SECTION 1: INTRODUCTION

Section 1 Contents

The Purpose and Scope of This Guidance

This national management measures guidance for marinas and recreational boating provides guidance to states, territories, authorized tribes, and the public regarding management measures that may be used to reduce nonpoint source pollution from marinas and recreational boating activities.

The guidance is intended to provide technical assistance to state program managers and others on the best practicable means of reducing nonpoint source pollution of surface waters from marinas and recreational boating. The guidance provides background information about nonpoint source pollution from marinas and recreational boating—including where it comes from and how it enters the nation's waters—and technical information about how to reduce nonpoint source pollution from marinas and recreational boating. It also discusses the relationship of marinas to the watersheds in which they are located.

The guidance can assist marina managers in identifying possible sources of nonpoint source pollution and offers potential solutions. Finding a solution to nonpoint source pollution problems at a marina requires taking into account the site-specific factors that together compose the setting of a marina. The best management practices (BMPs) presented in Section 4 of this guidance are recommended based on their successful application at many marinas nationwide. Their applicability to any particular marina or situation, however, must be determined based on site-specific factors. The applicability of the individual BMPs and combinations of BMPs should be considered within the overall context of the location, environment, design, and needs of the marina. Marina managers should make informed decisions, based on the circumstances at their particular marina, as to whether the BMPs in this guidance or others would be most effective for controlling nonpoint source pollution. Which BMP or combination of BMPs is used is not the critical point. Preventing water pollution is.

This guidance refers to statutory and regulatory provisions that contain legally binding requirements. It does not take the place of those provisions or regulations, nor is it a regulation itself. Thus, it does not impose legally binding requirements on the U.S. Environmental Protection Agency (EPA), states, territories, authorized tribes, or the public and might not apply to a particular situation. The decision

makers of EPA, states, territories, and authorized tribes retain the discretion to adopt approaches on a case-by-case basis that differ from this guidance where appropriate. EPA may change this guidance in the future.

The guidance is organized in six parts:

- Section 1 introduces the guidance.
- Section 2 discusses the sources of nonpoint source pollution and the specific pollutants of concern associated with marinas and recreational boating.
- Section 3 discusses management measures and site-specific BMPs generally, the use of combinations of BMPs (BMP systems), and the characteristics of surface waters where marinas are located.
- Section 4 introduces the 15 management measures for marinas and recreational boating and describes BMPs that can be used to achieve the management measures.
- Section 5 describes some models used to estimate pollutant loads and discusses water quality monitoring.
- Appendices provide additional relevant information.

The *management measures* in this guidance are the best available, economically achievable practices or combinations of practices that can be used to address nonpoint sources of pollution related to marinas and recreational boating. EPA originally identified 15 management measures for implementation within the state coastal management areas (see *Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters* [USEPA, 1993]). The titles of the management measures are listed in the box to the above right. From discussions with marina owners and operators at facilities on fresh waters nationwide, these 15 management measures and associated practices have been found generally to be just as applicable to fresh water marinas as they are to coastal water marinas. They form the basic measures recommended in this guidance.

Management Measures for Marinas and Recreational Boating

Flushing
Water quality assessment
Habitat assessment
Shoreline stabilization
Storm water runoff
Fueling station design
Petroleum control
Liquid material management
Solid waste management
Fish waste management
Sewage facilities
Maintenance of sewage facilities
Boat cleaning
Boat operation
Public education

Best management practices are individual activities or structures that can be used alone or in combination to achieve the management measures. Refer to Section 4 for a thorough discussion of the 15 management measures for marinas and recreational boating and the known BMPs that can be used to achieve them.

The scope of this national management measures guidance is broad, covering diverse nonpoint source pollutants from marinas and recreational boating. Because it reflects all types of waterbodies, it cannot provide all practices and techniques suitable to all regional or local marina or waterbody conditions. Also, BMPs are continuously being modified and developed as a result of experience gained from BMP implementation and the innovation of marina managers across the country.

Management measures are steps that can be taken to control of the addition of pollutants from nonpoint sources. Management measures are achievable through the application of BMPs, technologies, processes, siting criteria, operating methods, or other alternatives.

Relationship to CZARA Guidance

Readers should note that this guidance is consistent with the *Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters* (USEPA, 1993) published under section 6217 of the Coastal Zone Act Reauthorization Amendments of 1990 (CZARA). This guidance does not supplant or replace the 1993 coastal management measures guidance for the purpose of implementing programs under section 6217.

Under CZARA, states that participate in the Coastal Zone Management Program under the Coastal Zone Management Act are required to develop Coastal Nonpoint Pollution Control Programs that ensure the implementation of EPA's management measures in their coastal management areas. The 1993 guidance continues to apply to that program.

This national management measures guidance modifies and expands upon the supplementary technical information contained in the coastal management measures guidance both to reflect circumstances relevant to differing inland conditions and to provide current technical information. It does not set new or additional standards for state Nonpoint Source Management Programs under section 319 of the Clean Water Act (CWA) or section 6217 of CZARA. It does, however, provide information that government agencies, private sector groups, and individuals can use to understand and apply measures and practices to address nonpoint source pollution from marinas and recreational boating.

National Water Quality Inventory

The nation's aquatic resources are among its most valuable assets. Although environmental protection programs in the United States like those implemented under the CWA have brought great improvements to water quality during the past 30 years, many challenges remain. Significant progress has been made in reducing pollution to the nation's waters from industrial and municipal wastewater treatment systems. Nevertheless, EPA reported in its 1998 *National Water Quality Inventory,* published in June 2000*,* that more than 35 percent of the inland waters and estuaries assessed are still too polluted to support their designated uses (based on survey information submitted by states, territories, and tribes). The health of these waters is primarily degraded by nonpoint source pollution, which is described more fully on page 1-4.

Every 2 years, EPA reports to Congress on the quality of the nation's waters in the *National Water Quality Inventory*. States, territories, and tribes survey the water quality in a sample of the rivers and streams; lakes, ponds, and reservoirs; estuaries; ocean shorelines; and/or Great Lakes shorelines in their jurisdictions and report the findings to EPA for the Inventory. Because each state, territory, and tribe surveys its jurisdictional waters according to individual priorities, the survey results cannot be generalized as the quality of the nation's waters overall, but the results do provide a snapshot of nationwide water quality and water quality trends.

The 1998 *National Water Quality Inventory* summarizes the water quality assessment reports submitted by states, territories, and tribes. Table 1-1 lists the overall percentages of each waterbody type surveyed and the water quality of those waters in terms of *designated use* support.

States, territories, and tribes designate waters as suitable for particular uses, depending on location, surrounding land use, and other factors. For instance, a river passing near an urban area might be designated to be used for noncontact recreation (such as fishing or boating), while a stream in a state park might be designated for aquatic life support. Water quality criteria are set for each waterbody according to its designated use(s).

The types of pollutants that degrade these waters are

> ***Designated uses*** are set by states as water quality goals for individual waterbodies. Designated use goals include drinking water supply, primary contact recreation (such as swimming), and aquatic life support. Each designated use has a unique set of water quality requirements or criteria that must be met for the use to be attained.

Table 1-1. Percentages of surveyed waters supporting designated uses.

Waterbody Type	Percent Surveyed	Fully Supporting All Uses[a]	Threatened for One or More Uses[a]	Impaired for One or More Uses[a]	Quantity of Waterbody Type in US
Rivers & Streams (miles)	23	65	10	35	3.7 million miles
Lakes, Ponds, & Reservoirs (acres)	42	55	9	45	41.6 million acres
Estuaries (square miles)	32	56	9	44	90,465 square miles
Ocean Shoreline (miles)	5	88	8	12	66,645 miles
Great Lakes Shoreline (miles)	90	4	2	96	5,521 miles

[a] Percent of units of waterbody type *surveyed* in this category. For example, 9 percent of the 32 percent of estuaries surveyed were threatened for one or more uses at the time of the survey.
Source: USEPA, 2000 (1998 Report to Congress)

- Nutrients (excess nitrogen and phosphorus).
- Sediment (from soil and shoreline erosion).
- Disease-causing bacteria (from animal waste washed into surface waters and inadequately treated sewage).
- Toxic metals (from mining runoff, storm-water runoff from urban and industrial areas, and industrial processes).
- Toxic organic chemicals (such as dioxins and polychlorinated biphenyls, or PCBs).
- Oxygen-depleting materials (organic materials like leaf litter that consume oxygen as they break down in the water).
- Pesticides (including insecticides and herbicides).
- Petroleum compounds (such as fuel, oil, and grease).
- Noxious or invasive aquatic plants (such as Eurasian water milfoil and water hyacinth).

The leading sources of these pollutants are agriculture, municipal point sources, industrial discharges, nonpoint sources (in general), urban runoff/storm sewers, atmospheric deposition, hydrologic modification (dams and shoreline modification), habitat modification, and mining.

Although marinas are not one of the major sources of pollution to our nation's rivers, lakes, or estuaries, they are centers of recreation, and poor or inadequate pollution prevention practices in them can result in human health problems and local water quality degradation. Examples of potential nonpoint source pollution problems at marinas include poor water circulation and flushing within the marina, petroleum spills from storage tanks and boat fueling, bilge oil discharges, and runoff from boat hull maintenance and engine repair areas. Nonpoint source pollution at marinas can also result from poor housekeeping practices (such as in-water boat washing with polluting detergents), a lack of containers for recycling solid and liquid waste materials, and inadequate sanitary facilities.

What Is Nonpoint Source Pollution?

Nonpoint source pollution results from rainwater and snow (or snowmelt) carrying pollutants picked up from the atmosphere or the ground to *surface water* and *ground water*. It is also associated with land runoff from irrigation or lawn watering, ground water drainage from mines and

landfills, seepage from broken or leaking pipes, and hydrologic modification. Hydrologic modification is anything that alters natural water currents, such as dams and levees or changes to natural shorelines with hard structures or excavation, such as riprap or cement. These are considered nonpoint sources of pollution because of the harm that can occur to the biological and physical integrity of surface and ground waters as a result of them. The nonpoint source pollutants that cause the greatest harm to surface waters are nutrients, sediments, organic matter, pathogens, and toxic compounds (including petroleum compounds and toxic metals).

> ***Surface waters*** include ponds, lakes, streams, rivers, estuaries, bays, and oceans. ***Ground water*** is the water in soils and aquifers.

Technically, the term *nonpoint source* is defined to mean any source of water pollution that does not meet the legal definition of *point source* in section 502(14) of the CWA of 1987:

> *The term "point source" means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include agricultural storm water discharges and return flows from irrigated agriculture.*

Although diffuse runoff is usually treated as nonpoint source pollution, runoff that enters and is discharged from conveyances like those described above is treated as a point source discharge. Point sources typically enter receiving water bodies at some identifiable site, such as the end of a pipe, and they are usually the result of a discharge from some industrial process or construction activity, not rain or snowfall. The distinction between point and nonpoint sources of pollution is an important one because point source discharges such as municipal and industrial wastewaters and storm sewer outfalls from urbanized areas are regulated and issued permits under the CWA, whereas nonpoint sources are not subject to federal permit requirements.

Watershed Approach to Nonpoint Source Pollution Control

Marinas, by nature of their business, are positioned in a *watershed*, where the activities of others in the watershed affect water quality in the marina basin. Water quality at any specific point along a river is influenced by all upstream and upgradient locations in the river's watershed. Marinas located on rivers and reservoirs are potential recipients of the runoff from sources located upstream and along upstream tributaries, and from all upgradient land-based activities in the watershed. Lakes are the natural sinks for runoff from activities in their basins, and the water quality in marinas on lakes is potentially influenced by all of the activities in the watershed and activities that occur on the lake. The water quality of marinas in estuaries and coastal areas is similarly influenced by the numerous activities that contribute runoff and pollutants to the water flowing into the marina basin. The runoff from marinas in urban settings is often mixed with runoff from nearby areas because runoff is directed toward the surface waters where marinas are located. Similarly, marinas in watersheds where agriculture is abundant may receive a lot of runoff from upland agricultural sources.

Marinas can benefit from cooperative environmental protection efforts that involve and educate those who potentially contribute pollutants to the surface waters in the watershed where the marina is located and seek responsible, shared solutions to water quality problems.

Since 1991 EPA has promoted the watershed protection approach as a comprehensive framework for addressing complex pollution problems, such as those from nonpoint sources within a defined geographic area. The watershed protection approach is not a new centralized government program. It is a flexible framework for focusing and integrating current environ-

> ***Watersheds*** are areas of land that drain to a single stream, lake, or other water resource. Watersheds are defined solely by drainage areas and not by land ownership or political boundaries.

mental protection efforts and for exploring innovative methods to achieve maximum efficiency in using resources and obtaining positive environmental effects.

The watershed protection approach is a comprehensive planning process that considers all natural resources in a watershed, as well as social, cultural, and economic factors (Figure 1-1). The process tailors workable solutions to ecosystem needs through the participation and leadership of stakeholders.

Although watershed approaches might vary in terms of specific objectives, priorities, elements, timing, and resources, all should be based on the following guiding principles:

- *Partnerships*: People affected by management decisions are involved throughout and help shape key decisions. Cooperative partnerships among federal, state, and local agencies; Indian tribes; and nongovernmental organizations with interests in the watershed are formed. This approach ensures that environmental objectives are well integrated with those for economic stability and other social/cultural goals of the area. The approach also builds support for action among the people who are economically dependent on the natural resources of the area.

  Watershed projects typically involve state environmental, public health, agricultural, and natural resources agencies; local and/or regional boards, commissions, and agencies; EPA waterand air programs; other federal agencies; private wildlife and conservation organizations; industry sector representatives; and the academic community.

- *Geographic focus*: Resource management activities are coordinated and directed within specific geographic areas, usually defined by watershed boundaries, areas overlying or recharging ground water, or a combination of both. Watershed projects encompass all or most of the landscape in a well-defined watershed or other ecological, physiographic, or hydrologic unit, such as an embayment, an aquifer, or a lake and its drainage area.

- *Sound management techniques based on strong science and data*: Collectively, watershed stakeholders employ sound scientific data, tools, and techniques in an

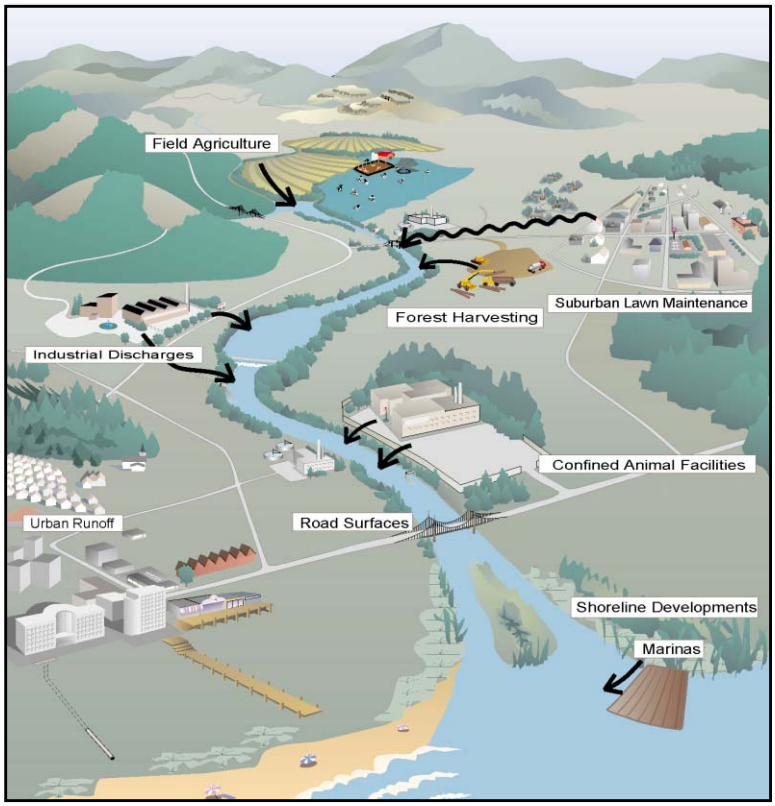

Figure 1-1. Schematic of a watershed. Sources of pollutants from throughout the watershed are carried downstream in surface water runoff and ground water flow. The watershed approach involves examining all pollution problems in the watershed, setting priorities, and taking an integrated approach to addressing the problems.

iterative decision-making process. Typically, this process includes:

– Assessment and characterization of the natural resources in the watershed and the people who depend on them.

– Goal setting and identification of environmental objectives based on the condition or vulnerability of resources and the needs of the aquatic ecosystem and the people. Well-defined goals and objectives are established for the watershed, including objectives for chemical water quality (e.g., reduced toxicity), physical water quality (e.g., temperature, flow, circulation), habitat quality (e.g., channel morphology, health of biotic communities), and biodiversity (e.g., species number, range, replacement of exotic species with native species).

– Identification of priority problems. Watershed projects identify the most significant threats to water quality, based on a comparative risk analysis of the potential human health, ecological, and economic impacts. The resources of the participants in a watershed project are then targeted in a coordinated fashion toward the high-risk problems.

– Development of specific management options and action plans. Based on the priorities that have been set, integrated action plans that will achieve the goals and objectives of the watershed protection project are devised.

– Implementation, evaluation, and revision of plans as needed. All appropriate authorities and techniques are employed to achieve the goals and objectives set forth in the action plans. Normally, existing programs of local, state, and federal agencies; private environmental and civic groups; and industries and corporations form the basis of the framework for implementation of the action plans. These separate efforts are merely coordinated and redirected to work together more efficiently to achieve common goals. Cost savings due to this coordination of efforts are often realized by the participants.

- *Getting Organized*: Working as a task force, stakeholders reach consensus on goals and approaches for addressing a watershed's problems, the specific actions to be taken, and how those actions will be coordinated and evaluated. Coordinated action can be taken in areas such as voluntary pollution prevention (BMP installation) and source reduction (waste minimization).

Programs to Control Nonpoint Source Pollution

Several federal laws and programs that address nonpoint source pollution in one form or another are in effect. The most important ones are discussed below.

National Nonpoint Source Pollution Control Program

During the first 15 years of the federal water pollution control program to abate and control water pollution (1972–1987), EPA and the states focused most of their water pollution control activities on industrial and municipal wastewater point source discharges. They regulated point sources through the National Pollutant Discharge Elimination System (NPDES) permit program established by section 402 of the 1972 Federal Water Pollution Control Act (Clean Water Act). Discharges of dredged and fill materials into wetlands were also regulated by EPA and the U.S. Army Corps of Engineers under section 404 of the CWA.

As a result of these activities, by the mid-1980s pollutant loads from point source discharges had been greatly reduced and considerable progress had been made in restoring and maintaining water quality. However, the gains made in controlling point sources had not achieved the desired level of water quality improvement. Recent studies and surveys by EPA and by state water quality agencies indicate that most of the remaining water quality improvement impairments in rivers, streams, lakes, estuaries, coastal waters, and wetlands result from nonpoint source pollution and other nontraditional sources, such as urban storm water discharges and combined sewer overflows.

In view of the growing national awareness of the now-dominant influence of nonpoint source pollution on water quality, Congress amended the CWA in 1987 to focus pollution control efforts on nonpoint sources. The amended CWA added a fundamental principle to section 101, "Declaration of Goals and Policy":

> *It is the national policy that programs for the control of nonpoint sources of pollution be developed and implemented in an expeditious manner so as to enable the goals of this Act to be met through the control of both point and nonpoint sources of pollution.*

Supporting the section 101 Declaration, Congress enacted section 319 in the 1987 act, which established a national program to control nonpoint sources of water pollution. Under section 319, states, territories, and Indian tribes address nonpoint source pollution by assessing the problems and causes of nonpoint source pollution and implementing management programs to control them. Section 319 authorizes EPA to issue grants to states and tribes to assist them in implementing management programs or the portions of management programs that have been approved by EPA. In 1990–2001, EPA awarded more than $1.3 billion in section 319 grants to help states, territories, and tribes implement their nonpoint source programs.

Further information about nonpoint source pollution control is available at EPA's web site, http://www.epa.gov/owow/nps.

Storm Water Permit Program

The CWA prohibits the discharge of any pollutant to waters of the United States from a point source unless the discharge is allowed under a National Pollutant Discharge Elimination System (NPDES) permit. The NPDES permitting program is designed to track classes of point source discharges, monitor the discharge of pollutants from specific sources to surface waters, and require the implementation of the controls necessary to minimize the discharge of pollutants.

As pollution control measures for industrial and municipal wastewater sources were implemented and refined, studies showed that storm water runoff draining large surface areas, such as agricultural and urban land, was also a significant cause of water quality impairment.

In 1987 Congress amended the CWA to require implementation of a comprehensive national program for addressing problematic nonagricultural sources of storm water discharges. As required by the amended CWA, the NPDES Storm Water Program is implemented in two phases:

- Phase I requires permits for separate storm water systems serving large- and medium-sized communities (those with more than 100,000 inhabitants) and for storm water discharges associated with industrial and construction activity involving at least 5 acres (see Title 40 of the Code of Federal Regulations [CFR], Part 122).
- Phase II addresses urban areas with populations of less than 100,000; construction sites of 1 to 5 acres; and retail, commercial, and residential activities.

Further information is available on EPA's NPDES Storm Water Program web page, http://www.epa.gov/owm/npdes.htm.

Information on the applicability of the Storm Water Permit Program to marinas is provided in Section 4.5.

Coastal Nonpoint Pollution Control Program

In November 1990 Congress enacted CZARA. The amendments were intended to address the impacts of nonpoint source pollution on coastal water quality. Section 6217, "Protecting Coastal Waters" (codified as 16 U.S.C. section 1455b), provides that each state with an approved Coastal Zone Management Program must develop and submit a Coastal Nonpoint Pollution Control Program to EPA and the National Oceanic and Atmospheric Administration (NOAA) for approval. Section 6217 required NOAA to recommend and states to determine the geographic area in each coastal state within which land and water uses have a significant effect on coastal water quality, and states are to implement control measures

within this 6217 management area, or coastal management area.

Coastal Nonpoint Pollution Control Programs are not intended to supplant existing Coastal Zone Management Programs and Nonpoint Source Management Programs. Rather, they are to serve as an update and expansion of existing nonpoint source management programs in the 6217 management area and are to be coordinated closely with the Coastal Zone Management Programs that states and territories are already implementing. The legislative history indicates that the central purpose of section 6217 is to strengthen the links between federal and state coastal zone management and water quality programs and to enhance state and local efforts to manage land use activities that degrade coastal waters and habitats.

Section 6217(g) of CZARA required EPA to publish, in consultation with NOAA, the U.S. Fish and Wildlife Service, and other federal agencies, "guidance for specifying management measures for sources of nonpoint pollution in coastal waters." EPA published *Guidance Specifying Management Measures for Sources of Nonpoint Source Pollution in Coastal Waters* in 1993. In that document, CZARA management measures and BMPs were defined and described for marinas and recreational boating, as well as for urban development, agriculture, hydromodification and wetlands, and forestry.

Further information on CZARA and coastal nonpoint source pollution control can be found at the EPA web site for CZARA and section 6217: http://www.epa.gov/owow/czmact.html.

Clean Vessel Act Pumpout Grant Program

The Clean Vessel Act (CVA) Pumpout Grant Program makes matching grants available, through a competitive process, to all states and territories for construction and education efforts and to coastal states (excluding Alaska) to conduct surveys and develop plans for the installation of pumpouts for onboard sewage holding tanks. States match grant funds at a 3:1 (federal-to-state) ratio. The program benefits boaters, who will have more numerous and convenient pumpout facilities to use as a result of the program, and the public and environment as a whole through reductions of disease-carrying microorganisms contained in sewage discharges and improvements in dissolved oxygen concentrations. Further information is available at http://fa.r9.fws.gov/cva/cva.html.

International Convention for the Prevention of Pollution from Ships (MARPOL)

The International Convention for the Prevention of Pollution from Ships, known as MARPOL 73/78 (for Marine Pollution) is an internationally accepted treaty that, together with U.S. laws and regulations, sets out operational waste discharge requirements for ships. MARPOL 73/78 contains five annexes designed to reduce marine pollution by controlling or prohibiting discharges of harmful substances from ships (see box). It covers intentional and accidental discharges of wastes of all kinds from vessels and applies to ports, terminals, and marinas as well. The United States is signatory to MARPOL 73/78 and Annexes I, II, III, and V; Annex IV is not currently in force internationally.

MARPOL 73/78 ANNEXES

Annex I:	Oil
Annex II:	Noxious liquid substances in bulk
Annex III:	Harmful substances carried in package form
Annex IV:	Sewage
Annex V:	Garbage and all other ordinary ship-generated solid and liquid waste not covered by Annexes I, II, III, and IV

In the United States, MARPOL 73/78 is implemented through the Act to Prevent Pollution from Ships of 1980, as amended. The U.S. Coast Guard is responsible for promulgating regulations and enforcing the treaty. Regulations for ships are included in 33 CFR Part 151; those for port reception facilities are included in 33 CFR Part 158.

MARPOL 73/78 Annex V is implemented in the United States by the Marine Plastic Pollution Research and Control Act (MPPRCA) of 1987, Title II of Public Law 100-220. Annex V prohibits disposal of plastics at sea and restricts at-sea disposal of other vessel-generated trash. It also requires shore reception facilities for the plastics and other trash brought to shore for disposal. Recreational boating facilities, along with other ports and terminals, are required to have a trash reception facility that is capable of receiving trash from those vessels that do business with them (33 CFR Part 158). Vessels 26 feet or longer must display a placard that explains MARPOL 73/78 Annex V ocean disposal regulations (Figure 1-2).

Oil Pollution Act (OPA) and Regulations

The Oil Pollution Act (OPA) is a comprehensive prevention, response, liability, and compensation regime for dealing with vessel- and facility-generated discharges of oil or hazardous substances. Under the OPA, any hazardous waste spill from a vessel must be reported by the owner of the vessel and vessel owners are responsible for any costs of a resulting environmental cleanup and any damage claims that might result from the spill. Marinas are responsible for any oil contamination resulting from their facilities, including dumping or spilling of oil or oil-based paint and the use of chemically treated agents.

The OPA also requires Area Committees to prepare an Area Contingency Plan for approval by EPA and the Coast Guard. An Area Contingency Plan provides details of how to respond to a spill within a specific geographic area. Marinas are subject to a broader range of claims and liability than vessel owners, and marina owners should consult their Area Contingency Plan for proper remedial actions.

There are other laws that relate directly and indirectly to marinas and recreational boating. The major tenets of those laws are presented in Appendix D and on EPA's web site at http://www.epa.gov/oilspill.

Sources of Further Information

Other information about nonpoint source pollution and its control can be accessed at the Office of Wetlands, Oceans, and Watersheds page of the EPA web site, http://www.epa.gov/owow.

USCG. 1994. *Managing Waste at Recreational Boating Facilities*. U.S. Coast Guard, Marine

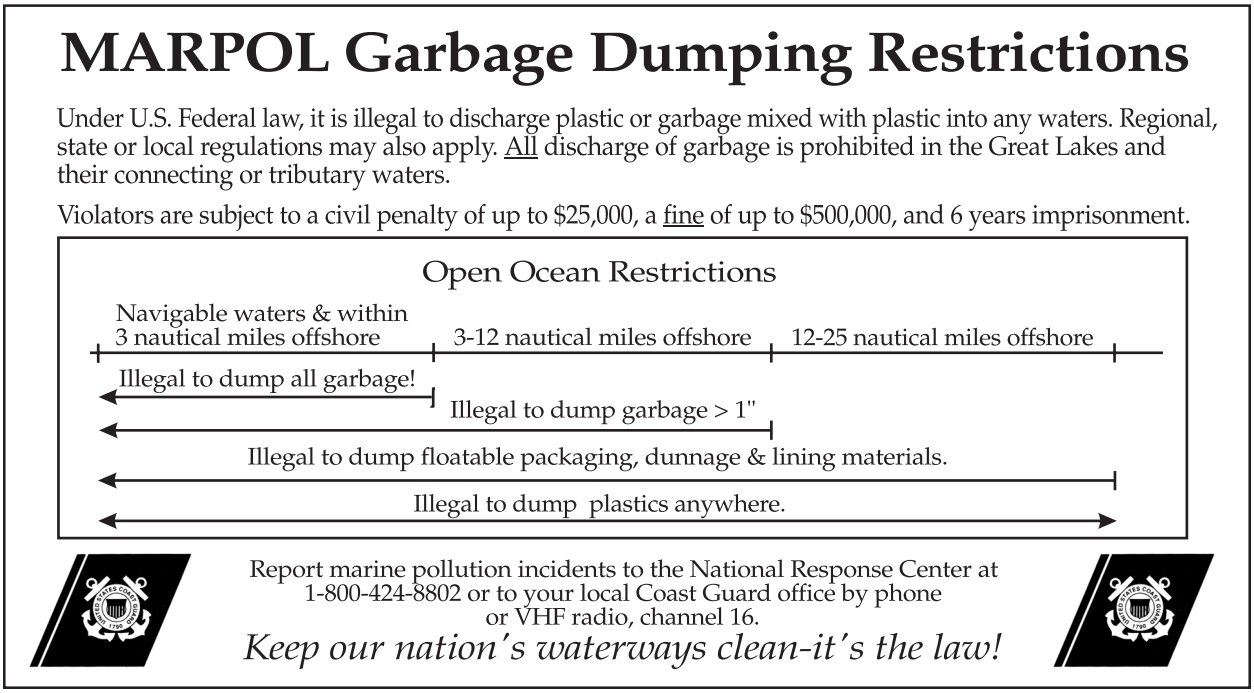

Figure 1-2. MARPOL placard

Environmental Protection Division, Environmental Coordination Branch, Washington, DC. April.

USEPA. 1993. *Guidance specifying management measures for sources of nonpoint pollution in coastal waters*. EPA 840-B-92-002. U.S. Environmental Protection Agency, Office of Water, Washington, DC. January.

USEPA. 1996. *Clean Marinas—Clear Value: Environmental and Business Success Stories*. EPA 841-R-96-003. U.S. Environmental Protection Agency, Office of Water, Washington, DC. August.

USEPA and USDOC. 1993. *Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance*. U.S. Environmental Protection Agency, Office of Water, Washington, DC, and National Oceanic and Atmospheric Administration, Washington, DC. January.

Watershed Resources

EPA's Surf Your Watershed web site offers a Web-based source of information about watersheds throughout the United States. The site contains information about watershed size, pollutants, stressors, and condition. Access information for any watershed in the nation by clicking on maps at http://www.epa.gov/surf.

USEPA. 1991. *The Watershed Protection Approach*. EPA/503/9-92/002. U.S. Environmental Protection Agency, Office of Water, Washington, DC. December.

USEPA. 1995. *Watershed Protection: A Project Focus*. EPA841-R-95-003. U.S. Environmental Protection Agency, Office of Water, Washington, DC. August.

USEPA. 1997. *Top 10 Watershed Lessons Learned*. EPA840-F-97-001. U.S. Environmental Protection Agency, Office of Water, Washington, DC. October. [This document discusses some very important lessons in ensuring the success of watershed protection projects, gained from experience with the watershed approach for addressing environmental problems. The document contains case studies of watershed projects that have been implemented throughout the country and lists of contacts for further information and technical assistance. It is available at http://www.epa.gov/owow/lessons.]

Other references and information on organizations related to pollution prevention in marinas can be found in the bibliography and Appendix E. Other information about nonpoint source pollution and its control can be found at the EPA Office of Wetlands, Oceans, and Watersheds web page: http://www.epa.gov/owow.