OCEAN DUMPING: AN INTERNATIONAL AND DOMESTIC PERSPECTIVE

> [W]e are far from any 'quick remedy,' sure, it will total billions and years. But as we have sown, so shall we reap, and it is not a pretty harvest when we endeavor to establish colonies on planets while our vital, precious oceans coagulate in never-ending waste.[1]

I. INTRODUCTION

In the wake of widespread destruction of ocean beaches and the contamination or elimination of many forms of marine life, individuals worldwide are finally becoming concerned with the effects of marine pollution.[2] Vacationers to coastal areas are routinely chased from beaches because of waste washed ashore. Tragically, waste such as partially treated or untreated sewage,[3] oil, toxins, drug-paraphernalia, medical debris, and plastic containers is commonplace.[4] Fishermen bring in catches which have lesions on their bellies and fins that are rotting away. Even individuals who do not come in direct contact with the ocean feel the repercussions of marine pollution. Moreover, aquatic pollution is not restricted to oceans; many inland waterways are similarly affected. For instance, "females under age fifteen or in child-bearing years are advised not to eat fish from the New York waterways."[5] Increased beach closings, medical waste washing up onshore, and the widespread contamination of our marine environment, tell us that we are losing the battle.

Marine pollution occurs in myriad forms.[6] As a consequence, lawmakers have not yet been able to develop a comprehensive system to control or eliminate it. To date, most of the international conventions or federal and state laws

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1. Jordan, *Coastal Pollution Isn't Just Coastal*, N.Y. Times, Sept. 18, 1988, at 26, col. 5.

2. Jacques Cousteau has seen the waters of "his homeland turn from a beautiful sea of blue to a cesspool where . . . [he] cannot take [his] son." McClelland, *Cousteau Has Hope For Oceans*, LEXIS-NEXIS, UPI, Oct. 30, 1986.

3. Toilet-flushing in New York city produces eight tons of sludge each minute. Moss, *Racing to Move Sludge; City Set to Award No-Bid Contracts*, NEWSDAY, Jan. 29, 1991, at 21.

4. For instance:

> The red off-limits flags fluttered along Atlantic beaches in New Jersey and New York . . . and the great white shark had nothing to do with it. Beach-lovers were driven away instead by waves of sewage, grease balls and hospital wastes — including syringes and two vials of AIDS-tainted blood. Man's biggest garbage dump, the ocean, may be filling up, too.

Bussey, *Garbage Out, Garbage In*, U.S. NEWS & WORLD REP., July 18, 1988, at 9.

5. O'Malley, *Report Details Toxic Dumping in Hudson River*, United Press International, October 11, 1989 (quoting Clearwater spokeswoman Bridget Barclay).

6. Several forms of marine pollution have been enumerated:

1. Ship generated or vessel source (created in the normal course of navigation)
2. Dumping (deliberate disposal of waste at sea)
3. Land based (discharge of a wide range of shore-generated effluents)
4. Pollution from or through the atmosphere (at sea incineration or factory emissions)
5. Pollution from sea-bed activities (off-shore petroleum exploration or exploitation)
6. Pollution from activities in the area (deep-sea mining activities).

15 MENG QINQ-NAN, LAND-BASED MARINE POLLUTION (1987).

enacted to control marine pollution were developed in reaction to a present crisis, environmental concern, or some disaster.[7] Therefore, the time needed to deliberate and synthesize all available information in order to devise a well-developed, uniform convention was not available.[8] As a result, methods to control pollution, such as permit requirements or imposition of fines, can vary greatly between individual nations, states, and conventions.

This note discusses one of the most critical forms of marine pollution — ocean dumping. Ocean dumping is a problem of national and international dimension. The note initially examines current problems and establishes the need for urgent legislative reform. Part II defines the scope and extent of ocean dumping in both domestic and international settings. Part III discusses existing anti-pollution conventions in the international sphere, focusing on the deficiencies in ocean dumping controls. Part IV analyzes current and proposed laws within the United States. Finally, the note proposes recommendations to eliminate those deficiencies.

II. WHAT IS OCEAN DUMPING?

Ocean dumping is generally defined as the disposition of material at sea.[9] Conventions and statutes differ as to what type of disposition falls within the term "ocean dumping." But almost all agree that the disposal must be a deliberate one, and that the substances were loaded onto a vessel, aircraft or man-made structure with intent to dispose of them at sea.[10] The term generally does not include, however, effluents discharged during the normal operation of vessels.[11] This type of discharge is considered to be ship-generated, and, therefore, covered under alternative regulations on reducing marine pollution.[12] Incineration at sea

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7. *See* Tharpes, *International Environmental Law: Turning the Tide on Marine Pollution*, 20 INTER-AMERICAN L. REV. 579, 609-10 (1989). Current examples of this post hoc legislative response can be found in the many bills which were introduced in the House of Representatives and the Senate such as the Oil Pollution Act of 1990, 33 U.S.C. §§ 2701-61 (1990) in response to the Exxon Valdez oil spill disaster in Alaska in 1989; Pollution Casualties on High Seas, 33 U.S.C. § 1472 (1990); and most recently, President Saddam Hussein's deliberate dumping of oil into the Persian Gulf in February of 1991.

8. The first major wave of federal environmental legislation occurred in the months before and the few years after Earth Day, 1970. The National Environmental Policy Act; the Clean Air Act; the Clean Water Act; the Noise Control Act; the Safe Water Act . . . the Ocean Dumping Act, and the Endangered Species Act were all enacted from 1970 to 1974 and covered a broad spectrum of environmental concerns. Almost every major environmental statute passed since then has either been a fine tuning of one of the laws passed during that brief era (such as the Clean Air Act Amendments of 1990), or a distinct reaction to a well-publicized disaster.

Kass & Gerrard, *Reordering Priorities*, N.Y.L.J., Jan. 16, 1991, at 3.

9. *See, e.g.*, Convention for the Prevention of Marine Pollution By Dumping from Ships and Aircraft, February 15, 1972, art. 19, 932 U.N.T.S. 5, 11 [hereinafter Oslo Convention]; Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, December 29, 1972, art. III(1)(a), 26 U.S.T. 2406, 2407, T.I.A.S. No. 8165 [hereinafter London Dumping Convention]; Marine Protection, Research and Sanctuaries Act, 33 U.S.C. § 1402(f) (1987).

10. *See* Oslo Convention, art. 19(1), 932 U.N.T.S. at 11 and London Dumping Convention, art. III(1)(a), 26 U.S.T. at 2407.

11. *See* Oslo Convention, art. 19(1)(a), 932 U.N.T.S. at 11; London Dumping Convention, art. III(1)(b)(i), 26 U.S.T. at 2407; and 33 U.S.C. § 1402(f) (1987).

12. *See* International Convention for the Prevention of Pollution of the Sea by Oil, May 12, 1954, 12 U.S.T. 2990, T.I.A.S. No. 4900, 327 U.N.T.S. 3; International Convention for the Prevention of Pollution from Ships, Nov. 2, 1973, 12 I.L.M. 1319, U.N. Doc. ST/LEG/SER.B/18 at 461; and Protocol Relating to Intervention on the High Seas in Cases of Marine Pollution by Substances Other than Oil, November 2, 1973, U.N. Doc. ST/LEG/SER.B/18 at 457.

is often included within the province of ocean dumping, even though the waste is originally emitted into the air, because the burnoff eventually falls into ocean waters.[13]

When interpreting the meaning of disposal "at sea" — the language is broadly construed in ocean-dumping conventions — arguments have been made that anything which is dumped into the water but eventually comes to rest in the sea bed is not a disposal at sea.[14] Ocean dumping conventions, however, have been interpreted to include sea-bed disposal as a disposition at sea.[15] Moreover, the language used to define ocean dumping is generally very broad within statutes and conventions. Obviously, the drafters, whose main concern is to prevent damage to the marine environment, intended to leave room within the language to deal with the regulation of new forms of pollution created by disposal at sea.

Most people, however, remain ignorant of the magnitude of the marine problem. Generally, the public erroneously assumes that the vast oceans have an inexhaustible capacity to neutralize contaminants, either by absorption or through harmless setting in the sediment miles below the surface.[16] Consequently, the public is skeptical for the need to regulate ocean dumping both nationally and internationally. Yet the effects of marine pollution are seen in many forms both in the water and along the world's coastlines. Significantly, disposal of waste at sea — which constitutes ten percent of the pollutants and toxic agents that annually enter the world's oceans[17] — is a major contributor to environmental problems.[18]

Such problems include red and brown tides, suffocating and sometimes poisonous blooms of algae, that commonly appear along coastal bays and gulfs.[19] These tides deplete the water of oxygen, and leave a trail of dying fish and

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13. The Marine Protection, Research and Sanctuaries Act of 1972 specifically includes incinerator residue within its list of materials which are to be regulated when dumped into the ocean. 33 U.S.C. § 1402(2) (1974). Additionally, the London Dumping Convention will prohibit incineration of toxic waste beginning on December 31, 1994. For a discussion of international conventions which regulate incineration at sea, see Note, *EPA Proposal For At-Sea Incineration*, 21 VAND. J. TRANSNAT'L L.J. 157, 161-71 (1988).

14. *See, e.g.*, the London Dumping Convention's definition of dumping, the phrase 'disposal at sea' could be interpreted narrowly to mean the final resting place of wastes - with seabed disposal excluded from coverage because those wastes are not in direct contact with 'marine waters'. Given the London Dumping Convention's object and purpose, however the only harmonious and reasonable interpretation is that which defines 'disposal at sea' to mean the place where the dumping activities occur. Other international agreements also support this object and purpose-based interpretation which concludes that seabed disposal is covered and prohibited. *See also*, Curtis, *Legality of Seabed Disposal of High-Level Radioactive Wastes Under the London Dumping Convention*, 14 OCEAN DEV. AND INT'L L.J. 383, 383 (1985).

15. *See id.* at 391-403 for a discussion of the legality of seabed disposal within international conventions.

16. Toufexis, *The Dirty Seas*, TIME, Aug. 1, 1988, at 48.

17. Kung, *Dumping at Sea*, in THE IMPACT OF MARINE POLLUTION 181 (1980).

18. It should be pointed out, however, that in some cases dumping of certain non-toxic wastes in poor sea areas can be beneficial for the development of the resources in the area. Therefore, a rational environmental approach to the problem does not necessarily coincide with a total ban on dumping of any substances or materials. In some cases, third world states could be benefitted economically by granting disposal access to industrialized nations' waste in return for fees and technology. TIMAGENIS, 1 INTERNATIONAL CONTROL OF MARINE POLLUTION 111 (1980).

19. *See supra* note 16, at 47.

contaminated mollusks and crustaceans in their wake.[20] New York waterways are severely impacted by corporations who dump toxins into the Hudson River.[21] There are health advisories against consuming seventeen different types of fish in the Hudson River.[22] Similarly, researchers discovered that high levels of arsenic found in the Baltic Sea were caused by 7000 tons of arsenic "entombed" in concrete containers dumped there over forty years ago. The amount dumped was reportedly enough to kill the world's population three times over if properly administered.[23] Even previously open waterways are being blocked by sewage and sludge which have been dumped into them.[24] Disturbingly, these are only a few examples of the adverse impacts that toxins and hazardous substances have on the marine environment.

III. INTERNATIONAL REGULATION

The nature of marine pollution requires that it be regulated internationally. Once a pollutant enters the water, it knows no boundaries. Marine pollution has been described as:

> A transboundary environmental interference is any impairment of human health, living resources, ecosystems, material property, amenities or other legitimate uses of a natural resource or the environment caused, directly or indirectly, by man through polluting substances of which the physical origin is wholly or in part located outside the area under national jurisdiction of a State or outside the area beyond the limits of national jurisdiction in which the deleterious effects caused by the interference occur.[25]

In other words, a transboundary interference is the dumping of pollutants by one country which causes damage to the environment or natural resources of another country.[26] A nation which is the cause of a transboundary interference has a duty to prevent or abate any such interferences which causes, or entails a

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20. The Gulf of Mexico, New Jersey's Raritan Bay, and Japan's Osaka Bay are a few of the areas affected by the algae blooms. Shellfish, flounder and fluke have all fallen prey to the pollution. Toufexis, *supra* note 16, at 46.

21. It is claimed that at least 50 million pounds of toxins, including ones suspected of causing cancer, were dumped into the Hudson River in 1987. *See supra* note 6 at 35.

22. *Id.*

23. TIMAGENIS, *supra* note 18, at 109.

24. The U.S. Army Corps of Engineers are expected to scrape 74.6 million cubic yards of sludge from the San Francisco Bay area, because the silt is clogging the shipping channels and creating navigational hazards. San Francisco Chronicle, November 17, 1989, at 34, col. 6.

25. Lammers, *The Present State of Research Carried Out By the English-speaking Section of the Center For Studies and Research*, in TRANSFRONTIER POLLUTION AND INTERNATIONAL LAW (1985).

26. *See, e.g.*, the seminal Trail Smelter Arbitration, wherein the United States complained that the fumes from a smelting operation in Trail, British Columbia, had subsequently polluted the air on the American side of the border. This case illustrates the limits imposed on a State which is using its territory in such a way that may cause damage to other States. The International Joint Commission held that under international law no state has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or the property or persons therein, when the case is of serious consequences and the injury is established by clear and convincing evidence. Trail Smelter (U.S. v. Canada), 3 R. Int'l Arb. Awards 1911 (1938). *See also* United States and Canadian Treaties of 1972 and 1978 governing the Great Lakes and transboundary waters; Great Lakes Water Quality, Nov. 22, 1978, United States-Canada, 30 U.S.T. 1383, T.I.A.S. No. 10798; Great Lakes Pollution, April 15, 1972, United States-Canada, 23 U.S.T. 301, T.I.A.S. No. 7312.

significant risk of causing, substantial harm.[27] Wastes which one nation permits to be dumped into the ocean waters within its own jurisdiction are often brought into the waters of nearby nations by tides, currents or winds causing damage to the marine life and coastlines.[28] International documents on ocean dumping were designed to set minimum standards for protection of neighboring states from the aftermath of toxic or hazardous dumping.

A. Regional Conventions

In the early stages of attempting to control marine pollution, countries approached the problem from a regional perspective for two reasons. First, rules or policies may be negotiated, held open for ratification, or signed by States of a particular region. This allowed countries to ratify and adopt acts or conventions more readily which pertain to local marine pollution. Second, the particular rules adopted by regional countries were constructed for the protection of the marine environment in a particular region.[29] Because the conventions were initially local in character, they were more flexible to adjustment and change to local conditions. Therefore, regional agreements are more appropriate for situations where the source of the pollution is localized, such as from land-based sources, exploitation and exploration of the seabed, or nuclear dumping. On the other hand, regional conventions are too rigid and are poorly equipped to address the involvement of uniform and universal interests, such as in the case of pollution from ships.

Although regional conventions provide some advantages, they are not established in the context of general conferences; *i.e.*, open to all countries regarding participation in the negotiations and the final acceptance. Despite the fact that regional rules are more specific in context and, in general, have priority among the parties over global rules, regional rules should be interpreted and applied in a fashion consistent with global rules and conventions to give a uniform result.[30]

One of the earliest conventions designed for the regulation of ocean dumping was the 1958 Geneva Convention on the High Seas and was primarily concerned with the sinking of radioactive wastes. This Convention was the foundation for both regional and international agreements.[31] Under the provisions of the Geneva Convention, the contracting states were under an obligation to avoid the contam-

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27. Lammers, *supra* note 25, at 94-95. The general obligation between States is to prevent substantial harm, not every harm however small. Article 192(2) of the 1982 United Nations Law of the Sea Convention formulates a somewhat stricter obligation. The Convention provides:

> States shall take all measures necessary to ensure that activities under their jurisdiction or control are so conducted as not to cause damage by pollution to other states and their environment, and that pollution arising from incidents or activities under their jurisdiction or control does not spread beyond the areas where they exercise sovereign rights in accordance with this Convention.

Convention on the Law of the Sea, Dec. 10, 1982, art. 192(2), U.N. Doc. A/Conf. 62/122, *reprinted in* 21 I.L.M. 1261 (1982) [hereinafter LOS Convention].

28. *See* Tharpes, *supra* note 7, at 597-99. "Limits of national jurisdiction over economic and natural resources extending geographically or politically along a coastline and into waters out to twelve nautical miles for the territorial sea, or two hundred nautical miles for extended national jurisdiction, are unavailing in terms of controlling mobility of pollutants." TIMAGENIS, *supra* note 18, at 112.

29. TIMAGENIS, *supra* note 18, at 117-19.

30. *Id.* at 154-62.

31. *See supra* note 17, at 137.

ination of the oceans by radioactive wastes.[32] Yet, since 1958, the disposal of non-radioactive wastes has increased dramatically just as the toxicity of various substances.[33] The contracting states, however, are only obligated to cooperate with other states regarding "other harmful agents,"[34] such as marine pollution. Thus, because of its specific nature, the Geneva Convention's regulatory scope and application to prevent marine pollution is limited.

Since the territorial sea is subject to the sovereignty of a particular state, it can permit and regulate the disposal of waste "so long as this does not effect bordering territorial seas or inhibit the innocent passage of foreign ships."[35] Given the potentially fatal combination of limited scope regional conventions and the transient nature of hazardous substances in the seas,[36] it is vital that a higher level of commitment coupled with severe penalties is necessary to protect the territorial seas and international oceans.

Although the Geneva Convention allowed states sovereign control over the territorial seas, the Convention allows states to exercise control over the contiguous zone for specific purposes.[37] Such purposes include the prevention of sanitary violations and other health regulations.[38] Yet, on the high seas, a state has no right to interfere with the dumping activities of any other state. Surprisingly, the Geneva Convention entitles a coastal state some latitude of control where the dumping occurred "suprajacent" to the continental shelf, even if these waters were part of the high seas.[39]

The Geneva Convention provided a template for the creation of future regional conventions through its initial interpretation of oceanic concerns and created a path for new conventional solutions as opposed to limited and non-comprehensive regional conventions. For instance, the Oslo Convention and the

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32. The Geneva Convention on the High Seas, April 29, 1958, art. 25(2), 2 U.S.T. 2132, T.I.A.S. No. 5200, 450 U.N.T.S 82 [hereinafter Geneva Convention].

33. *Id.*

34. *Id.* Furthermore, art. 25(2) seems to have little importance in the context of the high seas. For example, in the case of dumping nerve gas in the Atlantic Ocean by the United States Army in 1970, the State Department lawyers, in defending the legality of this act, paid little attention to the Geneva Convention. Brown, *International Law and Marine Pollution: Radioactive Waste and "Other Hazardous Substances"*, 11 NAT. RESOURCES J. 221 (1971) at 253.

35. Geneva Convention, *supra* note 31, art. 14. Furthermore under Article 16 where the passage involves the potential for dumping or suspicious activities, the coastal state may take necessary steps to protect its waters.

36. *See* Waldichuk, *An International Perspective on Global Marine Pollution*, in IMPACT OF MARINE POLLUTION ON SAFETY 68 (V. Tippie & D. Kester eds. 1982). Furthermore, the 'World Ocean' is an indivisible, integrated, and unified ecological system. Limits of national jurisdiction over economic and natural resources extending geographically or politically along a coastline into waters out to twelve nautical miles for the territorial seas, or 200 nautical miles for extended national jurisdiction, are unavailing in terms of controlling the mobility of pollutants. Effluent discharged by one coastal state can easily be carried into and degrade the waters of another when caught in littoral currents. Russina, *International Legal Principals of Protection of the Marine Environment Against Pollution*, in THE LAW OF THE SEA AND INTERNATIONAL SHIPPING, Anglo-Soviet Post UNCLOS Perspectives 261 (W. Butler ed. 1985).

37. Geneva Convention, supra note 32, at art. 24.

38. TIMAGENIS, *supra* note 18, at 116.

39. This additional control was permitted if the coastal state's continental shelf extends beyond the limits of its territorial sea and the dumping interferes with the sovereign rights of the coastal state. *See* Geneva Convention article 2(2), providing exclusive rights, and article 5(7), providing measures for the protection of safety zones.

Convention on the Protection of the Marine Environment of the Baltic Sea Area "Helsinki Convention"[40] were such products.

The Oslo Convention was the result of Norway and other Scandinavian countries concerned with protecting the coastal and marine environment. The concern arose because these countries are dependent on fishing and other resources in the sea.[41] The fear that adverse effects from British and Dutch dumping near fishing locations would cause a decrease in fish population was a motivating factor for the Oslo Conference, held October 19 - 22, 1971.[42] Subsequently, the Oslo Convention was signed on February 15, 1972. The Convention is divided into twenty-seven articles and three annexes. Articles one through fifteen and nineteen contain most of the regulations. Articles sixteen through eighteen are for the implementation of the Convention, and articles twenty to twenty-seven state the final clauses regarding enforcement.

The Oslo Convention, like the Geneva Convention, is a regional instrument for three reasons. First, the convention is open for signature and/or accession in principle to other surrounding or nearby states defined within a set region.[43] Second, the contractual obligations under the Convention refer basically to a region defined in the Convention.[44] Last, article III further defines what each parties' responsibilities are under the Convention so as to limit the harmful effects of ocean dumping within the region.[45] Such restrictions on the availability of dumping will cause individuals to go outside of the region set forth in Article II. Yet, since the Convention applies to both the high seas and the territorial sea regions, it appears that the contracting/signing states are under some duty to prevent an increase in dumping outside of the defined region.[46]

The scope of the Convention's language is very broad. Article I provides that "the Contracting parties pledge themselves to take all possible steps to prevent the pollution of the sea by substances that are liable to harm living

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40. *See infra* notes 55-60 and accompanying text.

41. The North Sea States were extremely concerned with the construction of two substantially sized ships built for the purpose of dumping. The first was called the Hudson Stream built by the United Kingdom for dumping industrial wastes from British factories into the North Sea. The second was the Dutch vessel Stella Maris, which was intended to dump 600 tons of noxious wastes into the North Sea or the Atlantic Ocean. TIMAGENIS, *supra* note 18, at 124.

42. This conference was attended by representatives of twelve states: Belgium, Denmark, Finland, France, the Federal Republic of Germany, Iceland, the Netherlands, Norway, Portugal, Spain, Sweden, and the United Kingdom. *Id.*

43. Oslo Convention, *supra* note 9, art. II, defines the purview of the convention which is the high seas and territorial sea which are situated within (a) those parts of the Atlantic and Arctic Oceans and the dependent seas, which lie north of 36 degrees north latitude and between 42 degrees west longitude and 51 degrees east longitude (excluding the Baltic Sea and the Mediterranean Sea) and (b) that part of the Atlantic Ocean north of 59 degrees north latitude and between 44 degrees west longitude and 42 degrees west longitude.

44. *Id.*

45. *Id.* at art. III.

46. As a result, the Contracting States are under a conventional obligation to take measures against dumping in their own territorial sea, thus accepting one more contractual limitation to their traditional sovereignty in that area of the sea. Article III of the Oslo Convention states: "The Contracting Parties agree to apply the measures which they adopt in such a way as to prevent the diversion of dumping of harmful substances into seas outside the area in which this convention applies." This language expands the limited character of a regional convention and applies a general application seen in traditional international conventions such as the London Convention. *See*, Oslo Convention, *supra* note 9, at art III.

resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea."[47]

Although the language appears broad in scope, however, when this article is read in conjunction with the other articles, it should be understood that the provisions of the Convention apply directly to dumping and not to other forms of pollution. In regulating other forms of marine pollution, article I of the Oslo Convention thus simply defines the obligation of all participating nations to "pledge themselves"[48] to prevent marine pollution. This absence of an imperative enforcement mechanism is fatal.

The Oslo Convention classifies a wide variety of substances and material into three categories that are subject to certain regulations and prohibitions — so called "Black," "Grey," and "White Lists."[49] Article V of the Convention, referred to as the Black List, prohibits the dumping of substances listed in Annex I. This article imposes the responsibility on the states to prohibit the dumping of the substances to the extent possible by means of personal and territorial jurisdiction. Furthermore, the substances, which are subject to article VI, require advance permission when dumped in certain quantities. These substances are listed in Annex II, the Grey List[50]. The last category, the White List, contains all other substances not included in the Black or Grey Lists. This category is subject to article VII of the Oslo Convention which requires approval before any material may be dumped.[51] Furthermore, in granting permits under Annex II and the White Lists, the Commission examines generally the characteristics of the waste, the dumping site and method of deposit, and general considerations and conditions.[52]

Although this system may seem rigid, the Convention provides a *force majeure* exemption in article VIII(1) which may be invoked to protect human lives in cases of emergency. Subsequently, any dumping must be immediately reported to the appropriate Commission, in order to prevent any abuse of this exemption.[53]

Ideally, in order for this system to be effective, there should be a prohibited list of substances which must not be dumped, together with other substances which would require either permission or approval to dump. A Regulatory Commission would then have the power to grant permits, enforce regulations, and impose sanctions against violators. Pursuant to article XV of the Oslo Convention, participating nations are required to punish any conduct that is violative of the Convention so as to discourage future violations.[54] This article gives coastal states, for the purpose of compliance, the power to request information, perform investigations and proceedings, impose penalties, and make arrests if necessary.

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47. Id. at art. I.
48. *Id.*
49. Oslo Convention, arts. V, VI, VII.
50. Oslo Convention, *supra* note 9 at art. VI.
51. *Id.*
52. *Id.*
53. *Id.* at art. VIII(1).
54. *Id.* at art. VIII(3).

For reasons similar to the oceanic dumping crises that gave rise to the Oslo Convention, seven neighboring states in the Baltic Sea area signed the Helsinki Convention on March 22, 1974.[55] This Convention was in response to the increase in pollutants and marine traffic in the Baltic Sea area.[56] Unlike the deeper waters of the Atlantic or North Sea, which tolerate substances to be absorbed and dispersed more readily, the Baltic Sea, in comparison, is a shallow basin. Therefore, in the Helsinki Convention, the central purpose shifted from an emphasis of regulating the dumping of certain types of toxins or hazardous substances to creating regulatory measures to protect the sea from any kind of pollution.

The broad scope of the Helsinki Convention thus included a more comprehensive plan to prevent the dumping of waste.[57] Furthermore, the articles of the Convention created not only a regional obligation to prevent dumping, but also to protect other areas of the sea.[58] As a result of such commitment, all Baltic countries have actively participated in pollution research programs to collectively control and reduce dumping in the Baltic Sea areas because, as the signatories recognized, without international cooperation, individual and disjointed programs would be ineffective.[59]

In addition, just as substances in the oceans are transient in nature, the various types of toxins change and recombine as technology develops. Article XIII of the Convention provides for such evolution flexibility to insure the Convention remains current with present toxicological crises.[60] Because of existing high concentrations of pollution and restricted water flow in the Baltic Sea area, the Helsinki Convention is less tolerant of mishaps or unavoidable dumping, as is provided by the *force majeure* exemption of the Oslo Convention.[61] The Helsinki Convention does not allow a generous emergency exemption to a state or individual violator, and, therefore, requires a much higher and more uniform standard before it grants an exemption. The criteria required to be met for dumping under its emergency conditions incorporate (1) the actual condition of the vessel, (2) the impending complete or total loss of the vessel, and (3) every probability must indicate that the damage through dumping will be less than the damage otherwise occurred by the loss of the vessel.[62]

In summary, regional conventions are the result of coastal states first examining their interests and the effects of pollution on their coastal and ocean areas, and only then considering outside contiguous and high sea areas. Yet, in order for such regional conventions to be successful, they must reconcile both proximal and external interests while preserving the right to travel on the seas.

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55. Kung, supra note 17, at 197.

56. Convention on the Protection of the Marine Environment of the Baltic Sea Area, March 22, 1974, *reprinted in* 13 I.L.M. 546 (1974) [hereinafter Helsinki Convention]; *See* Tharpes, *supra* note 7, at 596.

57. *Id.*

58. *Id.* at art. III(1).

59. Kung, *supra* note 17, at 197. This is also called for in articles IX(4) and IX(5), combined with a commission to be established under article XII of Helsinki Convention where specified information has to be documented and reported.

60. Helsinki Convention, *supra* note 54, at art. 13.

61. *Supra* notes 48-52 and accompanying text.

62. Helsinki Convention, *supra* note 52, at art. 9(4)

B. International Conventions

Although regional conventions provided coastal states the power to establish regulations for pollution control and the right to navigate within the territorial seas, a more comprehensive and uniform standard is necessary to control world-wide marine pollution. Because oceans are an integral component of the global ecosystem, it should be the responsibility of all nations to protect these resources. In an effort to respond to global pollution, two conventions were enacted: the Prevention of Marine Pollution by Dumping of Wastes and Other Matter[63], and the Third United Nations Conference on the Law of the Sea "LOS."[64]

The London Dumping Convention, unlike other Conventions, is concerned only with the disposal of wastes in the marine environment by dumping.[65] This Convention was written in the fall of 1972, shortly after the Oslo Convention, and represented a significant step toward a uniform and global convention to foster international cooperation of the oceans. The London Dumping Convention came into effect in the summer of 1975; by 1988 fifty-two nations had become signatories.[66]

The purpose of the London Dumping Convention is to promote international cooperation to protect the oceans from the consequences of dumping. The preamble clearly articulates this purpose in stating that:

> The Contracting parties to this Convention, [r]ecognizing that the marine environment and the living organisms which it supports are of vital importance to humanity, and all people have an interest in assuring that it is so managed that its quality and resources are not impaired; . . . [and] that the capacity of the sea to assimilate wastes and render them harmless, and its ability to regenerate natural resources, is not unlimited . . . [therefore it is necessary] that international action to control the pollution of the sea by dumping can and must be taken without delay . . . .[67]

In conjunction with the preamble, articles (1)[68] and (2)[69] serve as the foundation for the remainder of the articles and annexes within the Convention.

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63. *See supra* note 9.

64. The Third United Nations Conference on the Law of the Sea was created to provide a uniform and comprehensive scheme to protect the marine environment on a global basis.

65. On November 1, 1990, a consensus among the 43 nations, represented at the five-day meeting of the signatories to the London Dumping Convention, agreed to a global ban on dumping industrial waste at sea. This plan would cease all dumping at sea by 1995. This plan is legally binding on all 64 nations that have signed the treaty. *Nations Agrees to Stop Dumping At Sea*, Los Angeles Times, Nov. 3, 1990, at 2, col. 2.

66. London Dumping Convention, *supra* note 5. UN Documents, 1988, Secretariat Office of Legal Affairs, ST/Leg/Ser.E/6, Multilateral Treaties at 735, 1988.

67. *Id.*

68. Article I states:

> Contracting Parties shall individually and collectively promote the effective control of all sources of pollution of the marine environment, and pledge themselves especially to take all practicable steps to prevent the pollution of the sea by the dumping of waste and other matter that is liable to create hazards to human health, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea. London Dumping Convention, *supra* note 9, art. I.

69. Article II states: "Contracting Parties shall, as provided for in the following articles, take effective measures individually, according to their scientific, technical and economic capabilities, and collectively, to prevent marine pollution caused by dumping and shall harmonize their policies in this regard." *Id.* at art II.

The London Dumping Convention's scope of prohibition against marine dumping is broader than that of the Oslo Convention,[70] in that it includes the "deliberate disposal at sea of wastes of matter from vessels, aircraft, platforms, or other man-made structures.[71] In contrast, the Oslo Convention only regulates disposal from "sea-going and air-borne craft.[72] The contracting parties' obligation to fulfill the London Dumping Convention is established according to a state's "scientific, technical, and economic capabilities."[73] Although this may seem contrary to a successful overall scheme, it is appropriate not to impose substantial burdens on lesser developed countries to comply beyond their means. Somewhat surprisingly, however, the Oslo Convention articulates a more stringent standard. "All possible steps" shall be taken in order to prevent marine pollution.[74]

In "prohibit[ing] the dumping of any wastes or other matter in whatever form or condition except as otherwise"[75] the London Dumping Convention establishes a three-fold categorical list of various substances which are subject to regulation and prohibition. Similar to the Oslo Convention,[76] the London Dumping Convention defines the categories by List as the "Black," "Grey," and "dumping of all other wastes."[77]

Article IV of the London Dumping Convention contains regulations pertaining to the three categories: the Black List is defined in Annex I[78]; the Grey List is defined in Annex II[79]; and all other substances not listed in Annexes I or II are defined according to:

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70. Oslo Convention, *supra* note 9, at art. XIX(2).
71. London Dumping Convention, *supra* note 9, at art. III.
72. Oslo Convention, *supra* note 9, at art. XIX.
73. London Dumping Convention, *supra* note 9, at art. II.
74. *See* Oslo Convention, at art. I.
75. London Dumping Convention, at art. IV(1).
76. Oslo Convention, at arts. V, VI, and VII.
77. London Dumping Convention, at art. IV(1).
78. Annex I of the London Dumping Convention prohibits the dumping of:
    1. Organohalogen compounds.
    2. Mercury and mercury compounds.
    3. Cadmium and cadmium compounds.
    4. Persistent plastics and other persistent synthetic material, for example, netting and ropes, which may float or may remain in suspension in the sea in such a manner as to interfere materially with fishing, navigation or other legitimate uses of the sea.
    5. Crude oil, fuel oil, heavy diesel oil, and lubricating oils, hydraulic fluids, and any mixtures containing any of these, taken on board for the purpose of dumping.
    6. High-level radio-active wastes or other high-level radio-active matter, defined on public health, biological or other, by the competent international body in this field, at present the International Atomic Energy Agency, as unsuitable for dumping at sea.
    7. Materials in whatever form (*e.g.*, solids, liquids, semi-liquids, gases or in a living state) produced for biological and chemical warfare.
    8. The preceding paragraphs of this Annex do not apply to substances which are rapidly rendered harmless by physical, chemical, or biological process in the sea provided they do not:
    (i) make edible marine organisms unpalatable, or
    (ii) endanger human health or that of domestic animals.
    The consultative procedure provided for under Article XIV should be followed by a Party if there is doubt about the harmlessness of the substance.
    9. This Annex does not apply to wastes or other material (*e.g.*, sewage sludges and dredged spoils) containing the matters referred to in paragraphs 1-5 above as trace contaminates. Such wastes shall be subject to the provisions of Annexes II and III as appropriate.
79. Annex II of the London Dumping Convention provisions for dumping with special permits:

> accordance with the provisions of this Convention, Contracting Parties shall prohibit the dumping of wastes or other matter in whatever form or condition as otherwise specified below:
> (a) the dumping of wastes or other matter listed in Annex I is prohibited;
> (b) the dumping of wastes or other matter listed in Annex II requires a prior special permit; and
> (c) the dumping of all other wastes or matter requires a prior general permit.[80]

In creating such a regulatory system, article IV(1) enables the contracting parties to the London Dumping Convention to designate an appropriate authority with proper jurisdiction,[81] and to issue special and general permits to control dumping.[82] As defined in article III, in order for a special permit to be granted, the application process must be performed in advance and within the parameters of annex II and III for each individual incidence of dumping.[83] General permits may be granted in advance according to annex II for a series of dumpings, such as for a corporation on a regular basis.[84]

When deciding whether to issue general or specific permits, a designated authority must take several factors into account include whether the material will accumulate or decompose within the ocean, its biological and chemical characteristics, toxicity, and general considerations and conditions.[85] Through this integrated and comprehensive regulatory system, the London Dumping Convention extends beyond the Oslo Convention's regulatory scheme to provide a more uniform system to control marine pollution in the oceans.

Similar to the Oslo Convention's exception for emergency situations,[86] the London Dumping Convention also provides an exemption permitting dumping if "necessary to secure the safety of human life or vessels, aircraft, platforms, or other man-made structures at sea."[87] Although article V may provide some latitude, a safeguard against abusive use exists that requires the contracting states

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The following substances and materials requiring special care are listed for the purposes of Article VI(1)(a).

> A. Wastes containing significant amounts of the matters listed below: [1] arsenic, lead, copper, zinc, and their compounds, [2] organosilicon compounds, cyanides, fluorides, pesticides and their by-products not covered in Annex I.
> B. In the issue of permits for the dumping of large quantities of acids and alkalis, consideration shall be given to the possible presence in such wastes of the substances listed in paragraph A and to the following additional substances: [1] beryllium, chromium, nickel, vanadium, and their compounds.
> C. Containers, scrap metal and other bulky wastes liable to sink to the sea bottom which may present a serious obstacle to fishing or navigation.
> D. Radio-active wastes or other radio-active matter not included in Annex I. In the issue permits for the dumping of this matter, the Contracting Parties should take full account of the recommendations of the competent international body in this field, at present the International Atomic Energy Agency.

80. *Id.* at art. IV.(1).
81. *Id.* at art. IV(2) which provides that the "[c]ontracting parties shall designate a competent Organization existing at the time of that meeting to be responsible for Secretariat duties in relation to this Convention.
82. *Id.* at art. II.
83. *Id.* at art. III(5).
84. *Id.* at art. III(6).
85. *Id.* at annex III.
86. Oslo Convention, *supra* note 9, at art. VIII(1).
87. London Dumping Convention, *supra* note 9, at art. V(1).

to report each incidence of emergency dumping to the designated authority. In this requirement, the London Dumping Convention strives to impose political as well as other pressures on the states to prevent their vessels from using this exemption as a matter of convenience.[88]

Notwithstanding its similarity to that of the Oslo Convention, the London Dumping Convention exemption is more restrictive regarding the issuance of a special permit for annex I substances that have to be discharged in order to deter possible abuse of this exception. Annex I provides that a "[c]ontracting [p]arty may issue a special permit as an exception to article IV(1)(a), in emergencies, posing unacceptable risk relating to human health and admitting no other feasible solution."[89]

The London Dumping Convention provides several measures for the enforcement, regulation, and punishment of violations under article VII. Article VII further provides that the "contracting party" can ensure such adherence "by the adoption of appropriate measures"[90] such as boats, and other surveillance equipment "to prevent and punish conduct in contravention" of the Convention.[91]

Although the London Convention's comprehensive scheme was designed to join the world's nations to protect the marine environment from the inevitable consequences of ocean dumping, the United Nations Third Law of the Sea Conference ("UNCLOS III"), in 1974, formulated a new comprehensive treaty. By 1982, the UNCLOS treaty had been signed by 135 States and ratified by nine States. This treaty represented one of the most ambitious and significant measures for a comprehensive system of protection.[92]

In part XII of UNCLOS, articles 192-237, the Convention establishes broad duties of signatory nations to take "all measures consistent with this Convention that are necessary to prevent, reduce, and control pollution of the marine environment from any source. . . . "[93] The scope of the Convention is enumerated in eleven sections which can be subdivided into three smaller groups: (1) general overview and regulations, (2) vessel dumping regulations, and (3) specialized regulations. Part XII of UNCLOS attempts to provide a more universal marine regulatory system by taking into account coastal and lesser developed countries' interests in protecting their oceans from pollution as well as industrialized nations' interests for inexpensive disposal measures.

In keeping with the purpose and spirit of UNCLOS III to protect the marine environment, article 194 provides that all participating nations, for the purpose of part XII, shall use the "best practicable means at their disposal and in accordance with their capabilities"[94] to control marine pollution. Although this standard is similar to the London Dumping Convention,[95] article 194(3) requires that governments shall design measures to minimize and reduce marine pollution. Since the article 194 standard does not unfairly prejudice or burden lesser

88. *Id.* at art. V(1).
89. *Id.* at art. V(2).
90. *Id.* at art. VIII(1)(a)-(c).
91. *Id.* at art. VII(2).
92. Tharpes, *supra* note 7, at 612.
93. LOS Convention, *supra* note 27, at part XII, § 1, art. 194.
94. *Id.*
95. *See supra* notes 77-81 and accompanying text.

developed countries and their duty to protect the oceans, it should not be used as an excuse for partial compliance.

To foster full compliance instead of exploitation, section 3 of part XII provides technical assistance for developing states. Article 202(a) provides "programmes for scientific, educational, technical, and other assistance to developing States for the protection and preservation of the marine environment. . . ."[96] This system seems to promote the facilitation and transfer of information and resources between countries in order to achieve a more comprehensive system to prevent marine pollution. In addition, if a contracting state wishes to raise its requirements for the reduction and control of pollution in the marine environment as a condition of vessels' entry into its territorial or internal waters, the state must submit a proposal to the Commission[97] detailing scientific and technical evidence to support such a finding. Within twelve months after the request is submitted, the Commission shall determine whether the regulation is appropriate and viable. If so, the regulation "shall not become applicable to foreign vessels until 15 months after the [initial] communication."[98]

Article 211 thus provides independent flexibility for states to ensure the safety of their marine environment, but coupled with a neutral adjudicative body to prevent the burdensome restrictions that a state might otherwise impose. The only apparent downside characteristic is the time difference between the first notice and when the new regulation will take effect. Consequently, a tiered system should be established for the requirements of certain toxins. One possibility is that a state could convene a special hearing, or file an injunction against shipment of these special toxins. A list similar to the Black List in the London Dumping Convention[99] could provide guidelines for a state to determine if a special hearing or injunction is necessary. A similar procedure could be followed for Grey List[100] substances that would be subject to the current 15 month procedures.[101]

This proposed system can only succeed if there is substantial compliance by the enforcement of responsibility and liability. The London Dumping Convention resolves many jurisdictional problems of customary international law or treaties regarding issues of liability and responsibility by the contracting parties.[102] The Law of the Sea Convention in section 6 of part XII stipulates broad state obligations and liability capacity for the assessment and remedies for those activities that cause marine pollution.[103] For instance, enforcement of the LOS Convention by coastal states provides these useful measures: the state can (1) reasonably delay a vessel from sailing if it threatens the marine environment,[104]

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96. LOS Convention, *supra* note 27, at art. 202(a).
97. *Id.* at art. 211.
98. *Id.* at art. 211(6)(a).
99. London Dumping Convention, *supra* notes 9 and 78.
100. London Dumping Convention, *supra* notes 9 and 79.
101. *Id.*
102. *Id.* at art. X which states:
In accordance with the principles of international law regarding State responsibility for damage to the environment of other States or to any other matter of all kinds, the Contracting Parties undertake to develop procedures for the assessment of liability and the settlement of disputes regarding dumping.
103. Los Convention, *supra* note 27, at part XII, § 6.
104. *Id.* at art 219.

(2) require a vessel to disclose its identity, port of registry, its next port, and relevant information to determine if a violation has occurred; and (3) if such information is not provided, an on-sight inspection can be conducted.[105] The language of section VI, therefore, provides the necessary framework for the investigation, prosecution, and punishment of vessel owners and polluters that violate part XII of UNCLOS.

Although UNCLOS III seems to propose the most consolidated approach to the regulation and prevention of marine pollution, its broad language creates some administrative ambiguities.[106] Yet, this broad language does allow for all participating nations to take the individual necessary measures to the protect marine environment from pollution while still maintaining uniform international guidelines for the development of individualized plans. Thus, to reconcile the political barriers with an effective controlling legislative body, two steps must be taken to regulate ocean dumping on a global basis. The first is to supplement the broad language of the LOS Convention with the Oslo Convention. Second, this hybrid "treaty" could then be coupled with the London Dumping Convention to provide an administrative body with power to regulate and control ocean dumping on an uniform basis.

IV. UNITED STATES REGULATION OF OCEAN DUMPING

A. Marine Protection, Research, and Sanctuaries Act of 1972[107]

The marine waters[108] of the United States have been used as a convenient alternative to land-fills for the disposal of various known and unknown types of waste such as sewage sludge, industrial waste and pipeline runoff. On October 23, 1972, just prior to its ratification of the London Dumping Convention,[109] the United States enacted the Marine Protection, Research and Sanctuaries Act[110] to address this problem. The purpose of MPRSA was to regulate the disposal of wastes into marine waters and to control the toxicity of these wastes.[111]

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105. *Id.* at art. 220.

106. For example, part XII, article 192 of the LOS Convention requires that "States have the obligation to protect and preserve the marine environment." Article 194(1) provides in pertinent part:

> States shall take, individually or jointly as appropriate, all measures consistent with this Convention that are necessary to prevent, reduce, and control pollution of the marine environment from any source, using for this purpose the best practical means at their disposal and in accordance with their capabilities, and they shall endeavor to harmonize their policies in this connection.

LOS Convention, *supra* note 27, at part XII, art. 194(1).

107. 33 U.S.C. § 1401-45 (1988) [hereinafter MPRSA].

108. These bodies of water can be classified into three primary groups; estuaries, coastal waters, and the open ocean. Estuaries are semi-enclosed areas of water that are neither completely fresh water nor saltwater. Examples include the Chesapeake Bay, Mississippi Delta, and some lagoons and tidal marshes. Coastal waters as compared to estuaries are less enclosed. Coastal waters extend from the baseline of the shore to three nautical miles out to sea. This area is also called the territorial sea. Some familiar examples are the Southern California Bight, and the New York Bight. The open ocean generally extends from the territorial sea and the deep ocean waters beyond the continental shelf. These waters are generally not affected by fresh-water inputs like estuaries and coastal waters. *See infra* note 113.

109. *See* supra note 9.

110. *See* supra note 107.

111. The policy of the act was two-fold: first, to regulate dumping of all materials into ocean waters; and second, "to prevent or strictly limit the dumping into ocean waters of any materials which would adversely affect human health, welfare, or amenities, or the marine environment, ecological systems, or economic potentialities." 33 U.S.C. § 1401(b) (1988).

To effectively regulate the disposal or dumping of all materials into ocean waters,[112] MPRSA utilized a comprehensive and uniform waste management system. In conjunction with MPRSA, the Clean Water Act,[113] regulates all discharges into navigable waters including the territorial sea.[114] Although these two marine protection acts overlap in their coverage of dumping from vessels within the territorial sea, MPRSA preempts CWA[115] in the coastal or open oceans[116] and the CWA controls in estuaries.[117]

Actual coverage of the MPRSA provisions, however, extends beyond the stated policy to regulate dumping in the ocean waters. A careful reading of MPRSA reveals that the Act regulates the dumping of all materials into the territorial seas and contiguous zone of the United States by a "person"[118] located outside the United States. MPRSA also prevents anyone from entering into U.S. waters for the purpose of dumping without receiving prior approval. Even though the actual application of MPRSA far exceeds its stated policy, MPRSA creates a template for a more comprehensive and integrated system in regulation of all waters within the United States' jurisdiction. The most efficient regulation to control dumping would be to provide one system which regulates the territorial sea, the contiguous zone and the open ocean.[119] An integrated system would thus clearly set forth all dumping standards for regulatory bodies as well as those engaged in ocean dumping.

MPRSA attempts to regulate all "material" which is disposed in the ocean. The statutory language that defines material is neither all inclusive nor exhaustive.[120] A laundry list of items which are described within the definition of MPRSA, include such matter as chemicals, dredged material, garbage, incinerator residue, solid waste, and various warfare agents.[121] MPRSA, in keeping with its stated policy, defines material very broadly so as to not limit itself to only those enumerated items.[122]

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112. Ocean waters, as defined by MPRSA, are "the open seas lying seaward of the baseline from which the territorial sea is measured." 33 U.S.C. § 1402(b) (1988).

113. The Clean Water Act [hereinafter CWA], 33 U.S.C. §§ 1251-1387 (1988), was formerly the Federal Water Pollution Control Act.

114. CWA regulates pipeline discharges dumping of wastes from vessels in estuaries and coastal waters, and point sources such as industrial pipelines extending into the territorial seas. Although MPRSA would regulate dumping from vessels in the ocean beyond the territorial sea, CWA would regulate dumping from land-based facilities and disposals from stationary drilling platforms.

115. *Id.*

116. 33 U.S.C. § 1416(a) (1988).

117. For domestic vessels, MPRSA applies to dumping in all waters seaward of the baseline, and, for international vessels, MPRSA applies to dumping within the contiguous zone. Office of Technological Assessment 1987; adapted from National Advisory Committee on Oceans and Atmosphere, Denison, *The Role of the Ocean in Waste Management Strategy*, (Comm. Print. 1981).

118. "Person" is defined by MPRSA as "any private person or entity, or any officer, employee, agent, department, agency, or instrumentality of the Federal Government, of any State or local unit of government, or of any foreign government." 33 U.S.C. § 1402(e) (1988).

119. *Supra* notes 81-96 and accompanying text.

120. The actual language of the Act provides: "Material means matter of any kind or description, including, but not limited
to. . . ." 33 U.S.C. § 1402(c) (1988).

121. 33 U.S.C. § 1402(c) (1988).

122. Similar to MPRSA, the CWA also classifies pollutants into three groups: conventional, toxic, and non-conventional. The conventional pollutants listed in Sec 304(a)(4) of the Clear Water Act are defined as total suspended solids, biochemical oxygen demand, concentration of acidity, fecal coliform

Pursuant to MPRSA, the Environmental Protection Agency Administrator ("Administrator") regulates the dumping of materials by issuing permits,[123] except in the case of dredged materials.[124] Several factors are considered when evaluating whether the permit should be issued,[125] however for both dredged and non-dredged materials. These factors include, but are not limited to:

(A) The need for the proposed dumping.
(B) The effect of such dumping on human health and welfare, including economic, esthetics, and recreational values.
(C) The effect of such dumping on fisheries resources, plankton, fish, shellfish, wildlife, shore lines and beaches.
(D) The effect of such dumping on marine ecosystems, particularly with respect to:
  (i) the transfer, concentration, and dispersion of such material and its byproducts through biological, physical, and chemical processes,
  (ii) potential changes in marine ecosystem diversity, productivity, and stability, and
  (iii) species and community population dynamics.
(E) The persistence and permanence of the effects of the dumping.
(F) The effect of dumping particular volumes and concentrations of such materials.
(G) Appropriate locations and methods of disposal or recycling, including land-based alternatives and the probable impact of requiring use of such alternate locations or methods upon considerations affecting the public interest.
(H) The effect on alternate uses of oceans, such as scientific study, fishing, and other living resource exploitation, and nonliving resource exploitation.
(I) In designating recommended sites, the Administrator shall utilize wherever feasible locations beyond the edge of the Continental Shelf.[126]

In order to establish a uniform and comprehensive system, the Administrator, when establishing or revising criteria to be used in determining if a permit should be issued, is to apply the standards set forth in international dumping conventions to which the United States is a party; *e.g.*, the London Dumping Convention.[127] To meet the international standards,[128] the Administrator may not relax the standards set forth in the MPRSA. As the United States is more technologically

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bacteria, and oil and grease defined in 40 CFR § 401.16 (1990). Since metals and organic substances can combine to form new toxic substances that can cause harmful effects in the marine environment, the EPA list 126 pollutants in 40 CFR § 122, app. D (1990), as well as include metals and organic chemicals in order to cover hybrid toxins. Non-conventional pollutants as defined in 40 CFR § 122, app. D (1990), establish a catch all category that may include additional or new substances that need to be regulated.

123. 33 U.S.C. § 1412 (1988).

124. The Secretary of the Army is charged with issuing permits for the disposal of dredged material into ocean waters. 33 U.S.C. § 1413 (1988).

125. The factors enumerated within the Act are similar to those which were included in the Oslo Convention. *See supra* notes 41-49 and accompanying text.

126. 33 U.S.C. § 1412 (1988).

127. *Supra* notes 65-73 and accompanying text.

128. *Id.*

advanced than many other states — and therefore more reliant on ocean dumping than most nations — the standards set within the U.S should be stricter than those set internationally. Thus, to regulate and prevent domestic and foreign pollutants which are dumped into U.S. waters, strict regulation, if not more stringent than international standards, is necessary to prevent further degradation of the U.S. marine environment.

1. Penalties

Although enforcement of the regulations prohibiting ocean dumping has been inadequate or non-existent in the past, MPRSA provides stricter enforcement measures to deter such conduct and incentives to those who comply with the requirements established by the Administrator.[129] MPRSA provides that any person who engages in activities which are prohibited by the Act may be subject to both civil and criminal sanctions.[130] The Administrator has broad discretion when imposing these sanctions and may consider the duration of continuing violations, each vessel, or other sources, used for dumping counting as a separate offense.[131]

The Administrator, when determining what fine should be imposed, is to consider the gravity of the violation, prior violations, and any good faith efforts to comply with the Act after notification of a violation.[132] An individual who is found guilty of MPRSA may be liable for a civil penalty of up to $50,000.[133] Furthermore, the Administrator's discretionary range in the imposition of penalties and fines acts as an additional deterrent to cease violations immediately and comply with the requirements.

2. Statutory Construction

The statutory language and interpretation of MPRSA makes it difficult to prosecute an individual but even harder for a business or corporation, since the dumper must "know" that its conduct violates the Act. Pursuant to MPRSA, anyone who knowingly violates the Act, or any regulations issued pursuant to it, shall be subject to criminal penalties.[134] In order to show a violation, the prosecutor must establish that the dumper knew it was dumping in violation of the Act, not just that its intent was to engage in dumping activities.

Subsequently, if the dumper is convicted, there may be a fine of up to $50,000, a prison term of up to one year, or both.[135] In addition, the violator is

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129. In 1989, the federal government appropriated $12,000,000 to the Environmental Protection Agency to regulate ocean dumping. This money was used both to regulate the issuing of permits, pursuing violators, and imposing sanctions on violators. 33 U.S.C. § 1420 (1988). The government also appropriated $13,500,000 for research on the impact of ocean dumping and $14,500,000 for fiscal year 1990. 33 U.S.C. § 1445 (1988).

130. 33 U.S.C. § 1415 (1988). Similarly, under the 1987 provisions of the Water Quality Act, 33 U.S.C. § 1251 (1987), Congress granted the EPA authority to assess administrative civil penalties.

131. 33 U.S.C. § 1415(c) (1988).

132. *Id.*

133. 33 U.S.C. § 1415(a) (1988). The penalty imposed for the dumping of any medical waste is increased to $125,000. *Id.*

134. 33 U.S.C. § 1415(b) (1988).

135. *Id.* If the violations that occur involve the dumping of medical waste the fine can increase to $250,000 and the prison term may be of any duration up to five years, or both.

also subject to a forfeiture penalty if the dumping activities involved medical waste.[136] The forfeiture provision is a substantial deterrent for those who may wish to engage in illegal dumping of medical waste because the vessel or structure used to accomplish the dumping, and any proceeds derived there from, are to be surrendered to the United States.[137] A possible solution to increase compliance with MPRSA would involve a statutory amendment by which any violator would be subject to the forfeiture provisions, not just those who dump medical waste. In addition, there should be a minimum $10,000 bounty to anyone that provides information which leads to a conviction as a result of dumping.

B. Ocean Dumping: An Evolving Problem in the United States

The need to control ocean dumping in the United States did not end with the introduction of legislation and regulations in 1972. Currently, marine pollution is still having a profound adverse affect in the ocean and coastal environment in the United States.[138] As new technology develops, improved measures to curb disposal of hazardous waste into the ocean must be implemented in a systematic approach to provide a comprehensive and uniform form of regulation.[139]

The Marine Protection, Research and Sanctuaries Act[140] must be supplemented with new regulations in order to control the continually evolving problem of ocean dumping. The Act was most recently amended on November 18, 1988.[141] The purpose of the amendment was to eliminate the dumping of sewage sludge and industrial waste by December 31, 1991.[142] After the enactment of the amendment, all dumping of these materials was to stop within nine months unless a permit was issued by the EPA that included an agreement to end the dumping by December 31, 1991.[143] Furthermore, no new permits were to be issued to individuals who were not dumping prior to September 1, 1988.[144] Civil sanctions were to be imposed on those dumpers who were not in compliance with permit requirements or did not cease dumping activities by the December 31, 1991 deadline.[145] The fines are calculated by the number of dry tons dumped in

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136. 33 U.S.C. § 1415(b) (2) (B) (1988).

137. *Id.*

138. For a discussion of the problems created by marine pollution see *supra* notes 11-19 and accompanying text.

139. Honorable Walter B. Jones provided significant input on the need for a uniform and comprehensive policy to deter ocean dumping along with the current legislation:

> The quest for cleaner oceans has led us to enact laws prohibiting the ocean dumping of sewage sludge and the disposal of plastics and medical wastes at sea. In search of cleaner oceans we have adopted major coastal management initiatives . . . . But the health of our oceans is not, and cannot be, a purely domestic U.S. concern. The oceans are a global resource and solutions to their problems must be managed on a global level.

136 CONG. REC. E3021-03 (daily ed. Sept. 27, 1990) (statement of Hon. Jones).

140. *Supra* note 103.

141. Ocean Dumping Ban Act of 1988, Pub. L. No. 100-688, 102 Stat. 4139 (1988) (codified at 33 U.S.C. § 1414(b) (1988)). Furthermore the House and Senate passed this Act without a single dissenting vote.

142. For a discussion of the need to regulate dumping of sewage sludge and industrial waste see *supra* notes 20-21, and 23 and accompanying text.

143. 33 U.S.C. § 1414b(1) (1988).

144. 33 U.S.C. § 1414b(a)(2) (1988).

145. 33 U.S.C. § 1414b(b) (1988).

violation of the new regulation. An additional deterrence feature to the amendment provided that the penalty rate per dry ton was to increase each year.[146]

Unlike other penalties and sanctions, approximately eighty-five percent of the fines paid by the dumper are be placed in an escrow account. Essentially, the fines paid to the government are minimal, since the money is be used to identify, develop and implement alternatives means of waste disposal,[147] which the violator is required to develop anyway. Although the civil penalties do not provide a strong deterrent, they encourage dumpers to develop alternative means of dumping.

Since past amendments were not a stringent deterrent to ocean dumpers, future legislation should incorporate more severe criminal sanctions and civil penalties to be imposed upon individuals who violate ocean dumping regulations.[148] Congress has recently introduced several bills which are intended to protect the marine environment.[149] Ocean dumping is still a major concern in the United States, and legislators are burdened with the task of promoting the welfare of the marine environment by enacting uniform and comprehensive legislation that will reduce ocean dumping.[150]

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146. *Id.*

147. 33 U.S.C. § 1414b(e) (1988).

148. We will not tolerate a slap on the wrist for those who wantonly pollute our oceans. Our oceans are regularly assaulted by the illegal dumping of sewage sludge, medical waste, toxic chemicals, and a litany of assorted garbage and trash. We must have the means for tough sanctions against these polluters, and we must get the word out that we will no longer tolerate these abuses.
Furthermore, the purpose of the Ocean Dumping Enforcement Improvement Act of 1989 was to amend MPRSA by expediting the "arrest, prosecution, and conviction of illegal dumpers," by updating enforcement measures through criminal penalties and higher sanctions. The policy articulated in Congress was that "we must have a policy of zero tolerance when it comes to the pollution of our oceans, and coastal waters, and the Ocean Dumping Enforcement Act of 1989 will just do that." *Ocean Dumping Enforcement Improvement Act of 1989*, 101st Cong., 1st Sess., 135 CONG. REC. E3496-01 (daily ed. Oct. 19, 1989)(statement of Rep. Schneider).

149. *See Marine Protection Act*, 101st Cong., 1st Sess., 135 CONG. REC. S6639-02 (daily ed. June 14, 1989); *Prevention of the Further degradation of the Coastal and Estuarine Waters of the United States*, 101st Cong., 1st Sess., 135 CONG. REC. S288502 (daily ed. Aug. 4, 1989) E2885-02; *Ocean Dumping Enforcement Improvement Act*, 101st Cong., 1st Sess. 135 CONG. REC. E3496-01 (daily ed. Oct. 19, 1989); 101st Cong., 2nd Sess. 136 CONG. REC. E30130-03 (daily ed. Sept. 27, 1990); *Convention for Protection of Natural Resources and Environment of the South Pacific Region*, 101st Cong., 2d Sess. 136 CONG. REC. H133968 (daily ed. Sept. 17, 1990); and *Water Resources Development Act of 1990*, 101st Cong., 2d Sess. 136 CONG. REC. H8107-01 (daily ed. Sept. 26, 1990).

150. Senator Sam Gejdenson has sought to reintroduce the Illegal Dumping Prevention Act. This legislation would give the Environmental Protection Agency and the Attorney General, the authority to seize boats and other vessels of waste transporters found guilty of dumping medical waste, hazardous waste, and municipal solid waste in to the oceans and waterways in violation of EPA permits. Senator Gejdenson further stated that the:

> Illegal Dumping Prevention Act gives agencies additional muscle to effectively stop the illegal dumping of all types of waste. It will also give these entities greater ability to deal with short dumping, the dumping of sludge and waste that is permitted to be dumped in a particular site, but which is dumped short of the designated location. This legislation will provide the EPA and the Attorney General with additional sentencing option and provides a strong incentive for waste disposers to comply with the laws on the books or face the possible loss their livelihood-their boats.

137 CONG. REC. E785-02 (daily ed. March 5, 1991) (statement of Sen. Gejdenson).

Senator Mitchell also provided insightful commentary on the need for regulation of marine pollution while introducing the Marine Protection, Research and Sanctuaries Act:

> [E]ven if total compliance with today's regulations is achieved, existing programs will not be sufficient to maintain or improve the health of all estuaries and coastal waters.

V. CONCLUSION

Marine pollution has a profound impact on the environment, both internationally and nationally. Ocean dumping, which represents ten percent of the pollutants that enter marine waters, must be regulated in order to preserve the oceans and coastal areas. The apparent belief among ocean dumpers is that the ocean has an infinite capacity to absorb anything which is dumped into it. The enormity of damage and destruction which has occurred along shorelines and to marine life refutes this theory. To prevent the total destruction of the marine environment, governments worldwide must be aware of and regulate *all* materials which are dumped into the oceans.

Although regulations currently exist on both national and international levels, a consolidated system is required to establish a more uniform means of monitoring and enforcing dumping at sea. Because marine pollution knows no bounds, one international administrative body must be developed that sets forth minimum standards for controlling ocean dumping. Of course, individual countries may impose more stringent standards than those established by international committee. Such standards would be submitted to the administrative body for approval together with supporting scientific data.

The responsibilities of this international administrative group must be both comprehensive and integrated. Delegated agencies would analyze current and future harms that are caused by dumped substances. In addition, the committee would determine what substances, because of their extremely dangerous characteristics, should be totally banned from dumping. Further delegation would establish regulations, to be followed by all countries, for the dumping of any materials which are not banned, monitoring dumping which does occur, and penalizing countries and dumpers who violate standards set by the administrative body. The primary focus of the consolidated international system is to prevent dumping which will harm the marine environment, instead of simply reacting to problems which dumping has already caused. If the current system remains reactive, instead of proactive, irreparable damage to the marine environment will occur before ocean dumping is brought under control.

Frederick Forrest Richards III[151]

In the absence of additional measures to protect our marine waters, the next few decades will witness new or continued degradation in many estuaries and coastal waters around the country.

135 CONG. REC. S6639-02 (daily ed. June 14, 1989) (statement of Sen. Mitchell).

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