

REPORT OF THE WORKING GROUP ON MARINE DEBRIS EDUCATION

(Kathryn J. O'Hara, Chair)

Recognizing the difficulty of enforcing marine debris laws, especially at sea, education has been identified as an important way to help reduce the marine debris problem. Under the assumption that an informed public will be much less inclined to generate marine debris during both commercial and recreational activities, compliance with laws and regulations should be much higher. Education is particularly important in this issue because land-based sources of debris are primarily nonpoint, having diverse contributors that would be difficult to control under regulatory authorities alone. Moreover, longstanding, customary international law has permitted garbage discharge for ships in transit. Therefore, ethics and behavior patterns for individuals both on land and at sea must be changed, and education is the best known means for effecting such changes.

Charged with assembling a comprehensive list of the types of educational materials currently in use, the Working Group on Marine Debris Education identified more than 100 different types of educational materials. This included 21 brochures, 19 reports, factsheets and special documents, 11 posters, 10 videos, 9 curriculums and guides for educators, 6 newsletters, and more than 30 other types of educational materials ranging from public service advertisements to bumper stickers and coloring books. A complete listing of educational materials currently available may be obtained by contacting the National Oceanic and Atmospheric Administration's Marine Debris Information Office operated by the Center for Marine Conservation in Washington, D.C.

The working group was also charged with making recommendations for: (1) production of new educational materials and priority audiences for marine debris education, including the best means for delivery; (2) appropriate methods for the effective dissemination and utilization of these materials; (3) appropriate means for evaluating the success of educational programs; and (4) evaluation of lessons from the development of past marine debris educational programs and materials that may be of value in formulating environmental education programs in the future.

TYPES OF EDUCATIONAL PROGRAMS AND TARGET AUDIENCES

Marine debris education encompasses two key elements: The implementation of educational programs and the development of educational materials. With regard to the former, the group recommended that marine debris education should be incorporated into three primary types of programs:

1. formal education in a structured academic setting;

2. informal education outside a formal academic setting but within structured educational events such as adult education classes and organized youth groups; and
3. general public awareness.

Marine debris education has been or is presently being conducted for many groups, including: plastics manufacturers and processors, offshore oil and gas workers, commercial fishermen and processors, military personnel, politicians, solid waste managers, port and terminal operators, commercial shippers, teachers and educators, elementary, middle, and high school children, college students, recreational fishermen, recreational boaters, charter vessel operators, operators of cruise ships, cruise ship passengers, and the general public.

Several new groups would benefit from education and should be included in future efforts. These are the packaging industry; municipal sewage treatment operators; government officials; government enforcement agencies; coastal tourist industries; tackle manufacturers; operators of small ports, docks, marinas, and yacht clubs; suppliers of stores for vessels; boat manufacturers; employees of retail stores (including fast-food and convenience stores, and fishing and boating stores); environmental and conservation organizations; the media; employees of shipyards; longshoremen; and coastal hunters. Specialized efforts should be directed toward native and rural people.

Among all the groups identified above as target audiences for marine debris education, the working group concluded that five major groups are priority audiences:

1. all marine user groups;
2. the media;
3. teachers and educators;
4. school children; and the
5. general public.

A public awareness campaign is of utmost importance at the present time. Specific elements that should be addressed in developing this campaign are an initial assessment of human behavior and public perception of the marine debris problem. Using this information, a mass media public awareness campaign should then be developed. The working group felt that paramount to the success of this campaign is the development of a comprehensive strategy to use the media effectively as a tool to disseminate educational information. One suggestion was to solicit pro bono support from the National Advertising Council or a similar group. The working group also recognized that substantial funds are necessary to create this campaign.

EFFECTIVE DISSEMINATION AND UTILIZATION OF MATERIALS

After reviewing the list of marine debris educational materials, the working group concluded that there is a wealth of materials currently available but there is a need to facilitate the dissemination of these materials to appropriate groups. In 1988, the National Oceanic and Atmospheric Administration's Marine Entanglement Research Program established two Marine Debris Information Offices, which respond to requests for information on marine debris. The working group suggested that the dissemination of marine debris educational materials would be facilitated if the function of these offices were enhanced by increasing their visibility as an international resource center and providing them with sufficient quantities of educational materials to meet the demand. It was also suggested that an informational vehicle be established to provide updated information on the development of new educational materials and programs. There was an opinion, however, that educational materials should be disseminated in a more decentralized manner.

The dissemination of educational materials could be facilitated with assistance from established education organizations such as the National Marine Educators Association.

Existing government distribution mechanisms such as licensing and registration procedures for fishing and boating should also be used to disseminate materials.

The working group recognized the difficulty of disseminating educational materials on an international level due to the diversity of cultures and languages. However, it was suggested that specific international agencies such as the United Nations Environmental Programme, Food and Agriculture Organization, and the International Maritime Organization should be encouraged to take part in information exchange.

Efforts should be made to include the marine debris issue on the agendas of international conferences and meetings that address the issues of marine pollution and education.

EVALUATING THE SUCCESS OF EDUCATIONAL PROGRAMS

Evaluations could be conducted through long-term monitoring of beach debris and monitoring the usage of shoreside refuse reception facilities.

Formal surveys should be conducted, where possible, to assess changes in attitude and behavior.

LESSONS LEARNED FROM THE DEVELOPMENT OF PAST MARINE DEBRIS EDUCATIONAL PROGRAMS

Specific recommendations made with regard to development of educational programs and materials included:

- Involve members of the target audience in the development of educational materials and distribution.
-

- Identify specific discrete tasks for the involvement of individuals.
- Set realistic goals.
- Make educational experiences positive and enjoyable.
- Be familiar with the audience.

Other experiences shared by group members who have been involved in educational efforts pertained to the content of educational materials. This included the need to:

- Use good photographic materials that show the impact of debris.
- Personalize the message to specific target audiences.
- Emphasize the benefits to a group for their involvement in efforts to reduce the marine debris problem.
- Emphasize the importance of individual efforts.
- Emphasize economic impacts where appropriate.
- Keep the information as locally relevant as possible.
- Keep the message short.
- Highlight positive steps taken by groups or individuals to reduce the marine debris problem.
- Use facts that are updated and verified.

The working group suggested that researchers who are working on the issue of marine debris should be encouraged to make photographic materials available for educational efforts.

FORMULATING FUTURE ENVIRONMENTAL EDUCATION PROGRAMS

The working group also discussed the need to expand educational efforts to include the way in which debris affects estuaries and inland waters. There was considerable discussion with differences of opinion regarding the emphasis of marine debris educational materials and programs. The majority of participants agreed that the primary focus of marine debris educational materials should be to increase awareness of the problems caused by improper disposal of man-made wastes in marine areas. Others suggested that marine debris educational efforts should also emphasize the need for source reduction and the broader issues of wasteful consumer habits. It was agreed by all working group participants that the marine debris issue is part of the larger solid waste problem and, therefore, we should incorporate lessons learned from dealing with solid waste into marine debris education materials and programs.

The working group recognized that the marine debris issue has elicited an unprecedented emotional response and enthusiasm to take action. Therefore, the group sees great potential for using the marine debris issue as a stepping stone to encourage citizen involvement in other environmental issues.

LIST OF PARTICIPANTS

Nancy Azzam, Windstar Foundation
Ronald G. Bruner, The Society of the Plastics Industry
Alan Bunn, Alaska Fisheries Science Center, NMFS, NOAA
James M. Coe, Alaska Fisheries Science Center, NMFS, NOAA
Patty Debenham, Center for Marine Conservation
Trevor R. Dixon, The Tidy Britain Group
Angela Farias, Texas Adopt-A-Beach Program
Sarah Friday, North Carolina Sea Grant
Bernard Griswold, National Sea Grant College
Michael R. Hagler, Greenpeace, New Zealand
Jeffrey June, Natural Resources Consultants
Jill Kauffman, Center for Marine Conservation
Shirley Laska, Department of Sociology, University of New Orleans
Sidney Lasseigne, Pacific Marine Fisheries Commission
Patti Mullin, Washington Sea Grant
Judie Neilson, Oregon Department of Fish and Wildlife
Kathryn J. O'Hara, Center for Marine Conservation
Fran Recht, Pacific States Marine Fisheries Commission
Barbara Schroeder, Florida Department of Natural Resources
Rupert Teves, Pearl City, HI
Barbara Wallace, Kearney/Centaur Division, A. T. Kearney, Inc.
Dottie Wendt, Hawaii Sea Grant
Nobuyuki Yagi, Division of Fishing Grounds Environmental Conservation,
Fisheries Agency, the Government of Japan