

AFS Policy Statement #20:
Plastic Debris in Marine Environments
(Full Statement)

A. Issue Definition

The use of synthetic materials, especially plastics, has greatly increased over the past 35 years. Because of plastic's versatility, its use has moved rapidly into all aspects of our everyday life. This plastic proliferation has resulted in more and more "floatable trash."

Many plastics degrade at such a slow rate that the debris may remain in the natural environment for years or decades. There is increasing evidence that synthetic debris is more detrimental to aquatic life—fish, seabirds, marine mammals, and crustaceans—than previously believed by scientists.

Until recently, there was little information available about the impact of plastic debris on natural living resources. Published information primarily documented ducks and geese entwined in six-pack rings or gulls caught in monofilament fishing line.

A ban on the dumping of any plastic materials in the ocean was put into effect by the United States in January 1989. This legislation and rising public awareness have provided an opportunity to move effectively toward reducing the amount of plastics discarded in aquatic environments.

B. Impacts of Marine Debris

Biologists began to encounter plastic material in the stomachs of fish, birds, turtles, and mammals with increasing regularity; however, there was no formal or broad ranging exchange of information on this subject. The first international "Workshop on the Fate and Impact of Marine Debris" was held in Honolulu, Hawaii, in November 1984. Oceanographers, marine mammal specialists, and fishery scientists shared findings about the effects of plastic debris on marine living resources. Papers focused on animals becoming entangled in discarded plastic lines or net fragments, injury from chaffing, impaired ability to escape predators or pursue food, and drowning.

The workshop concluded that the plastic problem was of such a magnitude as to be a contributing factor in the decline of many populations of fish, marine mammals, and turtles. In a May 1988 report of the Interagency Task Force on Persistent Marine Debris, it was stated: "Scientists regularly report 'scars' and bruises on marine mammals as evidence of entanglement. They point out that it is difficult, if not impossible, to know if the scar is from active or discarded fishing gear. There are no reliable estimates of the fate of marine animals which entangle in debris while at sea or ingest plastic products, because these animals either sink, are eaten, or go unnoticed by human observers due to the vastness of the ocean".

The general public has become increasingly aware of the debris problem through beach cleanup efforts and the increased attention to plastic debris in the national press. The first coastwide cleanup was held in Oregon in 1984 and each year additional coastal states have joined in the cleanups. In the fall of 1988 48 coastal states, Costa Rica, and Puerto Rico participated in this annual event. Providing the public with "hands-on" involvement during the cleanups has given volunteers a better understanding of marine debris and products which become a threat to marine animals when discarded in the natural environment. Quantification of debris collected has allowed understanding of the problems and provided insight to the source of the materials. For example, the Center for Marine Conservation indicates that the beaches of Texas, Mississippi, and Louisiana are among the dirtiest in the nation, each averaging over 2,000 pounds of trash per mile of coastline.

The commercial fishing industry has played a leadership role in addressing ways to reduce the materials accidentally or deliberately discarded into the marine environment. Fishermen are taking a hard look at how ships are provisioned and seeking ways to reduce the amount of garbage generated by food packaging and supplies. Since storage space on most ships is at a premium, some fishermen have installed compactors to accommodate storage of trash on board. Fishermen have a keen interest in solving the entanglement problem because ropes and net fragments wrapped around propellers or plastic bags sucked into engine intake systems result in breakdown. Safety at sea is the major concern, but time and money spent in repairs is an additional concern as is lost fishing time.

The plastics industry has taken an active part in seeking solutions to the debris problem. They initiated research to further develop photodegradable and biodegradable plastics for specific applications. Recycling and scrap industries are interested in the collection of plastic materials because of new domestic and overseas markets.

In December 1987 the United States adopted Annex V of the MARPOL Convention. Annex V bans the dumping of any plastic material into the ocean by any source within the United States 200-mile Exclusive Economic Zone (EEZ) and mandates that all port facilities, including processing plants, marinas, and the smallest commercial ports provide acceptable disposal facilities for plastic from vessels. Effective January 1989, Annex V requires the maritime and plastics industries and several federal agencies to work on an accelerated schedule to develop economically and environmentally acceptable strategies and facilities to dispose of shipboard plastic garbage.

Because the American Fisheries Society is committed to the protection and conservation of aquatic animals and their environment, it is the policy of the Society to address the important issue of marine debris.

C. Needed Actions

The American Fisheries Society and its members realize the environmental image caused by debris in aquatic systems and support its reduction and ultimate elimination through the following actions:

1. Actively support and participate in the development of public information and education materials to provide for increased public awareness of the impacts of marine debris on aquatic species. Further, it should facilitate the effective transfer to users of new and innovative information and techniques regarding plastic recycling, packaging, alternative materials, and ways to effect change in Individual disposal habits.
2. Support and encourage rigorous enforcement of federal, state, provincial, and local laws, regulations, and standards pertaining to marine debris.
3. Support and encourage programs to identify, inventory, and document sensitive habitats and species impacted by plastic debris, and utilize this information to devise corrective actions.
4. Encourage studies designed to determine and apply the most effective means of increasing the recycling of plastic and other synthetic materials.
5. Emphasize the need for further research on biodegradability, and the development of new, more environmentally sound packaging technology.
6. Lobby for sensible legislation which aims to control the disposal and recycling of non-degradable debris.

Additional information needs to be collected. The American Fisheries Society encourages its members to:

1. Publish articles on marine debris in professional journals and nontechnical outlets. Become informed on entanglement and ingestion of plastic by aquatic animals and use this information in presentations to school, civic, and sporting organizations.
2. Document by photography and other appropriate ways, evidence of aquatic animal mortality caused by entanglement or ingestion of plastic materials.
3. Actively and visibly participate in and/or sponsor beach cleanups to help document the amount and source of debris in their local area.