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BY THE U.S. GENERAL ACCOUNTING OFFICE

## Report To The Secretary Of Commerce

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# Need To Strengthen Coordination Of Ocean Pollution Research

The National Ocean Pollution Planning Act of 1978 designated the National Oceanic and Atmospheric Administration (NOAA) as lead agency for preparing and periodically revising a plan to coordinate and direct Federal ocean pollution research--an activity scattered throughout the Government. GAO found that while NOAA has made progress toward implementing the act, the plan has had little impact on ocean pollution research.

GAO recommends that the National Ocean Pollution Planning Act be amended to increase the ability of NOAA or an appropriate interagency committee to coordinate research and that future revisions of the plan provide clearer direction for the course and organization of the Federal research effort.



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**GAO/CED-82-108**  
**JULY 14, 1982**

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UNITED STATES GENERAL ACCOUNTING OFFICE  
WASHINGTON, D.C. 20548

COMMUNITY AND ECONOMIC  
DEVELOPMENT DIVISION

B-203956

The Honorable Malcolm Baldrige  
The Secretary of Commerce

Dear Mr. Secretary:

We recently completed a review of the National Oceanic and Atmospheric Administration's (NOAA's) implementation of the National Ocean Pollution Planning Act (Public Law 95-273, approved May 8, 1978). As you know, the act directs NOAA to prepare and periodically revise a plan for coordinating Federal ocean pollution research. We found that the plan could be a more effective instrument for coordination if the National Ocean Pollution Planning Act were strengthened and if certain changes were made to the plan itself. At a minimum, the act needs to be amended to give NOAA, or an interagency coordinating committee chartered by the act, authority to review Federal agency research budgets before they are approved by the Office of Management and Budget (OMB). Future plans need to specify in more detail how limited Federal research money should be allocated and how responsibilities should be divided by agencies exploring similar ocean pollution issues to avoid unintended duplication or inefficiently organized research.

OBJECTIVES, SCOPE, AND METHODOLOGY

The objective of our review, which was performed between May 1981 and March 1982, was to determine whether NOAA's implementation of the National Ocean Pollution Planning Act, and particularly the 5-year plan mandated by the act, had improved the coordination of Federal ocean pollution research development and monitoring (hereafter referred to simply as ocean pollution research). We made this determination by (1) reviewing the plan itself, descriptions of ongoing and planned Federal research, and research budgets and (2) by talking to NOAA officials, to representatives of OMB and the National Academy of Sciences, and to managers of Federal ocean pollution research programs in Washington, D.C., and at several field locations. We discussed with these sources the nature of ongoing Federal research, the implementation of the plan's recommendations, the effect of the plan on research budgets, and the coordination mechanisms employed in other areas of multiagency scientific research. (See app. I for a list of some Federal sources we contacted.)

An attempt to comprehensively catalog all coordination problems in this broad field was outside the scope of our review. However, we did look for evidence of the need to improve coordination by reviewing other studies of ocean pollution research coordination and also by examining one research area in greater detail--dredge material research. We discussed dredge material research with managers of Federal research programs in Washington, D.C., and at various field locations and reviewed descriptions of research projects to determine what research was being conducted by Federal agencies and what attempts had been made to coordinate it. We selected dredge material research because it involves many programs in a number of Federal agencies and significant Federal outlays.

We performed this review in accordance with our current "Standards for Audit of Governmental Organizations, Programs, Activities, and Functions."

#### THE EFFORT TO COORDINATE OCEAN POLLUTION RESEARCH

By the 1970's many Federal agencies were conducting research on the possible harm done to the ocean by man's activities. According to a recent Federal study: 1/

"Often the organizations addressing these questions had little communication with each other. With the increasing complexity of pollution problems and the growing maze of Federal programs to address them came a need for careful planning, defining of goals, information sharing, and general coordination of related efforts throughout the Federal establishment."

In October 1977 the Subcommittee on Oceanography, House Committee on Merchant Marine and Fisheries, held hearings on the scattered Federal ocean pollution research effort and the need for legislation to improve coordination. The Acting Assistant Administrator for Research and Development of the Environmental Protection Agency (EPA) testified that there was a need to eliminate duplication and said he strongly supported a cohesive, coordinated Federal program of marine protection and research. The Acting Associate Administrator of NOAA agreed that Federal programs were very fragmented, a condition which he believed might lead to duplication of effort. The committee report concluded that the "\* \* \* wide dispersion of ocean programs is an

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1/Marine Oil Pollution: Federal Program Review, Interagency Committee on Ocean Pollution Research, Development, and Monitoring, April 1981.

inherent factor contributing to the fragmented and uncoordinated Federal effort relating to ocean pollution research and monitoring."

The National Ocean Pollution Planning Act of 1978 was passed by the Congress after these hearings. The act states in its "Findings and Purposes" section that Federal ocean pollution research was "\* \* \*" often uncoordinated and could result in unnecessary duplication." The act designated NOAA as the lead agency to develop a comprehensive 5-year plan to better coordinate ocean pollution research. The 5-year plan, according to the act, is to be revised biennially and is to include a detailed inventory of Federal programs, an assessment and ordering of national needs and problems, an analysis of the extent to which existing programs will assist in meeting these priorities and resolving these problems, recommendations for changes in the overall Federal effort to meet priorities, and a description of budget coordination efforts. The act specified that proposals should be made in the plan for interagency cooperation to help eliminate duplication.

To advise NOAA in carrying out its mandate, the President's Science Advisor chartered the Interagency Committee on Ocean Pollution Research, Development, and Monitoring (COPRDM) as a standing committee of the Federal Coordinating Council for Science, Engineering, and Technology. The Committee is chaired by NOAA's Deputy Administrator and its members are senior policymakers in Federal agencies that perform ocean pollution studies. A representative of OMB is also a member.

The National Marine Pollution Program Office (NMPPPO) was established as part of NOAA in 1979 to (1) prepare and revise the plan, (2) coordinate its implementation, and (3) provide staff support to the COPRDM. The 5-year plan was first released in August 1979; the first revision was released in February 1982.

The plan prepared by NOAA has identified about 1,000 ocean pollution research projects carried out by 11 Federal departments and independent agencies. Total Federal ocean pollution research expenditures in fiscal year 1981 were approximately \$172 million. Amounts expended by individual departments and agencies are shown in appendix II.

THE PLAN HAS HAD LIMITED IMPACT ON  
FEDERAL OCEAN POLLUTION RESEARCH

NOAA has made considerable progress toward implementing the National Ocean Pollution Planning Act. It has (1) issued under the act's mandate a plan and one revision containing extensive catalogs of Federal ocean pollution research projects, (2) conducted a detailed review of one ocean pollution research area--oil pollution--which contributed to a Department of the Interior (DOI)

decision to intensify research on the long-term effects of off-shore drilling, (3) influenced the distribution of some NOAA research grants, and (4) improved communication among researchers and managers by sponsoring various meetings and forums to exchange information and views.

However, in view of the wide range and diversity of Federal ocean pollution research activities, we believe that the accomplishments of NOAA's coordinating efforts must be considered limited. With the exception of the DOI and NOAA programs noted above, the plan has not had a discernible effect on Federal research coordination. That is, it has not affected the initiation or termination of research projects or programs, their funding, or their distribution among Federal agencies. This conclusion is based (1) on discussions we had with managers of 12 research programs in five Federal agencies and with representatives of other institutions, such as OMB and the National Academy of Sciences (see app. I), who said the plan has not affected the coordination of Federal research, (2) on discussions with NOAA officials responsible for preparing the plan, and (3) on our review of budgets and other records relating to Federal research.

For example, the Director, Division of Ocean Sciences, National Science Foundation, said he was not aware of any effect that the plan has had on grant awards. EPA headquarters officials characterized the original plan as merely a listing of research projects and said it has not helped research programing. Corps of Engineers (COE) headquarters officials said their dredge material research was carried out in line with their agency missions rather than any Federal plan. Headquarters officials of the U.S. Geological Survey, the Coast Guard, and the Navy also said that the plan had no material or beneficial impact on their programs or plans.

Field officials with whom we spoke had similar views of the plan's impact. Representatives from COE's District II Office and the Department of Energy's (DOE's) Northeast Regional Marine Program said the plan had no impact on their activities, and they were not sure they had ever seen it.

The Director of NOAA's National Marine Pollution Program Office, which prepared and revises the plan, said that with the exception of the DOI study and the NOAA research grants referred to above, he could not identify any Federal research projects that had been affected by the plan.

WHY NOAA'S EFFORTS HAVE NOT HAD  
MORE IMPACT ON OCEAN POLLUTION RESEARCH

The effectiveness of NOAA's attempts to implement the National Ocean Pollution Planning Act have been hampered because (1) it has little authority to influence research conducted by

other Federal agencies and (2) because the plan it produced has not indicated how recommended research should be funded and has not recommended specific roles to agencies which research similar subjects.

NOAA has limited statutory authority to influence research

The National Ocean Pollution Planning Act did not give NOAA authority to control ocean pollution research in other Federal agencies. NOAA must rely on the voluntary cooperation of research agencies acting through COPRDM, which was created by administrative order and is not chartered by the act, to help prepare and implement its 5-year plan. Neither NOAA nor COPRDM has explicit authority under the act to review research budgets. These limitations reduce the likelihood that any changes the plan recommends which are not viewed by the affected research agencies as fully consistent with their interests or missions will be adopted.

NOAA's authority under the National Ocean Pollution Planning Act is more limited than that granted by other laws to other lead agencies responsible for coordinating multiagency Federal research programs. For example, the Acid Precipitation Act of 1980 (Title VII of Public Law 96-294) established the interagency Acid Precipitation Task Force cochaired by representatives of the Department of Agriculture, NOAA, and EPA. The act designates the task force to coordinate Federal acid rain research, including developing a national plan for acid rain research and a Government-wide budget for research. Each year, OMB tells the task force how much money OMB expects to approve for acid precipitation research in the Federal budget then being prepared by the Federal agencies. The task force's job is to allocate this money to the individual Federal research agencies and to present to OMB a consolidated research budget. According to OMB's Budget Examiner for acid rain research, the consolidated budget is used by OMB to review funding requests from the individual research agencies.

To cite another example, the Congress is considering legislation (H.R. 5401) to correct deficiencies in another area for which NOAA has coordinating responsibility--climate research. The deficiencies--limited impact on research programs and budgets--are similar to those we found in NOAA's ocean pollution coordinating activities. The proposed legislation was introduced after a group of climatologists, including the President of the Association of State Climatologists and the Chairman, Climate Board, National Research Council, reported that NOAA's ability to coordinate Federal climate research had been hampered by inadequate statutory authority. NOAA relied on assistance from an Interagency Policy Board in preparing and implementing a 5-year climate program plan. As with COPRDM, the interagency coordinating committee in the ocean pollution area, the Board did not have a statutory charter

and lacked budget review authority. In an August 4, 1981, letter, the climatologists reported to the chairman of a House subcommittee that:

"There is general agreement that the present Inter-agency Policy Board has been ineffective. It has met infrequently, no significant policy issues have been brought before it for resolution, it has played no well-defined role in the budget process, and the level of authority of participants in its meetings has declined.

"Budget formulation has largely consisted of collating agency proposals, and there seems to be no evidence that these agency plans have been influenced substantively by Policy Board deliberations. This is not surprising since the legislation gives no direct budget authority to the central coordination structure."

The climatologists concluded that:

"A multi-agency National Climate Program probably can function most effectively if it is planned and implemented in a participatory, corporate fashion in which Agency constraints and mission-oriented interests and constraints can be reconciled with programmatic goals. To this end, the crucial policy-setting and budgetary authority for the Program should reside in an interagency body, not in a weak office necessarily attached to, and thus perceived to be part of, a mission agency. To be effective, this interagency body must have statutory authority, and a clearly defined role in the planning/budgeting process, and should be composed of individual agency representatives of sufficiently high rank to have presumptive authority to make binding budget decisions on behalf of their agencies."

H.R. 5401 would help correct the weaknesses found by the group of climatologists by, among other things, giving the inter-agency coordinating body a statutory charter and authority to review Federal agency budgets for climate research. NOAA's Assistant Administrator for Policy and Planning strongly endorsed these changes at hearings on the bill. 1/

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1/We recently reported on another instance of how limited authority of a coordinating body, in this case EPA's Great Lakes National Program Office, had limited its effectiveness. See "A More Comprehensive Approach Is Needed To Clean Up the Great Lakes" (CED-82-63, May 21, 1982).

Five-year ocean pollution plan needs  
to more clearly lead Federal research

A major function of an interagency coordination effort, in our opinion, should be to ensure that research serves national as well as agency interests. When agencies concentrate on their own interests to the exclusion of broader Federal concerns, the result can be (1) misplaced research emphasis, resulting in over-spending on less important areas and underfunding of more important areas and (2) unnecessarily duplicative research or inefficiently organized efforts to research common issues. To be effective, the ocean pollution research plan should therefore provide some direction from a Government-wide perspective on how (1) limited research funds should be spent and (2) how to efficiently allocate responsibilities among agencies which are researching similar issues.

More explicit guidance in these areas would also be consistent with the National Ocean Pollution Planning Act. The act states that the plan should establish research priorities based on the value and cost of individual research projects and may recommend funding changes to existing programs in accordance with these priorities. The act also states that the plans should contain an account of how the budget review process was coordinated so as to eliminate unnecessary duplication among agency programs and may include specific proposals for pooling resources across agency lines to eliminate duplication. As discussed below, the original plan and the first revision have not provided sufficiently clear direction in these areas and thus, as reported to us by Federal program managers, have not had much effect on the course of Federal ocean pollution research. In our opinion, the plan has not been precise on the need for budget changes and the division of research responsibilities because (1) it is developed largely through consensus among research agencies and (2) in NOAA's view, the plan is a "strategic" document, designed to provide only very general guidance to researchers.

The plan needs to influence budget decisions

The original plan and its revision have not been well designed to affect budget decisions. Both versions of the plan have recommended that many research areas be emphasized or that new research initiatives be undertaken. The plan states that the additional research can be performed without an increase in total research spending but does not indicate which research programs should be reduced to finance higher priority studies. For example, the revised plan clearly recommends reducing research in only two areas. These areas are (1) studies of brine disposal from the strategic petroleum reserve storage areas funded by the Department of Energy and (2) research on the effects of off-shore drilling conducted by DOI in preparation for leasing tracts on the Outer Continental Shelf. Neither of these recommended reductions would free enough resources to launch major research initiatives.

The manager of DOE's Strategic Petroleum Reserve Oceanographic Support Program told us that DOE is currently discussing possible reductions in brine disposal studies with the Corps of Engineers and EPA. So far, DOE has identified a one-time saving of about \$1.6 million, annual reductions of about \$500,000, and potential for some additional savings. DOE's budget for brine disposal studies in fiscal year 1982 is \$4.5 million. In the case of research on the effects of off-shore drilling, the Acting Chief, Branch of Offshore Mining, Mineral Management Service, DOI, said that implementing other plan recommendations for increased broad-based studies and long-term effects studies would more than offset any cost savings from reductions in pre-lease studies.

Research which the plan indicates is most important would likely stand a better chance in the competition for funding if the plan clearly specified where Federal research money should be spent. For example, OMB officials told us that the plan had not established priorities or made funding recommendations with sufficient precision to be of use in their budget review and that in fact neither the original plan nor its revision have been used by OMB for this purpose. Although OMB is a member of COPRDM, its representatives have never attended a meeting, according to OMB, because of the press of higher priority business. OMB held a draft of the revised plan for 8 months after it was transmitted by NOAA and released it only after making major changes to conform it to the administration's fiscal year 1983 budget.

The need to more closely tie the plan to Federal agency budgets is illustrated by the treatment received by regional planning projects and ocean dumping research in the fiscal year 1983 budget. The plan says that ocean dumping research is "\* \* \* of continuing importance and should receive emphasis in the future," but the administration's fiscal year 1983 budget proposes to eliminate NOAA's Ocean Dumping Research Program. In addition, the plan states that "Many marine pollution problems are addressed most appropriately on a regional basis so that the unique environmental attributes and problems of the region can be considered." According to the Director of NOAA's National Marine Pollution Program Office, Federal scientists generally agree that ocean pollution research is best coordinated and most useful when done on a regional basis. The revised plan recommends that EPA and NOAA develop a conceptual model for making regional waste management decisions and test the model in a selected region. Nevertheless, the administration's budget for fiscal year 1983 proposes to eliminate or reduce funding for regional research projects in NOAA and EPA involving the Great Lakes, Chesapeake Bay, Hudson-Raritan Estuary, and Puget Sound.

Agency roles need to be more precisely defined

Most ocean pollution research categories are investigated by several Federal agencies. (See app. II.) For example, five organizations research marine waste disposal issues, four research marine mining, five research accidental discharges, and eight research the effects of coastal land use. Without adequate coordination, there is a potential for unnecessarily duplicative or inefficiently organized research. In the only in-depth examination of a research area so far undertaken pursuant to the National Ocean Pollution Planning Act, a panel of non-Federal scientists and managers found just these kinds of problems. The panel's report said:

--"Research priorities are established by agency mission rather than by assessment of overall information requirements, with a resultant waste of resources due to non-critical problems being attacked, duplication of effort, etc. \* \* \*."

\* \* \* \* \*

--"The Evaluation Panel found evidence of unintended duplication of effort (e.g. studies of natural oil seeps, oil spill trajectory modeling, and oil biotic effect studies) that could have been prevented or mitigated by prior interagency communication. Also, the results of some studies are ignored in the design of others, e.g. studies on the possibility of drilling fluid distribution onto the Flower Garden Reefs in the Gulf of Mexico. General studies of hydrocarbon detoxification, biochemical impact, and genetic impacts could have been made more useful to petroleum development decisions by modest changes, such as the use of test compounds more characteristic of petroleum, if they had been developed with greater interagency communication."

\* \* \* \* \*

--"The lack of overall planning of current efforts comprising Federal activities in marine petroleum pollution research has allowed studies to be defined and initiated without being fully integrated with one another. For example, socio-economic studies, when conducted at all, are conducted without apparent integration with other research efforts."

Despite these criticisms, the revised Ocean Pollution Research Plan does not assign oil pollution research responsibilities to Federal agencies so as to avoid the duplicative or poorly coordinated research reported by the panel.

Our review of Federal research on the ocean disposal of dredge material disclosed that in this area also, Federal agencies were conducting studies on similar issues without a clear assignment of roles and responsibilities. Three agencies --NOAA, EPA, and COE--are the principal Federal researchers in this area. All three are investigating how the disposal of dredge material affects the marine environment. NOAA studied this subject in fiscal year 1981 in six programs. <sup>1/</sup> EPA does dredge material research at three laboratories around the country and COE at the Waterways Experiment Station in Vicksburg, Mississippi, and in various COE district offices nationwide. Since these three agencies are actively examining the same general issue, they should each have clearly defined roles to avoid unnecessary duplication and ensure that research projects are efficiently designed and allocated. (See app. III for a listing of NOAA, EPA, and COE programs involving dredge material research.) The plan does not attempt to do this, however. It does not contain any analysis of the appropriateness of the division of responsibility for ongoing research or recommend clear roles for future research.

In addition, the plan recommends that two areas of dredge material research receive future emphasis--(1) chemical effects on the ecosystem and (2) disposal management--but does not attempt to prescribe roles for individual Federal agencies in these areas. It says only that the value of a study to synthesize current information on chemical effects "be determined by the Corps of Engineers, NOAA, EPA, and [Fish and Wildlife Service, Department of the Interior], and the study be conducted if appropriate." Regarding disposal management research, it says only that "Research, development, and monitoring related to this need fall largely within the purview of Corps of Engineers Headquarters, and coastal divisions and districts, and EPA and NOAA."

The need for coordinating dredge material research under the National Ocean Pollution Planning Act is underscored by the inactivity of other interagency coordination efforts. Recognizing a need to better coordinate dredge material research, EPA and COE formed a technical coordinating committee in 1975. The committee's principal product has been a manual for testing the suitability of dredge material for ocean disposal. According to its cochairman, the committee has focused more on discussing regulations than individual research projects. As of March 1982, when we talked with the committee cochairman, the committee had met only once in 39 months and had scheduled no future meetings.

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<sup>1/</sup>The Ocean Dumping, New York Bight, Hudson-Raritan Estuary, Habitat Investigations, Ocean Pollution Monitoring, and Sea Grant Programs.

CONCLUSION\*

NOAA's efforts to improve interagency coordination of ocean pollution research have produced some benefits but results have been limited by (1) NOAA's inability to influence research in other Federal agencies and (2) by a lack of clear direction in the 5-year plan on how Federal research money should be spent and on how research responsibilities should be allocated among agencies. As a result the plan has had very little effect on Federal research, despite continuing evidence of a need for better coordination.

RECOMMENDATIONS TO THE SECRETARY OF COMMERCE

We recommend that the Secretary of Commerce seek legislation amending the National Ocean Pollution Planning Act of 1978 to more fully realize the congressional purpose of effective coordination of ocean pollution research. The proposed legislation should be drafted after mechanisms or institutional arrangements used in other multiagency coordination programs have been reviewed for their applicability to the coordination of ocean pollution research. At a minimum the National Ocean Pollution Planning Act should be amended to give NOAA, or an appropriate interagency coordinating committee, explicit authority to review Federal agency research budgets before they are approved by OMB.

Also, we recommend that the Secretary direct the NOAA Administrator to prepare future ocean pollution research plan revisions so that they address, in more detail than has been the case in the past, (1) how Federal research money should be allocated so that the most important research gets done and limited research money is not diverted to less important programs and (2) how responsibilities should be allocated to agencies exploring similar ocean pollution issues to avoid duplication or inefficiently organized research.

We discussed the matters contained in this report with officials of NOAA's National Marine Pollution Program Office. They generally agreed that the plan needed to have a greater impact on Federal research and felt that progress would be made in future revisions of the plan. They also agreed to consider our recommendations.

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As you know, section 236 of the Legislative Reorganization Act of 1970 requires the head of a Federal agency to submit a written statement on actions taken on our recommendations to the Senate Committee on Governmental Affairs and the House Committee on Government Operations not later than 60 days after the date of the report and to the House and Senate Committees on

Appropriations with the agency's first request for appropriations made more than 60 days after the date of the report.

We are sending copies of this report to the above House and Senate committees; the Chairman, House Committee on Merchant Marine and Fisheries and its Subcommittee on Oceanography; House Committee on Science and Technology and its Subcommittee on Natural Resources, Agricultural Research and Environment; Senate Committee on Commerce, Science, and Transportation; and the Director, Office of Management and Budget. We are also sending copies of this report to your Assistant Secretary for Administration and your Inspector General; the Administrator, National Oceanic and Atmospheric Administration; and the Assistant Administrator for Oceanic and Atmospheric Research.

Sincerely yours,

A handwritten signature in cursive script that reads "Henry Eschwege".

Henry Eschwege  
Director

C o n t e n t s

APPENDIX		<u>Page</u>
I	Partial list of officials with whom we discussed the impact of the ocean pollution research plan	1
II	National marine pollution program funding categories in fiscal year 1981	2
III	Ocean pollution research programs involving dredge material funded in fiscal year 1981 at the National Oceanic and Atmospheric Administration, Environmental Protection Agency, and Corps of Engineers	3



PARTIAL LIST OF OFFICIALS WITH WHOM WE DISCUSSED  
THE IMPACT OF THE OCEAN POLLUTION RESEARCH PLAN

National Oceanic and Atmospheric Administration

Director, Ocean Dumping Program  
Manager, Ocean Pollution Monitoring Group  
Director, Office of Habitat Protection  
Director, National Marine Pollution Program Office  
Associate Director, Sea Grant Program

Environmental Protection Agency

Deputy Assistant Administrator for Environmental Processes  
and Effects Research  
Assistant Director, Marine Protection  
Branch, Office of Water Program Operations

Department of the Interior

Chief, Branch of Offshore Assessment, Bureau of Land  
Management  
Deputy Chief, Programs and Budget, Office of Marine Geology,  
U.S. Geological Survey

Department of Defense

Aquatic Biologist, Water Resources Support Center, Corps  
of Engineers  
Chief, Environmental Laboratories, Waterways Experiment  
Station, Corps of Engineers  
Research Engineer, Naval Facilities Engineering Command,  
U.S. Navy

U.S. Coast Guard

Chief, Enforcement and Prevention Division

NATIONAL MARINE POLLUTION PROGRAM  
FUNDING BY CATEGORIES IN FISCAL YEAR 1981 <sup>1/</sup>  
(in thousands)

<u>Federal agencies</u>	<u>Marine Waste Disposal</u>	<u>Marine Mining</u>	<u>Marine Energy</u>	<u>Marine Transportation</u>	<u>Accidental Discharges</u>	<u>Coastal Land Use</u>	<u>Information Collection and Interpretation</u>	<u>Cumulative Effects</u>	<u>Total</u>
Department of Agriculture						\$ 196			\$ 196
Department of Commerce	\$ 5,915	\$ 602	\$ 68	\$ 162	\$ 1,561	6,487	\$3,112	\$7,833	25,740
Department of Defense	5,704	386		3,900		126	2,018	257	12,391
Department of Energy	6,700		4,100		100	5,523	151	6,162	22,736
Department of Health and Human Services	715					687		3,154	4,556
Department of the Interior		40,618			528	5,392	2,160	2,500	51,198
Department of Transportation				339	3,051				3,390
Environmental Protection Agency	6,378	3,816			3,405	6,488	3,009	8,604	31,700
National Aeronautics and Space Administration							500		500
National Science Foundation								18,765	18,765
Nuclear Regulatory Commission						600	100	300	1,000
<b>Total</b>	<b>\$25,412</b>	<b>\$45,422</b>	<b>\$4,168</b>	<b>\$4,401</b>	<b>\$8,645</b>	<b>\$25,499</b>	<b>\$11,050</b>	<b>\$47,575</b>	<b>\$172,172</b>

<sup>1/</sup>Funding Estimates as of June 1, 1981.

Source: NOAA's National Marine Pollution Program Office.

OCEAN POLLUTION RESEARCH PROGRAMS INVOLVING DREDGE  
MATERIAL FUNDED IN FISCAL YEAR 1981 AT THE NATIONAL  
OCEANIC AND ATMOSPHERIC ADMINISTRATION, ENVIRONMENTAL  
PROTECTION AGENCY, AND CORPS OF ENGINEERS

<u>Agency program</u>	<u>Funding estimates 1/</u>
	(000 omitted)
<u>National Oceanic and Atmospheric Administration</u>	
(1) Ocean Dumping Program	\$ 247
(2) New York Bight Project	130
(3) Hudson-Raritan Estuary Project	75
(4) Habitat Investigations Program	270
(5) Ocean Pollution Monitoring Program	60
(6) Sea Grant Program	190
<u>Environmental Protection Agency</u>	
(1) Marine Waste Disposal Program	263
(2) Wetlands Research	80
(3) Great Lakes Research Program	786
(4) Chesapeake Bay Program	1,446
<u>U.S. Army Corps of Engineers</u>	
Research and Development Programs	
(1) Coastal Engineering Program	630
(2) Flood Control and Navigation Program	1,040
(3) Environmental Quality Program	448
(4) Satellite and Surveying Applications Program	29
Development and Monitoring Programs	
(1) North Atlantic Division	602
(2) New England Division	455
(3) South Atlantic Division	672
(4) North Pacific Division	328
(5) North Central Division	252
(6) Lower Mississippi Valley Division	1,178
(7) Southwest Division	<u>70</u>
Total	<u>\$9,251</u>

1/Some programs involve research subjects other than dredge material. The funding shown for these programs is an estimate made by program officials of the portion of total program funding attributable to dredge material research.

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