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ASSESSING AND MONITORING FLOATABLE DEBRIS

August 2002



Assessing and Monitoring Floatable Debris



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MESSAGE FROM THE ADMINISTRATOR



I am pleased to provide you with a guidance document, *Assessing and Monitoring Floatable Debris*, which will help states, tribes, and local governments address their problems with floatable debris in our waterways and on our beaches.

In coastal communities across the nation and around the world, there is a growing concern regarding the impacts of floatable debris on public health and the marine environment. Because of recurring incidents such as entanglement of endangered species, loss of tourism, injured beach-goers, eyesore views of coastal areas and damaged property, we are looking for solutions to address this growing issue.

In October 2000, Congress passed the Beaches Environmental Assessment and Coastal Health (BEACH) Act. The BEACH Act, among other things, asked EPA to provide technical assistance to states and local governments in assessing and monitoring their floatable materials.

The purpose of this document is to help states, tribes, and local governments develop programs to assess and monitor their coastal recreation waters for floatable debris. These programs would be used to help identify sources of floatable debris, protect human and animal health and safety in those waters, and restore and preserve the overall coastal watershed and aquatic environment.

We are also concerned about the health of our beachgoers and have initiated a program to ensure frequent monitoring of our beach waters, and that the information on water quality is made available to the public. EPA has developed the *National Beach Guidance and Required Performance Criteria for Grants* to address these issues.

EPA hopes that this document, *Assessing and Monitoring Floatables Debris*, along with the efforts from the volunteers and the community, will help strengthen the future of our coastal recreation waters by helping our citizens develop an environmental awareness that will last a lifetime.

Christine Todd Whitman
Administrator

Assessing and Monitoring Floatable Debris

August 2002

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Contents

Executive Summary	ix
Section 1: Introduction	1-1
1.1 Importance of Coastal Watersheds	1-1
1.2 Impacts of Floatable Debris	1-2
1.2.1 Impacts on Wildlife	1-2
1.2.2 Impacts on Humans	1-4
1.3 Beaches Environmental Assessment and Coastal Health Act of 2000	1-6
1.4 Other Floatable Debris-Related Legislation	1-6
Section 2: Types and Origins of Floatable Debris	2-1
2.1 Storm Water Discharges	2-2
2.2 Combined Sewer Overflows	2-3
2.3 Beachgoers and Other Nonpoint Sources	2-3
2.4 Ships and Other Vessels	2-3
2.5 Solid Waste Disposal and Landfills	2-4
2.6 Offshore Mineral and Oil and Gas Exploration/Production	2-4
2.7 Industrial Activities	2-4
2.8 Illegal Dumping or Littering	2-5
Section 3: Current Floatable Debris Assessment and Monitoring Methodologies	3-1
3.1 Floatables Action Plan for New York and New Jersey Waters	3-1
3.1.1 Background	3-1
3.1.2 Goals	3-1
3.1.3 Methodology	3-2
3.1.4 Unique Characteristics	3-2
3.1.5 Contact Information	3-2
3.2 Combined Sewer Overflows Studies Program	3-2
3.2.1 Background	3-2
3.2.2 Goals	3-2
3.2.3 Methodology	3-3
3.2.4 Unique Characteristics	3-4
3.2.5 Contact Information	3-4
3.3 International Coastal Cleanup Campaign	3-4
3.3.1 Background	3-4
3.3.2 Goals	3-4
3.3.3 Methodology	3-5
3.3.4 Unique Characteristics	3-5

3.3.5	Contact Information	3-5
3.4	National Marine Debris Monitoring Program	3-5
3.4.1	Background	3-5
3.4.2	Goals	3-6
3.4.3	Methodology	3-6
3.4.4	Unique Characteristics	3-7
3.4.5	Contact Information	3-7
3.5	Storm Drain Sentries Program	3-7
3.5.1	Background	3-7
3.5.2	Goals	3-7
3.5.3	Methodology	3-7
3.5.4	Unique Characteristics	3-8
3.5.5	Contact Information	3-8
3.6	Clean Marinas Program	3-8
3.6.1	Background	3-8
3.6.2	Goals	3-9
3.6.3	Methodology	3-8
3.6.4	Unique Characteristics	3-9
3.6.5	Contact Information	3-9
Section 4: Developing a Floatables Assessment and Monitoring Program		4-1
4.1	Marine Debris Survey Manual	4-1
4.1.1	Design Protocols for Monitoring and Assessment of Marine Debris ..	4-1
4.1.2	Variables to Be Considered Overall	4-2
4.1.3	Shipboard Sighting Surveys for Large Debris Items	4-2
4.1.4	Contact Information	4-2
4.2	Marine Debris Monitoring and Cleanup	4-3
4.2.1	Sampling Considerations and Options	4-3
4.2.2	Conducting a Marine Debris Cleanup	4-3
4.2.3	Contact Information	4-4
Section 5: Prevention and Mitigation Activities Associated with Floatable Debris		5-1
5.1	Plastic Pellet Containment	5-1
5.2	Combined Sewer Overflow Permit Conditions for Floatable Debris	5-1
5.3	Navesink River Nonpoint Source Program	5-2
5.4	Debris-Impaired Waters and Total Maximum Daily Loads	5-2
5.5	National Estuary Programs	5-3
5.5.1	New York-New Jersey Harbor Estuary Program	5-3
5.5.2	Long Island Sound Study	5-5
5.5.3	San Juan Bay Estuary	5-6
5.5.4	Santa Monica Bay Restoration Project	5-7

References and Additional Resources	References-1
Glossary	Glossary-1
Acronyms	Acronyms-1
Appendix A: International Coastal Cleanup Data Card	A-1
Appendix B: National Marine Debris Monitoring Program Data Card	B-1
Appendix C: Storm Drain Stenciling Data Cards	C-1
Appendix D: Surveys from the <i>Marine Debris Survey Manual</i>	D-1

Executive Summary

Assessing and Monitoring Floatable Debris is designed to assist states, tribes, and local governments in developing their own assessment and monitoring programs for floatable debris in coastal recreation waters. The Beaches Environmental Assessment and Coastal Health (BEACH) Act of 2000 defines coastal recreation waters as the Great Lakes and marine coastal waters (including coastal estuaries) that are designated under section 303(c) of the Clean Water Act by states. Coastal watersheds, which include coastal recreation waters as well as upstream areas, beaches, nearshore waters, estuaries, oceans, and offshore habitats, are important resources. They are a source of aesthetic beauty, recreation, and food, and they have local and national economic value. These waters provide habitat for thousands of aquatic species and represent a scientific resource. Despite their value, coastal recreation waters sometimes appear to be a repository for trash and other types of wastes. The floatable materials in these wastes, referred to as floatable debris, can have an adverse impact on both wildlife and humans. Turtles, marine mammals, birds, fish, crustaceans, and other wildlife are affected primarily by entanglement and ingestion. Floatable debris can also endanger human health and safety. For example, some types of debris can pose a health risk through disease transmission, sharp objects can cause injury, and floatable debris can disable vessels when propellers become entangled. Floatable debris also is visually unappealing, which can cause economic losses from decreased tourism, and potentially damaging to boats, which can financially harm a region's fishing industry.

In response to growing concern regarding the impact of floatable debris, important legislation has been passed and programs implementing the legislation have been established. In 1987, Congress approved ratification of Annex V of the MARPOL treaty and enacted domestic legislation known as the Marine Plastic Pollution Research and Control Act, which prohibits any ship in U.S. waters from dumping plastics. Other floatable debris-related legislation includes the Shore Protection Act of 1988; the Marine Protection, Research, and Sanctuaries Act; and the Clean Water Act, as amended by the Water Quality Act of 1987. In October 2000, Congress passed the BEACH Act. The BEACH Act authorizes the U.S. Environmental Protection Agency (EPA) to award program development and implementation grants to eligible states, territories, tribes, and local governments to support microbiological testing and monitoring of coastal recreation waters that are adjacent to beaches or similar points of access used by the public. It also tasks EPA to provide technical assistance to states and local governments in establishing assessment and monitoring programs for floatable materials. The BEACH Act defines floatable materials as any foreign matter that may float or remain suspended in the water column. The term includes plastic, aluminum cans, wood products, bottles, and paper products.

This document provides examples of monitoring and assessment programs that have been established in the United States to address the impact of floatable debris, as well as examples of mitigation activities to address floatable debris, and contact information. Section 1 of the document discusses some of the impacts of floatable debris on the aquatic environment, and describes the current legislation available to address those impacts.

Section 2 of the document discusses the types and origins of floatable debris. The many types of floatable debris and their origins include street litter, medical items, debris from industrial activities, sewage-related items, galley waste from ships, fishing equipment, and items from offshore mineral and oil and gas exploration activities. Floatable debris can be transported into coastal recreation waters from land by improper disposal of trash by beachgoers, by rain washing the debris into storm drains or directly into rivers and streams, or the debris being blown into the waters from landfills, garbage bins, or litterbugs. It also can be deposited into coastal recreation waters from ocean sources such as ships, recreational boaters, fishermen, and offshore oil and gas exploration and production facilities. Floatable debris can travel long distances over the ocean and be deposited far from its source.

Section 3 discusses a variety of plans and programs that have been developed and implemented to assess and monitor floatable debris. Although each plan or program seeks to reduce floatable debris, the specific objectives or strategies vary:

- The Floatables Action Plan, for example, was developed by an interagency work group to reduce the number of ocean beach closings in New York and New Jersey due to floatable debris.
- EPA initiated the Combined Sewer Overflow (CSOs) Studies Program to supplement existing information on CSOs and storm water discharges (SWDs) as sources of floatable debris. The program was implemented through monitoring of CSOs and SWDs, and it provides a characterization of debris from those discharges.
- The International Coastal Cleanup Campaign (ICCC) was established to conduct annual cleanups and to characterize debris found on shorelines, underwater sites, waterways, and beaches. The ICCC also is designed to increase public awareness about the impact of marine debris.
- The National Marine Debris Monitoring Program, established to characterize types of debris washing onto beaches and the sources of that debris, is a statistically valid, 5-year scientific study.
- Finally, the Storm Drain Sentries Program was developed to address the impact of floatable debris on coastal watersheds from storm drain systems.

Section 4 presents recommendations for developing assessment and monitoring programs that were presented in the *Marine Debris Survey Manual*, developed by the National Oceanic and Atmospheric Administration, and Chapter 16 of EPA's *Volunteer Estuary Monitoring: A Methods Manual* (USEPA, 1993). The *Marine Debris Survey Manual* provides useful information for designing marine debris surveys and assessment and/or monitoring programs, considering important variables such as wind and the type of debris, and conducting shipboard sighting surveys for large debris items. Chapter 16 of the *Volunteer Estuary Monitoring: A Methods Manual*, includes recommendations for organizing a floatable debris monitoring and cleanup program.

Section 5 provides a number of examples of prevention and mitigation activities associated with floatable debris that are under way around the country. The following are examples:

- The Society of the Plastics Industry partnered with EPA to characterize process operations in the plastics industry and to identify potential sources of plastic pellet losses to the environment. EPA reported its recommendations to the plastics industry.
- A CSO and storm water permit system is being developed in New York and New Jersey. The system will address the control of solids and floatable debris.
- The Navesink River Nonpoint Source Program was established to reduce nonpoint source bacterial pollution in the Navesink estuary.
- Some states, such as California, New York, and Alaska, have listed debris as a pollutant that is causing impairment of their waters. A number of states, including California, have developed or are in the process of developing Total Maximum Daily Loads (TMDLs) to address the impact of debris.
- Several National Estuary Programs have floatable debris management goals in their Comprehensive Conservation and Management Plans. Some examples include: (1) the New York-New Jersey Harbor Estuary Program; (2) the Long Island Sound Study; (3) the San Juan Bay Estuary; and (4) the Santa Monica Bay Restoration Project. These programs address floatable debris by involving local communities in the assessment and monitoring process.