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Book Review

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BOOK REVIEW

MARINE POLLUTION AND THE LAW OF THE SEA. By John Warren Kindt. Buffalo, New York: William S. Hein & Co., Inc., 1986. 4 Vols. Pp. 2407. \$375.00; 1988 Supp. \$170.00.

*Reviewed by Christopher C. Joyner**

Marine pollution is not a new phenomenon.¹ So long as man has used the oceans, he has polluted them. In this century, however, pollution of

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1. The definition of "marine pollution" varies. This reviewer has often accepted the definition used by an authoritative United Nations study group, which considers marine pollution as the "[i]ntroduction by man, directly or indirectly, of substances or energy into the marine environment (including estuaries) resulting in such deleterious effects as harm to living resources, hazards to human health, hindrance to marine activities including fishing, impairing of quality for use of sea-water and reduction of amenities." Joint Group of Experts on the Scientific Aspects of Marine Pollution (GESAMP), *The Health of the Oceans*, 16 UNITED NATIONS ENVIRONMENT PROGRAMME REGIONAL SEAS REP. & STUD. 9 (1982) [hereinafter GESAMP]. Closely mirroring this, the definition contained in article 1, paragraph 1(4) of the 1982 Law of the Sea Convention reads as follows:

(4) "pollution of the marine environment" means the introduction by man, directly or indirectly, of substances or energy into the marine environment, including estuaries, which results or is likely to result in such deleterious effects as harm to living resources and marine life, hazards to human health, hindrance to marine activities, including fishing and other legitimate uses of the sea, impairment of quality for use of sea water and reduction of amenities

United Nations Convention on the Law of the Sea, Dec. 10, 1982, U.N. Doc. A/CONF. 62/122, reprinted in 21 INT'L LEGAL MATS. 1261 (1982) [hereinafter UNCLOS III Convention]. Professor Kindt concludes that "[t]his [Convention's] definition of 'pollution of the marine environment' is the best definition to surface so far" 1 J. KINDT, MARINE POLLUTION AND THE LAW OF THE SEA 40 (1986). For further discussion of definitional considerations in delimiting "marine pollution," see *id.*, at 33-42.

the seas has starkly intensified. Several simultaneous global pressures have generated this intensification: accelerating population growth, technological development, heightened living standards, and greater consumption demands associated with economic growth.² The unmistakable consequence has been more pronounced damage to the living resources and marine ecology of coastal states' shores, as well as to the world's ocean environment.³

Marine pollution today assumes at least five conspicuous contaminant forms. First, there is sewage. Composed of a heterogeneous mixture of human and industrial wastes, this pollution product flows from municipal drainage systems into the oceans. Sewage, which is often discharged into the marine environment directly from its source in an untreated condition, has its most pronounced effects upon coastal zones.⁴

A second pollutant is petroleum. Pollution by crude and refined oil results from tanker accidents, deballasting operations and tank flushing, refinery effluents, municipal discharges, and losses from pipelines and offshore production facilities.⁵ The input of petroleum into the marine environment has been estimated to range from 2 to 20 million tons each year, although 6 million tons may be a more reasonable approximation.⁶

2. See generally WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT, *OUR COMMON FUTURE* (1987); L. BROWN, E. WOLF, & L. STARKE, *STATE OF THE WORLD: A WORLDWATCH INSTITUTE REPORT ON PROGRESS TOWARD A SUSTAINABLE SOCIETY* (1987).

3. A recent report in *Business Week* graphically made this point:

Th[e] summer of 1987 hammered home a point that some scientists have been making for years: The world's coastal waters are in trouble, deep trouble. The seas' ability to absorb a lethal cocktail of industrial, urban, and agricultural wastes is being exceeded. And when those overstressed ecosystems are exposed to natural insults, such as unusually warm weather, they collapse. . . .

Ironically, concern over pollution is coming on the heels of a decade of steady progress toward cleaning up U.S. inland waters. But cleaning the fouled seas is a gargantuan task by comparison, and it is likely to become one of the most pressing environmental issues of the next decade—and beyond.

Smart & Smith, *Troubled Waters: The World's Oceans Can't Take Much More Abuse*, *BUS. WK.*, Oct. 12, 1987, at 89 [hereinafter *Troubled Waters*].

4. GESAMP, *supra* note 1, at 39. Estimates during the early 1980s in the New York Bight area calculated that some four million cubic meters (or 200,000 tons) of organic sewage were dumped annually. S. GERLACH, *MARINE POLLUTION: DIAGNOSIS AND THERAPY* 64 (1981). It seems reasonable to presume that this figure has risen appreciably during the past decade. See 2 J. KINDT, *supra* note 1, at 905-80.

5. See Cowell, *Oil Pollution of the Sea*, in *MARINE POLLUTION* 353 (R. Johnson ed. 1976), noted in 2 J. KINDT, *supra* note 1, at 725-783.

6. *Troubled Waters*, *supra* note 3, at 98. Approximately one-tenth of the petroleum polluting the oceans is believed to be atmospheric in origin. GESAMP, *supra* note 1, at

Metallic effluents comprise a third class of pollutants. Copper, silver, mercury, lead, and cadmium are considered especially toxic metals, and the latter three have sufficiently polluted the marine environment to arouse worldwide concern.⁷ Produced primarily from land-based industrial discharge, the methylmercury poisoning between 1953 and 1975 of approximately 800 persons in Minamata, Japan, tragically illustrates the human costs of metallic pollution.⁸

Chlorinated hydrocarbons (organo-chlorines) are a fourth kind of pollution afflicting the marine environs. Also introduced into the oceanic ecosystem by industrial discharge, chlorinated hydrocarbons constitute a major pollution hazard, largely because of their persistent longevity and extreme toxicity to marine organisms. Among these chemical compounds constantly entering the marine environment are dichlorethane, vinylchloride, carbontetrachloride, polychlorinated biphenzles (PCB's) and the now ubiquitous pesticide, dichlorodiphenyl trichloroethane (DDT).⁹

The fifth class of marine pollutants is that of radionuclides. Radioactive wastes have increasingly entered the oceanic environment since World War II. They have been produced largely by radioactive fallout from atmospheric testing of atomic weapons and release of radioactivity from nuclear fuel reprocessing plants.¹⁰ Lesser amounts of contamination have stemmed from controlled dumping of low-level radioactive liquid and solid wastes.¹¹ Disposal of radioactive isotopes, in particular plutonium-239, strontium-90, and cesium-137 have recently caused more salient concern as their increased levels of toxicity have been detected in commercial species of fish.¹²

Serious legal attention to addressing problems of marine pollution has only recently become an international concern. A mere thirty-five years

44.

7. See Bryan, *Heavy Metal Contamination in the Sea*, in MARINE POLLUTION, *supra* note 5, at 185; GESAMP, *supra* note 1, at 49.

8. GESAMP, *supra* note 1, at 51; WORLD HEALTH ORGANIZATION GENEVA 1976, ENVIRONMENTAL HEALTH CRITERIA I: MERCURY 103 (1976), *noted in* 2 J. KINDT, *supra* note 1, at 800-17.

9. GESAMP, *supra* note 1, at 41. See generally Harvey, *DDT and PCB in the Atlantic*, OCEANUS, Fall 1974, at 18; E. GOLDBERG, *THE HEALTH OF THE OCEANS* (1976), *noted in* 2 J. KINDT, *supra* note 1, at 764-80.

10. GESAMP, *supra* note 1, at 51-52.

11. See generally Finn, *Ocean Disposal of Radioactive Wastes: The Obligation of International Cooperation to Protect the Marine Environment*, 21 VA. J. INT'L L. 621 (1980); Lomio, *International Law and Disposal of Radioactive Wastes at Sea*, 15 NEW ENG. L. REV. 253 (1980).

12. GERLACH, *supra* note 4, at 104-19, *noted in* 2 J. KINDT, *supra* note 1, at 827-88.

have passed since the adoption of the International Convention for the Prevention of Pollution of the Sea by Oil,¹³ the first major international attempt to cope with the growing threat of marine pollution. In the interim, a number of notable multilateral conventions were promulgated to deal with vessel-source pollution,¹⁴ dumping at sea,¹⁵ intervention in instances of oil casualties,¹⁶ and civil liability for vessel-source pollution.¹⁷ These agreements significantly contributed to defining general obligations and establishing principles of international environmental law. Nevertheless, lacunae in the law were left. States were not mandated to accept these restrictions; no universal regime for controlling transnational marine pollution was put in place; and there was no agreed regulation of land-based or airborne sources of pollution, both of which inevitably impact upon the ocean environment.¹⁸ Stated tersely, the law of the sea for regulating marine pollution lacked a fundamental framework of legal norms that not only could deal effectively with the broad scope of ocean

13. May 12, 1954, 12 U.S.T. 2989, T.I.A.S. No. 4900, 327 U.N.T.S. 3 (entered into force Dec. 8, 1961).

14. *Id.*, as amended Apr. 11, 1962, [1966] 17 U.S.T. 1523, T.I.A.S. No. 6109, 600 U.N.T.S. 332 (entered into force May 18 & June 28, 1967), as amended, Oct. 21, 1969, 28 U.S.T. 1205, T.I.A.S. No. 8505 (entered into force Jan. 28, 1978). See 2 NEW DIRECTIONS IN THE LAW OF THE SEA 589 (S. Lay, R. Churchill & M. Nordquist eds. 1973); International Convention for the Prevention of Pollution from Ships, Nov. 2, 1973, reprinted in 12 INT'L LEGAL MATS. 1319 (1973), and Protocol to the International Convention for the Prevention of Pollution from Ships, 1973, Feb. 17, 1978, reprinted in 17 INT'L LEGAL MATS. 546 (1978). The latter agreement is often referred to as the MARPOL Convention.

15. International Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, Dec. 29, 1972, 26 U.S.T. 2403, T.I.A.S. No. 8165, 1046 U.N.T.S. 120 (entered into force Aug. 30, 1975). This agreement is often referred to as the London Dumping Convention.

16. International Convention relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, Nov. 29, 1969, 26 U.S.T. 765, T.I.A.S. No. 8068 (entered into force May 6, 1975), and Protocol to the International Convention relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, reprinted in 4 NEW DIRECTIONS IN THE LAW OF THE SEA 451 (R. Churchill & M. Nordquist eds. 1975).

17. International Convention on Civil Liability for Oil Pollution Damage, Nov. 29, 1969, 973 U.N.T.S. 3 and Protocol to the International Convention on Civil Liability for Oil Pollution Damage, 1969, Nov. 19, 1976, reprinted in 16 INT'L LEGAL MATS. 617 (1977).

18. See Kalsi, *Oil in Neptune's Kingdom: Problems and Responses to Contain Environmental Degradation of the Oceans by Oil Pollution*, 3 ENVTL. AFF. 79, 81 (1974). The persistent pollution problem of "acid rain" caused by the combustion of land-based fossil fuels is believed to inflict continuous damage on the oceanic environment, even though accurate estimates are incalculable. See NAT'L ACAD. SCI., ACID DEPOSITION 1-11 (1983).

pollution problems, but also could set the rights and duties of states toward that end.

Much of the impetus motivating a Third United Nations Conference on the Law of the Sea was generated by intentions aimed at remedying these gaps in the law.¹⁹ Even so, in the aftermath of this prolonged and protracted series of negotiations, especially as set within the context of the resultant 1982 Law of the Sea Convention,²⁰ several important questions remained. How successful were diplomats who negotiated the new law of the sea in filling legal gaps in the international law affecting marine pollution? Does the 1982 Law of the Sea Convention provide sufficient and effective regulations for modern marine pollution on a global scale? Are international duties and responsibilities for curtailing pollution, along with agreed standards and adequate monitoring safeguards, supplied by the 1982 Convention? If not, what new laws and policies are needed to construct an international environmental legal regime that not only seeks to arrest marine pollution output, but also is designed to foster resource conservation and management of ocean resources and preservation and protection of the global marine commons? Which resources are the most gravely threatened by marine pollution? What legal remedies are most appropriate for their protection? In quest of remedies, at what point on which issues should the reach of national legislation end and the jurisdiction of international law begin? The encyclopedic search for answers to these critical questions furnishes the intellectual foundation for John Warren Kindt's treatise, *Marine Pollution and the Law of the Sea*.²¹ The findings discovered at the end of this quest likewise boldly highlight the real significance of this major contribution to the law of the sea literature.

The author, who is Professor of International and Commercial Law at the University of Illinois, has undertaken a truly ambitious challenge. The principal purpose of his study is to provide "in-depth analyses as well as a basic overview of international environmental law, U.S. environmental law, and the law of the sea."²² The framework for this analysis is organized along the lines of the Lasswell/McDougal format of policy-oriented jurisprudence.²³ That is, the study first strives to delimit the

19. See generally Boyle, *Marine Pollution Under the Law of the Sea Convention*, 79 AM. J. INT'L L. 347 (1985).

20. UNCLOS III Convention, *supra* note 1.

21. J. KINDT, *supra* note 1.

22. 1 J. KINDT, *supra* note 1.

23. See Moore, *Prolegomenon to the Jurisprudence of Myres McDougal and Harold Lasswell*, 54 VA. L. REV. 662 (1968); Note, *The Lasswell-McDougal Enterprise: Toward a World Public Order of Human Dignity*, 14 VA. J. INT'L L. 535 (1974).

problem, and then seeks to clarify precise goals and identify past trends. The next task endeavors to analyze conditions which have affected past trends and then to project future trends. Finally, the effort is made to create law and policy alternatives and to assess their respective contribution and viability.²⁴ Notwithstanding this research methodology, Professor Kindt's study is actually designed not simply to furnish assessments and appraisals of law and policy, but also to serve as an authoritative research source on issues pertaining to marine pollution and the law of the sea. Professor Kindt, to his great credit, succeeds laudably in achieving these ambitions in this monumental work.

Thirty chapters comprise this voluminous study, which is arranged into four major parts. Part I seeks to delimit problems of commission and claim associated with marine pollution. The ecosystemic interplay of ocean resources with marine pollution is examined, as are various national assertions that have complicated regulation of pollution in general and dealing with pollution issues in particular. Part II addresses the clarification of goals for protecting the marine environment. Those pollutants which industrial man has introduced into the marine environment are critically discussed, and the baneful consequences that they exert upon the ecosystem are evaluated.

Part III contains the core of the study. Entitled "Trends and Conditioning Factors," this section takes on a two-pronged thrust. On the one hand, it analyzes the traditional origins of marine pollution, namely, land-based sources, ocean dumping sources, and vessel-sources. This analysis cogently sets out the diverse character of marine pollution and makes plain the global scope of legal remedies required for its control. On the other hand, substantial attention is devoted to assessing how international efforts at resource conservation and environmental protection of the oceans are affected by the multifaceted threat of global marine pollution.

Professor Kindt demonstrates acute sensitivity to the plight of marine mammals and highly migratory species in the world's oceans. He also includes considerable insights concerning how and why specific international legal criteria evolved for more precisely defining rights and responsibilities affecting continental shelf areas, exclusive economic zone jurisdiction, and offshore installations. Notably in the latter regard, Professor Kindt closely analyzes ocean thermal energy conversion systems

24. McDougal & Schneider, *The Protection of the Environment and World Public Order: Some Recent Developments*, 45 *MISS. L. J.* 1085, 1087 (1974). For an early application of this approach to the oceans, see M. McDougal & W. Burke, *THE PUBLIC ORDER OF THE OCEANS* (1962).

and floating nuclear power plants. The relationship of global pollution to international marine sanctuaries, ice-covered areas, marine scientific research, and dispute settlement provisions in the 1982 Law of the Sea Convention round out the subjects analyzed as conditioning factors.

Part IV supplies an extremely thoughtful and carefully crafted summation of the law of the sea issues impinged upon by marine pollution, with a special view toward furnishing policy alternatives and recommendations. This section points out deficiencies in the contemporary law of the sea for controlling marine pollution. It then proffers suggestions relating to the manner by which the legal framework might be improved in order to preserve and protect the world's marine environment more effectively.

Three fundamental themes permeate Professor Kindt's analysis. The first concerns the preeminent assumption that unifies this study, namely that "[t]he ocean is the earth's greatest natural resource."²⁵ The marine ecosystem entails a global commons covering seventy-one percent of the planet's surface. Professor Kindt persuasively argues that modern marine pollution represents a glaring manifestation of "the tragedy of the commons,"²⁶ the notion where people tend to overexploit a given resource—or pollute the environment—because it appears in their best economic interest to do so. Such an attitude is clearly myopic. The cruel irony of this mindset is that as more people adopt this behavior, a decreasing supply of usable resources will inevitably be available in the common pool.

The ultimate result is that everyone loses—this is the case with marine pollution. As each government decides to permit (or fails to prohibit) pollution of the marine environment because it seems more expedient in the short run to do so, the unavoidable consequence remains that the oceans will eventually become overloaded. In the end, all peoples will suffer. Thus, the process of global marine pollution should not be viewed merely as a two-person zero sum game between states in the developed North and those in the developing South. Pollution of the world's oceans actually constitutes a universal zero sum game wherein everyone loses, irrespective of who does the polluting.²⁷

A second theme relates to the fundamental need to secure a "rational

25. 3 J. KINDT, *supra* note 1, at 1692.

26. See Hardin, *The Tragedy of the Commons*, SCI., Dec. 13, 1968, at 1243.

27. 1 J. KINDT, *supra* note 1, at 202-05. See also Hollick, *Ocean Pollution: Organization for Environmental and Resource Interdependence*, in 1 APPENDICES: COMMISSION ON THE ORGANIZATION OF THE GOVERNMENT FOR THE CONDUCT OF FOREIGN POLICY 116, 124 (1975), cited in 1 J. KINDT, *supra* note 1., at 202 n. 170.

ocean policy" to support the law of the sea.²⁸ Although Professor Kindt applies this notion specifically to United States ocean policy, it seems fair to presume that such policy ambitions may be generally relevant in the broader international legal context as well. A "rational ocean policy" should be guided by six primary goals: (1) the attainment of national security; (2) the management of international conflict, which includes means for conflict avoidance, reduction, and settlement; (3) the promotion of efficiency in and fair access to ocean uses; (4) the protection of the marine environment; (5) the promotion of knowledge; and (6) the maintenance of a favorable legal order, which presumably works to sustain the other goals.²⁹ The author's fundamental point here is that pervasive marine pollution undercuts real prospects for attaining any of these goals. In the process, the world is made a far less desirable place in which to live.

The third theme relates to the most effective manner in which to seek solutions on a global scale for the marine pollution problem. Pollution of the marine environment knows no national boundaries and produces transnational repercussions. National remedies of law and policy, while undeniably important, are insufficient for coping with the global marine pollution problem. A modern, evolving international law suitable for constant adaptation to the diverse needs of global interdependence remains essential for effectively managing pollution of the world's oceans. In this contemporary era of conflicting developmental priorities and disparate national interests, such a lofty legal aspiration has been met only grudgingly, in a piecemeal fashion, with incomplete results.³⁰

Two fundamental strategies have been suggested for remedying the problem of global marine pollution. One entails a comprehensive international approach³¹ and the other mainly focuses action on regional con-

28. See 1 & 4 J. KINDT, *supra* note 1, at 149-54, 2140-42, and 2169-75.

29. As Professor Kindt acknowledges, these policy goals were formulated by Professor John Norton Moore of the University of Virginia. See Moore, *A Foreign Policy for the Oceans*, in *THE OCEANS AND U.S. FOREIGN POLICY* 1, 2-4, *discussed in* 4 J. KINDT, *supra* note 1, at 2140-42.

30. This point has been underscored particularly by the developing countries' attempt to have a "New International Economic Order" recognized and accepted in international fora. See 1 J. KINDT, *supra* note 1, at 177-84.

31. For representative views of the internationalist approach, see R. FALK, *THIS ENDANGERED PLANET: PROSPECTS AND PROPOSALS FOR HUMAN SURVIVAL* (1971); Shields & Ott, *Environmental Decay and International Politics: The Uses of Sovereignty*, 3 ENVTL. AFF. 743 (1974); Joyner & Joyner, *Prescriptive Administrative Proposal: An International Machinery for Control of the High Seas*, 8 INT'L LAW. 57 (1974).

siderations.³² Implementation of an international approach has often been suggested, ostensibly because of the global nature of the marine pollution problem and the perceived need for global solutions. However, the practicality of that approach remains elusive. The ability to mobilize the entire international community to deal with marine pollution in a comprehensive, uniform, and direct manner is not realistic given the disparity of states' developmental interests, assets, and objectives sought. Professor Kindt suggests that a regional approach might be the more viable strategy. By implementing the common heritage principle³³ on a regional basis, states would be more capable of pooling their efforts through shared economic zones in a more manageable arrangement.³⁴ This reviewer concurs that, of the two, the regional approach seems the more pragmatic solution.

Nevertheless,—and the author strongly agrees—much still can be said for utilizing international institutions to monitor the high seas and set standards for pollution control. Clearly, the International Maritime Organization under the United Nations must continue to play a pivotal regulatory role for vessel-source pollution. Other international organizations, such as the Food and Agricultural Organization, the United Nations Environmental Programme, and the International Whaling Commission, should also make contributions toward coordinating and substantiating a sounder, more protective international law for the global marine environment.

32. See Alexander, *Regional Arrangements in the Oceans*, 71 AM. J. INT'L L. 84 (1977); Okidi, *Towards Regional Arrangements for Regulation of Marine Pollution: An Appraisal of Options*, 4 OCEAN DEV. & INT'L L. J. 1 (1977); Ramp, *Regional Law of the Sea: A Proposal for the Pacific*, 18 VA. J. INT'L L. 121 (1977); Rawlinson, *International Problems Concerning Pollution and the Environment*, 4 NAT. RESOURCES LAW. 804 (1971).

33. The common heritage principle advocates that certain global spaces, such as the ocean and its seabed, should be legally regarded as beyond the appropriation, jurisdiction, and administration of any person or polity, save for the international community as a whole acting through an established international regime. Importantly, any revenues derived from these areas would accrue to the international community for distribution, with presumably the greatest share allocated to those states with the greatest developmental needs. See generally Larschan & Brennan, *The Common Heritage of Mankind Principle in International Law*, 21 COLUM. J. TRANSNAT'L L. 305 (1983). For criticisms of this notion, see Joyner, *Legal Implications of the Concept of the Common Heritage of Mankind*, 35 INT'L & COMP. L. Q. 190 (1986); Van Dyke & Yuen, "Common Heritage" v. "Freedom of the High Seas": Which Governs the Seabed?, 19 SAN DIEGO L. REV. 493 (1981).

34. See Note, A "Common Heritage" Approach to Fisheries Through Regional Controls, 10 N.Y.U.J. INT'L L. & POL. 171, 190-201 (1977).

As Professor Kindt correctly observes, neither a purist international approach nor a purist regional approach is likely to prove sufficiently effective for arresting marine pollution. There must be a synergistic integration of both approaches. A blend of national legislation and pragmatic regional policies, underpinned by a systematic international legal approach, would seem to complement neatly the best attributes of each anti-pollution strategy and constitute a more comprehensive problem-solving approach.³⁵ It is this integrative strategy that Professor Kindt appropriately endorses as the necessary legal framework for best managing the problem of international marine pollution.

There is much to recommend in *Marine Pollution and the Law of the Sea*. This study merits great commendation for compiling, synthesizing, and analyzing diverse facets of contemporary marine pollution and for identifying the multiple realms where new and better international law is needed. The treatment represents a meticulously documented account. Its four volumes are replete with authoritative citations which undoubtedly will serve as valuable source clues for serious scholars on the law of the sea. A helpful bibliography of works cited is appended to each chapter, as are tables of relevant treaties, statutes, and cases. In addition, when appropriate to the contextual analysis in a chapter, specific provisions of the 1982 Law of the Sea Convention are also reprinted for the reader's reference convenience.

No less important are the substantive policy alternatives and thoughtful recommendations for new law furnished in the final section of the study. These will be of genuine interest to scholars of ocean law. More particularly, they should also hold significant value for government officials, policy-makers, and diplomats who are seriously concerned about improving international standards for marine conservation and preservation, as well as regulating practices of global marine pollution.

Professor Kindt's treatise makes clear the vital role played by municipal governments in fashioning international law of the sea rules and standards. Largely because of this realization, this reviewer would have welcomed more detailed attention to national anti-pollution legislation adopted by governments other than the United States. Such foreign legis-

35. See 1 J. KINDT, *supra* note 1, at 204. For elaboration, see Note, *supra* note 34, at 185-202. Professor Kindt, however, prefers the regional approach for jurisdiction over fishery resources. As he observes, "[n]ot only is the regional approach preferable to the establishment of exclusive, unilateral zones, but the premise of *mare liberum* is better realized. Regional zones offer the advantages of controlled resource utilization made possible by localized regimes, while minimizing the possibility of uncontrolled exploitation of the 'free sea.'" 4 J. KINDT, *supra* note 1, at 2276.

lation is mentioned *in passim*, but not really treated in a comprehensive fashion.³⁶ Such a comparative legislative approach would have permitted the reader to gain more appreciable insights into the relative place that international marine pollution control occupies in the policy priorities of states, given their disparate socioeconomic conditions and different legal systems. For example, how is control of marine pollution mandated and sanctioned by various African states, as compared to such nations as Japan, the United Kingdom, the Peoples' Republic of China, or the Soviet Union? Are island and archipelagic states more sensitive to marine pollution in their national legislation than land-locked or shelf-locked countries? Do various states' national legislation relating to seabed mining contain adequate safeguards for protecting the marine environment against pollution and degradation? Are socialist governments more concerned about stricter marine pollution controls than capitalist governments? No less important, do these governments practice what they preach with regard to enforcement of legislative provisions to halt violations and punish violators? Or, do certain governments wink at their marine pollution control legislation when the policy choice is drawn between more extensive economic development, or less marine pollution?

Admittedly, close scrutiny of these questions lay far beyond the scope of Professor Kindt's identified task. Such an analysis very likely could consume an intellectual effort perhaps even as substantial as the *magnum opus* under review. Nonetheless, future studies would do well to consider them, if for no other reason than to ascertain more exactly just how serious and committed various national governments actually are in upholding protective international environmental standards, both in law and in fact.

The conclusions to be drawn from Professor Kindt's study are stark and plain. The world's accelerated industrial activities and the resultant unremitting insertion of waste materials into the marine environment are seriously aggravating the physical salubrity of the oceans, with pervasive impacts. Not only are these effects clearly discernible in the spread of visible wastes and residues; they also can be detected in the pronounced denigration of living resources and compounded impairment of the marine ecosystem in general. The persistent myth that the oceans can furnish a bottomless sink for the world's surfeit waste effluents is being challenged by the very health and stability of that ecosystem. As a conse-

36. For the author's discussion of various national legislation pertaining to fishery jurisdictions and offshore claims, see 1 J. KINDT, *supra* note 1, at 223-72. Brief mention of deep seabed mining legislation passed by France, the United Kingdom, and the Federal Republic of Germany may be found in *id.*, at 1568-70.

quence, pressing needs have arisen to impose even stricter legal restraints on pollutants entering the marine environment, to set higher environmental impact standards for regulating those activities, and to establish more reliable means for accurately monitoring and enforcing the process of pollution control and abatement.

The message sounded in *Marine Pollution and the Law of the Sea* is that it is not too late. International law can still be fashioned to control marine pollution more prudently, more effectively, and more comprehensively. The critical ingredient, however, for obtaining this self-imposed policy of international legal restraint is generation of the national political will among polluter governments to do so. To work efficaciously, law first must be agreed upon, then subscribed to, and ultimately, either obeyed or enforced. If international policies and programs are to work, governments must want them to work. In this modern era of rising economic expectations, spreading industrialization, and increasing interdependence among states, securing genuine commitment from governments to exercise this internationally-oriented political will for checking their own national marine pollution activities will not come easily. Nevertheless, the irrepressible fact remains that the political will and the law must eventually come, or present trends of increasing marine pollution must inevitably change course. Otherwise, having an international law for regulating the oceans should hardly matter. Dead seas will not require much in the way of legal regulation.