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**International Marine Science Research Projects:  
Inventory and Analysis of Selected Projects  
at Sea Grant Institutions—1985**

by

**David A. Ross and Judith Fenwick**

July 1985

**Technical Report**

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*Funding provided by the Department of Commerce, NOAA,  
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David A. Ross and Judith Fenwick

Woods Hole Oceanographic Institution  
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Approved for Distribution:



David A. Ross, Chairman  
Department of Geology and Geophysics

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## ABSTRACT

The U.S. marine scientific community continues to show an interest in marine research within foreign Exclusive Economic Zones and with foreign scientists and institutions, in spite of the problems, regulations, and increased formalization involved in cooperative international projects. This inventory of international marine science research projects at Sea Grant institutions resulted from discussions on the possible establishment of a U.S. office or center for international marine science cooperation. Such an office has been proposed as one mechanism to assist in developing international marine research projects.

The report analyzes data from 98 inventory questionnaires, completed by Sea Grant institutions. It should serve as a reference piece for persons seeking information and assistance in initiating cooperative international marine science research projects. Projects are profiled by sources of funding, disciplines of principal investigators, geographic locations of projects, and general categories of research. Also included are summaries of the completed questionnaires, indexes for quicker access to pertinent areas of the summaries, and information for the reader with further questions or interest in contacting the principal investigator of a specific project.



INVENTORY AND ANALYSIS OF SELECTED  
INTERNATIONAL MARINE SCIENCE RESEARCH PROJECTS  
AT SEA GRANT INSTITUTIONS--1985

TABLE OF CONTENTS

INTRODUCTION . . . . .	1
CHANGES IN MARINE SCIENCE RESEARCH . . . . .	3
<u>Coordinating International Marine Science Research</u> . . . . .	5
REPORT AND ANALYSIS OF THE INVENTORY	
Criteria for the Inventory . . . . .	7
<u>General Scope of the Inventory</u> . . . . .	7
Graphs of	
<u>Geographic areas</u> . . . . .	11
<u>Disciplines of principal investigators</u> . . . . .	15
<u>Funding: public and private</u> . . . . .	25
<u>Funding by geographic area</u> . . . . .	29
INDEXES TO THE SUMMARIES . . . . .	31
<u>Keyword Index</u> . . . . .	33
<u>Foreign Location Index</u> . . . . .	41
<u>Funding Sources Index</u> . . . . .	51
<u>Index by PIs' Disciplines</u> . . . . .	57
SUMMARIES OF QUESTIONNAIRES	
<u>Guide to the Summaries</u> . . . . .	69
<u>Summaries</u> . . . . .	71
ADDRESS LISTING OF SEA GRANT INSTITUTIONS . . . . .	169



## INTRODUCTION

This inventory of international marine science research projects at Sea Grant institutions was prompted by discussions at various forums on the value of establishing a U.S. center or office for international marine science cooperation.<sup>1</sup> The authors feel that the need for such a center is increasingly evident as U.S. scientists face the problems, opportunities, and regulations involved in doing research within foreign Exclusive Economic Zones and with foreign scientists and institutions.

Our report is organized with two functions in mind:

1. To serve as an analysis of the data obtained from 98 inventory questionnaires completed by individuals at 17 of 29 Sea Grant institutions; and
2. To serve as a reference piece for persons seeking information and assistance for initiating cooperative international marine science research projects.

We present data on geographic locations of projects, sources of project funding, disciplines of the principal investigators, and general categories of the projects (through the assignment of keywords to each project). The projects included in this inventory go far beyond the traditional oceanographic sciences and the locations are often land-based rather than all marine-based. The thrust of these projects is, however, most definitely toward international cooperative marine science.

Our report also contains summaries of the completed questionnaires, indexes to give the reader quicker access to pertinent areas of the summaries, and enough information to allow the reader with further questions or similar

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<sup>1</sup> For a full discussion of this proposed office, see, David A. Ross, Presented Statement to the Subcommittee on Oceanography, U.S. House of Representatives, 26 September 1984; and David A. Ross, "EEZ Offers Chance for Foreign Collaboration," Oceanus 27, no. 4 (Winter 1984/85): 57-61.



research interests to contact directly the principal investigator of each project.

We should note, however, that the report is flawed by the static quality of inventory information once it is published. The names of organizations and individual contacts change. Yet the need is evident for an established network through which to exchange information on international research projects. This report has caught an "instamatic" picture of that potential network. One function of a center for international marine science cooperation could be to keep the "family album", full of those "instamatic" pictures, constantly updated and available to the scientific community. As a first step toward starting that family album and hopefully easing the rigors of international research and collaboration, we have undertaken this inventory of international marine science research projects at Sea Grant institutions.

## CHANGES IN MARINE SCIENCE RESEARCH

For many countries a new perspective of the ocean and its uses has recently developed. Shifting social values, changing economic conditions, the Law of the Sea Conference, and increased global political pressures have fostered this new perspective. For the United States, the perspective of the 1960s with an emphasis on science and technology was followed in the 1970s by environmental concerns. As we move through the 1980s into the final decade of the century, ocean policy may be dominated by economic development and resource management. With a decreasing supply of conventional land-based resources in a world of expanding population, the resources of the ocean will become more attractive for exploitation.

Ocean uses, traditional and new, have been pondered and reconsidered by most coastal nations as they focus increased attention on their extended marine and coastal jurisdictions and environments. Three factors have led many of the world's coastal states toward this reconsideration: 1) the implications of the Law of the Sea Treaty for global ocean interests; 2) potential for or establishment by many coastal states of a 200-nautical-mile Exclusive Economic Zone (EEZ); and 3) advances in marine science and technology.<sup>2</sup> These factors may also give rise to a change in the style and direction of U.S. marine scientific research in the international arena. Most developing countries have a paucity of marine science and technology capabilities with which to undertake the necessary studies for exploring or capitalizing on the potential of their new economic zones, whereas the U.S. has considerable knowledge, skills, equipment, and experience.

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<sup>2</sup> These points and much of the discussion that follows in this section are drawn from Ross, op. cit. (1).

The establishment and control of EEZs by coastal states, including jurisdiction over marine science, is a reality regardless of whether the Law of the Sea Treaty eventually goes into force. Enclosure of the coastal ocean comes at a time when the U.S. marine scientific community faces a decrease in the number of ocean-going ships and other budgetary constraints. However, this enclosure has also come when major areas of study, such as air-sea interactions (especially, climate and global ocean circulation), ocean drilling, the ocean's capacity to assimilate waste, and new technological applications such as sophisticated satellite observations could lead to innovative ocean uses. These and future studies will require access to all EEZs, which include essentially all upwelling zones, most subduction regions, most proven or potential marine resources (save manganese nodules) and, of course, all continental margins. It should also be stressed that EEZs encompass that part of the ocean which often has the most variability, receives most of the erosion and waste products from land, and is the most used and abused. To close off or reduce access to this region for research would dangerously narrow effectiveness of ocean science studies.

The proposal and conduct of efficient and effective studies by any U.S. scientist in a foreign EEZ will require increased cooperation with scientists and scientific institutions from the foreign nation(s), as well as within U.S. scientific institutions. U.S. marine science expertise is scattered among various organizations: governmental agencies, private industry, universities; and many of these organizations have limited experience in collaborative programs, especially with developing countries. Effective collaboration should be structured so as to help define the problems, develop and implement the methods of observation, refine the exchange of information and technology, and publish the results. In other words, the success of U.S. international

marine research will require continued access to foreign waters, and this will mean developing cooperative programs with scientists or institutions in these foreign countries. A single project with a given foreign country is probably not sufficient to ensure continuing access to its EEZ for all U.S. research vessels. Rather, by improving a foreign nation's scientific capability, an effective, continuing research program may well reduce that nation's reluctance in granting access for marine science research.

Controls and regulations for marine science research in some foreign EEZs are many, complex, and often changing. Marine science research in these regions may require detailed negotiations, permission, data exchange, possible training and assistance efforts, and especially close cooperation with the foreign country in all phases of the research activity. The challenge lies in developing and maintaining successful and viable foreign programs without sacrificing excessive amounts of time and resources. Meeting this challenge will require skills and infrastructure often unavailable to individual marine scientists.

#### Coordinating International Marine Science Research

The U.S. marine scientific community has shown a tenacious interest toward working in foreign countries, even with the increased formalization in obtaining permission and appropriate research clearances. Several recent studies<sup>3</sup> have indicated that this interest continues and that a broader

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<sup>3</sup> Ocean Policy Committee, National Research Council, United States Interests and Needs in the Coordination of International Oceanographic Research (National Academy Press: Washington, D.C., 1982), pp. 103-120; Marine Technical Assistance Group, Ocean Policy Committee, National Research Council, Marine Technical Assistance to Developing Countries: The U.S. Role (National Academy Press: Washington, D.C., 1982), pp. 74-87; Ross, D.A., R.C. Ladner, and J.A. Early, 1983. The Impact of the Law of the Sea Conference on U.S. Marine Scientific Research: Report on a Questionnaire. W.H.O.I. Technical Report 83-15, p. 5.

range of mechanisms is needed to assist in coordinating international marine research projects.

One of the suggested mechanisms in building a more coherent base for cooperative marine programs has been through the proposed establishment of a Center or Office of International Marine Science Cooperation. Among the main objectives of this center would be:<sup>4</sup>

- To improve opportunities and efficiencies for those in the U.S. marine community wishing to work with foreign countries (and in foreign waters).
- To improve access for foreign countries and institutions to marine scientific research and training opportunities with U.S. organizations.
- To collect and circulate information to the U.S. marine scientific community concerning opportunities, mechanisms, and funding sources for foreign programs.
- To identify countries or areas for the U.S. marine community with particular problems or requirements, and advise on mechanisms for dealing with such problems (in particular, from scientists who have had experience in such countries).
- To identify American scientists interested in working in specific fields in specific foreign countries.
- To assist in the development of multidisciplinary (and perhaps multinational) teams.

The information gathered by this inventory illustrates the potential to achieve some of these objectives.

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<sup>4</sup> Ross, op. cit. (1).

## REPORT AND ANALYSIS OF THE INVENTORY

### Criteria for the Inventory

The questionnaire, upon which we have based this inventory, was distributed November, 1984 to the 29 Sea Grant institutions. These institutions represent a broad geographic network of colleges and universities; they do not include all U.S. institutions engaged in marine science research. They do, however, contain a variety of researchers with specific interests in international marine science.

We asked that a questionnaire be completed for each international marine science project which had been initiated at the participating institution, limiting the projects for inclusion to those, as of December 1984, that were proposed, current, or that had occurred within the past five years (starting or completion date). No limits were set as to dollar amounts or time involved in the projects since relatively low-cost activities often yield significant returns. Projects also were not limited to those sponsored by Sea Grant. In most instances, questionnaires were completed by the principal investigator of each project. Returns were received between late January and early May, 1985.

### General Scope of the Inventory

We estimate that approximately 50% of the cooperative international marine projects at Sea Grant institutions were caught in the net of our inventory. Completed questionnaires were received from individuals at 17 of 29 Sea Grant institutions, or 59%, ranging from a high of 31 questionnaires returned from the University of Puerto Rico Sea Grant Program to a low of 1 questionnaire (received of three institutions).

The charts that follow represent an overview of the inventory in terms of project distribution: 1) by general geographic area, 2) by principal investigators' disciplines, and 3) by sources of funding (public and private) and how those funding sources were spread among the geographic areas.

Geographic Distribution: Project distribution was fairly even over the range of geographic areas, with Asia and the Caribbean leading, as shown in Figures 1A and 1B. The more popular countries for project location were Israel and Mexico, both with 8 projects; Japan followed with 6 and Argentina with 5 (see the Foreign Location Index). Somewhat surprising was the small number of projects with African countries, areas with great possibility for cooperative programs.

Principal Investigators' Disciplines: Figures 2A and 2B show project distribution among principal investigators' disciplines. The largest percentage of PIs, 42%, fall within the fisheries related disciplines, with oceanography second, at 15%. The dominance of PIs in fisheries may reflect the weight of Sea Grant oriented research that comprises this inventory.

The succeeding figures (2-C through 2-J) offer a breakdown of PIs' subdisciplines within the major disciplines. Although the data set is small for some of these subdisciplines, the figures are included to indicate the diversity of and within the disciplines.

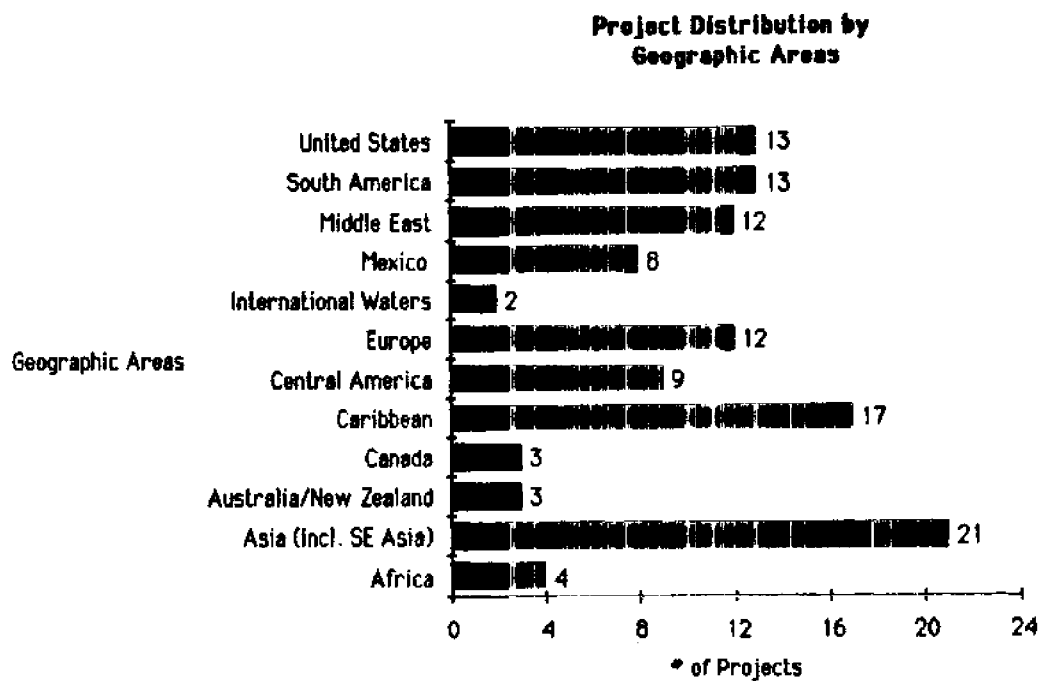
Funding Sources: Funding sources have been categorized as public or private, then further allocated to a more particular type of public or private source (Figures 3A, 3B, 4A, and 4B). Public sources constituted 82% of the funding for the international projects with the balance of 18% from private sources. We were provided with only the sources on funding, not the dollar amounts involved. Thus, the descriptions of funding are based on the number of projects, not on dollar amounts.

In the realm of public funding, 27% of the projects were funded by foreign or international monies and 73% by U.S. sources (Figure 3B). The U.S. federal government was the direct source of 57% of the public funding. Projects with private funding had to look to foundations for the majority of their support, with 52% of the private monies coming from foreign and U.S. foundations (Figure 4B). Industry, both foreign and domestic, contributed an additional 17% of private backing (with foreign industry at 13% and U.S. industry at 4%).

Figure 5 illustrates that public funding provided the majority of support in all geographic areas. The largest segment of private funding was found in Caribbean projects, which (although not shown on the chart) is comprised of foreign and U.S. foundation support, and PI personal funds.

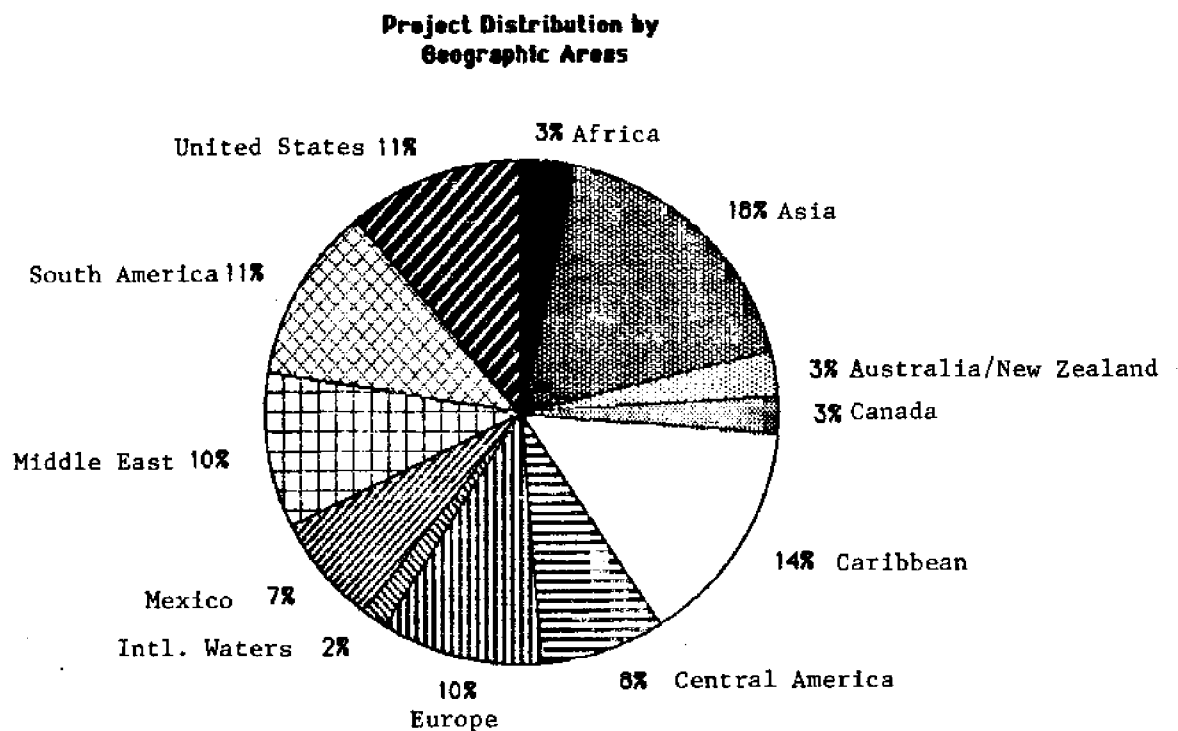






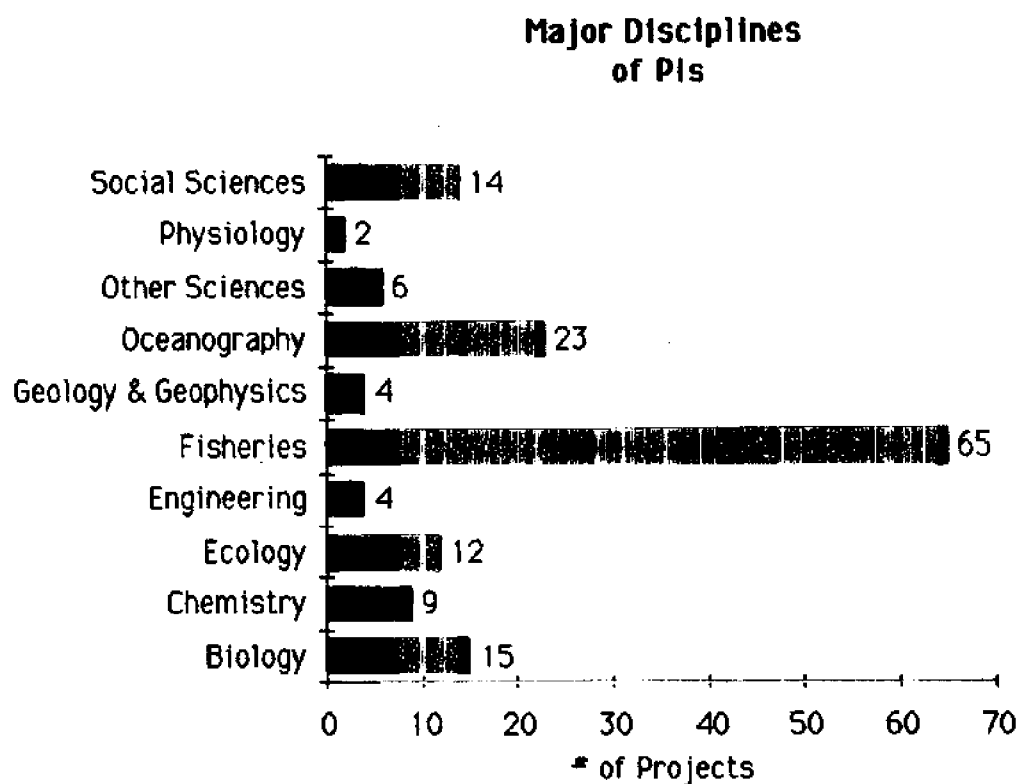
**Figure 1A:** Describes the number of projects taking place worldwide. Since some projects took place in more than one geographic location, the number of projects distributed among areas exceeds the base number of projects.





**Figure 1B:** Describes the percentage of projects taking place worldwide. Since some projects took place in more than one geographic location, the number of projects distributed among areas exceeds the base number of projects.

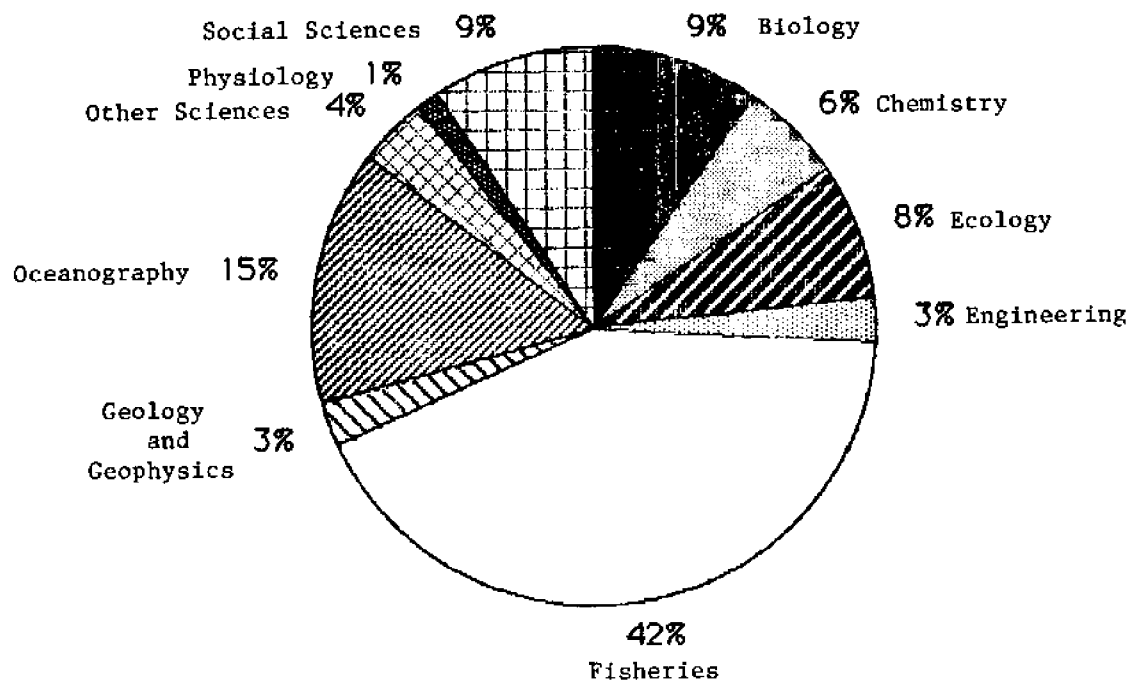




**Figure 2A:** This chart describes the distribution of principal investigators among major disciplines. Since many projects had multiple PIs, the number of projects shown by disciplines exceeds the base number of projects.



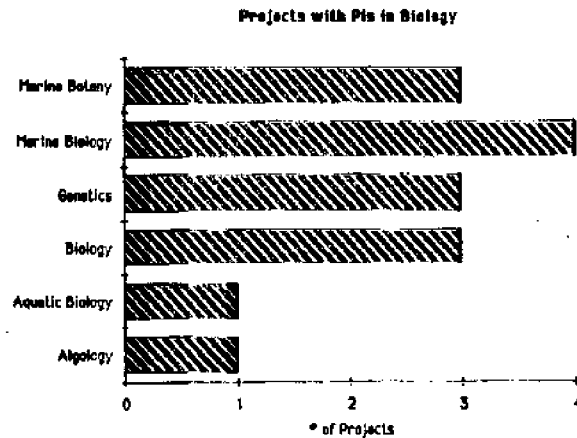
**Percentage of PIs  
within Major Disciplines**



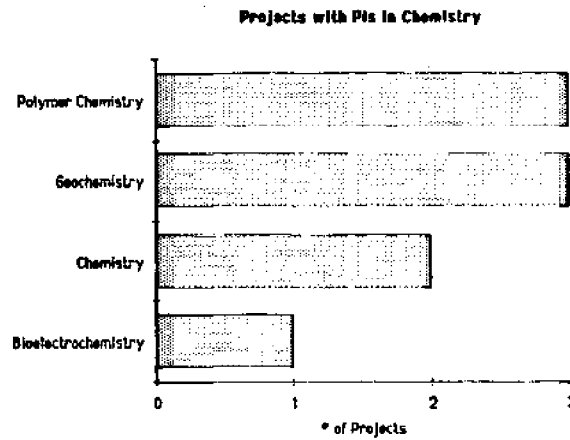
**Figure 2B:** This chart describes the percentage of principal investigators among major disciplines.



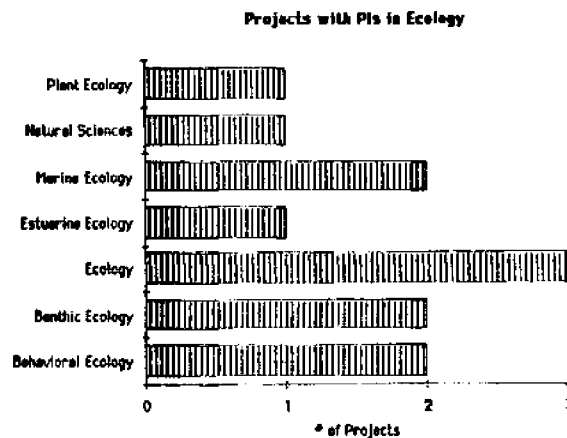




**Figure 2-C:** Subdisciplines within Biology represented by project PIs



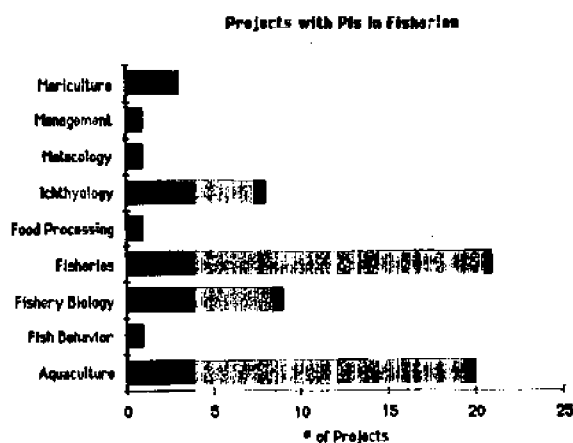
**Figure 2-D:** Subdisciplines within Chemistry represented by project PIs



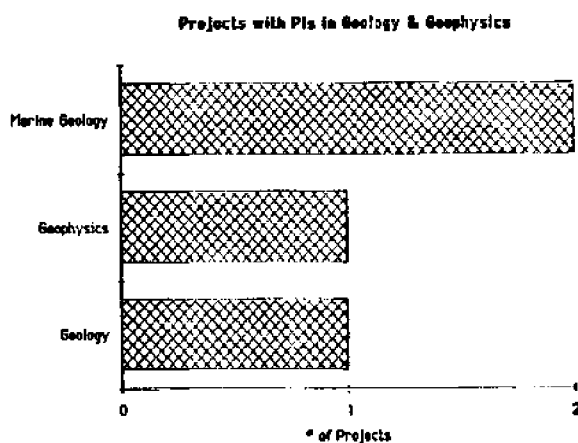
**Figure 2-E:** Subdisciplines within Ecology represented by project PIs

Figures 2-C through 2-J indicate subdisciplines of principal investigators.

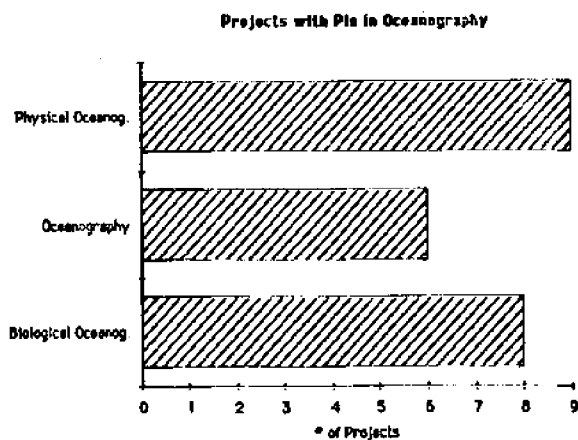




**Figure 2-F:** Subdisciplines within Fisheries represented by project PIs

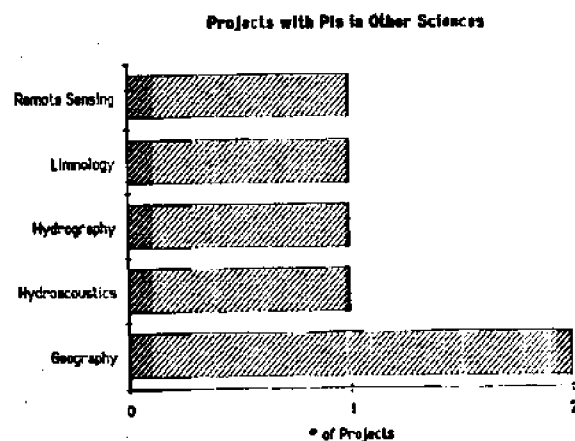


**Figure 2-G:** Subdisciplines within Geology and Geophysics represented by project PIs

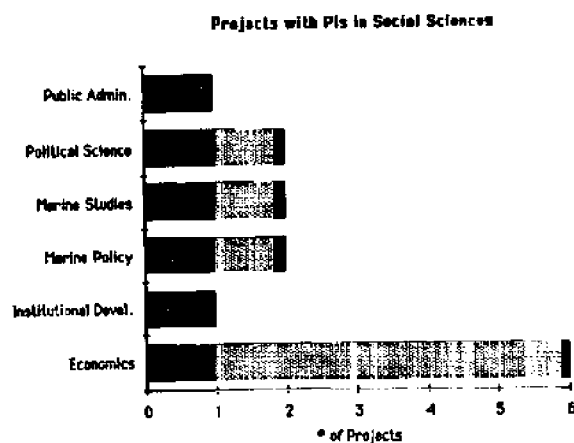


**Figure 2-H:** Subdisciplines within Oceanography represented by project PIs



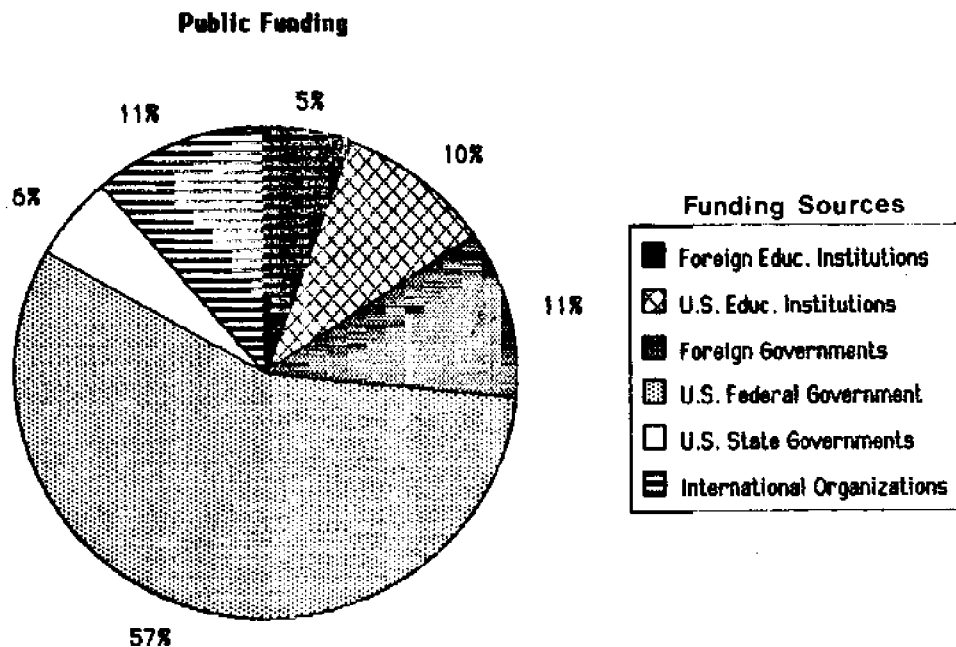
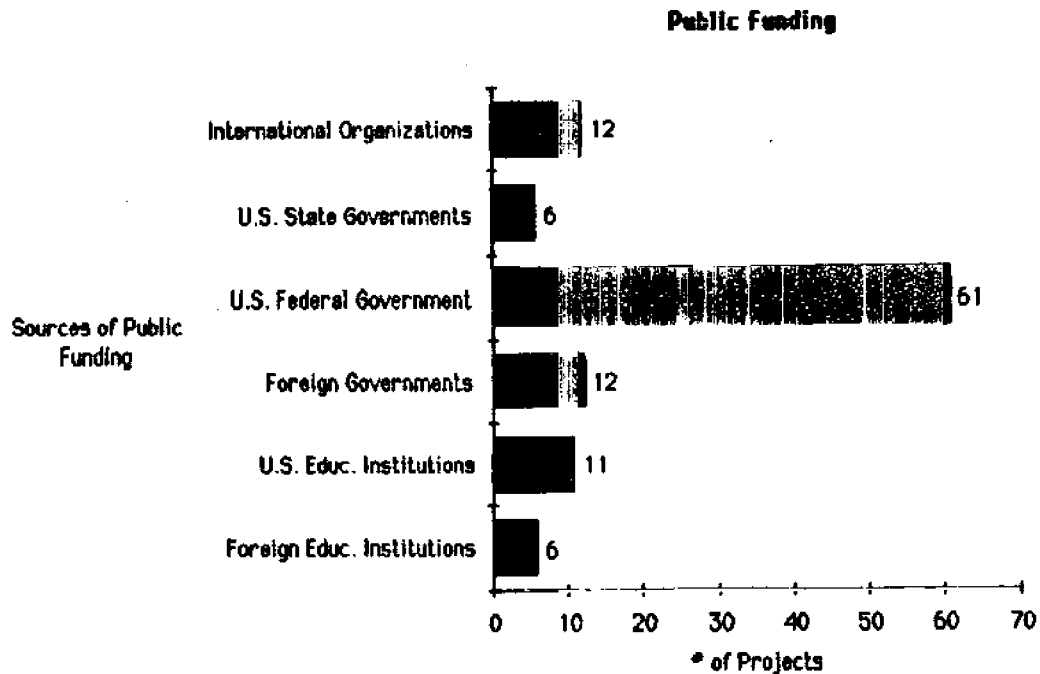


**Figure 2-I:** Subdisciplines within other sciences represented by project PIs



**Figure 2-J:** Subdisciplines within Social Sciences represented by project PIs

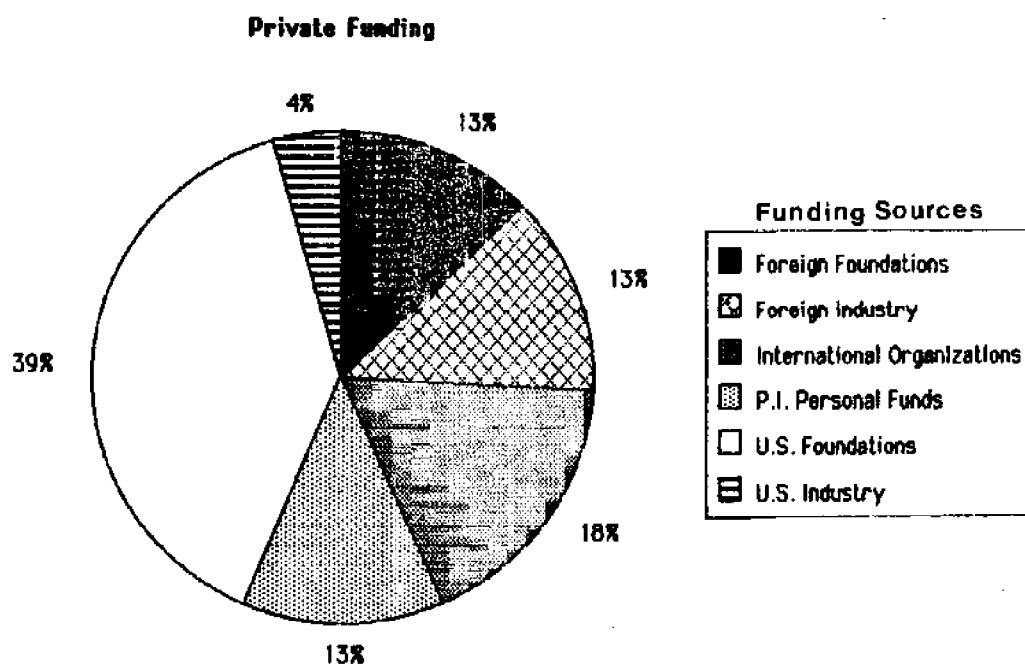
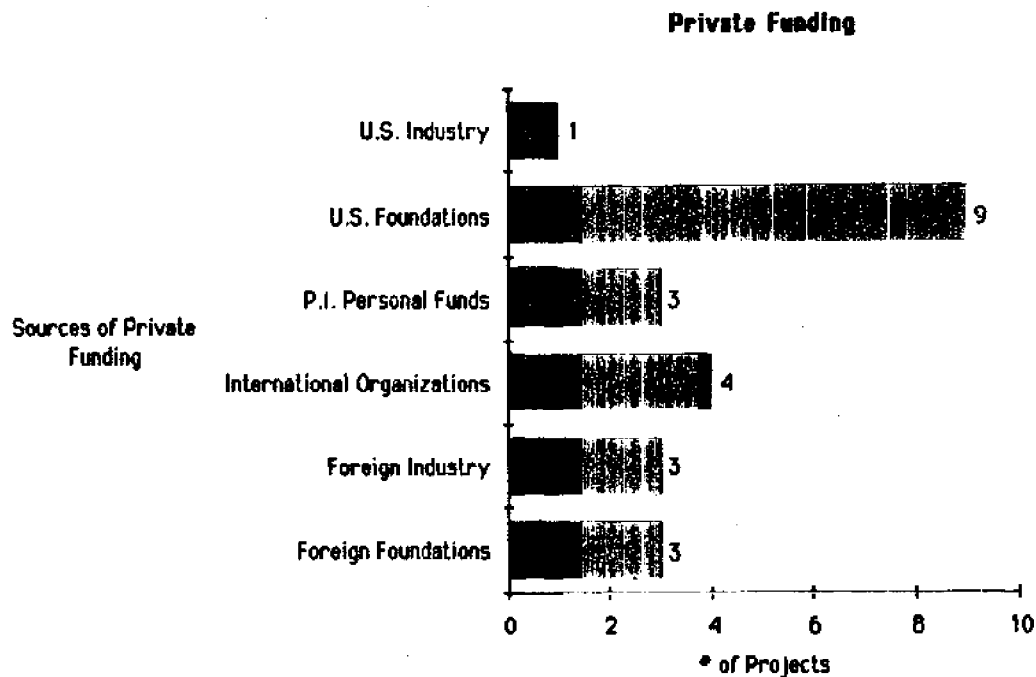




Figures 3A and 3B: Public funding sources by number of projects and by percentage of projects. Since some projects carried more than one source of funding, the number of projects to which private and/or public funding were allocated as shown by these graphs exceeds the base number of projects.

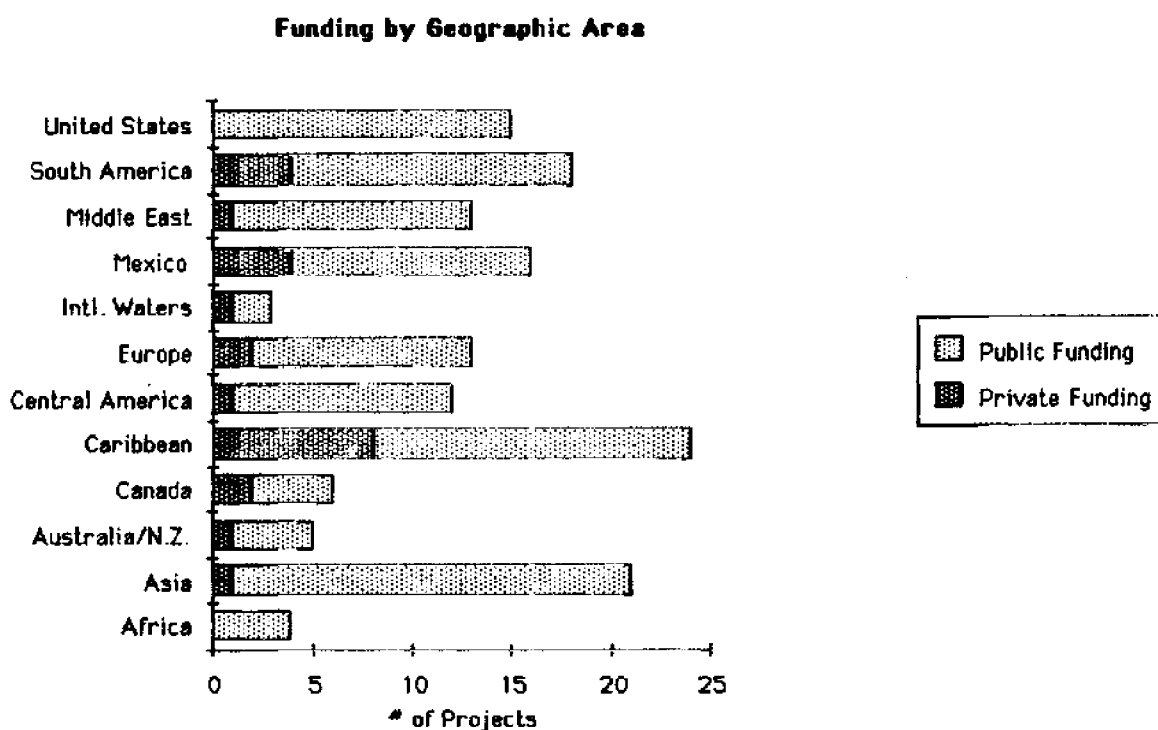






**Figures 4A and 4B:** Private funding sources by number of projects and by percentage of projects. Since some projects carried more than one source of funding, the number of projects to which private and/or public funding were allocated as shown by these graphs exceeds the base number of projects.





**Figure 5:** This chart indicates the correlation between geographic areas and funding sources (public and private). Since some projects took place in more than one geographic location and some projects carried more than one source of funding, the number of projects indicated on this graph exceeds the base number of projects.







## INDEXES TO THE SUMMARIES

### Explanation of Summary Indexes

These indexes should provide the reader with quick access to the summaries (starting on page 71) by keywords, foreign locations, funding sources, and disciplines of PIs. Four indexes are provided:

Keyword Index (pp. 33-40; in addition to keywords, indicates foreign locations of each project, following the project number; keywords were assigned to each project, based on project title and project description.)

Foreign Location Index (pp. 41-50; in addition to foreign location, indicates the keywords associated with each project, following the project number.)

Funding Sources Index (pp. 51-55; in addition to funding sources, shows foreign locations for each project, following the project number.)

Index by PIs' Disciplines (pp. 57-68; in addition to PIs' disciplines, shows project title for each project, following the project number.)





# KEYWORD INDEX

Keywords	Proj#	For. Locat.
agriculture	027B	Indonesia
Antarctica	016B	So-Atlantic-Ocean Scotia-Sea
aquaculture	001A	Egypt Israel
	002A	Thailand
	002B	Thailand
	011A	Indonesia
	011M	U.S.-location
	012A	Israel
	012B	Haiti
	015AA	Panama
	015BB	Belgium Haiti
	015EE	Dominican-Republic
	015F	Mexico
	015K	Costa-Rica
	015L	Caribbean
	015M	U.S.-location
	015N	U.S.-location
	015O	Grenada
	015P	U.S.-location
	015Q	U.S.-location
	015R	Trinidad-Tobago
	015S	Dominican-Republic
	015Z	Jamaica
	024D	Belize
	024E	Philippines Panama Ecuador
	024F	Martinique
	024G	Bahamas
	024H	Mexico
	026B	Panama
artisanal-fishery	012B	Haiti
biodeterioration	026G	Argentina
bioproductivity	016D	Egypt Israel
	024A	Chile
	030B	Japan
boundary-dispute	008C	U.S.-location
chemistry	024C	Spain
coastal-biotopes	016F	United-Arab-Emin.

# KEYWORD INDEX

Keywords	Proj#	For. Locat.
coastal-development/management	001A	Egypt Israel
	010A	Mauritius
	010B	Israel
	011I	Argentina
	011J	Peru
	011K	China
	0110	Canada
	027B	Indonesia
	029C	Ecuador
	029D	Ecuador
coastal-erosion	024C	Spain
cooperative-marine-programs	001A	Egypt Israel
	003B	Colombia
	015C	Dominican-Republic
	025A	Mexico
	025B	Mexico
	026F	Costa-Rica
	029B	Jordan
	029C	Ecuador
	029D	Ecuador
coral-reefs	015I	Philippines
crops	026E	Egypt
currents	008B	Spain Moroccan-waters Gibraltar-Str-of
	016C	Argentina
desalination	026A	Anguilla Caribbean
educational	003A	India
	003B	Colombia
	011B	Japan Taiwan South-Korea USSR
	011I	Argentina
	011N	U.S.-location
	015BB	Belgium Haiti
	015CC	U.S.-location
	015G	Dominican-Republic

## KEYWORD INDEX

Keywords	Proj#	For. Locat.
educational (continued)	015H	Dominican-Republic
	015M	U.S.-location
	015N	U.S.-location
	015P	U.S.-location
	015Q	U.S.-location
	016A	Saudi-Arabia
	024F	Martinique
	025A	Mexico
	025B	Mexico
	026C	Colombia
	026F	Costa-Rica
environmental-science	003B	Colombia
facility-siting	0110	Canada
fisheries	001A	Egypt Israel
	002A	Thailand
	002B	Thailand
	011A	Indonesia
	011B	Japan Taiwan South-Korea USSR
	011C	Japan
	011D	Japan
	011E	U.S.-location
	011F	Intl-waters
	011G	Costa-Rica Philippines
	011H	Italy
	011M	U.S.-location
	0110	Canada
	011P	Sweden
	011Q	Poland Nigeria Zaire
	011R	India
	011S	Japan USSR South-Korea Taiwan
	011T	U.S.-location
	011U	U.S.-location
	012A	Israel
	012B	Haiti

## KEYWORD INDEX

Keywords	Proj#	For. Locat.
fisheries (continued)	015A	Israel Red-Sea
	015B	Panama Philippines
		Belgium Haiti
	015CC	U.S.-location
	015DD	Mexico
	015E	Spain Dominican-Republic
	015F	Mexico
	015I	Philippines
	015J	Israel Egypt Red-Sea
	015K	Costa-Rica
	015L	Caribbean
	015M	U.S.-location
	015N	U.S.-location
	015O	Grenada
	015P	U.S.-location
	015Q	U.S.-location
	015R	Trinidad-Tobago
	015S	Dominican-Republic
	015T	U.S.-location
	015U	Italy
	015V	U.S.-location
	015W	Bali
	015X	Australia
	015Y	England Sweden East-Germany Austria France
	015Z	Jamaica
	016B	So-Atlantic-Ocean Scotia-Sea
	016D	Egypt Israel
	024B	Canada
	024D	Belize
	024E	Philippines Panama Ecuador

## KEYWORD INDEX

Keywords	Proj#	For. Locat.
fisheries (continued)	024F	Martinique
	024G	Bahamas
	024H	Mexico
	026B	Panama
	026C	Colombia
	026D	Argentina Costa-Rica Ecuador
	027A	Caribbean Mexico
	027B	Indonesia
	029C	Ecuador
	029D	Ecuador
fishery-biology	015A	Israel Red-Sea
	015B	Philippines
fishery-conservation-zone	011B	Japan Taiwan South-Korea USSR
	011E	U.S.-location
	011T	U.S.-location
	011U	U.S.-location
Georges-Bank habitat	008C	U.S.-location
	015I	Philippines
krill	016B	So-Atlantic-Ocean Scotia-Sea
lakes	001A	Egypt Israel
	014A	Arg Austrl Austria Can Chile Fin France W.Germ Guat Hung India Indon Isr Jap Jord Malawi Mex NZ Pan Pol Sweden Switz Tanz Thai Urug USSR Zaire Zambia
limnology	014A	Arg Austrl Austria Can Chile Fin France W.Germ Guat Hung India Indon Isr Jap Jord Malawi Mex NZ Pan Pol Sweden Switz Tanz Thai Urug USSR Zaire Zambia

# KEYWORD INDEX

Keywords	Proj#	For. Locat.
living-resources	011L	Guinea-Bissau
mackerel	027A	Caribbean Mexico
mangroves	024E	Philippines Panama Ecuador
	026D	Argentina Costa-Rica Ecuador
mariculture	024E	Philippines Panama Ecuador
	024H	Mexico
	026B	Panama
marine-biology	016F	United-Arab-Emir.
marine-policy	029B	Jordan
marine-recreation	0110	Canada
marine-resources	003B	Colombia
	010C	Comoros-Islands Madagascar Maldives Mauritius Seychelles England Austria
	011L	Guinea-Bissau
	029A	Colombia
	029C	Ecuador
	029D	Ecuador
migration	027A	Caribbean Mexico
morphology	014A	Arg Austrl Austria Can Chile Fin France W.Germ Guat Hung India Indon Isr Jap Jord Malawi Mex NZ Pan Pol Sweden Swtz Tanz Thai Urug USSR Zaire Zambia
oceanography	008B	Spain Morrocan_waters Gibraltar-Str-of
	010B	Israel
	016A	Saudi-Arabia

# KEYWORD INDEX

Keywords	Proj#	For. Locat.
oceanography (continued)	016C 020A 024C	Argentina Kenya Spain
pollution	015D	Trinidad-Tobago
ports-and-harbors	003A 0110	India Canada
red-tide	015E	Spain
resource-development/management	010C	Comoros-Islands Madagascar Maldives Mauritius Seychelles England Austria
	011A 011I 011L 029A 029C 029D	Indonesia Argentina Guinea-Bissau Colombia Ecuador Ecuador
river-inputs	030A	Thailand
salinity	008A  026A  026E	Israel  Anguilla Caribbean  Egypt
salmon	011E 011T 011U 024B	U.S.-location U.S.-location U.S.-location Canada
sediments	008A 016F	Israel United-Arab-Emir.
squid	011C	Japan
technology-transfer	011M 015AA 015F 015M 015S	U.S.-location Panama Mexico U.S.-location Dominican-Republic
tourism	011H 029C 029D	Italy Ecuador Ecuador
trace-metals	030A	Thailand
turtles-marine	016E	Mexico



# KEYWORD INDEX

Keywords	Proj#	For. Locat.
turtles-marine (continued)		Grand-Cayman Australia
upwelling	011J 024A 030B	Peru Chile Japan
water-quality	011D	Canada
weather	020A	Kenya
whaling	011D	Japan





# INDEX BY FOREIGN LOCATION

For. Locat.	Proj#	Keywords
Anguilla	026A	desalination salinity
Argentina	0111	coastal-development/management resource-development/management educational
	014A	limnology morphology lakes
	016C	oceanography currents
	026D	fisheries mangroves
	026G	biodegradation
Australia	014A	limnology morphology lakes
	015X	fisheries
	016E	turtles-marine
Austria	010C	marine-resources resource-development/management
	014A	limnology morphology lakes
	015Y	fisheries
Bahamas	024G	fisheries aquaculture
Bali	015W	fisheries
Belgium	015BB	fisheries aquaculture educational
Belize	024D	fisheries aquaculture
Canada	0110	coastal-development/management ports-and-harbors water-quality fisheries marine-recreation facility-siting
	014A	limnology

# INDEX BY FOREIGN LOCATION

For. Locat.	Proj#	Keywords
Canada (continued)		morphology lakes
	0248	fisheries salmon
Caribbean	015L	fisheries aquaculture
	026A	desalination salinity
	027A	fisheries migration mackerel
Chile	014A	limnology morphology lakes
	024A	bio-productivity upwelling
China	011K	coastal-development/management
Colombia	0038	educational marine-resources environmental-science cooperative-marine-programs
	026C	educational fisheries
	029A	marine-resources resource-development/management
Comoros-Islands	010C	marine-resources resource-development/management
Costa-Rica	011G	fisheries
	015K	fisheries aquaculture
	026D	fisheries mangroves
	026F	cooperative-marine-programs educational
Dominican-Republic	015C	cooperative-marine-programs
	015EE	fisheries aquaculture

# INDEX BY FOREIGN LOCATION

For. Locat.	Proj#	Keywords
Dominican-Republic (continued)	015G	educational
	015H	educational
	015S	fisheries aquaculture technology-transfer
East-Germany	015Y	fisheries
Ecuador	024E	fisheries aquaculture mariculture mangroves
	026D	fisheries mangroves
	029C	cooperative-marine-programs marine-resources resource-development/management coastal-development/management fisheries tourism
	029D	coastal-development/management marine-resources cooperative-marine-programs resource-development/management tourism fisheries
Egypt	001A	cooperative-marine-programs fisheries aquaculture coastal-management lakes
	015J	fisheries
	016D	fisheries bioproductivity
	026E	crops salinity
England	010C	marine-resources resource-development/management
	015Y	fisheries
Finland	014A	limnology morphology lakes
France	014A	limnology

# INDEX BY FOREIGN LOCATION

For. Locat.	Proj#	Keywords
France (continued)		morphology lakes
	015Y	fisheries
Gibraltar-Str-of	008B	oceanography currents
Grand-Cayman	016E	turtles-marine
Grenada	0150	fisheries aquaculture
Guatemala	014A	limnology morphology lakes
Guinea-Bissau	011L	marine-resources living-resources resource-development/management
Haiti	012B	fisheries aquaculture artisanal-fishery
	015BB	fisheries aquaculture educational
Hungary	014A	limnology morphology lakes
India	003A	ports-and-harbors educational
	011R	fisheries
	014A	limnology morphology lakes
Indonesia	011A	fisheries aquaculture resource-development/management
	014A	limnology morphology lakes
	027B	coastal-development/management fisheries agriculture
Intl-waters	011F	fisheries

# INDEX BY FOREIGN LOCATION

For. Locat.	Proj#	Keywords
Israel	001A	cooperative-marine-programs fisheries aquaculture coastal-management lakes
	008A	salinity sediments
	010B	oceanography coastal-development/management
	012A	fisheries aquaculture
	014A	limnology morphology lakes
	015A	fisheries fishery-biology
	015J	fisheries
	016D	fisheries bioproductivity
Italy	011H	fisheries tourism
	015U	fisheries
Jamaica	0152	fisheries aquaculture
Japan	011B	fisheries educational fishery-conservation-zone
	011C	fisheries squid
	011D	fisheries whaling
	011S	fisheries
	014A	limnology morphology lakes
	030B	upwelling bio-productivity
	014A	limnology
Jordan	014A	limnology



# INDEX BY FOREIGN LOCATION

For. Locat.	Proj#	Keywords
Jordan (continued)		morphology lakes
	029B	cooperative-marine-programs marine-policy
Kenya	020A	oceanography weather
Madagascar	010C	marine-resources resource-development/management
Malawi	014A	limnology morphology lakes
Maldives	010C	marine-resources resource-development/management
Martinique	024F	fisheries aquaculture educational
Mauritius	010A	coastal-development/management
	010C	marine-resources resource-development/management
Mexico	014A	limnology morphology lakes
	015DD	fisheries
	015F	fisheries aquaculture technology-transfer
	016E	turtles-marine
	024H	fisheries aquaculture mariculture
	025A	educational cooperative-marine-programs
	025B	cooperative-marine-programs educational
	027A	fisheries migration mackerel
Moroccan-waters	008B	oceanography

# INDEX BY FOREIGN LOCATION

For. Locat.	Proj#	Keywords
Moroccan-waters (continued)		currents
New-Zealand	014A	limnology morphology lakes
Nigeria	011Q	fisheries
Panama	014A	limnology morphology lakes
	015AA	fisheries aquaculture technology-transfer
	024E	fisheries aquaculture mariculture mangroves
	026B	fisheries aquaculture mariculture
Peru	011J	coastal-development/management upwelling
Philippines	011G	fisheries
	015B	fisheries fishery-biology
	015I	fisheries habitat coral-reefs
	024E	fisheries aquaculture mariculture mangroves
Poland	011Q	fisheries
	014A	limnology morphology lakes
Red-Sea	015A	fisheries fishery-biology
	015J	fisheries
Saudi-Arabia	016A	oceanography educational

# INDEX BY FOREIGN LOCATION

For. Locat.	Proj#	Keywords
Scotia-Sea	016B	fisheries krill Antarctica
Seychelles	010C	marine-resources resource-development/management
So-Atlantic-Ocean	016B	fisheries krill Antarctica
South-Korea	011B	fisheries educational fishery-conservation-zone
	011S	fisheries
Spain	008B	oceanography currents
	015E	fisheries red-tide
	024C	oceanography chemistry coastal-erosion
Sweden	011F	fisheries
	014A	limnology morphology lakes
	015Y	fisheries
Switzerland	014A	limnology morphology lakes
Taiwan	011B	fisheries educational fishery-conservation-zone
	011S	fisheries
Tanzania	014A	limnology morphology lakes
Thailand	002A	fisheries aquaculture
	002B	fisheries aquaculture

# INDEX BY FOREIGN LOCATION

For. Locat.	Proj#	Keywords
Thailand (continued)	014A	limnology morphology lakes
	030A	trace-metals river-inputs
Trinidad-Tobago	015D	pollution
	015R	fisheries aquaculture
U.S.-location	008C	Georges-Bank boundary-dispute
	011E	fisheries salmon fishery-conservation-zone
	011M	fisheries aquaculture technology-transfer
	011N	educational
	011T	fisheries salmon fishery-conservation-zone
	011U	fisheries salmon fishery-conservation-zone
	014A	limnology morphology lakes
	015CC	fisheries educational
	015M	fisheries aquaculture educational technology-transfer
	015N	fisheries aquaculture educational
	015P	fisheries aquaculture educational
	015Q	fisheries aquaculture

# INDEX BY FOREIGN LOCATION

For. Locat.	Proj#	Keywords
U.S. location (continued)		educational
	015T	fisheries
	015V	fisheries
United-Arab-Emir.	016F	marine-biology coastal-biotopes sediments
Uruguay	014A	limnology morphology lakes
USSR	011B	fisheries educational fishery-conservation-zone
	011S	fisheries
	014A	limnology morphology lakes
W. Germany	014A	limnology morphology lakes
Zaire	011Q	fisheries
	014A	limnology morphology lakes
Zambia	014A	limnology morphology lakes

# INDEX BY FUNDING SOURCES (w/locations)

Funding	Proj#	For. Locat.
Alaska-Dept-Fish-and-Game	011E	U.S.-location
	011T	U.S.-location
Alaska-fish-coops	011C	Japan
Alaska-State-of	011C	Japan
Argentina-Government-of	026D	Argentina Costa-Rica Ecuador
	026G	Argentina
Australian-Museum	015X	Australia
COLCIENCIAS-Colombia	026C	Colombia
CONACYT-Mexico	024H	Mexico
Donner-Foundation	029A	Colombia
	029C	Ecuador
Dubai-Petroleum-Co.	016F	United-Arab-Emir.
Dues-from-members	015L	Caribbean
Ecuador-Government-of	026D	Argentina Costa-Rica Ecuador
	029D	Ecuador
FAO	015U	Italy
	015W	Bali
Groves-Aquacul-Foundation	024G	Bahamas
Indian-Inst-of-Tech.	003A	India
Intl-Aid-Inc-(US)	012B	Haiti
Israel-Ministry-Agriculture	012A	Israel
Italy-Government-of	011H	Italy
IUCN	010A	Mauritius
Johnson-Endowment	029D	Ecuador
Louisiana-State-Fishery-Init.	027A	Caribbean Mexico
Louisiana-Wildlife-&-Fish	027A	Caribbean Mexico
MacArthur-Foundation	025A	Mexico
	025B	Mexico
Martinique-AQUAMAR	024F	Martinique
Martinique-ISTPM	024F	Martinique
Mexico-regional-govt	015F	Mexico
National-Park-Service	024E	Philippines Panama Ecuador

# INDEX BY FUNDING SOURCES (w/locations)

Funding	Proj#	For. Locat.
Natl-Geographic-Society	015A	Israel Red-Sea
Natl-Inst-Mental-Health	015B	Philippines
NMFS-NOAA	011B	Japan Taiwan South-Korea USSR
	011D	Japan
	011F	Intl-waters
	011P	Sweden
	015V	U.S.-location
	027A	Caribbean Mexico
No-Pac-Fish-Mgmt-Council	011E	U.S.-location
	011U	U.S.-location
None-listed	0111	Argentina
	011S	Japan USSR South-Korea Taiwan
NSF	010A	Mauritius
	015A	Israel Red-Sea
	015E	Spain
	015V	U.S.-location
	015X	Australia
	016B	So-Atlantic-Ocean Scotia-Sea
	016C	Argentina
	024H	Mexico
	026C	Colombia
	026G	Argentina
NSF-Earth-Sciences	008A	Israel
NSF-Intl-Prog	020A	Kenya
	024A	Chile
	030A	Thailand
	030B	Japan
NSF-Psychobiology-prog	016E	Mexico Grand-Cayman Australia

# INDEX BY FUNDING SOURCES (w/locations)

Funding	Proj#	For. Locat.
NSF-US-Australia-joint-prog	016E	Mexico Grand-Cayman Australia
NW-Regional-Comm	011M	U.S.-location
OAS	0150	Grenada
	026F	Costa-Rica
OAS-Washington	015N	U.S.-location
ONR	008B	Spain Morrocan-waters Gibraltar-Str-of
Ont-Charter-Boat-Assn	024B	Canada
Ont-Min-Natural-Resources	024B	Canada
Partners-of-the-Americas	026B	Panama
Peace-Corps	015CC	U.S.-location
People-to-People-Program	025A	Mexico
	025B	Mexico
Personal-funds	015G	Dominican-Republic
	015H	Dominican-Republic
	015Z	Jamaica
Pew-Memorial-Trust	029C	Ecuador
	029D	Ecuador
Saudi-Arabia-Government	016A	Saudi-Arabia
Sea-Grant	014A	Argen. Austral. Aus. Can. Chile Finl. France W.Germ. Guat. Hung. India Indon. Isr. Japan Jordan Malawi Mex. New-Zeal. Panama Poland Swed. Switz. Tanzania Thailand Uruguay U.S. USSR Zaire Zambia
	024H	Mexico
	025B	Mexico
	027A	Caribbean Mexico
Sea-Grant-Florida	003A	India
	003B	Colombia
Sea-Grant-ICAP	010B	Israel
	025A	Mexico
	026F	Costa-Rica
Sea-Grant-New-York	015DD	Mexico
Sea-Grant-Puerto-Rico	015DD	Mexico
Sea-Grant-Washington	011M	U.S.-location
	011N	U.S.-location



# INDEX BY FUNDING SOURCES (w/locations)

Funding	Proj#	For. Locat.
Sea-Grant-Washington (continued)	0110	Canada
	011P	Sweden
	011Q	Poland Nigeria Zaire
	011R	India
Sea-Grant-WHOI	029A	Colombia
Sea-Turtles-Inc	016E	Mexico Grand-Cayman Australia
Sigma-Xi	015Y	England Sweden East-Germany Austria France
Smith-Inst-of-Ichthyology	015T	U.S.-location
Soc-Sci-&-Human-Research-CncI	0110	Canada
St.-Cath-Game-&-Fish-Assn	024B	Canada
Tinker-Foundation	025A	Mexico
	025B	Mexico
	026D	Argentina Costa-Rica Ecuador
	029C	Ecuador
	029D	Ecuador
Trinidad-Inst-Marine-Aff	015R	Trinidad-Tobago
U-Puerto-Rico	015AA	Panama
	015BB	Belgium Haiti
	015C	Dominican-Republic
	015G	Dominican-Republic
	015H	Dominican-Republic
	015K	Costa-Rica
	015M	U.S.-location
	015S	Dominican-Republic
UN	015D	Trinidad-Tobago
UN-Environment-Prog	010A	Mauritius
UNESCO	011H	Italy
	011K	China
UNIDO	010C	Comoros-Islands Madagascar Maldives

# INDEX BY FUNDING SOURCES (w/locations)

Funding	Proj#	For. Locat.
UNIDO (continued)		Mauritius Seychelles England Austria
Univ-Baja-Cal	024H	Mexico
Univ-of-Florida	003A	India
Univ-of-Miami	003B	Colombia
Univ-Stockholm	011P	Sweden
US-AID	001A	Egypt Israel
	002A	Thailand
	002B	Thailand
	011A	Indonesia
	011G	Costa-Rica Philippines
	011J	Peru
	015AA	Panama
	015EE	Dominican-Republic
	016D	Egypt Israel
	024E	Philippines Panama Ecuador
	026A	Anguilla Caribbean
	027B	Indonesia
	029B	Jordan
US-AID-Collab-Res-Supp	015I	Philippines
US-AID-Sci-Tech	024D	Belize
US-AID-Title-12	015P	U.S.-location
	015Q	U.S.-location
	015S	Dominican-Republic
	026E	Egypt
US-AID-US-Egypt-Isr-Prog	015J	Israel Egypt Red-Sea
US-Spain-Joint-Comm	024C	Spain
US-State-Dept	008C	U.S.-location
USDA	012A	Israel
Washington-Dept-Natural-Res	011M	U.S.-location
Washington-State	011R	India
West-Indies-Self-Help	012B	Haiti
World-Bank	011L	Guinea-Bissau







# INDEX BY PIs DISCIPLINES

PI Field	Proj#	Proj Title
Algology	011M	Nori Seaweed Aqua- culture: Technology Transfer from Japan to Washington State
Aquaculture	015AA	Fish stock exchange, aquaculture related site visits and technical assistance in Panama
	015BB	Training Program in Practical Aquaculture for Belgian volunteers working in Haiti
	015CC	Peace Corps Small-scale Marine Fisheries Extension Training Program
	015DD	Fish preservation in tropical countries lacking widespread refrigeration facilities
	015EE	Aquaculture program development for Dominican Republic
	015K	Site visit to Aqua- cultura, S.A., Costa Rica
	015L	Establishment of Caribbean Aquaculture Association
	015M	Informal aquaculture training and technical assistance for persons from Latin America and Africa
	015N	Short course in Macrobrachium culture
	015O	Site visits to evaluate areas for Macrobrachium culture in Grenada
	015P	Workshop on Current Trends in Tropical Aquaculture
	015Q	Aquaculture Workshop --1981

# INDEX BY PIs DISCIPLINES

PI Field	Proj#	Proj Title
Aquaculture (continued)	015R	Participant at seminar "The Potential for an Aquaculture Industry in Trinidad and Tobago"
	015S	Technical Assistance in Aquaculture to Fisheries Resource Division of Agri- culture Dept of Dominican Republic
	015Z	Jamaica Inland Fisheries
Aquatic-Biology	012A	Stable Isotope Ratios as Naturally Occurring Tracers in the Aquaculture Food Web
Behavioral-ecology	015A	Initiation and Control of Sex Reversal in a Coral Reef Fish
	015B	Social Control of Sex Reversal in Hermaphroditic Fish
Benthic-ecology	016F	Survey of Coastal Biotores of Dubai United Arab Emirates
Bioelectrochemistry	026G	US-Argentina Workshop on Biodeterioration
Biological-oceanography	015D	Assessment of Pollution Problems Attributed to the Caroni Factory and Distillery
	015E	Study of the red tide problem in northwestern Spanish estuaries
	016D	Biological Productivity of SE Mediterranean in Post-High Dam (Aswan) Period
	024A	Effects of topographic and wind-reduced upwelling on biological productivity off Chile
	024H	Mariculture and chemical extraction of commer- cially valuable red seaweeds from Baja Calif

# INDEX BY PIs DISCIPLINES

P1 Field	Proj#	Proj Title
Biological-oceanography (continued)	025A	Informational and educational assistance to marine science institutions in Mexico
	025B	Scientific liaison, joint research planning and information exchange amongst Alta, Baja and Gulf of Calif. Marine Scientists
	026F	Joint Marine Studies Program between Univ of Costa Rica/Univ Delaware
Biology	003B	Marine Resources and Environmental Sciences Training and Information Exchange Program for Colombia
	011K	Demonstration bio-mathematical project to model dynamics of a small bay in Northern China
	012A	Stable Isotope Ratios as Naturally Occurring Tracers in the Aquaculture Food Web
	024H	Mariculture and chemical extraction of commercially valuable red seaweeds from Baja Calif
Chemistry	011R	Isolation of Chitin from Bengali Shellfish Waste
	024C	Study of the Nucleation of Calcium Carbonate in Natural Waters
Ecology	026B	Experimental mariculture of bivalves to improve the fisheries of Panama
	027B	Case Histories of Coastal Zone Management in Indonesia



# INDEX BY PIs DISCIPLINES

P1 Field	Proj#	Proj Title
Economics	008C	Economic Aspects of US/Canadian Boundary Dispute in the Gulf of Maine and Georges Bank
	010A	Workshop for Coastal and Marine Management, Protection and Development in East Africa and the Indian Ocean
	010C	Western Indian Ocean Island States: Problems and Prospects for Utilizing Marine Resources as a Base for Industrial Development
	0110	Comparative Coastal Governance for US and Canada in fisheries, ports, water quality, marine recreation, and major facility siting
	029C	Coastal and Marine Resources Management for the Galapagos Islands
	029D	Development of a marine resources management scheme for the Galapagos Islands
Endocrine-physiology	016E	Behavioral Physiology of Marine Turtles
Environmental-engineering	016A	Oceanographic Programs Development with Saudi Arabia
Estuarine-ecology	026C	Workshop on Taxonomy and Ecology of Crustaceans and Finfish of the Caribbean Sea
Fish-behavior	015J	Commercial potential and biological basis of a shallow-water grouper fishery in the Red Sea
Fisheries	002A	Collaborative Research Support for Thailand's

# INDEX BY PIs DISCIPLINES

PI Field	Proj#	Proj Title
Fisheries (continued)		Aquaculture Systems
	002B	Strengthening Southeast Asian Aquaculture Institutions
	011B	Foreign Fishing Observer Program
	011C	Squid Fishery Observer
	011D	Observers for Japanese Landbased Whaling Stations
	011E	Determination of Stock Origins of Chinook Salmon Incidentally Caught in Foreign Trawls in U.S. E. Bering Sea & Gulf of Alaska FCZ (Part I)
	011F	Monitoring Migrations and Origins of Salmonids in Offshore Waters in North Pacific
	011G	Management of Multi- species Fisheries in Tropical Regions
		Management of Multi- species Fisheries in Tropical Regions
	011H	Management of Multi- species Fisheries on Mediterranean Islands in Early Stages of Tourist Industry Development
	011I	Training and Development of Coastal Resource Managers in Argentina
	011J	Managing coastal resources of upwelling areas in Peru
	011T	Origins of Chinook Salmon in Area of the Japanese Mothership Salmon Fishery

# INDEX BY PIs DISCIPLINES

PI Field	Proj#	Proj Title
Fisheries (continued)	011U	Determination of Stock Origins of Chinook Salmon Incidentally Caught in Foreign Trawls in the Alaska FCZ (Part II)
	012B	Assessment of Artisanal Fishery of La Gonave, Haiti and Small-scale Aquaculture Development
	024B	Locations and Temperatures of Pacific Salmon in Western Lake Ontario
	024D	Genetic and demographic assessment of Strombus Gigas and development of an in-shore hatchery and research facility in Belize
Fisheries-biology	011S	Various foreign scientific bilateral fishery meetings
	015F	Technology transfer: laboratory hatchery culture of queen conch, Strombus gigas
	015I	Fish stock assessment in coral reef habitats
	015J	Commercial potential and biological basis of a shallow-water grouper fishery in the Red Sea
	024G	Artificial Propagation of the Queen Conch
	027A	Racial Studies and Migrational Patterns for King Mackerel
Fisheries-management	011K	Demonstration bio- mathematical project to model dynamics of a small bay in Northern China
Food-processing	015DD	Fish preservation in tropical countries

# INDEX BY PIs DISCIPLINES

PI Field	Proj#	Proj Title
Food-processing (continued)		lacking widespread refrigeration facilities
Genetics	011P	Publication of S.G. Lecture Series on Population Genetics and Its Application to Fishery Management
	024D	Genetic and demographic assessment of Strombus Gigas and development of an in-shore hatchery and research facility in Belize
Geochemistry	008A	Trace Metals in Sediments of Hypersaline Marine Environments
	030A	Trace Element Budgets of the Upper Gulf of Thailand: River Inputs
Geography	025A	Informational and educational assistance to marine science institutions in Mexico
	025B	Scientific liaison, joint research planning and information exchange amongst Alta, Baja and Gulf of Calif. Marine Scientists
Geology	010B	Improvement and application of ocean wave data acquisition and modelling techniques for facilitation of CZM decisions in Israel and the United States
Geophysics	012A	Stable Isotope Ratios as Naturally Occurring Tracers in the Aquaculture Food Web
Hydroacoustics	011G	Management of Multi-species Fisheries in Tropical Regions
Hydrography	030B	Cooperative Research on Environmental Characteristics and Lower Trophic Level Production in

# INDEX BY PIs DISCIPLINES

PI Field	Proj#	Proj Title
Hydrography (continued)		Regional Upwelling in the Sea (Japan)
Ichthyology	015J	Commercial potential and biological basis of a shallow-water grouper fishery in the Red Sea
	015T	Revision of volume on "Sea Fishes of Southern Africa"
	015U	Catalog of Sinistral Flounders for FAO Project--Survey and Identification of World Marine Fish Resources
	015V	Symposium on Ontogeny and Systematics of Fishes
	015W	Jefindofish Project--trawling survey in southern Indonesia for FAO
	015X	Symposium on Systematics and Evolution of Indo-West Pacific Reef Fisheries
	015Y	Museum visits collecting data on fish systematics
Institutional-development	011A	Aquatic Resources Development in Indonesia
Limnology	014A	Inventory of Morphometric and Limnologic Characteristics of the Large Lakes of the World
Malacology	026B	Experimental mariculture of bivalves to improve the fisheries of Panama
Mariculture	024E	Case study of mariculture development in mangroves
	024F	Training program in Queen Conch hatchery methods

# INDEX BY PIs DISCIPLINES

PI Field	Proj#	Proj Title
Mariculture (continued)	0246	Artificial Propagation of the Queen Conch
Marine-affairs	029A	Diagnosis of Marine Resources Development in Colombia
Marine-biology	015C	Counselling Universidad Autonoma de Santo Domingo on Marine Science Programs
	026D	Fisheries Related Studies of Mangrove Loss in Central America, and Study of La Plata River and Its Interaction with the Ocean
	026F	Joint Marine Studies Program between Univ of Costa Rica/Univ Delaware
	029B	US-Jordan Cooperative Marine Science and Policy Program
Marine-botany	015F	Technology transfer: laboratory hatchery culture of queen conch, Strombus gigas
	015G	Celebration of the 20th Anniversary of the Centro de Investigaciones en Biología Marina, Univ Autonoma de Santo Domingo
	015H	Special Lecturer for Academy of Sciences, Dominican Republic
Marine-ecology	025A	Informational and educational assistance to marine science institutions in Mexico
	025B	Scientific liaison, joint research planning and information exchange amongst Alta, Baja and Gulf of Calif. Marine Scientists
Marine-geology	029B	US-Jordan Cooperative

# INDEX BY PIs DISCIPLINES

PI Field	Proj#	Proj Title
Marine-geology (continued)		Marine Science and Policy Program
	029D	Development of a marine resources management scheme for the Galapagos Islands
Marine-policy	029B	US-Jordan Cooperative Marine Science and Policy Program
	029D	Development of a marine resources management scheme for the Galapagos Islands
Marine-studies	011L	Management of Marine Living Resources of the Guinea-Bissau (Africa)
Materials-science	026G	US-Argentina Workshop on Biodeterioration
Natural-sciences	026C	Workshop on Taxonomy and Ecology of Crustaceans and Finfish of the Caribbean Sea
Ocean-engineering	003A	Short Course on Small Harbor Engineering in India
	026A	DELBUDY Wave Powered Seawater Desalting Systems for Caribbean Countries
Oceanography	001A	Cooperative Marine Technology Program for the Middle East
	016A	Oceanographic Programs Development with Saudi Arabia
	016B	Antarctic and Sub-antarctic Phytoplankton: relating occurrence of resting spores to krill distribution
	024C	Study of the Nucleation of Calcium Carbonate in Natural Waters

# INDEX BY PIs DISCIPLINES

PI Field	Proj#	Proj Title
Physical-oceanography	008B	Acoustics Doppler Current Measurements in the Strait of Gibraltar
	016C	Abyssal Boundary Current Studies
	020A	Joint Analysis of Monex Phase of Global Weather Experiment
	024A	Effects of topographic and wind-reduced upwelling on biological productivity off Chile
	025A	Informational and educational assistance to marine science institutions in Mexico
	025B	Scientific liaison, joint research planning and information exchange amongst Alta, Baja and Gulf of Calif. Marine Scientists
Plant-ecology	026E	Development of crops from Halophytes
Plant-physiology	026E	Development of crops from Halophytes
Political-science	0110	Comparative Coastal Governance for US and Canada in fisheries, ports, water quality, marine recreation, and major facility siting
	029A	Diagnosis of Marine Resources Development in Colombia
Polymer-chemistry	0110	New Chemistry of Chitin
Public-administration	0110	Comparative Coastal Governance for US and Canada in fisheries, ports, water quality, marine recreation, and major facility siting



# INDEX BY PIs DISCIPLINES

PI Field	Proj#	Proj Title
Remote-sensing	026D	Fisheries Related Studies of Mangrove Loss in Central America, and Study of La Plata River and Its Interaction with the Ocean





### Guide to the Summaries

These summaries have been condensed from 98 completed questionnaires. In conjunction with the address listing of participating Sea Grant institutions, the summaries offer enough information to allow the reader with further questions or similar research interests to contact directly the principal investigator of each project.

This guide offers an explanation of each entry shown on the summaries:

<u>Project number</u>	At the onset of the inventory each Sea Grant institution was assigned a number and each questionnaire, as it was received, was given a letter to follow that number. Thus the sequence of project numbers shows some gaps where a Sea Grant institution did not have applicable projects or did not respond to the inventory.
<u>Institution</u>	This indicates the institution, and in some instances the specific department, of the principal investigator, and indicates the institution that submitted the completed questionnaire. An address listing for the participating institutions follows this guide.
<u>Proj. Title</u>	As indicated by preparer of the questionnaire.
<u>Foreign Location</u>	As indicated by preparer of the questionnaire.
<u>Funding</u>	As indicated by preparer of the questionnaire.
<u>Keywords</u>	Assigned to the project by WHOI Sea Grant, based on project title and description.
<u>Proj. Dates</u>	As indicated by preparer of the questionnaire.
<u>PI Name</u>	As indicated by preparer of the questionnaire; where multiple names appear, home institution appears in parentheses if different from institution that submitted completed questionnaire.
<u>PI Field</u>	As indicated by preparer of the questionnaire; where multiple PIs are listed above, disciplines are separated as are PIs by a slash.
<u>US Agencies</u>	As indicated by preparer of the questionnaire; this category specifically applies to <u>U.S. government</u> agencies, federal or state level.

<u>US Institutions</u>	As indicated by preparer of the questionnaire; this category applies to <u>U.S. academic and industrial organizations</u> .
<u>Foreign Agencies</u>	As indicated by preparer of the questionnaire; this category covers <u>foreign government agencies and departments</u> on national and regional levels; unless otherwise indicated, all agencies listed are in the country specified under "Foreign Location." Included on the full questionnaire were names of contacts within specific agencies and departments.
<u>Foreign Institutions</u>	As indicated by preparer of the questionnaire; this category lists <u>foreign academic and industrial organizations</u> ; unless otherwise indicated, all institutions listed are in the country specified under "Foreign Location." Again, included on the full questionnaire were names of scientists and affiliations within specific organizations.
<u>Project Description</u>	As indicated by preparer of the questionnaire; some descriptions were shortened due to space constraints.
<u>Assessment</u>	Excerpted from full questionnaire; this section identifies problems the PI encountered working with or in particular countries, and sometimes offers advice on the mechanisms for dealing with those problems.

Proj#: 001A            Inst: New Jersey Marine Sciences Consortium

Proj Title: Cooperative marine technology program  
for the Middle East

For. Locat: Egypt  
             Israel

Funding: US AID

Keywords: cooperative marine programs  
             fisheries    lakes  
             aquaculture  
             coastal development/management

Proj Dates: 1981-ongoing

PI Name: Robert B Abel (NJ)/ Sayed Z El-Sayed (Texas A&M)

PI Field: Oceanography/ Oceanography

US Agencies: US AID

US Insts: Auburn Univ, Bigelow Laboratory for Ocean Sciences,  
             Louisiana State Univ, Scripps Institute for Oceanography,  
             Texas A&M Univ, Texas Christian, MIT, Univ of Michigan

For. Agencies: Egypt: Ministry of Education  
                         Ministry of Science  
                         Ministry of Agriculture  
             Israel: Ministry of Energy & Infrastructure

For. Insts: Egypt: Coastal Research Inst., Alexandria Univ.,  
             Acad of Scientific Research & Technology, Inst. of Oceanography  
             & Fisheries, Nutrition Inst.

             Israel: Kinneret Limnological Lab, Israel Oceanographic &  
             Limnological Research Ltd., Hebrew Univ., Bar Elain Univ.

Proj. Description: Egyptian, Israeli, and American scientists  
                         collaborate on projects related to fisheries,  
                         aquaculture, lakes management and shore processes

Assessment: Satisfactory project, only caution is to exercise care  
                 in writing proposals.

Proj#: 002A

Inst: Univ of Michigan

Proj Title: Collaborative research support for Thailand's  
aquaculture systems

For. Locat: Thailand

Funding: US AID

Keywords: fisheries  
aquaculture

Proj Dates: 1982-87

PI Name: James A Diana/ Karl Lagler

PI Field: Fisheries/ Fisheries

US Agencies: US AID

US Insts: Oregon State Univ  
Auburn Univ  
Univ of California/Davis

For. Agencies: Thailand: Fisheries Dept  
Ministry of Agriculture and Cooperatives

For. Insts:

Proj. Description: This is one of six parallel collaborative  
research support projects in pond dynamics  
being carried out in developing countries  
to determine the mechanisms that regulate  
the productivity of tropical pond aquaculture  
systems.

Assessment: Would have requested a better understanding concerning  
the requirements of the AID subcontract.

Proj#: 002B                      Inst: Univ of Michigan

Proj Title: Strengthening Southeast Asian  
aquaculture institutions

For. Locat: Thailand

Funding: US AID

Keywords: fisheries  
aquaculture

Proj Dates: 1982-83

PI Name: James S Diana/ Karl F Lagler

PI Field: Fisheries/ Fisheries

US Agencies: US AID

US Insts:

For. Agencies:

For. Insts: Kasetsart Univ

Proj. Description: To identify the principal technical deterrents to current aquaculture production and earnings in Thailand; to devise the means for reducing these deterrents; while so doing, to establish priorities and improve the research and teaching capabilities of the involved institutions; to expand the application of the experience and findings to other institutions and to practicing aquaculturists of the region through publication and inputs to extension services; and where practicable, to intensify the use of models as tools in teaching and in research planning.

Assessment: Satisfactory, but be certain that a clear understanding exists as to what exactly will be contributed by the Thais.



Proj#: 003A            Inst: Univ of Florida/Sea Grant Program

Proj Title: Short course on small harbor engineering in India

For. Locat: India

Funding: Sea Grant and Univ of Florida  
          Indian Institute of Technology

Keywords: ports and harbors  
          educational

Proj Dates: 1979-80

PI Name: A.J. Mehta (Indian Institute of Technology)

PI Field: Oceanographic & Chemical Engineering and Mathematics

US Agencies: Sea Grant Program

US Insts: Univ of California/Berkeley

For. Agencies: Central Water & Power Research Station (India)

For. Insts: Indian Institute of Technology  
          Dredging Corp. of India  
          Karnataka Regional Engineering College  
          National Institute of Oceanography

Proj. Description: 10-day course conducted at Indian Inst. of Technology (Bombay) Jan. 1980. Objectives were to provide summary of latest technology available in coastal/harbor engineering design practice, to provide a forum for exchange of scientific know-how among Indian and non-Indian experts; and initiate such a forum for the first time, thus giving impetus to future forums of similar nature. As a result of this program, a rapport has been established between Univ of Florida, the Indian Inst. of Technology, the Univ of California/Berkeley, Norwegian Inst. of Tech., and School of Engineering, Univ of Thessaloniki-Greece.

Assessment:

Proj#: 003B            Inst: University of Miami/Rosenstiel School of  
                         Marine and Atmospheric Science  
Proj Title: Marine resources and environmental sciences training  
                 and information exchange program for Colombia

For. Locat: Colombia

Funding: Univ of Miami  
          Sea Grant (Florida)

Keywords: educational  
          marine resources  
          environmental science  
          cooperative marine programs

Proj Dates: 1978-82

PI Name: Francis Williams

PI Field: Biology

US Agencies: Sea Grant--International Programs

US Insts:

For. Agencies: Colombian Oceanographic Commission; Colombian Navy  
(Oceanographic and Hydrographic Research Center); Ministry of  
Agriculture (Institute for Dev. of Renewable Resources); Director-  
General of Ports and Harbors; Canal del Dique Commission; Government  
of Bolivar State; COLCIENCIAS

For. Insts: Univ of Cartagena, Univ of Bogota,  
          Univ of Los Andes, National University  
          Technical Research Center (Bogota)

Proj. Description: Training program to enhance capability of Colombian scientists and technicians to deal with resources and environmental problems of the coastal zone. Specifically, provided two-week training course on principles of multidisciplinary marine resources and environmental studies of tropical coastal areas; provided on-the-job training in the design, planning, executing and coordinating of field and laboratory programs to provide data bases necessary for development of management plans for coastal environment resources, through an integrated study of Cartagena Bay.

Assessment: Pre-project planning grant would have been useful; need to appreciate paucity of equipment in Colombia, including boats, for research. Enthusiastic group of young staff and students in most universities and organizations.

Proj#: 008A            Inst: Univ of New Hampshire

Proj Title: Trace metals in sediments of hypersaline  
             marine environments

For. Locat: Israel

Funding: National Science Foundation--Earth Sciences

Keywords: salinity  
             sediments

Proj Dates: 1979-81

PI Name: H.E. Gaudette/ W.B. Lyons

PI Field: Geochemistry/ Geochemistry

US Agencies: NSF-Earth-Sciences

US Insts:

For. Agencies:

For. Insts: Hebrew University  
             Tel Aviv University

Proj. Description: To test hypothesis that trace metals are  
                     accumulating in coastal marine sabkha sediments.

Assessment: Make earlier contact with foreign scientists.  
             Customs was an expensive pain in the butt.

Proj#: 008B            Inst: Univ of New Hampshire  
Proj Title: Acoustics Doppler current measurements  
             in the Strait of Gibraltar

For. Locat: Spain  
             Strait of Gibraltar

Funding: Office of Naval Research

Keywords: oceanography  
             currents

Proj Dates: 1984-87

PI Name: Neal R Pettigrew/ James D Irish

PI Field: Physical Oceanography/ Physical Oceanography

US Agencies: Office of Naval Research  
             US Navy  
             US Air Force

US Insts: Woods Hole Oceanographic Institution

For. Agencies: Instituto Hidrografico de la Marina (Cadiz, Spain)

For. Insts:

Proj. Description: 13-month, fixed point measurements (5 locations)  
                     of velocity profiles, and bottom pressure and  
                     temperature in the Strait of Gibraltar. Principal  
                     goals include determination of mean transport and  
                     variability in both Atlantic and Mediterranean  
                     layers, and role of meteorological forcing.

Assessment: Speak Spanish and include Spanish collaboration

Proj#: 008C      Inst: Univ of Maine

Proj Title: Economic aspects of US/Canadian boundary  
dispute in the Gulf of Maine and Georges Bank

For. Locat: U.S. location

Funding: U.S. State Department

Keywords: Georges Bank  
boundary dispute

Proj Dates: 1982-84

PI Name: James Wilson

PI Field: Economics

US Agencies: U.S. State Department

US Insts: Boston University  
MIT (Cambridge Systems)  
Columbia University  
Princeton University

For. Agencies:

For. Insts:

Proj. Description: Preparation and analysis of materials for U.S.  
case before the World Court.

Assessment:

Proj#: 010A      Inst: South Carolina Sea Grant Consortium

Proj Title: Workshop for coastal and marine management,  
protection and development in East Africa  
and the Indian Ocean

For. Locat: Mauritius

Funding: International Union for Conservation of Nature and  
Natural Resources (IUCN)  
National Science Foundation  
UN-Environment Programme

Keywords: coastal development/management

Proj Dates: 1983-85

PI Name: Donald L Sparks

PI Field: Economics

US Agencies: National Science Foundation--Office of International  
Programs

US Insts:

For. Agencies: IUCN  
UN Environmental Programme

For. Insts: Univ of Mauritius

Proj. Description: To bring together scientists and administrators  
from the East African and Indian Ocean region to  
review recent research on protected systems and  
species; to devise a regional strategy for  
coastal and marine management; and to devise a  
country-specific model for coastal and marine  
management.

Assessment: Satisfactory project. A formal planning committee  
should have been established.  
Mauritius is an easy country to work in, and the  
University is very helpful. Major problem is distance  
and the time lag between communications is long.

Proj#: 010B                      Inst: South Carolina Sea Grant Consortium

Proj Title: Improvement and application of ocean wave data  
                 acquisition and modeling techniques for the facilitation  
                 of coastal zone decisions in Israel and the U.S.

For. Locat: Israel

Funding: Sea Grant-International Program

Keywords: oceanography  
                 coastal development/management

Proj Dates: 1978-81

PI Name: Dr. Victor Goldsmith

PI Field: Geology

US Agencies: US-AID

US Insts: Virginia Institute of Marine Science

For. Agencies: Israel Port Authority

For. Insts: Ben Gurion Univ  
                 Technion University Coastal/Marine  
                 Engineering Institute

Proj. Description: General objective of project was to strengthen  
                 the marine research and development capabilities  
                 of Israel as well as those capabilities within  
                 the South Carolina Sea Grant Consortium.

Assessment:

Proj#: 010C                      Inst: South Carolina Sea Grant Consortium

Proj Title: Western Indian Ocean island states: Problems and  
prospects for utilizing marine resources as  
a base for industrial development

For. Locat: Austria Comoros Islands England  
Madagascar Maldives Mauritius Seychelles

Funding: UNIDO (U.N. Industrial Development Organization)

Keywords: marine resources  
resource development and management

Proj Dates: 1984-85

PI Name: Dr. Donald L Sparks

PI Field: Economics

US Agencies:

US Insts:

For. Agencies: UNIDO  
Maldives: various ministries  
Mauritius: various ministries  
Seychelles: various ministries

For. Insts:

Proj. Description: An examination of the use of marine resources  
in the Comoros, Madagascar, the Maldives,  
Mauritius, and the Seychelles.

Assessment: Thus far, successful; project not yet completed.



Proj#: 011A      Inst: Univ of Washington/School of Fisheries  
Proj Title: Aquatic resources development at Ambon, Indonesia  
For. Locat: Indonesia

Funding: US AID

Keywords: fisheries  
          aquaculture  
          resource development/management

Proj Dates: 1979-84

PI Name: Lynwood S Smith

PI Field: Institutional Development and Fish Physiology

US Agencies: US AID

US Insts: Univ of Guam

For. Agencies: Indonesia: Ministry of Education  
                          Ministry of Research & Technology  
                          National Institute of Sciences  
                          National Institute of Oceanology

For. Insts: Pattimura Univ

Proj. Description: Development of facilities and programs (including training of faculty and staff) of Pattimura Univ. and the National Oceanology Institute in fisheries and other aquatic sciences. Activities included establishment of an aquaculture lab, a marine science library, computerization of oceanographic data logging, analysis of water circulation in Ambon Bay, demonstration of culture of oysters and shrimp, expansion of the fisheries and food science curricula, train 3 Indonesian faculty to the MS level, several short-term training projects.

Assessment: High frustration level here. Encountered negative actions by the foreign university contact since national government forced the university to accept the project.

"Indonesians are status-oriented, Americans are achievement oriented"--that philosophy must be understood to work in Indonesia. Cross-cultural sensitivity absolutely required. US project members were excluded from broader scope planning by Indonesians. Contract should have included preliminary phase for collaborative planning.

Proj#: 011B      Inst: Univ of Washington  
Fisheries Research Institute  
Proj Title: Foreign fishing observer program

For. Locat: Japan  
South Korea  
Taiwan  
USSR

Funding: National Marine Fisheries Service (NMFS)-NOAA

Keywords: fisheries  
educational  
fishery conservation zone

Proj Dates: 1976-ongoing

PI Name: Roy E Nakatani

PI Field: Fisheries

US Agencies: NMFS  
US Coast Guard

US Insts: Sea Grant Colleges

For. Agencies: NMFS-contacts

For. Insts:

Proj. Description: The Fisheries Research Institute provided each fiscal year since 1976 a number of qualified fishery biologists (75-233 observers per year) to serve aboard foreign fishing vessels to observe and record biological data required by NMFS for the management and protection of our valuable living resources (fisheries) within U.S. 200-mile fishery conservation zone in accordance with the Magnuson Fishery Conservation and Management Act.

Assessment: Successfully continuing since 1976.

Proj#: 011C            Inst: Univ of Washington  
                         Fisheries Research Institute  
Proj Title: Squid fishery observer

For. Locat: Japan

Funding: State of Alaska  
          Alaskan fishing cooperatives, associations and unions

Keywords: fisheries  
          squid

Proj Dates: 1982-83

PI Name: Robert L. Burgner

PI Field: Fisheries

US Agencies: State of Alaska

US Insts: North Pacific Fishery Management Council  
          Pacific Seafood Processors Association

For. Agencies:

For. Insts: Hokusen-Gyogyo-Co (Japanese fishing company)  
          National Common Squid Drift Fishery Association

Proj. Description: A fisheries observer was placed aboard a  
                  Japanese driftnet vessel fishing for flying  
                  squid (*Ommastrephes bartrami*) to record fishery  
                  operation, sea surface temperatures and incident-  
                  al catches of fish species, including salmon.

Assessment:

Proj#: 011D                      Inst: Univ of Washington  
                                 Fisheries Research Institute  
Proj Title: Observers for Japanese landbased whaling stations

For. Locat: Japan

Funding: National Marine Fisheries Service (NMFS)-NOAA

Keywords: fisheries  
             whaling

Proj Dates: 1983-85

PI Name: Roy E Nakatani

PI Field: Fisheries

US Agencies: National Marine Mammal Laboratory (NMFS)  
                 U.S. State Department (Tokyo Embassy)

US Insts:

For. Agencies:

For. Insts:

Proj. Description: The Fisheries Research Institute recruited, screened and provided two biologists who spoke Japanese to serve as US observers at some five landbased whaling stations in Japan. The observers monitored the take of sperm whales (Jan.-March) and the take of Bryde's whales (April-August) by the Japanese whaling industry for compliance with the International Whaling Commission's (IWC) regulations. At the end of each whaling season, the observer submitted a report to the Secretary of the IWC.

Assessment:

Proj#: 011E            Inst: Univ of Washington/  
                         Fisheries Research Institute  
Proj Title: Determination of stock origins of Chinook Salmon  
             incidentally caught in foreign trawls in U.S. Eastern  
             Bering Sea and Gulf of Alaska Fishery Conservation Zone  
  
For. Locat: U.S. location

Funding: North Pacific Fishery Management Council

Keywords: fisheries  
           fishery conservation zone  
           salmon

Proj Dates: 1981-83

PI Name: Donald E Rogers

PI Field: Fisheries

US Agencies: NMFS   US Fish & Wildlife Service  
             California Dept Fish & Game   Alaska Dept of Fish & Game  
             Washington Dept of Fisheries  
             Oregon Dept Fish & Wildlife  
             North Pacific Fishery Management Council

US Insts:

For. Agencies: Japanese Fishery Agency  
             USSR's Pacific Scientific Research Institute  
             of Fisheries  
             Canadian Dept of Fisheries and Oceans

For. Insts:

Proj. Description: Project has involved use of scale pattern  
                 analysis techniques to determine stock origins  
                 of chinook salmon caught by foreign fisheries  
                 in the Bering Sea and North Pacific Ocean.

Assessment: Room for improvement in quality and quantity of scale  
             samples collected by US and foreign fisheries agencies.

Proj#: 011F      Inst: Univ of Washington  
College of Ocean and Fisheries Science  
Proj Title: Monitoring migrations and origins of  
Salmonids in offshore waters in North Pacific

For. Locat: Sampling in international waters, seaward of U.S. EEZ  
also attendance at meetings of International North  
Pacific Fisheries Commission and US-USSR Bilateral Talks  
on Fisheries Assessments

Funding: National Marine Fisheries Service (NMFS)-NOAA

Keywords: fisheries

Proj Dates: 1978-85

PI Name: Robert L Burgner

PI Field: Fisheries

US Agencies: NMFS-NOAA

US Insts: Alaska Dept of Fish & Game

For. Agencies: Japan Fisheries Agency  
(in Ministry of Forestry and Fisheries)  
Pacific Biological Station  
(in Canadian Dept. of Fish & Oceans)  
Pacific Scientific Research Institute of  
Fisheries and Oceanography  
(TINRO, in USSR Ministry of Fisheries)

For. Insts: International North Pacific Fisheries Commission

Proj. Description: To determine the distributions and migratory patterns of regional salmonid stocks in the central and western North Pacific Ocean and Bering Sea, pursuant to the research needs of the International North Pacific Fisheries Commission. This project also aims to provide information on ocean life history of salmonids useful in forecasting sizes of inshore runs, assessing the impact of high seas fisheries on various regional salmonid stocks, and elucidating aspects of salmonid marine growth and maturity.

Assessment: Diplomacy and patience of utmost importance















Proj#: 011M            Inst: Univ of Washington Sea Grant Program/  
                         Washington Dept. of Natural Resources  
Proj Title: Nori seaweed aquaculture: technology transfer  
                 from Japan to Washington State

For. Locat: U.S. location

Funding: Sea Grant Program (Washington)  
         Washington Dept. of Natural Resources  
         Northwest Regional Commission

Keywords: fisheries  
         aquaculture  
         technology transfer

Proj Dates: 1980-ongoing

PI Name: Thomas F Mumford, Jr

PI Field: Algologist

US Agencies: US Dept of Labor  
         Sea Grant Program

US Insts: Northwest Regional Commission  
         Washington Dept of Natural Resources

For. Agencies:

For. Insts: Zen-nori Gyoren  
         (National Federation of Shellfisheries Cooperative  
         Association)

Proj. Description: Technology transfer of Nori aquaculture  
         technology from Japan to Washington State.

Assessment: Not satisfactory--no nori industry yet started in  
         Washington; would change emphasis on project to  
         marketing, economics and financing.

Proj#: 011N            Inst: Univ of Washington  
Proj Title: Foreign scientists as visiting lecturers  
            and resulting publications

For. Locat: U.S. location

Funding: Sea Grant (Washington)

Keywords: educational  
          whaling  
          seals  
          salmon

Proj Dates: 1970-ongoing

PI Name: Patricia Peyton

PI Field: Sea Grant Communications

US Agencies: Sea Grant (Washington)

US Insts:

For. Agencies:

For. Insts: International Whaling Commission  
            British Antarctic Survey  
            Univ of British Columbia

Proj. Description: Organized to publish results of projects  
                    supported by Washington Sea Grant, including two  
                    lecture series (in living marine resources and in  
                    marine policy) which have involved foreign  
                    scientists as lecturers. Some publications are:  
                    K. Radway Allan--of International Whaling  
                    Commission, "Conservation and Management of  
                    Whales"  
                    W. Nigel Bonner--of British Antarctic Survey,  
                    "Seals and Man: A Study of Interactions"  
                    Peter Larkin--of Univ of British Columbia,  
                    "Pacific Salmon: Scenarios for the Future"

Assessment:

Proj#: 0110      Inst: Univ of Washington/Dept. of Public Affairs

Proj Title: Comparative coastal governance for U.S.  
and Canada

For. Locat: Canada

Funding: Sea Grant (Washington)  
Social Science and Humanities Research Council of Canada

Keywords: coastal development/management  
ports and harbors      water quality  
fisheries      marine recreation  
facility siting

Proj Dates: 1981-ongoing

PI Name: R.L. Bish/ M.H. Sproule-Jones (McMaster Univ.)

PI Field: Economics and Public Administration/ Political-Science

US Agencies: Sea Grant (Washington)  
Various agencies in project areas

US Insts:

For. Agencies: Canadian Fisheries, Transportation (Coast Guard)  
Ports, and Environmental agencies

For. Insts: Univ of Victoria (British Columbia)  
Social Science and Humanities Research Council of Canada

Proj. Description: Comparison of legal structures and governing  
processes for United States and Canada  
(Washington State and British Columbia) for  
fisheries, ports, water quality, marine  
recreation and major facility siting.

Assessment: Mixed results; formal research design could not be  
followed due to changes in institutions and environment.  
Advise squeezing research into shorter time period so  
that fewer changes will invalidate comparative research  
designs. Canadian-U.S. work has been very easy with  
full cooperation from government agencies.

Proj#: 011P                      Inst: Northwest and Alaska Fisheries Center

Proj Title: Publication of Sea Grant lecture series on  
                    population genetics and its application  
                    to fishery management

For. Locat: U.S. location

Funding: Sea Grant (Washington)  
                    Northwest and Alaska Fisheries Center (NMAFC)  
                    Univ of Stockholm

Keywords: fisheries

Proj Dates: 1982-85

PI Name: Fred Utter (NMAFC)/ Nils Ryman (Univ. Stockholm)

PI Field: Genetics/ Genetics

US Agencies: Sea Grant (Washington)  
                    National Marine Fisheries Service  
                    Northwest & Alaska Fisheries Center

US Insts: Univ of Washington   Univ of Texas   Univ of Montana  
                    Washington State Univ   Univ of California

For. Agencies:

For. Insts: USSR Academy of Science  
                    Department of Genetics, Univ of Stockholm

Proj. Description: Co-editing of book resulting from Sea Grant  
                    lectures given by Nils Ryman at Univ of  
                    Washington in the fall of 1982.

Assessment: Opening of network, further interactions likely.







Proj#: 0115            Inst: Univ of Washington/School of Fisheries  
Proj Title: Various foreign scientific bilateral fishery meetings

For. Locat: Japan  
             South Korea  
             Taiwan  
             USSR

Funding: --

Keywords: fisheries

Proj Dates: ongoing

PI Name: Donald E Bevan/ Rogers/ Harris

PI Field: Fishery Biology/ Fishery Biology/ Fishery Biology

US Agencies: National Marine Fisheries Service

US Insts:

For. Agencies: Japan Fishery Agency  
                 USSR-TINRO in Ministry of Fisheries  
                 USSR-VINRO

For. Insts:

Proj. Description:

Assessment:

Proj#: 0117      Inst: Univ of Washington  
                         Fisheries Research Institute  
Proj Title: Origins of Chinook Salmon in the area of  
                 the Japanese mothership Salmon fishery

For. Locat: U.S. location

Funding: Alaska Dept. Fish and Game

Keywords: fisheries  
                 fishery conservation zone  
                 salmon

Proj Dates: 1981-84

PI Name: Donald E Rogers

PI Field: Fisheries

US Agencies: NMFS    US Fish & Wildlife Service  
                 California Dept Fish & Game    Alaska Dept of Fish & Game  
                 Wash. Dept of Fisheries    Oregon Dept Fish & Wildlife  
                 North Pacific Fishery Management Council

US Insts:

For. Agencies: Japanese Fishery Agency  
                 USSR's Pacific Scientific Research Institute  
                 of Fisheries  
                 Canadian Dept of Fisheries and Oceans

For. Insts:

Proj. Description: Project has involved use of scale pattern  
                 analysis techniques to determine stock origins  
                 of chinook salmon caught by foreign fisheries  
                 in the Bering Sea and North Pacific Ocean.

Assessment: Room for improvement in quality and quantity of scale  
                 samples collected by US and foreign fisheries agencies.

Proj#: 011U            Inst: Univ of Washington/  
                         Fisheries Research Institute  
Proj Title: Determination of stock origins of Chinook Salmon  
                 incidentally caught in foreign trawls in the Alaska  
                 Fishery Conservation Zone

For. Locat: U.S. location

Funding: North Pacific Fishery Management Council

Keywords: fisheries  
                 fishery conservation zone  
                 salmon

Proj Dates: 1984-85

PI Name: Donald E Rogers

PI Field: Fisheries

US Agencies: NMFS      US Fish & Wildlife Service  
                 California Dept Fish & Game   Alaska Dept of Fish & Game  
                 Wash. Dept of Fisheries   Oregon Dept Fish & Wildlife  
                 North Pacific Fishery Management Council

US Insts:

For. Agencies: Japanese Fishery Agency  
                 USSR's Pacific Scientific Research Institute  
                 of Fisheries  
                 Canadian Dept of Fisheries and Oceans

For. Insts:

Proj. Description: Project has involved use of scale pattern  
                 analysis techniques to determine stock origins  
                 of chinook salmon caught by foreign fisheries  
                 in the Bering Sea and North Pacific Ocean.

Assessment: Given the chance to repeat the project, would seek  
                 improvements in quality and quantity of scale samples  
                 collected by both U.S. and foreign fisheries agencies.

Proj#: 012A            Inst: Illinois Natural History Survey

Proj Title: Stable isotope ratios as naturally occurring  
            tracers in the Aquaculture food web

For. Locat: Israel

Funding: US Dept. of Agriculture  
          Ministry of Agriculture (Israel)

Keywords: fisheries  
          aquaculture

Proj Dates: 1983-85

PI Name: David Homer Buck (Illinois)/ Gerald L Schroeder (Israel)

PI Field: Aquatic-Biology/ Nuclear Geophysics & Oceanography

US Agencies: US Dept. of Agriculture

US Insts:

For. Agencies: Ministry of Agriculture (Israel)

For. Insts: Agricultural Research Organization (Israel)

Proj. Description: Experimental environments are established to  
                    demonstrate the usefulness of the ratios of the  
                    natural isotopes of carbon ( $^{13}\text{C}/^{12}\text{C}$ ) as a tool  
                    for studying the aquatic food web in aquaculture  
                    ponds, for measuring actual contributions of  
                    available foods to growth of the cultured  
                    organisms.

Assessment: Satisfactory in demonstrating the use of the technology  
                    in question, but have not met expectations with regard  
                    to effectiveness in exploiting the technology. Recommend  
                    closer coordination between projects in US and Israel.

Proj#: 012B      Inst: So Illinois Univ at Carbondale/Sea Grant

Proj Title: Assessment of artisanal fishery of La Gonave, Haiti  
and small-scale aquaculture development

For. Locat: Haiti

Funding: International Aid Inc (US)  
West Indies Self Help (Haiti)

Keywords: fisheries  
aquaculture  
artisanal-fishery

Proj Dates: 1982-85

PI Name: Christopher C Kohler

PI Field: Fisheries

US Agencies:

US Insts: International Aid Inc.

For. Agencies:

For. Insts: West Indies Self Help

Proj. Description: Developed an appropriate technology for culturing fish in Haiti, and facilitated adoption of this aquaculture system by the indigenous poor. The marine fisheries aspects of the project include surveying the methodology, catch composition and catch per unit of effort of the native fishery; developing habitat evaluation of coastal waters; assessing fish stocks not currently being exploited; and composing appropriate gear types for possible introduction to the fishery. Aquaculture component focuses on rearing of tilapia with local fish feed ingredients and fertilizer sources being identified.

Assessment: Impossible to work with local government (Haiti). Best to work with private voluntary organizations.

Proj#: 014A            Inst: Ohio State University/Ohio Sea Grant

Proj Title: Inventory of morphometric and limnologic  
             characteristics of the large lakes of the world

For. Locat: Argentina   Australia   Austria   Canada   Chile   Finland  
             France   West Germany   Guatemala   Hungary   India   Indonesia   Israel  
             Japan   Jordan   Malawi   Mexico   New Zealand   Panama   Poland   Sweden  
             Switzerland   Tanzania   Thailand   Uruguay   USSR   Zaire   Zambia

Funding: Sea Grant Program

Keywords: lakes  
             limnology  
             morphology

Proj Dates: 1982-86

PI Name: Charles E Herdendorf/ Sirinimit Boonyuen

PI Field: Limnology/ Limnology

US Agencies: US Geological Survey Office of International Hydrology  
             Sea Grant

US Insts: numerous (see project publication with same title as  
             project)

For. Agencies: numerous (see project publication with same title as  
             project)

For. Insts: numerous (see project publication with same title as  
             project)

Proj. Description: An inventory of the distribution, origin, morpho-  
                     metry, limnologic characteristics of the world's  
                     large lakes. The inventory includes all lakes  
                     (253), both fresh and salt, with surface areas  
                     greater than 500 kilometers squared.

Assessment: Would attempt to gather a more complete data base, given  
             the chance to repeat the project.



Proj#: 015A            Inst: Univ of Puerto Rico

Proj Title: Initiation and control of sex reversal in  
            coral reef fish

For. Locat: Israel  
            Red Sea

Funding: National Science Foundation  
          National Geographic Society

Keywords: fisheries  
          fishery biology

Proj Dates: 1978-85

PI Name: Douglas Y Shapiro

PI Field: Fish behavior, ecology and population structure

US Agencies: National Science Foundation

US Insts: National Geographic Society

For. Agencies: Nature Reserve Authority (Israel)  
                Ministry of the Interior (Israel)

For. Insts: Hebrew Univ  
            Tel Aviv Univ

Proj. Description: Part 1: field study examined three hypotheses  
                     concerning the behavioral induction of adult  
                     female-to-male sex reversal in a hermaphroditic  
                     coral reef fish.  
                     Part 2: study the genetic relatedness of fish  
                     living in the same social group.

Assessment: Satisfactory; spend more time in the field.

Proj#: 01544 Inst: Univ of Puerto Rico

Proj Title: Fish stock exchange, aquaculture related  
site visits and technical assistance in Panama

For. Locat: Panama

Funding: US AID Title XII  
Univ of Puerto Rico

Keywords: fisheries  
aquaculture  
technology-transfer

Proj Dates: 1980

PI Name: Andrew S McGinty

PI Field: Aquaculture

US Agencies: US-AID

US Insts:

For. Agencies: Ministry of Aquatic Resources Development (Panama)

For. Insts:

Proj. Description: 1. Exchange fish stocks for future aquaculture research.  
2. Make site visits to learn the state of the art of aquaculture in Panama and offer technical assistance.  
3. Contact AID Mission and other assistance for aquaculture project.

Assessment:

Proj#: 015B            Inst: Univ of Puerto Rico  
Proj Title: Social control of sex reversal in hermaphroditic fish

For. Locat: Philippines

Funding: National Institute of Mental Health

Keywords: fisheries  
          fishery biology

Proj Dates: 1978-79

PI Name: Douglas Y Shapiro

PI Field: Fish behavior, ecology

US Agencies: National Institute of Mental Health

US Insts:

For. Agencies:

For. Insts: Silliman University (Philippines)

Proj. Description: A 3-month field study investigated the way in  
                    which the organizational structure of fish  
                    social groups influence female-to-male sex  
                    reversal in a species of hermaphroditic fish.

Assessment: Satisfactory; spend more time in the field.

Proj#: 01588      Inst: Univ of Puerto Rico  
Proj Title: Training program in practical aquaculture

For. Locat: Belgium  
            Haiti

Funding: Univ of Puerto Rico

Keywords: fisheries  
            aquaculture  
            educational

Proj Dates: 1984

PI Name: Andrew S McGinty

PI Field: Aquaculture

US Agencies:

US Insts:

For. Agencies:

For. Insts: PROTOS (Gent, Belgium)

Proj. Description: Provide training to Belgium volunteers for  
                    fish culture project in Haiti.

Assessment:

Proj#: 015C                      Inst: Univ of Puerto Rico

Proj Title: Counselling Universidad Autonoma de Santo Domingo  
                    on marine science programs

For. Locat: Dominican Republic

Funding: Univ of Puerto Rico

Keywords: cooperative marine programs

Proj Dates: 1979

PI Name: Luis R Almodovar

PI Field: Marine Biology

US Agencies:

US Insts:

For. Agencies:

For. Insts: Universidad Autonoma de Santo Domingo

Proj. Description: To plan work on the mangroves of the Dominican  
                                    Republic, with focus on algae.

Assessment: Satisfactory; learn Spanish fluently

Proj#: 01500      Inst: Univ of Puerto Rico

Proj Title: Peace Corps small-scale marine fisheries  
extension training program

For. Locat: U.S. location

Funding: Peace Corps

Keywords: fisheries  
educational

Proj Dates: ongoing

PI Name: John M Kubaryk

PI Field: Aquaculture

US Agencies: Peace Corps

US Insts: Univ. of Rhode Island

For. Agencies:

For. Insts:

Proj. Description: Provide training to Peace Corps trainees in the  
area of marine fisheries so that they can work  
in a third world country as marine extension  
agents.

Assessment: Volunteers trained in this program now serving in  
Sierra Leone, Tunisia, Morocco, Turks & Caicos Island,  
Dominican Republic, Antigua, Barbados.

Proj#: 0150            Inst: Univ of Puerto Rico  
Proj Title: Assessment of pollution problems attributed  
            to the Caroni Ltd Factory and Distillery  
            (Trinidad-Tobago)  
For. Locat: Trinidad-Tobago

Funding: United Nations

Keywords: pollution

Proj Dates: 1982

PI Name: Juan G. Gonzalez

PI Field: Biological oceanography

US Agencies:

US Insts:

For. Agencies: United Nations  
                  Institute of Marine Affairs (Trinidad)

For. Insts:

Proj. Description: The U.N. requested PI's advice regarding the concern of local residents (Trinidad) about the effluents of a sugar factory and a rum distillery discharging their waste in rivers which eventually flow into the Gulf of Paria, a notably rich area between Trinidad and Venezuela. After a thorough evaluation of the situation, recommendations were issued to help mitigate the problem. Besides the high organic effluents, other sources of contamination were found as well as poor management practices at the beach front in the mangrove forests.

Assessment: Do not know if recommendations were implemented; spend more time conducting actual research

Proj#: 01500      Inst: Univ of Puerto Rico

Proj Title: Fish preservation in tropical countries  
            lacking widespread refrigeration facilities

For. Locat: Mexico

Funding: Sea Grant-Puerto Rico  
          Sea Grant-New York

Keywords: fisheries

Proj Dates: 1984

PI Name: John M Kubaryk/ Robert Zall

PI Field: Aquaculture/ Food Processing

US Agencies: Sea Grant-Puerto Rico  
              Sea Grant-New York

US Insts: Cornell University

For. Agencies:

For. Insts:

Proj. Description: Determine methods of fish preservation that can  
                    be applied to tropical countries that cannot or  
                    do not have wide scale use of refrigeration-  
                    freezing facilities.

Assessment:



Proj#: 015E            Inst: Univ of Puerto Rico

Proj Title: Study of the red tide problem in northwestern  
             Spanish estuaries

For. Locat: Spain

Funding: National Science Foundation (proposal pending)

Keywords: fisheries  
           red tide

Proj Dates: 1985-86

PI Name: Juan G Gonzalez

PI Field: Biological oceanography

US Agencies: National Science Foundation

US Insts:

For. Agencies:

For. Insts: Spanish Institute of Oceanography

Proj. Description: Red tides cause extensive damage to mussel beds  
                     in the Northwestern Spanish estuaries. The actual  
                     damage is loss of revenue because of their  
                     toxicity. The proposed study has to do with the  
                     assessment of the causes of red tides and how to  
                     control them.

Assessment:

Proj#: 015EE      Inst: Univ of Puerto Rico

Proj Title: Aquaculture program development  
for Dominican Republic

For. Locat: Dominican Republic

Funding: US-AID

Keywords: fisheries  
aquaculture

Proj Dates: 1984-ongoing

PI Name: John M Kubaryk/ Francisco X Geraides

PI Field: Aquaculture/ Aquaculture

US Agencies: US-AID

US Insts:

For. Agencies: Museo Nacional de Historia Natural

For. Insts: Universidad Autonoma de Santo Domingo (CIBIMA)

Proj. Description: Provide research facilities that are not available in the Dominican Republic to help in their development of an aquaculture industry based on local feedstuffs for tilapia, carp, and macrobrachium.

Assessment:

Proj#: 015F            Inst: Univ of Puerto Rico  
Proj Title: Technology transfer: laboratory hatchery  
            culture of queen conch, Strombus gigas

For. Locat: Mexico

Funding: Mexican regional government

Keywords: fisheries  
          aquaculture  
          technology transfer

Proj Dates: 1982-83

PI Name: David L Ballantine/ Richard Appeldoorn

PI Field: Marine Botany/ Fisheries Biology

US Agencies:

US Insts:

For. Agencies: State government of Quintana Roo (Mexico)

For. Insts: PESCA

Proj. Description: Set up culture facilities for larval rearing in  
                    Mexico; train Mexican laboratory personnel both  
                    in Mexico and Puerto Rico to perform tasks  
                    utilized in culturing larvae and algae; design  
                    protocol for culturing; trouble-shooting.

Assessment: Lack of communication with Mexico; PI's have no direct  
            knowledge of how project has advanced since their  
            involvement.

Proj#: 0156 Inst: Univ of Puerto Rico

Proj Title: Celebration of the 20th Anniversary of the  
Centro de Investigaciones en Biologia Marina,  
Universidad Autonoma de Santo Domingo

For. Locat: Dominican Republic

Funding: Univ of Puerto Rico  
PI Personal funds

Keywords: educational

Proj Dates: 1983

PI Name: Luis R Almodovar

PI Field: Marine Botany

US Agencies:

US Insts:

For. Agencies:

For. Insts: Centro de Investigaciones en Biologia Marina  
Universidad Autonoma de Santo Domingo

Proj. Description: Represented the Director of the Dept. of Marine  
Sciences (Univ of Puerto Rico) on the activities  
pertinent to the celebration of the 20th anniversary  
of Centro de Investigaciones, Universidad  
Autonoma de Santo Domingo; advised concerning the  
aquaculture program and possible MS degree.

Assessment: Learn Spanish fluently

Proj#: 015H            Inst: Univ of Puerto Rico

Proj Title: Special Lecturer for Academy of Sciences,  
Dominican Republic

For. Locat: Dominican Republic

Funding: Univ of Puerto Rico  
PI Personal funds

Keywords: educational

Proj Dates: 1983

PI Name: Luis R Almodovar

PI Field: Marine Botany

US Agencies:

US Insts:

For. Agencies:

For. Insts: Academia de Ciencias de la Republica Dominicana

Proj. Description: Delivered the main speech on the first meeting  
of the Academy, titled "Uses of Marine Algae."

Assessment: Learn Spanish fluently

Proj#: 0151            Insts: Univ of Puerto Rico  
Proj Title: Fish stock assessment in coral reef habitats

For. Locat: Philippines

Funding: US-AID Collaborative Research Support Program  
(Proposal pending)

Keywords: fisheries  
          habitat  
          coral reefs

Proj Dates: 1976-79

PI Name: Richard S Appeldoorn

PI Field: Fisheries Biology

US Agencies: US-AID/BIFAD

US Insts: University of Rhode Island    University of Maine  
          Univ Southern Illinois    Texas A & M    Univ of Maryland

For. Agencies:

For. Insts: Marine Sciences Center, Univ of Philippines

Proj. Description: Development of assessment methodologies for fish  
                  stocks located in coral reef and other hard  
                  bottom habitats, with emphasis on visual census  
                  and trapping techniques.

Assessment:

Proj#: 015J      Inst: Univ of Puerto Rico

Proj Title: Commercial potential and biological basis  
of a shallow-water grouper fishery in the Red Sea

For. Locat: Israel  
Egypt  
Red Sea

Funding: US-AID Trilateral US-Egypt-Israel Program

Keywords: fisheries

Proj Dates: 1986-89 (proposed)

PI Name: Douglas Y Shapiro/ Richard S Appeldoorn/ Dannie A Hensley

PI Field: Fish behavior/ Fisheries biology/ Ichthyology

US Agencies: US-AID

US Insts: New Jersey Marine Science Consortium

For. Agencies: Institute of Oceanography and Fisheries (Egypt)

For. Insts: Hebrew Univ (Israel)  
Univ of Ain Shams (Egypt)

Proj. Description: Analysis of the grouper populations of the Red  
Sea, with emphasis on population structure,  
commercial potential and stock assessment.

Assessment: Support for program within Egyptian agency not very  
strong; project suspended for an interim following  
Israeli occupation of Lebanon. Communication with  
contacts in Egypt was difficult, either by phone, telex,  
or mail.

Inst: Univ of Puerto Rico

Proj Title: Site visit to Acuacultura, S.A. (Costa Rica)

For. Locat: Costa Rica

**Funding:** Univ of Puerto Rico

**Keywords:** fisheries  
aquaculture

Proj Dates: 1980

PI Name: Dallas E Alston

PI Field: Aquaculture

**US Agencies:**

US Insts:

**For Agencies:**

For. Insts: Acuacultura SA (Liberia, Costa Rica)

Proj. Description: Visit to Macrobrachium farm in Liberia, Costa Rica.

**Assessment:** Mutual exchange of information resulted in research program developed at Univ of Puerto Rico to solve some technical problems in the industry.



Proj#: 015L

Inst: Univ of Puerto Rico

Proj Title: Establishment of Caribbean Aquaculture Association

For. Locat: Caribbean

Funding: Dues from members

Keywords: fisheries  
aquaculture

Proj Dates: 1982-ongoing

PI Name: Dallas E Alston/ Andrew S McGinty

PI Field: Aquaculture/ Aquaculture

US Agencies: US AID

US Insts:

For. Agencies: various, represented by members of CAA

For. Insts: Caribbean Food Crop Society  
and others as represented by members of CAA

Proj. Description: The Caribbean Aquaculture Association was begun by Drs. Alston and McGinty. The Association was formed to foster common interests in aquaculture and mariculture in the Caribbean and to develop communication among aquaculturists.

Assessment: Lines of communication developed between members with the Univ. of Puerto Rico becoming center of aquaculture in the Caribbean; seeking to expand membership, and distribution of information through CAA newsletter.

Proj#: 015M Inst: Univ of Puerto Rico

Proj Title: Informal aquaculture training and technical  
assistance for persons from Latin America and Africa

For. Locat: U.S. location

Funding: Univ of Puerto Rico

Keywords: fisheries  
aquaculture  
educational  
technology transfer

Proj Dates: 1981-85

PI Name: Dallas E Alston

PI Field: Aquaculture

US Agencies:

US Insts:

For. Agencies:

For. Insts:

Proj. Description: Many persons have requested informal training  
at the Dept of Marine Sciences (Univ of Puerto  
Rico-Mayaguez) to work with our aquaculture  
operations, to gain hands-on experience or simply  
to ask us for technical information.

Assessment: Participants from South Africa, Venezuela, Dominican  
Republic, Suriname, Grenada, Mexico and Haiti; meeting  
requests for information and technical assistance;  
ongoing.

Proj#: 015N            Inst: Univ of Puerto Rico  
Proj Title: Short course in Macrobrachium culture

For. Locat: U.S. location

Funding: Organization of American States--Washington, D.C.

Keywords: fisheries  
          aquaculture  
          educational

Proj Dates: 1984

PI Name: Dallas E Alston/ Andrew S McGinty

PI Field: Aquaculture/ Aquaculture

US Agencies:

US Insts:

For. Agencies: Organization of American States  
                  Institut de Developement Agricole et Industriel  
                  (Grenada)

For. Insts: Grenada Teachers College

Proj. Description: Short course to offer participants a hands-on  
                  approach for the culture of Macrobrachium  
                  rosenbergii, with special emphasis on clear  
                  water techniques.

Assessment: Technical training in aquaculture--quite successful;  
            resulted in PI visiting Grenada to make site selections  
            for aquaculture.

Proj#: 0150      Inst: Univ of Puerto Rico

Proj Title: Site visits to evaluate areas for Macrobrachium  
culture in Grenada

For. Locat: Grenada

Funding: Organization of American States

Keywords: fisheries  
aquaculture

Proj Dates: 1984

PI Name: Dallas E Alston

PI Field: Aquaculture

US Agencies:

US Insts:

For. Agencies: Ministry of Agriculture (Grenada)  
OAS-General Secretariat, Dept. of Scientific Affairs  
OAS-Aquaculture Coordinator (Grenada)

For. Insts: Caribbean Agro Industries (Grenada)

Proj. Description: Evaluate three areas as potential sites for  
Macrobrachium culture and to advise pond  
construction and selection of feed formulation  
materials, utilizing local raw materials.

Assessment: PI assisted in general overall plan for aquaculture  
development in Grenada.

Proj#: 015P            Inst: Univ of Puerto Rico  
Proj Title: Workshop on current trends in tropical aquaculture

For. Locat: U.S. location

Funding: US-AID Title XII

Keywords: fisheries  
          aquaculture  
          educational

Proj Dates: 1984

PI Name: Dallas E Alston/ John Kybaryk/ Andrew S. McGinty

PI Field: Aquaculture/ Aquaculture/ Aquaculture

US Agencies: US-AID  
              U.S. Embassy (Kingston, Jamaica)

US Insts: College of the Virgin Islands  
          Agricultural Enterprises Co. (Puerto Rico)

For. Agencies: Dept. of Fisheries Resources (Dominican Republic)

For. Insts: Maricultura (Netherlands Antilles)  
          Rhodes Univ. Dept. of Fisheries Science (South Africa)  
          Inland Fisheries (St. Catherine, Jamaica)

Proj. Description: Workshop with informal discussion format allowing  
                  participants to present their current views  
                  and research findings in tropical aquaculture.

Assessment: Participants from Puerto Rico, Virgin Islands, Nether-  
          lands Antilles, U.S., South Africa, Dominican Republic,  
          Jamaica, Quebradillas. Valuable transfer of information  
          among aquaculture scientists in the Caribbean.

Proj#: 0150            Inst: Univ of Puerto Rico

Proj Title: Aquaculture Workshop--1981

For. Locat: U.S. location

Funding: US-AID Title XII

Keywords: fisheries  
          aquaculture  
          educational

Proj Dates: 1981

PI Name: Dallas E Alston/ John Kubaryk

PI Field: Aquaculture/ Aquaculture

US Agencies: US AID

US Insts:

For. Agencies: participants from seven Caribbean areas

For. Insts:

Proj. Description: Aquaculture workshop, 1981, to cover basic  
                          techniques in aquaculture.

Assessment: Groundbreaking workshop for successive aquaculture  
                  meetings and projects. Aquaculture newsletter for  
                  Caribbean region evolved from this workshop (PESCA-  
                  Program of Caribbean Studies in Aquaculture).

Proj#: 015R            Inst: Univ of Puerto Rico

Proj Title: Participant at seminar "The Potential for an  
Aquaculture Industry in Trinidad and Tobago"

For. Locat: Trinidad Tobago

Funding: Institute of Marine Affairs (Trinidad and Tobago)

Keywords: fisheries  
aquaculture

Proj Dates: 1981

PI Name: Dallas E Alston

PI Field: Aquaculture

US Agencies:

US Insts:

For. Agencies: Ministry of Agriculture, Lands and Food Production  
(Trinidad)

For. Insts: Zoology Dept. of Univ. of West Indies (St. Augustine)  
Institute of Marine Affairs (Trinidad and Tobago)

Proj. Description: Contributor to seminar which examined the aqua-  
culture potential of Trinidad and Tobago, with  
special reference to other projects in the  
Caribbean.

Assessment: Resources of Trinidad-Tobago evaluated for aquaculture,  
and foundation formed for future aquaculture work.  
Tours of the island by panelists before evaluation would  
have been more helpful.

Proj#: 0155                      Inst: Univ of Puerto Rico

Proj Title: Strengthening aquaculture aid for less  
developed countries

For. Locat: Dominican Republic

Funding: US-AID Title XII  
Univ of Puerto Rico

Keywords: fisheries  
aquaculture  
technology transfer

Proj Dates: 1982-84

PI Name: Ricardo C Cortes

PI Field: Aquaculture

US Agencies: US AID: Agriculture Development Office and  
US AID Mission in Dominican Republic

US Insts:

For. Agencies: Department of Fisheries Resources  
Agriculture Dept. of Dominican Republic

For. Insts:

Proj. Description: Technical assistance in aquaculture  
to Fisheries Resource Division of  
Agriculture Dept (Dominican Republic)

Assessment: Know Spanish and cultural background of Dominican  
people.



Proj#: 015T

Inst: Univ of Puerto Rico

Proj Title: Revision of volume on "Sea Fishes of Southern Africa"

For. Locat: U.S. location

Funding: J.L.B. Smith Institute of Ichthyology (South Africa)

Keywords: fisheries

Proj Dates: 1978-1985

PI Name: Phillip C Heemstra/ Margaret M. Smith

PI Field: Ichthyology/ Ichthyology

US Agencies:

US Insts:

For. Agencies:

For. Insts: Rhodes University (Grahamstown, South Africa)  
J.L.B. Smith Institute of Ichthyology (Grahamstown, SA)

Proj. Description: Producing volumes on marine fishes of Southern Africa. This is a complete rewriting of J.L.B. Smith's "The Sea Fishes of Southern Africa."

Assessment:

Proj#: 015U            Inst: Univ of Puerto Rico

Proj Title: Catalog of sinistral flounders for FAO Project: Survey  
and indentification of world marine fish resources

For. Locat: Italy

Funding: UN Food and Agriculture Organization

Keywords: fisheries

Proj Dates: 1981-85

PI Name: D.A. Hensley

PI Field: Ichthyology

US Agencies:

US Insts:

For. Agencies: UN FAO

For. Insts:

Proj. Description: Preparing an FAO species catalog of the sinistral,  
flounders of the world.

Assessment:

Proj#: 015V

Inst: Univ of Puerto Rico

Proj Title: Symposium on ontogeny and systematics of fishes

For. Locat: U.S. location

Funding: National Marine Fisheries Service (NMFS)-NOAA

Keywords: fisheries

Proj Dates: 1981-83

PI Name: H.G. Moser

PI Field: Ichthyologist

US Agencies: National Marine Fisheries Service of NOAA  
National Science Foundation

US Insts: Univ of Miami  
National Geographic Society  
Los Angeles County Museum of Natural History

For. Agencies:

For. Insts: Hokkaido University (Japan)

- Proj. Description: Assemble ichthyologists from all over the world working on fish eggs and larvae. Produce a volume on ontogeny and systematics of fishes.

Assessment:

Proj#: 015W      Inst: Univ of Puerto Rico  
Proj Title: Jefindofish Project--trawling survey  
            in Southern Indonesia for FAO

For. Locat: Bali

Funding: UN Food and Agriculture Organization (FAO)

Keywords: fisheries

Proj Dates: 1984-5

PI Name: Thomas Gloevfelt-Tarp

PI Field: Ichthyology

US Agencies:

US Insts:

For. Agencies: FAO

For. Insts:

Proj. Description: Trawling survey in southern Indonesia; production  
                    of a field guide to trawled fishes of the region.

Assessment:

Proj#: 015X      Inst: Univ of Puerto Rico

Proj Title: Symposium on systematics and evolution  
of Indo-West Pacific Reef fisheries

For. Locat: Australia

Funding: National Science Foundation  
Australian Museum

Keywords: fisheries

Proj Dates: 1982

PI Name: D.A. Hensley

PI Field: Ichthyology

US Agencies: National Science Foundation

US Insts:

For. Agencies:

For. Insts: Australian Museum (Sydney)  
Lizard Island Research Laboratory (Queensland)

Proj. Description: Papers presented and discussions with foreign  
ichthyologists.

Assessment:

Proj#: 015Y            Inst: Univ of Puerto Rico

Proj Title: Museum visits collecting data on fish systematics

For. Locat: Austria   East Germany   England  
             France   Sweden

Funding: Sigma Xi

Keywords: fisheries

Proj Dates: 1980

PI Name: D.A. Hensley

PI Field: Ichthyology

US Agencies:

US Insts: Sigma-Xi

For. Agencies:

For. Insts: British Museum of Natural History, Uppsala Universitet,  
Naturhistoriska Riksmuseet (Stockholm), Museum National d'Histoire  
Naturelle (Paris), Museum fur Naturkunde (E. Berlin), Naturhistor-  
isches Museum (Vienna)

Proj. Description:

Assessment:

Proj#: 0152      Inst: Univ of Puerto Rico

Proj Title: Jamaica inland fisheries

For. Locat: Jamaica

Funding: PI Personal funds

Keywords: fisheries  
aquaculture

Proj Dates: 1981

PI Name: Andrew S McGinty

PI Field: Aquaculture

US Agencies: US-AID

US Insts: Auburn Univ

For. Agencies: Ministry of Agriculture (Jamaica)

For. Insts:

Proj. Description: Exchange of information concerning the development of aquaculture in rural areas of Jamaica.

Assessment:

Proj#: 016A

Inst: Texas A&M

Proj Title: Oceanographic programs development with Saudi Arabia

For. Locat: Saudi Arabia

Funding: Saudi Arabian government

Keywords: oceanography  
educational

Proj Dates: 1979 and 1983

PI Name: Charles Giammona

PI Field: Oceanography and Environmental Engineering

US Agencies:

US Insts:

For. Agencies:

For. Insts: University of Petroleum and Minerals, Research Institute

Proj. Description: Initiated a marine science capability at the  
Research Institute of the University of Petroleum  
and Minerals, Dhahran, Saudi Arabia.

Assessment: Accomplishments will only be noticeable years after  
completion; suggest working part-time on such project,  
understanding that productivity will be low; plan to  
feel little sense of accomplishment over the period  
of performance.



Proj#: 016B      Inst: Texas A&M

Proj Title: Antarctic & Subantarctic phytoplankton:  
relating occurrence of resting spores to krill  
distribution

For. Locat: South Atlantic Ocean  
Scotia Sea

Funding: National Science Foundation

Keywords: fisheries  
          krill  
          Antarctica

Proj Dates: 1981-84

PI Name: Greta Fryxell

PI Field: Oceanography

US Agencies: National Science Foundation

US Insts:

For. Agencies:

For. Insts: Houlder Bros (Uruguay)  
            British Antarctic Survey

Proj. Description: To compare quantitative and qualitative analyses  
of preserved phytoplankton samples from spring  
and autumn cruises, especially in regard to  
resting spore ecology and distribution patterns.  
Emphasis was placed on relating occurrence of  
resting spores to krill distribution.

Assessment: Logistics awkward for Antarctic research due to strained  
British relations with Argentina during Falklands war.  
Note on scheduling problems with funding agencies--  
"arrangements with our funding agencies require planning  
ahead several years in advance and obtaining firm  
commitments from the cooperative country."

Proj#: 016C            Inst: Texas A&M  
Proj Title: Abyssal Boundary current studies

For. Locat: Argentina

Funding: National Science Foundation

Keywords: oceanography  
          currents

Proj Dates: 1985-88

PI Name: T. Whitworth/ W.D. Nowlin, Jr./ R. Dale Pillsbury

PI Field: Physical Oceanography/Physical Oceanography/ Oceanography

US Agencies: National Science Foundation

US Insts: Oregon State Univ

For. Agencies:

For. Insts: Instituto Antartico Argentino

Proj. Description: Investigation of the source waters and variability of the deep boundary current which supplies cold Antarctic waters to the South Atlantic Ocean. Hydrographic measurements and current meter arrays will be used to investigate the spreading paths of dense Weddell Sea Deep Water into the Argentine Basin. Yearlong direct measurements will be used to estimate the spatial and temporal variability and the volume transport of the current north of Falkland Plateau, and to investigate possible relationships between the observed variability and the overlying flow of the Antarctic Circumpolar Current.

Assessment:

Proj#: 0160 Inst: Texas A&M

Proj Title: Biological productivity of SE Mediterranean  
in Post-High Dam (Aswan Period)

For. Locat: Egypt  
Israel

Funding: US AID

Keywords: fisheries  
bio-productivity

Proj Dates: 1980, 1984-86

PI Name: Sayed El-Sayed

PI Field: Biological Oceanography

US Agencies: US AID  
Sea Grant Program

US Insts: Bigelow Laboratory of Marine Science

For. Agencies: Egypt Academy of Science and Technology

For. Insts: Dept of Oceanography, Univ of Alexandria (Egypt)  
Institute of Limnology and Oceanography (Israel)

Proj. Description: To assess the existing levels of biological  
productivity in the nutrient-impooverished  
Southeastern Mediterranean and to determine the  
principal factors controlling the primary,  
secondary, and tertiary (fishes) productivity  
of these waters.

Assessment: Personnel from the Division of International Programs of  
NSF can be of substantial assistance in contributing to  
success of projects, if they can be involved. Equally,  
ONR can be of inestimable help if they would agree to  
fund ship-time to carry out oceanographic investigations  
in Southeastern Mediterranean.

Proj#: 016E            Inst: Texas A&M

Proj Title: Behavioral physiology of marine turtles

For. Locat: Mexico  
            Grand Cayman  
            Australia

Funding: Sea Grant Program  
          NSF--US-Australia joint program and Psychobiology program  
          Sea Turtles Inc

Keywords: turtles

Proj Dates: 1979-ongoing

PI Name: David W Owens/ Max Amoss

PI Field: Behavioral endocrine physiology/ Endocrine physiology

US Agencies: U.S. Fish & Wildlife Service  
              National Park Service  
              National Marine Fisheries Service  
              National Science Foundation

US Insts: Univ of California/Berkeley  
          Univ of Arizona  
          Sea Turtles Inc

For. Agencies: Instituto Nacional de Pesca (Mexico)  
              Secretaria de Pesca  
              Queensland National Park Service (Australia)

For. Insts: Cayman Turtle Farm

Proj. Description: Study of sea turtles is commonly an international task because turtles do not recognize political borders. This project deals with research on basic biology of sea turtles. We study their behavior, reproductive physiology and endocrinology for two reasons: 1) these species have several unique adaptations, thus understanding them is of fundamental interest to all of zoology; 2) they are quite valuable from an economic standpoint, thus any assistance to removing them from the endangered species list will be a service to mankind as well as to the turtles. We commonly work with co-investigators in other countries where we collect samples and do field work that simply cannot now be done in the U.S.

Assessment: Mexico is tricky now and it is often difficult to get permits; system in Mexico changes regularly; more difficult to work with their government than to work with collaborator at a Mexican university. Find someone who has done similar work recently at a Mexican university.

Proj#: 016F                      Inst: Texas A&M

Proj Title: Survey of coastal biotopes of Dubai  
United Arab Emirates

For. Locat: United Arab Emirates

Funding: Dubai Petroleum Co.

Keywords: marine biology  
coastal biotopes  
sediments

Proj Dates: 1981

PI Name: Thomas J Bright/ Eric N Powell

PI Field: Benthic Ecology/ Benthic Ecology

US Agencies:

US Insts: CONOCO Inc. and subsidiary,  
Dubai Petroleum Co.

For. Agencies:

For. Insts:

Proj. Description: A descriptive assessment was made of the coastal marine biotopes of Dubai. Biotic zonation, community structure and species composition of the various biotopes were depicted. Community health and condition were determined. Sediments and hydrocarbon levels in sediments and organisms were analyzed.

Assessment: Preliminary on-site planning session would be helpful before going into the field for sampling.

Proj#: 020A            Inst: Old Dominion Univ (Virginia Graduate  
                                 Marine Science Consortium)  
Proj Title: Joint analysis of Monex Phase of Global  
                 Weather Experiment

For. Locat: Kenya

Funding: National Science Foundation--International Program

Keywords: oceanography  
                 weather

Proj Dates: 1981-82

PI Name: Donald R Johnson

PI Field: Physical Oceanography

US Agencies: National Science Foundation

US Insts: Univ of Miami

For. Agencies: Marine and Fisheries Research Institute (Kenya)  
                 Dept-of-Fisheries (Kenya)

For. Insts:

Proj. Description: Analysis of data collected off Kenya during  
                 the Monex phase of the Global Weather Experiment.

Assessment: Recommend involvement of NSF Intl. Program at earlier  
                 date, during collection of data so that foreign  
                 scientists could have better input.



Proj#: 024B      Inst: Marine Sciences Research Center--  
State Univ of NY/ Stony Brook  
Proj Title: Locations and temperatures of Pacific Salmon  
in Western Lake Ontario

For. Locat: Canada

**Funding:** Ontario Ministry of Natural Resources  
Ontario Charter Boat Association  
St. Catherine Game and Fish Association

**Keywords:** fisheries  
salmon

Proj Dates: 1984

PI Name: James M Haynes

PI Field: Fisheries and Ecology

**US Agencies:**

US Insts:

For. Agencies: Ministry of Natural Resources (Ontario)

For, Insts: Ontario Charter Boat Association

Proj. Description: To determine the distribution, movements, and temperatures of coho and chinook salmon in spring and summer in Lake Ontario.

**Assessment:**





Proj#: 024D            Inst: Marine Sciences Research Center--  
State Univ of NY/ Stony Brook  
Proj Title: Genetic and demographic assessment of  
Strombus Gigas and development of an in-shore  
hatchery and research facility in Belize  
  
For. Locat: Belize

**Funding:** US-AID (Program in Science Technology Cooperation)

**Keywords:** fisheries  
aquaculture

**Proj Dates:** 1985-86

PI Name: William Steiner (USDA)/ Winston Miller-(Belize)  
(S.E. Siddall, consultant to project, at SUNY/Stony Brook)  
PI Field: Genetics/ Fisheries

US Agencies: US AID Program in Science Technology Cooperation

US Insts:

For. Agencies: Ministry of Fisheries (Belize)

For. Insts:

**Proj. Description:** To survey queen conch stocks off the coast of Belize, to determine genetic differentiation, uniqueness of populations. To develop a hatchery for production of juvenile conchs to be used in experimental reseeding studies.

**Assessment:** Project just beginning; communications with Belize are poor. Site visits critical for developing projects.











153



Proj#: 026A            Inst: Univ of Delaware  
Proj Title: DELBUOY wave powered seawater desalting  
             systems for Caribbean countries

For. Locat: Anguilla  
             Caribbean

Funding: US AID

Keywords: desalination  
             salinity

Proj Dates: 1981-82

PI Name: C.M. Pleass

PI Field: Ocean Engineering

US Agencies: US AID (LDC-Energy Program)

US Insts:

For. Agencies:

For. Insts:

Proj. Description: To support the first sea trials of a desalination  
                     system that uses wave action as its source of  
                     energy. A proven reverse osmosis technology  
                     would purify the water, at an affordable cost.

Assessment:

Proj#: 026B                      Inst: Univ of Delaware/College of Marine Studies

Proj Title: Experimental mariculture of bivalves  
to improve the fisheries of Panama

For. Locat: Panama

Funding: Partners of the Americas

Keywords: fisheries  
aquaculture  
mariculture

Proj Dates: 1984-ongoing

PI Name: Janzel Villalaz (Panama)/  
Consultants: Melbourne Carriker (Delaware)/ Luis D'Croz (Panama)  
PI Field: Malacologist / Ecologist / Ecologist

US Agencies:

US Insts: Smithsonian Tropical Research Institute (STRI)

For. Agencies:

For. Insts: Univ of Panama

Proj. Description: Establish an experimental bivalve larval hatchery at STRI on Naos Island, Panama, to raise appropriate algae for feeding the larvae, collect experimental samples of scallops and clams (commercial species), determine their spawning periods, spawn adults, raise the larvae to setting; in cooperation with artisanal shellfishermen plant seed in protected areas of Panama Bay, control predators, and catch scallop seed in traps in the field to supplement that grown in laboratory. Scallops once a thriving commercial population, now seriously declined; clams likewise declining.

Assessment: Satisfactory; results several years away; "remember this is the tropics and there are 'costumbres' that must be observed, and that progress does not necessarily move as rapidly there as in the U.S."

Proj#: 026C      Inst: Univ of Delaware/College of Marine Studies

Proj Title: Workshop on taxonomy and ecology of  
crustaceans and finfish of the Caribbean Sea

For. Locat: Colombia

Funding: National Science Foundation (proposal pending)  
COLCIENCIAS-Colombia

Keywords: educational  
fisheries

Proj Dates: 1985

PI Name: Hernando Sanchez (Colombia)/ Melbourne Carriker (Delaware)

PI Field: Natural Sciences/ Malacology and Estuarine Ecology

US Agencies: National Science Foundation

US Insts:

For. Agencies: COLCIENCIAS (Colombia)

For. Insts:

Proj. Description: Workshop on systematics and ecology of crustaceans and finfish of southern Caribbean. Overviews of research programs on these taxa, discussions, suggestions for future research. Promote interdisciplinary interaction, future collaboration and research. Participants drawn from both U.S. and Caribbean. Papers and summaries from workshop to be published.

Assessment:

Proj#: 0260 Inst: Univ of Delaware/College of Marine Studies

Proj Title: Fisheries related studies of mangrove loss in  
Central America and study of La Plata River  
and its interaction with the Ocean

For. Locat: Argentina  
Costa Rica  
Ecuador

Funding: Tinker Foundation  
Government of Ecuador  
Government of Argentina

Keywords: fisheries  
mangroves

Proj Dates: 1981-85

PI Name: V. Klemas/ M. Hardisky

PI Field: Remote Sensing/ Marine Biology

US Agencies:

US Insts: Tinker Foundation

For. Agencies: CLIRSEN (Ecuador)  
National Research Council (Argentina)

For. Insts: Univ of Costa Rica

Proj. Description: Assessment of mangrove losses due to shrimp pond  
construction; development of remote sensing  
techniques for mapping biomass and coastal  
productivity; studies of coastal pollution and  
fisheries production; studies of coastal currents  
and sediment transport.

Assessment: Exceeded expectations after a slow start; plan for more  
realistic schedules and make better use of local talent  
and facilities. Make sure you have a reliable  
co-investigator in the host country and check to insure  
whether host scientist's plans have full support of his  
government.

Proj#: 026E            Inst: Univ of Delaware  
Proj Title: Development of crops from halophytes

For. Locat: Egypt

Funding: US AID Title XII

Keywords: crops  
          salinity

Proj Dates: 1981-ongoing

PI Name: J.L. Gallagher/ G.F. Somers

PI Field: Plant ecology/ Plant physiology

US Agencies: US AID

US Insts: American Univ in Cairo

For. Agencies:

For. Insts:

Proj. Description: Testing of halophytic crops developed through  
                    Sea Grant project under vigorous saline  
                    conditions in the Egyptian desert.

Assessment: Satisfactory; work is continuing; methods being updated.

Proj#: 026F            Inst: Univ of Delaware/College of Marine Studies

Proj Title: Joint marine studies program between University  
            of Costa Rica and Univ of Delaware

For. Locat: Costa Rica

Funding: Sea Grant -International Cooperative Assistance Program  
          Organization of American States

Keywords: cooperative marine programs  
          educational

Proj Dates: 1978-83

PI Name: Charles E Epifanio/ Don Maurer

PI Field: Marine Biology/ Biological Oceanography

US Agencies: Sea Grant--International Cooperative Assistance Program

US Insts: Woods Hole Oceanographic Institution

For. Agencies: Organization of American States

For. Insts: Univ of Costa Rica

Proj. Description: Several Univ of Costa Rica students were trained at the MS level at Delaware and others were trained as marine technicians and boat operators. Research involved physical, chemical, and biological studies in the Gulf of Nicoya, investigating circulation of the gulf, seasonal nutrient cycles, faunal composition of benthos and benthic-pelagic region, community structure of fish populations, reproductive biology of several decapod crustaceans, population dynamics of tropical blue crabs, and seasonality of abundance of larval crustaceans. Various remote sensing projects were superimposed on all of these areas.

Assessment: Satisfactory project; PI would require more administrative responsibility from Costa Rican scientists. Work through only one main individual at one institution. Allow that person to deal with other agencies in the host country.

Proj#: 0260      Inst: Univ of Delaware/College of Marine Studies  
Proj Title: U.S.-Argentina Workshop on Biodeterioration

For. Locat: Argentina

Funding: National Science Foundation  
Government of Argentina

Keywords: biodeterioration

Proj Dates: 1985

PI Name: S.C. Dexter (Delaware)/ Hector Videla (Argentina)

PI Fields: Materials Science/ Bioelectrochemistry

US Agencies: National Science Foundation--International Programs

US Insts: Naval Oceanographic Research & Development Authority  
NSTL-MS

For. Agencies: CONICET (Argentina)

For. Insts: INIFTA (Argentina)

Proj. Description: Conference to focus on the basic science of the mechanisms by which microorganisms interact with corroding metal surfaces. This includes a review of the biological corrosion problem worldwide through a review of past research efforts and current case histories. Sessions to deal with experimental methods and remedial measures.

Assessment:

Proj#: 027A            Inst: Louisiana State Univ  
Proj Title: Racial studies and migrational patterns  
            of King Mackerel

For. Locat: Caribbean  
            Mexico

Funding: National Marine Fisheries Service (NOAA)  
          La. Department of Wildlife & Fisheries  
          Sea Grant  
          LSU Fisheries Initiative

Keywords: fisheries  
          migration  
          mackerel

Proj Dates: 1983-87

PI Name: G.W. Bane

PI Field: Fisheries Biology

US Agencies: Southeast Fisheries Center of  
            National Marine Fisheries Service

US Insts: La. Dept. of Wildlife & Fisheries  
          Gulf States Marine Fisheries Commission  
          Gulf of Mexico Fisheries Mgmt. Council  
          SEAMAP

For. Agencies: PESCA (Mexico)  
            Fisheries Dept. [CIP] (Cuba)

For. Insts: Univ of Havana

Proj. Description: High-pressure liquid chromatography, electro-  
                         phoresis and size structure analyses of  
                         King Mackerel

Assessment:





Proj#: 029A            Inst: Woods Hole Oceanographic Institution  
                         Marine Policy & Ocean Management Center  
Proj Title: Diagnosis of marine resources development in Colombia

For. Locat: Colombia

Funding: Donner Foundation  
          Sea Grant Program (Woods Hole)

Keywords: marine resources  
          resource development/management

Proj Dates: 1982-84

PI Name: Robert W Knecht/ Biliiana Cicin-Sain  
          (both now at Univ of Calif./Santa Barbara)  
PI Field: Marine Affairs/ Political Science

US Agencies: Sea Grant Program

US Insts: Donner Foundation

For. Agencies: Navy's Maritime and Ports General Directorate (DIMAR)  
                 Ports of Colombia (COLPUERTOS)  
                 Colombian Commission on Oceanography (CCO)  
                 National Planning Office (DNP)  
                 and others

For. Insts: Institute for Geologic and Mineral Studies (INGEOMINAS)  
          Inst. for Development of Renewable Natural Resources (INDERENA)  
          Fund for Scientific Research and Special Projects (COLCIENCIAS)  
          Center for Economic Development Studies (CEDE)  
          Marine Research Institute of Punta de Betin (INVEMAR)  
          Center for Oceanographic and Hydrographic Research (CIOH)  
          National Tourism Company (CNT) and others

Proj. Description: Analyzed current situation and potential for  
                         development of several ocean resource elements:  
                         ports and harbors; minerals and energy; fisheries  
                         and aquaculture; tourism; and coastal zone  
                         management.

Assessment: Needed more time in-country. Good dedicated people in  
                 the scientific organizations, but infighting within the  
                 policy-oriented groups.

Proj#: 0298      Inst: Woods Hole Oceanographic Institution/  
Marine Policy & Ocean Management Center  
Proj Title: US-Jordan cooperative marine science  
and policy program

For. Locat: Jordan  
Gulf of Aqaba

Funding: US AID

Keywords: cooperative marine programs  
marine policy

Proj Dates: 1984-85

PI Name: David A Ross/ George Grice

PI Field: Marine Geology & Marine Policy / Marine Biology

US Agencies: US AID  
Sea Grant Program

US Insts:

For. Agencies: Ministry of Planning (Jordan)

For. Insts: Marine Science Center (Aqaba)  
Yarmouk University  
Univ of Jordan

Proj. Description: Scientists from the Woods Hole Oceanographic  
Institution propose to assist and work with  
scientists and administrators of Jordan in  
developing a cooperative marine science and  
policy program for the Gulf of Aqaba.

Assessment: Project not yet complete; if repeated, "get it started  
quicker" and "remember it is the Middle East."

Proj#: 029C                      Inst: Woods Hole Oceanographic Institution  
   Marine Policy & Ocean Management Center  
Proj Title: Coastal and Marine Resources Management for  
   the Galapagos Islands

For. Locat: Ecuador  
Funding: Donner Foundation  
          Tinker Foundation  
          Pew Memorial Trust  
          Government of Ecuador

Keywords: coastal development/management  
          cooperative marine programs  
          fisheries  
          marine resources  
          resource development/management  
          tourism

Proj Dates: 1983-1984

PI Name: James M. Broadus

PI Field: Economics

US Agencies: National Park Service

US Insts: Smithsonian Institution

For. Agencies: High Level Commission for Formulation of a Galapagos  
   Master Plan  
   Navy of Ecuador    Naval Oceanographic Institute (INOCAR)  
   Merchant Marine & Coastal Authority    (DIMERC)  
   Galapagos National Park (PNG)  
   National Galapagos Institute (INGALA)  
   National Fisheries Institute (INP)

For. Insts: Charles Darwin Research Station

Proj. Description: To examine coastal and marine resource uses and problems in Ecuador's Galapagos Islands (current status and possible avenues for improvement). Problems in the islands which can be addressed by a coastal zone management/marine resources management process include conservation of the islands' unique biota and habitats, tourism, port development, waste disposal, resource extraction, and fisheries. A two-zone management scheme for coastal and marine resources is outlined. Mechanisms for improved coordination are identified.

Assessment: A successful project which established a strong rapport with many Ecuadorian agencies and institutions. The possible creation of a special management area in Galapagos waters was discussed in the report that resulted from this project. Work continues between Woods Hole and the present Government of Ecuador on creation of a marine special management area, tourism control, and use of scientific and technical information.

Proj#: 029D      Inst: Woods Hole Oceanographic Institution  
Marine Policy & Ocean Management Center  
Proj Title: Development of a marine resources management  
scheme for the Galapagos Islands

For. Locat: Ecuador

Funding: Tinker Foundation  
Pew Memorial Trust  
Johnson Endowment  
Government of Ecuador

Keywords: coastal development/management  
cooperative marine programs  
fisheries  
marine resources  
resource development/management  
tourism

Proj Dates: 1984-86

PI Name: David A Ross/ James M Broadus

PI Field: Marine Geology & Marine Policy/ Economics

US Agencies: National Park Service  
U.S. Dept. of State  
U.S. AID  
NOAA-Marine Sanctuaries Program

US Insts: Smithsonian Institution  
World-Wildlife Fund-US  
National Resources Defense Council  
Environmental Defense Fund

For. Agencies: High Level Commission for Formulation of a Galapagos  
Master Plan  
Navy of Ecuador    Naval Oceanographic Institute (INOCAR)  
Merchant Marine & Coastal Authority (DIMERC)  
Galapagos National Park (PNG)  
National Galapagos Institute (INGALA)  
National Fisheries Institute (INP)

For. Insts: UN Environment Programme  
Charles Darwin Research Station  
Darwin Foundation  
Fundacion Natura

Proj. Description: Ongoing cooperative study with Government of  
Ecuador on the Galapagos Islands, with focus on:  
implementation strategies for coastal zone man-  
agement, background studies on special marine  
area management (including comparative global  
experience with marine parks and the economics  
of marine reserves), environmentally sensitive  
approaches to tourism management, and the use of  
scientific and technical information in coastal  
management.

Assessment:

Proj#: 030A      Inst: Skidaway Institute of Oceanography  
                 Savannah, Georgia  
Proj Title: Trace element budgets of the Upper Gulf of  
            Thailand: River inputs

For. Locat: Thailand

Funding: National Science Foundation--International Program

Keywords: trace metals  
          river inputs

Proj Dates: 1984

PI Name: H.L. Windom

PI Field: Geochemistry

US Agencies: National Science Foundation--International Program

US Insts:

For. Agencies:

For. Insts: Chulalongkorn Univ

Proj. Description: Trace metal inputs and distribution in  
                 Gulf of Thailand

Assessment:

Proj#: 0308                      Inst: Skidaway Institute of Oceanography  
                                 Savannah, Georgia  
Proj Title: Cooperative research on environmental characteristics  
                                 and lower trophic level production in regional  
                                 upwelling in the sea (Japan)

For. Locat: Japan

Funding: National Science Foundation--International Program

Keywords: upwelling  
                                 bio-productivity

Proj Dates: 1986

PI Name: L.P. Atkinson

PI Field: Hydrography

US Agencies: National Science Foundation

US Insts:

For. Agencies:

For. Insts: Univ of Tsukuba (Japan)

Proj. Description: Comparative studies of nutrient enrichment  
                                 and its effect on biological production at  
                                 Western Boundary Current fronts (Kuroshio  
                                 and Gulf Stream)

Assessment:

Address Listing of Sea Grant Institutions

- \* Alaska Sea Grant College Program  
University of Alaska  
590 University Ave., Suite 102  
Fairbanks, AK 99701  
  
California Sea Grant College Program  
Univ. of California  
A-032  
La Jolla, CA 92093  
(Scripps Institution of Oceanography  
La Jolla, CA 92093)  
  
Florida Sea Grant College Program  
University of Florida  
Building 803  
Gainesville FL 32611  
  
Illinois/Indiana Sea Grant Program  
University of Illinois  
1206 South Fourth Street  
Rm. 104, Huff Gym  
Champaign, Illinois 61820  
  
Louisiana State Univ. Sea Grant College Program  
Center for Wetland Resources  
Baton Rouge, Louisiana 70803
- \* MIT Sea Grant College Program  
Building E38, Rm. 330  
77 Massachusetts Ave.  
Cambridge, MA 02139
- \* Maryland Sea Grant College Program  
University of Maryland  
H.J. Patterson Hall, Rm. 1222  
College Park, MD 20742
- \*\* Minnesota Sea Grant Program  
University of Minnesota  
116 Classroom Office Bldg.  
1994 Buford Avenue  
St. Paul, MN 55108
- \* Mississippi-Alabama Sea Grant Consortium  
Gulf Coast Research Laboratory  
Caylor Bldg.  
Ocean Springs, Mississippi 39564

(continued)

- 
- \* No appropriate projects for the inventory or information received too late to include in inventory
  - \*\* No response to inventory questionnaire



Address Listing of Sea Grant Institutions (continued)

New Jersey Marine Sciences Consortium  
Sea Grant Program  
Building No. 22  
Ft. Hancock, NJ 07732

Ohio Sea Grant Program  
Ohio State University  
484 West Twelfth Ave.  
Columbus OH 43210

- \* Oregon State Univ. Sea Grant College Program  
Adm. Bldg. A-320  
Corvallis, Oregon 97331

South Carolina Sea Grant Consortium  
221 Fort Johnson Rd.  
Charleston SC 29412

State Univ. of New York/Cornell Sea Grant College Program  
New York Sea Grant Institute  
37 Elk Street  
Albany NY 12246

Texas A&M Univ. Sea Grant College Program  
College Station, TX 77843

- \* University of Connecticut Sea Grant Program  
Avery Point  
Groton, CT 06340

Univ. of Delaware Sea Grant College Program  
College of Marine Studies  
Newark, Delaware 19711

Univ. of Georgia Sea Grant College Program  
Ecology Building  
Athens, Georgia 30602  
(Skidaway Inst. of Oceanography  
P.O. Box 13687  
Savannah, Georgia 31416)

- \*\* Univ. of Hawaii Sea Grant College Program  
1000 Pope Road, Rm. 220  
Honolulu, Hawaii 96822

(continued)

- 
- \* No appropriate projects for the inventory or information received too late to include in inventory
  - \*\* No response to inventory questionnaire

Address Listing of Sea Grant Institutions (continued)

Univ. of Maine Sea Grant College Program  
14 Coburn Hall  
Orono, Maine 04469

Univ. of Michigan Sea Grant College Program  
2200 Bonisteel Blvd.  
Ann Arbor, Michigan 48109-2099

Univ. of New Hampshire Sea Grant College Program  
Marine Program Building  
Durham, New Hampshire 03824

- \*\* Univ. of North Carolina Sea Grant Program  
North Carolina State Univ.  
Box 8605  
Raleigh, NC 27695-8605

Univ. of Puerto Rico Sea Grant Program  
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