in carnivores, including humans. Mercury in the environment has been documented in fresh water and estuarine fish species that have led to health advisories warning Floridians not to consume certain fish under certain circumstances.

GOAL:

Educate the boating public about the disposal bans and places where mercury bilge pump float switches and AC thermostats can be taken for recycling, e.g., county household hazardous waste programs or industry sponsored take back programs. Provide for designated secure areas where mercury bilge pump float switches that are no longer usable can be stored for recycling.

IDEAS FOR YOUR BOATYARD TO USE:

1 Provide water-tight containers in secure areas where the public can place unusable mercury bilge pump float switches and a/c thermostat. Mark the containers "For Mercury Bilge Pump Float Switch and AC Thermostat Recycling" only and keep the containers closed and under cover. Indoor locations, which can be monitored by staff, are best. Make sure switches and thermostats that are broken and leaking mercury are put into a heavy, sealable plastic bag before being deposited into the container. [Note: This will involve some, possibly considerable, expense for the marina operator. Recycling can cost from \$2.50 to \$8.00 per switch or thermostat.



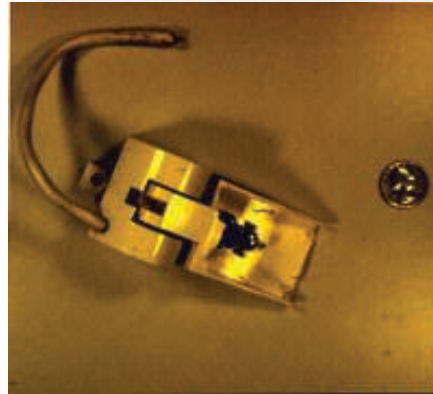
2 Post signs around the facility to alert the public to the disposal ban on mercury bilge pump float switches and AC thermostats and provide any local or toll free phone numbers to access recycling programs such as local household hazardous waste programs and industry sponsored take-back programs. Include the DEP information line phone number of 1-800-741-4DEP and DEP web site at "www.dep.state.fl.us" for help in recycling mercury bilge pump float switches and AC thermostats (or other mercury containing materials).



3 Periodically place flyers in customers bills or other correspondence reminding them of the disposal ban on mercury bilge pump float switches and AC thermostats, providing any local or toll free phone numbers to access recycling programs such as local household hazardous waste industry sponsored take-back programs and encouraging the use of non-mercury bilge pump float switches. Include the DEP information line phone number of 1-800-741-4DEP and DEP web site at “www.dep.state.fl.us (search for mercury)” for help in recycling mercury bilge pump float switches, AC thermostats or other materials.

DISPOSAL BAN ON MERCURY BILGE PUMPS

There is a disposal ban on mercury bilge pump float switches and AC thermostats. For help in recycling mercury bilge pump float switches, AC thermostats see the boatyard manager. 1-800-741-4DEP or visit DEP's web site at www.dep.state.fl.us - search for "mercury"



Boat bilge pump float switch - side view and top view with some of the plastic switch housing removed to show the glass ampoule containing about 1 gram (a drop about the size of a pencil eraser) of mercury.

Emphasize to boaters that mercury bilge pump float switches, AC thermostats and other wastes should not be thrown overboard as this is a direct route to pollution of the waters they enjoy and the fish they catch and eat.

Since differentiating between mercury and non-mercury bilge pump float switches or bilge pumps with a built-in switch can be difficult, some care should be taken to develop simple to follow instructions, e.g., pictures, for boaters and repairers. Or collect all float switches and bilge pumps. Have knowledgeable staff sort before sending these items for recycling.

REGULATORY REQUIREMENTS

It is unlawful for anyone (individual, commercial, industrial and government businesses) to dispose of mercury bilge pump float switches and AC thermostats in the solid waste stream (either sanitary landfilling or municipal waste incineration) (Section 403.7186, Florida Statutes) or in the waters of the State (Section 403.161, Florida Statutes).



MERCURY CONTAINING LAMPS: FLUORESCENT AND HIGH INTENSITY DISCHARGE (HID)

PROBLEM:

Fluorescent lamps are used in a wide variety of lighting applications in boatyards and boats. High Intensity Discharge (HID) lamps are used in many outdoor lighting applications like parking lots and street lighting and some indoor locations such as high ceiling work areas or boat storage areas.

Compared to incandescent lighting, fluorescent and HID lighting uses less energy and produces less heat. However, fluorescent and many HID lamps contain mercury. This mercury can contaminate our air, surface and ground water. Mercury contamination in Florida is evident in fish consumption advisories issued by the Department of Health due to high levels in certain fish

GOAL:

Recycle all discarded fluorescent and HID lamps used in boatyard business applications following all appropriate regulations. Educate the boating public about the disposal bans and places where mercury-containing lamps can be taken for recycling, e.g., county household hazardous waste programs.

IDEAS FOR YOUR BOATYARD TO USE:

1 Post signs around the facility to alert the public to the incineration ban on mercury-containing lamps. Provide local or toll free phone numbers to access recycling programs. Include the DEP information line phone number of 1-800-741-4DEP and DEP web site at "www.dep.state.fl.us" for help in recycling mercury-containing lamps or other materials.

DISPOSAL BAN ON MERCURY CONTAINING LAMPS (MCL)

MCLs are prohibited from being disposed of at solid waste incineration facilities.

CALL [LOCAL PROGRAM
PHONE NUMBER HERE]
OR 1-800-741-4DEP

visit DEP's web site at
www.dep.state.fl.us -
search for "mercury"

2 Periodically place flyers in customers bills or other correspondence reminding them of the incineration ban on mercury-containing lamps, instructing customers how to identify the various types of fluorescent and HID lamps and providing any local or toll free phone numbers to access recycling programs.



Emphasize to boaters that mercury-containing lamps and other wastes should not be thrown overboard as this is a direct route to pollution of the waters they enjoy and the fish they catch and eat.

Fluorescent lamps are fragile and easily broken. Use sturdy containers, which do not tip over easily and train employees who will handle the discarded lamps. When a fluorescent lamp breaks, mercury is released. If lamps are stored in a hot, poorly ventilated area and broken lamps are not promptly cleaned up, OSHA exposure levels for mercury may easily be exceeded.

Lighting ballasts used with fluorescent lamps are often changed during lighting relamping or maintenance. Ballasts manufactured prior to 1979 usually contained polychlorinated biphenyls (PCBs) and cannot be disposed in Florida. Recycling of these and all lighting ballasts is recommended.

3 Train employees to handle bulbs without breaking and place mercury containing lamps in appropriately labeled containers for proper recycling or disposal.



4 Contract with licensed (See page 106) contractors to handle recycling of lamps.



REGULATORY REQUIREMENTS:

1. It is unlawful to incinerate mercury-containing lamps in any quantity (excluding those from households). In addition, businesses which discard more than 10 such lamps per month must either recycle the lamps or send them to a hazardous waste landfill for disposal (Section 403.7186, Florida Statutes). It is also unlawful to dispose of these lamps in the waters of the State (Section 403.161, Florida Statutes).
2. Recycle all discarded fluorescent and HID lamps used in boatyard business applications following Chapter 62-737, Florida Administrative Code. Major requirements are listed below:
 - Do not place used lamps used in boatyard business applications in the regular trash.
 - Store lamps in an area and in a manner that will prevent them from breaking. Do not over fill the shipping container. Do not tape lamps together for storage or shipment.
 - Label the lamp storage area and each container as "Spent Mercury-Containing Lamps for Recycling."
 - Do not intentionally break or crush lamps because mercury may be released.
 - If lamps are accidentally broken, immediately store them in a tightly sealed container. It is recommended that you mark the container as "Spent Broken Mercury-Containing Lamps For Recycling."
 - Clearly and visibly label each container and the storage area with the starting date of accumulation when the lamps were first placed in the container and storage area.
 - If on-site storage is not feasible, lamps may be transported to a central accumulation point at one of your own facilities, to a registered or permitted storage facility or directly to a recycling facility.
 - Your business may transport its own lamps or hire a transporter complying with the Department's regulations.
 - Keep copies of any shipping papers for at least 3 years.



USED ANTIFREEZE MANAGEMENT

ETHYLENE GLYCOL

PROBLEM:

Antifreeze (ethylene glycol) is toxic to animals, humans and aquatic life. When antifreeze is improperly discarded onto the ground or allowed to flow into storm drains or off paved areas into the ground it eventually finds its way into our waterways. A small quantity of antifreeze poured onto the ground can contaminate a large volume of groundwater, which could lead to expensive clean-up costs and degradation of water supplies to other users. Pets, such as dogs, have been poisoned from drinking water contaminated with antifreeze. Used antifreeze typically also contains high concentrations of lead (from the solder used in radiators), which also can poison our water supplies.

GOAL:

Provide a convenient mechanism for collecting, managing and recycling or disposing of used antifreeze.

IDEAS FOR YOUR BOATYARD TO USE:

1 Use dedicated antifreeze collection equipment. This would include collection funnels, transfer pans or buckets and storage containers (drums or tanks). Transfer used antifreeze immediately to a dedicated storage container compatible with the antifreeze stored in them. Containers must be in good condition and kept closed at all times except when emptying or filling. Label used antifreeze collection equipment and containers with the words "Used Antifreeze".



2 Antifreeze containers must be protected from the elements and located in a secured area. Inspect containers at least weekly to check for signs of leaks or deterioration caused by corrosion or other factors. Replace leaking containers immediately.



If used antifreeze is recycled on site by the marina or boatyard, a hazardous waste determination must be made on the waste antifreeze filters generated from the recycling process equipment. 40 CFR Section 262.11.

3 Post signs for marina/boatyard staff and boat owners advising of the prohibition on disposal of used antifreeze and giving directions for the proper collection and management of the used antifreeze.

USED ANTIFREEZE
Collect separately in tightly sealed labelled drum or tank.
DO NOT add to used oil tank or pour into drains.
Recycle on site or off site at an approved service.

5 Use, where possible, environmentally friendly anti-freeze. Determine if this product must still be recycled or hazardous waste determination.



4 Never mix used antifreeze with any other chemicals or substances, rendering it unacceptable for recycling. Keep stored antifreeze free from cross-contamination by oil, fuels and degreasers by providing a separate, well-labeled container.



6 See vendor list for Antifreeze Recyclers on Page 131. Also see list for recycling equipment on page 132.

USED ANTIFREEZE RECYCLERS PAGE 131
ANTIFREEZE RECYCLING EQUIPMENT PAGE 132

REGULATORY REQUIREMENTS:

Antifreeze may become contaminated with heavy metals (such as lead) and organics (such as benzene, trichloroethelene or tetrachloroethlene) at levels that would render the used antifreeze a hazardous waste. If the antifreeze is not recycled, a hazardous waste determination must be made by the generator (marina or boatyard operator). 40 Code of Federal Regulations Section 262.11 and Chapter 62-730, F.A.C. If the waste antifreeze is determined to be hazardous waste, it must be managed and disposed of in accordance with 40 Code of Federal Regulations 260-268.



TOXIC PAINT CHIPS

PROBLEM:

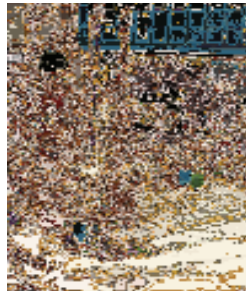
Paint chips may contain hazardous material.

GOAL:

The boatyard operator must determine whether or not the paint chips generated are hazardous waste. If the paint chips are hazardous waste the operator must comply with applicable hazardous waste regulations. If the paint chips are not hazardous waste they must be sent for disposal in a lined landfill at the discretion of the landfill operator. Paint chips may not be disposed of into the soil or surface waters. Hazardous waste paint chips may not be placed in the dumpster for disposal. Hazardous waste paint chips must be properly containerized and sent to a permitted transfer/storage/disposal facility for disposal.

IDEAS FOR YOUR BOATYARD TO USE:

1 If the generator does not know the formulation of the paint being stripped, the paint chips must be containerized until a waste determination is made. If the boatyard is a conditionally exempt small quantity generator of hazardous waste (generates less than 220 pounds/month), 2,200 pounds (about five 55-gallon drums) of paint chips can be accumulated before a representative sample is collected and sent to a certified lab for TCLP analysis. If the boatyard is a small quantity generator of hazardous waste (220-2,200 pounds/month), the waste determination must be made within 6 months of generation since hazardous waste can not be accumulated for more than 6 months.



REGULATORY REQUIREMENTS:

1. The boatyard operator must determine which waste streams are hazardous waste using process knowledge, product knowledge, or testing. Title 40 Code of Federal Regulations Part 262.11
2. Paint chips and sanding dust must be collected for disposal at a permitted landfill. On site solid waste disposal of paint chips and sanding dust on land or water is prohibited, Section 403.708, Florida Statutes.

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REFRIGERANTS

PROBLEM:

Improper handling of refrigerants can result in harm to the atmosphere and humans.

GOAL:

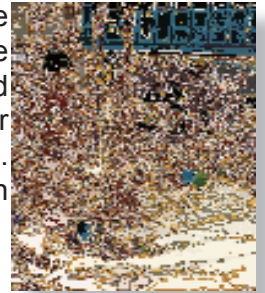
Handle material containing refrigerants carefully and in accordance with applicable regulatory requirements.

IDEAS FOR YOUR BOATYARD TO USE:

1 Purchase and use approved refrigerant recycling equipment to recover refrigerants from vessel and boatyard refrigeration systems. Ensure appliance contractors who do business at the boatyard use recovery equipment.



2 A hazardous waste determination can be made using product and process knowledge or through waste analyses. Supporting documentation is required.



REGULATORY REQUIREMENTS:

1. Recovering refrigerants from boatyard and vessel refrigeration systems must be done by certified air conditioning refrigerant technicians using approved refrigerant recycling equipment. Pertinent Air Regulations related to Refrigerants are covered in Chapter 62-281, Florida Administrative Code.
2. Pretreatment requirements for existing and new sources of pollution (Chapter 62-625, Florida Administrative Code).

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FISH WASTE MANAGEMENT

PROBLEM:

The amount of fish waste disposed into a small enclosed basin such as a marina can exceed that which exists naturally in the water at any one time. In small quantities, this fish waste is fed upon by scavenging fish (such as catfish) and is not a problem. However, in sufficient quantities where water circulation is restricted, the decomposition of this fish waste can deplete the water of dissolved oxygen, leading to water quality degradation and fish kills. This is most often a problem at marinas with large numbers of fish landings or at marinas that have limited fish landings but poor flushing. "Fish feeding" with bait or cleaned fish similarly loads marina basins with nutrients, but can also disrupt the feeding behavior of wild animals and spread diseases among them. Releasing of fish waste in the marina also may attract unwanted predators such as alligators.

GOAL:

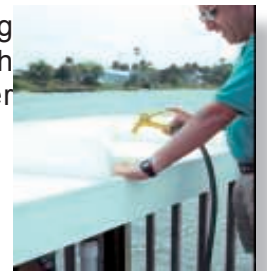
Promote sound fish waste management through a combination of fish-cleaning restrictions, public education and proper disposal of fish waste.

IDEAS FOR YOUR MARINA TO USE:

1 Educate boaters regarding the importance of proper fish cleaning practices. Provide signage at fish cleaning stations. Encourage boaters to dispose of unwanted bait offshore and to eviscerate (gut) fish and dispose of contents at sea.



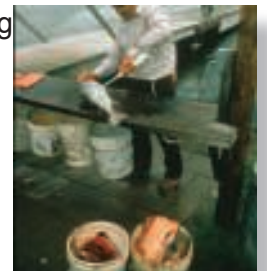
4 Establish fish cleaning stations with trash receptacles and waste water hookups.



2 Use a macerator for fish waste disposal to the central sewer or arrange for crabbers to take the carcasses.



5 Implement fish composting where appropriate.



3 Use fish waste as chum bait in open waters away from the facility.



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BOATYARD STORMWATER MANAGEMENT FOR INDUSTRIAL ACTIVITIES

PROBLEM:

Many existing boatyards were constructed prior to implementation of stormwater management rules. As a result, many of these facilities discharge untreated stormwater directly to surface waters. Normal activities occurring at boatyard work areas (hull scraping, sanding, pressure washing, etc.) are sources of pollution, which may be flushed into surface waters during rainfall. These discharges continually degrade water quality and contribute to violations of standards for turbidity, oils and grease, nutrients, metals and dissolved oxygen. The highest concentration of these surface pollutants occurs in the runoff associated with the first one inch of rainfall, normally called the “first flush” effect.

GOAL:

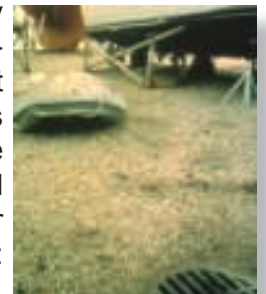
Reduce the discharge of pollutants in stormwater runoff.

IDEAS FOR YOUR BOATYARD TO USE:

1 Create separate stormwater treatment areas where boat hull cleaning, washdowns and motor repairs are performed. This will help to segregate this industrial stormwater from the runoff from other parts of the boatyard.



3 Where possible, modify your existing stormwater system to treat the “first flush” runoff from all impervious surfaces and reduce the discharge of untreated stormwater. Stormwater treatment practices include: sand filters, wet ponds, vegetated filter strips, grassed swales, porous pavement, oil-grit separators, holding tanks, swirl concentrators, catch basins, chemical and filtration treatment systems and absorbents in drain inlets.



2 Develop and implement a stormwater pollution prevention plan as outlined on page 83. This plan will help identify potential sources of pollutants that can get into stormwater, identify the areas where stormwater is generated and show where the stormwater flows.



4 Check to ensure that all stormwater and sanitary sewer systems are separate. If your stormwater system has water draining during dry weather, perhaps a sewer pipe or other non-stormwater discharge is going into the stormwater conveyances.



5 Inspect your stormwater system regularly, especially after large storms, to assure that it is still working properly. Remove debris and other materials that have accumulated, especially on discharge structures.



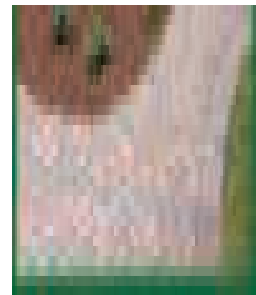
7 Prevent liquid wastes from entering floor drains, sinks or outdoor storm drains.



6 Plug floor drains that are connected to the storm or sanitary sewer, install a sump that is pumped regularly, if necessary.



8 The use of brick pavers in areas where concrete is normally used, or replacing broken concrete, can dramatically reduce the amount of water runoff to the retention ponds. It does not cause the water to runoff somewhere else. The foundations layers must be compacted properly for the pavers to work properly.



9 Keep updated by visiting DEP's website which is developing Total Maximum Daily Loads (TMDLs) for impaired water bodies.



REGULATORY REQUIREMENTS:

1. An environmental resource permit (or stormwater discharge permit in the northwest district) may be required from your DEP district, local agency, or water management district as applicable if a new stormwater system is to be constructed or if an existing system will be modified. A permit may also be required if new site work is proposed at the facility. (Part IV, Chapter 373, Florida Statutes.)
2. Boatyards and other facilities that conduct outdoor boat cleaning or repair operations that discharge to surface waters of the State or into a separate storm sewer system (MS4) must obtain coverage under the NPDES Stormwater Discharge Associated with Industrial Activity (MSGP) or an individual stormwater permit. Coverage under the MSGP requires the implementation of a stormwater pollution prevention plan (SWPPP). (See Page 34 or visit the NPDES Stormwater web site at: <http://www.dep.state.fl.us/water/stormwater/npdes/index.htm> for additional information.)
3. The Clean Water Act and the Florida Watershed Restoration Act requires the development of Total Maximum Daily Loads (TMDLs) for pollutants entering impaired water bodies. The DEP is developing TMDLs for these water bodies on a five-year cycle (see web page <http://www.dep.state.fl.us/water/division/tmdl/pdf/jan.pdf>). Boatyards located on impaired water bodies may be impacted by this process.



ELEMENTS OF A STORMWATER POLLUTION PREVENTION PLAN:

Please note that specific requirements for stormwater plans are contained in the Multi-Sector Generic Permit for stormwater discharge associated with industrial activity (MSGP). What follows are some of the typical elements found in a stormwater plan.

POLLUTION PREVENTION TEAM

Each boatyard needs to select a Pollution Prevention Team from its staff. The Team is responsible for developing and implementing the stormwater pollution prevention plan.

COMPONENTS OF THE PLAN

A description of potential pollutant sources and a description of the BMPs to prevent or minimize pollution of stormwater. The description of the potential pollutant sources typically includes:

- A map of the boatyard indicating areas which drain to each stormwater discharge point
- A description of the industrial activities (i.e., engine maintenance, boat repair or cleaning) which occur in each drainage area.
- A description of the likely sources of pollutants from the site.
- An inventory of the materials which may be exposed to stormwater.
- The history of spills or leaks of toxic or hazardous materials for the last 3 years.

The BMPs to prevent or minimize pollution of stormwater usually include:

- Good housekeeping or upkeep of industrial areas and material storage areas that are exposed to rain and stormwater.
- Preventive maintenance of stormwater controls and other boatyard equipment.
- Spill prevention and response procedures to minimize the potential for and the impact of any spills.
- Visual inspection of all stormwater outfalls during dry periods to insure there are no cross connections (only stormwater is discharged).
- Training employees on pollution prevention measures and controls and record keeping.

The Plan also typically:

- Identifies areas with a high potential for erosion and the BMPs to be used to limit erosion in those areas.
- Implements structural stormwater BMPs (i.e., retention, detention, filters, etc.) where they are appropriate for the site.

Inspection/Site Compliance Evaluation - Boatyard staff need to inspect the boatyard equipment and in industrial areas on a regular basis. At least once every year a more thorough site compliance evaluation should be performed by boatyard staff.

- Look for evidence of pollutants entering the stormwater system.
- Evaluate the performance of pollution prevention efforts.
- Identify areas where the Stormwater Pollution Prevention Plan should be revised to reduce the discharge of pollutants.
- Document both the routine inspections and the annual site compliance

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LANDSCAPING MANAGEMENT

PROBLEM:

Traditional landscaping design uses plants that typically need maintenance such as frequent watering, fertilizers and pesticides. These materials can get into stormwater or leach through the soil and get into groundwaters.

GOAL:

Use environmentally friendly landscaping techniques (such as xeriscaping) which feature native plants and turf suited to the climate and conditions at your site. These plants need less maintenance thereby reducing potential stormwater pollutants and saving you money.

IDEAS FOR YOUR MARINA TO USE:

1 Contact the Cooperative Extension service in your county and ask about the Florida Yards and Neighborhood or Environmental Land Management programs. Many of these ideas are transferable to marina sites.

Animal Clinic 201 S Morse	484-6171
Landfill Dept Director 1000 Thomasville Rd	484-6580
Art Room 201 S Morse	484-6065
Navigo Clearing 201 S Morse	484-2088
Nuclear Department 201 S Morse	484-7327
Mississippi Pavilion 201 S Morse	484-7488
Public Safety 201 S Morse	484-6473
Public Records 201 S Morse	484-7967
Recreation-Hervey 201 S Morse	484-7281
Recording & Planning/Communications 201 S Morse	484-7128
Small Claims Division 1427 Thomasville Rd	484-6923
Traffic Division 1021 Thomasville Rd	484-6771
Community Development 110 Railroad Ave	484-7188
Cooperative Extension Service	
Agriculture 615 Paul Russell Rd	487-3003
Family/Consumer Sciences 615 Paul Russell Rd	487-3004
4-H 615 Paul Russell Rd	487-3005

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Agriculture 615 Paul Russell Rd	487-3003
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4-H 615 Paul Russell Rd	487-3005

3 Refer to a plant reference guide to choose the correct plants for your location. Observe what grows well on vacant land around your site. These plants are particularly well adapted and have low maintenance needs. They may be good choices for your landscape unless they are exotic invasive species.



2 Contact the Cooperative Extension service in your county via the internet.

www.

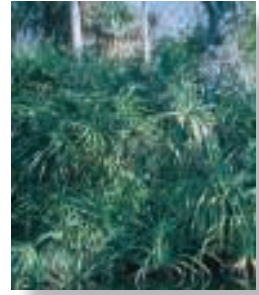
4 Some exotic plants such as Brazilian pepper, Australian pine and melaleuca to name a few are illegal to plant in Florida and should be removed from your property. Other undesirable species include the carrotwood tree, Java plum, Chinese tallow and wedelia (a ground cover). For a complete list contact the Exotic Pest Plant Council.



5 Select slower growing species. These may take longer to provide the desired look for your property but will need less pruning, create less yard waste and have a longer lifespan than faster growing plants.



9 Consider using ground cover and landscaped beds of native plants instead of turf, where appropriate. These require less water, fertilizer, pesticides and maintenance. However, in high traffic areas, turf is often appropriate.



6 Limit the number of showy plants which require more water and attention and place them where they will have the most visual impact.



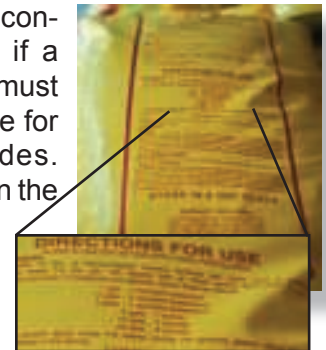
10 If chemical fertilizers are needed, use a slow release variety in which at least 30% of the nitrogen is water insoluble. DO NOT use varieties containing herbicides or insecticides.



7 Aim for diversity using a variety of trees, shrubs, ground cover, native grasses and wildflowers, where possible. These are less prone to disease and infestation than monocultures and provide greater wildlife value.



11 A common misconception is that if a little is good then more must be better. This is not true for fertilizers and pesticides. Follow the instructions on the product label.



8 Select drought resistant (xeriscape) plants to minimize irrigation needs.



12 Pesticide dusts and sprays are highly susceptible to wind drift. If they must be used, only apply during early morning or late evening hours when there is little or no air movement.



13 DO NOT wash pesticide application equipment over paved surfaces which drain to waterbodies. Use pressure washing pad or other suitable permeable surface. Follow the instructions found on labels for disposal.



14 If you employ a professional landscape maintenance service, make sure they use environmentally friendly methods.



15 Integrated Pest Management (IPM) is an environmentally friendly alternative to the use of conventional pesticide products. Examples of safer solutions for landscape pests include insecticidal soap (2 1/2



tbsp. of dish soap per gallon of water); horticultural oil (add 2 1/2 tsp. of vegetable oil to the insecticidal soap); Bacillus Thuringiensis (BT) a bacterium which controls caterpillars (available at nurseries); coffee grounds and tea bags prevent mosquito larvae from hatching; shallow pans of beer help control slugs. Try using these least toxic alternatives before taking more drastic measures.

16 Create a compost area for yard debris. This material is a good alternative to chemical fertilizers and its free. Composting also eliminates the need to haul off yard waste.



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SEWAGE PUMPOUTS AND WASTE DUMP RECEPTACLES

PROBLEM:

Overboard discharges of domestic sewage from marine heads or holding tanks contribute significantly to water quality degradation and introduce dangerous pathogens into the water. Poorly maintained pumpouts and waste dump receptacles limit their use and discourage the proper disposal of sanitary wastes.

GOAL:

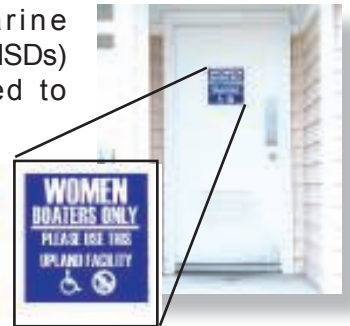
Encourage the proper use of pumpout facilities and waste dump receptacles by boaters, particularly liveaboards and overnighters. Ensure that sewage pumpout facilities and waste dump receptacles are maintained in good operational and sanitary condition to encourage their use.

IDEAS FOR YOUR MARINA TO USE:

1 Install Pumpout connections at convenient locations or at each slip and provide clear instructions for operating them. This is especially important where there are liveaboards. (Instruction should include warning against the disposal of toxic materials.)



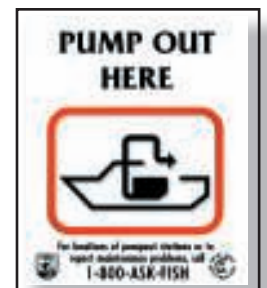
3 Boats with Marine Sanitation Device (MSDs) should be encouraged to use shoreside facilities.



2 For small boats with port-a-potties, install waste dump receptacles at boat ramps and clearly label them with instructions for their use. (Instruction should include warning against the disposal of toxic materials.)



4 For all marinas with pumpout facilities, literature advertising the marina should indicate pumpouts are available.



5 Develop regular inspection schedules.



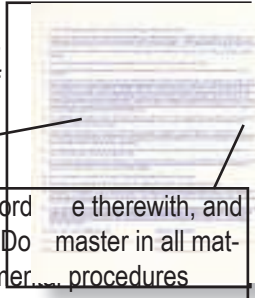
9 Provide convenient pumpout services free of charge or for a nominal fee in order to encourage use. Services may include portable or stationary units, or pumpout boats. (Make the charge part of dock fee, if necessary, to recover cost.) Direct connections to all slips capable of mooring boats with heads (particularly liveaboards) is preferred.



6 Have personnel on hand to monitor and ensure the proper use of the equipment.



10 Add language to slip leasing agreements promoting the use of pumpout facilities.



7 Arrange maintenance contracts with contractors competent in the repair and servicing of pumpout and waste dump receptacle equipment.



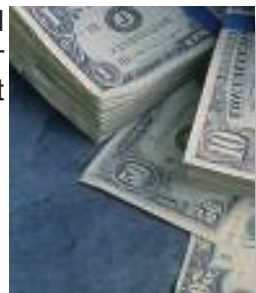
11 Provide signage for proper disposal of marina patron's animal waste.

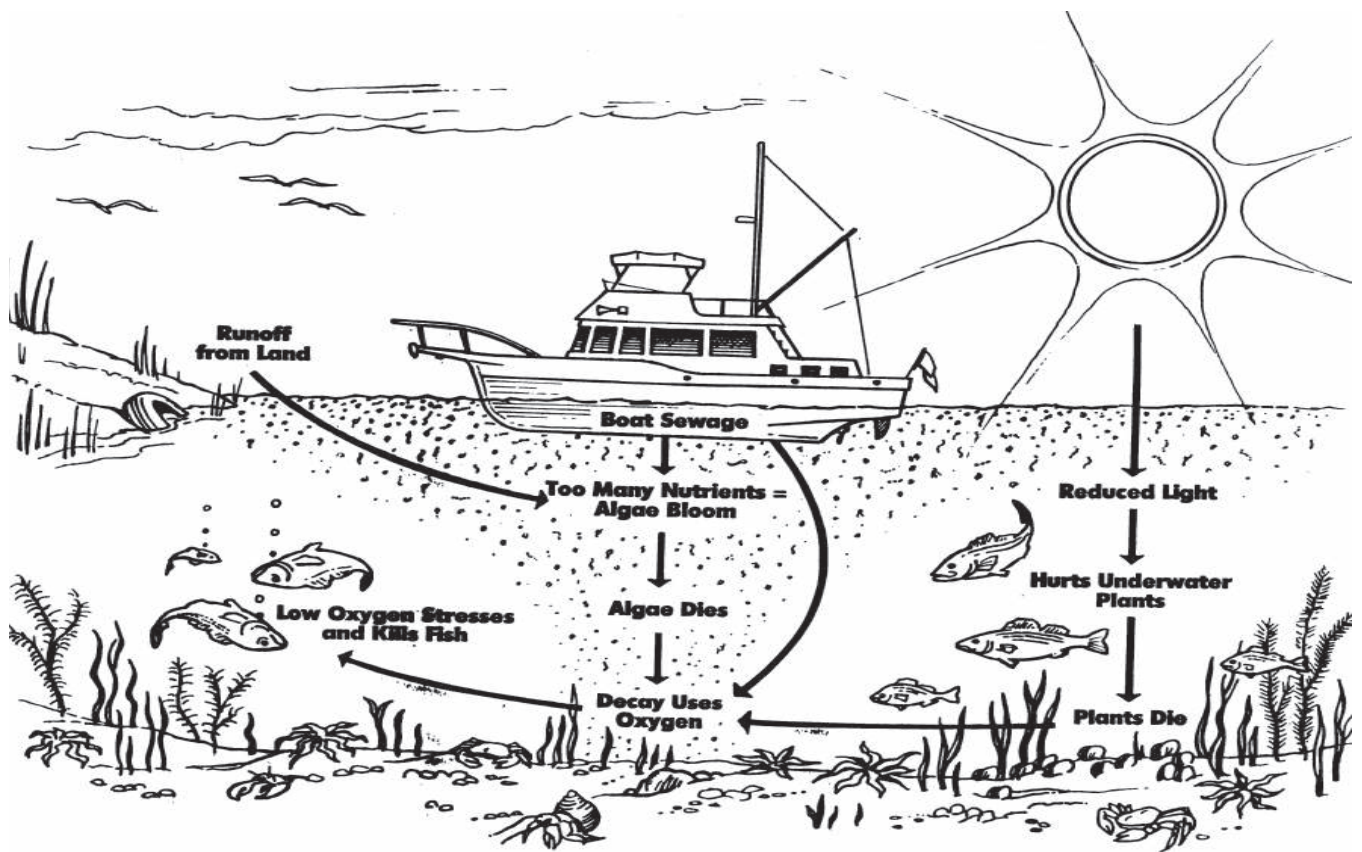


8 Keep sewer lines clean to avoid plugging (a common problem with high strength waste).



12 Maintain a dedicated fund for the repair and maintenance of pumpout stations and receptacles.





Pumpout facilities are especially important in marinas with liveaboards. Studies have documented a correlation between boating activity and elevated levels of fecal coliform, especially in areas of poor flushing.

- *Connection to a central sewage system is preferred.**
- *Empty portable pumpout collectors regularly.**
- *Ensure that septic fields are properly constructed and placed high above water level.**

At a marina with an existing wastewater treatment system, the permitting authority for new pumpout construction will be the same agency that permitted the existing system. That is, a marina with a package treatment plant permitted by DEP will need a DEP permit to construct new pumpout facilities. A marina with an existing on-site wastewater treatment system permitted by Department of Health (DOH) will need a permit from DOH to construct new pumpout facilities.

Boat waste water is higher strength than conventional residential wastewater and may cause problems for wastewater collection and treatment systems. These problems include overloading, odors, plugging, sludge handling, corrosion, permit violations and toxicity.

- a) Boat wastewater is similar to recreational vehicle (RV) wastewater. Solutions which have worked for RV Parks in your area may also work for your marina.**
- b) Boat wastewater may need to be stored either at the marina or adjacent to the wastewater treatment facility and be added slowly to the regular wastewater stream to avoid shocking or over loading the treatment facility.**
- c) Septic tanks should be a last resort for treating marina wastewater. If no other alternatives are practical, consider oversizing the facilities to accommodate the high strength nature of the waste and peak seasonal volume.**

REGULATORY REQUIREMENTS:

1. Florida statutes prohibits the discharge of raw sewage from any vessel (Section 327.53 – 4(a), Florida Statutes).
2. All vessel owners, operators and occupants shall comply with United States Coast Guard relations pertaining to marine sanitation devices and with United States Environmental Protection Agency regulations to areas in which the discharge of sewage, treated and untreated. (Section 327.53 – 5)

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GRAY WATER

PROBLEM:

Gray water is defined as waste water from sinks and showers. Direct discharges of gray water increases Biochemical Oxygen Demand (B.O.D.) and nutrients in the water, lowers dissolved oxygen and may lead to undesirable algal blooms.

GOAL:

Reduce the volume of gray water discharges and the concentrations of pollutants contained in gray water discharges at marinas.

IDEAS FOR YOUR MARINA TO USE:

1 Encourage use of shoreside showers and laundry.



4 Encourage boaters to conserve water and use water saving devices such as low volume showerheads.



2 Educate boaters to use biodegradable, phosphate-free detergents and soaps on vessels.



5 Maintain marina design depths as necessary in order to prevent damage to adjacent areas.



3 Minimize food wastes overboard by providing regularly maintained, accessible trash receptacles.



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MOORING FIELD

PROBLEM:

Vessels that anchor in the waters of Florida can potentially damage sea grass, coral colonies, and other fragile elements of the marine floor environment.

GOAL:

Encourage the use of managed areas or mooring fields to place recreational vessels in areas that will minimize or eliminate damage to the floor of the marine environment.

IDEAS FOR YOUR MARINA TO USE:

1 Provide appropriate personnel to manage the mooring areas or mooring fields which includes enforcing provisions of the Management Plan, permits and facility rules and regulations and coordinates hurricane preparedness plan.



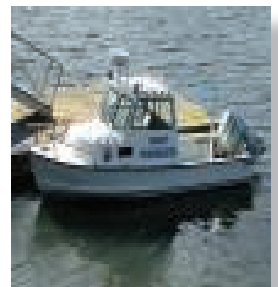
4 Only allow vessels compliant with USCG, FF-WCC, and local laws and regulations regarding safety equipment, current registration, sanitation equipment, and observance of idle speed/ no wake zone and protected wildlife/endangered species with no harrasment or feeding of wildlife.



2 Provide appropriate personnel to inspect vessels for compliance, assign mooring space, reports environmental compliance to regulatory agencies.



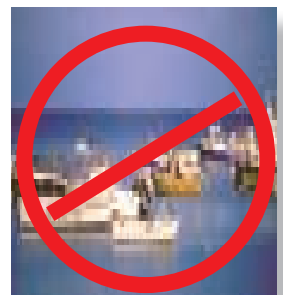
5 Allow the vessels to moor only in designated areas and have moorings assigned by the harbormaster.



3 Only allow vessels in seaworthy condition, capable of maneuvering under their own power or sail to moor in the managed area.



6 Prohibit the anchoring of vessels in the mooring field or managed areas as well as the use of additional anchors.



7 Provide facilities for the proper disposal of human or pet waste as well as litter and other trash.



11 Major repairs or refitting vessels must not be allowed in the mooring field.



8 Provide containment area for waste oil, rags, bilge socks, absorbants, anti-freeze and batteries.



12 Oil spills must be reported to the harbormaster and USCG National Response Center immediately; use of detergents prohibited; inboard & I/O vessels must have absorbants in the bilge.



9 Only allow fueling at designated fueling stations and not in the mooring field.



13 Vessels are recommended to evacuate mooring fields and seek safe harbor areas in the event of hurricane or tropical storm.



10 Only allow the cleaning of vessels with biodegradable, environmentally clean products. Provide product information for customers and carry such products in the ship's store.

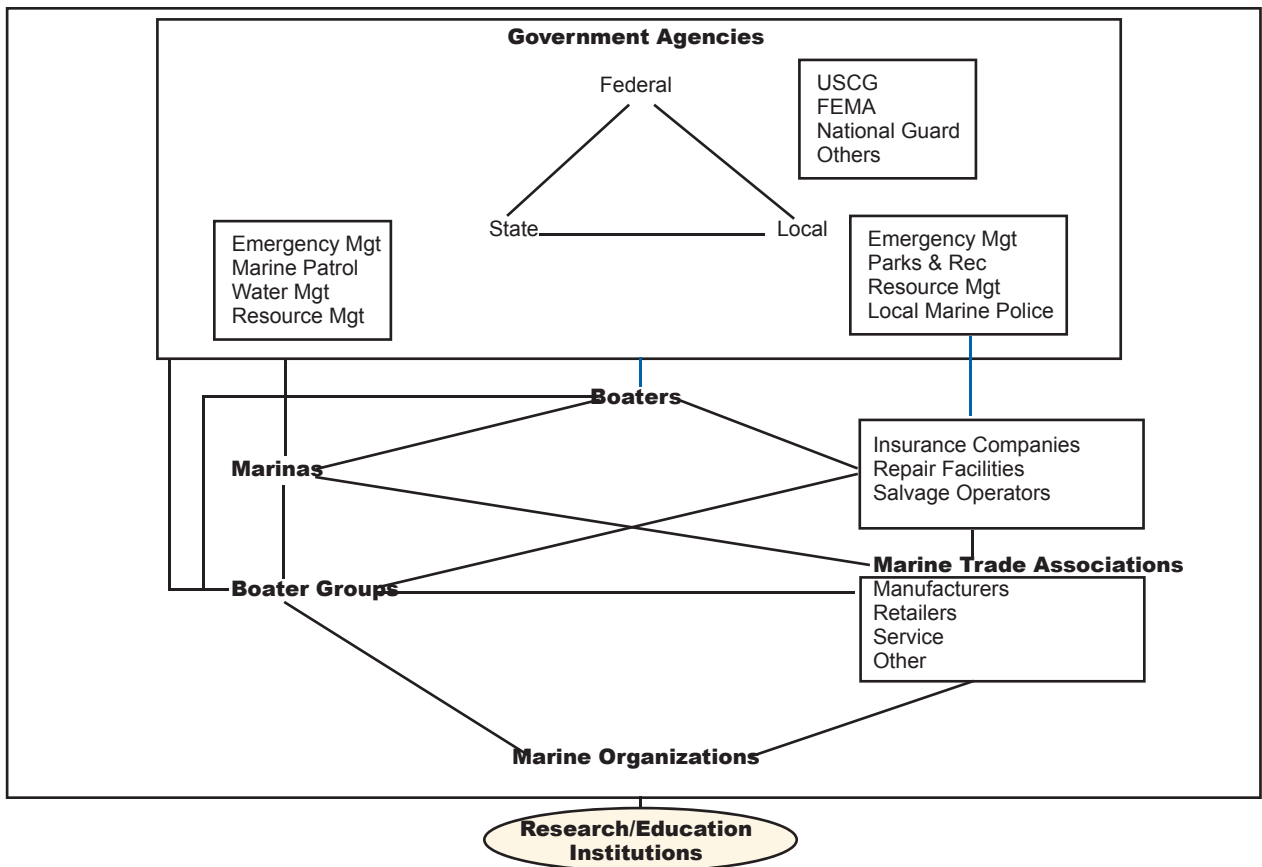




GENERAL HURRICANE INFORMATION

The Department of Environmental Protection, Division of Law Enforcement would like to thank Escambia County and Florida Sea Grant College Program for their permission to use their content in preparing this section of the Clean Marina Notebooks. The intent of this section is to provide boatyard, marina operators and boaters with reliable information to help guide their actions during hurricane conditions.

Hurricane! The word is both feared and respected by knowledgeable mariners and old timers along the U.S. coastal areas of the Gulf of Mexico and the Atlantic Ocean. Residents of Florida are constantly alert to news of developing tropical storms in or headed for the Atlantic, Gulf or Caribbean Sea. Interest peaks during hurricane season between June 1 and November 30. Recent hurricane experiences revealed the lack of cooperative and coordinated efforts between the public and private sectors of marine interests. Many segments of both the private and public sectors do not have the necessary plans to efficiently prepare for, respond to, and recover from a catastrophic event. The schematic below illustrates the complexity of institutional links of the marine community in hurricane planning.



A hurricane is a violent tropical cyclone with winds of 74 or more mile per hour. These winds spiral counterclockwise around a relatively calm center known as the “eye” of the storm. At full strength, hurricane winds can gust to more than 200 miles per hour as far out as 20 to 30 miles from the eye. Winds of 39 mph and greater can extend 200 miles or more in advance of the hurricane and trail hundreds of miles behind. The greatest threat from hurricane wind is flying debris. Winds may also disrupt electrical power, telephone service, gas, the fresh water supplies and transportation. Tornadoes are also possible as a spin-off from hurricane winds. However, the **greatest danger** from a hurricane is from the **storm surge**. As the storm approaches and moves across a coastline, storm surge may rise 10 feet or more above normal high tide. Battering waves which overcome coastal lowlands usually accompany storm surge. In addition, extensive rainfall associated with the storm may cause widespread flooding farther inland. More than 23 inches of rainfall in 24 hours have been recorded in association with a hurricane.

During the hurricane season the National Hurricane Center (NHC) in Miami maintains a constant watch for tropical disturbances which could develop into destructive storms. When it appears that a storm is developing, an Air Force reconnaissance aircraft or one of the National Oceanic and Atmospheric Administration’s (NOAA) research aircraft files into the area to investigate. Once a disturbance becomes a depression, the National Hurricane Center will begin issuing advisories. A depression gets a name if it reaches tropical storm strength. Officials then issue advisories every six hours showing the storm’s location, intensity, speed and direction of travel. As a hurricane moves toward the mainland, the NHC may issue advisories more frequently.

**Hurricanes are classified by wind speed according to the Saffir/Simpson Scale:
Saffir/Simpson Scale**

<u>Category</u>	<u>Wind</u>
I	74-95 mph
II	96-110 mph
III	111-130 mph
IV	131-155 mph
V	156+ mph

About 25 percent of hurricane fatalities are boaters trying to secure vessels in worsening storm conditions. **More than half** the deaths attributed to Hurricane Hugo (1989) and Andrew (1992) were **boaters** who drowned while trying to save their boats, or were riding out the storm in their vessels. The suggestions and information offered in this manual are intended to preserve life and property; however, it is the **boat and/or marina owner’s responsibility** to take precautionary measures to protect property when disaster threatens. The agencies/organizations contributing to this publication can assume no responsibility for actions taken by boat/marina owners or operators.



GENERAL PRECAUTIONS FOR BOAT OWNERS

The keys to pre

preparation and timely action. The following precautions and checklists are meant as guides only. Each boat owner needs a plan unique to the type of boat, the local boating environment, severe weather conditions likely to occur in the region, and the characteristics of safe havens and/or other plans for protection. The following preparations and precautionary suggestions are issued as guidelines to be used by the marine community. While these suggestions may not be applicable to everyone in all instances, common sense and good judgement should prevail. Experience has proven that boater hurricane preparedness education and preparation can reduce loss of property for both the boat owner and others.

1. Before hurricane season, develop a detailed plan of action to: secure your vessel in the marina, if permitted; remove your boat from the threatened area; or take your boat to a previously identified hurricane refuge. Specifically identify and assemble needed equipment and supplies. Keep them together and practice your plan to ensure it works before hurricane season.
2. Arrange for a friend to carry out your plans if you are out of town during hurricane season.
3. Check your lease or storage rental agreement with the marina or storage area. Know your responsibilities and liabilities as well as those of the marina.
4. Consolidate all records including insurance policies, a recent photo of your vessel, boat registration, equipment inventory, lease agreement with the marina or storage area, and telephone numbers of appropriate authorities, i.e., harbor master, Coast Guard, insurance agent, National Weather Service, etc., and keep them in your possession. You may need them when you return to check on your boat after the hurricane.
5. Maintain an inventory of both the items removed and those left on board. Items of value should be marked so that they can be readily identified.
6. Before a hurricane threatens, analyze how you will remove valuable equipment from the boat and how long it will take so you will have an accurate estimate of the time and work involved. When a hurricane is impending, and after you have made anchoring or mooring provisions, remove all movable equipment such as canvas, sails, dinghies, radios, cushions, biminis and roller furling sails. Lash down everything you cannot remove such as tillers, wheels, booms, etc. Make sure the electrical system is cut off unless you plan to leave the boat in the water, and remove the battery to eliminate the risk of fire or other damage.

DO NOT REMAIN ON YOUR BOAT DURING SEVERE WEATHER!!

NOTE: When winds and seas warrant, marine agencies remove their boats from service and won't be able to rescue foolish boaters.

In addition to these general steps, which should be taken no matter where you plan to leave your boat during a hurricane or other severe weather, the following specific steps should be taken depending on the option you select.

TRAILERABLE BOATS

1. Determine the requirement to load and haul your boat to a safer area. Be sure your tow vehicle is capable of properly and adequately moving the boat. Check your trailer: tires, bearings and axle should all be in good condition. Too often flat tires, frozen bearings or broken axles prevent an owner from moving a boat.

2. Once at a "safe" place, lash your boat to the trailer and place blocks between the frame members and the axle inside each wheel. Owners of light weight boats, after consulting with the manufacturer, may wish to consider letting about half the air out of the tires, then filling the boat one-third full of water to help hold it down. (The blocks will prevent damage to the trailer springs from the additional weight of the water.)

3. Secure your boat with heavy lines to fixed objects. Try to pick a location that allows you to secure it from four directions, because hurricane winds rotate and change direction. The boat can be tied down to screw anchors secured in the ground.

NON-TRAILERABLE BOATS

IN DRY STORAGE

1. Determine the safest, realistic, obtainable haven for your boat and make arrangements to move your boat there. When selecting a "safe" location, be sure to consider whether storm surge could rise into the area. Wherever you choose to locate your boat for the duration of the hurricane, lash the boat to its cradle with heavy lines and consider adding water to the bilge to help hold it down, based on the boat's weight.

2. **Never** leave a boat in davits or on a hydro-lift.

NON-TRAILERABLE BOATS

IN WET STORAGE

The owner of a large boat, one usually moored in a berth, has three options:

1. **Secure** the boat in the marina berth.

2. **Moor** the boat in a previously identified safe area.

3. **Haul** the boat.

Each action requires a separate strategy. Another alternative, running from the storm, is not encouraged, except for large, commercial or military vessels.

**Should Even One
of These Suggestions**

SAVE A LIFE,

PREVENT INJURY,

or

REDUCE PROPERTY DAMAGE,

their purpose will have

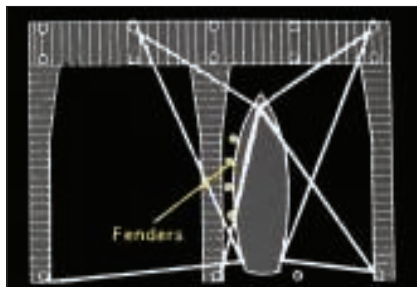
been served.



BOATS REMAINING IN A MARINA BERTH

1. Double all lines. Rig crossing spring lines fore and aft. Attach lines high on pilings to allow for tidal rise or surge. Make sure lines will not slip off pilings. Inspect pilings and choose those that seem strongest, tallest and properly installed.

2. Cover all lines at rough points to prevent chafing. Wrap with tape, rags, rubber hose, etc. Install fenders to protect the boat from rubbing against the pier, pilings and other boats. **The longer the docklines, the better a boat will be at coping with high tides. It is also essential to double up on all lines and use chafe protectors at any potential chafe points.**

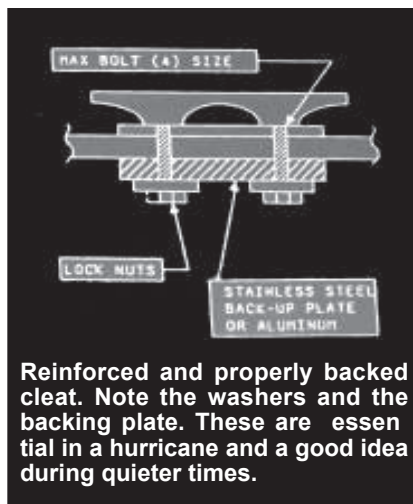


The longer the docklines, the better a boat will be at coping with high tides. It is also essential to double up on all lines and use chafe protectors at any potential chafe points.

3. Assess attachments of primary cleats, winches and chocks. These should have substantial back plates and adequate stainless steel bolt sizes.

4. Batteries should be fully charged and checked to ensure their capacity to run automatic bilge pumps during the storm. Consider backup batteries. Turn off all devices consuming electricity except bilge pumps.

5. Do not stay aboard. Winds during any hurricane can exceed 100 miles per hour and tornadoes are often associated with these storms. First and foremost, safeguard human life.



Reinforced and properly backed cleat. Note the washers and the backing plate. These are essential in a hurricane and a good idea during quieter times.

NAUTICAL KNOTS



Sailor's Breastplate



Square or Reef Knot



Bowline



Harness Hitch



Carrick Bend

Insurance companies should motivate boaters to be pro-active concerning hurricane preparedness by providing a discount for those who have a hurricane plan and make every attempt to execute it. These rates should be for the boat owner who actually writes formal plan and files it with the insurance company. Financial incentive could be a useful tool.

SPECIFIC SPECIFICATIONS FOR BOAT OWNERS

Marine facilities, marine-related service organizations and insurance companies expect boat owners to take the time and effort to plan necessary actions to protect their vessels.

Consider the following in formulating an overall hurricane plan for your vessel. Necessary arrangements should be made in advance. If you will be away, a Captain or caretaker should be designated to carry out your plan.

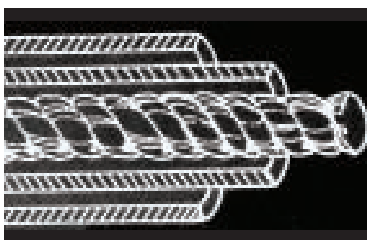
PRIOR TO THE HURRICANE SEASON

1. Make sure your vessel is in sound condition. This includes the hull, deck hardware, rigging, ground tackle, machinery and electronics. Absentee owners should arrange for a boat yard haulout or supervised inspection of the vessel before each hurricane season. This includes making sure batteries are charged, bilge pumps operate and all equipment is secure.

2. Enhance the watertight integrity of your boat, both above and below the water line. Seal windows, doors, and hatches if necessary with duct tape. Shut sea cocks and cap off or plug unvalved through-hull fittings such as sink drains.

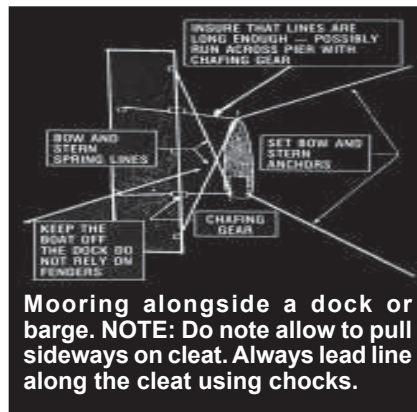
3. Inspect the vessel's deck hardware in light of planned mooring arrangements. Assess the size and structural attachment of the primary chocks, cleats, bits, bollards, and winches. These high load/high stress points should have substantial backing plates; secure them with the largest bolts they will accept.

4. **Avoid chafing mooring lines.** Double neoprene hose chafing gear works well.



For a super system, if your chocks are large enough, fit a second, larger diameter hose around another hose that fits snugly to the line. Drill holes in both hoses and use cord to tie them securely to the line. In a pinch, you can use a single hose.

5. Storm moorings, whether at dock or otherwise, should have **double lines**. The second set of lines should be a size larger than the normal lines, including spring lines at a dock.



6. Purchase necessary materials ahead of time such as additional lengths of mooring lines, screw anchors, fenders, fender boards, chafing gear, and anchors. These items may not be readily available during the hurricane season or just before a hurricane.

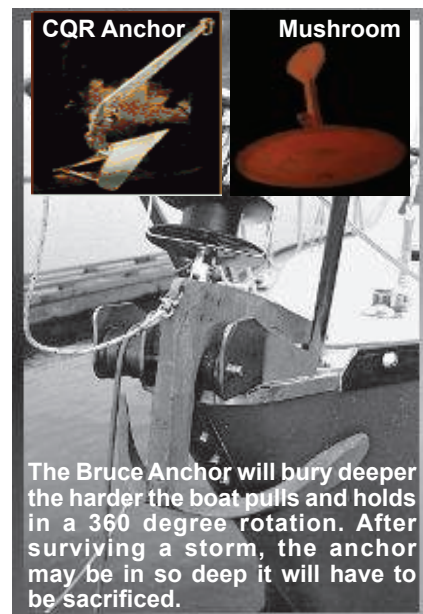
7. If the vessel is to be unattended during the hurricane season, it should be hauled at a storage yard or on its trailer, if trailerable. Arrangements for wet storage at a protected dock, mooring or marina is another alternative.

8. Make up an inventory of all vessel equipment. Note items to be removed from vessel. Keep a copy of the inventory list on board and ashore.

9. For wet berthing locations, ensure that seawalls and docks are sound, mooring bits and cleats are secure, dock pilings and dolphins are in good condition.

10. At private berthing and dock facilities in residential areas, check with neighbors and other vessel owners in the area. Coordinate safety and mooring arrangement plans.

11. At marina facilities, find out from the dock master or marina management personnel what their hurricane plans and/or procedures are for vessels left at the facilities.





12. Check with local marine and law enforcement organizations for local plans. This is especially important where access to inland protected bayous (Bayou Chico) is limited by bridges that may be permanently closed to water traffic for land evacuation routes when a hurricane warning is issued.

13. If your plan calls for moving your vessel from its current berthing location to an inland waterway location, know your route, your vessel navigation requirements at different tides and the restrictions along the route such as bridges (auto and train) and channels. This is especially important for sailboats.

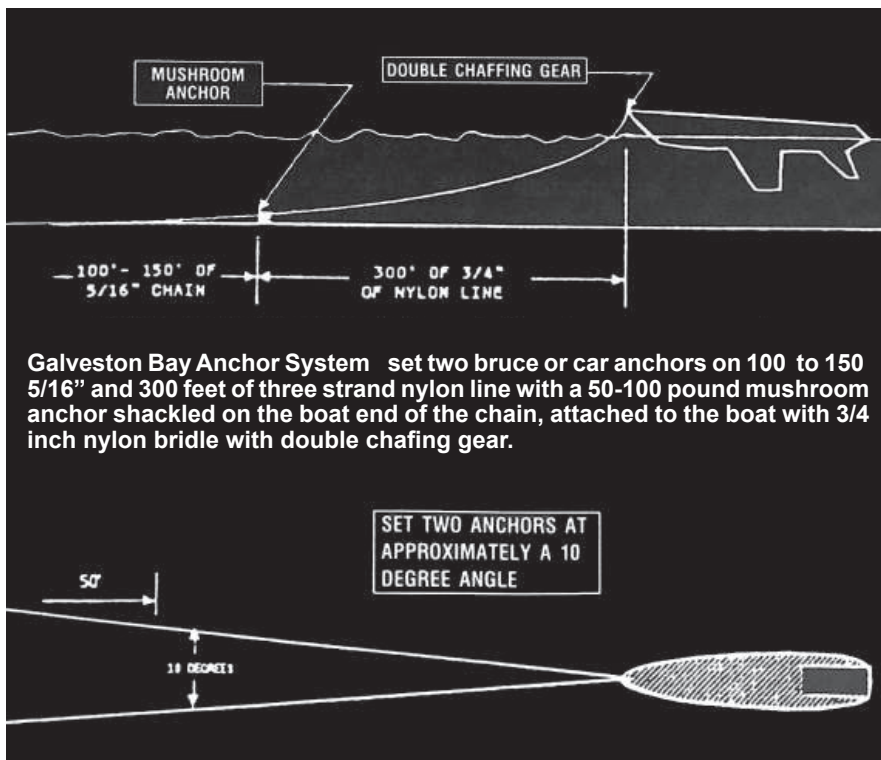
14. Rehearse your planned vessel movement, including an actual visit to the alternate dock or hurricane mooring/anchoring location. If rental of a protected dock or slip space is required, make arrangements well ahead of time.

15. Be sure that your family or key crew members know your hurricane plan and that everyone that may be involved knows how to contact you, your designated representative or agent.

16. Key your plan on quick response. Moving a vessel, stripping sails, derigging, and anchoring in rough seas and 35 mph winds is extremely difficult. **It is impossible in 45 mph winds.**

17. Prepare your hurricane plan in writing and make copies of it. Keep a copy on the vessel and one at home. Extra copies should also be made for marina or yacht club facilities which may require you to have one on file with them.

18. Make sure your insurance policy is current. Read the policy thoroughly. There is quite a bit of helpful and advisory information in the policy telling what the vessel owner should do and should not do if there is a storm or hurricane related loss or damage to the vessel. Understand the coverages, exclusions and your duties as a vessel owner.



PRIOR TO THE HURRICANE

1. If your plan calls for moving your vessel and you have sufficient notice, do it at least 48 to 72 hours (or earlier) before the hurricane is estimated to strike the area. This may be before a hurricane watch is issued.

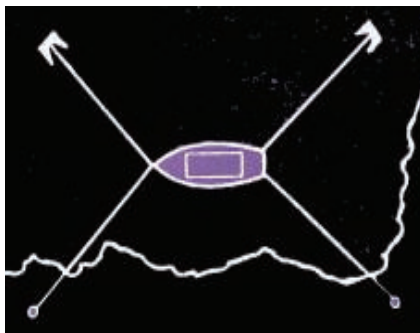
2. Make sure that:

- (a) fuel tanks are full;
- (b) fuel filters are clean;
- (c) batteries are charged;
- (d) bilges are clean;
- (e) cockpit drains are free and clear;
- (f) fire fighting equipment is in good order;
- (g) lifesaving equipment is in good condition, in place and readily accessible (these items will be secured later).

3. Remove and/or secure all deck gear, portable gear, radio antennas, outriggers, fighting chairs, deck boxes, bimini tops and side canvas/curtain, sails, boom, dorades, extra halyards, canister rafts, and dinghies. Make sure that you secure all hatches, ports, doors, lazarettes and sailboat rudder. (You may need the dinghy to take lines ashore.)

4. If your vessel is moored at a dock on a canal, river or in a marina near the gulf, it is possible that with an additional 5-10 or greater storm surge, the vessel could take a beating against the dock or even impale itself on the pilings.

5. The best offshore mooring location for a vessel to ride out a storm is in the center of a canal or narrow river where at least doubled mooring lines can be secured to both shores, port and starboard, fore and aft.



6. Do not raft vessels together at moorings or docks, especially if larger and smaller vessels are involved. Mooring vessels singly reduces the possibility of damage.

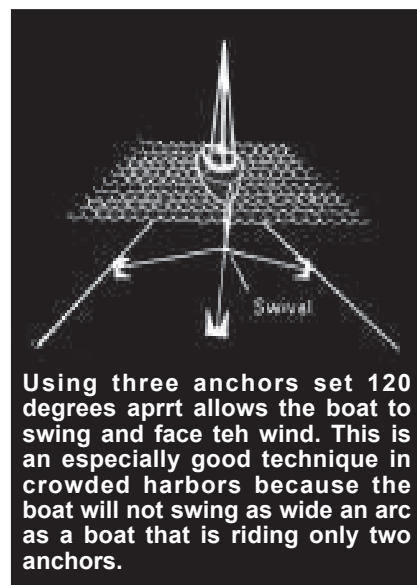
7. If the vessel must remain dockside at a private dock or marina, heavy duty fender boards (2" by 6") should be used on a bare wood canter piling or otherwise installed to prevent damage. Lines should be doubled and even tripled where necessary to hold a vessel in the center of the berth or off seawall or dock pilings. Preventers should be installed at the top of the pilings so lines cannot slip off the top. Note that nylon line will stretch five to ten percent of its length.

DURING THE HURRICANE

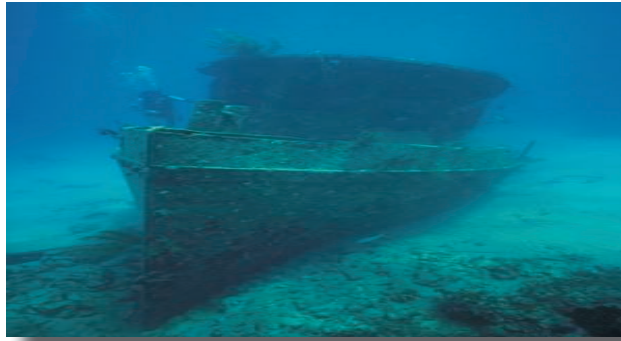
1. Do not stay aboard any vessel during a hurricane. If you have taken all the preliminary precautions previously outlined, you have done all that can be done in anticipation of the storm.

2. Stay in a protected and safe place. Attended to the safety of family, home and other personal property.

3. Stay tuned to news broadcasts and weather advisories concerning the hurricane so that you will know when the danger has passed.



Using three anchors set 120 degrees apart allows the boat to swing and face the wind. This is an especially good technique in crowded harbors because the boat will not swing as wide an arc as a boat that is riding only two anchors.



AFTER THE HURRICANE

1. After the hurricane has passed, there may be extensive damage in the area. While checking the condition of your vessel is an important concern, there may be limitations such as flooded roads and downed power lines. A check of the vessel should be made as soon as practicable to determine its condition and security.
2. Other vessels may be up-river behind your vessel mooring location. This may require that you modify your mooring if you are in the center of the canal or stream so that other vessels may navigate past you. If you don't, others may just cut your mooring lines and let your vessel drift, causing more damage than the hurricane.
3. A check of vessel security is important if damage has occurred. One security aspect that must be considered is the prevention of looters or others who feel that a damaged vessel is "abandoned" and thus theirs to take.
4. If there has been any theft or vandalism loss or damage to the vessel, other than storm related, a report should be made to local law enforcement authorities so that appropriate actions can be taken. The incident report number and, if possible, a copy of the incident report should be obtained to substantiate any insurance claim or IRS property loss report.
5. If the vessel incurs damage, take immediate action to save the vessel and/or equipment and prevent further loss or damage. All insurance policies require this action. Insurers expect vessel owners to take those actions that a "prudent uninsured person" would take to save and preserve his property.
6. If the vessel appears to be unrepairable (constructive total loss), you must make arrangements to remove the hull from any navigable waterways as government authorities will probably require this. The vessel should be moved to a yard or salvage facility storage area.
7. If salvage removal of your vessel is required (emergency or otherwise) and you are unable to receive advice from your insurance company, agent, marina, or yacht club, screen the salvage contractor for competence and cost. Read the contract, know where your vessel is going, and the level of security provided at the location. Save as much equipment from the vessel as possible.
8. Where vessel damages are repairable, immediate arrangements should be made with a reputable repair yard to have the vessel moved there, if necessary, for repairs. Make a list of repair facilities that you would like to work with. Obtain estimates before proceeding with repairs. Those who act quickly will be back in the water first.



SPECIFIC PRECAUTIONS FOR MARINA OWNERS

Marina operators, yacht dealers, boat builders and boat repair yards should consider the following information in formulating an overall hurricane plan for their facility. Since facilities, circumstances and exposures vary throughout the county, adaptation of these suggestions to specific situations may be necessary.

PRIOR TO THE HURRICANE SEASON

1. A formal hurricane plan should be developed and distributed to all employees. Facility personnel will have homes, family and property of their own to consider. They must be made aware of their work-related duties and responsibilities so they can plan accordingly.
2. Know your physical plant facilities, operation services, equipment and housekeeping. Make assignments of personnel to be responsible for areas and operations of the facility. Designate team units to be responsible to key people.
3. Review plans and procedures with co-tenants or subcontractors in multiple-occupancy facilities.
4. Review your facility's "seasonal" operations or activities during the hurricane season and consider ordering supplies, stocks, and vessel inventory items accordingly to keep exposures as low as possible.
5. Consider the number of permanent, transient, new or brokered vessels that may be on hand in your care, custody and control at any times during the hurricane season. Can you secure all vessels at your facility or will vessels have to be moved to inland protected areas? How and by whom? Where? These questions are best answered in the calm, long before the storm.
6. Determine your policy on non-owned vessels in your care, custody and control at your facility or elsewhere. Communicate your position to vessel owners, preferably in written form as a notice or as part of the mooring, listing or work order agreement or contract. Know all the vessels and their owner, captain or caretaker. You should have on record the home and business phone numbers and addresses of the vessel owner or designated representative. Consider having vessel owners file their hurricane plan, in writing, with you.
7. Conduct a complete facility housekeeping and "field day" or "field week" operation sometime in the spring just before hurricane season to police and clean up all open areas and structures within the facility. This should include, but not be limited to the following:
 - (a) Remove all debris, trash and unnecessary items from open areas.
 - (b) Store or otherwise secure all materials and supplies.
 - (c) Inspect and service as necessary all building walls, roofs, windows, doors, docks, pier, wharfing or slipfingers, pilings, electrical and lighting installations, fuel and natural gas supply and dispensing equipment, both portable and fixed fire fighting equipment, mobile lifts, hydrolifts, and railways.
8. Order and stock emergency equipment and supplies the facility warrants such as extra mooring lines, lumber for fender boards, chafing gear, screw anchors, flashlights, batteries, portable generators, electrical and manual bilge pumps, and hull patching or repair supplies.

PRIOR TO THE HURRICANE

Even the smallest marine facility operation has numerous tasks and precautions that must be taken in preparation for a hurricane. The extent of the tasks and the number of personnel available will determine the amount of time required to complete the preparation. However, 72 hours is probably the minimal time allowable in most instances to undertake the following.

A. 72-48 Hours Before Small Craft Warning Conditions.

1. Notify personnel that the facility is on hurricane alert. Personnel should start preparing to put on standby to start securing operations within the next 24 hours.
2. Any mobile or waterborne operations personnel should be put on standby to start securing operations within the next 24 hours.
3. Begin facility protection preparations by policing all yards, marina and dock areas. Stow or secure loose equipment.
4. Secure all flammable, explosive or other hazardous materials, such as compressed gas cylinders in a safe, protected secure area.
5. Dry storage or other facilities with outside "rack" storage in a building may provide sufficient protection unless in a lowland area where evacuation of all vessels may be necessary.
6. Facilities with inside "rack" storage in a building may provide sufficient protection unless in a lowland area where evacuation of all vessels may be necessary.
7. Take down large signs, antennas or other removable items subject to wind damage.

8. Facility protection precautions should start at this time. Storm shutters or other protective equipment should be made ready and/or installed for use.

9. Process and mail all paperwork that can be completed immediately. Set all new paperwork aside to be completed after the hurricane.

10. Remove expensive equipment or products to inland warehouses for storage.

11. Reduce inventories as much as possible and delay ordering material, stocks or supplies.

12. All facilities should start contacting vessel owners or their representatives in order to start removing vessels from the facility, if required.

B. 48-24 Hours Before Small Craft Warning Conditions

1. Lowland locations that are evacuating personnel and equipment should be completing securing operations. All dock structures, field buildings and offices should be secure. Trailers should be evacuated. All electrical power supplies should be secured by turning off at the main power switch. All natural gas should be turned off at the main valve. All fuel supply tanks and lines should be secured at the shoreside installation. All electrical motors, pumps and like equipment at or below ground level should be disconnected and protected or placed in a safe location. If fresh water is supplied from city water lines, turn off the supply at the meter. Notification to location manager, or local police should be made when evacuation is complete and the location secured.

2. All vessel removal operations should be well underway and completed during this 24-hour period. Plans for securing remaining vessels should start.

3. As departing vessels are fueling, facility vessels and vehicles should also be topped off, in preparation for securing all fueling operations and equipment. Loss of electrical power during a hurricane may disrupt fuel supplies after the storm.

4. Any equipment such as forklifts, trucks, travel lifts, mobile cranes, and workboats that may not be needed in storm preparations should be secured in protected areas, shops or warehouses.

C. 24-0 Hours Before Small Craft Warning Conditions

In these hours before the projected arrival of a hurricane, the 'Hurricane Warning' has been issued; it is highly likely the hurricane will landfall near your facility. The following activities should be in progress or near completion so that most personnel can be released in the next twelve hours.

1. All vessel protection and securing operations should be completed with a final check of doubled mooring lines, tied off with sufficient slack and fender boards and/or other protective equipment in place.

2. Employees who are not staffing facilities during the storm should be released no later than twelve hours before the storm. Instructions should be given for reporting back to work after the storm.

3. Whether staffing or evacuating the facility, insure that all perimeter access point in the form of fences, gates and building door are locked and secured.

4. All facility precautionary preparations should be complete twelve hours before the hurricane's arrival.

5. No personnel should be allowed to stay on any vessel during the hurricane.

DURING THE HURRICANE

1. Stay in a protected and safe place inland if possible.

2. For facilities remaining staffed, extreme caution should be exercised if outdoor activities become necessary.

3. No one should attempt to move or re-secure a loose vessel or equipment during the storm period.

4. Stay tuned to news and weather broadcasts concerning the hurricane's movement so you will know when the danger has passed.

5. Do not venture out during the "eye" or lull in the hurricane.

Tying of Cleats and Piling



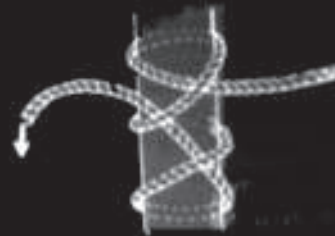
Correct method of making fast to a cleat



Incorrect method of making fast to a cleat



Clove hitch



Rolling hitch



AFTER THE HURRICANE

1. The hurricane may cause extensive damage, flooded roads, downed power lines and washed out beach or river areas. While checking the condition of your facility is of prime concern, some limitations may impede you from assessing damage.

2. As personnel return to the facility and start the preliminary damage assessment process, they should be aware of the following potential problems:

(a) Beware of snakes when going into grassy areas or other locations. Personnel should wear boots and be cautioned to look where they place their feet and hands.

(b) Be aware of possible downed electrical wires which should be considered "hot" and avoided until the power company or electrical maintenance personnel are notified. Although your house or boat may be without power, generators may be operating nearby, causing the electrical lines to be charged.

(c) Make checks for leaking natural gas by smell only, not with matches or candles.

(d) Facility fueling docks and tanks should be checked for leaking gasoline or diesel fuel.

(e) Facility electrical equipment that has been submerged in water should not be started until it has been checked and repaired as necessary.

(f) Broken sewer or water mains should be reported immediately to either the utility company or to the maintenance personnel if owned and maintained by the facility.

(g) Building, shop and dock electrical wiring should be checked completely before turning on the main power switch.

(h) Wet electrical appliances, such as hot plates, toasters, calculators, typewriters, etc. should be inspected and repaired or replaced.

3. Prepare a written assessment of damage as soon as possible. Estimate damages to docks and piers and other harbor facilities: cranes, mast hoist, boat sheds, toilets, showers, lockers, Harbor Master's office, fuel dock and office, electrical transformers, electrical service and telephones.

4. If there has been any theft or vandalism loss or damage to the facility, other than storm related, make a report to local law enforcement authorities so they can take appropriate actions. Get the incident report number and, if possible, a copy of the incident report itself to substantiate any insurance claim or IRS property loss reporting.

5. While immediate repairs may be necessary, any repair action before insurance adjustment should be properly documented and filed. In the case of facility property damages, appraisers assigned by the insurance company will assist with the adjustment. Insurance companies will establish storm claim offices to handle claims after the hurricane, plus extra staff if needed.

6. Obviously, third party vessel owners, captains, caretakers and others will inquire as to the status of their vessels. These inquiries should be fielded as best as possible, especially if there is no damage to their property. Notification of any vessel damage should be made as soon as possible.

7. While vessel owners may want to return to marinas or yard facilities as soon as possible, they should be advised as to the situation at the facility and as to the availability of berthing facilities for their vessel. If damages preclude the facility from providing a berthing space for the vessels, owners should be so notified and advised as to when the facility may be available to provide a berth.

8. If the facility is relatively undamaged, then efforts should be made to become operational to provide facility service to those who are not so fortunate.

9. Controlled access and/or security at a facility may be required. Plan how to handle:

(a) members and nonmembers in the case of yacht clubs;

(b) tenants and non-tenants in the case of marinas or other facilities;

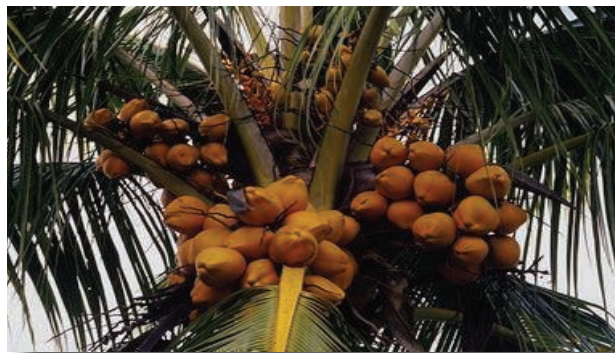
(c) reporters;

(d) outside salvage contractors, repairers, estimators, surveyors, adjusters, and appraisers.

You may take many other actions and precautionary measures prior to, during and after the hurricane. The above may not cover every action that should be taken, but it should provide guidelines and a checklist as a starting point for developing a hurricane plan.

Fit any specific measures or precautions unique to your operations into the checklist when preparing the plan for your facility.

Only if you are prepared in advance will you be able to reduce loss and damage when a hurricane strikes your area.



General Procedures to Process Vessel Claims

Once you determine you have a loss, you should take the following steps to process your claim:

1. For the record, photograph the damage vessel and make a list of all damages and suspected problems. If the vessel is in peril, take all necessary steps to preserve the vessel to prevent further damage. Do not begin repairs other than those necessary to prevent further damage.

2. Promptly call your insurance agent to report the claim or loss. Estimate the percentage of damage – cosmetic, water damage, total loss, etc.

3. Contact repair yards to get estimates for repairs. You do not have to wait for an adjuster/surveyor to get estimates.

4. An adjuster, insurance company surveyor or independent surveyor acceptable to the insurance company will survey the damaged vessel. The boat owner can elect to hire a second surveyor, at the owner's cost, to conduct an independent survey of the vessel. The boat owner should arrange to accompany the surveyor on the initial damage survey.

5. Have your inventory list, receipts, inventory pictures, pictures of the damages and repair estimates ready for inspection by the adjuster/surveyor. You will need to provide both a "proof of loss" and "release/payment order."

6. After conducting the survey, the surveyor files a surveyor's damage report with the insurance company, and sends a copy to the boat owner, if required.

7. The boat owner files a statement of loss with the insurance company explaining what happened, when, where and why. It includes specific lists of known damages along with sketches or drawings.

8. In the event of a dispute, the boat owner will hire a second surveyor/adjuster, at the boat owner's expense, to represent the owner's side of the dispute. A third party will be designated to listen to both sides and arrive at a decision.

9. If the boat owner agrees on the estimates and companies to do the repairs, the insurance company issues a check with both the repair firm and boat owner/mortgagee listed as payees on the check.

10. When the work is completed to the boat owner's satisfaction and approval, the check is co-signed and the repair firm is paid.

11. Keep in mind that with all the confusion accompanying the aftermath of a hurricane, the underwriters will first settle claims having all the appropriate paperwork completed.

12. If the vessel is a total loss, a check is issued by the insurance company to the boat owner and mortgagee, usually for an amount equal to the agreed value or the fair market value of the vessel.

13. In the event of a loss, be prepared to surrender the vessel's documentation papers., original

insurance policy, and remaining equipment and the damaged vessel itself.

Remember!!

If a vessel is insured and damages have occurred, a report of loss and/or damage should be made to the insurance agent and/or company as soon as possible. A telephone call will suffice to put them on notice. Follow this up with a written notice. Provide all the details that you can on this first notice, such as:

- (a) exact vessel location;
- (b) structural condition of vessel (e.g., holes in hull, minor damages);
- (c) if the vessel is partially sunk with machinery and/or interior wet, etc;
- (d) if the vessel must be removed immediately and, if so, to what location.

Be aware!!

Insurance companies will have surveyors and adjusters in the area to help and work with their policy holders. In locations designated as disaster areas, there will be insurance teams and claims offices established. While surveyors, adjusters, company representatives and many repair facilities will try to work with you, only you have the right and authority to determine what is to be done to or on your vessel. Many other boat owners will also have damaged vessels and repair facilities will be very busy. The quicker you do necessary preliminary work the sooner your vessel will

Boat Owner's Preparation Worksheet

Use this worksheet, after reading the material in these guidelines, to adapt it to your own circumstances. Then be sure to distribute copies to your alternates as well as your marina owner/manager.

Boat's Name: _____ **Length:** _____ **Model:** _____

Your Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone Day: _____ Night: _____

Diagram of Proposed Hurricane Docking/Mooring Arrangement:

Alternatives (if you are not available)

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Has Boat Keys? _____ Access to Hurricane Equipment? _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Has Boat Keys? _____ Access to Hurricane Equipment? _____

Boat's Current Location: _____

Planned Location During Hurricane:

If at a Dock: Slip # _____

Additional Lines No.: _____ Length: _____

Size: _____ Chafe Gear: _____ Fenders: _____

If at a Hurricane Hole:

Travel Time by Water from Present Location: _____

Are There Any Bridges? _____

If Yes, Will They Be Open Prior to Hurricane? _____

Has Owner of Surrounding Land Been Contacted? _____

How Will the Skipper Get Ashore? _____

Type of Bottom: _____

Depth: _____

Additional Anchor Needed: _____ No.: _____ Size(s): _____

Type(s): _____

Additional Lines: _____ No.: _____ Length: _____ Size: _____

Additional Chain: _____ No.: _____ Length: _____ Size: _____

Chafe Gear: _____ Swivel: _____ Shackle(s): _____

If at a Mooring/Anchorage:

Has Mooring Been Inspected Within the Last Six Months? _____

How Will the Skipper Get Ashore? _____

Type of Bottom: _____

Depth: _____

Mooring Line Should Be Extended _____' to Increase Scope

Additional Anchor Needed: _____ No.: _____

Size(s): _____ Type(s): _____

Additional Lines: _____ No.: _____

Length: _____ Size: _____

Additional Chain: _____ No.: _____

Length: _____ Size: _____

Chafe Gear: _____ Swivel: _____

Shackle(s): _____

If Stored Ashore:

Is Boat Already Stored Ashore? _____

If No, What Arrangements Have Been Made for Hauling? _____

Storage Location: _____

Contact Name (Marina/Property Owner) _____

Phone Number: _____

List All Equipment Needed Aboard to Prepare Boat:

Equipment	Current Location
<input type="checkbox"/> Extra Lines _____	_____
<input type="checkbox"/> Chafe Protectors _____	_____
<input type="checkbox"/> Fenders _____	_____
<input type="checkbox"/> Anchors _____	_____
<input type="checkbox"/> Swivels _____	_____
<input type="checkbox"/> Shackles _____	_____
<input type="checkbox"/> Duct Tape _____	_____
<input type="checkbox"/> Plugs (Exhaust Ports) _____	_____
Other _____	_____

List All Equipment to be Stripped From Boat

Equipment	Storage Location
<input type="checkbox"/> Electronics _____	_____
<input type="checkbox"/> Dinghy _____	_____
<input type="checkbox"/> Outboard/Fuel _____	_____
<input type="checkbox"/> Sails _____	_____
<input type="checkbox"/> Bimini _____	_____
<input type="checkbox"/> Galley Fuel _____	_____
<input type="checkbox"/> Ship's Papers _____	_____

Hurricane Plan Final Checklist

- | | |
|--|---|
| <input type="checkbox"/> Arrange Dock/Anchor Lines | <input type="checkbox"/> Put Duct Tape on Hatches |
| <input type="checkbox"/> Strip Bimini, Sails, Life Rings | <input type="checkbox"/> Close all but Cockpit Seacocks |
| <input type="checkbox"/> Add Chafe Protection | <input type="checkbox"/> Insert Plugs in Engine Ports |
| <input type="checkbox"/> Disconnect Shore Power | <input type="checkbox"/> Lock Boat |
| <input type="checkbox"/> Use Extra Fenders/
Fender boards as needed | <input type="checkbox"/> Notify Marina Manager |
| <input type="checkbox"/> Close Fuel Valves | |



SUMMARY

IMPORTANT POINTS TO REMEMBER

- **DEVELOP YOUR HURRICANE PLAN EARLY. ONLY YOU CAN BE RESPONSIBLE FOR YOUR PLAN.**
- **MAKE ALL ARRANGEMENTS FOR MOVING AND SECURING YOUR VESSEL PRIOR TO HURRICANE SEASON.**
- **THERE ARE INSUFFICIENT SAFE HAVENS FOR ALL VESSELS. THOSE WHO ACT EARLY FARE BEST.**
- **DO NOT STAY ON YOUR VESSEL, OR TRY TO MOVE OR SECURE YOUR VESSEL AFTER SMALL CRAFT WARNINGS ARE ISSUED.**
- **DON'T BE FOOLED BY THE LULL OR CALM AS THE EYE OF THE STORM PASSES. THE SECOND HALF OF THE STORM WILL SOON STRIKE WITH FULL INTENSITY.**
- **STAY TUNED TO BROADCASTS AND OFFICIAL BULLETINS UNTIL THE STORM HAS FULLY ABATED. DON'T RETURN TO YOUR VESSEL UNTIL YOU ARE TOLD IT IS SAFE TO DO SO.**
- **VESSELS THAT SINK DURING THE STORM ARE NOT CONSIDERED BOATING ACCIDENTS AND DO NOT REQUIRE A REPORT BY THE FLORIDA MARINE PATROL. YOU MAY REQUEST AN "OWNERS REPORT FORM" FROM YOUR LOCAL MARINE PATROL OFFICE.**
- **SUNKEN VESSELS MUST BE REMOVED FROM THE WATER. DO NOT ABANDON A SUNKEN VESSEL.**
- **YOUR LIFE IS MORE VALUABLE THAN YOUR PROPERTY. DO NOT ALLOW YOURSELF TO BECOME A HURRICANE STATISTIC.**

Severe Weather Terms in Common Use

Hurricane Season- June 1 through November 30 each year.

Advisory- A message released by the hurricane center, usually at six-hour intervals, updating information on the storm or hurricane, including watches and warnings whenever they are in effect. A special advisory is a message given any time there is a significant change in weather conditions or change in warnings previously released. An intermediate advisory updates information in advisories at two to three-hour intervals, whenever a watch or warning is in effect.

Small Craft Warning- When a hurricane or tropical storm threatens a coastal area, small craft are advised to remain in port and not to venture into the open sea.

Tropical Depression- A circulation at the water's surface with a sustained wind speed of 38 miles per hour or less.

Tropical Storm- Distinct circulation with sustained wind speeds of 39-73 mph.

Hurricane- A tropical cyclone that rotates counterclockwise with sustained winds of 74 mph or greater.

Hurricane or Tropical Storm Watch- The alert given when a hurricane or tropical storm poses a threat to a coastal area within 36 hours.

Hurricane or Tropical Warning- A hurricane or tropical storm is expected to strike within 24 hours with sustained winds of 74+ miles per hour (hurricane) or between 39 and 73 mph (tropical storm) with heavy rain and high waves.

Storm Surge- A rise in tide caused by a hurricane as it moves over or near the coastline. Storm surge can be much higher than the normal tidal rise, with breaking waves on top.



BER FEDERAL RELEASE REQUIREMENTS

Reportable Substances	Triggers	Immediately Report To

1. See State Implementation Plan (SIP) and/or your facility's permit condition
2. Follow up report to LEPC, SERC and EPA Region
3. As soon as possible but not later than 24 hours
4. For Outer Continental Shelf spills notify the OCS District Office/ Supervisor

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EMERGENCY RESPONSE CONTRACTORS

Emergency Response Contractors are listed by the county in which they maintain an office. Most Emergency Response Contractors can provide service to other counties and some provide service statewide. BER does not endorse any contractor and a firm's absence or presence does not imply prejudice or impropriety. Call the FDEP Bureau of Emergency Response at (850) 245-2010 with any questions.

FDEP 24-HR Emergency Response # (800) 320-0519

24-Hour Emergency Response Contractors

CONTRACTOR NAME	COUNTY	24 HOUR#	RESPONSE TYPE
A&A Coastal Pollution Cleanup Services	Hillsborough	(800) 248-6055	HZ, P
A&S Oil Recovery of Florida, Inc.	Pinellas	(727) 321-2602	HZ, P
AAG Environmental	Alachua	(800) 472-9251	HZ, P
AAG Environmental	Orange	(877) 281-4460	HZ, P
AAG Environmental	Taylor	(800) 472-9251	HZ, P
ABA Environmental	Palm Beach	(561) 236-1395	HZ, P
American Compliance Technologies	Alachua	(800) 226-0911	HZ, P, X, R
American Compliance Technologies	Broward	(800) 226-0911	HZ, P, X, R
American Compliance Technologies	Hillsborough	(800) 226-0911	HZ, P, X, R
American Compliance Technologies	Orange	(800) 226-0911	HZ, P, X, R
American Compliance Technologies	Pinellas	(800) 226-0911	HZ, P, X, R
American Compliance Technologies	Polk	(800) 226-0911	HZ, P, X, R
Affordable Environmental Audits	Sumter	(352) 568-1930	HZ, P
Atlantic Industrial Services	Broward	(800) 940-6155	HZ, P
Cape Canaveral Marine Services	Brevard	(800) 248-0670	HZ, P
Clark Environmental, Inc.	Polk	(863) 425-4884	HZ, P
Clean Harbors Environmental Services	Polk	(800) 699-8916	HZ, P
Cliff Berry, Inc.	Broward	(800) 899-7745	HZ, P
Cliff Berry, Inc.	Dade	(800) 899-7745	HZ, P
Cliff Berry, Inc.	St. Lucie	(800) 899-7745	HZ, P
Cliff Berry, Inc.	Hillsborough	(800) 899-7745	HZ, P
CPS Environmental Services	Palm Beach	(561) 575-1547	HZ, P
Diversified Environmental Services, Inc.	Hillsborough	(813) 248-3256	P
Duff's Management Corp.	Seminole	(800) 523-4409	HZ, P
Duff's Management Corp.	Orange	(800) 523-4409	HZ, P
Eco-Care, Inc.	Dade	(305) 558-2277	HZ, P
Environmental Remediation Services	Duval	(800) 718-5598	HZ, P
Environmental Research and Restoration	Broward	(954) 989-3322	HZ, P, X
Florida Environmental Regulations Specialists, Inc.	Charlotte	(800) 761-3777	HZ, P
Florida Environmental Regulations Specialists, Inc.	Orange	(800) 761-3777	HZ, P
Handex of Florida	Palm Beach	(800) 989-5512 x65	HZ, P
HEPACO, Inc.	Clay	(800) 888-7689	HZ, P, X, R
Howco Environmental Services	Marion	(352) 759-2895	HZ, P
Howco Environmental Services	Pinellas	(727) 327-8467	HZ, P
Jacksonville Pollution Control, Inc.	Duval	(904) 355-4164	P
Marine Industrial Services, Inc.	Duval	(800) 404-1062	P
Moran Environmental Recovery, Inc.	Duval	(800) 359-3740	HZ, P, X, R
Oil Spill Response Company	Collier	(239) 389-5578	HZ, P
On-Time Environmental Services	Hillsborough	(813) 917-5944	HZ, P
Petroleum Management, Inc.	Broward	(954) 581-4455	HZ, P
Petroleum Technicians, Inc.	Volusia	(800) 537-9383	P
Ragin Cajun	Palm Beach	(561) 346-5866	HZ, P
Raider Environmental	Broward	(954) 232-4427	HZ, P
Reactive Explosive Materials Training Crp.	Polk	(800) 736-8295	HZ, R, X
Russell's R&S Repair and Towing Service	Osceola	(407) 892-5466	HZ, P
Shaw Environmental	Lake	(800) 537-9540	HZ, P
Shaw Environmental	Dade	(800) 537-9540	HZ, P
Statewide Environmental Tank Services, Inc.	Pasco	(727) 842-8265	HZ, P
Southern Waste Services First Response	Bay	(800) 852-8878	HZ, P, R, X
Southern Waste Services First Response	Broward	(800) 852-8878	HZ, P, R, X
Southern Waste Services First Response	Escambia	(800) 852-8878	HZ, P, R, X
Southern Waste Services First Response	Hillsborough	(800) 852-8878	HZ, P, R, X
Southern Waste Services First Response	Lee	(800) 852-8878	HZ, P, R, X
Southern Waste Services First Response	Pinellas	(800) 852-8878	HZ, P, R, X
Southern Waste Services First Response	Polk	(800) 852-8878	HZ, P, R, X
Southern Waste Services First Response	Leon	(800) 852-8878	HZ, P, R, X
Superior First Response	Okaloosa	(800) 550-2506	HZ, P
US Filter Recovery Systems	Broward	(800) 235-0189	HZ, P
US Filter Recovery Systems	Orange	(800) 235-0189	HZ, P
US Filter Recovery Systems	St. Lucie	(800) 235-0189	HZ, P
US Liquids Environmental Service	Hillsborough	(800) 624-5302	HZ, P
Waste Management	Escambia	(850) 479-1788	HZ, P
WRS Infrastructure & Environment, Inc.	Hillsborough	(813) 620-1432	HZ, P, R, X

Key for above response contractors: HZ=Hazardous materials P=petroleum R=radioactives X=explosives

APPROVED DISCHARGE CLEANUP ORGANIZATIONS

ORGANIZATION	COUNTY	24 HOUR#	RESPONSE
A&A Coastal Pollution Cleanup	Hillsborough	(813) 677-3805	First & Complete Cleanup
ABA Environmental dba Ragin Cajun	Palm Beach	(561) 436-1493	First & Complete Cleanup
Action Marine Towing & Salvage, Inc.	Dade	(305) 864-1736	First Responder
American Compliance Technologies	Polk	(800) 226-0911	First Responder
Biscayne Towing & Salvage, Inc.	Dade	(305) 358-1485	First Responder
Cape Canaveral Marine Services	Brevard	(407) 868-0670	First & Complete Cleanup
Cliff Berry Inc.	Broward	(800) 899-7745	First & Complete Cleanup
Coastal Fuels Marketing, Inc.	Broward	(954) 525-4261	First & Complete Cleanup
Coastal Fuels Marketing, Inc.	Manatee	(941) 722-7727	First & Complete Cleanup
Coop./Spillage Control of St. Marks	Wakulla	(850) 925-6020	First Responder
Crystal River Oil Spill Group	Citrus	(352) 795-1916	First Responder
Danmark Environmental Services	Dade	(305) 242-0014	First & Complete Cleanup
Diversified Environmental Services	Hillsborough	(813) 248-3256	First & Complete Cleanup
Environmental Recovery, Inc.	Duval	(904) 241-2200	First & Complete Cleanup
Environmental Research & Restoration	Broward	(954) 967-0011	First & Complete Cleanup
Ferguson Harbour Inc.	Spanish Fort, AL	(334) 626-3295	First & Complete Cleanup
Florida Spill Response Corporation	Brevard	(407) 631-7778	First & Complete Cleanup
Florida Waste/Star 'db Environmental	Hillsborough	(800) 745-8626	First Responder
Fort Pierce Tow Boat, Inc.	St. Lucie	(561) 465-0709	First Responder
Jacksonville Pollution Control, Inc.	Duval	(904) 355-4164	First & Complete Cleanup
Joseph Gunger/Becton	Okaloosa	(850) 729-2782	First Responder
Lee County Marine Services	Lee	(941) 945-4820	Complete Cleanup
M.S.S./Sea Spill Sarasota	Sarasota	(941) 756-3422	First Responder
MARR-1/Sea Spill Venice	Sarasota	(941) 488-9142	First & Complete Cleanup
Magnum Environmental	Broward	(800) 235-0189	Complete Cleanup
Marine Spill Response Corp.	Broward	(800) 256-6772	Complete Cleanup
Marine Spill Response Corp.	Duval	(800) 256-6772	Complete Cleanup
Marine Spill Response Corp.	Hillsborough	(800) 256-6772	Complete Cleanup
Marine Towing & Repair	Hillsborough	(727) 347-3532	First Responder
Miami Yacht Divers	Dade	(305) 543-3483	First Responder
Miller Marine, Inc.	Franklin	(850) 653-9521	First Responder
Offshore Marine Towing	Broward	(954) 783-7821	First Responder
Oil Recover Co, Inc.	Mobile, AL	(334) 690-9010	First & Complete Cleanup
Okaloosa Special Hazardous Team	Okaloosa	(850) 244-5373	First Responder
Ostego Bay Response Coop	Lee	(941) 463-2588	First Responder
Panama City Spillage Control	Bay	(850) 763-3042	First Responder
Pt Canaveral/Brevard County Cleanup	Brevard	(321) 783-7831	First Responder
Ragin Cajun Enterprises	Palm Beach	(561) 436-1493	First Responder
Sea Tow Services of Tampa Bay	Hillsborough	(813) 547-1868	First & Complete Cleanup
Sea Tow Islamorada	Marathon	(305) 664-4493	First Responder
Sea Tow/Sea Spill Key Largo	Marathon	(305) 451-3330	First Responder
Sea Tow Services of Palm Beach	Palm Beach	(561) 844-8056	First & Complete Cleanup
Sea Spill of the Treasure Coast	Martin	(561) 288-2900	First Responder
Sea Tow and Sea Spill of Miami	Dade	(305) 864-9481	First & Complete Cleanup
SWS Environmental First Response	Bay	(800) 852-8878	First & Complete Cleanup
SWS Environmental First Response	Broward	(800) 852-8878	First & Complete Cleanup
SWS Environmental First Response	Citrus	(800) 852-8878	First & Complete Cleanup
SWS Environmental First Response	Escambia	(800) 852-8878	First & Complete Cleanup
SWS Environmental First Response	Lee	(800) 852-8878	First & Complete Cleanup
SWS Environmental First Response	Pinellas	(800) 852-8878	First & Complete Cleanup
Summerlin's Seven Seas, Inc.	St. Lucie	(561) 464-6090	First Responder
Superior First Response	Okaloosa	(850) 550-2506	First & Complete Cleanup
Tampa Port Comm -Spillage Control	Hillsborough	(813) 837-1502	First & Complete Cleanup
Tow Boat One, Inc.	Palm Beach	(561) 626-1067	First Responder
Undertow Marine Towing and Salvage	Escambia	(850) 453-3775	First Responder
United States Env'l Services, LLC	Saraland, AL	(334) 679-1848	First & Complete Cleanup
Volusia Marine/Sea Spill South	Volusia	(904) 767-1508	First Responder

REPORT TO THE LEGISLATURE FLORIDA'S USED OIL RECYCLING PROGRAM

**14th Annual Report
January 1999 (Abbreviated)**

INTRODUCTION AND HISTORY

Florida's comprehensive, statewide Used Oil Recycling Program is recognized as one of the most successful in the United States and serves as a national and international model. The Florida Department of Environmental Protection (DEP) has implemented a used oil management program under Sections 403.75 through 403.769, Florida Statutes (F.S.), since 1984. The program consists of a registration and record keeping program for used oil handlers and technical assistance to the public and regulated community. The 1988 Solid Waste Management Act substantially changed public policy toward solid waste management and used oil collection, management, transportation and recycling. New initiatives included a 5% price preference for the purchase of recycled and refined used oil by state and local governments, as well as some limited liability exemptions for businesses which accept used oil from the public. The 1988 Legislature approved a one-time appropriation of funds amounting to \$1 million for local government grants for establishing public used oil collection centers and \$1.5 million for statewide incentive/awareness and educational programs aimed at Do-It-Yourselfer (DIY) oil changers and school students. These funds have been expended and follow-up measures are being taken. The Department continues its regulatory program and, though the number of regulated parties remains relatively stable, the amount of used oil recycled per capita continues to grow while, at the same time, the amount of oily wastes managed by way of landfill disposal and incineration continues to decline.

Florida law contains several bans on the disposal of used oil. As of October 1, 1988, used oil may not be discarded into sewers, drainage systems, septic tanks, surface or ground waters, watercourses, or marine waters. It cannot be mixed or commingled with solid waste to be disposed of in landfills, except for those instances wherein the disposal occurs unknowingly, or is approved by the Department (such as in the case of emergency clean-up of accidental oil spills). Used oil cannot be mixed with hazardous substances or hazardous wastes that make it unsuitable for recycling or beneficial use. It cannot be used for road oiling, dust control, weed abatement, or other similar uses that may release used oil into the environment.

The used oil statutes were amended by the 1993 Legislature. The majority of these amendments were made to make Florida law consistent with the federal used oil regulations, especially in the use of terms and definitions. A major change requires retailers who sell over 500 gallons of oil annually to post signs which display the State's toll free 1-800 number (1-2 800-741-4DEP[4337]). This number uses a voice mail system to provide the locations of all public used oil collection centers in Florida, indexed by post office zip code.

Chapter 62-710 of the Florida Administrative Code (F.A.C.), addresses used oil management and implements the provisions of state law. It establishes a program for registration, record keeping and reporting by handlers of used oil; certification of used oil transporters; and permitting of used oil processing facilities. The federal used oil management standards which are found in Chapter 40, Part 279 of the Code of Federal Regulations (CFR) are adopted by reference in Rule 62-710.210, F.A.C., effective June 8, 1995. The definitions and forms used in this program are found in Chapter 62-701, F.A.C. (Solid Waste Management).

RECENT DEVELOPMENTS

Chapter 62-710, F.A.C. was amended, effective December 23, 1996. The most significant change requires Used Oil Processors to obtain a Used Oil Processing Permit. Since this rule became effective, 20 Used Oil Processors have filed permit applications with DEP. Of these applicants, 16 facilities have been granted permits, 3 facilities are still under review and 1 facility is in the process of preparing a new

application as it is moving to a new location. DEP charges a \$2,000 application fee to cover the cost to DEP for the permit review. Permitted facilities must provide descriptions of the corporate structure, processing operations, preparedness and prevention, analysis and contingency plans, tank management, closure and employee training. Some items (storage tank integrity, adequacy of secondary containment, and certain portions of the closure plan) require certification by an engineer registered in the state of Florida.

The rule was again amended, effective March 25, 1997. These latest amendments deleted certain obsolete or redundant sections of Chapter 62-710, F.A.C., and centralized some common Solid Waste Management items (e.g. intent, definitions and forms) in Rule 62-701, F.A.C., Solid Waste Management, in order to meet the requirements of Governor Chiles' Rule Reduction Initiative.

USED OIL REPORTING

Effective June 8, 1995, Used Oil Filter (UOF) Handlers were required to register with the Department's Used Oil Recycling Program. The number of 1998 UOF registrants is not significantly changed except for an increase of 17 UOF transfer facilities, which is indicative of existing businesses expanding to fill gaps left by those going out of business. Many used oil handlers now also manage UOFs to meet customer demand. As of December 1998, the DEP database includes 107 UOF Transporters, 72 UOF Transfer Facilities, 28 UOF Processors and 4 UOF End-Users (metal foundries and Waste-To-Energy facilities [WTEs] which accept segregated loads of UOFs from non-registered persons). As a WTE facility will burn the oil contained within a filter for energy recovery and recycle the metal casing, the Rule allows generators of used oil filters who live in one of the 14 counties serviced by a WTE facility to commingle their used oil filters with the rest of their solid waste. The WTE facility, in turn, need not register with the Department to manage commingled filters. Because such a large portion of UOF generators in the state are in areas served by WTE facilities, the reporting requirement for UOF Handlers was made optional within the Rule. As reporting is optional, data regarding UOF management is destined to remain an approximation.

TRENDS IN USED OIL MANAGEMENT IN FLORIDA

Overall, the trends (collection, recycling and disposal) show a steady increase in volume over time. This is to be expected, given Florida's steady population growth. It is difficult to correlate increased rates of used oil recycling to population growth due to many variables. Variables resulting in reduced oil changes include extended vehicle service schedules for newer cars (significant in Florida's large rental fleets) and for those consumers using the new, synthetic oils which have a longer life, the use of on-board, in-line oil filtration systems by truck fleets, and the growth of on-site used oil reconditioning and recycling technologies increasingly employed by industry. Nonetheless, the rate of growth in the volume of used oil collected seems to at least keep pace with the population growth rate.

A significant adjustment is evident in the period between 1993 and 1995. It was during this time that DEP promulgated amendments to the Used Oil Management standards (Chapter 62-710, F.A.C.) and, at the same, adopted standards for the management of Petroleum Contact Water (Chapter 62-740, F.A.C.). The changes in definitions of used oil, oily wastes, and petroleum contact water (PCW), along with the fine tuning of the 4 data collected by DEP regarding these activities, resulted in a major data shift. Large quantities of material (mostly water with a small percentage of petroleum) which had, in the past, been managed as used oil, are now managed as PCW. Thus, the trend in Figure 1 indicates that a lot of material managed as used oil was more waste-like than oil-like.

The trend since the shift during rulemaking is interpreted by DEP to be very positive in that the amount of oil actually recycled continues to increase while the amount of waste disposal related to used oil steadily declines. The regulatory burden is heaviest on the Used Oil Processors. This burden has moved processors to exercise more control over the product received from transporters who, in turn, apply stricter management standards on their generator customers. The result is that used oil, once a catch-all waste stream for a variety of materials, is becoming a cleaner commodity. That is, as better management

increases, there is a notable reduction in the instances of a load of used oil being contaminated by water, sediments and other, potentially hazardous, wastes. The trend in Figure 1 continues, indicating that better management is occurring at the point of generation so that good quality used oil, rather than waste material, is collected. The apparent reduction in total collection is not significant, as this number includes both oil and waste. As the level of waste material in the oil declines, then so too will this total volume.

AMOUNT OF USED OIL AND OILY WASTES COLLECTED

In calendar year 1997, 119,563,069 gallons of used oil and oily wastes were reported to have been collected (Figure 2, Page 11). Automotive used oil and oily waste made up 35.5% of the total amount collected, including 2,489,256 gallons collected from nearly 1,100 Public Used Oil Collection Centers. Approximately 21.6% of the total was industrial oil collected from bulk petroleum and various industrial facilities, and other sources. The remaining 42.9% of the total was of the mixed type generated by commercial sources (i.e. a combination of automotive and industrial oils).

DISPOSITION OF USED OIL AND OILY WASTES

As mentioned in the preceding section, approximately 119,563,069 gallons of used oil were reported to have been collected in Florida during 1997. About 42,542,494 gallons of this figure represent a duplication of data which occurs when used oil transporters report their collections to the Department when the oil is not end-used but rather is transferred to another facility (Table 1, Page 13). The receiving facility then also reports this same quantity as having been collected at that site. When the on-hand inventory is included and the transferred quantity is removed from the data, a total of 80,887,456 gallons of used oil and oily wastes were reported as collected for management. However, only 74,808,926 gallons of used oil are reported as being managed (recycled or disposed). This leaves a difference of 6,078,530 gallons of used oil unaccounted for. According to information provided by industry, there is always a degree of error in tracking used oil because of differences in measuring loads of used oil which are intrinsic to the used oil industry. Most transporters use dip sticks to estimate volume during pick-up and transit. Processors use a more sophisticated measure, using actual weight from certified scales in determining a price per load. It is not uncommon for transporter estimates to differ by 12% from the final measured volume, with the mean falling around 7%. The error in this year's annual report calculates to 4.9% of the total quantity reported to have been collected, which is well within the normal range of any expected margin of error. Of the 74,808,926 gallons of used oil and oily waste reported as managed, 54,229,115 gallons (72.5%) were recycled as follows:

- 33,524,746 gallons (61.8%) were marketed as an on-specification used oil fuel
- 2,643,060 gallons (4.9%) were marketed as an off-specification used oil fuel
- 12,652,963 gallons (23.3%) were marketed for other industrial uses (e.g. phosphate beneficiation)
- 5,408,346 (9.9%) gallons was counted as end of year, on-site inventory

There are some noticeable trends in this data when compared to previous years. The amount of oil marketed as off-specification used oil has decreased by about 4 million gallons while the amount marketed for industrial uses has increased by over 10 million gallons. DEP suspects that this may be the result of some confusion on the part of registrants who apply varying definitions of end uses according to their particular business practice. For instance, a cement kiln might burn used oil fuel, but report this as an industrial use as they are primarily a manufacturing operation. The amount of used oil remaining in inventory increased by about 4 million gallons. This is probably due to depressed prices and adverse market conditions as previously discussed.

Of all the oil and oily wastes collected, 20,579,811 gallons (27.5% of the total amount of used oil reported managed) ended up as oily wastes. These wastes are primarily condensation water and sediment which are ubiquitous in used oil. Whenever a container of used oil is picked up for transportation, whether in drums or pumped into a vac-truck, these wastes will almost always constitute some significant portion of

the load. A significant portion, according to industry reports, ranges anywhere from 4-20%, with the mean around 8%. These oily wastes were managed as follows :

- 795,349 gallons (3.9%) were landfilled (non-liquid sediment)
- 19,374,059 (94.1 %) were treated as industrial wastewaters
- 410,403 gallons (2%) were incinerated

Again, there are significant changes in this data compared to last year. The amount of solid oily wastes landfilled have been reduced by almost one million gallons. The amount of liquid oily wastes indicate an overall reduction of such waste by approximately 8 million gallons less than last year. The amount of oily wastes incinerated has been reduced by about 1.3 million gallons. Finally, another result of strict quality control of the revised reporting forms, no wastes were listed under "other" (typically undescribed) management schemes. DEP interprets this shift in data as an indication that, as has been mentioned, the quality control at the point of generation and pickup is improving.

PUBLIC USED OIL COLLECTION CENTERS (PUOCCs)

As of December, 1998, Florida had a statewide network of 1,092 PUOCCs. The Department has worked closely with all county Used Oil Coordinators, the Florida Petroleum Council, the Florida Petroleum Marketers Association, and others in the quick-lube oil-change business in establishing this network.

As a result of this effort, all but four (rural) counties have more than one location where used oil can be taken for recycling. Major oil companies and hundreds of independent service stations, auto repair shops, quick-lube shops and auto parts retailers have volunteered to become public used oil collection centers. However, the number of PUOCCs participating in this program continued its three year decline. There are at least three reasons for this decrease. First, many major retailers are discontinuing auto service functions (most notably K-Mart and Sears). Second, many local governments have established fixed location collection sites (Household Hazardous Waste Collection Centers, recycling sites or landfill stations) and have shut down the isolated, unstaffed collection tanks. By centralizing their collection operation, local governments can better manage the site. A number of counties reported housekeeping and monitoring problems at remote, unattended sites. Finally, some collection site operators feel there is a risk of increased liability in collecting used oil from the public. Operators of used oil collection sites who maintain compliance with all applicable management standards are granted certain liability exemptions under Section 114 of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA or Superfund), are granted protection against enforcement penalties related to a release of used oil under Florida Statutes, Section 403.760, but must still assume the significant costs associated with a cleanup. Despite the decline in numbers of collection sites, the gallons of used oil collected from household Do-It-Yourselfers (DIYers) continues to increase annually.

PUOCCs accepted 2,489,256 gallons of used oil in calendar year 1997, an increase of 86,267, which is higher than last year's increase of 82,289 gallons. The Department estimates that approximately 5 million gallons of used oil is generated by DIYers who change their own motor oil. This means that Florida is now collecting 50% of the used oil generated by DIYers, which is an increase of about 3% over last year.

The Department maintains a toll-free number (1-800-741-4DEP) which uses voice mail to index PUOCCs by post office zip code. Anyone calling this number is prompted to enter their zip code. The system then either reports a listing of PUOCCs in that zip code, or directs the caller to leave a taped message for a prompt reply from a Department representative.

EFFECTIVENESS OF THE ACT

One of the main purposes of the Florida Resource Recovery and Management Act, of which the Used Oil Recycling Act (Sections 403.75-403.769, Florida Statutes) is part, is to promote the recovery of resources which have the potential for further use—such as used oil—while protecting the public health and welfare and the environment of Florida. A combination of Florida's growing population, an effective PUOCC program and prohibitions on the uses and disposal of used oil and used oil filters continues to increase the amount of quality used oil available for recycling.

Prohibitions on the land application or disposal of used oil and strict management standards provide the Department's enforcement personnel with laws and authorities that can assist in preventing contamination of surface and ground waters by improper used oil management practices.

The management standards, including the processing permit, were adopted with the input, cooperation and approval of the regulated community. They are based on a common sense approach to regulation which is felt to be protective of the environment and human health while assuring used oil will be recycled to the most practical extent possible.

Recent amendments made state and federal law more consistent and easier on the regulated community. The signage requirement and toll free information number further expand public awareness and increase the amount of used oil which is properly managed.

According to a 1996 report published by the American Petroleum Institute and a 1995 report published by Evergreen Oil Company of California, the collection rate of Florida's Used Oil Recycling Program ranks (respectively) first and second in the nation. The Department attributes this success to: 1) its decision not to manage used oil as hazardous waste; 2) the cooperation of public and private entities in maintaining the PUOCC program; and 3) the Department's use of effective formal education and public information materials. Technical assistance and information provided to states such as Wisconsin, Massachusetts, Pennsylvania, and Virginia and overseas governments such as Puerto Rico, Costa Rica, and the Cayman Islands indicate that Florida's Used Oil Recycling Program continues to serve as a national and international model of effective used oil management.

RECOMMENDATIONS

Florida's statewide Used Oil Recycling Program, one of the most comprehensive, extensive, and successful in the United States, continues to grow as it continues to receive national recognition. There is, however, always room for improvement.

Additional funding is needed to enhance the educational initiatives developed and implemented in 1989-90. During those years, complete formal education curriculum kits were introduced into every public K-1, secondary and post secondary school in the State. The interest, need and demand for such materials continue to grow as these one-time production materials become outdated and the supply is exhausted.

The Department is continuing to refine the data gathered in assessing the effectiveness of this program for this annual report through explanatory letters, quality control screening of all 9 incoming reports and monthly contributions to the "Oil Drop", the trade publication of the United Association of Used Oil Services (UAUOS), which has a mailing list of over 500 entities involved in the management of used oil.

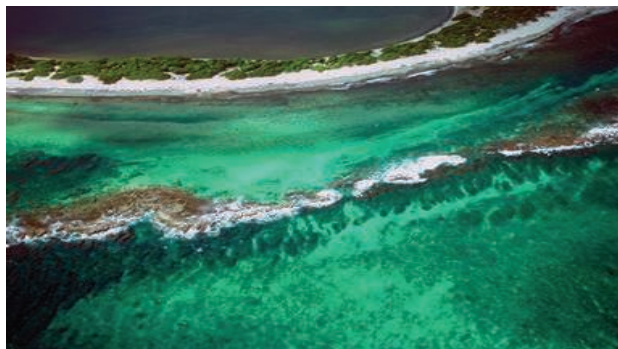
As a result of a 1996 partnership initiative, the Department and the UAUOS, which represents about 45% of the used oil and used oil filter handlers registered with the Department, jointly provided three education and compliance assistance seminars throughout the state. A day long education seminar, focusing on compliance assistance and featuring DEP speakers was included as part of the Association's annual workshop.

The Department continues to assist the UAUOS in setting standards within the industry. These include standards for the management of used oil such as an industry-wide sampling and analysis procedure for screening oil prior to transport and minimum spill control standards. The UAUOS continues to support the Department in fine tuning the standards used to measure the effectiveness of the program. The Department is currently assisting in the development of Continuing Education Units (CEU) that would standardize and lend credence to used oil training activities in Florida.

The UAUOS has also agreed to work in partnership with the Department as it pursues grant funding for educating generators of used oil. Such grants would significantly reduce some of the problems in managing used oil, such as cross contamination with hazardous waste, at the source of the problem, the generator's site.

Florida's Used Oil Recycling Program remains on the cutting edge of change as environmental management and regulation evolves into the next century. The focus of both the regulators and the regulated community is shifting steadily towards management schemes which are multi-media (encompassing a number of heretofore separately regulated waste streams) by nature and increasingly incorporate pollution prevention (P2) goals. The object of P2 is to consider all wastes and to generate as little waste as possible. As almost 80% of the used oil in Florida is automotive or mixed with automotive, the automotive service industry has been a major stakeholder in this program. More and more of these businesses are moving towards P2 management schemes. Used oil is not so much a stand alone program as it once was. To address this change of focus, Florida's Used Oil Recycling Program has been enhancing its relationship with the Department's P2 staff. Both sections are striving to coordinate and strengthen their communication efforts. Joint efforts in regulatory and education initiatives have begun as these programs position themselves to assume a proactive role in the changing world of environmental regulation.

A critical step in keeping the Used Oil Recycling Program up to date and at the cutting edge of technology occurred in March 1998 when the program established a presence on the World Wide Web at the Department's internet site. Annual Reports and all fact sheets and forms used in this program are available for downloading at this site. Various education materials will soon be added to the site. The internet address for Florida's Used Oil Recycling Program is http://www2.dep.state.fl.us/waste/programs/used_oil/



If you still decide to use a commercial cleaning product look for **environmentally friendly products**. Look for the words “bio-degradable and phosphate-free” on the labels. Below is a sampling of the many products available that make “GREEN” claims. For detailed ingredient listings you should request a Material Safety Data Sheet from the manufacturer.

Star Brite Sea Safe Products

4041 SW 47th Ave
Fort Lauderdale, FL 33314
1-800-327-8583
954-587-6280
www.starbrite.com

Boatlife Cleaners

2081 Bridgeview Dr
PO Box 71789
Charleston, SC 29415-1789
800-382-9706
www.boatlife.com

Simple Green Marine All-Purpose Cleaner

Sunshine Environmental Intelligence
PO Box 2708
Huntington Beach, CA 92647
1-800-228-0709
www.simplegreen.com

Spray Nine Marine Grez-Off

Knight Marketing Corporation
251 N. Comrie Ave.
Johnstown, NY 12095
518-762-4591
www.spraynine.com

Orpine Boat Care Products

H&M Marine Products
PO Box 16568
Surfside Beach, SC 29587
1-800-264-1127
www.sspboatsite.com/hmmarine/

Krazy Clean

Marine Development and Research Corp.
2116 Merrick Ave. Merrick, NY 11566

Ambio-Clean Environmental Formula

Distributed by Rainman International
San Francisco – Sacramento – San Jose
1-800-892-7246 www.rainmanintl.com

Dr. Bronner's Sal Suds/Pure Castile Soaps

Distributed by Magic Chain Health Products
696 El Camino Real Suite 105
Rancho La Costa, CA 92009
1-888-411-MAGIC
www.magicchain.com

Seventh Generation Cleaners

One Mill Street
Box A-26
Burlington, VT 05401-1530
802-658-3773
www.seventhgen.com

Lifekind Cleaning and Laundry Products

P. O. Box 1774
Grass Valley, CA 95945
1-800-284-9983
www.lifekind.com

Watkins Organic Cleaners

150 Liberty Street
PO Box 5570
Winona, MN 55987-0570
507-457-3300
www.watkins-inc.com

The information provided above was obtained on the internet and from a survey of products observed in local marina stores and is not a complete list of available products. A company's absence from the list does not imply prejudice or impropriety. The DEP does not endorse any specific product. The DEP, by providing this list, does not imply that the companies are in compliance with applicable laws. The DEP recommends you personally evaluate the products of any company you use. DEP welcomes information from companies who wish to have their products listed. Please send the relevant information to the Clean Marina Education Coordinator, 3900 Commonwealth Blvd, MS 665, Tallahassee, FL 32399-3000.

OTHER MARINE VENDORS

A company's absence from the list does not imply prejudice or impropriety. The DEP does not endorse specific equipment or companies. The DEP, by providing this list, does not imply that the companies are in compliance with applicable laws. Users of this list are responsible for ensuring that products, equipment or services comply with the requirements of local, state and federal law. The DEP cautions users to personally evaluate the services and compliance status of any company they use. The list is updated periodically and subject to change without notice. The DEP welcomes information from other companies who wish to have their services or stewardship programs listed.

ANCHOR MARINE SERVICES

PO Box 3503 Tequesta, FL 33469 561-845-6381
Product: Geofilter Tube Erosion Control System

AMERICAN DELPHI

7110 Fenwick Lane, Box 307 Westminster, CA 92684-0307
Product: Fish Cleaning Stations

BIRKITT ENVIRONMENTAL SERVICES

2408 W Country Club Ave, Tampa FL 33611 813-832-6094

EMP INDUSTRIES

3284 Morris Street North, St. Petersburg, FL 33713 800-355-7867
Products: Wash water recycling systems and bilge oil recycling systems

ENVIROCARE

2454 W. Oakland Park Blvd, Oakland Park, FL 33311 954/730-7707
Products: Environmental Consultants

GEL-PEEL INC

407-863-4457
Product: Gelcoat and Laminate removal

PREMIER MATERIALS TECHNOLOGY, INC

7401 Central Avenue NE, Minneapolis, MN 55432
Product: floats

QUICKSILVER ENVIRONMENTAL INC

8503 Sunstate Street, Tampa, FL 33634 800-376-7888
Product: Recycling spent fluorescent lamps, light ballasts and batteries

REDD Team

6587 S.R. 21 PO Box 658 Keystone Heights, FL 32656 1-800-648-3696
Product: Floating Docks, Gangways, Fishing Piers

RGF ENVIRONMENTAL

3875 Fiscal Court, West Palm Beach FL 33404
Product: RGF Recirculating Systems

SPINAZOLA AND ASSOCIATES

PO Box 04421 Castine, Maine 04421 207-326-9147
Product: Marina Fast Attack fire fighting system

SYNERGETIC ENVIRONMENTAL SERVICES, INC

PO Box 470 Hobe Sound, FL 33475 561-546-0720

TRANSMATIC, INC.

6720 Amsterdam Way Wilmington, NC 28405 910-395-1808
Product: Dust control

UNIFLOAT

1813 Dennis Street, Jacksonville, FL 32204 904-358-3362
Product: floats

HOUSEHOLD HAZARDOUS WASTE CONTACT AS OF 6/5/2003

COUNT			
Alachua			
Bay (Co-op)	Donny Wise	904/966-6212	904/966-6384
Bradford			
Broward	Joel King	954/960-3023	954/935-6760
Charlotte	Edith Wylie or Barbara Kula	941/764-4386 or /64-4380	941/764-4399
Citrus	Suzie Metcalf or Patty Jefferson	352/527-7670 or 527-5406	352/527-7672
Clay	James Wilkes	904/284-6374	904/284-0345
Collier	Gary Morocco	239/732-2508	239/744-9222
Columbia (Co-op)	Bill Lycan	386/752-6050	386/758-1328
Desoto	Billy Hines	863/993-4826	863/993-2068
Dixie	Joe Ruth	352/498-1432	352/498-1429
Duval	Romeo Del Rosario or Diokno "D" Bayani	904/632-4185 or 904/387-8847 Wed..904/632-4471	904/381-8454 904/630-4191
Escambia	Paul Stevens	850/937-2156	850/937-2152
Flagler	Bruce Bovankovich	386/517-2075	386/517-2071
Franklin	Van Johnson	850/670-8167	850/670-4249
Gadsden	Herb Chancey	850/875-8658	850/875-8644
Gilchrist (Co-op)	Diane Avery	352/463-3185	352/463-3163
Glades (Co-op)	David Whiddon	863/675-0124	863/675-9248
Gulf (Co-op)	Joe Danford	850/227-3696	850/229-9521
Hamilton	Dale Jackson	386/92-1020	386/92-0820
Hardee	Janice Williamson	863/773-5089	863/773-3907
Hendry	Pat Norman	863/675-5252	863/675-5317
Hernando	Jeff Howley	352/754-4112 ext. 116	352/754-4118
Highlands	Christy Reed	863/655-6477 or 655-6483	863/655-6480
Hillsborough	Tony Sullivan or Ernie Mayes or TomSmith	813/276-2284 or 276-2936 813/276-2909	813/276-2960
Holmes (Co-op)	Ann Payne	850/547-0922	850//547-2351
Indian River	Sarah Nicoles	772/770-5112 ext. 206	772/770-5296
Jackson (Co-op)	Margaret Baudoin	850/482-9637	850/482-9846
Jefferson	Beth Thorn	850/342-0184	850/342-0185
Lafayette (Co-op)	Kim Walker	386/294-1279	386/294-2016
Lake	David Crowe or Joe Ellis	352/343-3776 ext. 277 or 242	352/343-9257
Lee	Rick Clontz	239/338-3302	941/338-3304
Leon	Rosemary Bottcher / Tom Keister	850/922-0400	850/414-9353
Levy	Robert Murray	352/486-5127	352/486-5165
Liberty	Carroll Copeland	850/643-3777	850/643-2210
Madison	Kevin Beals	850/973-2611	850/973-4486
Manatee	Cari Walz	941/795-3423	941/795-3428
Marion	Royette Warington-Bateman	352/245-6530	352/245-4228
Martin	John Polley	561/221-1440	561/221-1447
Miami-Dade	Mark Laurent or Valerie Moore	305/597-1730 or 594-1585	305/594-1591
Monroe	James McDill or Dent Pierce	305/295-4314 or 292-4432	305/292-4555
Nassau	Bob McIntyre	904/321-5770 or 879-6321	904/879-6323
Okaloosa	Jim Reece	850/689-5774 or 651-7262	850/651-7395
Okeechobee	Jim Threewits	863/763-4458	863/763-5529
Orange	Oscar Ramos	407/836-6600	407/836-6658
Osceola	Wendy Woolson / Danny Sheaffer	407/397-7653	407/397-0708
Palm Beach	Bob Madden	561/687-1100	561/687-1103
Pasco	Farouk El-Shamy	727/847-8041 ext. 8718	727/847-8064
Pinellas	Deb Bush or Joe Fernandez	727/464-7803 or 464-7735	727/464-7713
Polk	Joe Going	863/284-4319	863/284-4321
Putnam	Joe Battillo/James Robbins	386/329-0395 or 329-0396	386/329-0486
St. Johns	Richard Baker	904/824-9720	904/826-1394
St. Lucie	Jason Bessey	561/462-1827	561/462-6987
Santa Rosa (Co-op)	Tony Gomillion	850/626-0191	
Sarasota	Lois Rose	941/316-1530	941/316-1300
Seminole	John Hauserman/Tom Waters	407/665-2250 or 665-2261	407/324-5731
Sumter (Co-op)	Gary Breeden	352/793-0240	352/793-0247
Suwannee	Debbie Vickers	386/362-3992	386/364-3674
Taylor	John Singer	850/838-3533	850/838-3538
Volusia	Susan Gaze	386/947-2952	386/947-2955
Wakulla (Co-op)	Gary Simmons or Randy Merit	850/926-7010 or 926-3153	850/926-2890
Walton (Co-op)	Rusty Floyd	850/892-8180	850/892-8434
Washington (Co-op)	Peter Herbert	850/638-6200	850/638-6106 DEP
Irene Gleason or Raoul Clarke		850/245-8753 or 245-8750	850/245-8811

More HHW INFO-- Contact Earth 911 at 800-CLEANUP (800-253-2687) or visit www.earth911.org

USED MOTOR OIL -- For the closest free collection site in Florida, call the DEP's toll free number, 800-741-4337.

Factors Affecting Antifouling Paints

Extreme high or low water temperature & salinity, acidic or alkaline waters, fouling growth, waxes, over-spray, dust, silt and chemicals in runoff can clog pores or change paint chemistry and impair antifouling properties. Regular underwater hull cleaning removes slime build-up & contaminants and increases antifouling ability of hull paint. Infrequent use allows hard growth to form, requiring forceful hull scrubbing. Low water allows the hull to hit bottom, scraping the antifouling paint or clogging pores. Poor surface preparation prevents paint from adhering properly. Proper thickness of epoxy barrier coats beneath antifouling paint prevents blistering. Immersing the boat too soon or too long after painting, applying too little paint or coats that are too thin reduces paint's life span. Faulty or inadequate wiring on boats or in shore power connections may cause stray currents that contribute to corrosion of underwater metals or (rarely) neutralize antifouling paint.

Hull Paint Selection Factors

Paint Type & Price Range	Antifouling Method	Environmental Considerations	Fuel Consumption
Soft Sloughing \$75-125/gal ^{11,14}	Free leaching & soft. Paint erodes until completely disintegrated. 20-50% copper ¹⁶	Potential to release much toxicant due to uncontrolled sloughing ⁵	Uneven sloughing increases drag & fuel consumption
Epoxy Ester, Conventional \$155-180/gal ^{11,14}	Hard, smooth finish. Releases toxicant by leaching. Up to 76% copper ^{11,14}	Initial high release of toxicant, replaced by even copper leaching ⁵	Rough surface left by toxicant release increases drag & fuel consumption
Vinyl, Conventional \$160-170/gal ^{2,14}	Hard, smooth finish. Releases toxicant by leaching. 40-67% copper ¹²	Better controlled release rate of copper vs. epoxy ester paint ^{2,5}	Rough surface left by toxicant release increase drag & fuel consumption
Vinyl, Thin Film Teflon \$136/gal ¹⁵	Hard, smooth finish. Releases copper by leaching. 42% copper ¹⁵	Controlled leach rate of copper. Very hard finish	Slick surface decreases drag & fuel consumption
Copolymer, Ablative 46-58% copper ¹⁶	Continuously sheds outer layer to release toxicant ⁹	Boat use & underwater cleaning release toxicant ⁵	Surface smooths with boat use; decreases drag & fuel consumption
Water-based, Ablative \$160-192/gal ^{2,14}	Continuously sheds outer layer to release toxicant Up to 64% copper ^{9,12,14}	Boat use & underwater cleaning release toxicant ^{5,*}	Surface smooths with boat use; decreases drag & fuel consumption
Polyurethane, Biocide free \$78-180/gal ^{14,11}	Topside paint. Hard, smooth finish deters fouling. May blister after 72 hours in water ^{2,9,14,**}	Primarily a topside paint. No toxicant to prevent fouling ^{11,14}	Smooth surface, not blistered decreases drag & fuel consumption
Silicone, Biocide free \$600-630/gal ¹⁴	Deters fouling by creating slick surface when wet ^{2,14}	No toxicant to prevent fouling ¹⁴	Slick surface decreases drag & fuel consumption

* Water-based ablative paints release fewer volatile pollutants (VOCs) than do solvent-based paints.

** Most polyurethane paints are used for cosmetic purposes on hulls; some are more water-resistant.

*** **Durability Notes:** Controlled copper leach rate makes hull paints last longer.



Durability ***	Special Hull Cleaning Factors +	Special Hull Preparation ++	Special Paint Application +++	Examples ++++
1 year or less ⁵	Soft paint may release much toxicant with underwater cleaning ⁵	Can apply to rough surfaces ^{5,11}	Launch 8-48 hours after painting ^{5,11}	Petit Yacht Copper, Interlux BottomKote
— 2 years ²	Harder surface release less toxicant with underwater cleaning.		Dry 8 or more hours before launchings. ^{8,13}	Pettit Trinidad, Interlux UltraKote, Unepoxy Plus
— 2 years ²	Harder surfaces release less toxicant with underwater cleaning		Launch 4 to 16 hrs after painting ^{8, 13}	Proline 1088, Interlux Super Vinyl-lux, Pettit Vinylcide
1-1.5 years ¹⁵	Harder surfaces release less toxicant during underwater cleaning	Do not apply over abrasive paints ¹⁵	Thin film may need frequent recoat ¹⁵	Extensor VC Offshore
2 years ^{5,9} Does not oxidize in air ¹²	Moderate potential for toxicant release with underwater cleaning		Do not overcoat with nonabrasive paints ^{9, 12}	Proline Y1044, Interlux Micron CSC, Petit ACP-50
— 2 years ^{5,9}	Moderate potential for toxicant release with underwater cleaning	Very clean hull, wet sand or 4000 psi hydrowash ²	Use fresh water for thinning ¹²	Proline 888, Pettit AquaClean. Woolsey Neptune II Interlux Interthane Plus! Petit Durathane (2 Part), Proline Deepgloss
Durable topside paint. ³ May blister after 72 hrs in water. ¹⁴	Wipe down often ² , if boat is in water long periods ^{9,14}	Remove old coats ¹⁴		
2 to 3 years or more ¹⁴	No toxicant release with underwater cleaning.	Remove old coats ¹⁴	Slippery! Special handling for safety. ^{13, 14, 15}	Interlux Veridian 2000, Proline Paints

+ **Standard Hull Cleaning Notes:** Clean hull regularly to keep paint clean for releasing toxicant (except sloughing and abrasive paints) and to avoid accumulation of hard fouling growth. Ask your underwater hull cleaner to use a soft carpet or diaper for cleaning and rub gently. Regular cleaning also avoids the need for abrasive pads and forceful scrubbing that release more toxicant.

++ **Standard Hull Preparation Notes:** Read all directions, thinner, catalyst or solvent requirements for each product. If old paint is in poor condition or consists of more than 4-5 old coats, boatyards can remove old paint and properly dispose of paint chips.¹² Make sure the hull is free of contamination, such as grease, wax, or sanding residue, so paint adheres properly. De-wax new fiberglass hulls. ^{3,10}

+++ **Standard Paint Application Notes:** Use solvent-resistant, quality application equipment.¹¹ Note that paint solvents are **caustic**, except for water-based paints. Apply at least two coats; a third coat gives protection to leading edges of keel, rudder and through-hull fitting. ^{2,12}

++++ **Regulations vary.**

References

1. Barclays California Code of Regulations (1993), Register 93, Number 2, 1-8-93, Sections 6488, 6489 and 6674.
2. Hudiburgh, Barth (1995) Yacht Sales and Technical Representative, Proline Paint Company.
3. Interlux (1994) Boaters' Painting Guide to Bottom Paints, Topside Enamels, Varnishes, Stains & Fillers and Interprotect.
4. Lewis, Bill (1995) Recreational Boaters of California. Personal communications.
5. Longmore, Jeff (1981) "Antifouling bottom paints and fishing vessel fuel efficiency." SNAME/NOAA Fishing Industry Energy Conservation Conference, Seattle, WA, California Energy Extension Service. University of California, Sea Grant Extension.
6. Lucas, Libby (1995) Environmental Health Coalition. Personal communications
7. Mallon, Michael H. & Edward Kolbe (1979) "Cathodic protection for boats in saltwater" Oregon State University Sea Grant, Extension Marine Advisory Program, A Land Grant & Sea Grant Cooperative, SG 46.
8. Nielsen, Tom (1995) Nielsen-Beaumont Marine Personal communications.
9. Paige, David (1995) Sales Representative Pettit Paint. Personal communications.
10. Peters, Greig (1995) Regional Water Quality Control Board. Personal communications.
11. Pettit Paint (1989) Product Information Handbook.
12. Proline Paint Company (1994) Bottom Coating Guide
13. Roberts, Bill (1995) Shelter Island Boatyard. Personal communications.
14. Szafranski, Frank (1995) Sales Representative, Courtaulds Coatings. Personal communications.
15. Tyrell, John, (1994) Oceanside Marine Center. Personal communications.
16. West Marine (1995) "West Marine Master Catalog"

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UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION
SEA GRANT EXTENSION PROGRAM
COUNTY OF SAN DIEGO
FARM & HOME ADVISOR DEPARTMENT

Educational Use, Only

This information is provided on an educational basis to assist you in working with your boatyard or maintenance service. Examples and prices were current in Spring, 1995 and are provided for illustrative purposes; no recommendation is intended or implied.

This work is sponsored in part by NOAA, National Sea Grant College Program. Department of Commerce, under grant number NA36RG0537, project number A/EA-I, through the California Sea Grant Program, in part by United States Environmental Protection Agency, under grant number NW009982-01-0, in part by the California State Resources Agency, in part by the University of California Division of Agriculture and Natural Resources and in part by the County of San Diego.

VENDOR LIST OF ANTIFREEZE RECYCLERS

March 15, 1999

The Florida Department of Environmental Protection (DEP) maintains the following list of antifreeze recyclers and collectors as a service to Florida businesses and generators of waste antifreeze. The information was voluntarily supplied by the companies and is not a complete list of available services and a company's absence from the list does not imply prejudice or impropriety. The DEP does not endorse any specific antifreeze recycler or collector. The DEP, by providing this list, does not imply that the companies are in compliance with applicable laws. The DEP cautions generators of hazardous waste to personally evaluate the services and compliance status of any company they use. The list is updated periodically and subject to change without notice.

Mobile Antifreeze Recycling Services

HARPER RECYCLING SERVICES 6101 Rowland Road
Valdosta, Georgia 31601 (912) 247-8636
Jefferson, Madison, Taylor, Lafayette, Hamilton and Suwannee

ANTIFREEZE RECYCLERS, INC.
P. O. Box 1527 Eustis, Florida 32727-1527
1-888-209-8142 (TOLL FREE) 1-352-589-1800
FAX: (352) 483-2260

BRIAN'S ON-SITE RECYCLING 3301 Ridge Ave.
Tampa, Florida 33603 (813) 228-7717 Fax: (813) 307-0047
Hillsborough, Pinellas and Pasco Counties

FLORIDA FILTER & FLUID RECYCLING 5100 95th St. N.,
Suite 5 St. Petersburg, Florida 33708 (813) 399-2875

RECYCLE USA. 8208 Cortez West Bradenton, FL 34210
(941) 792-7890 800-932-5111
Servicing Sarasota, Manatee, Hardee, Highland, Desoto
and Hillsborough Counties.

ON-SITE RECYCLING 4408 North Gulf Circle North Fort
Myers, FL 33903 (941) 995-3553 800-872-9185

TOTAL ENVIRONMENTAL SERVICES 4875 South Florida
Ave. Inverness, Florida 34451 1-888-293-5772
Central, Northeast and Northwest Florida

WYNN OIL COMPANY Professional Products Formula Div.
1050 West 5th St. Azusa, California 91702
(626) 334-0231 800-989-8363

ZAMORA INTERNATIONAL 2201 Cordova Greens III
Largo, Florida 34647 (888) 777-8707

CENTRAL FLORIDA HI-TECH
13453 NW 50th Avenue Chiefland, Florida 32626
800-330-6945 (850) 493-2354
Citrus, Alachua, Levy Dixie, Marion and Gilchrist

EL DORADO, INC. 133 East Bay Street Jackson-
ville, Florida 32202 (904) 350-9602
Duval, Nassau, Baker, St. Johns, Clay, Bradford,
Union and Columbia Counties

SAFEBWAY ANTI-FREEZE RECYCLERS, CORP.
P.O. Box 47346 Jacksonville, Florida. 32207
(904) 399-8636
Servicing Duval County and surrounding area

HARRIS MOBILE- RECYCLING 118
Maple Hill Drive Deland, Florida 32724
(904) 736-1190

HI-TECH RECOVERY 129 Maple Lane
Lake Helen, Florida 33426
(904) 228-9721
Servicing Volusia County

MMT TECHNOLOGIES, INC. 12202
Big Bend Rd. Riverview, Florida 33569
1-888-274-5894
Servicing Central Florida

HI-TECH RECYCLING 1135 SW 25th Avenue Boynton Beach,
Florida 33426 (800) 251-5642
Palm Beach, St. Lucie, Indian River, Okeechobee, Martin, Broward,
and Dade Counties

READY GREEN RECYCLING 1135 SW 25th Avenue Boynton
Beach, Florida 33426 (800) 887-4011
Servicing Dade County

21ST CENTURY ANTIFREEZE RECYCLING INC. 1135 SW 25th
Avenue Boynton Beach, Florida 33426 (800) 251-5642
Servicing Palm Beach, St. Lucie, Indian River, Okeechobee, Martin,
Broward, and Dade Counties



VENDOR LIST OF ANTIFREEZE RECYCLING EQUIPMENT

March 15, 1999

A company's absence from the list does not imply prejudice or impropriety. The DEP does not endorse specific equipment or companies. The DEP, by providing this list, does not imply that the companies are in compliance with applicable laws. Users of this list are responsible for ensuring that products, equipment or services comply with the requirements of local, state and federal law. The DEP cautions users to personally evaluate the services and compliance status of any company they use. The list is updated periodically and subject to change without notice. The DEP welcomes information from other companies who wish to have their services or stewardship programs listed.

CENTURY MFG. COMPANY

9231 Penn Avenue South
Minneapolis, Minnesota
(800) 328-2921
Product: Century: Solar and Viper Brands

FINISH THOMPSON INC (FTI)

921 Greengarden Road
Erie, Pennsylvania 16501-1591
(814) 455-4478 800-934-9384 Fax 814-455-8518
Product: BE Coolant Reclaimer,
Coolant Change 'N Clean

FPPF CHEMICAL COMPANY, INC.

117 West Tupper Street
Buffalo, New York 14201-2193
(716) 856-9607 800-735-3773 Fax (716) 856-0750
www.fppf.com
Product: Glyclean

HI-TECH INDUSTRIES, INC.

6501 Park of Commerce Blvd. Suite 230
Boca Raton, Florida 33487 800-231-6262

KLEER-FLO COMPANY

15151 Technology Drive
Eden Prairie, Minnesota 55344
(612) 934-2555 800-328-7942
Product: AF250

PENRAY COMPANIES

440 Deniston Ct.
Wheeling, Illinois 60090
Western Sales Office: 800-368-3723
Product: Antifreeze Inhibitors/additives

PRO-SYSTEMS, INC.

6501 Park of Commerce Blvd. Suite 230
Boca Raton, Florida 33487
800-231-6262
Product: Fast Flush Coolant Changer

ROBINAIR

1224 Robinair Way
Montpelier, Ohio 43543
Sales 800-628-6496
Tech support 800-822-5561
Product: Model 75250 Filter Pro

WYNN OIL COMPANY

Professional Products Formula Div.
1050 West 5th St.
Azusa, California 91702
626-334-0231 800-989-8363
Product: Du-All

FLORIDA RECYCLING FACILITY AND PRODUCT STEWARDSHIP CONTACTS FOR MERCURY-CONTAINING LAMPS AND DEVICES

Solely as a service to the Environmental Protection (DEP) maintains the following list of Florida companies that have been issued facility operating permits under Chapter 62-737, F.A.C., by the DEP or are manufacturers that have notified the DEP of their product stewardship services. Florida-permitted mercury recovery facilities separate mercury-containing lamps and devices into recyclable components and mercury-containing components that will be processed at a mercury reclamation facility to reclaim the mercury. Florida permitted mercury reclamation facilities reclaim commercial grade mercury from mercury-containing lamp and device components. The information was obtained from the DEP's permitting files or voluntarily supplied by the companies and is not necessarily a complete list of available services. A company's absence from the list does not imply prejudice or impropriety. The DEP does not endorse specific equipment or companies. The DEP, by providing this list, does not imply that the companies are in compliance with applicable laws. Users of this list are responsible for ensuring that products, equipment or services comply with the requirements of local, state and federal law. The DEP cautions users to personally evaluate the services and compliance status of any company they use. The list is updated periodically and subject to change without notice. The DEP welcomes information from other companies who wish to have their services or stewardship programs listed.

*** Envirolight, Inc.**

Jack Ahearn, Vice President
1967 West 9 Street
Riviera Beach, FL 33404-6425
1-800-480-1719
Email: jackahearn@usa.net

**** MTI**

Laurie Chase, Account Representative
Jim Kington, Production Manager
4317-L Fortune Place
West Melbourne, FL 32904
1-800-808-4684
Homepage: www.aerc-mti.com

*** Superior Special Services (Plant City)**

Ralph Mann, Operations Manager
2611 Sammonds Road
Plant City, FL 33566
1-800-376-7888
Email: onesource@p-3.com

**** Superior Special Services (Tallahassee)**

Jay Schlotthauer, National Distribution Mgr.
Jeff Kirk, Operations Manager
4972 Woodville Highway
Tallahassee, FL 32311
1-800-376-7888
Homepage: www.recyclights.com

*** Superior Special Services (Tampa)**

Mike Flynn, President
P.O. Box 25178
Tampa, FL 33622-5178
1-800-376-7888
Email: qsenviron@aol.com

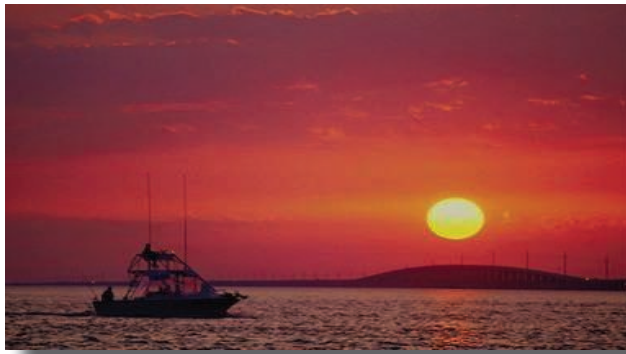
HID Lamps Only

HID Recycling, Inc.
32000 Aurora Road
Solon, OH 44139
1-800-200-9716

* Florida Permitted Mercury Recovery Facility

** Florida Permitted Mercury Recovery and Mercury Reclamation Facility

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REFERENCES

- Askren, D.R. 1979. *Numerical Simulation of Sedimentation and Circulation in Rectangular Marina Basins*. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Rockville, MD. NOAA Technical Report NOS 77.
- Barada, W., and W.M. Partington. 1972. *Report of Investigation of the Environmental Effects of Private Water Front Canals*. Board of Trustees of the Internal Improvement Fund, State of Florida.
- Bell, F.W. 1990. *Economic Impact of Bluebelting Incentives on the Marina Industry in Florida*. Florida Sea Grant College Program, Florida State University, Tallahassee, FL.
- Bleier, A. 1991. Waste Management/Marine Sanitation. In *Proceedings of the 1991 National Applied Marina Research Conference*, ed. N. Ross. International Marina Institute, Wickford, RI.
- Braam, G.A., and W.A. Jansen. 1991. North Point Marina A Case Study. In *World Marina '91: Proceedings of the First International Conference*, American Society of Civil Engineers, Long Beach, CA, 4-8 September 1991.
- British Columbia Research Corporation. 1991. *Urban Runoff Quality and Treatment: A Comprehensive Review*. GVRD. British Waterways Board. 1983. *Waterway Ecology and the Design of Recreational Craft*. Inland Waterways Amenity Advisory Council, London, England.
- Cahill Associates. 1991. *Limiting NPS Pollution from New Development in the New Jersey Coastal Zone*. New Jersey Department of Environmental Protection.
- Camfield, R.E., R.E.L. Ray, and J.W. Eckert. 1980. *The Possible Impact of Vessel Wakes on Bank Erosion*. Prepared for U.S. Department of Transportation, United States Coast Guard, Office of Research and Development, Washington, DC.
- Cape Cod Commission. 1991. *Regional Policy Plan*. Barnstable County, Massachusetts.
- Cardwell, R.D., M.I. Car, and E.W. Sanborn. 1978. *Water Quality and Biotic Characteristics of Birch Bay Village Marina in 1977 (October 1, 1976 to December 31, 1977)*. Washington Department of Fisheries Protection. Report No. 69.
- Cardwell, R.D., and R.R. Koons. 1981. *Biological Consideration for the Siting and Design of Marinas and Affiliated Structures in Puget Sound*. Washington Department of Fisheries Technical Report No. 60.
- Cardwell, R.D., R.E. Nece, and E.P. Richey. 1980. Fish, Flushing, and Water Quality: Their Roles in Marina Design. In *Coastal Zone '80: Proceedings of the Second Symposium on Coastal and Ocean Management*, ASCE, Hollywood, FL.
- CARWQCB. 1989. Staff report: State Mussel Watch Program. California Regional Water Quality Control Board, Los Angeles Region. March 27, 1989.
- CBC. 1989. *Issues and Actions*. Chesapeake Bay Commission, Annapolis, MD.
- CDEP. 1991. *Best Management Practices for Marinas, Draft Report*. Connecticut Department of Environmental Protection, Long Island Sound Program, Hartford, CT.
- Cheyne, M., and N. Carter. 1989. *The 1988 Puget Sound Recreational Boaters Survey*. Washington Public Ports Association and Parks and Recreation Commission, State of Washington.
- Christensen, B.A. 1986. Marina Design and Environmental Concern. In *Ports 86: Proceedings of a Specialty Conference on Innovations in Port Engineering and Development in the 1990's*, American Society of Civil Engineers, Oakland, CA, 19-21 May 1986.
- Chmura, G.L., and N.W. Ross. 1978. *The Environmental Impacts of Marinas and Their Boats: A Literature Review with Management Considerations*. Marine Advisory Service, University of Rhode Island, Narragansett, RI.
- City of Austin. 1990. *The First Flush of Runoff and its Effects on Control Structure Design*.

- Clark, W.F. 1990. *North Carolina's Estuaries: A Pilot Study for Managing Multiple Use in the State's Public Trust Waters*. Albe-marle-Pamlico Study report 90-10. University of North Carolina Sea Grant College Program.
- Cubit Engineering. 1982. *Wexford Marina Water Quality Analysis*. Prepared for Willard Byrd and Associates.
- Dickerson, G. 1992. Sales representative for Capital Vacuum, Raleigh, NC. Personal communication with Julie Duffin, Research Triangle Institute, 13 May 1992.
- Doyle, B., and R., Barnaby. 1990. *Reducing Marine Debris: A Model Program for Marinas*. University of New Hampshire Sea Grant College Program. International Marina Institute, Wickford, RI.
- DNREC. 1990. *State of Delaware Marina Guidebook*. Delaware Department of Natural Resources and Environmental Control, Dover, DE.
- Dunham, J.W., and A.A. Finn. 1974. *Small-craft Harbors: Design, Construction, and Operation*. U.S. Coastal Engineering Research Center, Fort Belvoir, VA. December. Special Report No. 2.
- Fisher, J.S., R.R. Perdue, M.F. Overton, M.D. Sobsey, and B.L. Sill, 1987. *Comparison of Water Quality at Two Recreational Marinas During a Peak-Use Period*. University of North Carolina Sea Grant College Program, Raleigh, NC.
- Forestry Suppliers. 1992. *Environmental 1992 Catalog*. Forestry Suppliers, Inc., Jackson, MS.
- Frederick, L., R. Harris., L. Peterson, and S. Kehmeyer. 1989. *The Compost Solution to Dockside Fish Wastes*. University of Wisconsin Sea Grant Institute. WISCU-G-89-002 C3.
- Gaines, A.G., and A.R. Solow. 1990. *The Distribution of Fecal Coliform Bacteria in Surface Waters of the Edgartown Harbor Coastal Complex and Management Implications*. Woods Hole Oceanographic Institution, Woods Hole, MA.
- Gannon, T. 1990. Ethylene or Propylene? *Practical Sailor*, 16(19):15.
- Goodwin, F.R. 1988. Urban Ports and Harbor Management: Responding to Change Along U.S. Waterfront.
- Grovhoug, J.G., P.F. Seligman, G. Vafa, and R.L. Fransham. 1986. Baseline Measurements of Butyltin in U.S. Harbors and Estuaries. In *Proceedings Oceans 86, Volume 4 Organotin Symposium*, pp. 1283-1288. Institute of Electrical and Electronics Engineers, Inc., New York, NY.
- Hall, L.W., Jr., M.J. Lenkevich, W.S. Hall, A.E. Pinkney, and S.T. Bushong. 1987. Evaluation of Butyltin Compounds in Maryland Waters of Chesapeake Bay. *Marine Pollution Bulletin*, 18(2):78-83.
- Holland, R.C. 1986. Designing Marinas to Mitigate Impacts. In *Ports 86: Proceedings of a Specialty Conference on Innovations in Port Engineering and Development in the 1990's*, American Society of Civil Engineers, Oakland, CA, 19-21 May 1986.
- Horner, R.R., F.B. Gutermuth, L.L. Conquest, and A.W. Johnson. 1988. Urban Stormwater and Puget Trough Wetlands. In *First Annual Meeting for Puget Sound Research*, 18-19 March 1988, Seattle, WA. Puget Sound Water Quality Authority.
- Industrial Products Co. 1991. *Safety Equipment and Supplies*. Industrial Products Co., Langhorne, PA.
- Jansen, W.A. 1991. Personal communication, 24 October 1991.
- Johnston, S.A., Jr. 1981. Estuarine Dredge and Fill Activities: A Review of Impacts. *Journal of Environmental Management*, 5(5):427-440.
- Karp, C.A., and C.A. Penniman. 1991. *Boater Waste Disposal "Briefing Paper" and Proceedings from Narragansett Bay Project Management Committee*. The Narragansett Project, Rhode Island.
- Keko, Inc. 1992. Letter dated April 13, 1992, to Geoffrey Grubbs, Director, Assessment and Watershed Protection Division, U.S. Environmental Protection Agency, from W. Kenton, President, Keko, Inc.
- Klein, R.D. 1992. *The Effects of Boating Activity and Related Facilities Upon Small, Tidal Waterways in Maryland*. Community and Environmental Defense Services, Maryland Line, MD.
- Lab Safety. 1991. *1992 Safety Essentials Catalog*. Spring edition. Lab Safety Supply, Inc., Janesville, WI.
- Layton, J.A. 1980. Hydraulic Circulation Performance of a Curvilinear Marina. In *Proceedings of the 17th International Conference on Coastal Engineering*, American Society of Civil Engineers, Sydney, Australia, 23-28 March 1980.
- Layton, J.A. 1991a. Case History of the Point Roberts Marina. In *World Marina '91: Proceedings of the First International Conference*, American Society of Civil Engineers, Long Beach, CA, 4-8 September 1991.

Layton, J.A. 1991b. Personal communication, 24 October 1991.

Leonard, D.L., M.A. Broutman, and K.E. Harkness. 1989. *The Quality of Shellfish Growing Water on the East Coast of the United States*. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Rockville, MD.

Lowrance, R.R., S. McIntyre, and C. Lance. 1988. Erosion and Deposition in a Field/Forest System Estimated Using Cesium-137 Activity. *Journal of Soil and Water Conservation*, 43(2):195-199.

Maguire, R.J. 1986. Review of the Occurrence, Persistence and Degradation of Tributyltin in Fresh Water Ecosystems in Canada. In *Proceedings Oceans 86, Volume 4 Organotin Symposium*, pp. 1252-1255. Institute of Electrical and Electronics Engineers, Inc., New York, NY.

Marcus, J.M., and T.P. Stokes. 1985. Polynuclear Aromatic Hydrocarbons in Oyster Tissue and Around Three Coastal Marinas. *Bulletin of Environmental Contamination and Toxicology*, 35:833-844.

Marcus, J.M., G.R. Swearingen, A.D. Williams, and D.D. Heizer. 1988. Polynuclear Aromatic Hydrocarbons and Heavy Metals Concentrations in Sediments at Coastal South Carolina Marinas. *Archives of Environmental Contamination and Toxicology*, 17:103-113.

Massachusetts Coastal Zone Management. 1988. *Harbor Planning Guidelines*. Harbor Planning Program.

Massachusetts Coastal Zone Management. 1991. *Local Comprehensive Plans: Draft Guidance Document*.

McDougal, W.G., R.S. Mustain, L.S. Slotta, and J.M. Milbrat. 1986. Marina Flushing and Sedimentation. In *Proceedings of a Specialty Conference on Innovations in Port Engineering and Development in the 1990's*, American Society of Civil Engineers, pp. 323-332.

McMahon, P.J.T. 1989. The Impact of Marinas on Water Quality. *Water Science Technology*, 21(2):39-43.

MDDNR. 1991. *A Guidebook for Marina Owners and Operators on the Installation and Operation of Sewage Pumpout Stations*. Maryland Department of Natural Resources, Boating Administration, Annapolis, MD.

METRO. 1992a. *Maritime Industrial Waste Project: Reduction of Toxicant Pollution from the Maritime Industry in Puget Sound*. Municipality of Metropolitan Seattle Water Pollution Control Department, Industrial Waste Section, Seattle, WA.

METRO. 1992b. *Boatyard Wastewater Treatment Guidelines*. Municipality of Metropolitan Seattle, Water Pollution Control Department, Industrial Waste Section. Seattle, WA.

Milliken, A.S., and V. Lee. 1990. *Pollution Impacts from Recreational Boating: A Bibliography and Summary Review*. Rhode Island Sea Grant Publications, University of Rhode Island Bay Campus, Narragansett, RI.

Mills, W.B., D.B. Porcella, M.J. Unga, S.A. Gherini, K.V. Summers, M. Lingfung, G.L. Rupp, G.L. Bowie, and D.A. Haith. 1985. *Water Quality Assessment: A Screening Procedure for Toxic and Conventional Pollutants*. U.S. Environmental Protection Agency, Athens, GA. EPA/600/6-85/002a,b.

Mitsch, W.J., and J.G. Gosselink. 1986. *Wetlands*. Van Nostrand Reinhold Co., New York, NY.

Moffatt and Nichol. 1986. Modification to the North Point Marina Breakwater Structures Based on the Physical Model Study.

Murawski, W.S. 1969. *A Study of Submerged Dredge Holes in New Jersey Estuaries with Respect to Their Fitness as Finfish Habitat*. Prepared for New Jersey Department of Conservation and Economic Development, Division of Fish and Game, Bureau of Fisheries, Nacote Creek Research Station. August. Miscellaneous Report No. 2M.

Myers, J. 1989. *Evaluation of Best Management Practices Applied to Control of Stormwater-borne Pollution in Mamaroneck Harbor, New York: Analysis and Recommendations*. Prepared for the Long Island Sound Study, U.S. EPA Region 2.

Myers, J. 1991. Working With Local Governments to Enhance the Effectiveness of a Bay-wide Critical Area Program. Presented at the U.S. Environmental Protection Agency Nonpoint Source Watershed Workshop, 29-31 January, New Orleans, LA.

Natchez, D.S. 1990. *Marina Structures as Sources of Environmental Habitats*. International Marina Institute, Wickford, RI.

Natchez, D.S. 1991. *Are Marinas Really Polluting?* International Marina Institute, Wickford, RI.

NCDEM. 1990. *North Carolina Coastal Marinas: Water Quality Assessment*. North Carolina Division of Environmental Management, Raleigh, NC. Report No. 90-01.

NCDEM. 1991. *Coastal Marinas: Field Survey of Contaminants and Literature Review*. North Carolina Division of Environmental Management, Raleigh, NC. Report No. 91-03.

- Nece, R.E. 1981. Platform Effects on Tidal Flushing of Marinas. *Journal of Waterway, Port, Coastal and Ocean Engineering*, 110(2):251268.
- Nielsen, T.A. 1991. Case Study: A San Diego Boatyard's Approach to Environmental Compliance. In *Proceedings of the 1991 National Applied Marina Research Conference*, ed. N. Ross. International Marina Institute, Wickford, RI.
- Nixon, S.W., C.A. Oviatt, and S.L. Northby. 1973. *Ecology of Small Boat Marinas*. Marine Technical Report Series No. 5, University of Rhode Island, Kingston, RI.
- NOAA. 1976. *Coastal Facility Guidelines*. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Office of Coastal Zone Management. Washington, DC.
- NOAA. 1988. *Dealing with Annex V Reference Guide for Ports*. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Seattle, WA. NOAA Technical Memorandum NMFS F/NWR-23.
- NRC. 1987. National Research Council. *Sedimentation Control to Reduce Maintenance Dredging of Navigational Facilities In Estuaries*. National Research Council, Marine Board, Commission on Engineering and Technical Systems. National Academy Press, Washington, DC.
- NYBA. 1990. Northwest Yacht Brokers Association. *Progress Report: The New Moon Project*. Seattle, Washington.
- Paulson, B.K., and S.L. Da Costa. 1991. A Case Study of Propeller-induced Currents and Sediments Transport in a Small Harbor. In *Proceedings of World Marina '91*, pp. 514-523. American Society of Civil Engineers, New York, NY.
- Penttila, D., and M. Aguero. 1978. *Fish Usage of Birch Bay Village Marina, Whatcom County, Washington, in 1978*. Washington Department of Fisheries Progress Report No. 39.
- Pisano, W.C., 1989. Swirl Concentrators Revisited. In *Design of Urban Runoff Quality Controls*. ed. L.A. Roesner, B. Urbonas, and M.B. Sonnen, pp. 390-402. American Society of Civil Engineers, New York, NY.
- Polis, D.D. 1974. *The Environmental Effects of Dredged Holes*. Present State of Knowledge. Report to Water Resources Administration. May.
- PSWQA. 1989. *Managing Nonpoint Pollution: An Action Plan Handbook for Puget Sound Watersheds*. Puget Sound Water Quality Authority, Seattle, WA.
- PSWQA. 1990. *1991 Puget Sound Water Quality Management Plan*. Puget Sound Water Quality Authority, Seattle, WA, pp. 160-165.
- Richards, W.R., J.E. Shwop, and R. Romano. 1981. Evaluation of Urban Stormwater Quality and Non-Structural Best Management Practices. In *Nonpoint Pollution Control: Tools and Techniques for the Future*, ed. K.C. Flynn, pp. 82-99. Interstate Commission on the Potomac River Basin, Rockville, MD.
- Romano, F. 1990. *Oil and Water Don't Mix: The Application of Oil-Water Separation Technologies in Stormwater Quality*. Office of Water Quality, Municipality of Metropolitan Seattle, Seattle, WA.
- Ross, N. 1985. Towards a Balanced Perspective...Boat Sewage. Presented at Thirteenth National Docks and Marinas Technical Conference, University of Wisconsin, Madison, WI.
- Sawyer, C.M., and A.F. Golding. 1990. *Marina Pollution Abatement*. International Marina Institute, Wickford, RI.
- SCCC. 1984. *Guidelines for Preparation of Coastal Marina Report*. South Carolina Coastal Council, Charleston, SC.
- SCDHEC. 1987. *Heavy metals and extractable organic chemicals from the Coastal Toxics Monitoring Network 1984-1986*.
- South Carolina Department of Health and Environmental Control, Technical Report No. 007-87.
- Schluchter, S.S., and L. Slotta. 1978. Flushing Studies of Marinas. In *Coastal Zone '78 Proceedings Symposium on Technical, Socioeconomic and Regulatory Aspects of Coastal Zone Management*, American Society of Civil Engineering, San Francisco, CA, March 1978.
- Seabloom, R.A., G. Plews, F. Cox, and F. Kramer. 1989. *The Effect of Sewage Discharges from Pleasure Craft on Puget Sound Waters and Shellfish Quality*. Washington State Department of Health Shellfish Section, Olympia, WA.
- Schlomann, H. 1992. Letter dated June 22, 1992, to Geoffrey Grubbs, Director, Assessment and Watershed Protection Division, U.S. Environmental Protection Agency, from Northwest Marine Trade Association, Seattle, WA.
- Schueler, T.R. 1987. *Controlling Urban Runoff: A Practice Manual for Planning and Designing Urban BMPs*. Metropolitan Washington Council of Governments, Washington, DC.
- Schueler, T.R., P.A. Kumble and M.A. Heraty. 1992. *A Current Assessment of Urban Best Management Practices*. Metropolitan Washington Council of Governments, Washington, DC.

- Shaver, E. 1991. Sand Filter Design for Water Quality Treatment. Presented at 1991 ASCE Stormwater Conference in Crested Butte, CO.
- Sherk, J.A. 1971. *Effects of Suspended and Deposited Sediments on Estuarine Organisms*. Chesapeake Biological Laboratory, University of Maryland. Contribution No. 443.
- Silverman, G.S., M.K. Stenstrom, and S. Fam. 1986. Best Management Practices for Controlling Oil and Grease in Urban Stormwater Runoff. *Environmental Professional*, 8:51-362.
- Silverman, G.S., and M.K. Stenstrom. 1989. Source Control of Oil and Grease in an Urban Area. In *Design of Urban Runoff Quality Controls*, ed. L.A. Roesner, B. Urbonas, and M.B. Sonnen, pp. 403-420. American Society of Civil Engineers, New York, NY.
- Smith, G.F., and H.H. Webber. 1978. *A Biological Sampling Program of Intertidal Habitats of Northern Puget Sound. Appendix K. W.W.U. Intertidal Study. Baseline Study Program North Puget Sound*, Washington Department of Ecology, Olympia.
- Smith, H.T., J. Phelps, R. Nathan, and D. Cannon. 1991. Avalon Harbor: Example of a Successful Destination Harbor. In *Proceedings of World Marina '91*, pp. 370-391. American Society of Civil Engineers, New York, NY.
- Smith, J.E. 1977. *A Baseline Study of Invertebrates and of the Environmental Impacts of Intertidal Log Rafting on the Snohomish River Delta*. Final report. Fisheries Research Institute, University of Washington, Seattle, WA.
- Sorensen, R.F. 1986. *Bank Protection for Vessel Generated Waves*. Report No. WES-IHL-117-86, Lehigh University, Bethlehem, PA.
- Soule, D.F., M. Oguri, and B.H. Jones. 1991. *The Marine Environment of Marina Del Rey: October 1989 to September 1990*. Marine Studies of San Pedro Bay, California, Part 20F. University of Southern California, Los Angeles, CA.
- Souza, S.J., R.L. Conner, B.I. Krinsky, and J.A. Tiedemann. 1990. *Compatibility of Coastal Development and Coastal Resources, Port Liberte: A Case Study*.
- Stallard, M., V. Hodge, and E.D. Goldberg. 1987. TBT in California Coastal Waters: Monitoring and Assessment. *Environmental Monitoring and Assessment*, 9:195-220. D. Reidel Publishing Company.
- Stephenson, M.D., D.R. Smith, J. Goetzl, G. Ichikawa, and M. Martin. 1986. Growth Abnormalities in Mussels and Oysters from Areas With High Levels of Tributyltin in San Diego Bay. In *Proceedings Oceans 86, Volume 4 Organotin Symposium*, pp. 1246-1251. Institute of Electrical and Electronics Engineers, Inc., New York, NY.
- SWRPC. 1991. *Costs of Urban Nonpoint Source Water Pollution Control Measures*. Prepared by the Southeastern Wisconsin Regional Planning Commission, Waukesha, Wisconsin. Technical Report No. 31. June.
- Tanski, J. 1989. Boater Use of Pumpout Facilities in Suffolk County, Long Island, New York. In *Proceedings of the 1989 National Marina Research Conference*, International Marina Institute, Wickford, RI, pp. 173-191.
- Tetra Tech. 1988. *Rive St. Johns Phase II Canal System Water Quality Model Study*. Prepared for Dotsie Builders, Inc., Jacksonville, FL. Tetra Tech Report TC-3668-04.
- Thomann, R.V., and J.A. Mueller. 1987. *Principles of Surface Water Quality Modeling and Control*. Harper & Row, New York.
- Tiedemann, J.A. 1989. *Pump It or Dump It? An Analysis of the Sewage Pumpout Situation in the New Jersey Coastal Zone*. International Marina Institute, Wickford, RI.
- Tobiasson, B.O., and R.C. Kollmeyer. 1991. *Marinas and Small Craft Harbors*. Van Nostrand Reinhold, New York, NY.
- Tsinker, G.P. 1992. Small Craft Marinas. In *Handbook of Coastal and Ocean Engineering: Vol. 3, Harbors, Navigational Channels, Estuaries, Environmental Effects*, ed. J.B. Herbich, pp. 1115-1167. Gulf Publishing, Houston, TX.
- Tull, L. 1990. *Cost of Sedimentation/Filtration Basins*. City of Austin, TX.
- USACE. 1984. *Shore Protection Manual*. 4th ed. U.S. Army Corps of Engineers, Waterways Experiment Station, Coastal Engineering Research Center.
- USCG. 1990. *American Red Cross National Boating Survey: A Study of Recreational Boats, Boaters, and Accidents in the United States*. U.S. Department of Transportation, U.S. Coast Guard, Washington, DC.
- USEPA. 1974. *Assessing Effects on Water Quality by Boating Activity*. U.S. Environmental Protection Agency, National Environmental Research Center, Cincinnati, OH.
- USEPA. 1976. *Impacts of Construction Activities in Wetland of the United States*. U.S. Environmental Protection Agency. EPA/600/3-76-045.
- USEPA. 1982. *Design Manual: Swirl and Helical Bend Pollution Control Devices*. U.S. Environmental Protection Agency, Washington, DC. EPA-600/8-82-013.

- USEPA. 1985a. *Coastal Marinas Assessment Handbook*. U.S. Environmental Protection Agency, Region 4, Atlanta, GA. April.
- USEPA. 1985b. *Water Quality Assessment: A Screening Procedure for Toxic and Conventional Pollutants*. U.S. Environmental Protection Agency, Athens, GA. EPA/600/6-85/002a,b.
- USEPA. 1986. *Wexford Locked Harbor, April 1986 and September 1986*. U.S. Environmental Protection Agency, Region 4, Environmental Services Division, Marine and Wetlands Unit, Athens, GA.
- USEPA. 1988. *Bacteria: Water Quality Standards Criteria Summaries: A Compilation of State/Federal Criteria*. U.S. Environmental Protection Agency, Office of Water, Washington, DC. EPA/440/5-88/007.
- USEPA. 1989. *Rapid Bioassessment Protocols for Use in Streams and Rivers: Benthic Macroinvertebrates and Fish*. U.S. Environmental Protection Agency, Office of Water, Washington, DC. EPA/444/4-89-001.
- USEPA. 1990. U.S. Environmental Protection Agency, Office of Water Enforcement and Permits. National Pollutant Discharge Elimination System Permit Application Regulations for Storm Water Discharges; Final Rule. *Federal Register*, November 16, 1990, 55:48066.
- USEPA. 1991a. *Proposed Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters*. U.S. Environmental Protection Agency, Office of Water, Washington, DC.
- USEPA. 1991b. *Draft EPA Region I No-Discharge Area Policy*. U.S. Environmental Protection Agency, Region 1, Boston, MA.
- USEPA. 1992a. *Development of Estuarine Community Bioassessment Protocols*. Issue Paper for Work Group Meeting January 8 and 9, 1992. U.S. Environmental Protection Agency, Washington, DC.
- USEPA. 1992b. *Draft Interim Report: Environmental Assessment for Siting and Design of Marinas*. Submitted to U.S. Environmental Protection Agency, Nonpoint Source Control Branch, Washington, DC, by Tetra Tech, Inc.
- USEPA. 1992c. *Final Report on Marina Water Quality Models*. Submitted to U.S. Environmental Protection Agency, Region 4, Atlanta, GA, by Tetra Tech, Inc.
- USEPA. 1992d. *Coastal Marina Water Quality Assessment Using Tidal Prism Analysis User's Manual*. Submitted to U.S. Environmental Protection Agency, Region 4, Atlanta, GA, by Tetra Tech, Inc.
- USFWS. 1982. *Mitigation and Enhancement Techniques for the Upper Mississippi River System and Other Large River Systems*. U.S. Department of the Interior, U.S. Fish and Wildlife Service. Resource Publication 149.
- Voudrias, E.A., and C.L. Smith. 1986. Hydrocarbon Pollution from Marinas in Estuarine Sediments. In *Estuarine, Coastal and Shelf Science*, vol. 22, pp. 271-284. Academic Press Inc., London, England.
- WADOE. 1991. *Stormwater Management Manual for the Puget Sound Basin*. Washington State Department of Ecology, Olympia, WA. Publication No. 90-73.
- Walton, R. 1983. *Computer Modeling of Hydrodynamics and Solute Transport in Canals and Marinas: A Literature Review and Guidelines for Future Development*. Prepared for the U.S Army Engineer Waterways Experiment Station, Vicksburg, MS, by Camp Dresser and McKee, Annandale, VA. Miscellaneous paper EL-83-5.
- Wanielista, M.P., and Y.A. Yousef. 1986. Best Management Practices Overview. In *Urban Runoff Quality Impact and Quality Enhancement Technology*, proceedings of an Engineering Foundation Conference, American Society of Civil Engineers, New York, NY, pp. 314-322.
- WDF. 1971. *Criteria Governing the Design of Bulkheads in Puget Sound, Hood Canal, and Strait of Juan de Fuca for Protection of Fish and Shellfish Resources*. Washington State Department of Fisheries, Seattle, WA.
- WDF. 1974. *Bulkhead Criteria for Surf Smelt (Hypomesus pretiosus) Spawning Beaches in Puget Sound, Hood Canal, and Strait of Juan de Fuca, San Juan Islands, and the Strait of Georgia*. Washington State Department of Fisheries, Seattle, WA.
- Wendt, P.H., R.F. Van Dolah, M.Y. Bobo, and J.J. Manzi. 1990. The Effects of a Marina on Certain Aspects of the Biology of Oysters and Other Benthic Macrofauna in a South Carolina Estuary. Unpublished draft manuscript. South Carolina Department of Health and Environmental Control, Columbia, SC.
- White, D.G., J.M. Regenstien, T. Richard, and S. Goldhor. 1989. *Composting Salmonid Fish Waste: a Waste Disposal Alternative*. New York Sea Grant Extension Program and Cornell University. NYEXT-G-89-001 C3. December.
- Woodward-Clyde Federal Services. 1991. *Urban BMP Cost and Effectiveness: Summary Data for 6217 (G) Guidance*.
- WPCF. 1989. *Combined Sewer Overflow Pollution Abatement*. Manual of Practice No. FD-17. Water Pollution Control Federation, Alexandria, VA.
- Young, D.R., G.V. Alexander, and D. McDermott-Ehrlich. 1979. Vessel-related Contamination of Southern California Harbors by Copper and other Metals. *Marine Pollution Bulletin* 10:50-56.
- Young, D.R., T.C. Heesen, D.J. McDermott, and P.E. Smokler. 1974. *Marine Inputs of Polychlorinated Biphenyls and Copper from Vessel Antifouling Paints*. Southern California Coastal Water Research Project, El Segundo, CA.
- Zabawa, C., and C. Ostrom. 1980. *Final Report on the Role of Boat Wakes in Shore Erosion in Anne Arundel County, Maryland*. Tidewater Administration, Maryland Department of Natural Resources, Annapolis, MD.

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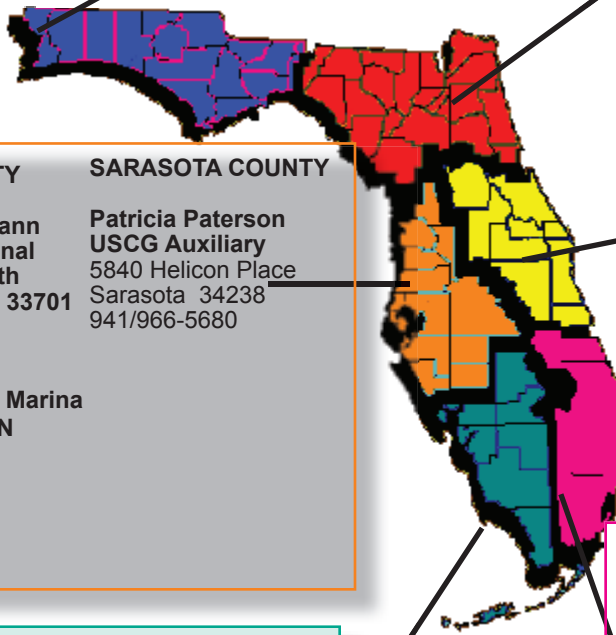
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Web Sites with Information Related to Marinas and Recreational Boating

BoatFacts Online National Boating Federation
outdoorsource.com/nbf
www.boatfacts.com/home.asp

Boat Owners Association of the United States
www.boatus.com

Coastal Conservation Association of Florida
<http://www.cca-florida.com/>

Florida Fish and Wildlife Commission
www.state.fl.us/gfc/

Florida Marine Industries Association
www.boatflorida.org

International Marina Institute
www.imimarina.com

International Council of
Marine Industry Association (ICOMIA)
www.icomia.com

Marina Operators Association of America (MOAA)
mma.org/affiliates/moaa

Marina Retailers Association of America
www.mraa.com

Marine Environmental Education Foundation
www.meef.org

Marine Fisheries Commission (MFC)
www.psmfc.org

Marine Operators Association of America
www.moaa.com

Maryland Department of Natural Resources
www.dne.state.md.us/boating/

National Marine Manufacturers Association
www.nmma.org

National Sea Grant College Program
www.mdsg.umd.edu/NSGO/

National Sea Grant National Depository
www.nsgd.gso.uri.edu

PumpOut U.S.A. Inc
www.pumpoutusa.com

Recreational Boating and Fishing Foundation
www.rbff.org

US Environmental Protection Agency,
Office of Wetlands, Oceans and Watersheds
www.epa.gov/owow/

Office of Solid Waste and Emergency
Response
www.epa.gov/swerrims/

Index of Watershed Indicators
www.epa.gov/surf/imi

US Army Corps of Engineers
www.usace.army.mil/inet/functions/cw/cecwo/recrea.htm

US Fish and Wildlife Service
Clean Vessel Act Program
fa.r9.fws.gov/cva/cva.html

US Coast Guard Sea Partners
www.uscg.mil/hq/g-m/nmc/seapart.htm

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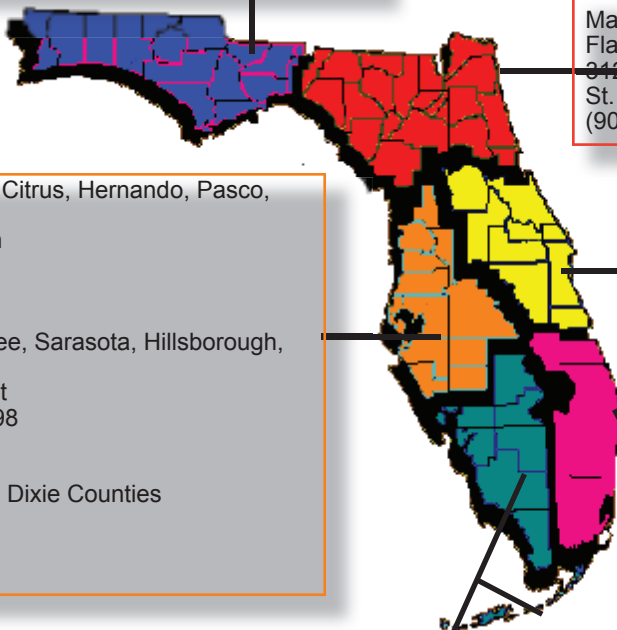
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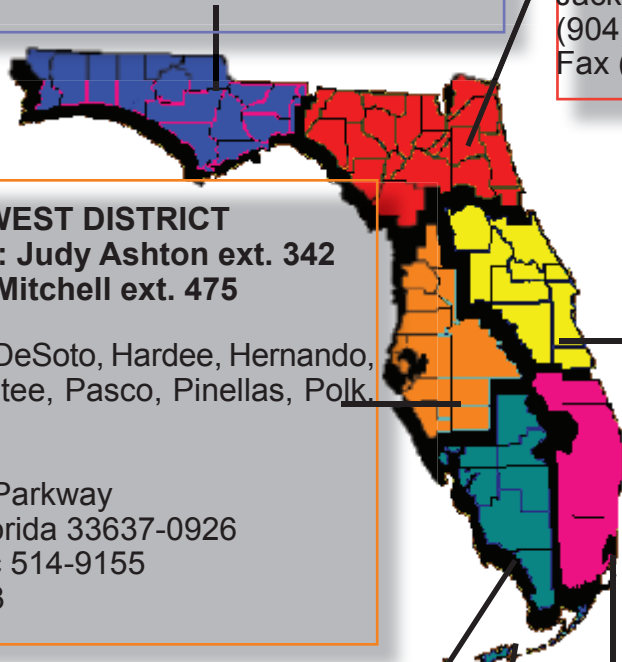
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