1-1-1978

In Pursuit of Clean Oceans - A Review of the Marine Protection, Research, and Sanctuaries Act

Richard L. Kuersteiner

Etta G. Herbach

Follow this and additional works at: http://digitalcommons.law.scu.edu/lawreview

Part of the Law Commons

Recommended Citation
Available at: http://digitalcommons.law.scu.edu/lawreview/vol18/iss1/4

This Article is brought to you for free and open access by the Journals at Santa Clara Law Digital Commons. It has been accepted for inclusion in Santa Clara Law Review by an authorized administrator of Santa Clara Law Digital Commons. For more information, please contact sculawlibrarian@gmail.com.
IN PURSUIT OF CLEAN OCEANS—A REVIEW OF THE MARINE PROTECTION, RESEARCH, AND SANCTUARIES ACT

Richard L. Kuersteiner* and Etta G. Herbach**

INTRODUCTION

Since prehistoric times man has used the various oceans and tributaries of the world not only as primary means of transportation, but also as important sources of food. Many countries and cultures remain highly dependent upon the ocean. Virtually every nation contiguous to an ocean or sea exploits its rich resources. However, over the years man has also used the ocean as a receptacle for his refuse. Industrial pollution has become so pervasive† that, unless curtailed, it will likely eradi-

---

* Counsel, Western Division, Naval Facilities Engineering Command, San Bruno, Cal.; B.A., 1961, Washington and Lee University; J.D., 1964, University of Florida; Member, Florida and United States Supreme Court bars.

** Assistant Counsel, Western Division, Naval Facilities Engineering Command, San Bruno, Cal.; B.A., 1971, City University of New York at Brooklyn College; J.D., 1976, University of Santa Clara; Member, California bar.

† "For example, in 1959, industrial wastes disposed of by ocean dumping approximated 2.2 million tons. By 1968, the amount had increased to over 4.7 million tons, a 114 percent increase in nine years. In the same period, the amount of sewage sludge dumped increased by 61 percent, from 2.8 million tons to 4.5 million tons." ENVIRONMENTAL PROTECTION AGENCY, THE MARINE PROTECTION, RESEARCH AND SANCTUARIES ACT OF 1972 (OCEAN DUMPING) HIGHLIGHTS (1972).

Some additional insight into the quantities and trends of materials which have been dumped into the ocean may be gleaned from the following table:

TABLE III.—QUANTITIES AND TRENDS OF MATERIALS OCEAN DUMPED

<table>
<thead>
<tr>
<th>Type of waste</th>
<th>1968 amount dumped (tons)</th>
<th>1973 amount dumped (tons)</th>
<th>1974 amount dumped (tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dredged spoils</td>
<td>52,000,000</td>
<td>NA</td>
<td>118,000,000</td>
</tr>
<tr>
<td>Industrial wastes</td>
<td>4,690,500</td>
<td>5,405,100</td>
<td>5,717,000</td>
</tr>
<tr>
<td>Sewage sludge</td>
<td>4,477,000</td>
<td>5,429,400</td>
<td>5,676,000</td>
</tr>
<tr>
<td>Construction and demolition debris</td>
<td>574,000</td>
<td>1,161,000</td>
<td>2,242,000</td>
</tr>
<tr>
<td>Solid waste</td>
<td>26,000</td>
<td>260</td>
<td>200</td>
</tr>
<tr>
<td>Explosives</td>
<td>15,200</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>61,782,700</td>
<td>NA</td>
<td>131,635,200</td>
</tr>
</tbody>
</table>
cate the very forms of marine life that have proved so essential.  

Although the problem of ocean dumping is an old one,\(^3\) it was not until 1972 that Congress enacted a comprehensive plan to regulate the problem. However, earlier concern over ocean dumping had prompted President Nixon to request a study of the problem by the Council on Environmental Quality (CEQ) in 1970.\(^4\) This study produced a report entitled “Ocean Dumping—A National Policy,” which stressed the immediacy of the problems created by ocean dumping and the need for a clear national policy to provide for its regulation.\(^5\)

In 1971 President Nixon submitted legislation designed to

---

\(^3\) U.S. Department of Commerce, National Oceanic and Atmospheric Administration, report to the Congress on ocean dumping research, January through December 1974, June 1975, p. 2.  
\(^4\) CONGRESSIONAL RESEARCH SERVICE, 94TH CONG., 2D SESS., OCEAN DUMPING REGULATION: AN APPRAISAL OF IMPLEMENTATION 15 (Comm. Print 1976) [hereinafter cited as CONGRESSIONAL RESEARCH SERVICE].  

Further, an EPA spokesperson has categorized ocean disposal in recent years according to types, amounts, and areas in which the waste is dumped. See Marine Protection, Research, and Sanctuaries Act of 1972: Hearings Before the Subcomm. on Oceans and Atmosphere of the Senate Comm. on Commerce, 94th Cong., 2d Sess. (1975) (statement of Dr. Andrew W. Breidenbach: Assistant Administrator for Water and Hazardous Materials, Environmental Protection Agency) (see table reproduced at app. A infra).

2. “Mariculturists, those seeking to increase the world’s food supply through mass cultivation of oysters, shrimp, lobsters, pompano and the like, say that the oceans may soon be too polluted to produce edible fish.” Wall St. J., Feb. 17, 1977, at 1, col. 5.

3. Norwegian anthropologist and explorer Thor Heyerdahl has also expressed his views concerning the vulnerability of the seas:  

Only when we fully perceive that there is no fundamental difference between the various bodies of water on our planet, beyond the fact that the ocean is the largest of all lakes, can we begin to realize that the ocean has something else in common with all other bodies of water: it is vulnerable. In the long run the ocean can be affected by the continued discharge of all modern man’s toxic waste. One generation ago no one would have thought that the giant lakes of America could be polluted. Today they are, like the largest lakes of Europe.  

Heyerdahl, How to Kill an Ocean, SAT. REV., Nov. 29, 1975, at 13.  

4. The first legislation attempting to deal with ocean dumping was the Rivers and Harbors Act of 1899, ch. 425, § 13, 30 Stat. 1152 (codified at 33 U.S.C. § 407 (1970)), which prohibited the dumping of any refuse in navigable water.  


5. COUNCIL ON ENVIRONMENTAL QUALITY, OCEAN DUMPING—A NATIONAL POLICY, 36 (1970) [hereinafter cited as OCEAN DUMPING REPORT].
effectuate these CEQ recommendations. The legislative history explained that the legislation was needed as a result of “the volume and toxicity of the wastes of which technological societies must dispose.” By 1972, Congress was sufficiently motivated by the projected increase in quantities of harmful materials being dumped in the oceans and the problems which their disposal presented to enact remedial legislation, known as the Marine Protection, Research, and Sanctuaries Act (Ocean Dumping Act).

Initially, this article examines the domestic and international political developments which provided the impetus behind the passage of the Ocean Dumping Act. It then explores some key provisions of the Act and assesses its role in the context of domestic pollution legislation. Finally, it evaluates the relative strengths and weaknesses of the Act, concluding that it represents an important first step towards the elimination of ocean pollution.

**International Agreements on Ocean Dumping**

As noted above, ocean dumping is not the isolated problem of a handful of nations. Because of its international scope, the problem cannot be dealt with by the piecemeal efforts of one nation. Accordingly, the United States has sought to reinforce its domestic legislation by pursuing international agreements designed to alleviate the problem of ocean dumping. This effort culminated in London with the 1972 Ocean Dumping Convention, a product of the Intergovernmental Conference on the Convention on the Dumping of Wastes at Sea. The international aspects of the ocean dumping problem are best understood in light of an awareness of the historical setting which produced the 1972 Convention. It has been said that “[a]lthough water pollution control has existed since the sixteenth century, a concerted international effort to fight marine pollution did not begin until this century.”

7. Id. at 9.
The 1954 Convention

The initial international agreement aimed at controlling the dumping of marine pollution occurred in 1954, with the adoption of a convention to control the oil discharges of ships in certain designated zones. The effectiveness of the 1954 Convention has been criticized because "the circumstances under which compliance with the convention is excused are so broad that most ships are able to escape liability." A further shortcoming lies in its enforcement provisions. Only the flag nation can prosecute its ships' violations. This presents a problem since political and/or economic motivations might induce the offender's nation not to institute legal action against the polluter. The amendments of 1962 and 1969 did little to remedy these initial weaknesses. As one commentator observed: "In addition to being limited to oil discharges, and to allowing uncontrolled dumping outside prohibited zones, the amendments left intact the flag state's prerogative not to initiate any legal action against a polluter, and failed to introduce mandatory pollution reduction procedures for all ships."

The 1958 Conventions

An attempt to codify existing international law and to establish new rules governing the law of the sea was made in 1958. Although four conventions were adopted at that United

---

11. Note, supra note 9, at 35.
12. The Convention provides that:
   (1) Article III shall not apply to:
       (a) the discharge of oil or an oily mixture from a ship for the purpose of securing the safety of the ship, preventing damage to the ship or cargo, or saving life at sea; or
       (b) the escape of oil, or of an oily mixture resulting from damage to the ship or unavoidable leakage, if all reasonable precautions have been taken after the occurrence of the damage or discovery of the leakage for the purpose of preventing or minimizing the escape....
13. 1954 Convention, supra note 10, art. IV.
Nations Conference, they did not effectively abate the problem of ocean dumping. Their ineffectiveness has been explained on the basis "that the law of the sea is based primarily on conventions or other agreements which were concluded prior to current understanding of the actual and potential impacts of dumping on the marine environment. Consequently, present international law appears inadequate to deal with possible long-term environmental effects of various actions."\(^{18}\)

**The 1969 Conventions.**

The next significant international development occurred in Brussels in 1969. Again, the two conventions which were adopted\(^{19}\) focused solely on the problem of oil pollution. However, they made significant inroads into the policy of flag state control over polluters.\(^{20}\)

Also in 1969, the United Nations General Assembly requested exploration of the possibility of drafting an international treaty governing marine pollution.\(^{21}\) Consequently, the Intergovernmental Working Group on Marine Pollution was established for the purpose of drafting a convention on ocean dumping in preparation for the 1972 United Nations Conference on the Human Environment.\(^{22}\) Although such a draft was prepared,\(^{23}\) no conclusive action was taken by the Human Environmental Conference other than to refer "the draft ocean dumping convention to the United Nations Seabeds Committee, which at that time was preparing for the approaching Law-

---

17. Note, supra note 9, at 36. In fact, all that was accomplished by these conventions was an attempt to deal with the problems of nuclear pollutants and oil discharge, both with only limited success. See Convention on the High Seas, arts. 24, 25, done Apr. 19, 1958, [1962] 2 U.S.T. 2312, T.I.A.S. No. 5200, 450 U.N.T.S. 82. For a general discussion of radioactive ocean pollution, see Comment, International Law and Radioactive Pollution by Ocean Dumping: "With All Their Genius and All With Their Skill . . . .," 11 SAN DIEGO L. REV. 757 (1974).

18. OCEAN DUMPING REPORT, supra note 5, at 36.


20. "[I]n cases of extreme urgency requiring measures to be taken immediately, the coastal state may take measures rendered necessary by the urgency of the situation, without prior notification or consultation [with the flag state] . . . ." Convention on Intervention, supra note 19, art. III(d).


of-the-Sea Conference, for its comments, and to a conference to be held in the United Kingdom for final consideration before the end of 1972.24

The 1972 Convention

The most sweeping international convention covering marine pollution was adopted at the London Conference of 1972.25 It has been praised chiefly for including a specific list of contraband materials and for establishing criteria to evaluate materials not individually listed.26 Commendation has also resulted because the convention acknowledges the ocean's ability to cope with some amount of waste material, yet contains a provision requiring an evaluation of the environmental impact of the proposed dumping prior to permitting damage to occur.27

Favorable views of the Ocean Dumping Convention have not been universal, however. One commentator states that the terms of the convention are relatively weak;28 yet he admits that the convention served as a consciousness raising mechanism, which will perhaps lead to future agreements concerning marine pollution. Further, he notes that the establishment of such a consciousness might reduce violations of the discretionary provisions of the convention.29

The provisions of the Ocean Dumping Convention closely parallel those of the Ocean Dumping Act.30 This similarity illustrates a sensible approach taken toward solving the problem of pollution in our oceans. Pollutants know no national boundaries. Therefore, to create an effective plan to combat pollution, attacks must be launched on both international and domestic fronts. In line with this view, as early as 1970 the Council on Environmental Quality urged the adoption of a national

24. Lettow, supra note 4, at 665.
26. Note, supra note 9, at 47.
27. Id.
28. Legislative Developments, Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 6 Law & Pol'y Int'l Bus. 575, 586. This commentary explains the goals which the treaty hopes to achieve, articulates the provisions of the Treaty, analyzes its effectiveness and raises questions concerning potential economic effects of the implementation of the Convention.
29. Id.
30. The congruence is explained in part by their simultaneous development. The United States signed the Ocean Dumping Convention on December 29, 1972, while the Ocean Dumping Act was signed into law on October 23, 1972.
policy which insured that domestic marine pollution legislation kept pace with international conventions.\textsuperscript{31} Accordingly, the Ocean Dumping Act was amended in 1974 "in order to make it fully consonant with the treaty responsibilities of the United States under the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter."\textsuperscript{32}

Having briefly examined those international agreements which have an impact on the Ocean Dumping Act,\textsuperscript{33} it is now possible to examine the provisions of the act itself.

\textbf{THE MARINE PROTECTION, RESEARCH, AND SANCTUARIES ACT}

The purpose of the Ocean Dumping Act is to regulate the dumping of waste materials into the oceans,\textsuperscript{34} and since "material" is defined quite broadly,\textsuperscript{35} it is apparent that the legislation was designed to prohibit a wide range of substances from being dumped in our oceans. The mechanism chosen to accomplish this regulation of ocean dumping is a permit process.

\textit{Permit Process}

The act requires that permits be obtained to engage in any of the following activities: (1) the transportation by any vehicle emanating from the United States of "any material for the purpose of dumping it into ocean waters;"\textsuperscript{36} (2) the transporta-

\textsuperscript{31} OCEAN DUMPING REPORT, supra note 5, at 37.
\textsuperscript{33} For further discussion of these international agreements, see generally Let-tow, supra note 4; Note, supra note 9.
\textsuperscript{34} [I]t is the policy of the United States to regulate the dumping of all types of materials into ocean waters and to prevent or strictly limit the dumping into ocean waters of any material which would adversely affect human health, welfare, or amenities, or the marine environment, ecological systems, or economic potentialities.
\textsuperscript{36} "Material" is defined to include:
matter of any kind or description, including but not limited to, dredged material, solid waste, incinerator residue, garbage, sewage, sewage sludge, munitions, radiological, chemical, and biological warfare agents, radioactive materials, chemicals, biological and laboratory waste, wreck or discarded equipment, rock, sand, excavation debris and industrial, municipal, agricultural, and other wastes; . . . .
\textsuperscript{Id.} § 1402(c).
\textsuperscript{36} Id. § 1411(a). The focus of the Act on transportation for the purpose of dumping would appear to leave unregulated the dumping of materials which had been
tion by a United States agency or official of such materials from any location outside the United States for the purpose of dumping it into ocean waters; and, (3) the dumping by any person of such materials, transported from any location outside the United States into the territorial sea or contiguous zone. This permit process is bifurcated; permits for the dumping of dredged spoils are issued by the Secretary of the Army through the Army Corps of Engineers, while permits for all other materials are issued by the Administrator of the Environmental Protection Agency.

The Administrator may issue such permits "where [he] determines that such dumping will not unreasonably degrade or endanger human health, welfare, or amenities, or the marine environment, ecological systems, or economic potentialities."\footnote{Id. § 1411(b).}

\footnote{Id. § 1413(a).} \footnote{Id. § 1412(a). For an analysis of the permit system employed by the EPA and the Corps of Engineers, covering developments through 1975, see Lumsdaine, Ocean Dumping Regulation: An Overview, 5 Ecology L.Q. 753 (1976).} \footnote{33 U.S.C. § 1412(a) (Supp. V 1975). In making his determination, the Administrator shall consider, although not exclusively, the following:

(A) The need for the proposed dumping.

(B) The effect of such dumping on human health and welfare, including economic, esthetic, and recreational values.

(C) The effect of such dumping on fisheries resources, plankton, fish, shellfish, wildlife, shorelines 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.}

\footnote{Id.}
In addition, the Administrator is empowered to establish various categories of permits and determine appropriate and inappropriate sites for dumping. The Secretary must use the same criteria to evaluate the effects of dumping dredged spoils. However, he must also make “an independent determination of the need for the dumping,” taking into consideration such factors as “the potential effect of a permit denial on navigation, economic and industrial development, and foreign and domestic commerce.” In addition, he must consider the availability of alternative dumping sites or disposal methods.

The Ocean Dumping Act requires that the Secretary secure the approval of the Administrator prior to issuing any permits. The Secretary may request a waiver if he finds that no economically feasible alternative is available which will comply with the criteria. The Administrator must grant the waiver unless he determines that such action “will result in an unacceptably adverse impact on municipal water supplies, shellfish beds, wildlife, fisheries . . ., or recreational areas . . . .”

The permit and licensing system is at the heart of the regulatory effort. Controlled dumping such as the Act envisions reflects a congressional determination that continued ocean dumping absent controls would be hazardous, and yet a total ban would be impractical. Licensing serves to constantly balance these competing concerns. The act supplements this permit system with a number of other provisions designed to make the licensing scheme more effective.

42. Id. § 1412(b).
43. Id. § 1412(c).
44. Id. § 1413(b).
45. Id.
46. Id.
47. Id.
48. “Prior to issuing any permit under this section, the Secretary shall first notify the Administrator of his intention to do so. In any case in which the Administrator disagrees with the determination of the Secretary as to compliance with the criteria” of the Act, it is the Administrator’s determination which must prevail. This provision insures consistent application of the criteria. Id. § 1413(c).
49. Id. § 1413(d).
50. Id. In another context, however, it is the Secretary’s determination that will prevail. When dumping might create an artificial island or adversely affect navigation, the Administrator must consult with the Secretary, “and no permit shall be issued if the Secretary determines that navigation will be unreasonably impaired.” Id. § 1416(c).
Other Provisions

The Ocean Dumping Act contains a number of significant provisions in addition to the establishment of a permit process. It provides for both civil and criminal sanctions in the event of a violation. Additionally, it establishes procedures for the revocation or suspension of permits. The Act also empowers the Secretary of Commerce to formulate a research program into the effects of ocean dumping and to designate certain marine sanctuaries. In carrying out these duties, the Secretary of Commerce must consult with related federal departments and agencies, and may engage in action on an international level under the “foreign policy guidance of the President.”

The most significant additional provision establishes a private right of action to enjoin a violator. This private civil suit is not without limits. It cannot be commenced until sixty days after either the Administrator or the Secretary has been notified. Additionally, a private action may not be brought if the Attorney General has “commenced and is diligently prosecuting” a civil action. Finally, the private suit is not available if an action has been commenced by the Administrator to impose a penalty or if permit suspension or revocation proceedings have been initiated by the Secretary or Administrator.

51. Id. § 1415(a), (b). Factors which must be considered in determining the severity of civil penalties include prior infractions, the severity of the infraction, and the violator’s good faith. Criminal penalties are available for knowing violations.

52. Id. § 1415(f). Either the Secretary or the Administrator may revoke or suspend a permit. The requirements of due process are satisfied by a provision that “[n]o permit shall be revoked or suspended unless the permittee shall have been given notice and opportunity for a hearing on such violation and proposed suspension or revocation.” Id.

53. Id. §§ 1441, 1442(a). In conducting this research effort, the Secretary must consider such factors as “existing and proposed international policies affecting oceanic problems, economic considerations involved in both the protection and the use of the oceans, possible alternatives to existing programs, and ways in which the health of the oceans may best be preserved for the benefit of succeeding generations of mankind.” Id. § 1442(a).


56. Id. § 1442(b).

57. Id. § 1415(g)(1). Suit may be brought against any person “alleged to be in violation of any prohibition, limitation, criterion or permit,” including the United States itself and any other governmental agency or instrumentality. This provision also recognizes that such suits might be limited by the eleventh amendment to the Constitution. Id.

58. Id. § 1415(g)(2).

59. Id. § 1415(g)(2)(B).

60. Id. § 1415(g)(2)(C).
spite these limitations, private suits are encouraged by a provision permitting the court to award the private party the costs of litigation, including reasonable attorney and expert witness fees.\textsuperscript{61}

1974 Amendments

The Ocean Dumping Act was amended in 1974 to achieve greater conformity between domestic legislation and international law.\textsuperscript{62} The most important modification of the original act was the extension of United States law to regulate the transportation of foreign-source material by United States flag vessels for the purpose of ocean dumping.\textsuperscript{63} Significantly, the 1974 amendments go beyond the Ocean Dumping Convention by totally prohibiting the disposal of "chemical and biological warfare agents and high level radioactive wastes."\textsuperscript{64} They also expand the list of prohibited material to include oil that is transported for the purpose of ocean dumping.\textsuperscript{65}

The Ocean Dumping Act does not function in a vacuum. It is but one of a host of pieces of domestic legislation regulating environmental pollution. Thus, it becomes necessary to explore how the provisions of the Act operate in this overall regulatory scheme.

THE EFFECTIVENESS OF THE MARINE PROTECTION, RESEARCH, AND SANCTUARIES ACT

To accurately assess the effectiveness of the Ocean Dumping Act, it is necessary to examine its relationship with other environmental legislation, specifically the Federal Water Pollution Control Act (FWPCA),\textsuperscript{66} and the National Environmental Policy Act (NEPA).\textsuperscript{67} In addition, its jurisdictional scope must be explored, since it purports to regulate others besides United States citizens. Finally, since the citizen suits mentioned above are critical to the proper implementation of the Act, their availability must be considered. After these inquiries, it is possible to make a concise evaluation of the Act itself.

\textsuperscript{61} Id. § 1415(g)(4).
\textsuperscript{62} 1974 Senate Report, supra note 32, at 1.
\textsuperscript{63} Id. at 4.
\textsuperscript{64} Id. at 5.
\textsuperscript{65} 33 U.S.C. § 1402(c) (Supp. V 1975).
\textsuperscript{66} Id. §§ 1251-1376.
The Relationship with the FWPCA and EPA

EPA permits. Both the Ocean Dumping Act and the FWPCA provide for the issuance of Environmental Protection Agency (EPA) permits for discharges into the territorial sea. 68 However, the Ocean Dumping Act explicitly provides for the voiding of licenses and permits which were not issued pursuant to its terms. 69 This provision has given rise to a conflict surrounding the intended coverage of the two acts. One commentator has suggested that this conflict arose because both acts were before Congress at the same time, with competing Senate committees vying for jurisdiction in the area. 70 As a result, while the Ocean Dumping Act does not permit states to promulgate rules relating to activities regulated by it, 71 the FWPCA specifically anticipates the issuance of discharge permits by the states and allows them to adopt more stringent standards than the federal government. 72

These conflicting provisions have spawned a controversy over which piece of legislation should control. Although the FWPCA was enacted prior to the Ocean Dumping Act, the passage of each occurred within a five day period. 73 It has been argued that the date of passage is the controlling factor, and that the Ocean Dumping Act supersedes any previously enacted laws. 74 However, one could argue that three factors combine to weaken the validity of this position: (1) the essentially simultaneous passage of the two statutes; (2) the lack of clarity as to which act is more specific with regard to dumping from vessels within the three mile limit; and (3) the impossibility of satisfactorily determining congressional intent because the committees involved failed to reach agreement on a proper division of jurisdiction. 75

69. Id. § 1416.
70. Lettow, supra note 4, at 650.
73. The Ocean Dumping Act was enacted October 23, 1972, and the FWPCA was passed over the President’s veto on October 18, 1972.
74. Lettow, supra note 4, at 655.
Despite these factors the former argument is more persuasive. The Ocean Dumping Act states that its permit system takes precedence over permits issued pursuant to any other legislation.76 Although the statutes were enacted virtually simultaneously, the Senate report accompanying the Ocean Dumping Act reveals that certain specific pieces of legislation would not be affected by the enactment.77 The FWPCA was not specifically mentioned in this context, nor was it mentioned in the conference report on the Ocean Dumping Act.78

Given this construction, it seems clear that the sections in the FWPCA which provide for state regulation of dumping are incompatible with the Ocean Dumping Act. Section 106 of the Ocean Dumping Act provides that "no State shall adopt or enforce any rule or regulation relating to any activity regulated by [the Ocean Dumping Act]."79 While some authors have suggested that state certification pursuant to the FWPCA might be imposed upon dumpers in addition to the federal permit process,80 the broad language contained in the Ocean Dumping Act would appear to preclude any state regulatory efforts.81 No court has confronted this problem in the specific context of the EPA permit program. However, the propriety of state regulation of activities covered by Corps of Engineers permits was before the court in Save Our Sound Fisheries Association, Inc. v. Calloway,82 and that decision supports the notion of federal preemption.

**Corps of Engineers permits.** Save Our Sound Fisheries was an action brought to enjoin both the Department of the Army and a private corporation employed by the government from dumping dredged spoil off the coast of Rhode Island.83 Its sig-

---

77. 1972 Senate Report, supra note 6, at 35.
80. See, e.g., Lettow, supra note 4, at 657.
81. This apparently represents the intent of Congress.
83. Id. at 294.
nificance lies in the court's examination of the dredged material permit programs of both the Ocean Dumping Act and the FWPCA.

Each act contains provisions establishing a procedure for the issuance of dredged material permits by the Secretary of the Army.\(^8\) Unlike their respective EPA permit programs, the Corps of Engineers permit programs roughly parallel one another. Since the FWPCA does not allow permits to be issued by the states for dredged spoils, no conflict exists with the section in the Ocean Dumping Act which preempts state regulation.\(^8\) However, the question remains as to whether or not state certification is required prior to the issuance of the federal permit, a question analogous to the issue raised by the conflict with respect to EPA permits.

The court in *Save Our Sound Fisheries* discussed both these issues. With regard to the applicability of permit requirements of Rhode Island law, the court observed:

> It is clear, however, that insofar as State law is applicable to an activity regulated by the MPRSA [Ocean Dumping Act], State law may not be enforced. Since this Court holds that the MPRSA is applicable to the project in question, R.I.G.L. §§46-17.1-1 and 46-17.1-2 cannot be enforced against the instant defendants, since the R.I. law purports to regulate certain dumping of dredged spoil which is governed by the provisions of the MPRSA.\(^6\)

The court declined to require state certification as a prerequisite to the issuance of a permit, but it did so based upon the narrow ground that a provision of the FWPCA exempts a federal agency from the status of an applicant.\(^7\) Such a holding leaves open the possibility that state permit laws would be applicable to someone other than a federal agency. This would be inconsistent, however, with the broad language of the Ocean Dumping Act that "no State shall adopt or enforce any rule or regulation relating to any activity regulated by this subchapter."\(^8\) Once a determination is made that the activity involved falls within the class of activities regulated by the Ocean

---

85. *See* note 79 *supra*.
87. *Id.* at 306 (construing 33 U.S.C. § 1341(a)(6) (Supp. V 1975)).
Dumping Act, state regulation of any kind should be precluded.

Relationship with NEPA

No statement is contained in the Ocean Dumping Act regarding the relationship between its regulatory authority and the NEPA. However, EPA guidelines provide an exemption for the Ocean Dumping Act's regulatory provisions from the NEPA requirement.\(^8\) Thus, one commentator predicted, prior to any reported cases, that "environmental impact statements probably will not be required for action [on] permit applications under the Ocean Dumping Act, at least where the EPA and not the Corps of Engineers is taking the action."\(^9\)

The applicability of the NEPA impact statement requirement to EPA ocean dumping permits was addressed in *Maryland v. Train.*\(^1\) That court held that "proper interpretation of the Ocean Dumping Act does not require EPA to prepare or circulate an Environmental Impact Statement."\(^2\) With respect to permits issued by the Army Corps of Engineers, however, it should be noted that in *Save Our Sound Fisheries,* the Secretary of the Army did not claim any exemption for the Corps of Engineers from the NEPA impact statement requirement.\(^3\)

The disparate treatment afforded the permit programs of these two agencies is justified by their differing functions and expertise. Although both agencies must make similar evaluations of environmental concerns prior to issuing dumping permits, the EPA is an agency with recognized environmental expertise, while the Corps of Engineers was not created to coordinate and take effective action on behalf of the environment. Thus, an evaluation of the basic function of the agency involved determines whether an environmental impact statement is required in order to comply with NEPA or whether such a statement would merely duplicate procedures found in the Ocean Dumping Act. The use of this criteria is appropriate because such an approach insures that only an agency with recognized environmental expertise will be excused from pre-

---

2. *Id.* at 122.
3. 387 F. Supp. at 310.
paring an environmental impact statement before taking action on an ocean dumping permit.

**Jurisdictional Questions**

The jurisdictional basis for the prohibitions contained in the Ocean Dumping Act is the broad power of Congress to regulate commerce. The legislative history indicates that Congress felt it inappropriate for the United States to directly assert jurisdiction on the high seas over persons who were not United States nationals. However, no violence is done to the principles of international law by the assertion of "jurisdiction to regulate transportation by persons subject to the jurisdiction of the United States for the purpose of dumping in the oceans." In each instance of prohibited conduct under the Ocean Dumping Act, jurisdiction has been statutorily asserted over the violator without regard to whether or not the material will be dumped in the high seas. This is a valid extraterritorial exercise of jurisdiction.

A 1974 amendment expanded this jurisdiction. In addition to the conduct proscribed in the original act, the amendment prohibits, absent a permit, a vessel or aircraft registered in the United States or flying the United States flag from transporting any material from any location which is to be dumped in ocean waters. The legislative history accompanying the amendment does not expressly state the basis for the expanded jurisdiction, but reveals that although such a version was contemplated at the time of the original passage, "[i]t was concluded . . . , however, that it would not be as effective as a universal international regulatory regime. Furthermore other nations had not yet indicated their willingness to take similar action." The absence of any specific statement of jurisdictional authority suggested that there was no doubt that jurisdictional validity existed on the same basis as in the original act. Further, the United States was apparently willing to ac-

94. U.S. Const. art. I, § 8, cl. 3.
95. 1972 Senate Report, supra note 6, at 19.
96. Id. Canada has taken a broader view of jurisdiction, "and repeatedly argued that coastal states, or perhaps all of the parties to a dumping control convention, should have enforcement rights against all vessels on the high seas. This has some basis in international law, which permits any ship on the high seas to arrest a pirate ship." Note, supra note 9, at 45 (emphasis in original).
cept additional responsibility with regard to the actions of its nationals only when international accord was reached on this point.\textsuperscript{99}

Additional support for the legality of the extension of jurisdiction found in this 1974 amendment is drawn from the fact that it brought the Ocean Dumping Act into accord with the terms of the Ocean Dumping Convention. The original act empowered the Secretary of State to seek international agreement on ocean dumping,\textsuperscript{100} and the 1974 amendment was designed to "effect the refinements required to make [the Ocean Dumping Act] fully consonant" with international agreements.\textsuperscript{101}

\textbf{Citizen Suits}

In \textit{Save Our Sound Fisheries}, a question arose concerning the scope of the citizen suit provision of the Ocean Dumping Act.\textsuperscript{102} The Secretary of the Army contended that the citizen suit provision was designed to insure only that all persons comply with the substantive standards provided by law and that jurisdiction was lacking for a district court to entertain a suit to enforce agency compliance with the procedural requirements of the law.\textsuperscript{103} Since the court concluded that jurisdiction was properly premised on the Administrative Procedure Act,\textsuperscript{104} it was unnecessary to determine the applicability of the citizen suit provision of the Ocean Dumping Act. Nevertheless the court commented on that question since it had been extensively briefed, and reasoned that the Secretary's position was untenable in light of the statute's broad language allowing citizen suits to enjoin any person "\textit{who is alleged to be in violation of any prohibition, limitation, criterion, or permit established or issued by or under this subchapter.}"\textsuperscript{105} Thus, if the analysis of \textit{Save Our Sound Fisheries} is followed, the federal courts will be available to citizens to insure that both the substantive and procedural standards of the Ocean Dumping Act are met.

\begin{flushleft}
\textsuperscript{99} Id.
\textsuperscript{103} 387 F. Supp. at 298-99.
\textsuperscript{105} 387 F. Supp. at 299 n.6 (quoting 33 U.S.C. § 1415(g)(1) (Supp. V 1975)).
\end{flushleft}
An Evaluation of the Ocean Dumping Act

Positive aspects. Both the creation of a permit system for dumping and the total ban on dumping of certain specified substances are positive achievements of the Ocean Dumping Act.\textsuperscript{106} A permit system is a useful tool in environmental protection. It allows an evaluation to be made of the effect a proposed action will have on the environment prior to its occurrence rather than "restricting enforcement to remedial measures such as fines after the ocean has been damaged."\textsuperscript{107} In addition, the permit program established by the Act includes the criteria to be used by administrators in judging a proposed dumping activity.\textsuperscript{108} These criteria should enable the Administrator to achieve an objective evaluation of the dumping effects. However, the system is not inflexible, since no single factor is controlling, and additional criteria may be developed as conditions warrant.\textsuperscript{109}

The prohibited dumping of certain materials represents a legislative determination that certain substances are so hazardous that ocean disposal of them is intolerable.\textsuperscript{110} While only a few substances are thus characterized, it constitutes an important initial step. As research into the effects of ocean dumping uncovers other substances which pose such hazards, one can expect that they, too, will face a total ban.\textsuperscript{111}

While some critics have suggested that a permit system merely creates "legalized ocean dumping,"\textsuperscript{112} there is evidence that the oceans are fully capable of absorbing some amount of wastes without ill effects.\textsuperscript{113} Although it is unreasonable to assume that the oceans can be considered endless sinks in which we can deposit our wastes, it would be impractical to impose a total ban on such disposal. A total ban would make it necessary

\textsuperscript{106}. Compare this conclusion with the approval of other provisions contained in Note, supra note 9, at 47.

\textsuperscript{107}. Id. at 43.


\textsuperscript{109}. The EPA "has revealed the feeling that it might be in order for Congress to indicate some kind of priority among the criteria listed." \textit{Congressional Research Service, supra} note 1, at 84.

\textsuperscript{110}. 1972 Senate Report, supra note 6, at 12, 18. \textit{See also} 40 C.F.R. §§ 227.21-.22 (1976).

\textsuperscript{111}. In the view of Dr. David D. Smith, whose Dilligham Report was the precurser to the Ocean Dumping Report, supra note 5, the goal of a comprehensive ocean dumping scheme would be to determine which wastes can safely be disposed at sea and which must be disposed elsewhere. 1972 Senate Report, supra note 6, at 18.

\textsuperscript{112}. Note, supra note 9, at 43.

\textsuperscript{113}. 1972 Senate Report, supra note 6, at 13.
to dispose of these wastes elsewhere, thereby polluting other areas of the environment. A pragmatic approach to the problem of ocean dumping would be to adopt a scheme aimed at determining which substances are to be blacklisted from ocean disposal and under what circumstances non-blacklisted substances might be dumped safely. This is the approach of the Ocean Dumping Act.

Another positive aspect of the Act is its provision for a citizen suit, a crucial adjunct to the effective operation of any environmental legislation. Access to the courts is made easier by a waiver of the "amount in controversy" requirement, and the possibility of an award of litigation costs. Although some barriers to citizen suits are erected, the provision is valuable on the whole since it enables the private citizen to serve as a watchdog. Of equal importance are the Act’s provisions mandating international cooperation, since no true solution to the problem of dumping can be found until international accord is reached. While the Ocean Dumping Convention represents an important first step in this direction, no comprehensive international solution has yet been found.

A final positive aspect of the Act is its support of continuing research into the effects of ocean dumping. The provisions are necessary to insure the long-term flexibility of the Act. Ongoing research is essential to an intelligent assessment of the adverse effects of any particular dumping activity. The Secretary of Commerce has already begun categorizing and evaluating the types of research activities being conducted to aid future decisions. However, in this regard, it should be noted...

114. See text accompanying notes 57-61 supra.
115. Id. This is an invaluable aid to citizen suits in light of the Supreme Court decision restricting awards of attorneys’ fees. See Alyeska Pipeline Co. v. Wilderness Soc'y, 421 U.S. 240 (1975).
116. Prior to the commencement of a suit the private citizen must notify the Secretary or Administrator and defer to the agency should it choose to bring suit. Since there is no provision for citizen intervention, the private citizen will have no control over the litigation. 33 U.S.C. § 1415(g) (Supp. V 1975). Cf. 42 U.S.C. § 1857h-2 (Supp. V 1975) (restricting citizen suits against air polluters).
118. NAT'L OCEANIC & ATMOSPHERE ADMINISTRATION, U.S. DEP'T OF COMMERCE, REPORT TO THE CONGRESS ON OCEAN DUMPING RESEARCH (1976). Particularly interesting is the description in the report concerning the New York Bight Project. The report suggested alternatives to current ocean dumping. For example, in lieu of current disposal methods for dredged materials, it suggested the creation of artificial habitats such as new marshes or dredged material islands. With respect to sewage sludge,
that the National Oceanic and Atmospheric Administration "has refused to accept its statutory authority to conduct research on alternatives, saying EPA should have this responsibility and it has abdicated any responsibility for taking a lead role in coordinating R. & D. and in insuring that the Federal ocean dumping research program is coherent and properly directed—except to write an annual summary report." It seems clear that further research coordination will be necessary before a truly effective system for regulating ocean dumping can be employed.

Some criticisms. Although there has been some criticism of the statutory scheme itself, most criticism of the Ocean Dumping Act has been leveled at the agencies responsible for implementation of the Act. Thus, in a recent suit brought against the EPA and the Corps of Engineers, the National Wildlife Federation criticized the ease with which permits to dump dredged materials may be obtained. Although both agencies were criticized, counsel for the federation, Mr. Kenneth Kamlet, stated that an applicant has "an even easier time" obtaining a permit from the Corps. Mr. Kamlet's criticisms of the Corps go toward the degree to which it carries out the intent of the Ocean Dumping Act. He charges that the Corps publishes so many dumping notices that sensitive ones are lost in the crowd and actually pretends that no ocean dumping is involved in a project, either by failing to mention it in the notice or issuing no notice at all.

In 1975, the Senate Commerce Committee also questioned the Corps about its compliance with the statutory notice re-

---

suggested alternatives include disposal on land, recycling, and treatment. Id. at 38-39.


119. CONGRESSIONAL RESEARCH SERVICE, supra note 1, at 88.
120. See Lumsdaine, supra note 40 (general criticism of the divided agency responsibility which the Act envisions).
121. In fact, most criticism is directed toward the Corps of Engineers, which not only regulates the dumping of dredged spoils, but is the primary dumper of such wastes. Id. at 785.
124. Id. at 20.
quirements. The Corps reviewed the public notices issued by district offices, and concluded that they were "adequately discharging their responsibilities." At present there is insufficient data to conclude that the Corps either is or is not fulfilling its responsibilities; presumably such data will be developed during the course of the National Wildlife Federation lawsuit.

There can be little doubt remaining, however, about the EPA's willingness to meet its obligations. This was amply illustrated by the EPA's handling of the permit application of the City of Philadelphia for continued dumping of sewage sludge. Philadelphia had obtained interim permits authorizing this dumping in 1973 and 1974. The permit was again granted in 1975, but was accompanied by an order to halve all ocean sludge dumping by 1979 and eliminate it by 1981. The city appealed this decision to EPA Administrator, Russell Train. In order to be successful, Train disclosed that Philadelphia must convince him that no unreasonable environmental harm would be caused by the dumping and overcome the presumption of validity that attached to the regional decision. Subsequently, Train affirmed the regional decision, in accordance with the EPA policy of eventual phase-out of the ocean dumping of sewage sludge, accompanied by increasing interim usage of alternative disposal methods. This decision demonstrates the heavy burden which a dumper must meet to establish the safety and necessity of the proposed dumping, and the EPA's commitment to clean up the oceans.

Criticism has also been leveled at the Coast Guard's dis-

---


129. Decision of the Administrator, supra note 126, at 6.

130. Since the Administrator based his decision at least in part on a perceived potential danger, id. at 4, a dumper must be able to persuade the EPA that potential hazards are de minimis, when the availability of alternative methods of disposal are considered.
charge of its responsibilities under the Act. The Coast Guard is authorized to conduct surveillance to ensure compliance with the Act, and a spokesperson summarized its efforts as follows:

The Coast Guard does not accompany all dumpers to the dumpsites; nor does it maintain continuous presence at each site. The goal we have set is to conduct surveillance of all dumps at toxic waste sites and ten percent of all other dumps. The usual methods of surveillance are by vessels, aircraft, shipriders or land-based radar; the type of surveillance is determined by the distance to the dumpsite, the toxicity of the material involved, and the resources available. Some surveillance is in response to specific dumping operations and some is "general" in nature (random coverage of sites and other suspect areas).

This limited surveillance makes effective enforcement of the Act difficult. In an effort to improve the enforcement mechanism, the General Accounting Office recommended that "[t]he USCG should increase the overall level of ocean dumping surveillance. In this regard, shipriders should be used to monitor night dumping operations. The USCG should also continue to develop new methods such as electronic surveillance whereby compliance with permit conditions may be more effectively monitored." As might be expected, the "lack of resources committed to this [surveillance] effort has been the main obstacle to full implementation of an effective monitoring program." In recognition of this shortcoming, Congress significantly increased the appropriations for Coast Guard enforcement efforts from $41,000 in 1975 to $316,000 in 1976.

Finally, criticism has been leveled at the legislation by some who believe that the Ocean Dumping Act does not make

---

131. See Lumsdaine, supra note 40, at 791-92.
132. 1975 Hearings, supra note 125, at 37 (letter from Admiral O.W. Siler, U.S. Coast Guard Commandant).
133. A recent General Accounting Office report revealed that through July, 1976, only three of the alleged forty-one violations referred to the EPA by the Coast Guard resulted in fines being levied. In part, this limited number of successful prosecutions can be attributed to a lack of satisfactory evidence. Comptroller General's Report on the Problems and Progress in Regulating Ocean Dumping of Sewage Sludge and Industrial Wastes, 13, 16 (1977) [hereinafter cited as Comptroller General's Report].
clear whether the legislative goal is to entirely phase out ocean dumping or to regulate it in order to "prevent adverse effects on health and the marine environment." These critics maintain that due to this uncertainty no research priorities can be definitely established. Thus, it has been unclear whether the focus of the research should be on the development of alternatives to ocean dumping or the actual effects of strictly regulated ocean dumping. This uncertainty is said to constrain the research efforts of those involved in waste disposal and stymie the potentially large research investment industry otherwise might make in evaluating the effects of ocean dumping and marine pollution.

In response to this criticism, Congress has stated that at present "some ocean dumping is acceptable, but only if it will not result in harmful effects upon human health, the marine environment, or the economic welfare of an area." Thus, Congress has adopted a balancing approach to this environmental problem. While ocean dumping has not been forbidden, such activity is permitted only if its effects are not harmful. Although some might assert that the language "at present" is insufficient to satisfactorily establish research priorities, it would be absurd to adopt an inflexible position in an area where technological developments could alter conditions so drastically. Congress has removed some doubts as to its goals while retaining the ability to adapt to changing circumstances.

**CONCLUSION**

Despite the shortcomings in enforcement, the Ocean Dumping Act represents a significant initial step toward the elimination of ocean pollution. In establishing a permit process which allows limited ocean dumping, it reflects a balanced, pragmatic attempt to cope with the pollution problems thus created, until international agreements and technological advances provide a genuine solution.

Although the verdict is not yet in on the agency implementation of the Act, events such as the Philadelphia permit application indicate an increasing willingness to comply with the intent behind the Act. Significantly, should agency perform-

---

138. Id. at 86.
140. See notes 127-130 supra.
ance begin to slip, the citizen suit remains an available remedy.

It seems clear that this first step to combat marine pollution has been a large one. The Ocean Dumping Act provides both the agencies and the public with tools to effectively monitor the condition of our territorial waters. However, additional long-range commitments toward the preservation of the oceans are essential, for it is unreasonable to assume that the oceans can endlessly absorb the quantity of wastes currently deposited in them.

<table>
<thead>
<tr>
<th>WASTE TYPE</th>
<th>ATLANTIC</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1975</td>
<td>1974</td>
<td>1973</td>
</tr>
<tr>
<td>Industrial Waste</td>
<td>3,322,300</td>
<td>3,642,000</td>
<td>3,642,800</td>
</tr>
<tr>
<td>Sewage Sludge</td>
<td>5,039,600</td>
<td>5,010,000</td>
<td>4,898,900</td>
</tr>
<tr>
<td>Construction &amp; Demolition Debris</td>
<td>395,900</td>
<td>770,400</td>
<td>973,700</td>
</tr>
<tr>
<td>Solid Waste</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Explosives</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>8,757,800</td>
<td>9,422,400</td>
<td>9,515,400</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WASTE TYPE</th>
<th>GULF</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1975</td>
<td>1974</td>
<td>1973</td>
</tr>
<tr>
<td>Industrial Waste</td>
<td>123,700</td>
<td>950,000</td>
<td>1,408,000</td>
</tr>
<tr>
<td>Sewage Sludge</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Construction &amp; Demolition Debris</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Solid Waste</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Explosives</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>123,700</td>
<td>950,000</td>
<td>1,408,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WASTE TYPE</th>
<th>PACIFIC</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1975</td>
<td>1974</td>
<td>1973</td>
</tr>
<tr>
<td>Industrial Waste</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sewage Sludge</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Construction &amp; Demolition Debris</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Solid Waste</td>
<td>0</td>
<td>200</td>
<td>240</td>
</tr>
<tr>
<td>Explosives</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>0</td>
<td>200</td>
<td>240</td>
</tr>
<tr>
<td>WASTE TYPE</td>
<td>TOTAL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------------</td>
<td>---------------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td></td>
<td>1975</td>
<td>1974</td>
<td>1973</td>
</tr>
<tr>
<td>Industrial Waste</td>
<td>3,446,000</td>
<td>4,592,000</td>
<td>5,050,800</td>
</tr>
<tr>
<td>Sewage Sludge</td>
<td>5,039,600</td>
<td>5,010,000</td>
<td>4,898,900</td>
</tr>
<tr>
<td>Construction &amp;</td>
<td>395,900</td>
<td>776,400</td>
<td>973,700</td>
</tr>
<tr>
<td>Demolition Debris</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solid Waste</td>
<td>0</td>
<td>200</td>
<td>240</td>
</tr>
<tr>
<td>Explosives</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>8,881,500</strong></td>
<td><strong>10,372,600</strong></td>
<td><strong>10,923,640</strong></td>
</tr>
</tbody>
</table>

* 1975 Source—EPA Regional Offices, Preliminary Figures from unpublished Reports, 1975 (12 months of dumping activity).


*** 1973 Source—EPA Regional Offices. Unpublished Reports, 1973 (8 months of dumping activity, May to December 1973 under permits issued by Ocean Disposal Program extrapolated for 12 months to provide an annual rate).