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95-65 AUTHORIZATIONS FOR THE MARINE PROTECTION,
RESEARCH, AND SANCTUARIES ACT OF 1972

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HEARING

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BEFORE THE

COMMITTEE ON COMMERCE,
SCIENCE, AND TRANSPORTATION

UNITED STATES SENATE

NINETY-FIFTH CONGRESS

SECOND SESSION

ON

S. 2767

TO AMEND SECTION 204 OF THE MARINE PROTECTION, RE-
SEARCH, AND SANCTUARIES ACT OF 1972 TO EXTEND THE
AUTHORIZATION FOR APPROPRIATIONS FOR FISCAL YEARS
1979 AND 1980

S. 2769

TO AMEND SECTION 304 OF THE MARINE PROTECTION, RE-
SEARCH, AND SANCTUARIES ACT OF 1972, AS AMENDED, TO
EXTEND THE AUTHORIZATION FOR APPROPRIATIONS FOR
FISCAL YEARS: 1979 AND 1980

MARCH 20, 1978

Serial No. 95-65

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Committee on Commerce, Science, and Transportation



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ANNALS

OF THE

ROYAL SOCIETY

OF LONDON

AUTHORIZATION FOR THE MARINE PROTECTION, RESEARCH, AND SANCTUARIES ACT OF 1972

MONDAY, MARCH 20, 1978

U.S. SENATE,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
Washington, D.C.

The committee met at 10:30 a.m., in room 318, Russell Senate Office Building, Hon. Ernest F. Hollings, presiding.

OPENING STATEMENT BY SENATOR HOLLINGS

Senator HOLLINGS. This morning's hearings are on S. 2767 and S. 2769 the reauthorization of two parts of the Marine Protection, Research, and Sanctuaries Act of 1972: Title II, which directs the Secretary of Commerce to conduct research on the effects of ocean dumping and other man-induced changes in the oceans, and title III, which provides for marine sanctuaries.

Increasingly, we have seen just how important these two functions are. The oil tanker accidents of both last winter and today, and incidents as diverse as sewage washing up on Long Island beaches and kepone contaminating Chesapeake Bay, show how vulnerable our coastal waters are, and how much more we need to learn about the effect of marine pollution.

Much more research and information are needed, which is why I am encouraged that NOAA plans to expand its title II research, as well as related research under other NOAA authority.

This morning I look forward to hearing how NOAA plans to use the additional money it is requesting for fiscal year 1979.

I am also pleased to note that the President's May 1977 environmental message called for more marine sanctuaries, and that the designation of additional sanctuaries is a top priority of NOAA's new Office of Ocean Management, which now administers the program. I hope the details of these plans will be discussed at this hearing.

[The bills follow:]

[S. 2767, 95th Cong., 2d sess.]

A BILL To amend section 204 of the Marine Protection, Research and Sanctuaries Act of 1972 to extend the authorization for appropriations for fiscal years 1979 and 1980

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section 204 of the Marine Protection, Research, and Sanctuaries Act of 1972 as amended (33 U.S.C. 1444), is further amended by (1) deleting the word "and" after the date "1977" and inserting in lieu thereof a comma; (2) deleting the period after the date "1978"; and (3) adding ", not to exceed \$5,905,000 for fiscal year 1979, and such sums as may be necessary for fiscal year 1980."

[S. 2769, 95th Cong., 2d sess.]

A BILL To amend section 304 of the Marine Protection, Research, and Sanctuaries Act of 1972, as amended, to extend the authorization for appropriations for fiscal years 1979 and 1980

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section 304 of the Marine Protection, Research, and Sanctuaries Act of 1972, as amended (16 U.S.C. 1434), is further amended by deleting the word "and" after the date "1977" and adding immediately after the date "1978" the following: ", and not to exceed \$500,000 for fiscal year 1979, and such sums as may be necessary for fiscal year 1980".

Senator HOLLINGS. Our first two witnesses this morning are both from NOAA.

After that, we will hear from Mr. Kamlet, a representative of the environmental community.

Because our time this morning is short, I ask the witnesses to highlight their statements, to leave more time for questions.

Our first witness is Dr. Wilmot Hess, Acting Associate Administrator of NOAA, who will discuss NOAA's fiscal year 1979 plans for title II.

Dr. Hess, we welcome you here, and we are sorry for the pressure of time. We on the Budget Committee though that we would consider the Talmadge farm bill on last Friday, but the leadership is setting aside the Panama Canal in order to consider the farm bill today. I think that signoff is necessary, and we could not get a quorum, so they set it over until Monday at 11 o'clock.

So with that time restriction, let's see what we can accomplish and get into the record.

STATEMENT OF DR. WILMOT N. HESS, ACTING ASSOCIATE ADMINISTRATOR, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, DEPARTMENT OF COMMERCE

Dr. HESS. Thank you, Mr. Chairman. In the interest of saving time, I will submit my statement for the record and summarize a few highlights of it, if that is the committee's pleasure.

Senator HOLLINGS. Very good, sir.

Dr. HESS. I appreciate this opportunity to appear before this committee to discuss extension of appropriation authority for NOAA's programs under title II of the Marine Protection, Research, and Sanctuaries Act of 1972. Also, as requested by the committee, I shall review some of the more significant findings from our studies to date.

I think the chairman is well aware of the responsibilities that title II place on NOAA. I will not spend any appreciable time on those.

I would say that funding will be required in fiscal 1979 and 1980 to support NOAA's ongoing program in support of section 201 and the Agency's planned programs under section 202. No funds are being requested for section 203 research on ocean dumping alternatives, because it is more appropriately an EPA function. The administration supports the reassignment of those responsibilities to EPA.

In fiscal 1979, the total appropriation for title II research will increase substantially, provided the Congress acts favorably on the President's budget request.

For that fiscal year, the administration is asking for an increase of \$4,035,000 which, if approved, would make the total fiscal year 1979 appropriation \$5,905,000.

This is indeed a significant change in the funding picture for ocean pollution research. We consider it as further evidence of the administration's commitment to improved management of the oceans, and their valuable resources.

I can assure you, Mr. Chairman, that NOAA management will be watching this program closely and will work hard to see that NOAA meets these additional responsibilities.

Now let me review some of the results of our work to date, and our plans regarding title II research.

NOAA's ocean dumping research efforts started not under section 201, but as a part of the marine ecosystems analysis (MESA) program's New York Bight project. The MESA project was planned in 1972 and was funded in fiscal year 1973 under a separate line item in the NOAA budget.

The Agency has taken the position that the MESA work on ocean dumping, although never funded under title II, was fully responsive to the concerns of the Congress as expressed in that legislation. It was largely for this reason that the Administration deferred seeking funds to establish another ocean dumping research program under section 201 until fiscal year 1977.

The project development plan calls for completion of the regional study of the New York Bight in fiscal 1981. This planning decision was made several years ago and is not related to the fact that the Congress recently passed legislation requiring the cessation of sewage sludge dumping by the end of calendar 1981.

I would point out that investigation of the effects of ocean dumping were only one facet of the comprehensive environmental investigations of the New York Bight. These studies have provided the necessary background information to initiate a program of monitoring the environmental conditions of the bight and were used in the development of other similar NOAA ecosystem investigations of presently or potentially stressed marine areas of the United States.

Critical studies related to the regional problems of the New York Bight that remain to be addressed following the termination of the New York Bight project, along with other recommendations for sound environmental management of the New York Bight, will be developed during the next 12 months.

In fiscal 1977, the first appropriation under title II was approved to establish the NOAA ocean dumping program. Management of the program was assigned to NOAA's national ocean study. Its mission is to carry out the purposes of section 201, including support of EPA and the Corps of Engineers in the discharge of their respective functions under title I of the act.

In fiscal year 1978 the appropriation is \$1,870,000 which is being used to continue a comprehensive study of Deepwater Dumpsite 106, to initiate the study of the Puerto Rico industrial waste dumpsite, and to complete work done a year earlier at the Gulf of Mexico industrial waste site.

At Deepwater Dumpsite 106, the program has developed knowledge of how waste material moves in the deeper ocean, its rate of vertical and horizontal mixing and dilution, its chemical interactions and alterations, and its effect on marine life.

Our findings show the southwest migrating Gulf Stream eddies frequently traverse Deepwater Dumpsite 106. These large eddies, gen-

erally about 100 kilometers in diameter, envelop the dumpsite within their boundaries as they move, entraining any waste materials present for about 30 days. Regardless of the presence or absence of Gulf Stream eddies, the expected course of waters containing waste materials is toward the southwest, along the depth contours of the Continental Slope. Ultimately, the waters and associated waste materials probably become entrained within the Gulf Stream off the coast of North Carolina, near Cape Hatteras. We have no evidence as yet that waste materials dumped at Deepwater Dumpsite 106 return to shore. We have also concluded that because of the great depths, 1800 to 2500 meters, and the characteristics of the wastes involved, little material, if any, reaches the bottom at the dumpsite.

Studies of the Puerto Rico dumpsite began early in February 1978, in accordance with EPA's listing of priorities for dumpsite investigations. Wastes from eight major pharmaceutical companies, including by-products of antibiotic and various other drug production operations, are being dumped at this site. This poses a particularly complex environmental problem, which will require continued monitoring. We are conducting field and laboratory studies to obtain information on biological responses to pharmaceutical wastes.

The Administration is requesting an additional \$1,475,000 to strengthen the program in fiscal year 1979. Of that amount, \$800,000 will be allocated to the study of two additional dredge material dumpsites in the Gulf of Mexico. Another \$250,000 would provide additional ship support to the ocean dumping research program.

The remaining \$425,000 will enable us to begin a complementary research program, one not necessarily related to specific dumpsites, but designated to consider basic questions such as the mechanisms of contaminate assimilation by marine organisms.

In the first year we plan to initiate laboratory studies on the chemistry of contaminant-seawater mixtures, and effects of such mixtures on planktonic organisms and fish. We plan to make special efforts to insure that this research on dumped materials will be complementary to and not overlap with any similar work being done by the regulatory agencies.

Section 202 of the Act requires the Secretary of Commerce to initiate a comprehensive and continuing program of research on the possible long-range effects of marine pollution on ocean ecosystems. Our Agency's research efforts in this area total approximately \$5 million now. However, these studies are carried out in response to legislation predating the Marine Protection, Research, and Sanctuaries Act, and do not constitute a comprehensive program as required by that Act.

In 1979, the President's request of \$2,560,000 for this Section would enable us to establish such a comprehensive program. This would be achieved by undertaking new research efforts which will either strengthen or complement current Federal programs in this area, and by establishing a mechanism through which the total Federal long-range effects research effort can be effectively coordinated.

The President's budget request for this part of the proposed Section 202 program is \$1,900,000. Of this sum, \$400,000 would be used to establish a group within NOAA responsible for carrying out the coordination function. Another \$1.5 million would be allocated to fund additional long-term effects research.

We are mindful of the legislative history of section 202, and that its scope includes all Federally sponsored research and the sums appropriated for section 202 would be available to any Federal agency or private research institution if such support would strengthen the overall national effort.

As our planning for the first year program here moves along, we will keep the Committee staff informed regarding specific research tasks to be carried out in the Agency or by private research organizations to be supported.

Another section 202 initiative contained in the President's budget is for \$660,000 for long-term effects studies in the Gulf of Mexico.

This new project is directed to understanding and predicting environmental threats, such as industrial pollution and oxygen depletion in the waters of the Gulf of Mexico.

Let me interpolate a comment, Mr. Chairman. This morning we are undergoing in France what may be the worst ecological problem that we in NOAA have experienced in the last several years.

We have a team of scientists working with the French National Oceanographic Institute in Brest at the scene of the wreck of the *Amoco Cadiz*, trying to help them as much as we can in studies of where the oil is going, how it is altering as it goes, how it is coming onto the beaches and how it moves on the beaches, trying to continue the kind of work that we did a year and a half ago at the *Argo Merchant* wreck.

Senator HOLLINGS. Did you have any previous studies of the Brest area, the waters in the Brest area, to show the ultimate effect on the marine biology?

Dr. HESS. No, sir, we have not. We are collaborating with the marine biologists from the French national organization (CNEXO) at that site, and also we are collecting samples along the beach ahead of the oil. There is oil continuously moving onto the beaches. The beach now has about 60 miles of oil, and it is expected that will increase as bad weather and onshore winds continue for the next several days.

Senator HOLLINGS. But you are moving ahead into the waters and onto the beaches that haven't been hit yet?

Dr. HESS. Yes, sir, we are collecting samples out in front of the oil.

Senator HOLLINGS. I understand. That is good. That is what we lacked in the *Argo Merchant*, as you well know.

Dr. HESS. That is correct.

Senator HOLLINGS. Since you stopped there a minute, I have another question. You say: "We also plan to set up a computer-based management information system, which would list all relevant federally conducted or sponsored research in this area, so that we might identify gaps and duplication and determine priorities."

You know, to the average legislator, it seems like we are bogged down in research. I mean there is all kinds of planning here, a program of study there, more research, another study.

How do you compile it all and get it into something that is usable to the lay mind in understanding and planning when, for example, you have these wrecks off the coast of Brest or any of these other things that occur? And have current information that is continually updated so it can be used.

I like the idea that you are going to try to get it computerized, so it can be used. We have got more information. more hearings. these days.

Yet, one thing that is wrong up here in Congress is we have no institutional memory. I can see that occurring over in the other House: the length of service is being cut short, and similarly in this particular body. And we are repeating ourselves in a lot of these studies.

Tell us something about that computer-based management information system.

Dr. HESS. Yes, sir. We agree with you it is deeply needed. One of the problems we have right now is trying to find out all of the work that has been done in the Gulf of Mexico, to serve as a base for the comprehensive study we want to undertake starting next year.

The Smithsonian Institution has a start at this. They have a computer file where all Federal agencies are supposed to enter all of the ongoing projects. We don't think that that is complete, and we want to work with the Smithsonian to try to upgrade this and to check and make sure it is complete, coordinate it with the other agencies, to pull this all together. Until we do that—

Senator HOLLINGS. You will coordinate with other agencies?

Dr. HESS. Yes, sir. Until we do that, we won't have a comprehensive understanding of those things that have been undertaken already, and therefore, as you suggest, we might do things that are duplicative.

Senator HOLLINGS. Very good, sir.

Dr. HESS. With respect to the fiscal year 1980, our planning has just begun and we are unable to provide a useful estimate of the requirements at this time.

Our final decisions for fiscal year 1980 will depend on the outcome of the President's fiscal year 1979 budget requests, and we recommend an authorization for fiscal year 1980 of such sums as may be necessary.

Mr. Chairman, that completes my statement. I would be pleased to respond to any questions you might have.

Senator HOLLINGS. I appreciate that, Dr. Hess. I understand since 1975 there has been an interagency agreement between NOAA and EPA, and I would like you to please tell us what the agreement contains, how NOAA's fiscal year 1979 request is influenced by it, and what research results to date have helped EPA to improve its regulation of ocean dumping.

Dr. HESS. Yes, sir. Mr. Chairman, we do have an agreement with EPA, which has been in place for several years. The purpose of that agreement is to coordinate the work that we do under section 201, of the Ocean Dumping Act, where we try to respond to needs that EPA has, studying the dumpsites which they consider to be the most significant problem areas, and characterizing them and understanding the processes going on at those dumpsites.

We have initiated studies at the deepwater dumpsite 106 and the Puerto Rico site in response to requests by EPA, stating those were the two highest priority dumpsites.

We are continuing that this year. The two new dumpsites in the Gulf of Mexico, which we are going to initiate, are ones which have been discussed with EPA and also with the Corps of Engineers, because they have a role in these two particular dumpsites, to make sure that these are also highest priority as in the other agencies.

Senator HOLLINGS. Why are particular projects selected, such as those in New York and the Gulf of Mexico? You devote half of your section 202 funds to research there. Why did you select those?

Dr. HESS. Going back to the New York Bight project, when we initiated that one, we considered that to be the body of water adjacent to the United States that had been most deeply challenged by man. Man was dumping a large fraction of the eastern urban wastes into that area, and there were signs that that body of water was becoming unhealthy.

We thought because of that, that was a logical place to start this kind of a program.

In response to the Gulf of Mexico question, the gulf is not yet challenged at that level. But there are signs it may not be in terribly good shape.

One of the problems has to do with the fact that in the deep waters of the Gulf of Mexico, the oxygen levels are relatively low, not as low as we have experienced now off the coast of New Jersey, where we had a significant fishkill a year ago, but low enough to give us concern.

And we are not aware of continuing measurements of the oxygen in those deep waters, we don't know whether it is going down, we don't know whether man is playing any role in the oxygen depletion in that area. It is an area of concern.

Another point here is that the Mississippi River is dumping into the gulf something like a million pounds of organic chemicals per day. That amount of dumping must be doing something deleterious to the organisms in the gulf.

It is not really well understood, but something we feel really needs looking into.

Senator HOLLINGS. A million pounds of organic materials?

Dr. HESS. Organic chemicals, per day, coming out of the Mississippi River.

Senator HOLLINGS. I notice later that Mr. Kamlet, on behalf of the National Wildlife Federation, expresses concern that the ocean dumping research program of NOAA is divided between the National Ocean Survey, the Environmental Research Laboratories, and Fisheries.

Why are these three different groups involved, and what steps are you and Dr. Frank taking to coordinate the effort?

Dr. HESS. It is correct, sir, that the program is divided between those different organizations. Where we have a piece of work to be done, we try to do it in the part of the organization that has the greatest talent to carry that work out.

It does require central coordination at the top, and we are working on that coordination. We expect in the next year that we will have stronger coordination in place to carry this out. But there is now an office under the Assistant Administrator for R. & D. that has responsibility for seeing that these kinds of programs are coordinated between different parts of the organization.

Senator HOLLINGS. What do we know now, Dr. Hess, that we didn't know before from the research which has been done on ocean dumping?

Dr. HESS. Looking at the New York Bight project over the last several years, I think we really understand something about the major stresses that are occurring in that area, and it is not what we had expected going in. We are now quite convinced that the major problem in that body of water is caused by the materials flowing out through

the Hudson River-Raritan Bay estuary system into the bight, and not materials that are being dumped into the bight deliberately by ship.

That is not to say that the dumping is a good idea; it is still a problem, and we still support the efforts of EPA to stop ocean dumping of sewage sludge in 1981.

However, we are strongly of the opinion now that the major problem is not that ocean dumping, but the influx through the Hudson River system. That influx, a year ago, caused a substantial depletion of oxygen in the bottom waters off New Jersey and a resultant fishkill of substantial magnitude.

We now think we understand the basic process leading up to that, and we may have some predictive ability because of our measurements in this system.

That is to say, hopefully we would be able to point to some signs next time about such an event occurring. We don't know any way to prevent it at this time other than cleaning up the Hudson River estuarine system.

Another area I might point to is the fact that we now for the first time have what to us seems to be a good indicator of sewage sludge. People for years have tried to find some material, some chemical, that they could use to trace sludge. You go and pick up material near the beach and ask the question did this come from the dumpsite or not. We have identified over the last year or so a chemical called coprostenol, which we now feel is of specifically human in origin and not degradable and is specifically a way to tag this material, so we can now trace it through the water.

Senator HOLLINGS. Did we ever find those munitions vessels that were sunk off the New Jersey coast some years back? I remember in the study of proposed dumping of nerve gas it said that the Army had dumped some munitions, by just sinking two old LST's off the New Jersey coast, and that, when we went to find exactly the effect, we were unable to find the vessels.

Dr. HESS. I am sorry, Mr. Chairman, I don't know the answer to that. I will be happy to provide it for the record.

[The following information was subsequently received for the record.]

While there have been many scuttlings of U.S. liberty ships containing munitions along the Atlantic seaboard, only three contained toxic substances. Two of these there were sunk off the coast of New Jersey and the other about 200 miles due east of Daytona Beach. All three have subsequently been relocated and monitored for pollutant release during survey operations.

The two vessels sunk off the coast of New Jersey in 1967 and 1968 were the S.S. ERIC G. GIBSON, and the S.S. MORMACTERN. Both were carrying various nerve agents, mustard gas, cyanides and other various highly toxic substances. Since these scuttlings, these ships have been relocated and surveyed three times. The surveys included both a photographic reconnaissance as well as water sampling and analyses designed to detect any leakage of the nerve agents. All test results indicated no leakage of any nerve agents or other materials into the water column.

Senator HOLLINGS. In fact, there was dumping at the Blake Plateau, and I understand once that was sunk we couldn't find it to do the testing afterwards. Is that correct?

Dr. HESS. I will have to provide an answer on that for the record.

[The following information was subsequently received for the record:]

The single vessel scuttled on the Blake Plateau was the liberty ship LE BARON RUSSELL BRIGGS. She was sunk in 1970 with a cargo of various nerve agents and other toxics. In subsequent years, the BRIGGS has been relocated and surveyed five times during which photographic, chemical, biological, geological and physical studies were done. Again, all test results indicate no leakage of any toxic substance into the water column.

Senator HOLLINGS. I have some other questions to submit to you, and I would appreciate it if you would answer them for the record.

Dr. HESS. Yes, sir.

Senator HOLLINGS. Thank you.

[The statement follows:]

STATEMENT OF DR. WILMOT N. HESS, ACTING ASSOCIATE ADMINISTRATOR,
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Mr. Chairman and Members of the Committee: I appreciate this opportunity to appear before this Committee to discuss extension of appropriation authority for NOAA's programs under Title II of the Marine Protection, Research, and Sanctuaries Act of 1972. Also, as requested by the Committee, I shall review some of the more significant findings from our studies to date.

Title II requires the Secretary of Commerce, in cooperation with other concerned Federal agencies, to establish or support programs of scientific investigations related to marine pollution in three separate, yet related areas. Briefly stated these are: (1) a comprehensive and continuing program under Section 201 to study and monitor the effects of ocean dumping upon marine ecosystems; (2) a comprehensive and continuing program under Section 202 to assess the possible long-range effects of ocean pollution, overfishing, and other man-induced stresses on marine ecosystems; and (3) assistance under Section 203 to research activities exploring alternatives to ocean waste disposal. These responsibilities were delegated to NOAA; initial funding authority was set at \$6,000,000 annually for fiscal years 1974 through 1976. Subsequent amending legislation authorized \$5,600,000 for FY 77 and \$6,500,000 for FY 78. The total FY 78 appropriation for Title II activities is \$1,870,000, the entire amount being allocated to Section 201 program activities.

Funding will be required in FY 79 and FY 80 to support NOAA's ongoing program in response to Section 201 and the agency's planned programs under Section 202. No funds are being requested for Section 203 research on ocean dumping alternatives because it is more appropriately an EPA function.

The Administration supports the reassignment of these responsibilities to EPA.

In FY 1979 the total appropriation for Title II research will increase substantially, provided the Congress acts favorably on the President's budget request. For that fiscal year the Administration is asking for an increase of \$4,035,000 which, if approved, would make the total FY 79 appropriation \$5,905,000. This is indeed a significant change in the funding picture for ocean pollution research. We consider it as further evidence of the Administration's commitment to improved management of the oceans and their valuable resources. I can assure you, Mr. Chairman, that NOAA management will be watching this program closely and will work hard to see that NOAA meets these additional responsibilities.

I will now review some of the results of our work to date and our plans regarding Title II research in FY 79.

SECTION 201

As the Committee is aware, NOAA's ocean dumping research effort was not initiated under Section 201, but as part of the Marine Ecosystems Analysis (MESA) Program's New York Bight Project. The MESA Project was planned in 1972 and was funded in FY 73 under a separate line item in the NOAA budget. The agency has taken the position that the MESA work on ocean dumping, although never funded under Title II, was fully responsive to the concerns of the Congress as expressed in that legislation. It was largely for this reason that the Administration deferred seeking funds to establish another ocean dumping research program under Section 201 until FY 77.

MESA field investigations focusing on the sewage sludge dumping problem in the New York Bight began in mid-1973 and have continued to the present time. The major thrust of these scientific efforts has been directed toward ascertaining the effects of existing ocean dumping practices and investigating the ecosystem in and around the present dumpsites as well as the proposed alternative sewage sludge sites.

Some of the more significant scientific findings from the MESA Project are as follows:

In the New York Bight, contaminants from the Hudson-Raritan estuaries are of far greater significance than contaminants introduced into the Bight from barge dumping of sewage sludge and dredged material.

Grease, tar, and floating trash that severely contaminated the southern beaches of Long Island in 1976 came primarily from these estuarine systems.

Nutrient-laden waters of these estuaries flow southwardly along the New Jersey coast and are the major contributors to depressed oxygen levels in bottom waters and fish kills when low oxygen levels are combined with other (primarily meteorological) factors.

PCBs or polychlorinated biphenyls are a group of persistent synthetic compounds that are highly toxic to certain marine organisms. These compounds are found in dumped sewage sludge and, to a lesser extent, dredged material.

The dumping of sewage sludge in the Bight has not resulted, as had been speculated, in the formation of a massive lens of material which moves shoreward along the bottom, rather the material seems to disperse with the solid portions settling to the bottom and accumulating in topographic depressions, where hydraulic activity is at a minimum.

The impacts of pollutants in the Bight Apex are great. The Apex, which is that portion of the Bight in closest proximity to the metropolitan area, appears to be a mixing bowl for many types of pollutants from various sources and the relative significance of any particular source is difficult to distinguish. Until adequate land-based waste disposal alternatives are available, it is probably best to continue to use this already heavily stressed area as a dumping ground, rather than contaminate a new area in the Bight.

The Project Development Plan calls for completion of the regional study of the New York Bight in FY 1981. This planning decision was made several years ago, and is not related to the fact that the Congress recently passed legislation requiring the cessation or sewage sludge dumping by the end of CY 1981. I would point out that investigations of the effects of ocean dumping were only one facet of the comprehensive environmental investigations of the New York Bight. These studies have provided the necessary background information to initiate a program of monitoring the environmental conditions in the Bight, and were used in the development of other similar NOAA ecosystem investigations of presently or potentially stressed marine areas of the United States. Critical studies related to the regional problems of the New York Bight that remain to be addressed following the 1981 termination of the New York Bight Project along with other recommendations for sound environmental management of the New York Bight region will be developed during the next twelve months.

In FY 77 the first appropriation under Title II was approved to establish the NOAA Ocean Dumping Program. Management of the program was assigned to NOAA's National Ocean Survey. Its mission is to carry out the purposes of Section 201, including support of EPA and the Corps of Engineers in the discharge of their respective functions under Title I of the Act. In FY 78 the appropriation is \$1,870,000 which is being used to continue a comprehensive study of Deep-water Dumpsite 106, initiate a study of the Puerto Rico industrial waste dumpsite, and to complete work begun a year earlier at a Gulf of Mexico industrial waste dumpsite.

At DWD-106, the program has developed knowledge of how waste material behaves in the deeper ocean, its rate of vertical and horizontal mixing and dilution, its chemical interactions and alterations, and its effect on marine life. Our findings show that southwest migrating Gulf Stream eddies frequently traverse DWD-106. These large eddies, generally about 100 km in diameter, envelop the dumpsite within their boundaries as they move, entraining any waste materials present for about 30 days. Regardless of the presence or absence of Gulf Stream eddies, the expected course of waters containing waste materials is toward the southwest, along the depth contours of the continental slope.

Ultimately, the waters and associated waste materials probably become entrained within the Gulf Stream off the coast of North Carolina, near Cape Hatteras. We have no evidence as yet that waste materials dumped at DWD-106 return to shore. We have also concluded that because of the great depths (1800 to 2500 meters), and the characteristics of the waters involved, little material, if any, reaches the bottom at the dumpsite.

Studies of the Puerto Rico dumpsite began early in February 1978, in accordance with EPA's listing of priorities for dumpsite investigations. Wastes from eight major pharmaceutical companies, including by-products of antibiotic and various other drug production operations, are being dumped at this site. This poses a particularly complex environmental problem which will require continued monitoring. We are conducting field and laboratory studies to obtain information on biological responses to pharmaceutical wastes.

As I have stated, the base funding for our current ocean dumping research program is \$1,870,000. With no increase in FY 79, this amount would be used in that fiscal year to continue investigations at Deepwater Dumpsite 106 and at the Puerto Rico Dumpsite. However, the Administration is requesting an additional \$1,475,000 to strengthen the program in FY 79. Of that amount, \$800K will be allocated to the study of two dredged material dumpsites in the Gulf of Mexico. Another \$250K would provide additional ship support to the ocean dumping research program. The remaining \$425K will enable us to begin a complementary research program—one not necessarily related to specific dumpsites, but designed to consider basic questions such as the mechanisms of contaminant assimilation by marine organisms. For the first year we plan to initiate laboratory studies on the chemistry of contaminant-seawater mixtures, and effects of such mixtures on planktonic organisms and fish. We plan to make special efforts to ensure that this research on dumped materials will be complementary to and not overlap with any similar work being done by the regulatory agencies.

With the requested increase, the NOAA ocean dumping research program under Section 201 would have a total funding of \$3,345,000 in FY 79.

SECTION 202

Section 202 of the Act requires the Secretary of Commerce to initiate a comprehensive and continuing program of research on the possible long-range effects of marine pollution on an ocean ecosystem. Our Agency's research effort in this area totals approximately \$5 million; however, these studies are carried out in response to legislation predating the Marine Protection, Research, and Sanctuaries Act and do not constitute a comprehensive program as required by the Act. Through FY 78 no funds have been approved for implementation of Section 202. The President's FY 79 request of \$2,560,000 for this section would enable us to establish such a comprehensive program. This would be achieved by undertaking new research efforts which will either strengthen or complement current Federal programs in this area, and by establishing a mechanism through which the total Federal long-range effects research effort can be effectively coordinated.

The President's budget request for this part of the proposed Section 202 program is \$1,900,000. Of this sum, \$400K would be used to establish a group within NOAA responsible for carrying out the coordination function. We also plan to set up a computer-based management information system which would list all relevant federally conducted or sponsored research in this area so that we might identify gaps and duplication and determine priorities. With the cooperation of the other Federal agencies engaged in long-term effects research, we believe that it will be possible to better evaluate and coordinate this research and to make the total Federal effort more cost-effective.

Another \$1,500K would be allocated to fund additional long-term effects research. We are mindful of the legislative history of Section 202 in that its scope includes all Federally-sponsored research and that sums appropriated for Section 202 would be available to any Federal agency or private research institution if such support would strengthen the overall national effort.

As for specific research needs in this area, it is possible to establish some immediate needs without going through systematic analysis. The general categories we plan to address in the initial year are indicated as follows. The estimated funding allocations may vary as planning progresses.

Estimated proportion of requested funds

Category	(Percent)
A. Sources and volume of pollutants introduced into the ocean.....	50
B. Distribution, fate, and effects of pollutants.....	30
C. Long-term exposure studies.....	10
D. Development of early warning system.....	10

As our planning for the first year's program moves along, we will keep the Committee staff informed regarding specific research tasks to be carried out and the agencies or private research organizations to be supported.

Another Section 202 initiative contained in the President's budget request is \$660K for long-term effects studies in the Gulf of Mexico. This new project is directed at understanding and predicting environmental threats such as industrial pollution and oxygen depletion in the waters of the Gulf of Mexico. The objectives of the program are: (1) to determine the significant processes that affect the sources, routes, and eventual sinks of pollutants entering the Gulf; (2) to provide the basic knowledge of the present state of the marine environment; (3) to provide the understanding required to assist in predicting environmental threats to the Gulf such as red tides, depressed oxygen levels, off-shore industrial development, ocean dumping, etc. First-year funds will be used to develop the Program Development Plan (\$150K); establish the project office (\$240K); analyze historical data (\$100K); and initiate field studies (\$170K).

This concludes my summary of our planned FY 79 activities in response to Title II of the Act. We look forward to carrying out the expanded program planned for FY 79. Furthermore, we wish to assure the Committee that the amounts requested are reasonable and within our capability to allocate in a cost-effective manner.

With respect to FY 80, our planning has just begun and we are unable to provide a useful estimate of our requirements at this time. Our final decisions for FY 80 will depend, of course, on the outcome of the President's FY 79 budget request and we recommend an authorization for FY 80 of such sums as may be necessary.

Mr. Chairman, this completes my statement. I would be pleased to respond to any questions you might wish to ask.

TITLE II, PUBLIC LAW 92-532

	Fiscal year—		
	1978	Increase 1979	Total 1979
Sec. 201:			
Dumpsite studies.....	\$1, 870/3	800/1	2, 670/4
Complementary research.....		425/2	425/2
Vessel support.....		250/0	250/0
Total, sec. 201.....		1, 475/3	3, 345/6
Sec. 202:			
Coordination and research.....		1, 900/10	1, 900/10
Environmental threats.....		600/3	660/3
Total, sec. 202.....		2, 560/13	2, 560/13
Combined total.....		4, 035/16	5, 905/19

QUESTIONS OF THE COMMITTEE WITH ANSWERS BY DR. HESS

Question 1. What are NOAA's specific responsibilities under the 1975 inter-agency ocean dumping agreement between NOAA and EPA? What arrangements exist for carrying out this agreement? For instance, are there periodic formal or informal reviews of each other's needs, programs, and proposed budgets? Please attach a copy of the agreement.

Answer 1. NOAA's responsibilities under the March 1975 Ocean Dumping Inter-agency Agreement with EPA are summarized as follows:

Assist EPA in developing specifications of information required for disposal site surveys and evaluations.

Provide detailed study plans to EPA and conduct the necessary studies.

Prepare reports on findings for EPA, together with copies of survey data.

Provide EPA and EPA contractors technical assistance in interpretation of NOAA-collected data for EPA preparation of Environmental Impact Statements.

Coordinate preparation of annual reports to Congress with EPA by exchange of information, data, etc.

Designate single point of contact as agency coordinator for interagency agreement interactions.

(Sections III B. and C. address responsibilities of the coordinator and media matters).

The above information extracts NOAA's major responsibilities under the terms of the Agreement (attached) which, however, should be looked at in its entirety for proper context.

Specific arrangements established for carrying out the agreement include designation of agency coordinators (Messrs. P. K. Park and T. A. Wastler of NOAA and EPA, respectively), and annual meetings (in April or May) to review EPA dumpsite priorities and NOAA's schedule of field operations. This is augmented by frequent technical meetings throughout the year and periodic working level contact, to review given survey plans or findings, discuss budgetary matters, coordinate testimony at public and congressional hearings, etc. This has proved effective in arranging joint test dump operations, in provision of EPA funds (1974, 1975) to NOAA for cooperative investigations, and in many other instances.

Question 2. In August 1970 this Committee held hearings on the disposal of Army munitions at sea, including a proposal at that time to dump fifty-five tons of concrete and steel encased liquid nerve gas into the Atlantic Ocean. Concern about controlling this kind of dumping, and studying the effects of those military materials already dumped, was one factor leading to the passage of the Marine Protection, Research, and Sanctuaries Act.

The Committee continues to be interested in this matter, and would like NOAA, if possible, to answer these questions:

Has the U.S. military dumped any nerve gas or other munitions into the sea since 1970, especially since the enactment of the MPRSA?

If the military continues to dump such materials into the ocean, is it required to get an EPA license and does NOAA advise it about possible sites?

Has NOAA or any other agency attempted to locate nerve gas, other conventional munitions, or radioactive wastes dumped into the oceans over the years by the U.S. armed forces? If so, what has been learned about the fate and effects of these materials?

Does NOAA now consider these dumped materials to be a threat to the marine ecosystem, worth further investigation? Does NOAA believe that the further ocean dumping of military wastes should be discouraged?

Answer 2. To our knowledge the U.S. military has not dumped nerve gas or other munitions into the sea since June 1970. It has definitely not done so since enactment of the Marine Protection, Research, and Sanctuaries Act (MPRSA). Under existing law an EPA permit would be required for such purpose. We are addressing what we believe to be a hypothetical situation, nevertheless NOAA would presumably advise EPA about possible sites. The EPA has, with NOAA assistance in providing ship and submarine support in some instances, conducted studies into prior disposal of radioactive wastes off Delaware and California. This work is being directed by Mr. Robert Dyer at EPA, with the intent of ascertaining residual effects. NOAA considers that these dumped materials could, under certain circumstances, be a potential threat to marine eco-systems and deserv- ing of the studies being carried out by EPA. In terms of discouraging further dumping of military wastes, we would oppose this as a general concept, believing that ocean disposal of all wastes should be discouraged and that alternatives to such action be pursued vigorously.

Question 3. What results are expected from NOAA's research on dredged spoils? In particular, does this NOAA research overlap with, complement, or supplement the work of the Corps of Engineers' Dredged Material Research Project? And what procedures exist to coordinate the work of the two agencies on spoils?

Answer 3. The NOAA dredged disposal studies will be site specific, and will be directed towards understanding how the environment will be impacted by the dredged material. We will concentrate on answering such questions as:

What will the harmful effects be?

How can they be minimized?

What are the long-term effects?

Is the site suitable for dredged disposal?

What are the transfer processes of toxic material from sediment to the water and to the organisms?

What are the natural environmental characteristics and how might they be altered?

To answer these questions, NOAA will support baseline studies and investigations that will identify chemical contaminants, water movement to determine the downstream impact area, and biological effects from the dredged material. From the results of the investigations, NOAA would identify pollutant indicators and initiate a monitoring program to determine long-range impact.

The work by NOAA will complement and supplement work done by the Corps of Engineers (COE). The studies are to be designed in consultation with COE to build upon the COE broad-based, short-termed Dredged Material Research Program. As stated above, NOAA will concentrate on individual sites and answer specific questions regarding impact of the dredged disposal on the environment. Some areas will supplement the work done by COE. For example, NOAA will test and evaluate the COE/EPA criteria manual for evaluating ecological impact by dredged material which performing the necessary bioassays. In this way NOAA will help COE improve on site evaluation to determine if a site is indeed suitable for disposal.

An interagency agreement between NOAA and COE to work cooperatively on dredged material disposal sites is under discussion. Its purpose would be to ensure that the NOAA program of monitoring and research, while fulfilling NOAA's mandate under Title II of MPSRA, provides information required by COE for site evaluation and management. This would be in support of the Title I regulatory provisions carried out by COE. Presently the NOAA Ocean Dumping Program (ODP) staff is working closely with the district COE offices on identifying critical areas of study.

Once the site is designated for investigation, COE and NOAA together design a program to assess the ecological impact. COE identifies what its needs are to evaluate the site. NOAA expands on these to initiate a comprehensive program of study.

Question 4. In his testimony before the Committee, Mr. Ken Kamlet called for more research on the bioaccumulation of persistent, toxic chemicals, and of pathogens, in marine food-chain species. Does NOAA's fiscal year 1979 budget request provide for a substantially larger effort in this area? If so, what research will be done? For instance, will the effects of chemicals such as kepone receive greater attention? If food-chain research is not be expanded substantially, what are the reasons?

Answer 4. Bioaccumulation studies will be initiated for the dredge material investigations. These studies will concern specific disposal sites as identified to NOAA by COE to determine long-term effects in order to evaluate a disposal area. In FY 1980, ODP plans to build on the bioaccumulation studies by initiating research on transferring of toxic materials between organisms, how this is done, and what the effects will be.

An ocean disposal area for dredge material is being considered off Virginia Beach. This involves dredging of shipping channels in the lower Chesapeake Bay. If this study begins, then the kepone problem will receive attention.

Laboratory studies of bioaccumulation in plankton and fish are being conducted with wastes from Deep Water Dumpsite 106 and Puerto Rico. This work will continue in FY 1979. The NOS Complementary Research Program, scheduled to begin in FY 1979, under the President's budget request before Congress will devote considerable attention to laboratory studies of bioaccumulation in plankton and deep-sea fish, using known toxic transition and heavy metals.

Attachment.

EPA/NOAA INTERAGENCY AGREEMENT CONCERNING BASELINE SURVEYS AND EVALUATIONS OF OCEAN DISPOSAL SITES, UNDER MARINE PROTECTION, RESEARCH AND SANCTUARIES ACT

SECTION I.—BACKGROUND AND PURCHASE

A. Title I of the Marine Protection, Research and Sanctuaries Act, 33 U.S.C. 1401-1444, directs the Administrator of EPA to regulate the dumping of materials into ocean waters, including issuance of permits for such dumping, establishment of criteria for reviewing and evaluating permit applications, and designation of sites and times for such dumping.

The Administrator of EPA will require baseline surveys and evaluations of existing and proposed disposal sites for the purpose of evaluating or predicting the effect of ocean disposal operations on the marine environment and guiding regulatory decisions and for the preparation of EIS's. Such surveys and evaluations will involve collection, analyses and interpretation of existing data and information related to existing or proposed sites and field surveys designed to determine physical, chemical, geological and biological characteristics of these sites.

B. Title II of the Marine Protection, Research and Sanctuaries Act directs the Secretary of Commerce, in coordination with the Secretary of the Department in which the Coast Guard is operating and with the Administrator of EPA, to initiate a comprehensive and continuing program of monitoring and research on the effects of ocean dumping, and to report his findings at least annually to the Congress. Responsibility for conduct of this program has been delegated to NOAA.

C. The purpose of this interagency agreement is to provide for coordination between EPA and NOAA in a program of ocean disposal site baseline surveys and evaluations. This program is consistent with the coordination required under the Act, and is intended to assure that NOAA programs of monitoring and research, while fulfilling NOAA's mandate under Title II of the Act, also provide information required by EPA for site evaluation and management.

SECTION II.—PROVISIONS

A. EPA will identify its requirements for disposal site surveys and evaluations for regulatory purposes. Specifications of information required will be developed in cooperation with NOAA, and EPA will give full consideration to NOAA views and guidelines in formulation or revision of regulations and guidelines specifying requirements for such studies.

B. EPA will develop and provide to NOAA a schedule of priorities for surveys and Environmental Impact Statements at existing and proposed disposal sites.

C. NOAA will provide detailed study plans to EPA, and conduct the necessary studies. EPA will provide information on the types and quantities of wastes discharged. Funding will be either under NOAA resources or by reimbursement from EPA. In the event that NOAA cannot contract or undertake the required surveys in accordance with EPA's operational program priorities under either NOAA or reimbursable EPA funding, EPA will contract or undertake these surveys directly to the extent of its resources.

D. As a result of surveys and evaluations of each disposal site, NOAA will prepare a report or reports on findings in cooperation with EPA. NOAA will provide copies of all survey data, as requested, together with these reports. The reports will be structured, as possible and feasible, to serve as input to preparation by EPA of Environmental Impact Statements required for each disposal site.

E. Where deemed necessary, NOAA will provide EPA and EPA contractors technical assistance in the interpretation of the NOAA collected oceanographic data during the preparation of Environmental Impact Statements. This effort may be reimbursed to NOAA by EPA at the discretion of the agency coordinators (see Section III.A.).

F. Where EPA imposes monitoring requirements on permittees, these requirements will be developed in consultation with NOAA to reduce the possibility of duplication of effort and insure the standardization of equipments methodologies, and quality control.

G. Under Section 112 of the Marine Protection, Research and Sanctuaries Act, the EPA Administrator is required to report annually to the Congress on his administration of Title I. Under Section 201 of the Act, the Secretary of Commerce is required to report at least annually on the findings of the program of monitoring and research. In order to meet these reporting requirements in a coordinated manner, the following provisions will apply:

(1) The EPA report will summarize the numbers and types of surveys made, the emphasis on their relation to site designation and other aspects of the regulatory program, and the application of the information to the needs of the regulatory program.

(2) The NOAA report will summarize the detailed scientific findings of the surveys, with emphasis on describing the ambient conditions in the disposal sites and the general scientific conclusions drawn from these and other such surveys.

(3) Both agencies will make provision for full exchange of information on all aspects of the ocean dumping program, and each agency will be afforded full opportunity to review and comment on the report of the other agency.

(4) Data and information obtained under this agreement shall be available through free access from appropriate data centers to all parties. Freedom of information will be adhered to under the broadest interpretation. EPA will be provided with copies of all data requested and will have access to original data upon request. All data collected by NOAA or NOAA contractors will be formatted and transmitted to the National Oceanographic Data Center, National Geophysical and Solar Terrestrial Data Center, and other centers as desired by EPA.

SECTION III.—IMPLEMENTATION

A. Each agency will designate a staff member as responsible for coordinating implementation of the provisions of the Interagency Agreement. These staff members will be responsible for establishing channels of communication and coordination within their respective agencies.

B. The agency coordinators will be responsible for establishing a schedule of baseline surveys which take into account EPA's priorities and needs; and the budgetary resources and capabilities of each agency. Budget requests will be developed in coordination with a concerted effort to program adequate resources. EPA will support NOAA's request to OMB for resources to conduct the agreed upon program. Provisions for reimbursement will be made as necessary, where NOAA budgetary resources are not adequate to meet EPA's schedule and priorities, particularly when these occur without adequate lead time for budgetary planning.

C. The agency coordinators may, as determined necessary, explore the feasibility of cooperative programs including but not limited to (1) establishment of a mutually supported centralized staff to design and implement ocean surveys for dumpsite characterization purposes, (2) formation of bilateral EPA/NOAA ad hoc committees for special purposes associated with dumpsite characterization, e.g., for survey finding assessment and analysis, and (3) possible dedication of NOAA vessels and/or EPA laboratories for periods of time.

D. The Administrators or their designated policy representatives shall meet annually to receive a report on implementation of the provisions of this Interagency Agreement. The report shall include:

(1) Progress reports covering completed and ongoing baseline surveys and evaluations of ocean dumping sites.

(2) An agreed upon program of work for the coming year.

(3) Estimated budgets for both agencies required to fund the program.

(4) Any problems being encountered in implementation of the program.

E. Each agency shall apprise the other prior to the issuance of releases to the news Media of preliminary findings and final conclusions of baseline surveys and evaluations carried out cooperatively pursuant to this agreement.

F. Interagency agreements on individual surveys or for provision of special services in support of the ocean dumping permit program must be approved by the respective agency coordinators before they are effective.

SECTION IV.—OTHER

A. Nothing contained herein shall abrogate the statutory responsibility or authority of either agency signatory to this agreement.

B. This agreement may be terminated by the Administrator of either agency by written notification at least 60 days prior to effective date of termination. Terms and provisions of this agreement, may be modified by concurrence of both agency coordinators or their representatives and approval by the Administrators of both agencies.

JAMES L. AGEE,
*Assistant Administrator, for Water and Hazardous Materials,
Environmental Protection Agency, March 26, 1975.*

JOHN W. TOWNSEND, Jr.,
*Associate Administrator,
National Oceanic and Atmospheric Administration, March 6, 1975.*

Senator HOLLINGS. Mr. Samuel H. Bleicher, would you come forward, please?

We welcome you, Mr. Bleicher, and would be glad to hear from you this morning.

STATEMENT OF SAMUEL N. BLEICHER, DIRECTOR, OFFICE OF
OCEAN MANAGEMENT, NATIONAL OCEANIC AND ATMOSPHERIC
ADMINISTRATION, DEPARTMENT OF COMMERCE

Mr. BLEICHER. I am happy to be here, Mr. Chairman. With your permission, I will simply highlight my statement, reading a portion of it and submit the full statement for the record.

My name is Sam Bleicher, and I am Director of NOAA's Office of Ocean Management.

As you are aware, title III of the Marine Protection, Research, and Sanctuaries Act of 1972 authorizes the Secretary of Commerce to designate and manage areas of the ocean both within and beyond the territorial sea to preserve or restore those areas for conservation, recreational, ecological or esthetic purposes.

While authorization title III of the act have existed for the past 7 years, President Carter's fiscal year 1979 budget, recently submitted to Congress, contains the initial funding request for the marine sanctuaries program, \$500,000.

Since the enactment of this legislation two sanctuaries have been designated, the area surrounding the U.S.S. *Monitor* site off North Carolina, and 100 square miles of coral reef off Key Largo, Fla.

Both of these designations took place in 1975. In 1977 two major actions were taken that underscore the relevance of title III and the purposes for which it was enacted.

First, President Carter in his May 1977 Environmental Message instructed the Secretary of Commerce to identify possible sanctuaries in areas where development appears imminent.

Second, NOAA Administrator Richard Frank reorganized NOAA, and established a new Office of Ocean Management which incorporates the responsibilities for title III and NOAA deepwater port responsibilities within a broader concept of ocean resource management.

Let me speak a moment about the overall perspective of the Office of Ocean Management and how the designation and operation of marine sanctuaries contribute to this programs.

The goal of the Office of Ocean Management is to help assure that ocean resources are used for the maximum public benefit with minimum conflict among resource uses or environmental damage. The Office will be evaluating, and developing new techniques for evaluation of existing and projected ocean resource demands, in terms of resource use levels, resource availability, and potential impacts. When conflicts are identified between conservation and resource use, or among resource uses, the Office will seek to develop a management strategy that will resolve these conflicts, whether through the use of NOAA's statutory powers or through authorities vested in other Federal or State agencies.

I consider marine sanctuaries one of NOAA's basic tools to accomplish these objectives. Despite its broad language, title III was clearly not intended as general ocean management legislation, and we do not intend to warp it to that purpose.

A marine sanctuary, in our view, must be built around the existence of distinctive marine resources whose protection and beneficial use requires comprehensive, geographically-based planning and management. Nor are marine sanctuaries pristine areas where human uses are

severely restricted or excluded. This inference has often been drawn from the term "sanctuary", although the law itself contains no such limitations.

In fact, marine sanctuaries will inevitably be multiple-use areas, where recreational activities, scientific research, commercial fishing, vessel traffic, even perhaps hard mining, and oil and gas development may all be allowed in varying degrees, and under appropriate restrictions to assure the preservation of the distinctive characteristics that originally prompted the designation of the sanctuary.

Our Office currently estimates that there are 25 to 35 good marine sanctuary candidates that could be designated over the next 5 years to implement the letter and the spirit of title III.

We have an ambitious program for 1978. In the summer of 1977, NOAA solicited recommendations for possible marine sanctuary sites from private industry, environmental groups, Federal and State agencies and the public in general.

Over 170 recommendations were received, mostly from States and other Federal agencies, and recommendations continue to arrive at the rate of about 1 each week, or 50 per year.

We hope to designate 5 marine sanctuaries during the calendar year 1978, and dispose of about 30 other recommendations, in addition to executing our management responsibilities for the two existing sites. We will keep the committee fully informed as our focus on candidate sites for new sanctuaries narrows to particular locations.

Public participation plays a vital role. Interested Federal, State and private groups and individuals are consulted throughout the designation process. Press releases are issued by NOAA when the initial feasibility is determined and when the regulatory proposals are published, and public hearings are held in the coastal communities most affected by the nomination.

Let me now review our plans for fiscal year 1979. First, the then-existing sanctuaries will require management, enforcement, and assessment. In fiscal 1979 there will be two marine sanctuaries that were designated in 1975, and the additional five that we expect to designate in 1978.

Management requires development of individualized sanctuary management plans, selecting and negotiating agreements with onsite management agents, typically the adjacent State, but other groups are possible, and overseeing the activities involved in sanctuary operations.

Management performed by the contractor includes permit evaluation, ongoing evaluations of the sanctuary regulations, public information, and insuring that the sanctuary purpose remains meaningful and reflective of environmental benefit.

Enforcement is currently being carried out under contract by the USCG for Key Largo. The USCG is performing these same services without a contract for the monitor sanctuary.

Assessment involves baseline and monitoring environmental studies to determine the benefits and costs of sanctuary designation and the impact of activities in and near the sanctuary on its viability.

Second, we will be evaluating and designating some new sanctuaries in fiscal year 1979. Under the funding levels proposed for fiscal year 1979, we hope to evaluate up to 30 recommended or nominated marine sanctuary sites and to select about five more for designation. Until thorough analyses are completed, we cannot specify just what areas will be designated.

In fiscal 1980, we plan to continue operating the then-existing sanctuaries, about a dozen or so, and designating new sanctuaries. Because this is a time-consuming and costly process, we want to use our fiscal year 1978 experience to guide us in the development of our budget needs for fiscal year 1980. Consequently, at this time we believe the most appropriate step for the Congress to take would be to authorize such sums as may be necessary for fiscal year 1980.

I am personally excited about the opportunity to take on the challenge of creating and managing a system of marine sanctuaries. I consider title III a vital element of our Nation's ocean programs, and I look forward to working closely with this committee on the implementation of its mandate.

This concludes my prepared statement. I will be happy to answer any questions you may have. Thank you.

Senator HOLLINGS. We appreciate that, Mr. Bleicher. I remember putting \$10 million in there originally. The administration would never ask for it, and this year you are only asking for \$500,000.

I am informed the House wants to put in a couple of million dollars.

In listening to your statement, how much do you think you could beneficially allocate in this next fiscal year?

Mr. BLEICHER. I think by 1979 we would be in a position to effectively spend \$2 million in this program.

Senator HOLLINGS. Because, you see, we resist the administration's idea of "so much as may be necessary;" if we passed all of the budgets around here that way, we might as well quit.

Mr. BLEICHER. Well, the administration is not willing to take any position about fiscal year 1980 expenditures on any aspects of the program. I think you will find that a theme running through all of the testimony. For 1980 we are simply asking for such sums as may be necessary.

Senator HOLLINGS. I wish we had a little more time with respect to the concept. But would you elaborate some, if you don't mind, for the record, when you talk about marine sanctuaries inevitably being multiple-use areas, where recreational activities, scientific research, commercial fishing, vessel traffic, hard mining, oil and gas development may all be allowed in varying degrees? What area would not be a sanctuary then? You have got just about everything in there. We considered this, and I can tell you now we had the view of a sanctuary that you say is not the case. When you use the word "sanctuary," that is what we had in mind; that appears to be an amazing difference between the executive bureaucracy and the legislative intent. We could have said "areas of water" or "marine areas," or whatever. You haven't eliminated anything. So you can speak of here or there or over there, in any direction, and say this shall be a marine sanctuary.

Isn't that the case, or am I exaggerating?

Mr. BLEICHER. It is very difficult to phrase in words the kind of concept that we are aiming at. Let me try to elaborate.

I think the important factor that justifies setting up a marine sanctuary in a particular area is the presence of a distinctive marine resource, whether it be an extraordinarily rich fishing ground, fish spawning ground, or areas of particular value for living marine resources, whether it is a coral reef or a kelp bed, or something else that is extraordinarily valuable.

Senator HOLLINGS. I agree with you on that, but there would be limited activity, not comprehensive or multiple use activity.

Mr. BLEICHER. There will, of course, be major limitations in various areas, depending on the nature of the marine sanctuary. The Key Largo coral reef is not an area where we would allow anything but certain kinds of scientific activity and certain kinds of recreational activity, which is what is currently going on there.

We recently had a request to build an artificial reef in that area, by some people who wanted to enhance recreational fishing, and we studied the issue, consulted with scientific advisers, and said no, we don't think an artificial coral reef in a marine sanctuary designed to protect the natural coral reef makes any sense, we denied the application. We said if you put it outside the boundary of the sanctuary, it may make sense, there are other areas where we have encouraged that.

The thing we have discovered as we have gone forward with looking at these 170 nominations is each area that has been drawn to our attention really is distinctive, in terms of the kinds of resources to be protected, distinctive in terms of the existing activities underway, and they are distinctive in terms of the kinds of development that the States and others have in those areas.

And the reason that we are focusing and hoping to be able to create just five marine sanctuaries this year, and not the much larger number that people originally hoped for, was we felt we have to address each one of those areas distinctively and basically draw up a constitution for the operation of each area.

I am not suggesting we are going to allow oil and gas development in all of the marine sanctuaries.

Senator HOLLINGS. When you speak of industrial development or oil and gas development, you first say one thing and then say you mean another thing. I am with you on what you are testifying to, but the prepared statement, when you say multiple-use areas, get all of those uses in. What, then, is distinctive about the areas you are considering?

I find nothing distinctive when you say multiple-use areas. When you say distinctive, you mean distinctive, when you say sanctuary, you mean sanctuary.

Give me an example of an industry use area that is distinctive.

Mr. BLEICHER. For example, one area that has been widely suggested to us is Bristol Bay and the southeast Bering Sea off the coast of Alaska, north of the Aleutian chain, which is a rather large area, going out to the Pribilof Islands, one of the richest commercial fishing grounds in the world—

Senator HOLLINGS. I understand that, that is the regular fishing industry, and you are limited there.

Mr. BLEICHER. One of the reasons I talked about multiple-use areas is the fishing industry that has been very concerned that a sanctuary is an area where no commercial fishing will be allowed.

We are trying to make that point clear. In other areas, again, talking about Alaska, because I was there recently, so I have those examples in mind, in the Beaufort Sea area there are plans that the State and Federal Governments have for a joint lease-sale, which have recently been announced to allow oil and gas drilling in the near-shore area there.

We have had that area nominated as a possible marine sanctuary.

Senator HOLLINGS. How could you make that a marine sanctuary and have oil and gas leases at the same time?

Mr. BLEICHER. That was my initial reaction, too.

Senator HOLLINGS. Not only reaction, that is your statement. You say oil and gas development. That is what I am trying to get to.

Mr. BLEICHER. The State has suggested to us that—yes, it has been suggested to me the statement is designed to suggest there may be oil and gas development in some sanctuaries.

Senator HOLLINGS. Where? What sanctuary would you have it in? I hope you are not going to make sanctuaries where they are drilling for oil and gas. If you do that, you are way off from what we had in mind.

Mr. BLEICHER. I am happy to hear you say that.

Senator HOLLINGS. You name the place where you are going to have oil and gas development in a marine sanctuary. Then the sky is the limit. I mean any area could qualify and we couldn't appropriate enough funds for them.

Mr. BLEICHER. No, any area can't qualify, because we are basing the designation of a sanctuary on the nature, the character of the resources initially, the environmental conservation values that need to be protected in the first place.

We don't say just because there is oil and gas development, or because there is some other kind of development planned or proposed, that we will set up a sanctuary there. We are not going to set up a sanctuary because development is planned, or set one up because no development is planned.

The thing that triggers whether we set up a sanctuary is the character of the resource initially. Once we identify what the resource is, what kind of protection it needs, then we will decide what kind of activities can be conducted.

The overriding objective will be to protect the resource values we have identified.

Senator HOLLINGS. Can you give me a distinctive area where you would allow oil and gas development?

Mr. BLEICHER. I am not sure that there are any. The State of Alaska, the reason I mentioned the Beaufort Seas is that the State of Alaska, some officials of the State, rather, have suggested to me that even though they are developing oil and gas there, they might want us to set up a marine sanctuary there to control the way in which that development takes place, control other kinds of development, through a single framework.

One of the unique features of the statute, and I am not sure it was really what people were thinking about when they passed it, is it centralizes the control of Federal activities, or all activities, in that area.

Senator HOLLINGS. And you wouldn't dare infer we are going to centralize oil and gas drilling activity under the Marine Sanctuary Act, by putting oil and gas development into a marine sanctuary?

Mr. BLEICHER. Not at all.

Senator HOLLINGS. The Interior folks would have had a duck fit around their place.

Mr. BLEICHER. As I recall the legislative history, they did oppose the bill.

Senator HOLLINGS. Right, and they were never given the idea that we were going to have oil and gas development included in marine sanctuaries.

Mr. BLEICHER. I think that is probably the sound approach. I don't want to say no to the State of Alaska until I have looked at the situation.

Senator HOLLINGS. That is what we have got to do, say no. We have to understand some things up here and say yes or no. We try to satisfy everybody, make a general statement, and everybody is happy, everybody goes away and nothing is done.

That shouldn't be the case. You used the word "distinctive," and that is the word we used, and we used the word "sanctuary" and we did not intend it to mean multiple use, or oil and gas development. If we weren't going to protect the environment and its distinctive nature, there wasn't any need to have the sanctuaries.

Mr. BLEICHER. There is no question that is the purpose of a sanctuary and our intention as we administer the act will be to protect the marine resources present, and we will do that consistent with that. We will allow other kinds of activities—in some areas the recreational and what we normally think of as benign uses are just as damaging as certain kinds of industrial uses.

We have to look at each sanctuary individually and decide how we can best protect the resources.

It is not an attempt, I agree, to set up general resource management areas, and we do not intend to use it that way.

I think you will find, as we get to specific cases—the other thing I would say is it is very hard to talk in generalities about sanctuaries. That is one thing I am painfully aware of. I think as we get to specific cases you will be satisfied that we are carrying out your intention.

Senator HOLLINGS. Very good, we appreciate your appearance. I will submit some other questions to you to answer for the record.

[The statement follows:]

STATEMENT OF SAMUEL A. BLEICHER, DIRECTOR, OFFICE OF OCEAN MANAGEMENT, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, DEPARTMENT OF COMMERCE

Mr. Chairman and Members of the committee: My name is Sam Bleicher, and I am the Director of NOAA's Office of Ocean Management. As you are aware, the Marine Protection, Research, and Sanctuaries Act of 1972 authorizes the Secretary of Commerce to designate and manage areas of the ocean both within and beyond the territorial sea to preserve or restore those areas for conservation, recreational, ecological or esthetic purposes. While authorizations for funding Title III of the Act have existed for the past seven years, President Carter's FY 79 budget, recently submitted to Congress, contains the initial funding request for the marine sanctuaries program, \$500,000.

Since the enactment of this legislation two sanctuaries have been designated—the area surrounding the U.S.S. MONITOR site off North Carolina and 100 square miles of coral reef off Key Largo, Florida. The wreck of the U.S.S. MONITOR off Cape Hatteras, North Carolina, was designated the Nation's first marine sanctuary in January, 1975. The MONITOR was a forerunner of modern Naval vessels and is an important historical artifact. NOAA has established procedures for review and issuance of permits to conduct research on this historic site. Research will continue over the next several years, and plans must be made after 1980 to consider whether salvage and reconstruction are possible or desirable.

The Key Largo Coral Reef Sanctuary was designated in December, 1975, in an effort to combat destruction of live coral and to make this unique habitat off of our coast a living national monument. The sanctuary regulations also allow a portion of the reef to be made available for scientific study. The sanctuary and its adjacent state park are a major tourist attraction that receives over 400,000 visitors a year. The Key Largo Marine Sanctuary is actually managed on site by the Florida Department of Natural Resources under a written agreement with NOAA. The enforcement and surveillance responsibilities are carried out by the U.S. Coast Guard under contract.

In 1977, two major actions were taken that underscore the relevance of Title III and the purposes for which it was enacted. First, President Carter in his May 1977 Environmental Message instructed the Secretary of Commerce to identify possible sanctuaries in areas where development appears imminent. Second, NOAA Administrator Richard Frank reorganized NOAA and established a new office of Ocean Management which incorporates the responsibilities for Title III and NOAA Deepwater Port responsibilities within a broader concept of ocean resource management.

Let me speak a moment about the overall perspective of the Office of Ocean Management and how the designation and operation of marine sanctuaries contribute to this program. The goal of the Office of Ocean Management is to help assure that ocean resources are used for the maximum public benefit with minimum conflict among resource uses or environmental damage. The office will be evaluating, and developing new techniques for evaluation of, existing and projected ocean resource demands, in terms of resource use levels, resource availability, and potential impacts. When conflicts are identified between conservation and resource use or among resource uses, the Office will seek to develop a management strategy that will resolve these conflicts, whether through the use of NOAA's statutory powers or through authorities vested in other Federal or State agencies.

The Office of Ocean Management is designed to be a focal point and a catalyst for NOAA's involvement in ocean use decisions. Through the designation and operation of marine sanctuaries and through selective participation in the decision processes of other Federal agencies, the Office hopes eventually to transform Federal ocean management decisions from relatively uninformed and parochial decision-making processes into informed, coordinated Federal actions that respond to the broadest concepts of social benefit as expressed in national policies made by Congress and the President.

I consider marine sanctuaries one of NOAA's basic tools to accomplish these objectives. Despite its broad language, Title III was clearly not intended as general ocean management legislation, and we do not intend to warp it to that purpose. A marine sanctuary, in our view, must be built around the existence of distinctive marine resources whose protection and beneficial use requires comprehensive, geographically-based planning and management. Nor are marine sanctuaries pristine areas where human uses are severely restricted or excluded. This inference has often been drawn from the term "sanctuary," although the law itself contains no such limitations. In fact, marine sanctuaries will inevitably be multiple-use areas where recreational activities, scientific research, commercial fishing, vessel traffic, hard mining, and oil and gas development may all be allowed in varying degrees and under appropriate restrictions to assure the preservation of the distinctive characteristics that originally prompted the designation of the sanctuary. Our Office currently estimates that there are 25 to 35 good marine sanctuary candidates that could be designated over the next 5 years to implement the letter and the spirit of Title III.

We have an ambitious program for 1978. In the summer of 1977, NOAA solicited recommendations for possible marine sanctuary sites from private industry, environmental groups, Federal and state agencies and the public in general. Over 170 recommendations were received, mostly from states and other Federal agencies, and recommendations continue to arrive at the rate of about one each week, or 50 per year. We hope to designate five marine sanctuaries during calendar year 1978 and dispose of about 30 other recommendations, in addition to executing our management responsibilities for the two existing sites. We will keep the Committee fully informed as our focus on candidate sites for new sanctuaries narrows to particular locations.

The procedure leading to the designation of a marine sanctuary begins with the recommendation of an area as a marine sanctuary by any interested party. The

marine sanctuary regulations identify the basic types of sanctuaries—habitat, species, research, recreation, esthetic, and unique areas.

The Office of Ocean Management first conducts a preliminary review of feasibility in consultation with the affected state or states and other involved federal agencies. Feasibility is determined on the basis of the distinctive characteristics of the area, the nature of development activities within the area, its vulnerability, and the ecological, recreational, scientific and esthetic value of the proposed site.

If, measured against these benchmarks, the proposed area is judged feasible, a profile is drawn, incorporating analyses of the marine life and geological features, the effects of existing Federal and state laws, and the impacts of development activities on an unprotected site, and potential sanctuary restrictions on future use. This document is circulated to interested groups and institutions for comments and suggestions.

This document and the comments on it are the basis for preparing draft and final Environmental Impact Statements. The completed draft EIS is published in the *Federal Register*, for comments on the proposed designation and regulations that would govern the marine sanctuary.

Public participation plays a vital role. Interested Federal, state and private groups and individuals are consulted throughout the designation process. Press releases are issued by NOAA when the initial feasibility is determined and when the regulatory proposals are published, and public hearings are held in the coastal communities most affected by the nomination.

If the results of this effort indicate that positive action is appropriate, Presidential approval is sought for the designation of the sanctuary.

In cases where a proposed marine sanctuary lies within the territorial jurisdiction of any state (i.e., three-mile limit), the Governor has veto power over designation of the state waters as a part of a sanctuary.

A similar process of proposal, public hearings, and when appropriate an Environmental Impact Statement will also be used to consider any revisions to established marine sanctuary regulations.

Let me now review our plans for fiscal year 1979. First, the then-existing sanctuaries will require management, enforcement, and assessment. In fiscal year 1979, there will be the two marine sanctuaries that were designated in 1975 and the additional five that we expect to designate in 1978.

Management requires development of individualized sanctuary management plans, selecting and negotiating agreements with onsite management agents (typically the adjacent state but other groups are possible), and overseeing the activities involved in sanctuary operations. Management performed by the contractor includes permit evaluation, on-going evaluations of the sanctuary regulations, public relations, and insuring that the sanctuary purpose remains meaningful and reflective of environmental benefit.

Enforcement is currently being carried out under contract by the U.S. Coast Guard for Key Largo. The Coast Guard is performing these same services without a contract for the MONITOR sanctuary.

Assessment involves baseline and monitoring environmental studies to determine the benefits and costs of sanctuary designation and the impact of activities in and near the sanctuary on its viability. These studies, which are essential to an effective sanctuaries program, will be handled by NOAA or contracted to local universities, private research groups or other government agencies. They will provide the information to help refine regulations and better respond to sanctuary needs.

Second, we will be evaluating and designating some new sanctuaries in fiscal year 1979. Under the funding levels proposed for fiscal year 1979, we hope to evaluate up to 30 recommended or nominated marine sanctuary sites and to select about five more for resignation. Until thorough analyses are completed, we cannot specify just what areas will be designated.

As indicated before, the designation of a new sanctuary involves an intensive process of analysis and review to identify critical resources or amenities that require protection, preparation of preliminary issue papers on potential sanctuaries, and draft and final regulations.

It also requires extensive travel to coastal states in the vicinity of candidate sites to meet with state, local, and private groups that nominated and support, or sometimes oppose, the nominations. In addition, formal hearings and consultations on sanctuary regulations and management and enforcement arrangements are required.

In fiscal year 1980, we plan to continue operating the then-existing sanctuaries and designating new sanctuaries. Because this is a time consuming and costly process, we want to use our fiscal year 1978 experience to guide us in the development of our budget needs for fiscal year 1980. Consequently, at this time we believe the most appropriate step for the Congress to take would be to authorize such sums as may be necessary for fiscal year 1980.

I am personally excited about the opportunity to take on the challenge of creating and managing a system of marine sanctuaries. I consider Title III a vital element of our Nation's ocean programs, and I look forward to working closely with this Committee on the implementation of its mandate.

This concludes my prepared statement. I will be happy to answer any questions you may have. Thank you.

QUESTIONS OF THE COMMITTEE WITH ANSWERS BY MR. BLEICHER

Question. There is some confusion over what the concept of "multiple-use management" means as applied to marine sanctuaries. The program's regulations state that, "Multiple use of marine sanctuaries will be permitted to the extent that they are compatible with the primary purpose(s) of the sanctuary." Could you please elaborate on how this concept has been applied in practice at the two existing sanctuaries, and generally how it will guide the management of future sites?

Answer. The term "multiple-use management" has been a part of the conceptual framework of the marine sanctuaries program from its inception. The phrase itself and reiterations of the concept appear in the discussions of the bill on the floor of the Senate and House of Representatives. "Multiple use" is an integral part of the Marine Sanctuary Guidelines for implementation of the program, which were adopted in 1974 (39 F.R. 23254; 15 CFR Part 922) and are still in effect.

The phrase does not imply that intensely used ocean areas will be chosen as sanctuary sites or that more extensive use of sanctuary areas will be encouraged. The purpose for creating a marine sanctuary is the protection of distinctive ocean areas—resources whose conservation, recreational, ecological, or esthetic values deserve preservation or restoration. The scope and extent of control over human activities in a sanctuary is a function of the circumstances under which those activities pose a threat to the preservation of the values that justified the sanctuary's creation.

The marine areas that display the most distinctive ecosystem values are often also areas that attract human activities. Even "benign" activities like recreational fishing and diving can be destructive of the natural ecosystem if they are not suitably regulated. The multiple-use concept simply recognizes that a number of activities, such as navigation, commercial fishing, recreational activities, and others, if properly controlled, can take place within the boundaries of the marine sanctuary without adversely affecting the values the sanctuary protects.

In the Key Largo Coral Reef Marine Sanctuary, for example, recreational fishing and scuba diving are allowed along with basic research under restrictions that are designed to insure the protection of the coral reef. On the other hand, spear fishing and tropical fish collecting are completely excluded from the sanctuary, and a proposal to create an artificial reef for enhanced recreational fishing was recently denied.

The same issues are emerging in our consideration of pending marine sanctuary nominations offshore of Alaska, California, and Texas. These problems will be fully considered on the white papers that are issued in the process of designation.

In short, the "multiple use" of the sanctuary areas is simply another way of stating that the controls on human activities within a sanctuary will extend only so far as necessary to assure the restoration and preservation of the resource values of the sanctuary. We fully intend to take any steps that may be necessary to assure that sanctuary resources are protected.

Question. Congressman Gerry Studds has proposed an amendment, now adopted by the subcommittees of the House Merchant Marine and Fisheries Committee, which would require the Secretary of Commerce to designate which activities in a proposed sanctuary would be regulated, and to make more explicit that other activities would continue to be regulated under other applicable law. Has the Department of Commerce taken a position on this amendment? If so, what is it?

Answer. The Department of Commerce has taken no position on the amendment proposed by Congressman Studds. The amendment does reflect the approach to establishment of a legal framework for each marine sanctuary that had been recently adopted by the National Oceanic and Atmospheric Administration (NOAA).

Question. There is some concern about whether all other law is superseded within a designated marine sanctuary. In the opinion of NOAA, is it presently clear that all other law is superseded in a sanctuary, even law passed subsequent to Title III? And if the Studds amendment, or similar language, becomes law, will there be any legal ambiguity about (i) Title III superseding other authority for those activities which the Secretary chooses to regulate and (ii) other activities within the site continuing to be regulated under other applicable law?

Answer. The NOAA Office of General Counsel informs me that the precedents for statutory interpretation leave no doubt that the adoption of subsequent legislation does not alter the effectiveness of Title III unless there is specific language in the subsequent legislation repealing Title III in full or in part, or a clear and manifest intent to effect such a repeal. Title III is designed to set up a specific regulatory regime for designated marine areas, and the whole purpose of the Act is to allow the Secretary of Commerce to control all activities within the designated area. If the Studds amendment is adopted, Title III will continue to allow the Secretary to impose whatever restrictions she believes are necessary on activities within the sanctuary, so long as her regulations are consistent with the limitations imposed by the terms of the Designation document. Other relevant law continues to apply to activities conducted within the sanctuary to the extent that they are not modified by the Secretary's regulations.

Question. What arrangements does NOAA have with the Coast Guard for enforcement at the Key Largo sanctuary? Is NOAA presently able to reimburse the Coast Guard for the full cost of these enforcement operations?

Answer. The U.S. Coast Guard (CG) has two billets assigned to the Islamorada CG Station specifically for enforcement at the Key Largo Coral Reef Marine Sanctuary. NOAA transferred \$30,000 to the CG for the cost of personnel in FY 1977. In FY 1978 the CG sought and obtained internal funding for the billets. No further requests for funds have been received. NOAA is discussing with CG the extent and nature of their involvement in future sanctuaries.

Question. How well has the delegation of Key Largo management responsibilities to the State of Florida worked? Does your office plan to delegate the management of future sanctuaries, where possible?

Answer. The State of Florida continues to improve its management activities at the Key Largo Coral Reef Marine Sanctuary. The State currently operates a patrol boat so that CG personnel can provide enforcement in the area, handles the initial paperwork for violation cases, conducts a review of permit applications and makes a monthly inspection of the reefs. NOAA is working with the State to expand the delegation of responsibilities to include supervising management-related studies such as a reef assessment and inventory, the implementation of a water quality monitoring system and an evaluation of anchor damage.

The Office of Ocean Management does plan to delegate management functions in future sanctuaries building upon our experiences at Key Largo. NOAA will retain the oversight responsibility for the establishment of regulations, issuance of permits, and final determination on violations.

Question. In May, 1975, before the present Administration took office, the *Monitor* site was designated as a marine sanctuary. Why was this particular site selected, given that the thrust of Title III of the Act is to protect habitats and living marine resources?

Answer. The U.S. Navy officially abandoned the *U.S.S. Monitor*, whose location was unknown, in September, 1953. The wreck of the *Monitor* was discovered in August, 1973 by a team of scientists from Duke University, in 220 feet of water 16 miles southeast of Cape Hatteras, North Carolina. In September 1974 the State of North Carolina nominated the site as a marine sanctuary. NOAA determined through legal analysis and consultation with other Federal agencies that the marine sanctuaries legislation was the only means by which the United States could fully protect against salvage operations that might destroy the wreck or disperse artifacts from it. Based on this and the significance of the *Monitor* to Naval history, NOAA in January, 1975, designated an area 1 mile in radius surrounding the wreck as a marine sanctuary.

Question. Since the marine sanctuaries program now is administered by the new NOAA Office of Ocean Management, please briefly discuss the purpose, main

responsibilities, budget, and organization of this Office. Is the sanctuaries program a major part of the Office's activities?

Answer. In the 1977 NOAA reorganization, the Office of Ocean Management was given explicit responsibility for the marine sanctuaries program and the Deepwater Ports Act of 1974. These 2 programs are components of a broader design projected for the Office. The purpose of the Office is to help assure that ocean resources are used for the maximum benefit with minimum environmental damage and minimum conflict among resource uses. To accomplish this goal, the Office has the responsibility to evaluate existing and projected demands on ocean resources in terms of use levels, resource availability, and environmental and socioeconomic impacts. When conflicts are identified between conservation and resource use or among resource uses, the Office will seek to develop a management strategy that results in the most appropriate resolution of the conflicts, whether through NOAA authority such as the Marine Sanctuaries Act or the Fisheries Conservation and Management Act, or through the authority of other Federal or State agencies.

The Office of Ocean Management is organized into four operating units: Operations and Enforcement, Project Management, Procedures and Project Tracking, and Critical Area Planning and Analysis (Figure 1). Funding for the office in FY 1978 is being accommodated within our existing resources. We will shortly notify the Congress through the normal reprogramming notification procedure of the source and uses of the reprogrammed funds.

The Operations and Enforcement unit is responsible for all designated marine sanctuaries once they are designated. This responsibility will expand greatly as new sanctuaries are designated. We now operate two sanctuaries:

The *Monitor* Sanctuary off North Carolina was established to preserve the remains of the Civil War artifact, which sank off Cape Hatteras on December 31, 1862, and

The Key Largo Coral Reef Marine Sanctuary off Florida, which incorporates one of the few natural coral reef areas in the United States.

The tasks of Operations and Enforcement are management, surveillance and enforcement, and assessment:

The management task includes the review and issuance of permits for research and other activities; coordination with other Federal, state, and local authorities; and a public education and information program.

Enforcement requires surveillance using aircraft and vessels, on a daily basis in heavily used sanctuaries. Enforcement is now handled through contracts with the U.S. Coast Guard and State Park personnel.

Periodic assessments of sanctuary conditions are essential for documenting management effectiveness. Scientific study and analysis may point to better regulatory measures or management techniques.

The next unit is Project Management. Each year a few critical decisions are made by Federal and State agencies on the diverse ocean activities mentioned above. The role of Project Management is to anticipate these events and become involved early on in the formulation, design, location, environmental impact analyses, and policy implications, to help guide the course of events to a conclusion that is consistent with national policy, as articulated by Congress and the President. In many cases, the Project Manager will be the NOAA spokesperson working closely with other Federal agencies and presenting tightly-reasoned arguments and analyses to the right people at the right time to achieve the desired ocean use decisions.

In other cases, the strategy may be the creation of a marine sanctuary. The President's Environmental Message of May 23, 1977, directed the Secretary of Commerce to begin the designation of additional sanctuaries over the next several years. Over 170 marine sanctuary sites have been recommended by Federal agencies, State government groups, and private parties. About one additional recommendation is received each week, or 50 per year. In FY 1978, Project Management will evaluate and select approximately five sites for sanctuary designation. This requires public meetings and hearings, position papers, draft sanctuary regulations, and environmental impact statements.

The next unit, Systems and Information, will develop an information system to keep track of what federal agencies are doing that affects ocean use, what projects are pending, and where are they in the decision process. Too often by the time the implications of some forthcoming decision are realized, the opportunity to affect the outcome has passed. Timely identification and information on proposed ocean use activities is a crucial factor in meeting our goals for

Ocean Management. Many agencies with ocean use responsibilities have regional structures that further complicate tracking. And finally, this unit will assure that the Office of Ocean Management understands the many laws that are being enacted that affect ocean activities.

The Critical Area Planning and Analysis unit is responsible for the assessments and projections needed to respond to immediate ocean use decisions and to map out long-range use strategies that provide a rational balance between conservation and development of the ocean.

Three tasks have been identified that we expect to realize within the next two years:

Develop regional ocean use strategies for selected areas. Scenarios will be prepared that explore the options available to a region for rational ocean use. After these options have been publicly reviewed and discussed, they will serve as a reference point for Ocean Management in influencing the decision process.

Conduct in-depth assessments of the consequences of specific proposals for ocean use such as oil and gas development, deepwater ports, tanker regulations and ocean dumping.

Evaluate and refine techniques of analysis to insure the credibility of NOAA positions. Persuasive methods of analyzing environmental and socioeconomic impacts and integrating those assessments are a prerequisite to intelligent recommendations on policy questions.

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

OFFICE OF OCEAN MANAGEMENT

APRIL 14, 1978

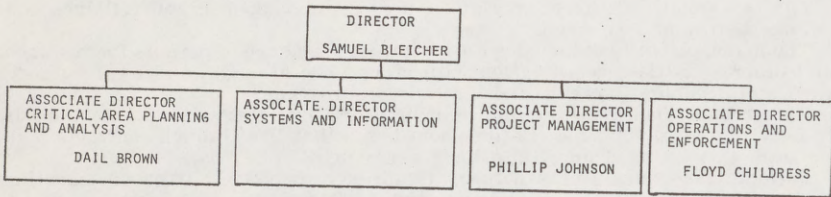


Figure 1

Senator HOLLINGS. Let me hear now from Mr. Kamlet, because I have to leave pretty soon.

STATEMENT OF KENNETH S. KAMLET, ON BEHALF OF THE NATIONAL WILDLIFE FEDERATION, WASHINGTON, D.C.

Mr. KAMLET. Thank you, Mr. Chairman. In the interest of brevity, I too will simply highlight our prepared testimony and summarize our eight principal conclusions.

First, in terms of initial funding levels for fiscal years 1979 and 1980, we believe the absolute minimum levels of authorization should be no less than \$7 million and \$8 million respectively for title II, and \$2 million and \$3 million for title III.

Second, we think it is vital that funding under the ocean dumping law be appropriated to the full level authorized by the Congress. In the past the oversight committees in both Houses have apparently been less than overzealous in pressing for appropriations commensurate with funding authorizations under the ocean dumping law. We hope this historical gap between authorizations and appropriations can be eliminated, Mr. Chairman.

Third, marine pollution research responsibilities under title II are currently scattered within NOAA, among at least three major organizational components. There is a concern among both NOAA employees and outsiders that at least so far there has been insufficient centralized policy and program direction to provide the kind of coordination and overview that is needed for smooth and effective operation of NOAA's marine pollution programs under title II.

Unless these problems are ironed out, NOAA may also have difficulty carrying out its lead agency responsibilities under S. 1617.

Fourth, in terms of research priorities, it is clear to us that a major emphasis of NOAA's section 201 research program must be the study of dredge spoil ocean dumping. Ninety percent of the material ocean dumped is dredge spoil—

Senator HOLLINGS. Right there, at that point, wasn't it interesting to hear Dr. Hess—you think everything comes from that ocean dumping, but he is finding more coming out of the Hudson, he is finding more coming out of the Mississippi.

Mr. KAMLET. Well, yes, sir, which really emphasizes the need to concentrate the ocean dumping research on dredge spoil disposal, because the dredge spoil that gets dumped is sediment derived from the beds of rivers like the Hudson and the Mississippi. It really transfers the pollution within the river in a more concentrated fashion out into the ocean.

Ninety percent of the ocean dumping sites currently approved are dredged material sites as well, again emphasizing the need for major research emphasis in this area.

Senator HOLLINGS. On dredged spoil, now the Corps of Engineers has a program of research on dredged spoil materials. Do you think we also should have one in NOAA?

Mr. KAMLET. Well, yes, sir. The Corps of Engineers has a dredged material research program that is presently winding down. That was a 5-year, \$3 million research effort.

Very little of the emphasis in that program, however, was on researching the effects of dredged material disposal in the marine environment, as opposed to disposal in inland waterways, and as opposed to studies of alternative disposal methods on land and elsewhere.

NOAA's emphasis, and responsibility under title II is in long-term marine pollution research, and that has not been the emphasis of the Corps of Engineers, so I think there is room and a need for NOAA to get involved quite actively in this area.

Senator HOLLINGS. I quite agree with you, I appreciate your views.

Mr. KAMLET. Thank you. Despite this 90 percent level of dredged material dumping, of the \$3½ million, roughly, requested by NOAA for ocean dumping research, only \$800,000 or less than 25 percent will address dredge spoil dumping.

If you look at it another way, of the 127 approved dredged material dumpsites, NOAA plans to study only two, or less than 2 percent of the total over the next 2½ years. We feel very strongly that NOAA needs to give much greater attention to the problem of dredge spoil dumping, but it is going to need significantly more manpower and resources to do the job right, perhaps \$5 to \$10 million a year for dredge spoil studies alone.

Fifth, as far as section 202 is concerned, our principal conclusion is that far greater priority must be given to assessing the impact of marine pollutants on human health and marine ecosystems, with heavy emphasis on food chain studies.

The proposal to earmark a mere \$225,000, less than 10 percent of the total proposed budget for section 202, which is itself ridiculously small, for food chain studies, is unfortunate, if not disgraceful.

I note Dr. Hess this morning has again deleted reference to the food chain studies and to even this \$225,000 share.

Sixth, we would support the proposed transfer of responsibility over alternatives research under section 202 from NOAA to EPA, with one qualification: We think there is much to be said for retaining within NOAA, as an agency principally concerned with the marine environment, responsibility for keeping track of and coordinating waste management research performed by others, to be sure that technology which could help speed the way to a phaseout of ocean dumping is in fact applied to that purpose, and applied with a minimum of delay.

It is perhaps a truism of Federal bureaucracies that one hand within an agency often doesn't know what the other is doing. An outside monitor, hopefully, could keep track of more than one hand at a time, and, to mix metaphors, not miss the forest for the trees. This outside monitor need not necessarily be NOAA, and I know NOAA is not especially anxious to assume such a role.

The Council on Environmental Quality, and the Office of Science and Technology Policy, for example, would also be good candidates for performing such a coordinative and monitoring function.

Seventh, as far as the implementation of S. 1617 is concerned, we believe much will depend on NOAA's ability to get its organizational house in order. Much talent exists within the Agency. The trick is going to be to take and coordinate this expertise in an efficient and effective way. It may take a special Office of Marine Pollution Research, accountable directly to the Administrator, to meet this need.

Finally, our major conclusions regarding the marine sanctuaries program under title III are as follows:

(a) NOAA and Commerce Department officials have finally gotten to the point of recognizing in their speeches and testimony the tremendous potential of marine sanctuaries in achieving a balanced program of protection and utilization of marine resources, but they are still a long way from taking the steps necessary to make this potential a reality.

(b) The record of the marine sanctuary program to date has been uninspired and disappointing. It reflects an almost total lack of interest and commitment by NOAA. Two sanctuaries designated in 5 years is hardly something to boast about.

(c) Although it is gratifying to see that NOAA's interest in title III has been kindled to the point that it is finally seeking some money under this title, the level of the request is so low as to hardly represent a burst of enthusiasm or a serious commitment of Agency effort. Surely Congress had in mind the Agency is capable of more than the five sanctuary designations a year NOAA has belatedly set its sights on.

Senator HOLLINGS. Would you comment on the statement of the previous witness with respect to marine sanctuaries?

If I were running OMB and I found there was no limit to what a sanctuary can contain, and that the witness testifies distinctly in his written statement there will be multiple-use, including oil and gas development, then I would say: Look, you can take and designate any area in the country offshore anywhere you want and call it a marine sanctuary, and this program is so general it is just opening up a hemorrhage of funds, so I better hold back on it.

Don't you think that it would be better to have a bull's-eye distinctiveness in design for a real sanctuary, then they could see some restrictions and see some limitations and they could properly fund it?

I would be sacred to death of that marine sanctuary thing the way they have described it, if I saw that.

Mr. KAMLET. I agree very much with your remarks earlier, that there is nothing multiple use about a marine sanctuary.

Senator HOLLINGS. I never heard of that before.

Mr. KAMLET. I think more appropriate, perhaps, is the concept of balanced use. We have certain areas that are being developed and used and certain other areas that are set aside for the protection of the natural resource values contained in those sites. That was, we thought, the purpose of marine sanctuaries, and that is what the proper use is.

Senator HOLLINGS. Exactly. Thank you.

Mr. KAMLET. We have recommended in the prepared statement four specific steps which Congress and NOAA can take to help put the marine sanctuaries program on the right track.

One would be more money, at least \$5 million over the next 2 fiscal years, as the House, at the subcommittee level, has thus far authorized.

Two, adoption and implementation by NOAA of a clear conceptual framework for carrying out the sanctuaries program.

We believe, as does the Center for Natural Areas, which studied the matter in great depth, that the program should emphasize the nomination and designation process as a means of getting more sanctuaries established, rather than prenomination planning or post-nomination management.

Three, annual reports to Congress detailing NOAA's progress in implementing the coherent and effective program. Annual reporting is currently required under title II, but there is no annual report on marine sanctuaries currently required under title III.¹ We feel at least in the initial years of the program that such reporting requirements might be very helpful and very informative.

Fourth, establishment, again as suggested by the Center for Natural Areas, of a national registry of areas of marine significance to serve both a prelude and a spur to formal marine sanctuary designation, and as a mechanism in its own right for alerting and sensitizing marine resource users to areas of unique environmental importance and vulnerability.

In closing, the ocean is obviously where the action is these days. It is our planet's last great frontier to be explored and exploited. If we use it well, it will repay our stewardship many times over. If we do not, we may get no second chance to correct our mistakes. We are at the crossroads. Let us hope we make the right choice.

¹ We were in error; an annual reporting requirement does exist for title III. It is contained in section 302(d).

Let us do more than hope, however. Let us equip ourselves with the tools we need to make the right choice.

We commend this committee for holding these hearings and appreciate very much the opportunity to present these views. Thank you.

Senator HOLLINGS. Thank you, I appreciate it. I am going to have to leave. I will leave some questions for you to answer for the record.

I was just looking at the U.S.S. *Monitor*, the first marine sanctuary. What was the distinctive quality of the marine ecosystem there that is being protected, in your opinion.

Mr. KAMLET. As I understand it, the purpose of that sanctuary designation was to preserve this historic and archeologically unique and important Civil War vessel.

Senator HOLLINGS. Not the marine ecosystem?

Mr. KAMLET. Not the marine ecosystem, but to prevent people—

Senator HOLLINGS. Shouldn't it go into the National Trust or be designated for historic preservation or something else like that, but not adulterate the marine sanctuary program?

Mr. KAMLET. Well, I don't believe it is possible under the National Registry of Historic Places, or various other mechanisms, to designate areas in the ocean. I don't know that this is an inappropriate use of the Marine Sanctuary Act. But I certainly hate to see it limited to such—maybe I shouldn't say this—to such trivial uses of it, but it certainly seems to me that there are much more important biological resources out there that deserve and require protection.

Senator HOLLINGS. Well, we appreciate your interest and the interest of the National Wildlife Federation, Mr. Kamlet.

We will submit those questions to you for the record. Is there anything else you wish to add?

Mr. KAMLET. No, sir.

Senator HOLLINGS. We appreciate it very much. Thank you.

[The statement follows:]

STATEMENT OF KENNETH S. KAMLET, ON BEHALF OF THE NATIONAL WILDLIFE FEDERATION

Mr. Chairman and Members of the Committee: My name is Ken Kamlet. I am counsel to the National Wildlife Federation ("NWF"), the nation's largest private conservation organization—with 3.5 million members and supporters throughout the United States and its territories. A few words about my background may aid the Committee in evaluating my testimony.

In addition to my law degree, I have eight years of graduate and undergraduate training in the bio-chemical sciences. Much of my time during the five years I have been with NWF has been spent on ocean disposal and other marine pollution problems. I am a member of a Department of State-EPA advisory committee on Ocean Dumping (established as a subcommittee to IMCO's Shipping Coordinating Committee), concerned with implementation of the international Convention on ocean dumping. I am a science advisor to EPA's National Marine Water Quality Laboratory (Environmental Research Laboratory) in Narragansett, Rhode Island. And, perhaps most relevant to the subject of today's hearings, I am a member of three advisory groups concerned with aspects of NOAA's Title II and III responsibilities under the ocean dumping law: (1) the NOAA-MESA New York Bight Synthesis Steering Committee (designed to guide the MESA New York Bight Project in producing an integrated state-of-the-art assessment of New York Bight ecosystem); (2) the NOAA Task Force on Technical Goals and Objectives for the Ocean Pollution Research Program (designed to guide NOAA in implementing its long-term ocean pollution research and planning responsibilities under Section 202 of the MPRSA, as well as under S. 1617—if and when it becomes law); and (3) the Marine

Sanctuaries Policy Advisory Committee to the Center for Natural Areas (designed to provide policy direction to the Center in carrying out a contract with NOAA's Office of Coastal Zone Management to help develop a management plan for implementing Title III of the MPRSA).

Before addressing the four principal issues, which the Committee in its invitation letter asked us to address, I would like to briefly review the organization and funding levels of NOAA's existing and planned Title II and Title III programs.

1. ORGANIZATION

Under NOAA's new organizational structure, three of the agency's five divisions play roles in ocean dumping and marine pollution research (i.e., Title II and S. 1617 functions): (a) Research & Development (which includes the Environmental Research Laboratories—which in turn include the MESA Program); (b) Oceanic & Atmospheric Services (which includes the National Ocean Survey—in which the "Ocean Dumping Program" resides); and (c) Fisheries (consisting of the National Marine Fisheries Service—some of the laboratories of which are engaged in studies of pollutant transfers through the marine food chain).

Another agency component plays a key role in marine sanctuary designation and management (i.e., Title III functions): the Ocean Management Office (the Director of which is appearing before you this morning). *Estuarine* sanctuaries, under the Coastal Zone Management Act, it should be noted, are handled under a separate Coastal Zone Management Division.

There are some who contend, not totally without justification, that NOAA's marine pollution programs lack centralized supervision and coordination. We will discuss this problem later in addressing the issue of how S. 1617 should be implemented.

2. FUNDING LEVELS

Under Section 201 (ocean dumping monitoring and research), the current (FY '78) funding level is \$1.87 million. For FY '79, the agency proposes to use this base funding level to continue studies at Deep Water Dumpsite 106 (at the edge of the New York Bight) and at the Puerto Rican Dumpsite. In addition, it seeks \$800,000 to initiate studies at two dredge spoil dumpsites in the Gulf of Mexico and \$250,000 for additional ship support; it also seeks \$425,000 for complementary laboratory and field studies to strengthen basic knowledge of interactions between dumped materials and the affected ecosystems. The overall Section 201 effort, to the tune of \$3,345,000, will be administered by the National Ocean Survey.

An additional \$2.8 million for ocean dumping research (but not funded under Title II of the MPRSA), has been separately requested for FY '79 as part of the MESA Program, to fund the continuing research of the New York Bight Project.

Under Section 202 (long-range effects research), no funds were requested or approved through FY '78. The agency has requested for FY '79 a total of \$2,785,000 to fund three long-range effects programs: (a) \$1.9 million to expand and initiate research on the long-term environmental effects of chronic, low-level concentrations of hazardous materials on marine biota and to improve the ability to predict the effects and behavior of these substances in the marine ecosystem (to be administered by NOS); (b) \$660,000 to initiate a research program directed at understanding and predict environmental threats such as industrial pollution and anoxia in the Gulf of Mexico (to be administered by the Research & Development division); and (c) \$225,000 to initiate an intensive study of selected contaminants on ocean food chain processes and feeding interrelationships (to be administered by the Fisheries division). (*Note:* With respect to this last item, NOAA, in its testimony last month on the House side, inexplicably deleted all reference to these food-chain studies, and stated that the Administration's total Section 202 request amounted to only \$2,560,000, rather than the \$2,785,000 approved by OMB and contained in NOAA's budget submission to the Congress).

No funds have been requested for Section 203 (promotion of research on alternatives to ocean dumping), because—in the words of a NOAA official—"[this research] is more appropriately an EPA function." More on this subject later.

NOAA's total FY '79 funding request under Title II of the MPRSA thus amounts to \$6,130,000 (if the \$225,000 for food-chain studies is included).

The House Committee (at the Subcommittee level) earlier this month voted to authorize Title II funding at the \$7 million level for FY '79 and at the \$9 million level for FY '80.

As far as Title III is concerned, no funds were sought or received through FY '78. For FY '79, the Administration has requested \$500,000.

By contrast, the House Committee (at the Subcommittee level) has recommended Title III funding authorizations of \$2,000,000 for FY '79 and \$3,000,000 for FY '80.

We will now address the four issues raised in the Committee's invitation letter:

3. WHICH RESEARCH TOPICS DESERVE PRIORITY?

In terms of ocean dumping-related research and monitoring (Section 201), it seems fairly clear that dredge spoil dumping deserves priority attention.

Thus, as shown by the following Table, more than nine times as much dredged material is being ocean-dumped in U.S. coastal waters than all other ocean-dumped wastes combined. A sizeable proportion of this dredged material is contaminated with sewage and chemical pollutants.

TABLE 1.—COMPARATIVE LEVELS OF OCEAN DUMPING ACTIVITY, 1973-76

	[In tons times 10 ⁶]			
	1973	1974	1975	1976
Dredged material*.....	79.8	118.4	105.4	78.6
Municipal waste.....	4.9	5.0	5.0	5.3
Industrial waste.....	5.1	4.6	3.4	2.7

*Corresponding figures in millions of cubic yards are: 1973—66.5; 1974—98.7; 1975—87.8; and 1976—65.6.

Source: NOAA Report to Congress on Ocean Dumping Research—January through December 1976 (July 1977), p. 3.

Similarly, more than 90 percent (127 of 140) of the "approved interim dumping sites" designated in § 228.12 of the Ocean Dumping Criteria, 42 *Fed. Reg.* 2485-87 (Jan. 11, 1977), are dredged material dumpsites.

The best reason, however, for concentrating research and monitoring efforts on dredged material ocean dumping is the fact that most ocean-dumping of non-dredged wastes is slated to be phased-out within the next three years or so. It makes little sense, at least in terms of deriving maximum usable information from a limited research effort, to devote an excessive proportion of available funds and resources to the study of dumping which will no longer occur a few years from now. To be sure, *some* existing non-dredged material dumpsites may deserve study, despite the interim status of these sites—whether because such studies will yield important basic information about the fate and effects of marine pollutants, because the studied sites are being heavily impacted now and it is desired to determine the short-term effects of such impacts, or because it is desired to follow recovery or rehabilitation rates at a site after dumping at the site ends. Nevertheless, it seems clear, given the magnitude of dredge spoil ocean dumping operations, the large number of dumpsites involved, and the lack of any foreseeable phase-out or reduction in the practice, that this is where NOAA's Section 201 research effort should be concentrated.

Unfortunately, NOAA's plans for dredge spoil dumpsite research are too little and too late.

In NOAA's original "Program Development Plan for Ocean Dumpsite Research and Monitoring Program" (May 1976), which has never been formally updated, a dumpsite "study schedule" it set forth (p. 5-2) which lists ten sites or categories of sites. Of this group, "dredge sites" are listed seventh, with "baseline and experimental study" of such sites projected to begin in FY '78, and "monitoring study" to commence only in FY '79. By contrast, Deep Water Dumpsite-106, Galveston site (non-dredged material), New Orleans site (non-dredged material), and Puerto Rico site were all slated to be studied beginning in FY '77 or earlier.

Of course, there's been subsequent slippage in this schedule, and the Galveston and New Orleans sites appear to have since been dropped (quite properly) from high-priority status. But NOAA's present intention (as reflected in its current budget request) still seems to be to defer dredge sites studies until FY '79, and even then, to limit such studies to two Gulf of Mexico sites.

With 127 dredged material sites scattered throughout every U.S. coast, and given the variability of dumping practices at these sites, a program to study only

two of these sites, both of them in the same coastal area, doesn't seem terribly adequate.

In this regard, the Committee should be aware that a contributing factor in this misallocation of priorities and in the unjustified deferral of dredge site studies has been the delay in completing an interagency agreement on the subject between NOAA and the Corps of Engineers. We understand that NOAA is ready to sign off on such an agreement from its standpoint, but that EPA and the Corps are delaying matters by insisting that a NOAA-Corps agreement be until a three-way (or even four-way) agreement can be negotiated among NOAA, EPA, and the Corps (and possibly the Coast Guard).

Matters have not been helped either by the existing NOAA-EPA interagency agreement which essentially commits NOAA to follow through on dumpsite study priorities set by EPA—given the fact that EPA's principal regulatory interest is in *non-dredged* material dumpsites.

Particularly in light of NOAA's new lead-agency responsibilities under S. 1617 (if and when enacted), it seems inappropriate for NOAA to defer excessively to priorities dictated by other agencies.

We agree with NOAA's 1976 plan that dumpsites should be selected and prioritized for study based upon eight enumerated factors (p. 4-11) (we would add a ninth): (1) public health hazards, (2) environmental damage (actual or potential), (3) EPA/Corps program priorities, (4) NOAA program priorities, (5) quantity and composition of material dumped, (6) social and economic effects, (7) public concern, and (8) available resources. To these we'd add a ninth: (9) future of dumping at the site (i.e., if dumping there is to be phased-out in the near future, that should weigh against selecting that site for high-priority study).

The study of ocean dumpsites is expensive. It will cost in the neighborhood of \$900,000 per year apiece to study the DWD-106 and the Puerto Rico dumpsites, both of which are deepwater offshore sites. Nearer-shore sites, such as the Gulf of Mexico dredge spoil sites, can be studied less expensively, but the price-tag is still on the order of \$400,000 apiece per year. Clearly, EPA, NOAA and the Corps should be pooling and coordinating their resources in the site-study effort. But the combined effort in this regard should probably be about 10 times as great as it is now with greatest emphasis on dredge spoil sites.

As a practical matter, too, more rapid site study is clearly required since, by the terms of § 228.12 of the ocean dumping criteria, any of the existing dumpsites which have not been studied and formally redesignated by January 1980 will no longer be approved for ocean dumping. It would be sad indeed if, when that time arrives, an effort is made to simply extend the deadline because not enough was done to do what was necessary today.

Turning briefly to long-range research under Section 202, we believe that priority attention should be given to assessing the separate and cumulative impacts of marine pollutants on human health and marine ecosystems. Bioaccumulation of persistent, toxic chemicals, and of pathogens, particularly in food-chain species, is deserving of particular attention. (In this regard, we are particularly distressed at the previously noted deletion—whether intentional or inadvertent—of even the low-level of FY '79 funding proposed for food-chain studies, from NOAA's presentation on the House side last month).

Among the key marine pollution sources which should receive close NOAA attention under Section 202 are discharges of sewage and other wastes through marine pipelines and outfalls.

We would hope as well that NOAA will be giving increased attention to monitoring and predicting the long-term effects of marine pollutants (e.g., through laboratory and field bioassay testing and other studies).

The implementation of Section 202, obviously, will be closely related to, and should be carefully integrated with, NOAA's implementation of S. 1617 (when and if enacted).

4. SHOULD SECTION 203 RESEARCH BE TRANSFERRED TO EPA?

Section 203 of the MPRSA presently directs the Secretary of Commerce (through NOAA) to "conduct and encourage, cooperate [with others on], and render financial and other assistance [to appropriate groups and individuals] . . . in the conduct of, and to promote the coordination of, research, investigation, experiments, training, demonstrations, surveys, and studies for the purpose of determining means of minimizing or ending all dumping of materials within five years of the effective date of this Act."

Although NOAA representatives were presumably supportive of such a role for NOAA at the time the MPRSA was passed, the tendency of NOAA officials since that time has been essentially to ignore Section 203, on the theory that the expertise concerning land-based alternatives resides elsewhere (e.g., within EPA). Thus, the letter from the Secretary of Commerce transmitting to the Congress NOAA's very first annual report on ocean dumping, in March 1974, stated that the report "does not cover activities under Section 203" because the Department "has not yet initiated a program of activities under this section." The same could have been said for each of the three subsequent annual reports filed by NOAA.

As this Committee is undoubtedly aware, its counterpart on the House side (at least at the Subcommittee level) has adopted a proposed amendment (offered by Reps. Breaux and Forsythe) which would transfer responsibility for "alternatives research," presently residing in NOAA under Section 203, from NOAA to EPA. If nothing else, such an approach has the virtue of putting a stop to what has been a rather flagrant flaunting of the present law. If it has the further effect of encouraging additional alternatives research by EPA, it might even be desirable in its own right. (Mr. Jorling of EPA hinted that this might be the case in testimony last month before the House Merchant Marine and Fisheries Committee, when he noted that if the transfer of Section 203 authority takes place, EPA "would regard the demonstration of the practicality of land-based alternatives for the disposal of sewage sludge as the first priority." It is unclear, however, whether such a transfer would carry with it additional funding to allow for the expansion of existing EPA research and development efforts.)

Accordingly, we would support the change proposed on the House side, with one important qualification.

We agree with Mr. Breaux's statement, in supporting S. 1617, as amended, that "the best way to accomplish a congressional mandate is to designate a leadership agency to coordinate other agency efforts." Congressional Record, daily ed., p. H 1566 (Feb. 28, 1978). For precisely this reason, we think it would be useful to retain in NOAA (or in some other environmentally-inclined agency, such as the Council on Environmental Quality), supervisory and coordinative responsibility over alternatives research. That is, EPA, the Corps of Engineers, and others would continue to conduct and fund such research, but NOAA, CEQ or some other outside agency, would monitor what these agencies were doing, and attempt to make sure that optimum use was being made of the research products emanating often (indeed, usually) from programs wholly unrelated to ocean dumping, where such research had application to cutting down on ocean dumping. Absent such an outside overview and perspective, the originating agency (given the realities of compartmentalized agency programs) might not realize that the results of an R&D grant or a sewage treatment construction grant had relevance to Section 203 objectives. The outside agency would be sensitized to this problem and would serve to maximize the effective utilization of relevant research results produced by the originating agencies.

5. HOW SHOULD S. 1617 BE IMPLEMENTED?

NOAA efforts to implement S. 1617 have already begun, albeit on a modest scale, largely as a result of the agency's newly awakened interest in Section 202 of the MPRSA. A series of regional scientific workshops is in the process of being held, in Chicago, Anchorage, Oregon, New Orleans, and New York, to solicit inputs and advice from those concerned with specific marine pollution problems in various parts of the country. A "Task Force on Technical Goals and Objectives" has been established to assist in evaluating the workshop results and to guide NOAA in establishing a long-range ocean pollution research program. With the advent of S. 1617, I'd imagine that the Task Force would also assist in the design of the 5-year comprehensive plan called for by the Act.

This procedural approach seems reasonable and we find little fault with it.

Where we do have concern is on the question of NOAA's ability and commitment organizationally to mobilize and coordinate its own in-house ocean pollution expertise and capabilities.

I referred previously to the fact that NOAA's ocean dumping program is scattered among three different divisions. Coordination of these divisional efforts has been hampered by the fact that, as of this writing, no permanent Assistant Administrator for Research and Development has yet been appointed. Moreover, matters are further confused, and lines of authority further obscured, by the fact that Dr. Hess serves as Associate Administrator (the third-ranking agency

official), with authority over all Assistant Administrators, including the Assistant Administrator for Research and Development, and at the same time as Director of the Environmental Research Laboratories—a position subordinate to the Assistant Administrator for Research and Development.

The scattering of marine pollution research functions is probably the more fundamental problem and has the greater potential for interfering with effective implementation of S. 1617. As noted in a Working Document prepared by NOAA's Environmental Assessment office in mid-January of this year:

For the marine environmental pollution research and assessment program to function efficiently, it is necessary that it be housed within NOAA with the following characteristics:

1. The program must be in a unit with only environmental responsibilities so as not to dilute the total effort.

2. The unit must be research and assessment, and not solely management, oriented because of the different users.

3. To achieve full program implementation, the program manager must have authority and responsibility as is necessary to deal equally and interact successfully with other NOAA and Federal components.

The same report points out that, "[a]s of this writing the level of coordination within NOAA is less than desired . . . regarding marine environmental programs."

The report goes on to recommend that the Program Manager must be authorized to:

- Control NOAA marine environmental pollution research and assessment funds and personnel ceilings.

- Prepare NOAA integrative planning for marine environmental pollution research and assessment programs.

- Establish policy on data processing and dissemination.

- Expend funds within and outside NOAA in conformity with the goals and objectives of the program.

- Prepare, develop, and present proposed Interagency Agreements and International Agreements to the NOAA Administrator for approval.

- Upon request, receive assistance from any NOAA-MPE [i.e., "major program element"].

- Upon request, receive assistance from any other Federal agency, (on a reimbursable basis, when required).

Although it is theoretically possible to have a number of program elements all with roles in marine pollution research, coordinated through one or more layers at higher levels in the chain of command, as the report points out, the more layers of management are involved, the more program money is going to be diverted to management (with about 20% subtracted at each level), and the less will be available for research.

Thus, the anomalous situation may exist that, whereas Section 7 of S. 1617, as amended, directs all other agencies with ocean pollution responsibilities to cooperate with NOAA, there may not yet exist any effective mechanism for ensuring cooperation and coordination among the divergent program elements within NOAA itself.

Let me hasten to add that I have nothing but the greatest admiration and respect, personally and professionally, for Dick Frank, NOAA's Administrator. I know his commitment to marine environmental protection to be deep and genuine, and am confident that any organizational or personnel problems which may now exist are only temporary and will be quickly remedied. It is also too early to adequately evaluate a brand-new organizational and authority structure. I did feel under an obligation, however, to respond candidly to the Committee's inquiry and to call the shots as I presently see them.

6. THE MARINE SANCTUARIES PROGRAM

There exists a real need for an effective marine sanctuaries program.

Perceiving this need, President Carter in his Environmental Message last year specifically instructed the Secretary of Commerce "to identify possible sanctuaries in areas where development appears imminent."

Likewise (although Title III had its initial origins in a House bill), this Committee long ago concurred with the House "that the establishment of marine sanctuaries is appropriate where it is desirable to set aside areas of the seabed and the superjacent waters for scientific study, to preserve unique, rare, or

characteristic features of the oceans, coastal, and other waters, and their total ecosystems." S. Rep. No. 92-451, 92d Cong., 1st Sess. (1971).

And high Department of Commerce officials have repeatedly reiterated the promise and potential of a vigorous marine sanctuaries program. For example, then-Acting Secretary of Commerce, John K. Tabor, noted the following in an April 16, 1974 letter to the Speaker of the House:

"In formulating the marine sanctuary provision, the Congress provided a powerful tool for conservation and protection of some of the Nation's more valuable marine areas. This legislation offers potential for development of a landmark program, analogous to well-established Federal programs that are already providing protection to some of our outstanding terrestrial areas such as national parks, national seashores, national wildlife refuges, wild and scenic rivers, and wilderness areas. . . ."

(He also noted that the program "must be developed wisely and carefully to accomplish the intent of the legislation and to assure balanced protection and utilization of marine resources in the face of burgeoning national needs").

Similarly, Commerce Secretary Dent stated the following at the ceremony designating the Nation's first marine sanctuary, the site of the U.S.S. *Monitor*: "There is no heritage upon which marine sanctuaries can rest, no record on which to measure the contribution. But the potential is tremendous viewed in terms of the interrelationship between marine sanctuary programs and those other conservation activities conducted by NOAA under the Coastal Zone Management Act, the Fish and Wildlife Act and other legislation. In this montage, we have what amounts to a substantial body of law spelling out a major national environmental obligation; a commitment to the proposition that as demands for the world's marine resources increase and intensify, the obligation and the opportunity to provide for balanced well managed, environmentally sound use of these resources go hand in hand."

Quoted at Hearings on H.R. 5710 and H.R. 6282 Before the Subcomm. on Fisheries and Wildlife Conservation and the Environment and the Subcomm. on Oceanography of the House Comm. on Merchant Marine and Fisheries, 94th Cong., 1st Sess., Ser. 10, at 42 (1975).

In the face of these pious (and no doubt sincere) declarations, frequently repeated over the past five or six years, it is a source of deep disappointment to conservationists and other concerned Americans that the record of the marine sanctuaries program can be summarized as follows: (1) no funding sought or obtained through FY '78; (2) a grand total of two sanctuaries designated in five years; (3) a paltry half-million dollars in funding requested for FY '79; and (4) although over 170 recommendations and nominations for marine sanctuary site designations have been received by NOAA since last summer, it is proposed to designate such sites over the next 5 years at a rate no greater than 5 to 7 per year.

We believe the pace and vigor of the marine sanctuaries program must be greatly stepped up if marine sanctuaries are to respond to the growing challenges of the balance of this century. We recommend the following immediate measures:

1. Legislation amending Title III to require annual reports to the Congress on NOAA's implementation of its marine sanctuaries responsibilities, analogous to the annual reports currently required under Title II.

2. Legislation amending Title III to require the establishment of a "National Registry of Areas of Marine Significance." for identifying critical areas where ocean planning is needed, serving as a repository of marine information, and of cataloging potential marine sanctuary nominations. The purpose of the Registry system would be to provide a means of formally recognizing a marine site's importance and to create a limited protection status short of actual marine sanctuary designation. While the Registry might be an end in itself for some sanctuary nominations it would also be an integral first step in the overall sanctuary designation process. It could be structured along the lines of the National Registry of Historic Places. The list could be published periodically in the Federal Register and would be accompanied by a separate listing of designated marine sanctuaries. Listing would be based primarily on value and importance rather than on consideration of the more detailed sanctuary designation criteria such as practicality, management cost, and the types of areas already protected by a marine sanctuary. The amendment should require all federal agencies planning major marine actions to consider possible effects of their actions on areas included in the Registry. This will encourage not only the recognition of listed sites as valuable and important marine areas, but

hopefully will help expedite the process of formally designating at least a small proportion of these sites as marine sanctuaries, where such status is appropriate. This Registry proposal was developed by the Center for Natural Areas. Additional details can be submitted on request.

3. Authorization and appropriation of funds for the marine sanctuaries program in FY '79 and '80, at a level not smaller than the \$2 and \$3 million (respectively) authorized by the House.

4. Adoption and implementation by NOAA of "Conceptual Framework" II (nomination/designation), as recommended by the Center for Natural Areas, as the best and most expeditious means of carrying out the marine sanctuaries program. As the Center discussed in detail in its Phase II Study for NOAA's Office of Coastal Zone Management, there are basically three general conceptual frameworks in which the marine sanctuaries program could be carried out: (1) Framework I—places primary emphasis on pre-nomination efforts as the method of achieving Program objectives; (2) Framework II—places primary emphasis on nomination/designation as the method of achieving Program objectives; and (3) Framework III—places primary emphasis on post-designation management as the method of achieving Program objectives. For reasons given in its study report, the Center regarded Framework II as the most promising approach. We understand that NOAA has yet to commit itself to a specific implementation strategy. We believe it should do so as soon as possible.

Finally, we have reviewed the Studds amendment regarding Title III, as approved in Subcommittee on the House side, and support its basic thrust. We would hope, however, that the final version of this amendment would (1) not place upon the Secretary too excessive a burden in listing "those specific activities which must necessarily be regulated by the Secretary" in order to accomplish the purposes of the sanctuary (the word "necessarily" should, perhaps, be deleted), and (2) not limit the "reasonable and necessary" regulations which the Secretary may issue solely to controlling listed activities "within" a designated sanctuary (the Secretary should have the authority, following consultation with other agencies, to issue reasonable and necessary regulations to also control certain activities located outside the sanctuary *per se*, where a direct effect on the sanctuary may nevertheless be anticipated).

We very much appreciate the opportunity to present these views.

QUESTIONS OF THE COMMITTEE WITH ANSWERS BY MR. KAMLET

Question. In your testimony before the Committee, you called for NOAA to give a higher priority to research on the bioaccumulation of persistent, toxic chemicals, and of pathogens, in marine food-chain species. Why do such studies deserve particular attention? What particular questions should such studies address?

NEED FOR FOOD-CHAIN STUDIES

Answer. We believe NOAA should give higher priority to research on the bioaccumulation of persistent, toxic chemicals, and of pathogens, in marine food-chain species for the following reasons:

(a) It is now recognized that many of the most serious adverse environmental and human health impacts of chemical pollutants result from low levels of exposure to persistent chemicals over long periods of time. The great majority of human cancers, for example, are believed to be the result of environmental factors which may take decades to manifest their insidious effects. This being so, one of the most critical attributes of a potential environmental pollutant to consider is its persistence.

(b) Physical scientists and engineers all too often tend to look at the world in mechanical terms. To some of them the study of marine pollution means nothing more than relating the quantity of pollutants entering the ocean to the quantity of ocean water available to dilute the pollutants. It all becomes a matter of mixing rates.

Fortunately, this point of view that "dilution is the solution to pollution" is no longer accepted by the majority of competent marine scientists, and the Congress in its wisdom has likewise rejected this philosophy as a matter of federal law. Of course, the reason that pollution impacts cannot be assessed solely by reference to dispersive physical phenomena is that countervailing biological factors are constantly operating to concentrate and increase the biological availability of noxious chemicals. The phenomena of biological accumulation (the tendency of organisms, particularly aquatic organisms, to accumulate in con-

concentrated form in their tissues fat-soluble and other chemicals from the surrounding environment), bio-magnification (the tendency of organisms in a biological food web to progressively magnify the concentration of certain chemicals in their tissues in the course of passage from low-level planktonic organisms to higher-level predators, including man), and biological transformation (the tendency of microorganisms and other biota, through their interaction with certain chemicals, to transform them into new chemical and physical forms which may increase their biological availability and/or toxicity) are all illustrations of these countervailing biological factors. As a consequence of such considerations, one is more likely to find measurable concentrations of persistent chemicals of concern in the tissues of appropriately selected marine organisms than in either the water column or in bottom sediments. The measurement of pollutant residues in the tissues of marine organisms is, thus, a logical and necessary area of emphasis of marine pollution research which is concerned with long-term fates and effects of pollutants.

(c) All of us are, to some extent, dependent upon the ocean as a source of food. While most Americans may regard seafood as a luxury, it constitutes an essential part of the diet for much of the world's population. The contamination of human seafood by the residues of persistent chemicals is, thus, of very real and direct human health concern. Moreover, since drastic toxicity effects on marine organisms (and drastic effects are the only ones that can be measured under the current state-of-the-art) are relatively rare, and since where toxic reactions occur they are generally far removed in time (and sometimes also in location) from their causes, there is usually little that can be learned from direct field monitoring of toxicity to marine organisms. Also, if pollutants are toxic enough to kill the seafood species that are exposed to them, one need not worry too much about exposing man or other higher predators to contaminated food; it is the survivors which are able to bioaccumulate dangerous chemicals that are often of greatest concern. From this standpoint as well, therefore, foodchain studies are seen as a logical area of emphasis.

(d) Because of the heavy influx (both directly and indirectly) of microorganism-laden sewage into the ocean, along with numerous antibiotics and exotic chemicals, it is necessary to consider the consequences of this as well. While scientists know a modest amount about the fate and effects of bacteria in inland waters, precious little is known about bacterial survival in seawater—although there is evidence to suggest that bacteria may survive for long periods when associated with sediment or suspended particles.

Also, most monitoring of pathogen levels, even in inland waters, relies on measurements of coliform and fecal coliform bacteria as indicators, despite the fact that other microorganisms have been shown to behave differently than coliforms. Thus, the absence of coliforms does not necessarily mean that other bacteria, which may be pathogenic, are also absent. The behavior of coliforms says even less about the presence of disease-causing viruses and protozoa, for example. As poorly developed are the correlations for inland waters, they are even worse for marine waters. When you couple with all of this the fact that bacteria possessing resistance to antibiotics can survive in the marine environment, it becomes a matter of more than passing academic interest to monitor the presence of pathogens in the human food chain, particularly in seafood organisms which may be eaten raw. The injection of exotic microorganisms into pre-existing marine ecological communities may have important ecological implications as well. In short, while apparently not nearly as serious a problem as that of persistent toxic chemicals, the fate and effects of pathogenic microorganisms in the marine environment clearly deserve study.

It should be emphasized that not all of the necessary bioaccumulation and food chain studies should be done in the field. Indeed, there is a great deal to be said for placing substantial emphasis on the design and refinement of laboratory procedures for the screening of wastes for bioaccumulation potential *before* they are allowed to enter the marine environment. Monitoring and research in the ocean are necessary, certainly, but they are by their very nature after-the-fact approaches. It is at least as important to develop the capability to predict and prevent adverse impacts before they happen as it is to be able to measure them once they've occurred. Both sorts of research should be on NOAA's agenda.

Question. What kinds of additional dredged spoil research do you believe NOAA should do? And is there need for closer coordination between the research programs of NOAA and the Corps of Engineers?

DREDGE SPOIL RESEARCH

Answer. The kind of research needed on dredged material ocean dumping is basically the same as that required for the ocean dumping of nondredged wastes—except that given the far greater quantities of polluted dredge spoils dumped, the need for research on the latter is more pressing.

It is true that the Corps of Engineers is presently concluding a five-year, \$30 million "Dredged Material Research Program" at their Waterways Experiment Station in Vicksburg, Mississippi, and that the DMRP has yielded much useful information about dredged material. However, the great majority of DMRP resources were directed at efforts other than elucidation of the fates and effects of dredged material (i.e., habitat development, disposal operations, productive uses, and criteria development). Even the one research project which dealt in part with "environmental impacts" of dredged material concentrated its major attention on short-term, water column effects of dredged material disposal. Moreover, the DMRP did not really undertake to evaluate dredged material impacts at ocean (as opposed to inland or estuarine) disposal sites.

Thus, there is much that NOAA could and should usefully do in the area of dredge spoil effects research, with little risk of duplication of Corps of Engineer effort. In particular, NOAA should concentrate on non-water column effects of contaminated dredge spoils, including the assessment of long-term toxicity to and bioaccumulation by benthic organisms in direct contact with mounds of settled dredged material. Laboratory and field bioassay research should play an important role in such efforts.

Certainly, NOAA and the Corps should coordinate their dredge spoil research activities. However, the problem up until now has not been a lack of coordination. In fact, a big part of the present problem may have arisen from too much coordination—coordination on the part of NOAA to the point of total deference to the Corps' internal research program. At the moment, the danger of too little dredge spoil effects research far outweighs the risk of duplication of effort.

Question. In your testimony you express some concern about ocean pollution research being performed by three different parts of NOAA. In your view, has this division of responsibility caused coordination problems? If so, what steps would you suggest NOAA take to improve coordination?

COORDINATION WITHIN NOAA

Answer. It does appear to me that NOAA has had some problems to date in coordinating the ocean pollution research functions of the three major different parts of NOAA involved in such activities. The recent appointment of a full-time Assistant Administrator for Research & Development should improve matters somewhat. However, it will probably be necessary, in order for NOAA to achieve an acceptable degree of internal coordination of marine pollution research functions, for the Administrator to designate a high-level agency official (having direct access to the Administrator) as NOAA's "point person" or coordinator for these functions. It probably doesn't matter much whether this is done by giving an existing NOAA office or official (e.g., the Assistant Administrator for R. & D.) explicit status as coordinator, or by establishing a new lead-office of marine pollution research outside of the existing divisional structure.

One thing is clear: if NOAA's research programs under Title II of the MPRSA and S. 1617 (if and when enacted) are to function effectively, three presently co-equal divisions cannot continue to proceed independently. Someone (below the Administrator) with decisionmaking authority must be designated to coordinate the agency's marine pollution research activities.

Question. In your statement you call for EPA, NOAA, and the Corps of Engineers to pool and coordinate their resources for work at particular sites. Has there been little such coordination in the past? If so, what particular types of cooperation are needed?

INTERAGENCY COORDINATION ON DISPOSAL SITE RESEARCH

Answer. There has been too little coordination in the past among EPA, NOAA, and the Corps of Engineers in connection with studies at particular dumpsites only in the sense that there have been far too few dumpsite studies. In the few cases

where such studies were done and more than one agency was involved (e.g., evaluation of alternative dumping areas in the New York Bight, and studies of Deep Water Dumpsite-106), interagency coordination has been pretty good.

It is, however, the conduct of dumpsite-specific research which presents the greatest theoretical risk of duplication of effort and, therefore, represents the greatest opportunity for coordination of efforts. This is so because the two regulatory agencies under the MPRSA—EPA and the Corps—have at least implicit authority to engage in short-term dumpsite research and monitoring, in support of their criteria-setting, permit-issuing, and site-selection responsibilities. NOAA's mandate under Title II, of course, encompasses both short- and long-term ocean dumping and marine pollution research. There is no obvious or appropriate way to delineate each agency's role in a way that will avoid the possibility of overlap.

Coordination of efforts, thus, clearly makes sense. However, coordination must not be allowed to take the form of one agency's undue deference to another's alleged "prerogatives." Nor must needed research be put off until formal inter-agency agreements or memoranda of understanding can be negotiated and finalized.

Senator HOLLINGS. The committee will be in recess subject to the call of the Chair.

[Thereupon, at 11:25 a.m., the hearings were recessed, subject to the call of the Chair.]

[The following information was subsequently received for the record:]

STATEMENT OF THE SIERRA CLUB

The Sierra Club welcomes this opportunity to comment on the Marine Protection, Research and Sanctuaries Act of 1972 (P.L. 92-532). This statement will particularly address Title II—Research on Ocean Dumping and Title III—Marine Sanctuaries.

We believe that continued research into the biological effects of ocean pollution, as authorized by Title II, is urgently needed. We have testified before the Environmental Protection Agency concerning the disposal of laboratory chemicals at sea, and have been forced to say that we don't know *how* toxic the chemicals are because not enough research has been done. Similarly, we in the Sierra Club have been following very closely the Bureau of Land Management's offshore oil leasing program and the associated environmental studies, and have been quite dismayed at the mechanistic, non-biological research orientation of its efforts. The National Academy of Sciences has just released a review of the BLM program which came to the same conclusions. With disasters like the AMOCO Cadiz break-up seeming to occur with increasing frequency, we cannot afford to skimp on our scientific investigation of these problems and how to mitigate them. We strongly support reauthorization of Title II.

The Marine Sanctuary title provides the opportunity to designate areas of the ocean waters, other coastal waters, and the Great Lakes for the purpose of protecting or restoring the waters for conservation, recreation, ecological and esthetic values. The Sanctuary program is a new and difficult one and the Office of Ocean Management is somewhat stymied in getting the program underway. The level of funding requested for FY 1979 (\$500,000) is insufficient to administer a program that is receiving increasing public attention and support. It is also essential to step up activity in the face of increased leasing for the exploration, development and production of oil and gas from the OCS, especially in frontier areas. Essential coordination between the two programs has been lacking.

There is a long standing need for a marine sanctuaries program. Two marine areas especially have received the highest recommendation—the Santa Barbara Channel, including the water surrounding the Channel Islands of California, and the Georges Bank off Cape Cod. The importance of preserving these offshore areas inspired the original legislation in 1967 to establish a national program of marine sanctuaries. Both the Santa Barbara Channel and Georges Bank were specifically mentioned in the 1967 legislation as worthy of sanctuary dedication. Eleven years have now elapsed since these candidate areas were proposed, and still they have not been designated and protected. Although strong federal interest favors their protection, the threat today to the marine values in these two areas calls for a much more expeditious effort to dedicate them as sanctuaries. Time is running out with respect to arresting the deterioration of our marine and estuarine resources.

As illustrated above, progress is very slow-moving and yet time is of the essence, only two sanctuaries—Monitor Marine Sanctuary (North Carolina) and Key Largo Coral Reef (Florida)—have been designated to date. The Office of Ocean Management has inventoried 170 potential sanctuary sites. These areas are now undergoing a careful and time-consuming screening review. There has been a considerable slippage in the review timetable, as much as seven months. By this April, 1978, the Final Environmental Impact statements were to have been submitted to CEQ. Designation of marine sanctuaries by the President was expected by May 1. At present NOAA expects to designate only five to seven sites per year for the next five years. This is less than one-quarter of the potential sites presently inventoried at the Office of Ocean Management. Funds for a larger review staff seem essential if the program is to get back on track. More money and/or more staff do not, per se, insure greater competency or more effective performance but they do make possible an upgrading that is very vital. We cannot overemphasize the importance of an efficient, effective sanctuary designation program.

We would like to address several points for improvement in the marine sanctuary program.

We support authorization and appropriation of funds at no less than the amount authorized by the House of Representatives—\$2 million for FY 1979 and \$3 million for FY 1980.

The Marine Protection, Research and Sanctuaries Act and the Coastal Zone Management Act, both passed in 1972, provide for sanctuary protection of off-shore areas and estuaries, respectively. Because of the vital marine interface between these two related ecological regions, much greater attention should be given to joint protective measures by coordinating the provisions of both bills. The bills are each administered by the Commerce Department. The possibility should be considered that they both be administered in the same agency and even out of the same office in the joint dedication of marine-estuarine sanctuaries. A joint program would insure a more efficient implementation of the intent of Congress.

The sanctuary concept as first proposed in 1967 was designed primarily to protect the interests of fishermen and assure a sustained yield of fisheries resources. This intent of the bill remains paramount. Every effort must be made to gain the confidence of fishermen in this legislation important to their interests. We therefore support the Studts amendments to H.R. 10661, the companion bill to your legislation, which were adopted by the House Merchant Marine and Fisheries Committee on March 16, 1978. These amendments will promote acceptance of the sanctuary program by specifying the activities to be regulated before the designation of an area as a sanctuary is made. We believe that in this manner those who derive their livelihood from the sea will come to see this program as a protection for their way of life rather than as another layer of federal bureaucracy.

One of the difficulties of this new sanctuary program is defining exactly what it means. Its multiple use aspects compound the complexity of a protection program in a marine environment where traditional land use and zoning categories have never been applied. The difficulty is compounded again when it is realized that special protection provisions must be defined for each separate sanctuary. Nominations are received from many different sources for marine sanctuaries. A major stumbling block (on the local level) for nomination and eventual designation of sanctuaries is the lack of funding available for such thorough research as is required for adequate study and development of the necessary technical data base—analyses of geological, marine features, profile descriptions, cataloguing of resources and values, developmental impacts existing and anticipated, sanctuary restrictions on use, etc.

We request an authorization in the Act providing grants for technical assistance to the interested local areas to carry out this research. In this way, complete involvement and cooperation on the local level in the nomination and designation of marine sanctuaries can be more fully assured. Further, it is our impression that state agencies are not altogether sure what their roles are in the sanctuary program. Since their response to the nomination procedure has been good, especially in California, they are eager to move with a stepped up, more clearly defined dedication effort. Such a grant funding provision would facilitate such an effort.

We would like to lend our support to the recommendation of the Center for Natural Areas to amend Title III "to require the establishment of a 'National Registry of Areas of Marine Significance,' for identifying critical areas where ocean planning is needed, serving as a repository of marine information, and cataloguing potential marine sanctuary nominations."

The Sierra Club is prepared to assist in any way we can with a program that establishes a new way of looking at ocean resources with the purpose of creating a balanced use of this vast but nonetheless fragile environment. The Office of Ocean Management is doing a commendable job in attempting to gain momentum for the program nationwide. Increased congressional support of these efforts should be commensurate with the national and even world significance of the sanctuary idea.

(This statement was prepared with contributions by Don Bailey, Linda M. Billings, Fred Eissler, Sally Kabisch, and Milton Oliver.)

The Marine Sanctuaries Program: A Framework for Critical Areas Management in the Sea

by Michael C. Blumm and Joel G. Blumstein

The search for a viable national policy toward the marine environment has been an elusive one. For more than a decade Congress has been calling for a "balanced" and "comprehensive" approach to the management of the nation's marine resources.¹ As attempts continue in the 95th Congress to elucidate and implement such a national policy,² a nearly forgotten federal program is rising like a phoenix from the ashes of bureaucratic obscurity to play a potentially prominent role in assuring that the nation's approach to its marine resources is both comprehensive and balanced. Established over five years ago by Title III of the Marine Protection, Research and Sanctuaries Act of 1972 (MPRSA),³ but largely ignored until the recent recognition given to it by President Carter in his Environmental Message,⁴ the Department of Commerce's marine sanctuaries program provides a

means of comprehensively managing marine activities by designating and assuring the protection of marine areas of environmental value.

Of course, Title III of the MPRSA is not the only congressional initiative aimed at controlling the allocation of marine resources. Increasing competition for the utilization of these resources has precipitated a flurry of legislative activity in recent years. Perhaps the best starting point for understanding the potential of the marine sanctuaries program is to highlight this intensifying competition and the congressional reactions it has fostered. For example, the use of the marine environment as a national sink for the disposal of waste products, such as sewage sludge, industrial wastes, and dredge and fill materials,⁵ has resulted in the enactment of legislation designed to control marine pollution.⁶ Similarly, a growing dependence on the waters off the United States' coasts as a major source of the world's food supply⁷ led to an extension of the nation's jurisdiction over its offshore fisheries.⁸ Likewise, increasing exploitation of oil and gas reserves on the outer continental shelf⁹ prompted a com-

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The authors wish to acknowledge the assistance of their colleagues at the Center for Natural Areas: John Epting, David Laist, Stark Ackerman, and John Noble. The Center for Natural Areas is a non-profit research corporation specializing in environmental management from an interdisciplinary perspective.

1. Marine Resources and Engineering Development Act of 1966, §2(a), 33 U.S.C. §§1101-1108; see also S. Res. 22, 93d Cong., 2d Sess., 120 CONG. REC. 3472 (1974) (establishing the National Ocean Policy Study). N.B.: throughout this article the term "marine" will be used to connote both oceanic and Great Lakes waters.

2. H.R. 9708, introduced in the House of Representatives on October 20, 1977, and entitled the National Oceanic and Atmospheric Administration Organization Organic Act of 1977, declares it a national policy to create and maintain conditions under which ocean, coastal, and atmospheric resources can fulfill the needs of present and future generations without harm to the environment. The bill also recognizes the federal government's role as a public trustee of ocean and coastal resources under its sovereign jurisdiction, declares the necessity for ensuring that federal programs affecting ocean and coastal resources allocation be consistent; and requires that ocean and coastal resources be periodically and systematically inventoried and assessed. H.R. 9708, 95th Cong., 1st Sess. §101(c) (1977). The bill would also designate the National Oceanic and Atmospheric Administration as the lead federal agency for ocean programs.

3. 16 U.S.C. §§1431-1434, ELR STAT. & REG. 41824:1 (hereafter MPRSA). The MPRSA is, of course, better known for its regulation of ocean dumping in Title I and its establishment of oceanographic research programs created by Title II (33 U.S.C. §§1401-1444, ELR STAT. & REG. 41821). For an earlier assessment of Title III, see Kifer, *NOAA's Marine Sanctuaries Program*, 2 COASTAL ZONE MGMT. J. 177 (1975); see also Laist & Odell, *The Marine Sanctuaries Program Finally Surfaces*, 80 AUDUBON no. 2 (Mar. 1978).

4. The Environment—The President's Message to Congress, 7 ELR 50057, 50066 (1977).

5. According to the Environmental Protection Agency (EPA), over 2.7 million tons of industrial wastes and over 5.2 million tons of sewage sludge were dumped into the oceans in 1976. ENVIRONMENTAL PROTECTION AGENCY, OCEAN DUMPING IN THE UNITED STATES—1977, at 7, 13, 25. However, dredge or fill material constitutes by far the largest single source of ocean dumping, with an estimated 118 million tons amounting to more than 90 percent of all ocean dumping in 1974. COUNCIL ON ENVIRONMENTAL QUALITY, ENVIRONMENTAL QUALITY: SEVENTH ANNUAL REPORT, at 279 (1976).

6. The principal federal statutes regulating marine pollution are the Federal Water Pollution Control Act, 33 U.S.C. §§1251-1376 ELR STAT. & REG. 42101; Title I of the MPRSA, 33 U.S.C. §§1401-1421, ELR STAT. & REG. 41821; the Oil Pollution Act of 1961, 33 U.S.C. §§1001-1016, ELR STAT. & REG. 41715; and the Ports and Waterways Safety Act of 1972, 33 U.S.C. §§1221-1227, ELR STAT. & REG. 41718. It should be noted, however, that an important means of controlling marine pollution—the ocean discharge criteria mandated by §403(c) of the Federal Water Pollution Control Act—has yet to be implemented by the Environmental Protection Agency.

7. With an estimated one-fifth of the world's marine fishery resources within 200 miles of its coasts, the United States has witnessed the volume of fish commercially harvested off its coasts double in the period 1948-72 to 50 million metric tons. Almost all of this increment is due to increases in foreign catches. The National Marine Fisheries Service reports that, as a result of the increased harvests, over 30 species of fish have been overfished or fully utilized. See SENATE COMM. ON COMMERCE, SCIENCE, AND TRANSPORTATION, CONGRESS AND THE NATION'S OCEANS: MARINE AFFAIRS IN THE 94TH CONGRESS, 95th Cong., 1st Sess. 3 (1977).

8. Jurisdiction over the nation's offshore fishery resources was extended to establish a 200-mile fishery conservation zone by the Fishery Conservation and Management Act of 1976, 16 U.S.C. §1801 *et seq.*

9. Since 1972 mineral leasing on the outer continental shelf has expanded dramatically. The 9.3 million acres under lease as of November 1976 were more than double the 4.3 million acres under lease three years earlier. DEPT. OF THE INTERIOR, MINING AND MINERALS POLICY 121 (1977). In addition, 1.1 million acres

plete reexamination of the federal government's mineral leasing system.¹⁰ And the anticipated reliance on the sea to support energy facilities, such as deepwater ports, liquefied natural gas terminals, and floating nuclear power plants,¹¹ has led to federal studies and legislation aimed at providing for the efficient and safe siting of these facilities.¹²

While each of these legislative responses concerns a particularly pressing marine resource allocation problem, collectively they have not brought the nation perceptively closer to the establishment of a balanced and comprehen-

sive approach to the protection and use of marine resources. Moreover, because these federal actions have primarily been reactions to initiatives proposed by private entities, they cannot plan for and manage marine activities in a positive manner, a crucial element in developing a viable national marine policy. The marine sanctuaries program, on the other hand, is not limited to regulating particular marine-related activities and thus has the potential to provide a critically needed positive link in the ongoing efforts to develop a balanced and comprehensive marine policy.

Under Title III of the MPRSA, areas of important conservation, recreation, ecological, or esthetic value in ocean, estuarine, or Great Lakes waters can be officially designated and managed to foster such values. While certain uses within these areas will be regulated, marine sanctuary designation does not serve to preclude all uses. Central to the program's potential role as an important link in the nation's efforts to formulate a balanced approach to marine management is its policy of permitting all uses compatible with a sanctuary's primary purpose.¹³ In short, the goal of the marine sanctuaries program is "to preserve and restore" marine areas rather than to build a wall around them.

Title III's broad legislative mandate to provide positive marine planning and management should enable the marine sanctuaries program to serve as a water-based counterpart to terrestrial reserves, such as national and state parks, forests, wildlife refuges, and wilderness areas. For over 100 years the nation has recognized the importance of preserving and protecting pristine and fragile areas of its public lands. Yet these efforts have been directed almost exclusively to areas above the high water mark of the oceans and Great Lakes, ignoring the more than 43 percent of the nation's public lands lying offshore.¹⁴ Consequently, the authority conferred by Title III can serve to extend seaward the umbrella of protection now provided to other areas of special natural or cultural value. Similarly, the marine sanctuaries program appears capable of complementing the ongoing efforts of coastal states to develop programs to better manage the land and water resources in their coastal zones.¹⁵

Thus, the marine sanctuaries program has the potential to fulfill many functions: from providing a positive planning element for federal programs designed to regulate marine developmental initiatives to extending sea-

have been leased since November 1976, and five new lease sales are expected in 1978. For assessments of OCS oil and gas development, see U.S. CONGRESS, OFFICE OF TECHNOLOGY ASSESSMENT, COASTAL EFFECTS OF OFFSHORE ENERGY SYSTEMS, vols. I and II (1976); and COUNCIL ON ENVIRONMENTAL QUALITY, OIL AND GAS IN COASTAL LANDS AND WATERS (1977).

10. On July 15, 1977, the Senate approved the Outer Continental Shelf Lands Act Amendments of 1977 (S. 9, 95th Cong., 1st Sess. (1977)), and on February 2, 1978 the House passed its own version of these amendments (S. 9, passed in lieu of H.R. 1514, 95th Cong., 1st Sess. (1977)). If agreement is reached, the OCS Lands Act Amendments would alter present OCS leasing procedures considerably, by requiring the Secretary of the Interior to develop a comprehensive leasing plan, requiring the development of improved OCS safety and environmental procedures, and providing a new framework for oil spill liability and compensation. The amendments would also increase the amount of OCS revenues to be shared by coastal states affected by OCS activity. At last report, a conference committee was expected to attempt to resolve the differences between the Senate and House versions of the Amendments. It should be noted, however, that a similar attempt to resolve differences on this topic was unsuccessful in the 94th Congress.

11. The construction of two deepwater ports has been approved by the Department of Transportation—LOOP, off the coast of Louisiana, and Seadock, off the coast of Texas. Plans for two other ports, Merryport and Delaware Bay, are in the early stages of formulation. Two liquefied natural gas facilities are presently operational: DISTRIGAS in Everett, Massachusetts and Phillips/Marathon on the Kenai Peninsula in Alaska. In addition, shipments are expected to begin early in 1978 to LNG facilities at Cove Point, Maryland, and Elba Island, Georgia, and construction of a facility at Lake Charles Harbor, Louisiana, was recently approved. Three other facilities, at Oxnard, California; Port O'Connor, Texas; and Kenai, Alaska are presently under consideration. See U.S. CONGRESS, OFFICE OF TECHNOLOGY ASSESSMENT, TRANSPORTATION OF LIQUEFIED NATURAL GAS, 29-38 (1977) Two floating nuclear power plants have been proposed off the coast of New Jersey and are under consideration by a licensing board of the Nuclear Regulatory Commission. See *Atlantic Generating*, NRC Docket No. STN 50-477-78.

12. See, e.g., the Office of Technology Assessment's analysis of oil and gas, deepwater port, and floating nuclear power plant siting issues off the coasts of New Jersey and Delaware, *supra* note 9, and OTA's LNG study, *supra* note 11. Recent legislation designed to assist in the effective siting of these facilities includes the Deepwater Port Act of 1974, 33 U.S.C. §§1501-1524, and the Coastal Zone Management Act Amendments of 1976, 90 Stat. 1013 (which establish a \$1.2 billion Coastal Energy Impact Program to assist states and localities in planning for and managing the impacts of energy development in their coastal zones). However, no new comprehensive legislation has been enacted to govern the siting of LNG facilities and floating nuclear power plants. Consequently, these remain principally governed by the Natural Gas Act of 1938, 15 U.S.C. §717a *et seq.* and the Atomic Energy Act of 1954, 42 U.S.C. §2011 *et seq.*

13. See notes 51 and 52 and accompanying text, *infra*.

14. If the estimated 570 million acres of outer continental shelf lands are compared to the approximately 750 million acres of federal public lands lying above the high water mark, over 43 percent of the nation's public lands lie beneath the seas. Muys, *The Federal Lands*, in FEDERAL ENVIRONMENTAL LAW (Dolgin and Guilbert, eds.) 493, 504 (1974). One commentator has stated:

If one takes an expansive meaning of the term "land," then surely the most extensive system of lands under federal control is the outer continental shelf of the United States.

BEAN, EVOLUTION OF NATIONAL WILDLIFE LAW 187 (1977).

15. State coastal zone management programs are being developed pursuant to the Coastal Zone Management Act, 16 U.S.C. §1451 *et seq.* See notes 40, 54, and 55 *infra*, for a discussion of the similarities and relationships between the marine sanctuaries program and the coastal zone planning program.

ward the protection afforded terrestrial reserves to complementing coastal zone planning efforts. The potential of the program is further enhanced by the unique role which it offers to members of the general public to shape the form and direction of the program. Unlike most other federal programs, which restrict the input of the public and other nongovernmental entities to reacting to preformulated proposals, Title III of the MPRSA encourages these groups to play an affirmative and aggressive role in its procedures. The principal avenue for such input is in the form of sanctuary nominations to which the Department of Commerce must respond. This opportunity to participate actively in the designation and protection of marine areas of natural and cultural significance makes the program an especially important one for the public to understand and monitor. One of the basic premises of this article is that the program's near dormancy during its first five years was a result, in large part, of a lack of significant public involvement. The absence of public outcry over the fact that the program has never been funded¹⁴ is only the most poignant testament to this thesis. Consequently, throughout this article special emphasis will be placed upon recommending mechanisms to facilitate effective public involvement. To this end changes in administrative procedures will be suggested where appropriate.

The remainder of the article is devoted to an examination of the marine sanctuaries program, its past, its present, and its potential. Section I explores the statute that created the program and its legislative history. Section II analyzes administrative efforts to implement the program. This analysis includes an examination of the program's operative guidelines and the sanctuaries which have been designated and nominated. Section III describes two recent events which have served both to increase the pace of program activity and alter the manner in which the program will be implemented in the future: the President's Environmental Message and an administrative reorganization within the Department of Commerce. Section IV then analyzes several key concepts which are critical to effective implementation of the program. Finally, section V summarizes the legislative and administrative changes needed to improve implementation of the program and postulates some potential effects that a fully implemented marine sanctuaries program may have on future efforts to plan for and manage marine resources.

I. Title III of the Marine Protection, Research and Sanctuaries Act

A. Legislative Background

The genesis of the legislation which established the marine sanctuaries program can be traced to the introduction of 11 bills in the House of Representatives in 1968. The bills were basically a reaction to the public outrage stemming from a series of incidents that resulted in the degradation of popular marine recreation areas. The most notable of these incidents were the dumping of nerve gas and oil wastes off the coast of Florida and the infamous Santa Barbara oil spill. These bills, which contemplated the establishment of marine sanctuaries off the

coasts of California, Massachusetts, and New Hampshire, were directed in large measure at instituting moratoria on mineral exploration. Other purposes, however, were also recognized, as noted by the Virginia Institute of Marine Sciences:

Marine sanctuaries were proposed as a mechanism to attain a national balance of uses in the marine environment and ensuring compatibility of conflicting uses. Some witnesses advocated marine zoning to minimize conflicts between competing uses. The concept of sanctuaries as areas for studies of natural systems unencumbered by pollution was brought forward as was the concept of preserving marine areas so that scenic beauty, ocean recreation, and fishing activities could be perpetuated.¹⁷

But largely due to their emphasis on mineral exploration moratoria, these bills attracted potent industry opposition and were not even reported out of the House Merchant Marine and Fisheries Committee during the 90th Congress. While similar bills were introduced in the 91st Congress, only after the completion of the Council on Environmental Quality's study of ocean dumping¹⁸ was a marine sanctuaries provision reported by the House Committee. This provision was incorporated into H.R. 9727,¹⁹ a bill which also contemplated the regulation of ocean dumping.

In the House Report accompanying H.R. 9727 the House Merchant Marine and Fisheries Committee explained the purposes which the marine sanctuaries provision was designed to serve:

Title III deals with an issue which has been of great concern to the Committee for many years: the need to create a mechanism for protecting certain important areas of the coastal zone from intrusive activities by man. This need may stem from the desire to protect scenic resources, natural resources or living organisms: but it is not met by any legislation now on the books. . . . The pressures for development of marine resources are already great and increasing. It is never easy to resist these pressures and yet all recognize that there are times when we may risk sacrificing long-term values for short-term gains. The marine sanctuaries authorized by this bill would provide a means whereby important areas may be set aside for protection and may thus be insulated from the various types of "development" which can destroy them.²⁰

17. VIRGINIA INSTITUTE OF MARINE SCIENCES, MARINE AND ESTUARINE SANCTUARIES, Report No. 70, at 9 (1973).

18. COUNCIL ON ENVIRONMENTAL QUALITY, OCEAN DUMPING—A NATIONAL POLICY (1970). Other studies which were instrumental in focusing legislative attention on the problems confronting the coastal and marine environment include the Commission on Marine Science, Engineering and Resources' final investigative report, OUR NATION AND THE SEA (1969) (prepared pursuant to §5(h) of the Marine Resources and Engineering Development Act of 1966, Pub. L. 89-454); DEPT. OF THE INTERIOR, NATIONAL ESTUARINE POLLUTION STUDY (1969) (prepared pursuant to §5(g) of the Clean Water Restoration Act of 1966, Pub. L. 89-753); and the BUREAU OF SPORT FISHERIES AND WILDLIFE AND BUREAU OF COMMERCIAL FISHERIES: NATIONAL ESTUARY STUDY (1970) (prepared pursuant to §2 of the Estuary Protection Act of 1968, Pub. L. 90-454). For a critical evaluation of the latter two studies, see Hedeman, *Federal Wetlands Law: An Examination*, in REITZEL, ENVIRONMENTAL PLANNING: LAW OF LAND AND NATURAL RESOURCES at two-12-16 (1974).

19. 92d Cong., 1st Sess. (1971).

20. H.R. REP. NO. 361, 92d Cong., 1st Sess. 15 (1971).

16. What little program activity that has been accomplished has been supported through general NOAA operating funds.

After passage in the House on September 9, 1971, the Senate Commerce Committee considered H.R. 9727 and reported an amended bill on November 12, 1971.²¹ Twelve days later, on November 24, 1971, the Senate passed an amended version of the House bill which did not include an analog to Title III. As the Senate Commerce Committee's report explained, there were two reasons for this. First, while the Committee noted that the continental shelf was within the jurisdiction of the federal government,²² it believed that control over the superjacent water column outside the limits of the territorial sea²³ and the contiguous zone²⁴ was beyond the nation's jurisdiction.²⁵ The second reason given for the deletion of Title III was that the Committee believed that the reservation of certain continental shelf areas for

special protection was already within the authority of the Secretary of the Interior under the Outer Continental Shelf Lands Act.²⁶ Nevertheless, while the Senate Commerce Committee did not agree with the approach adopted by the House, it was in full agreement with the concept of establishing marine sanctuaries:

The Committee believes that the establishment of marine sanctuaries is appropriate where it is desirable to set aside areas of the seabed and the superjacent waters for scientific study, to preserve unique, rare, or characteristic features of the oceans, coastal, and other waters, and their total ecosystems. In this we agree with members of the House of Representatives. Particularly, with respect to scientific investigation, marine sanctuaries would permit baseline ecological studies that would yield greater knowledge of these preserved areas both in their natural state and in their altered state as natural and manmade phenomena effected change.²⁷

To resolve the differences between the House and Senate versions of H.R. 9727, a Conference Committee was convened. It was not until October 9, 1972, that the Conference Committee was able to arrive at a compromise bill which included a Title III almost identical to that passed by the House, except for certain modifications regarding the Title's applicability to foreign citizens.²⁸ When signed into law on October 23, 1972,²⁹ over 13 months after it originally passed the

21. S. REP. NO. 451, 92d Cong., 1st Sess. (1971).

22. Federal jurisdiction over the seabed and subsoil of the outer continental shelf was established by virtue of the Truman Proclamation of 1945 (Exec. Order No. 9633, 10 Fed. Reg. 12305 (1945)) and the Outer Continental Shelf Lands Act of 1953, 43 U.S.C. §1331 *et seq.* This assertion of jurisdiction was subsequently endorsed in 1958 at the First Law of the Sea Conference by the Convention on the Continental Shelf (15 U.S.T. 471, T.I.A.S. No. 5578), which defined the continental shelf to include the soil and seabed adjacent to the coast to a depth of 200 meters and beyond that where the depth of the water permitted the exploitation of the natural resources of the soil and seabed. Proposed Article 76 of the Third Law of the Sea Conference would alter the definition to include the outer edge of the continental margin or to the 200-mile limit where the margin does not extend that far. See Third United Nations Conference on the Law of the Sea, *Informal Composite Negotiating Text*, Art. 76 (1977).

23. Historically, the limit of the territorial sea, that area of the oceans over which adjacent coastal nations exercise sovereign jurisdiction, was three miles. KNIGHT, *THE LAW OF THE SEA: CASES, DOCUMENTS, AND READINGS* 76 (1975). However, during this century disagreements among coastal nations concerning the breadth of this territorial sea grew so pronounced that no agreement could be reached on this issue during the First U.N. Law of the Sea Conference. *Id.* at 316-19. Article 3 of the 1977 *Informal Composite Negotiating Text*, *supra* note 22, would sanction a 12-mile territorial sea. In the United States, which presently claims only a 3-mile territorial sea, jurisdiction over this area was ceded by the federal government to the states by virtue of the enactment of the Submerged Lands Act of 1953, 43 U.S.C. §1301 *et seq.*

24. The contiguous zone, an area in which coastal nations exercise limited powers to protect special interests, has substantial historical precedent in international law. Knight, *supra* note 23, at 79-133. Article 24 of the 1958 Convention on the Territorial Sea and the Contiguous Zone (15 U.S.T. 1606, T.I.A.S. No. 5639) sanctioned a 12-mile contiguous zone in which coastal nations may take actions to prevent infringement of their customs, fiscal, immigration, or sanitary regulations. Proposed Article 33 of the 1977 *Informal Negotiating Text*, *supra* note 22, would expand this zone to 24 miles. In practice, however, the United States has enforced special contiguous zones considerably beyond the limits sanctioned internationally, such as the 62-mile zone authorized by the 1935 Anti-Smuggling Act (19 U.S.C. §§1701-1711), and, of course, the 200-mile fishery conservation zone authorized by the Fishery Conservation and Management Act, *supra*, note 8. Most recently, §58 of the Clean Water Act of 1977 extended from 12 to 200 miles the jurisdiction of the United States to assess clean-up costs for tanker oil spills. See Federal Water Pollution Control Act, §§1321(b)(3) and (f), ELR STAT. & REG. 42101.

25. S. REP. NO. 451, 92d Cong., 1st Sess. 15 (1971).

26. *Id.* It must be noted, however, that the House was more correct in recognizing that the authority contained in Title III was considerably broader in scope than that contained in the OCS Lands Act. The authority conveyed to the Secretary of the Interior by §8 of the OCS Lands Act, 43 U.S.C. §1337(a), to delete certain areas from proposed OCS mineral lease sales for lack of information, esthetic, environmental, geologic, or other reasons is exercised only on an ad hoc, case-by-case basis, does not protect deleted areas from inclusion in subsequent lease sales (or from other developmental activities), and is not tied to a program with a mission to comprehensively review marine areas to identify and protect sites of special value. Moreover, permanent withdrawals pursuant to §12 of the OCS Lands Act, 43 U.S.C. §1341, have only been utilized twice in 24 years: in 1960, when the Key Largo Coral Reef Preserve was established (Presidential Proclamation No. 3339, 25 Fed. Reg. 2352 (1960)), and again in 1969, with the establishment of the Santa Barbara Channel Ecological Preserve (Public Land Order 4587, 34 Fed. Reg. 5655 (1969)). The infrequency of use of these permanent withdrawals from mineral leasing might best be explained by the fact that no regulations or guidelines have ever been issued specifying eligibility criteria for these withdrawals.

27. S. REP. NO. 451, 92d Cong., 1st Sess. 15 (1971).

28. The Conference Committee agreed that sanctuary regulations would be applicable to those foreign citizens subject to United States jurisdiction either by virtue of "recognized principles of international law" or as a result of specific intergovernmental agreements. H.R. REP. NO. 1546, 92d Cong., 2d Sess. 18 (1972).

29. October of 1972 may be the most remarkable month in the history of this nation's attempts to develop a balanced approach to the management of its natural resources. In that month—indeed within an 18-day period, from October 9 to October 27—a plethora of environmental and natural resources legislation became law. This fertile period witnessed the establishment of three historic sites; the designation of four wilderness areas; the establishment of or additions to three national monuments; the establishment of a national wildlife refuge; and the establishment of a national seashore and three national recreation areas. In addition, comprehensive legislation was enacted to control water, noise, and pesticide pollu-

House, Title III of the MPRSA became the first, and to date remains the only broad-based, comprehensive federal legislation capable of striking a balance between the pressures to develop and exploit marine areas for their resources and the need to protect and conserve significant marine areas.

B. Statutory Provisions

Title III of the MPRSA authorizes the Secretary of Commerce, with the approval of the President, to designate marine sanctuaries in ocean waters as far seaward as the edge of the continental shelf, in coastal waters subject to the ebb and flow of the tides, and in the Great Lakes or their connecting waters.¹⁰ Areas may be designated to preserve or restore their "conservation, recreational, ecological, or esthetic values."¹¹ Unlike most reservations of terrestrial public lands, marine sanctuaries do not require congressional approval for designation.

Coordination

Section 302 of Title III contains an array of provisions designed to assure that cooperation and coordination take place between the Secretary of Commerce and other federal agencies, involved states, members of the public, and foreign governments prior to sanctuary designation. The successful implementation of these provisions is crucial, since after sanctuary designation many of these entities are prohibited by another provision of §302 from authorizing activities which might adversely affect designated sanctuaries.

The first of the cooperative and coordinative elements of §302 requires the Secretary of Commerce to consult with the Secretaries of State, Defense, Interior, and Transportation, the Administrator of the Environmental Protection Agency, and the heads of other interested agencies prior to designating an area as a sanctuary.¹² Second, the Secretary must also consult with and consider the views of state officials if a proposed sanctuary would include waters within the state's jurisdiction.¹³ Third, the governor of an involved state may veto a sanctuary designation within that state's jurisdiction within 60 days of the notice of designation.¹⁴ Fourth, when a sanctuary includes areas of ocean waters outside the "territorial jurisdiction" of the United States, the Secretary of State is directed to take "appropriate" action to negotiate international agreements to protect the sanctuary and promote the purposes for which it was

established.¹⁵ Fifth, the Secretary of Commerce is required to hold public hearings in those coastal areas that would be "most directly affected" by sanctuary designation.¹⁶ Sixth, the Secretary of Commerce must consult with interested federal agencies prior to the promulgation of regulations to control activities within the sanctuary.¹⁷ Finally, §302 requires that such regulations be promulgated "in accordance with recognized principles of international law."¹⁸

Consistency Certification

Having provided an opportunity for interested federal agencies, coastal states, and members of the public to participate in the establishment of marine sanctuaries, Title III proceeds to ensure that these entities do not engage in activities that could harm the integrity of designated sanctuaries. This protection, provided by §302(f) of the MPRSA, takes two forms: the issuance of site specific regulations to control activities within each designated sanctuary and the requirement that all governmental authorizations be consistent with sanctuary values. The latter mechanism, referred to as the consistency requirement, stipulates, in pertinent part, that:

... no permit, license, or other authorization issued pursuant to any other authority shall be valid unless the Secretary [of Commerce] shall certify that the permitted activity is consistent with the purposes of this title and can be carried out within the regulations promulgated under this section.¹⁹

The consistency certification in effect gives the Secretary of Commerce the opportunity to veto permits, licenses, and other authorizations of activities that would adversely affect designated sanctuaries. Similar in many respects to the federal consistency requirements of §307 of the Coastal Zone Management Act (CZMA),²⁰ §302(f) provides a clear indication that Congress intended the designation of marine sanctuaries to play a prominent role in the development of a comprehensive approach to the nation's utilization and preservation of its marine resources. In fact, because §302(f) applies to any permitting authorizations issued "by any other authority," it appears considerably broader than the scope of authority contained in the CZMA's consistency provisions, since it does not appear to be limited to federal permits,

tion; to provide for the protection of marine mammals; and to establish state coastal zone planning programs. See SENATE COMM. ON INTERIOR AND INSULAR AFFAIRS, CONGRESS AND THE NATION'S ENVIRONMENT: ENVIRONMENTAL AND NATURAL RESOURCES AFFAIRS IN THE 92D CONGRESS, 93d Cong., 1st Sess., at 1105-23 (1973). Thus, the sentiment which led to the passage of the MPRSA was actually part of a larger response to develop mechanisms to better manage the nation's natural resources.

30. MPRSA, §302(a).

31. *Id.* The implementing guidelines add research to the purposes for which a sanctuary may be designated (15 C.F.R. §922.2), which is no doubt a reaction to the Senate Committee's emphasis on the research values of sanctuaries.

32. *Id.*

33. *Id.* §302(b).

34. *Id.*

35. *Id.* §302(c). The term "territorial jurisdiction" has been generally interpreted to mean only that area over which the United States exercises dominion and control as a sovereign power—that is, the territorial sea, which at present extends to the 3-mile limit. *Cunard S.S. Co. v. Mellon*, 262 U.S. 101 (1923).

36. MPRSA, §302(e).

37. *Id.* §302(f).

38. *Id.* §302(g).

39. *Id.* §302(f) (emphasis supplied).

40. For a comprehensive assessment of the federal consistency provisions contained in that Act and the resulting federal-state relations, particularly as they affect federal regulation of dredge or fill activities, see Blumm and Noble, *The Promise of Federal Consistency Under Section 307 of the Coastal Zone Management Act*, 6 ELR 50047 (1976). See also Brewer, *Federal Consistency and State Expectations*, 2 COASTAL ZONE MGMT. J. 315 (1976); and Hildreth, *The Operation of the Federal Coastal Zone Management Act, as Amended*, 10 NAT. RES. LAW. 211 (1977).

licenses, and authorizations. Unfortunately, while the range of governmental authorizations requiring certification of consistency seems clear, §302(f) is ambiguous as to the intended geographic coverage of that requirement. That is, the language of the statute does not clearly indicate whether consistency is required of all activities affecting designated sanctuaries, or whether it applies only to activities taking place within sanctuary boundaries. As this article will demonstrate, neither the program guidelines nor the individual sanctuary regulations have interpreted the geographic coverage of the consistency provision in a manner which is most protective of sanctuary values.

Enforcement and Funding

Section 303 of the MPRSA subjects violators of sanctuary regulations to administratively imposed fines of up to \$50,000 per day. Notice and an opportunity to be heard are prerequisites to the levying of such penalties. In addition, federal district courts may compel payment of these fines, may conduct *in rem* proceedings brought against vessels involved in such violations, and may issue injunctions and grant other appropriate relief.⁴¹ The Act, however, does not provide for criminal sanctions and is similarly silent as to the ability of the Secretary of Commerce to delegate sanctuary management or enforcement responsibilities to other federal or state agencies.⁴²

In order to implement Title III of the MPRSA, §304 authorized the expenditure of \$10 million for each of the fiscal years 1973-75.⁴³ A 1975 amendment authorized \$7.75 million for fiscal year 1976 and the subsequent transition quarter, while a 1976 amendment set an authorization level of only \$.5 million for fiscal year 1977.⁴⁴ In spite of these authorizations, however, no funds have ever been appropriated. In fact, no funds have even been specifically requested by the Department of Commerce or the Office of Management and Budget (OMB) and at present the program's funding authorization has expired. As a result, efforts to implement Title III have relied upon general departmental operating funds, a situation which has served, in large measure, to prevent the program from realizing its vast potential.

II. Implementation of Title III: The First Five Years

Handicapped by a lack of adequate funding, the marine sanctuaries program (MSP) progressed at a snail's pace during its first five years. Not until June 27, 1974, over a year and a half after the enactment of Title III, were

program guidelines issued by the Administrator of the National Oceanic and Atmospheric Administration (NOAA), who had been delegated the authority to implement Title III by the Secretary of Commerce.⁴⁵ Only two marine sanctuaries have been designated to date—the site of the sunken Civil War ironclad, the U.S.S. *Monitor*, off the coast of North Carolina and a coral reef area off the coast of Key Largo, Florida. A number of other marine areas have been nominated for sanctuary status, but not designated, while other nominations remain under active consideration by NOAA.

A. Program Guidelines

The program guidelines issued by the Administrator serve two general purposes. First, they refine some of the broad concepts announced in Title III, thus supplying guidance for the site specific regulations which are to govern activities in designated sanctuaries. Second, the guidelines attempt, with questionable success, to provide effective procedures by which marine sanctuaries can be nominated, designated, and managed.

Chief among the clarifications in the guidelines, and one that offers practical guidance to those charged with implementing the program, is a classification scheme for sanctuaries. Designated sanctuaries are to fall within one or a combination of five different classifications: habitat areas,⁴⁶ species areas,⁴⁷ research areas,⁴⁸ recreational and esthetic areas,⁴⁹ and unique areas.⁵⁰ Another important concept announced by the guidelines, although not explicitly mentioned in the language of Title III, is that of compatible use. All uses compatible with the primary purpose or purposes for which a sanctuary is designated are permitted.⁵¹ The establishment of this concept not

45. 15 C.F.R. §922, 39 Fed. Reg. 23254 (June 27, 1974). Draft guidelines were issued on March 19, 1974 (39 Fed. Reg. 10255), six days after the Secretary of Commerce delegated authority to implement Title III to the Administrator of NOAA.

46. Habitat areas are defined as areas established "for the preservation, protection, and management of essential or specialized habitats representative of important marine systems." 15 C.F.R. §922.10(a).

47. Species areas are established "for the conservation of genetic resources," in order to help contribute to the goal of maintaining "the widest possible diversity of and within species . . . for ecological stability of the biosphere and for use as natural resources." *Id.* §922.20(b).

48. Research areas are to serve as "ecological baselines against which to compare and predict the effects of man's activities, and to develop an understanding of natural processes." *Id.* §922.10(c)(2).

49. Recreational and esthetic areas are left largely undefined by the guidelines, which note only that they "will be based on esthetic or recreational value." *Id.* §922.10(d).

50. Unique areas are established "to protect unique or nearly one of a kind geological, oceanographic, or living resource features." *Id.* §922.10(e).

51. 15 C.F.R. §922.1(b). The guidelines define multiple use as "the contemporaneous utilization of an area or resource for a variety of compatible purposes so as to provide more than one benefit." *Id.* at §922.11(c). The guidelines further state that multiple use "implies the long-term, continued uses of such resources in such a fashion that one will not interfere with, diminish, or prevent other permitted uses." *Id.* The determination of which uses are compatible with sanctuary purposes is obviously a critical one in terms of protecting the integrity of

41. MPRSA, §303. "Other appropriate relief" would seem to imply the authority necessary to compel restitution for damages to the sanctuary, including the costs of restoration.

42. Nevertheless, in the case of the Key Largo Coral Reef Marine Sanctuary primary on-site management responsibility has been delegated to the State of Florida. See text accompanying note 84, *infra*.

43. MPRSA, §304.

44. Pub. L. 94-62 (1975); Pub. L. 94-362 (1976). For an authorizations appropriations history of the MPRSA, see CONGRESS AND THE NATION'S OCEANS: MARINE AFFAIRS IN THE 94TH CONGRESS, 95th Cong., 1st Sess. 210-11 (1977).

only serves to carry out the congressional intent, as expressed in the legislative history of Title III,⁵² it also serves to mitigate the concerns of development interests and others for whom the term "sanctuary" connotes the restriction of all uses. The guidelines also introduce the concept of employing marine sanctuaries as a seaward complement of programs designed to preserve terrestrial areas, such as public parks, national seashores, and national and state monuments.⁵³ In addition, they urge that the MSP be conducted in close cooperation with NOAA's estuarine sanctuaries program,⁵⁴ in anticipation that a unified system of marine and estuarine sanctuaries will emerge in conjunction with state coastal zone planning efforts.⁵⁵

A major portion of the guidelines is devoted to outlining the procedures by which sanctuaries are to be nominated, designated, and managed. Sanctuary nominations, which may be submitted by any federal, state, or local official (including those within NOAA) or any member of the public,⁵⁶ must contain a certain

the sanctuary. Unfortunately, there is little experience with making compatible use determinations in the marine environment.

52. See, e.g., remarks of Congressmen Mosher, Keith and Pelly, reprinted in U.S. ENVIRONMENTAL PROTECTION AGENCY, LEGAL COMPILATION: STATUTES AND LEGAL HISTORY, WATER, vol. III, Supp. (1973) at 1683, 1689, and 1720.

53. 15 C.F.R. §922.2(b).

54. *Id.* §§922.1(c) and 922.20(c). The estuarine sanctuaries program was created by former §312 (now §315) of the Coastal Zone Management Act, 16 U.S.C. §1461. In contrast to the broad mandate given to the marine sanctuaries program, the purposes for which estuarine sanctuaries may be established are quite narrow. They are "to serve as natural field laboratories in which to study and gather data on the natural and human processes occurring within the estuaries of the coastal zone." *Id.* To acquire and manage such sanctuaries the Secretary of Commerce is authorized to make available 50 percent matching funds to coastal states. See 15 C.F.R. §921. Five estuarine sanctuaries have thus far been designated: (1) Sapelo Island, Georgia (which is the only sanctuary fully acquired and has been utilized for about 25 years to study natural wetland processes); (2) Coos Bay, Oregon (research and management have begun here although acquisition is only about 75 percent complete); (3) Waimanu Valley, Hawaii (acquisition has not yet begun); (4) Old Woman Creek, Ohio, which is located along Lake Erie (cyclical changes in estuarine processes will be studied here); and (5) Rookery Bay, Florida (acquisition has not yet begun). In all, approximately 25,000 acres are receiving estuarine sanctuary protection, about two-fifths the acreage protected by the Key Largo Coral Reef Marine Sanctuary alone.

55. 15 C.F.R. §922.20(c). Pursuant to the Coastal Zone Management Act, 16 U.S.C. §1451 *et seq.*, states and territories bordering on the oceans and Great Lakes are eligible for federal grants to develop and administer comprehensive land and water programs to better manage their coastal resources. Two elements required of all state CZM plans which may help to identify potential marine and estuarine sanctuaries are (1) an inventory and designation of "areas of particular concern" as required by §305(b)(3), and (2) procedures whereby areas can be designated to preserve or restore conservation, recreational, ecological, or esthetic values, as required by §306(c)(9). It should be noted that the Act defines the states' coastal zones as extending as far seaward as the extent of the territorial sea, or in Great Lakes' waters to the international boundary between the United States and Canada (§304(a)).

56. 15 C.F.R. §922.20(a).

quantum of data on the proposed area, its characteristics, and its current and prospective uses.⁵⁷ Once received, sanctuary nominations are subjected to two levels of administrative review. First, with the assistance of involved states and other federal agencies NOAA conducts a "preliminary review to determine feasibility."⁵⁸ Unfortunately, the guidelines offer no clarification of the specific procedures or criteria to be employed in reaching this initial determination. Second, after a nomination's feasibility has been established, NOAA issues a public notice of the nomination⁵⁹ and initiates a more detailed study of the area, its characteristics, its present and potential uses, and the interrelationship between these uses and prospective sanctuary status.⁶⁰ Public participation in this detailed review is assured through the preparation of a draft environmental impact statement (EIS), which is to discuss proposed sanctuary regulations and operational procedures, and through the holding of public hearings in the areas "most directly affected" by the proposed designation.⁶¹ The guidelines also implement the statutorily prescribed intergovernmental consultation process,⁶² designed to guarantee the consideration of various federal and state interests, such as those involving fisheries management, marine transportation, mineral exploration, and national security.⁶³

Following the opportunities for public and governmental input, and with the concurrence of the President,⁶⁴ NOAA may formally designate the proposed sanctuary.⁶⁵ The designation must set forth the purposes, regulations, and management program under which the sanctuary will be operated.⁶⁶ The guidelines specify that the management program must provide for continuous scientific evaluation, surveillance, and enforcement to protect the sanctuary's integrity.⁶⁷ They also outline administrative procedures designed to guarantee that

57. *Id.* §922.20(b). This subsection requires that the nomination include: the purposes for which the nomination is being submitted; the geographic coordinates of the site; plant and animal life in the area; geological characteristics of the area; and the present and prospective uses and impacts on the area and its resources. A nomination for a research sanctuary must also contain a specific scientific justification; a statement of how the research will aid in management decisions; and a history of prior research carried out in the area. *Id.* §922.20(b)(2).

58. *Id.* §922.21(a).

59. *Id.* §922.22(b).

60. *Id.* §§922.21(b) and (c). Detailed information is to be developed on animal and plant life; geological features; weather and oceanographic conditions and features; present and potential adjacent land uses; and federal, state, and local laws that apply to the area.

61. *Id.* §§922.21(d) and 922.22(d). It should be noted, however, that the guidelines specifically limit the holding of public hearings to those nominations which have been determined to be "feasible." *Id.* §922.22(d).

62. MPRSA, §302(a). See text accompanying notes 32-38, *supra*.

63. 15 C.F.R. §922.23.

64. Though the guidelines do not mention presidential approval, it is required by §302(a) of Title III.

65. 15 C.F.R. §922.24.

66. *Id.*

67. *Id.* §922.25.

violators of sanctuary regulations are afforded notice and an opportunity to be heard prior to the levying of the statutory penalties.⁶⁸ Under these guidelines, foreign citizens may be subject to sanctuary regulations in certain circumstances.⁶⁹

While it is commendable that the program guidelines encourage public nomination of sanctuaries and afford the opportunity for public input into the formulation of management programs, they do not entirely ensure effective public participation. This is because they neither define what constitutes a "feasible" nomination, nor provide specific procedures or criteria to be employed in reaching this threshold decision. And since this determination is a prerequisite to both the issuance of public notice of nominations and the preparation of environmental impact statements,⁷⁰ under the present guidelines there is in effect no public involvement in the evaluation of nominations until this critical first step in the designation process has been taken. Thus, detailed consideration of the merits of a nomination could be indefinitely delayed without the benefit of public scrutiny. The lack of prescribed standards for making feasibility determinations provides potential nominators with little indication of the kinds of marine areas likely to survive this first level of administrative review and effectively precludes challenges to findings of non-feasibility. In fact, the guidelines provide no guarantee that the public will even be informed when a nomination is found to be non-feasible. Until explicit procedures and criteria are established to govern the feasibility determination, effective public involvement in designating sanctuaries cannot be assured.

B. Existing Sanctuaries

The first half decade of the marine sanctuaries program has witnessed the establishment of only two sanctuaries. The first, designated on January 30, 1975, protects a one square mile area around the site of the sunken U.S.S. *Monitor*, located 16 miles from Cape Hatteras, North Carolina. The sanctuary's regulations⁷¹ are basically aimed at prohibiting activities which could damage the artifact, such as anchoring, diving, drilling, laying cables, and the discharge of pollutants.⁷² Permits may be issued by NOAA, after consultation with the Advisory Council on Historic Preservation, to conduct research activities related to the ship, or for salvage and recovery operations in connection with an air or marine casualty.⁷³ Criteria for permit issuance are provided in the regulations,⁷⁴ and applicants denied permits by the Administrator of NOAA may appeal that decision to the

Secretary of Commerce.⁷⁵ In practice, primary responsibility for surveillance and enforcement of the sanctuary rests with the Coast Guard, although this arrangement is not explicitly established by the regulations.⁷⁶

The other existing sanctuary is the Key Largo Coral Reef, a 100 square mile area located in federal waters seaward of the State of Florida's John Pennecamp State Park. The area was withdrawn from OCS mineral leasing by a Proclamation issued by President Eisenhower in 1960.⁷⁷ When it was designated as a marine sanctuary on December 18, 1975, interim regulations⁷⁸ were issued which prohibited activities such as the removal of natural features including fish and coral, dredging or filling, the discharge of pollutants, and anchoring on coral formations.⁷⁹ As in the case of the *Monitor*, the Key Largo regulations provide criteria for the issuance of permits to conduct research and marine salvage and recovery operations⁸⁰ and allow appeals from the denial of permit applications to the Secretary of Commerce.⁸¹ Specified compatible uses include recreational boating and fishing, snorkelling and scuba diving, commercial fishing, and scientific endeavors.⁸² The regulations do, however, allow up to 20 percent of the sanctuary to be closed to public use either to allow the sanctuary's living resources to recover from overuse or to accommodate scientific research.⁸³

Although NOAA's role in managing the Key Largo sanctuary extends to reviewing and approving permitted activities, the state of Florida's Department of Natural Resources serves as the on-site manager of the sanctuary pursuant to a cooperative agreement developed between NOAA and the state.⁸⁴ In this capacity the Department is assisted by an advisory board with representatives from federal and state agencies, as well as members of the public.⁸⁵ While it seems sensible to delegate management responsibilities to the state, since it also manages the adjacent waters of the John Pennecamp Park for similar purposes, the state lacks the legal authority to enforce the sanctuary's regulations. Consequently, the Coast Guard

75. *Id.* §924.8.

76. Pursuant to 14 U.S.C. §89(a) the Coast Guard serves as the principal marine enforcement agent for all federal agencies and in that capacity is subject to the rules and regulations of the agencies responsible for administering particular federal laws.

77. Presidential Proclamation No. 3339, 25 Fed. Reg. 2352 (Mar. 17, 1960) (issued pursuant to the authority granted the President by §12 of the Outer Continental Shelf Lands Act of 1953).

78. 15 C.F.R. §929, 41 Fed. Reg. 2378 (Jan. 16, 1976). Final regulations have not been issued.

79. *Id.* §929.4. The regulations also prohibit underwater construction, the removal of archeological or historic resources, the catching of tropical fish, the use of explosives, and certain motorboat and photographic activities that involve the installation of special settings.

80. *Id.* §§929.7(b) and (c). The criteria are similar to those of the *Monitor* regulations.

81. *Id.* §929.9.

82. *Id.* §929.4.

83. *Id.* §929.5(a)(2).

84. *Id.* §929.3(b).

85. *Id.*

68. *Id.* §§922.31-32, and MPRSA, §§303(a) and (b). See text accompanying notes 41-42, *supra*.

69. See text accompanying note 160, *infra*.

70. 15 C.F.R. §922.22(b).

71. 15 C.F.R. §924, 40 Fed. Reg. 21706 (May 19, 1975).

72. *Id.* §924.3. Other prohibited activities include salvage or recovery operations (without a permit), dredging, trawling, and detonating explosives. *Id.*

73. *Id.* §§924.6(b), (c), and (d). Research permits, however, will only be granted on the condition that any information and/or artifacts obtained will be made available to the public. *Id.* §924.6(c).

74. 15 C.F.R. §§924.6(b) and (c).

must serve as the enforcement agent.⁸⁶ The splitting of management and enforcement responsibilities between the state and the federal government has resulted in cumbersome operating practices which have made it difficult to adequately protect the sanctuary's coral reefs. The situation is exacerbated by Title III's lack of authorization to levy criminal sanctions and arrest violators. Although the BLM does possess the authority to impose criminal sanctions, pursuant to its regulations protecting viable coral communities,⁸⁷ efforts to establish an interagency agreement with BLM have thus far proved unsuccessful. The net result of this bureaucratic tangle is less than optimum protection of the sanctuary's values, a result which has led NOAA to seriously consider seeking an amendment to Title III authorizing criminal sanctions and allowing for the delegation of enforcement responsibilities to capable state agencies.

Two additional aspects of both the Key Largo and Monitor regulations are worthy of note. First, neither contains an express statement of the purposes for which the sanctuaries were designated, in spite of the fact that NOAA's program guidelines require that the purposes be clearly stated at the time of designation.⁸⁸ This may make it more difficult for NOAA to justify permit decisions or to issue the consistency certifications required of other governmental authorizations.

The second difficulty with the regulations concerns their unsuccessful incorporation of the consistency certification itself. As mentioned previously,⁸⁹ §302(f) grants NOAA broad authority to ensure that all other authorized activities are consistent with the purposes of Title III and individual sanctuary regulations. The consistency certification procedures adopted for both Key Largo and the Monitor have restricted the applicability of the certification requirement to federal activities which have previously been authorized within the boundaries of the two sanctuaries.⁹⁰ No mention is made of state or local authorizations, nor are procedures established to provide for review of future authorizations. Moreover, by limiting the geographic coverage of the certification to activities within the boundaries of the sanctuaries, the regulations allow activities to take place in adjacent areas which could

adversely affect the ecological or cultural values of the sanctuaries. In fact, largely due to the restrictive interpretation of the consistency requirement in both the Key Largo and Monitor regulations, no request for certification has ever been made. A broader interpretation of the scope of applicability and geographic coverage of the consistency requirement is both legally defensible and necessary to preserve the integrity of designated sanctuaries.

C. Proposed Sanctuaries

In August of 1977, prior to NOAA's stepped-up response to the President's Environmental Message,⁹¹ three marine sanctuary nominations were under active consideration. These included a coral reef area off of Looe Key, Florida; a 1,000 square mile area surrounding the Palau Islands in the Pacific Trust Territories; and a Killer Whale sanctuary in Puget Sound, Washington.⁹² The latter two nominations appear to have been submitted out of concern over proposals to commit these areas to oil ports.⁹³ Although the Killer Whale nomination has since been removed from active consideration,⁹⁴ the Flower Gardens Coral Reef, located approximately 100 miles off the coast of Texas, was recently nominated and is now under active consideration by NOAA.

As in the case of the Killer Whale nomination, four other areas nominated prior to August 1977 are no longer considered by NOAA to be "feasible."⁹⁵ Because of the

91. See text accompanying notes 101-106, *infra*.

92. U.S. DEPT. OF COMMERCE, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, PLAN TO IMPLEMENT THE PRESIDENT'S MANDATE TO PROTECT OCEAN AREAS FROM THE EFFECTS OF DEVELOPMENT 2 (Aug. 16, 1977).

93. The motivating force behind the Palau nomination, submitted by organizations from Palau, the United States, and Japan, consisted of a Japanese proposal to construct a deep-water port to transport oil and gas from Indonesia. Efforts to secure approval for the oil port are described in Brower, *To Tempt a Pacific Eden, One Large Oily Apple*, 78 AUDUBON 56 (Sept. 1976). See also *Hearing on the Palau Deepwater Port Before the Senate Committee on Energy and Natural Resources*, 95th Cong., 1st Sess. (1977). The killer whale nomination, submitted by Sen. Warren Magnuson (D-Wash.), was a response to a proposed superport at Cherry Point, Washington, which would receive Alaskan North Slope oil.

94. While NOAA's decision not to actively pursue the killer whale nomination appears to be a concession to the wishes of Washington Governor Dixie Lee Ray, Senator Magnuson has taken other steps to ensure that the proposed Cherry Point oil port will not be constructed. A provision which he attached as a rider to a bill extending the Marine Mammal Protection Act's funding authorization was recently signed into law. That provision explicitly precludes the siting of new oil facilities in the Puget Sound area. Pub. L. No. 95-136, §5(b), 91 Stat. 1168, 33 U.S.C. §476(b). See also 123 CONG. REC. S16228 (daily ed. Oct. 4, 1977, remarks of Sen. Magnuson).

95. Nominations in this category include: (1) the proposed Port Royal Sound Sanctuary in South Carolina, nominated by the Coalition for Lower Beaufort County; (2) the proposed Cape Lookout Bight and Shoals Sanctuary in North Carolina, nominated by the North Carolina Office of Marine Affairs; (3) the proposed Crystal River Sanctuary near King's Bay on the northern Gulf Coast of Florida, nominated by the Crystal River Protective Association; and (4) the waters adjacent to the counties of Santa Cruz, Monterey, and San Luis Obispo, California, nominated by former Congressman Burt Talcott.

86. *Id.* §29.5(a)(1).

87. 43 C.F.R. §6224.5. BLM's authority to protect viable coral communities stems from §5(a)(1) of the Outer Continental Shelf Lands Act, 43 U.S.C. §1334(a)(1), which empowers the Secretary of the Interior to issue regulations to *inter alia* "conserve the natural resources of the outer continental shelf." At least one circuit court of appeals has affirmed that this authority extends to the protection of living as well as non-living resources. *Union Oil Co. v. Morton*, 512 F.2d 743 (9th Cir. 1975).

88. *Id.* §922.24. The final EIS on the Key Largo sanctuary did spell out the purposes for which the sanctuary was created. See U.S. DEPT. OF COMMERCE, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, KEY LARGO CORAL REEF MARINE SANCTUARY, FINAL EIS 7 (1976).

89. See text accompanying notes 39-40, *supra*.

90. 15 C.F.R. §924.7 (*Monitor*); 15 C.F.R. §929.8 (*Key Largo*). The program guidelines offer no clarification of the scope of the consistency requirement, they merely restate the statutory language and note that the individual sanctuary regulations will each contain a consistency procedure. 15 C.F.R. §922.27.

lack of articulated standards defining what constitutes a feasible nomination,⁹⁶ however, it is difficult for members of the public to discern those sites which are particularly well suited for sanctuary designation or to challenge determinations of non-feasibility. It is, moreover, difficult to ascertain the status or even existence of nominations, since unless a nomination hurdles the feasibility threshold, the only publicly available information appears in NOAA's annual reports to Congress.⁹⁷

III. Program Acceleration: A New Ball Game

After years of languishing in the backwaters of the federal bureaucracy, unable even to secure the support of previous administrations in seeking congressional appropriations, the marine sanctuaries program has, in the past few months, entered what promises to be a new era. Two events are largely responsible for ushering in this second generation, a generation in which the program appears capable of assuming a key role in the nation's increasing interest in the effective utilization and protection of its marine resources. The first event is the recognition given the program in the President's Environmental Message, which bestowed upon the program a new level of visibility and has fostered an unparalleled level of program activity. The second is a proposed reorganization of NOAA which should place the program in a much more favorable position in which to secure administrative, legislative, and public support, and thus may prove to be an even more important assurance of its long-term viability.

A. The President's Environmental Message

May 23, 1977, may well be the most significant date in the history of efforts to implement the marine sanctuaries program. On that date President Carter delivered to Congress his Environmental Message,⁹⁸ the first such address in four years. The President devoted special attention to marine sanctuaries, making it clear that the program would play a significant new role in the nation's attempts to better manage its marine resources:

Existing legislation allows the Secretary of Commerce to protect certain estuarine and ocean resources from the ill-effects of development by designating marine sanctuaries.

Yet only two sanctuaries have been designated since 1972, when the program began.

I am, therefore, instructing the Secretary of Commerce to identify possible marine sanctuaries in areas where

The first and last of these nominations appear to have been motivated by developmental threats—the construction of a metal fabricating plant on the banks of Port Royal Sound and OCS mineral leasing off the California coast.

96. See text preceding note 70, *supra*.

97. Four such reports have been submitted to Congress. Only in the third report, however, is there an indication that a sanctuary nomination was rejected by NOAA—the proposed Crystal River Sanctuary. U.S. DEPT. OF COMMERCE, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, REPORT TO CONGRESS ON IMPLEMENTATION OF TITLE III, July 1974 to June 1975 (1975).

98. The Environment—The President's Message to Congress, 7 ELR 50057 (1977). For an analysis of the Message, see Comment, *The President's Environmental Message: Better Regulatory Coordination, More Vigorous Enforcement*, 7 ELR 10116 (1977).

development appears imminent, and to begin collecting the data necessary to designate them as such under the law.⁹⁹

The President also singled out the Alaskan outer continental shelf for special attention:

... Because the Alaskan outer continental shelf is particularly sensitive and controversial, I am directing [the Secretary of Interior] to give special emphasis to it. I have also asked him to work closely with the Secretary of Commerce as she identifies potential marine sanctuaries in areas where [offshore] leasing appears imminent.¹⁰⁰

NOAA's first response to the President's Message was to request the assistance of other federal agencies in establishing criteria for the selection of potential marine sanctuary sites. On August 16, 1977, with the assistance of the Environmental Protection Agency and the Department of the Interior, NOAA issued draft site selection criteria to assist federal and state agencies and members of the public in identifying potential sites.¹⁰¹ NOAA then requested public comment on the criteria, as well as recommendations concerning candidate sites by September 16, 1977. That announcement explained that these sites would be ranked on the basis of the following factors: the imminence of development;¹⁰² the uniqueness and fragility of the area; the importance of the site as an ecological unit; and the impact of external uses on the area.¹⁰³

The response to NOAA's request for candidate sites has been startling. One hundred and sixty-nine recommendations were received, including 24 from the states and 35 from members of the public.¹⁰⁴ In keeping with

99. 7 ELR at 50063.

100. *Id.* at 50061.

101. U.S. DEPT. OF COMMERCE, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, MEMORANDUM ON EXPANDED MARINE SANCTUARIES PROGRAM (Aug. 16, 1977).

102. "Imminent development" was interpreted by NOAA to embrace offshore or onshore activities likely to occur within 18 months, or where actions taken within 18 months could establish the likelihood of development. Offshore activities embraced OCS oil and gas development (including potential pipelines and tanker corridors); extraction of sand, gravel, manganese nodules, or other minerals; or the siting of energy facilities (including floating nuclear power plants). Onshore activities included facilities needed to service offshore industries; large energy production facilities (such as power plants, LNG facilities, and refineries); large industrial complexes; and new port facilities (including deepwater ports). U.S. DEPT. OF COMMERCE, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, PLAN TO IMPLEMENT THE PRESIDENT'S MANDATE TO PROTECT OCEAN AREAS FROM THE EFFECTS OF DEVELOPMENT, *supra* note 92, at 4-5.

103. *Id.* at 7.

104. Through February 1, 1978. Because certain areas were recommended by more than one entity, the number of sites is actually somewhat less than 169. U.S. DEPT. OF COMMERCE, NATIONAL OCEANIC AND ATMOSPHERIC ADMIN., LISTING OF RECOMMENDED MARINE SANCTUARIES SITES IN RESPONSE TO THE PRESIDENT'S MESSAGE. It should be noted that of the 110 federal recommendations received, all were proposed by either the Department of the Interior or the Environmental Protection Agency; the National Marine Fisheries Service, which had recommended over 100 sites, withdrew its recommendations and has not yet resubmitted them. This withdrawal was apparently caused by opposition to some of the recommendations

President Carter's directive, areas off the shores of Alaska have received the most attention—45 recommendations. Although NOAA's original expectation of formally nominating sites by December 30, 1977¹⁰⁵ has not been fulfilled, it is expected that at least two sanctuary nominations will emerge from this process.¹⁰⁶ Environmental impact statements, implementing regulations, and management plans will then be prepared with respect to each, with designation decisions expected by October of 1978.

Thus, the past year has witnessed more progress toward achieving Title III's goals than in the entire previous four and a half years. As a result of the President's Message, the marine sanctuaries program has, for the first time, received widespread attention from federal and state agencies and the public. Perhaps even more important, this new visibility has led NOAA to restructure the manner in which the program will be administered.

B. NOAA Reorganization

Responsibility for implementing the marine sanctuaries program during its first five years has rested with NOAA's Office of Coastal Zone Management (OCZM). Because of staff limitations¹⁰⁷ and its considerable responsibility in overseeing the development and administration of 34 state and territorial coastal zone management programs,¹⁰⁸ OCZM has not given a high priority to the marine sanctuaries program. This is most strongly evidenced by the fact that not one funding request for the program has ever survived the departmental budgetary review process.¹⁰⁹ Consequently, Congress has never even been presented with a formal request for appropriations.

Under a major reorganization plan recently implemented by NOAA Administrator Richard Frank, however, implementation of the marine sanctuaries program has been transferred from OCZM to a new Office of Ocean Management.¹¹⁰ This office assimilates a

number of NOAA responsibilities concerning ocean resources and, in effect, is the first federal office with explicit responsibility for the development of a broad-based ocean policy. In addition to assuming responsibility for administering the marine sanctuaries program, the Office of Ocean Management is to review and evaluate selected ocean use projects, including deepwater port applications, and identify critical ocean areas where positive planning is needed to ensure optimum utilization of ocean resources.

Several benefits can be anticipated to accrue to the marine sanctuaries program as a consequence of this reorganization. First, since marine sanctuaries implementation is the only programmatic responsibility of the Office of Ocean Management, the program should no longer be overshadowed, both in terms of staff time and funding, by the coastal zone program.¹¹¹ Second, as part of the chief federal ocean management office, the program is in a better position to play an integral role in the development of NOAA's positions with respect to the allocation of marine resources. Third, and perhaps of most immediate importance, because the Office of Ocean Management will report directly to the Administrator, rather than to another line office, the marine sanctuaries program should enjoy a higher level of visibility within NOAA itself. This should, in turn, serve to increase its ability to obtain budget clearances from the Department of Commerce and the Office of Management and Budget.

Coming on the heels of the stimulus provided by the President's Environmental Message, the NOAA reorganization should equip the program with an administrative capability sufficient to propel it into the forefront of efforts to better plan for and manage marine resources. It should be recognized, however, that despite this new capability, the fate of the program is in the hands of higher authorities. An administrative change of heart concerning the federal commitment to the program or a refusal on the part of Congress to provide adequate funding could easily relegate the program to its former status.

IV. Critical Elements in Effective Program Implementation

Few would argue with the proposition that governmental initiatives are more effective if undertaken pursuant to broad-based planning processes. In natural resources decision making this maxim has led to the creation of legally enforceable obligations to conduct such planning at all levels of government. On the federal level it is not an overstatement to assert that the mandates of the National Environmental Policy Act (NEPA)¹¹² have served to revolutionize administrative decision making.¹¹³ On the state level it can be argued that "mini-

111. This is not to suggest, however, that the marine sanctuaries program should be isolated from coastal zone planning efforts. On the contrary, coastal zone planning can make important contributions to the identification and management of sanctuaries. See note 55, *supra*.

112. 42 U.S.C. §4321 *et seq.*, ELR STAT. & REG. 41009.

113. See, e.g., LIROFF, NEPA AND ITS AFTERMATH: THE FORMATION OF A NATIONAL POLICY FOR THE ENVIRONMENT (1977); and Symposium, *Impenetrating NEPA's Substantive Goals*, 6 ELR 50001 (1976).

by two Regional Fishery Councils. See 8 COASTAL ZONE MANAGEMENT NEWSLETTER no. 38 at 5 (Sept. 21, 1977).

105. PLAN TO IMPLEMENT THE PRESIDENT'S MANDATE, *supra* note 92, at 7.

106. While the specific sites remain undetermined, NOAA anticipates that one nomination will be off the coast of Alaska, and one or two others off the California coast.

107. The staff at OCZM consists of only 75 persons, at least 25 fewer than was anticipated a year ago. Moreover, the Carter Administration's personnel ceilings call for maintaining that number at least through the end of fiscal year 1978. See 8 COASTAL ZONE MANAGEMENT NEWSLETTER no. 42 (Oct. 19, 1977).

108. Coastal zone management programs are being developed and administered pursuant to the Coastal Zone Management Act, 16 U.S.C. §1451 *et seq.*, which also authorizes OCZM to distribute a \$1.2 billion fund to compensate states and localities for the adverse impacts of coastal and offshore energy development.

109. PLAN TO IMPLEMENT THE PRESIDENT'S MANDATE, *supra* note 92, at 2.

110. See generally 8 COASTAL ZONE MANAGEMENT NEWSLETTER no. 39 at 1 (Sept. 28, 1977), in which an August 24, 1977 memorandum from NOAA Administrator Frank to the Secretary of Commerce detailing the reorganization plan is described.

NEPA's¹¹⁴ are having the same effect.¹¹⁴ And on the local level comprehensive planning requirements fulfill a similar function.¹¹⁵ The same spirit of fostering broad-based planning led the Department of Commerce to require that NOAA formulate a detailed management plan for the marine sanctuaries program prior to approving budget requests for the program.¹¹⁶ If this yet to be adopted management plan is to play a significant role in achieving the lofty goals of Title III of the MPRSA, however, the elements described below must be included.

A. The Processes Establishment of a National Register of Areas of Marine Significance

If the response to NOAA's request for the submission of candidate areas for sanctuary sites¹¹⁷ proves nothing else, it demonstrates that the number of marine areas of potential significance far exceeds the number which can at present be effectively managed as sanctuaries, or even evaluated in the near future for inclusion in the national system. Although the program does not possess the administrative capability to fully consider the abundance of potential sanctuary sites, there should be a means of directing prompt and adequate attention to those areas deserving special recognition. The creation of a national Register of Areas of Marine Significance (RAMS) could offer these important areas such recognition without imposing upon NOAA the administrative and financial burdens accompanying formal sanctuary nomination and designation.

The creation and maintenance of a RAMS would serve several additional program purposes. It would catalogue potential sanctuary nominations, facilitate NOAA comments on proposed marine activities, help to identify critical marine areas where positive planning is needed for effective resource decision making,¹¹⁸ and establish a

repository where marine information developed in the course of other decision-making processes could be compiled and updated. The Register could also provide a preliminary threshold in evaluating formal marine sanctuary nominations, thus serving to clarify some of the uncertainties which characterize the initial phases of the current procedure.

Because eligibility criteria for inclusion on the RAMS would be less demanding than those for sanctuary status, the necessary body of background data would be correspondingly smaller. However, a certain minimum level of information on the site would be required, such as its location, size, natural characteristics, outstanding values, and development pressures. Administrative review could be facilitated by eliminating the requirement of preparing an EIS prior to placing a site on the Register.¹¹⁹ This could be arguably justified on the ground that since no regulatory or management controls would apply to RAMS sites, placing an area on the Register might not constitute a major federal action significantly affecting the quality of the human environment.¹²⁰ Nevertheless, federal agencies would be encouraged (or required)¹²¹ to provide public notice in advance of approving licenses or permits or undertaking activities potentially affecting RAMS sites and to revise their NEPA procedures to consider the effects of proposed actions on these areas.

Because the Register would foster the broad legislative goals established by Title III and could in effect become the first step in the sanctuary evaluation process, specific enabling legislation to establish the Register would not be necessary. However, since the cooperation and assistance of other federal agencies engaged in marine activities would be instrumental in its effective implementation, an Executive Order directing federal agencies to actively participate in nominating RAMS areas, to consider the effect of their activities on RAMS sites, and to provide NOAA with pertinent information concerning these areas is almost essential to the success of the RAMS concept.¹²² In the alternative, interagency agreements along these lines would be necessary.

Establishment of Discrete Criteria for Key Decision-Making Points

Under the present program guidelines there are two key decision-making points in the evaluation of sanctuary nominations: the feasibility determination, which triggers more detailed and lengthy review, and the decision to designate areas as sanctuaries. As previously mentioned,¹²³ the former is governed by no specified set of publicly available criteria. It is, therefore, impossible for nominators and other members of the public to ascertain those factors which influence this initial but critical

114. See, e.g., Yost, *NEPA's Progeny: State Environmental Policy Acts*, 3 ELR 50090 (1973). Comment, *Emerging State Programs to Protect the Environment: Little NEPA's and Beyond*, 5 ENV. AFF. 567 (1976).

115. See, e.g., Mandelker, *The Role of the Comprehensive Plan in Land Use Regulation*, 74 MICH. L. REV. 900 (1976); and Sullivan and Kressel, *Twenty Years After—Renewed Significance of the Comprehensive Plan Requirement*, 9 URB. L. ANN. 22 (1975).

116. In response to this directive, NOAA commissioned the Center for Natural Areas to conduct a thorough review of the program and to recommend a comprehensive plan to more effectively implement it. The Center has to date produced three reports in this regard, many of whose recommendations are reflected in this section: AN ASSESSMENT OF THE NEED FOR A NATIONAL MARINE SANCTUARIES PROGRAM (1977) (critically analyzing the role that marine sanctuaries could play in marine resource decision making), AN ASSESSMENT OF ALTERNATIVE CONCEPTUAL FRAMEWORKS FOR THE NATIONAL MARINE SANCTUARIES PROGRAM (1977) (depicting various administrative options in mobilizing the program to fulfill its potential), and A DRAFT DETAILED MANAGEMENT PLAN FOR THE MARINE SANCTUARIES PROGRAM (1977) (recommending specific policies, objectives, resource requirements and an organizational structure to better implement the program).

117. See text accompanying note 104, *supra*.

118. These three activities are the principal responsibilities of the Office of Ocean Management.

119. However, NOAA's preparation of a programmatic EIS on the design, procedures, and content of RAMS is strongly recommended in order to afford interested entities and members of the public an opportunity to review and comment.

120. *Cf. Hanley v. Kleindeinst*, 460 F.2d 640, 2 ELR 20717 (2d Cir. 1972), *cert. denied*, 409 U.S. 990 (1972).

121. Agencies could be required to do so by an Executive Order.

122. See text accompanying note 140, *supra*.

123. See text preceding and following note 70, *supra*.

decision. To remedy this situation explicit criteria governing each stage of the decision-making process must be established and published in the program guidelines.

In addition, the establishment of a three-step decision-making process would allow the decision to place a site on the national Register of Areas of Marine Significance to effectively become the initial step in the evaluation of sanctuary nominations. This would allow the public an opportunity to become actively involved earlier in the evaluation process, particularly if public notice was provided upon receipt of a nomination. In brief, the process could function in the following fashion. When a nomination is received, NOAA would issue a public notice inviting comment and proceed to evaluate the site in terms of its suitability for Register status on the basis of criteria set forth in its program guidelines. If, pursuant to this process, a given area is placed on the Register, NOAA would then conduct a more detailed evaluation (again according to a prescribed set of criteria) of the site's potential for sanctuary designation.¹²⁴ Each site would then receive a priority rating in relation to the other nominations placed on RAMS. This ranking would be accompanied, as in the first phase, by a brief public announcement describing the decisions reached and the bases thereof.¹²⁵ Areas given a high priority would, to the extent NOAA resources permit, undergo detailed evaluations leading to decisions on sanctuary designation. This evaluation would be the third step in the decision-making process and would include an EIS review and the preparation of a proposed sanctuary management plan and draft implementing regulations.

Each of the three steps in the decision-making process would be made and justified on the basis of criteria set forth in the program guidelines. The criteria governing each decision, while basically similar, should differ in their emphasis. For example, RAMS decisions might be concerned primarily with the ecological or cultural characteristics of the site; the prioritization of sites would likely give greater weight to the threats to the area from developmental pressures; while sanctuary designation decisions could emphasize management concerns. The institution of such a three-step process would give the RAMS listing a functional role in sanctuary designation determinations, and would require decisions at all stages to be justified on the basis of publicly available criteria. Such a process would also maximize system efficiency by ensuring that those nominations which reach the sanc-

tuary designation stage are those which possess the greatest potential to benefit from sanctuary protection.

Ensuring Consistency of Other Governmental Authorizations

Once an area has been designated a marine sanctuary, uses within the sanctuary are to be regulated pursuant to a site management plan and implementing regulations. Under Title III, however, activities taking place outside the sanctuary's boundaries are outside the scope of the management plan and the implementing regulations. Yet because of the nature of the medium in which they are situated, marine reserves are much more susceptible to the influences of adjacent activities than are terrestrial reserves. As a result, if the integrity of designated sanctuaries is to be preserved, it is necessary to exert some control over activities taking place outside their boundaries.

In §302(f) of the MPRSA Congress declared invalid activities which are not certified by the Secretary of Commerce as being consistent with the purposes of Title III and capable of complying with sanctuary regulations. This broad-based grant of authority has, however, been construed quite narrowly in the regulations governing the two existing sanctuaries.¹²⁶ These regulations limit the scope of authorizations requiring consistency certification to federal authorizations, and only to those previously authorized within the sanctuaries' boundaries.¹²⁷ Such an interpretation is of questionable legal validity, and leaves unregulated activities adjacent to designated sanctuaries which may degrade the ecological or cultural values for which they were established.

There is no indication in the statute or its legislative history that Congress intended only federal activities to be subject to the consistency requirement. The language of §302(f) speaks of "authorization[s] issued pursuant to any other authority."¹²⁸ Furthermore, since Congress authorized the establishment of sanctuaries in state as well as federal waters¹²⁹ and explicitly required the approval of the governor when in the former,¹³⁰ it is logical to assume that Congress intended both state and local authorizations to be included within the scope of the term "any other authority." Without any indication to the contrary, the scope of authorizations subject to consistency should be governed by the clear statutory language. Similarly, there is no statutory support for NOAA's limiting the consistency certification to activities previously authorized. The congressional language stipulates that "no permit, license, or other authorization" can be issued without a consistency certification;¹³¹ to interpret this to embrace only previously granted per-

124. It would be possible, however, for nominators (which, of course, may include NOAA itself) to nominate an area only for RAMS status. Since the factual information required of RAMS-only nominations will be less extensive than that required for formal sanctuary nominations, this might happen quite often.

125. In this manner the prioritization of nominations could serve as an effective means of justifying program budget levels to the Department of Commerce, the Office of Management and Budget, and the Congress. For example, if NOAA were able to demonstrate a considerable backlog of high priority nominations, a strong argument could be made for increases in budget requests and appropriation levels. It should be remembered that the lack of any specifically appropriated funds has been a principal cause of the program's slow development during its first five years.

126. See text accompanying notes 89-90, *supra*.

127. 15 C.F.R. §924.7 (*Monitor*); *Id.* §929.8 (Key Largo).

128. MPRSA, §302(f).

129. *Id.* §302(a).

130. *Id.* §302(b).

131. *Id.* §302(f) (emphasis added).

It should be noted that this language does not include the promulgation of regulations within the purview of the consistency certification. Thus, there exists the possibility that other federal, state, or local regulatory schemes could be developed without taking into consideration their effects on

mits, licenses, and other authorizations contradicts the plain meaning of the statute.

There are also no compelling reasons to limit the geographic coverage of the consistency certification to activities taking place within the boundaries of designated sanctuaries. Although the statutory language is ambiguous on this point, speaking neither to authorizations within nor authorizations affecting designated sanctuaries, the latter interpretation is defensible for several reasons. First of all, the clause immediately preceding the consistency directive in §302(f),¹³² which authorizes the promulgation of sanctuary regulations, is quite clear as to its geographic scope. It authorizes regulations governing only activities *within* designated sanctuaries. Thus, when Congress sought to limit the geographic coverage of certain sanctuary regulations to sanctuary boundaries, it did so unequivocally. Because there is no clear indication that the reach of the consistency provision is to be similarly limited, it can be inferred that Congress intended a broader scope of applicability.

Secondly, an "affecting" standard is supportable on the basis of the criteria established by §307(f) to determine whether an authorization is indeed consistent. Authorizations must (1) be consistent with the purposes of Title III and (2) be capable of being conducted without violating sanctuary regulations. Since the second criterion obviously pertains only to activities within sanctuary boundaries, it is arguable that the first criterion is intended to have a more far reaching application. If it does not, there would be no reason to insert two distinct criteria.

Finally, and perhaps most importantly, the purposes of Title III—to preserve or restore marine areas for their conservation, recreational, ecological, and esthetic values¹³³—cannot realistically be achieved if sanctuary management ignores adjacent activities which could adversely affect these values. Thus, in prescribing this litmus test for consistency determinations it can be argued that Congress recognized the need for as broad a geographic coverage of the consistency certification as is necessary to protect the values for which a sanctuary was designated.¹³⁴

designated sanctuaries until the issuance of an authorization was requested. On the federal level, this prospective consideration of marine sanctuary impacts could be accomplished through the development of interagency agreements, the preparation of EIS's in connection with marine developmental activities, and the promulgation of an Executive Order. It may, however, be more difficult to effectively ensure such consideration on the state and local levels.

132. The first clause of §302(f) states:

After a marine sanctuary has been designated under this section, the Secretary, after consultation with other interested Federal agencies, shall issue necessary and reasonable regulations to control any activities permitted within the designated sanctuary . . .

133. MPRSA, §302(a).

134. Similar consistency provisions in other legislation have employed an "affecting" standard, rather than an arbitrary geographic criterion (*i.e.*, within or without artificially established boundaries). In both §307 of the Coastal Zone Management Act (see text accompanying note 40, *supra*) and §102(a) of the MPRSA (describing criteria to be employed in evaluating ocean dumping permit applications) Congress noted

There are, therefore, good reasons for interpreting the scope of governmental authorizations and the geographic coverage of §302(f)'s consistency provision more broadly than do the existing sanctuary regulations. Both these regulations and the program guidelines should be re-drafted accordingly. In order to put those entities responsible for issuing such authorizations on notice of the geographic areas subject to certification of consistency, the program guidelines should encourage sanctuary regulations that establish buffer zones surrounding designated sanctuaries within which all authorizations would require a consistency determination.¹³⁵

B. The Players

Cooperation of Federal Agencies

The cooperation and assistance of other federal agencies is particularly crucial to the successful implementation of the marine sanctuaries program. Federal agencies exert an enormous influence over the marine environment through their licensing, permitting, and leasing functions and through resource development projects. In addition, largely as a result of the duties imposed by NEPA, they accumulate masses of information concerning the marine environment which can help to identify potential sanctuary sites as well as assist in evaluating particular nominations. It is, therefore, imperative that NOAA develop effective mechanisms to obtain pertinent marine information generated by other federal agencies and also to ensure that these agencies do not undertake or authorize activities without first considering their potential effects on RAMS sites or designated sanctuaries.

Such cooperation can be achieved in two ways. First, NOAA could initiate contacts with federal agencies significantly involved in marine activities, with a view toward developing interagency agreements or memos of understanding. Agreements with agencies responsible for regulating developmental activities are particularly important. These would include the Bureau of Land Management and the United States Geological Survey in the case of outer continental shelf mineral leasing, the Environmental Protection Agency and the Army Corps of Engineers concerning ocean dumping and the regulation of dredge or fill activities, the Department of Transportation regarding the siting of deepwater ports, the Federal Energy Regulatory Commission (formerly the Federal Power Commission) concerning the licensing of liquefied natural gas terminals, and the Nuclear Regulatory Commission with respect to the siting of offshore nuclear power plants. Agreements with these agencies could be directed toward providing NOAA with information on existing or potential Register sites or sanctuaries, generated as a result of their own or their applicants' environmental reviews. In addition, the

importance of considering the effects of proposed activities on certain areas regardless of the activity's location. Achieving the goal of preserving or restoring marine areas of special importance appears no less dependent on assuring the compatibility of external activities than effective coastal zone management or ocean dumping regulation.

135. These buffer zones, however, should not be the exclusive determiners of when consistency is to attach. Whenever an activity would affect the sanctuary, consistency certification should be required.

agreements should encourage these agencies and their applicants to submit nominations to NOAA. Most importantly, these agreements should ensure that the regulatory procedures of these agencies, particularly their NEPA procedures, require the consideration of any potential adverse effects on sanctuaries or RAMS sites well in advance of any decision which could affect these areas. In fact, a recent court case has held inadequate an EIS for failure to consider the possibility of marine sanctuary designation as an alternative to a proposed offshore oil and gas lease sale.¹³⁶ Agreements should also be established with the National Marine Fisheries Service and the Regional Fisheries Councils, which are required to develop and implement regional fisheries management plans.¹³⁷

Federal agencies whose missions do not involve the regulation of developmental activities in the marine environment can also make important contributions to the marine sanctuaries program. This is particularly true of the Coast Guard, which serves as the principal marine enforcement agent for all federal agencies.¹³⁸ Agencies which manage terrestrial reserves along the nation's coasts, such as the Fish and Wildlife Service and the National Park Service should be encouraged to identify potential sanctuary sites for the purpose of providing compatible management programs in offshore areas. Cooperative agreements with the National Park Service could be particularly fruitful in this regard, since it already manages a number of marine areas lying adjacent to its terrestrial reserves.¹³⁹

The second means of achieving the cooperation of these federal agencies is through the issuance of an Executive Order.¹⁴⁰ An Executive Order directing all federal agencies to cooperate and assist in the identification and protection of marine areas of natural and cultural significance would have several advantages over individual agreements with agencies. Because such an order would signify a continuing federal commitment to identify and protect marine areas of special value, it would be difficult for any federal agency to ignore the

impact of its activities on these areas.¹⁴¹ The subsequent development of interagency agreements would, as a result, proceed with considerably greater speed. The higher visibility which an Executive Order would give the program should also encourage more active involvement on the part of the states and the public. Furthermore, the influence that such an Order would have on the Office of Management and Budget and the Congress with respect to budget levels should not be underestimated.

The contents of an Executive Order on the marine sanctuaries program should order the creation of the national Register of Areas of Marine Significance and direct all federal agencies to take steps to identify RAMS sites. In addition, the Executive Order could require federal agencies to consider the effect of their activities on marine areas listed on the Register or designated as sanctuaries, and, to the maximum extent practicable, refrain from engaging in or approving activities which may have an adverse effect upon the values of designated sanctuaries or areas under active consideration for sanctuary status. Agencies should also be required to provide notice to NOAA and the public whenever they are considering activities which might affect RAMS sites, in order to allow an opportunity to institute expedited consideration of these areas for sanctuary designation. Agencies with oceanographic monitoring, surveillance, and enforcement capabilities could be directed to cooperate and assist in the management of designated sanctuaries. Finally, the Executive Order should require the Council on Environmental Quality to report to the President on the effectiveness of efforts to implement its directives and the Office of Management and Budget to consider the Council's report when formulating budget requests to Congress for the various federal agencies.

Cooperation of the States

The effective cooperation of coastal states in the identification of marine areas of special value is also a critical element in the effective implementation of the marine sanctuaries program. In fact, because most recreational sanctuaries and all sanctuaries in estuarine areas will be located in state waters, state cooperation is essential since the MPRSA vests state governors with the authority to veto sanctuary designations within state boundaries.¹⁴² To date, however, cooperation between NOAA and coastal states has been less than optimal, as evidenced by the fact that there have as yet been no marine sanctuaries designated in state waters. Moreover, in at least two instances opposition by the state (or its subdivisions) has been the principal cause of the failure of nominations to proceed beyond the initial feasibility determination.¹⁴³ On the other hand, certain states have

136. *Massachusetts v. Andrus*, ___ F.Supp. ___, 8 ELR 20187 at 20189 (D. Mass. Jan. 18, 1977) (granting a preliminary injunction against the Department of Interior's proposed Georges Bank lease sale).

137. Pursuant to the Fishery Conservation and Management Act, 16 U.S.C. §1801 *et seq.*

138. See text accompanying notes 76 and 86, *supra*, regarding the Coast Guard's existing marine sanctuaries responsibilities.

139. Examples of marine areas managed by the National Park Service include the Virgin Islands National Park, which includes some 5,650 marine acres offshore of St. John Island; the Buck Island Reef National Monument, which includes 704 marine acres offshore of St. Croix Island in the Virgin Islands; and the Fort Jefferson National Monument, including over 47,000 marine acres offshore of the Dry Tortugas coral reef islands some 70 miles west of Key West, Florida.

140. The Carter Administration has already demonstrated its willingness to issue Executive Orders to provide for better federal management of natural resources. On May 25, 1977, five Executive Orders were issued, covering exotic organisms, floodplain management, off-road vehicles on public lands, wetland protection, and improvements in the EIS process. 42 Fed. Reg. 26944-68 (May 25, 1977).

141. Moreover, if an agency were to ignore or simply give lip service to the command of the Executive Order, its action could be challenged in court.

142. MPRSA, §302(b).

143. Nominated sanctuaries in this category include the proposed Port Royal Sound sanctuary in South Carolina and the proposed Cape Lookout sanctuary in North Carolina. See note 95, *supra*. It should also be noted that although it was never formally nominated, efforts to establish the area lying offshore of the Assateague Island National Seashore in

recently demonstrated an active interest in the program—for example, the states of California, Washington, Alaska, Pennsylvania, and New Jersey submitted a total of 24 recommended sanctuary sites in response to NOAA's most recent request.¹⁴⁴ In addition, many states have established programs to preserve and protect marine areas in a manner similar to the marine sanctuaries program. Examples of such state programs include Florida's system of aquatic preserves, Massachusetts' ocean sanctuaries, and Hawaii's natural areas reserves and marine life conservation districts.¹⁴⁵ Close federal cooperation with these states and others with similar programs will aid in the identification of suitable sanctuary sites, and may also provide an opportunity for all parties to benefit from the evolution of more effective management practices.

More active state involvement in the marine sanctuaries program can be anticipated if the states are apprised of the substantial incentives available to better manage their marine resources. First of all, the program offers states federal funding to manage marine areas within their waters. And, unlike the case of coastal zone planning and the estuarine sanctuaries programs, state matching funds are not required.¹⁴⁶ Furthermore, primary management responsibilities can be delegated to the states, as has been done with respect to the Key Largo Coral Reef sanctuary. This possibility should be particularly appealing if the states are afforded a meaningful opportunity to participate in the design of sanctuary management plans and implementing regulations. Moreover, Title III's consistency requirement would seem to offer the states (through NOAA) the assurance that federal activities will not adversely impact upon these areas once they are designated, particularly if consistency is interpreted to apply to activities affecting, as well as within, designated sanctuaries.

Maryland and Virginia as a marine sanctuary were abandoned largely as a result of local opposition. The suitability of this area for sanctuary designation was discussed at length in NOAA's third annual report to Congress. See U.S. DEPT. OF COMMERCE, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, REPORT TO CONGRESS ON IMPLEMENTATION OF TITLE III, July 1974 to June 1975 (1975).

144. California recommended 10 areas; Washington, 4; Alaska, 1; Pennsylvania, 3; and New Jersey, 6. See NOAA's Listing of Marine Sites, *supra* note 105.

145. Florida has established 30 aquatic reserves which are designed to maintain submerged lands and associated waters of exceptional biological, aesthetic, and scientific value in their natural and existing conditions for posterity. FLA. ANN. STAT. §§258.35-46. Massachusetts has established five ocean sanctuaries under five separate legislative enactments. MASS. ANN. LAWS, ch. 132A, §§13-17. Hawaii's Natural Area Reserves system, which manages both land and water areas to protect unmodified habitats for public education and scientific research, has led to the establishment of the Ahihi-Kinohi Natural Area Reserve, which has a marine component. HAW. REV. STAT. ch. 195. Marine Life Conservation Districts, such as that established at Hanauma Bay, are managed for the protection and conservation of marine life. HAW. REV. STAT. ch. 190.

146. Under the Coastal Zone Management Act, states pay one-fifth of the costs of planning and administering coastal zone programs and one-half of the costs of acquiring and managing estuarine sanctuaries. CZMA §§305, 306, and 315.

Thus, the marine sanctuaries program can offer to resourceful states a significant opportunity to manage particular offshore areas to preserve their natural and cultural values. There remains, however, an obstacle to successful sanctuary management by the states: their lack of authority to enforce sanctuary regulations. This deficiency has caused management difficulties, for example, in the Key Largo marine sanctuary. To remedy this, NOAA should seek from Congress an amendment to Title III granting it the authority to delegate enforcement responsibilities to capable states. While empowering the states to enforce federal laws is rather unusual,¹⁴⁷ it is not unprecedented.¹⁴⁸ In addition, this amendment should authorize the levying of criminal sanctions.¹⁴⁹ Thus, if the authority to, in effect deputize state officials as federal enforcement agents were granted,¹⁵⁰ along with the power to levy criminal sanctions, more effective sanctuary management should result.

While the proposed amendments should improve sanctuary management capabilities and help to stimulate interest in the program on the part of the states, NOAA currently has at its disposal a number of other mechanisms which can be utilized to encourage active state cooperation with the marine sanctuaries program. First, by requiring states participating in the coastal zone management program to demonstrate, as part of their annual grant applications, the efforts they have taken to identify areas suitable for sanctuary or RAMS consideration, NOAA could take a significant step toward integrating the marine sanctuaries program with coastal planning activities. Second, state coastal zone management program approval regulations, which are in the process of being revised by the Office of Coastal Zone Management,¹⁵¹ should explicitly mention the identification of potential marine sanctuaries. Finally, the

147. The general pattern of such delegation has involved requiring the states to adopt programs enforceable under state law if they wish to administer a given program. See, e.g., the authority of the Administrator of the Environmental Protection Agency to delegate permit responsibilities to states under §§402(b) and 404(g) of the Federal Water Pollution Control Act, 33 U.S.C. §§1342(b) and 1344(g), ELR STAT. & REG. 42101.

148. See, e.g., §109(c) of the Marine Mammal Protection Act, 16 U.S.C. §1379(c), which authorizes the Secretaries of Commerce and the Interior to enter into cooperative agreements with the states for the purpose of delegating the "administration and enforcement" of the federal program regulating the taking of marine mammals. See also Bean, *supra*, note 14, at 363, for a description of federal-state relations under this Act.

149. While the development of an interagency agreement with the Bureau of Land Management would make available criminal sanctions (and the accompanying authority to make arrests) in coral reef sanctuaries, it would not be useful in non-coral sanctuaries. See note 87 and accompanying text, *supra*. Consequently, legislation authorizing the levying of criminal sanctions is preferable.

150. It is not recommended, however, that the states be delegated the authority to assess and enforce federal criminal penalties.

151. Revised draft program approval regulations were recently published by NOAA (42 Fed. Reg. 43552, August 29, 1977). Interim final regulations are expected to be promulgated in February 1978.

new Coastal Fisheries Assistance Program should require recipient states to identify potential sanctuary and RAMS sites in the course of establishing programs to manage fisheries in their offshore waters.¹⁵² These measures would serve to foster the close cooperation between coastal and ocean management activities requested by NOAA Administrator Frank, as well as help carry out the expectations outlined in the marine sanctuary program guidelines.¹⁵³ And by bridging the gap between coastal and marine planning, they would provide strong incentives for coastal states to become actively involved in identifying marine areas of significance.

Public Involvement

The public has a particularly vital role to play in the implementation of the marine sanctuaries program. Because Title III provides members of the general public the opportunity to nominate marine areas for sanctuary status, interested individuals and organizations can significantly affect the direction of the program. Few other legislative schemes offer such an open-ended opportunity for the public to initiate actions designed to protect natural resources.

Regrettably, the present marine sanctuary program guidelines allow the initial evaluation of sanctuary nominations—the feasibility determination—to be made in the absence of meaningful public participation or review.¹⁵⁴ Thus, while the public is encouraged to submit nominations, there is no effective public involvement in the critical threshold decision of whether detailed evaluations of such nominations are merited. If, however, the program guidelines were revised to provide criteria to guide each step in the evaluation process and to offer the public an opportunity to review decisions made on the basis of these criteria, the program would take a large step towards increasing its public accountability. And, by placing nominators on notice of the criteria used in evaluating sanctuary nominations, the program would encourage the submission of nominations that at least on a prima facie basis satisfy the prescribed criteria.

In addition to clarifying the sanctuary evaluation process, public involvement can be encouraged through the effective use of the environmental impact statement process. The present EIS process requires not only a consideration of the environmental effects of sanctuary designation but also the concurrent development of management plans and implementing regulations. In addition, the draft EIS is the subject of public hearings in areas likely to be affected by sanctuary designation. While these procedures seem sound, particularly since they attempt to utilize the EIS process as a means to involve the public in management decisions, they run the risk of taking place late in the decision-making process. In other words, by the time the EIS process provides the

public an opportunity to review the sanctuary nomination, crucial decisions may have already been made. The three-step decision-making process advocated above¹⁵⁵ might actually exacerbate this difficulty by providing for two out of three steps to be conducted prior to EIS preparation instead of one. However, the suggested requirements of public notice of nominations and publicly available criteria should serve to involve the public in these pre-EIS decisions. And while it seems unnecessary and perhaps counterproductive to prepare an EIS on the initial decision to place a site on the Register of Areas of Marine Significance¹⁵⁶ and impracticable to prepare an EIS each time a site is assigned a priority rating,¹⁵⁷ the public notice of this secondary determination should contain enough information to apprise the public of the anticipated environmental effects of such a rating. In this manner, the fact that a formal EIS is not prepared until after the second step of the decision-making process need not impair the public's ability to review the environmental effects of the earlier decisions.

Finally, a potentially fruitful means of involving the public in the marine sanctuaries program concerns the kinds of marine areas considered for sanctuary designation. There is likely to be greater public interest in marine areas near shores which are used for recreational activities than in areas that are inaccessible to members of the general public. While the present program impetus supplied by President Carter's Environmental Message is directed largely to outer continental shelf areas threatened by impending developmental activities, this should not obscure the fact that Title III is aimed equally at the protection of estuarine and near shore areas used for recreational activities.¹⁵⁸ By encouraging the establishment of these "human use" sanctuaries, therefore, the marine sanctuaries program would not only encourage the participation of a large segment of the public, it would also help to fulfill the broad mandate given to the program by Congress.

International Considerations

In order for marine sanctuary regulations to be applicable to foreign citizens and vessels outside of the "territorial jurisdiction"¹⁵⁹ of the United States, Title III

155. See text accompanying notes 124-125, *supra*.

156. If public nominations were to be actively encouraged, the preparation of an EIS for each of the large number of nominations received would conceivably overtax the limited resources of the Office of Ocean Management and bring the entire process to a virtual standstill. Moreover, the act of listing a site on the RAMS may fall short of the threshold at which NEPA requires the preparation of an impact statement. *Cf. Hanly v. Kleindienst, supra*, note 120.

157. Since all sanctuary nominations placed on RAMS would receive a priority rating, an EIS on each may again unnecessarily delay evaluation of those areas receiving a high priority. However, the criteria used in assigning priorities should be the subject of an EIS. This EIS could be combined with that on the RAMS into a programmatic EIS on the entire program.

158. MPRSA, §302(a).

159. This term has been interpreted to mean the territorial sea. *Cunard S.S. Co. v. Mellon*, 262 U.S. 101 (1923).

152. The first fisheries grant issued by the Office of Coastal Zone Management pursuant to §305 of the Coastal Zone Management Act was recently made to North Carolina for the purpose of developing a number of fisheries management programs in the state's nearshore waters. See 8 COASTAL ZONE MANAGEMENT NEWSLETTER no. 40 at 3 (Oct. 5, 1977).

153. See note 55 and accompanying text, *supra*.

154. See text accompanying and following note 70, *supra*.

of the MPRSA requires that the regulations observe "recognized principles of international law" or be authorized by agreements between the United States and foreign nations.¹⁶⁰ Consequently, in designing regulations for sanctuaries located outside of the three mile territorial sea, the marine sanctuaries program must give careful consideration to the treaties, conventions, and agreements to which the United States is a party. This will require close coordination with the State Department's Office of Ocean Affairs both in terms of identifying relevant international laws and agreements and in ensuring that the regulations are consistent with them.

The program must also be sensitive to the changing nature of the international approach to the law of the sea. If the provisions in the latest negotiating text developed at the Third United Nations Conference on the Law of the Sea become accepted principles of international law, coastal nations' jurisdiction over the waters off their coasts would significantly increase. These provisions would establish a territorial sea of 12 miles, extend the contiguous zone from 12 to 24 miles, and authorize the establishment of a 200-mile exclusive economic zone in which coastal nations would enjoy sovereign rights to conserve and manage living and non-living natural resources.¹⁶¹ Thus, the adoption of these principles would eliminate most of the uncertainties regarding the effect of marine sanctuaries regulations on foreign citizens and vessels.

Even if no internationally acceptable agreement is reached at the Law of the Sea Conference, there is evidence that much the same result might be achieved domestically. To a large degree, Congress has changed its notions concerning what constitutes "recognized principles of international law" in the years since the passage of Title III. For example, the extension of jurisdiction over foreign fishing to the 200-mile limit was asserted in spite of the fact that there is no international agreement sanctioning such an extension of jurisdiction.¹⁶² More recently, jurisdiction to assess oil spill cleanup costs under the Federal Water Pollution Control Act was also extended to the 200-mile limit.¹⁶³ Furthermore, Congress is considering several bills which would extend the jurisdiction of the United States over deep seabed mining activities in areas beyond the edge of the continental shelves, at least until an international regime to regulate such activities is adopted.¹⁶⁴ In light of this apparent shift in attitude, restricting the applicability of marine sanctuary regulations to foreign citizens could be an anachronism, and Congress may be willing to sanction a broader scope of applicability.

If international or congressional developments do not lead to an expansion of jurisdiction over the activities of foreign nationals or vessels affecting marine sanctuaries, efforts must be made to establish international agreements to protect designated sanctuaries from these activities. Agreements with nations whose ships fish in waters off the nation's coasts or engage in trade to or from United States ports are particularly crucial. In addition, agreements with nations whose waters lie adjacent to United States waters, such as Canada, Mexico, and the Soviet Union, could serve to identify areas suitable for marine sanctuary protection and provide for joint management of these areas. In this manner, the marine sanctuaries program could take significant steps to implement some of the principles which have been often echoed at international conferences.¹⁶⁵

V. Conclusion

The long dormant marine sanctuaries program is closer now to realizing its goals than at any time since its creation over five years ago. The legal framework from which to comprehensively manage valuable marine areas is largely in place, the President has publicly singled out the marine sanctuaries program as an essential mechanism in the management of the nation's natural resources, and NOAA's recent reorganization promises to better situate the program in terms of securing administrative resources and funds to implement the mandates of Title III of the MPRSA. Both outside and inside the government interest in the program has blossomed, as evidenced by the influx of recommended sanctuary sites which have recently descended upon NOAA, and the increasing willingness of courts to require that the possibility of marine sanctuary designation be considered in EIS's on proposed marine development projects.¹⁶⁶

Yet, further legislative and administrative steps must be taken if the program is to effectively protect and restore valuable marine areas. On the congressional level, certain amendments to Title III are needed. These include authorizing criminal sanctions in order to allow enforcement entities to restrain sanctuary violations, providing for the delegation of enforcement responsibilities to capable states, and including foreign activities among those subject to sanctuary regulations. In addition, in order to eliminate doubts as to the scope and geographic coverage of Title III's consistency provision, Congress should make it clear that the Act is to be applied as broadly as the legislative goals warrant. Perhaps of most immediate concern, Congress must demonstrate its commitment to these goals by authorizing and appropriating funds sufficient to guarantee the program's effective implementation.

160. MPRSA §302(c), (g).

161. *Informal Negotiating Text*, *supra* note 22, Articles 3, 33, and 56.

162. Fishery Conservation and Management Act, §201, 33 U.S.C. §1821.

163. Federal Water Pollution Control Act, §§311(b)(3) and (f), 33 U.S.C. §1321. Although the language of the Conference Report is careful to limit the liability of foreign citizens to those who are "otherwise subject to the jurisdiction of the U.S.," this would nevertheless appear to apply to foreign fishing vessels within the 200 mile limit. H.R. REP. NO. 830, 95th Cong., 1st Sess. 91 (1977).

164. See, e.g., H.R. 3350, H.R. 4582, H.R. 6784, S. 2053, S. 2085, and S. 2168, 95th Cong., 1st Sess. (1977); see also *Hearings of the Subcommittee on Oceanography and the House Committee on Merchant Marine and Fisheries on Deep Seabed Mining*, 95th Cong., 1st Sess., Ser. No. 95-4 (1977).

165. For an overview of these principles, see CENTER FOR NATURAL AREAS, AN ASSESSMENT OF THE NEED FOR A NATIONAL MARINE SANCTUARIES PROGRAM, Appendix B (1977).

166. See note 136 and accompanying text, *supra*.

On the administrative level, NOAA must ensure that its reorganization effects changes not only in the program's implementation but carries over to the contents of the program's guidelines and implementing regulations. The guidelines must be revised to clarify the uncertainties that presently handicap the existing sanctuary evaluation process. This can be most readily accomplished by requiring each step of the process to be based on publicly available criteria and providing greater opportunity for public involvement. The guidelines should also establish a Register of Areas of Marine Significance and incorporate it as an integral element of the sanctuary evaluation process. Even if Congress does not clarify the language of Title III's consistency provision, both the guidelines and the sanctuary regulations should interpret the existing authority in a manner which is most protective of sanctuary values. In addition, NOAA must initiate efforts to establish and maintain the active involvement of other federal agencies and the states in identifying marine sites suitable for sanctuary protection and assuring that their actions do not adversely affect such areas. This may require the development of interagency agreements and memoranda of understanding with federal agencies, and appropriate revisions to coastal zone management grant application and program approval regulations in order to enhance state involvement.

Many of these administrative initiatives can be facilitated if NOAA can secure from the Administration an Executive Order supporting the marine sanctuaries program. Such an order should establish the national Register of Areas of Marine Significance, direct federal agencies to identify areas for inclusion on the Register or for sanctuary designation, and require that federal agencies consider the impacts of their actions on designated areas in order to avoid authorizing or undertaking actions which could adversely affect them. The Executive Order should also enlist the Council on Environmental Quality and the Office of Management and Budget to ensure that these directives are carried out. In addition to issuing this Executive Order, the Administration can demonstrate its commitment to the principles announced in the Environmental Message by sending to Congress budget requests sufficient to achieve them.¹⁶⁷

These legislative and administrative actions should serve to provide the marine sanctuaries program with the necessary tools to become a vital element in the nation's approach to the marine environment. Its potential role in this capacity should not be underestimated. Since the first day of this decade, the nation has required that federal actions with significant environmental effects be preceded by an analysis of those effects.¹⁶⁸ The National

Environmental Policy Act's implicit requirement to plan before acting and its success in achieving more rational natural resources decision making has, in recent years, fostered the development of more explicit planning requirements. This is particularly true with regard to the terrestrial public domain, where comprehensive planning processes are now mandated to provide for better management of national forests and national resource lands.¹⁶⁹

In spite of the fact that more than two-fifths of the nation's public lands lie seaward of the high water mark of the nation's oceans and Great Lakes,¹⁷⁰ comprehensive planning requirements with respect to marine resources have been slow to evolve. Only the most recent congressional effort to better manage marine activities requires the full implementation of a broad-based planning process.¹⁷¹ While efforts continue to apply planning processes to yield more rational resource decision making in the marine environment, these too appear directed only to specific (albeit important) marine activities.¹⁷² Thus, if the elusive search for a national ocean policy is to be a successful one, it is likely to occur as a consequence of a number of different marine resources planning processes.

When viewed from this perspective, an effectively implemented marine sanctuaries program has a particularly important role in shaping the nation's approach to the marine environment. Although the marine planning processes which have been, or are likely to be instituted can lead to more effective utilization of marine resources, standing alone they cannot ensure the preservation and restoration of valuable marine areas. Only through the authority conferred by Title III of the MPRSA is there the capability to permanently protect and comprehensively manage critical marine areas for their natural and cultural values. As marine resources planning evolves into an essential component of a discernible national ocean policy, the realization of the congressionally announced goal of a "balanced" and "comprehensive" approach to the marine environment¹⁷³ will be a direct function of how effectively these diverse planning processes incorporate the goals of the marine sanctuaries program.

to law on January 1, 1970.

169. Forest and Rangelands Renewable Resources Planning Act of 1974, as amended by the National Forest Management Act of 1976, 16 U.S.C. §§1600-1614, ELR STAT. & REG. 41441, see Bean, *supra* note 14, at 157-61 and 176-87.

170. See note 14, *supra*.

171. Pursuant to the Fishery Conservation and Management Act of 1976, 16 U.S.C. §1801 *et seq.*, eight regional fishery management councils are each to prepare interim and final management plans to provide for the conservation and management of the nation's fishery resources within a 200-mile contiguous zone. This mandate to plan, however, should not be confused with the comprehensive planning taking place on terrestrial public lands, since it pertains to only one activity—fishing.

172. For example, the proposed Outer Continental Shelf Lands Act Amendments, S. 9, H.R. 1614, 95th Cong., 1st Sess. (1977), would, *inter alia*, require the Secretary of the Interior to develop a comprehensive mineral leasing plan for the outer continental shelf.

173. Marine Resources and Engineering Development Act of 1966, §2(a), 33 U.S.C. §1101(a).

167. The Administration's commitment to the marine sanctuaries program was recently given more substantial support within the annual budget transmittal to Congress, which requested an appropriation of \$500,000 to fund the program for fiscal year 1979. BUDGET OF THE UNITED STATES GOVERNMENT 125 (1978), *Id.* at Appendix, p. 241. See also U.S. DEPARTMENT OF COMMERCE, BUDGET ESTIMATES FOR FISCAL YEAR 1979 at 213 (1978). Federal legislation is pending which would authorize an appropriation of \$5 million to the program over the next two years. H.R. 10661, 95th Cong., 1st Sess. (1977).

168. The National Environmental Policy Act, Pub. L. 91-190, 83 Stat. 852 (codified at 42 U.S.C. §4321 *et seq.*) was signed in-

