

REPORT OF THE WORKING GROUP ON LAW AND POLICY

(David Cottingham, Chair)

The working group reviewed existing legal and institutional arrangements to curtail the disposal and loss of solid wastes into the marine environment. Many nations have signed various international agreements and passed domestic laws that prohibit or limit disposal of plastic and other refuse into the sea, including disposal of wastes from ships. An undetermined, though probably significant, amount of marine debris originates on land. The group, therefore, concluded that solutions to the problem of marine debris should be developed and implemented in concert with efforts to address broader solid waste management issues. The most pressing needs identified include:

1. participating in the relevant international agreements;
2. assuring that adequate reception facilities are available at all ports and harbors to receive ship-generated garbage returned to shore; and
3. adopting national policies and programs, such as recycling and innovative packaging, to reduce the quantities of solid waste generated.

CONTROLLING AT-SEA SOURCES OF MARINE DEBRIS

The international agreement of greatest importance for controlling the discharge of plastics and other solid wastes into marine waters are:

- International Convention for the Prevention of Pollution from Ships, 1973/1978, Annex V (MARPOL Convention); and
- International Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Dumping Convention (LDC)).

The MARPOL Annex V regulates the disposal of ship-generated garbage. The LDC restricts transporting land-generated solid wastes to sea for the purpose of dumping.

At least 10 regional conventions control various forms of marine pollution, including the disposal of plastics and other solid wastes, from both sea- and land-based sources. They include:

In R. S. Shomura and M. L. Godfrey (editors), Proceedings of the Second International Conference on Marine Debris, 2-7 April 1989, Honolulu, Hawaii. U.S. Dep. Commer., NOAA Tech. Memo. NMFS, NOAA-TM-NMFS-SWFSC-154. 1990.

- Convention on the Conservation of Antarctic Marine Living Resources, 1980.
- Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1974 (the Helsinki Convention).
- Convention for the Prevention of Marine Pollution from Land-Based Sources, 1970.
- International Convention for the High Seas Fisheries of the North Pacific Ocean, 1952.
- Convention for the Protection of Marine Pollution by Dumping from Ships and Aircraft, 1972 (the Oslo Convention).
- Convention for the Protection and Development of the Wider Caribbean Region, 1983 (the Cartagena Convention).
- Convention for the Protection of the Mediterranean Sea Against Pollution, 1976 (the Barcelona Convention).
- Kuwait Regional Convention for Cooperation on the Protection of the Marine Environment from Pollution, 1978.
- Convention for Cooperation in the Protection and Development of the Marine Environment of the West and Central African Region, 1981 (the Abidjan Convention).
- Regional Convention for the Conservation of the Red Sea and Gulf of Aden Environment, 1982 (the Jeddah Regional Convention).

The latter five are part of the United Nations Environment Program Regional Seas Program.

The working group concluded that these international conventions jointly prohibit the disposal of plastics and other solid materials in the sea, thereby establishing this prohibition as "customary international law."

Of 131 nations that are members of the International Maritime Organization (IMO), 36 have ratified optional Annex V of MARPOL as of April 1989. These countries account for approximately 56% of the world's total gross commercial shipping tonnage. Many signatory nations are still in the process of developing programs to implement Annex V. In particular, many ports do not have adequate or convenient facilities for accepting ship-generated garbage.

Annex V identifies five "special areas"--the Baltic Sea, Red Sea, Mediterranean Sea, Black Sea, and "Gulfs Area." Within these special areas, ships are prohibited from disposing of all solid wastes (except comminuted food wastes beyond 12 nmi from shore). Before these provisions

can become effective, however, 1) each adjoining nation must certify that it agrees to designation of the area as a special area, and 2) that its ports have adequate reception facilities for handling ship-generated garbage. All nations surrounding the Baltic Sea have notified IMO. As of 1 October 1989, special area provisions in the Baltic Sea became effective. The Marine Environment Protection Committee (MEPC) recently added the North Sea as a special area. The United States is proposing to add the Gulf of Mexico as well.

CONTROLLING LAND-BASED SOURCES OF MARINE DEBRIS

Many items which become marine debris wash or blow into oceans and estuaries from landfills, municipal sewer systems, recreational beaches, industrial outfalls, illegal shoreline dumping, and other sources. Controlling land-based sources of persistent marine debris raises difficult problems which all nations must address domestically. International agreements are not well suited for controlling wastes from sites located on land.

Working group participants discussed the problems associated with effectively handling municipal and industrial solid waste throughout the world. Developed nations produce the largest per capita amounts of solid waste and generally have systems in place to dispose of it. Developing nations, on the other hand, frequently lack effective solid waste collection and disposal systems. Problems caused by marine debris in developing nations must be viewed within the context of their overall ability to handle all solid wastes. In such countries, marine debris may be a relatively small component of problems associated with handling solid wastes.

In the United States, responsibility for controlling nonhazardous wastes rests with the state and local governments. State and local agencies throughout the country have antilittering and dumping laws. However, enforcing these laws is difficult and penalties for violating them are not severe. Most local agencies, like the municipally operated Keep America Beautiful and Don't Mess With Texas programs, concentrate efforts on informing the public through antilitter campaigns.

Working group participants discussed the importance of reducing the volume of ship-generated solid waste by modifying ship stores purchasing and having rigorous onboard waste management. Current packaging systems often include throwaway containers, many of which could be recycled if systems and markets existed for the initial products and the recycled material. Japan, Denmark, parts of the United States and Canada, and other countries require people to separate newspapers, aluminum cans, clear and colored glass, and some plastic bottles for recycling. Seattle officials estimate that its recycling program, with curbside residential pickup of separated refuse, has reduced the volume of solid waste by 40%. Recycling has proven to be an effective way to remove aluminum and glass containers from the solid waste stream.

IMPROVED TECHNOLOGY

Although the subject of advanced technology was addressed by another working group, the Law and Policy Working Group briefly discussed ways to encourage research on degradability of single-use items such as plastic cups, plastic eating utensils, plastic bags, and tampon applicators. Degradable products may be a partial solution to the problem of marine debris. However, application of this technology requires further consideration of what happens to them as they break down. For example, wildlife may be just as likely to ingest the smaller fragments produced as plastic items degrade.

WORKING GROUP RECOMMENDATIONS

The Working Group on Law and Policy recommends that the following actions be taken by the IMO, national governments, and private industry:

Loss and Disposal of Garbage From Ships

1. Nations that have not yet ratified MARPOL Annex V and any regional conventions applicable to them which restrict disposal of solid wastes into marine waters should do so as soon as possible.
2. Nations which have ratified MARPOL Annex V should accelerate efforts towards full implementation of required provisions for port reception facilities.
3. The MEPC of IMO should review its guidelines for port reception facilities for garbage to facilitate effective implementation pursuant to Annex V of MARPOL. The MEPC should give particular attention to: 1) recovering or defraying the costs of operating port reception facilities and handling wastes (e.g., through recycling and refuse separation); 2) methods for handling various types of wastes; and 3) simplifying the steps and procedures that vessel owners and operators must follow to use port reception facilities.
4. The MEPC nations should consider measures which could ensure that vessels do not leave ports with garbage on board, for example, consistent fee systems.
5. National governments should provide information and, where possible, economic incentives to help ports comply with port reception facility requirements of Annex V. National governments also should assist local port communities where significant increases in the volume of solid waste result from the installation of new port reception facilities. For example, in the United States, Federal and state officials should expedite reviews of applications and permits for landfills and incinerators in port communities in developing

recycling programs, and expedite review of applications and permits for disposal facilities made necessary by increased wastes from ships.

6. Governments and port authorities should develop incentive systems, such as requiring or including off-loading fees as part of docking fees, rather than penalties to encourage compliance with Annex V.
7. The IMO should consider expanding Annex V guidelines or developing other forms of providing advice on the development and use of vessel logs for tracking the handling and disposal of ship-generated garbage.
8. Nations adjacent to special areas of Annex V should accelerate the development of port reception facilities to enable special area provisions to become effective at the earliest possible dates. In particular, nations bordering the Gulf of Mexico should take steps to designate the gulf as a special area under Annex V.
9. Governments should consider sharing collection and refuse transportation costs.
10. Governments should consider developing uniform signage and coloration standards for refuse and recycling facilities.

Shoreline Sources of Marine Debris

1. Nations should examine ways to prevent garbage and litter from escaping from landfills, industrial outfalls, sewage outfalls, and harbors or washing from beaches and shorelines into coastal waters.
 2. Regional seas programs should provide technical assistance to member nations on siting disposal facilities and handling solid wastes in coastal areas.
 3. Industries manufacturing or transporting plastics and plastic products should ensure that plastic resin pellets are not lost into the marine environment during handling.
 4. All levels of governments should encourage recycling programs to reduce the volume of material which becomes solid waste. For instance, in Japan the plastics industry, in cooperation with fishing villages, has found ways to collect and recycle gillnets and trawl nets.
 5. Governments should require that ships and barges transporting solid wastes be fully covered to prevent debris from dropping or blowing into waterways. Transfer facilities should be required to have booms and skimmers in
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place to remove refuse which enters waterways, and load limits and maximum heights for barges should be prescribed.

6. The Environmental Protection Agency and coastal municipalities should consider developing and requiring installation of equipment to prevent items in combined sewer overflows from entering waterways.
7. National governments should require that governmental entities preferentially purchase recycled goods.

Compliance and Enforcement

1. Governments party to MARPOL Annex V should develop incentives to encourage vessel owners and operators to comply with garbage disposal provisions.
2. Vessel owners and operators should be encouraged to report to national authorities and IMO those ports and harbors in Annex V signatory nations that do not have adequate port reception facilities. They should also be encouraged to report ports in nations which are not party to Annex V. For example, in the United States, the U.S. Coast Guard should publicize citizen reporting networks and encourage Coast Guard Auxiliary members to report violations of marine pollution regulations, including the absence of required port reception facilities.
3. The IMO should encourage member nations to develop innovative enforcement policies, such as requiring ships to off-load plastic refuse before they sail and providing inexpensive refuse removal.

Technology Improvements

1. National and local governments and private industry should develop institutional arrangements for recycling fishing nets and other large items that may potentially become marine debris.
2. Fisheries agencies should require time-release devices on crab, lobster, and fish traps and pots to avoid long-term ghost fishing by lost gear. Use of degradable material for selected components of drift net gillnets and other types of fishing gear should be required.
3. Private industries should conduct research on enhanced-degradable single-use plastic items such as cups, utensils, packing materials, and tampon applicators. The research also should examine by-products of degradable plastic materials and potential impacts on marine wildlife.

LIST OF PARTICIPANTS

Xan Augerot, Washington Sea Grant
Barbara H. Britten, American Cetacean Society
Richard Buxton, Nova Scotia, Canada
David Cottingham, Ecology and Environmental Conservation Office, NOAA
Mary L. Gessner, National Marine Fisheries Service, NOAA
Timothy Keeney, Office of General Counsel, NOAA
David W. Laist, Marine Mammal Commission, Washington, D.C.
Albert M. Manville II, Defenders of Wildlife
Rod J. Paterson, Canada Department of Fisheries and Oceans
Gerard Peet, Netherlands S.E.A. Foundation
Edward Rymarz, International Maritime Organization
