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**International Marine Science Research Projects:
Second Inventory of International Projects
at Sea Grant Institutions--1990**

by

Judith Fenwick, David A. Ross and Cynthia T. Schramm

March 1991

Technical Report

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**INTERNATIONAL MARINE SCIENCE RESEARCH PROJECTS:
SECOND INVENTORY OF INTERNATIONAL PROJECTS
AT SEA GRANT INSTITUTIONS--1990**

by

Judith Fenwick, David A. Ross and Cynthia T. Schramm

International Marine Science Cooperation Program / WHOI Sea Grant Program
Woods Hole Oceanographic Institution
Woods Hole, Massachusetts 02543 US

March 1991

TECHNICAL REPORT

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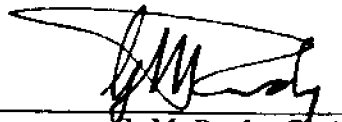
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G. M. Purdy, Chairman
Department of Geology & Geophysics

INTERNATIONAL MARINE SCIENCE RESEARCH PROJECTS:

**SECOND INVENTORY OF INTERNATIONAL PROJECTS
AT SEA GRANT INSTITUTIONS--1990**

TABLE OF CONTENTS

Page	
1	ABSTRACT
2	INTRODUCTION
2	The International Marine Science Cooperation Program
2	Sea Grant and International Research
5	REPORT AND ANALYSIS OF THE INVENTORY
5	Criteria for the Inventory
8	Results of the Inventory
8	Institutional Responses to 1985 and 1990 surveys
	Graphs of
9	Geographic distribution of projects
10	Disciplines of principal investigators
11	Funding sources
	Tables of
12	Geographic distribution of projects
12	Disciplines of principal investigators
12	Funding sources
	SUMMARIES OF QUESTIONNAIRES
14	Guide to the Summaries
16	Summaries
	INDEXES TO THE SUMMARIES
140	- by Geographic Location
142	- by Funding Sources
144	- by Disciplines of Principal Investigators
146	- by Name of Principal Investigators
148	- by Keyword
152	APPENDIX A: Sample of Inventory Questionnaire

This inventory of marine science projects at Sea Grant institutions was completed in order to gauge the level and enhance a database of U.S. / foreign collaboration in international marine research initiated at U.S. Sea Grant institutions. The inventory was done by the International Marine Science Cooperation Program at the Woods Hole Oceanographic Institution's Sea Grant Office. The first inventory of projects with international components at Sea Grant institutions was done in 1984-85 by the International Program. This second inventory continues in the tradition of the first to "take the pulse" of international interest at Sea Grant institutions. The pulse is very active despite the lack of direct funding accorded the formal Sea Grant International Program at the national level. Of the 122 projects at Sea Grant institutions, however, only 29 were directly funded in part or entirely by Sea Grant. The inventory analyzes data from 122 international projects initiated at 20 Sea Grant institutions by profiling and explicating the extent of project foreign locations, sources of funding, areas of expertise for principal investigators, and contacts at foreign and U.S. agencies and institutions. It presents one-page summaries of the 122 projects along with indexes by geographic location, funding source, PI discipline, PI name, and keywords. In addition, this report compares the data from the 1989-90 inventory with that of the 1985 inventory.

This inventory of marine science projects at Sea Grant institutions was compiled in 1989-90 in order to gauge the level and enhance a database of U.S. / foreign collaboration in international marine research initiated at U.S. Sea Grant institutions. An earlier inventory of projects with international components at Sea Grant institutions was done in 1984-85 (Ross & Fenwick, WHOI Tech. Rept. 85-22) and resulted in a database on 98 international marine research projects. At the time of the first inventory, an office for international marine science cooperation at Woods Hole was in the concept stage. That concept has since materialized as the International Marine Science Cooperation Program, funded by Sea Grant and based at the Woods Hole Oceanographic Institution. Since its inception in 1985, the International Program has attempted to demystify jurisdictional issues for marine scientists, administrators, and policymakers; to monitor and map the global patchwork of maritime claims; and to exchange marine science expertise with marine science communities in developing countries.

The International Marine Science Cooperation Program

The broad objectives of the International Marine Science Cooperation Program are to improve opportunities for collaborative research between U.S. and foreign scientists through information exchange and outreach; to increase and improve access for coastal countries to U.S. marine science expertise and education; to increase opportunities for U.S. scientists to work in foreign waters; and to strengthen a global approach to ocean studies.

In meeting these objectives, the International Program has been offering assistance to researchers through its active projects. These include:

- ◊ Maintaining a database of over 200 funding sources for scientists to undertake international marine science research. In 1990, the database was published by the WHOI Sea Grant Program as the *International Marine Science Funding Guide*, free upon request and already distributed to 1,100 institutions outside the U.S. and 1,000 institutions and individuals within the U.S.
- ◊ Establishing a Portuguese-U.S. Sea Grant cooperative marine science program for U.S. and Portuguese marine scientists to exchange information concerning scientific research projects and publications, to establish cooperative research projects between the two countries, to provide scientific and technical assistance from U.S. institutions to Portuguese marine science institutions, and to assist in placement and exchange of students and staff with marine science interests between U.S. Sea Grant institutions and Portuguese institutions.
- ◊ Maintaining a database that profiles 145 coastal countries, their maritime boundaries and claims, jurisdiction over marine science research, and records (since 1972) of past U.S. research clearance requests. Appropriate portions of this database will be

published periodically to assist marine science institutions, individual scientists, and administrators worldwide in planning research cruises and collaborative research programs.

- ◇ Preparing the second edition of a world map showing maritime boundaries and jurisdiction over marine scientific research. Fifteen hundred copies of the 1986 edition of the map, which is out of print, were distributed free worldwide to marine science institutions, individuals, and agencies.
- ◇ Establishing the International Red Tide Information and Assistance Service, a database of 400 experts in the field of toxic algal blooms from which a directory of experts was published in 1990.
- ◇ Maintaining a database of international marine science projects at Sea Grant institutions; data was collected from Sea Grant programs via questionnaires in 1984-85 and 1989-90. This technical report presents the data from the 1989-90 collection and compares it with data from the 1984-85 collection.
- ◇ Hosting foreign visitors, fulfilling literature searches and publication requests.

New program efforts include development of a database of Caribbean/Latin America marine science institutions and research areas and assistance to the U.N. Industrial Development Organization in developing a Caribbean Marine Technology Regional Center.

Sea Grant and International Research

The international spread of Sea Grant research is illustrated in Figure 1. The projects which make up the black bars (1990 data) are described individually in one-page summaries further along in this report. This second inventory continues in the tradition of the 1985 inventory to "take the pulse" of international interest at Sea Grant institutions. The pulse is very active despite the lack of direct funding accorded the formal Sea Grant International Program at the national level. We hope that publication of the database (the first part being the 1985 technical report and the second part herewith) will:

- ◇ assist other U.S. scientists with similar research interests in specific foreign countries;
- ◇ improve access for foreign scientists and institutions to U.S. marine science research, education, and training opportunities;
- ◇ assist in the development of multidisciplinary and/or multinational teams; and
- ◇ document the interest and activity of Sea Grant in international efforts.

This report presents the one-page summaries of 122 projects, explicating the extent of project foreign locations, sources of funding, areas of expertise for principal investigators, and contacts at foreign and U.S. agencies and institutions; and it provides indexes to these summaries by funding sources, PI names and disciplines, geographic locations, and key words. In addition, this report compares the data from the 1989-90 inventory with that of the 1985 inventory.

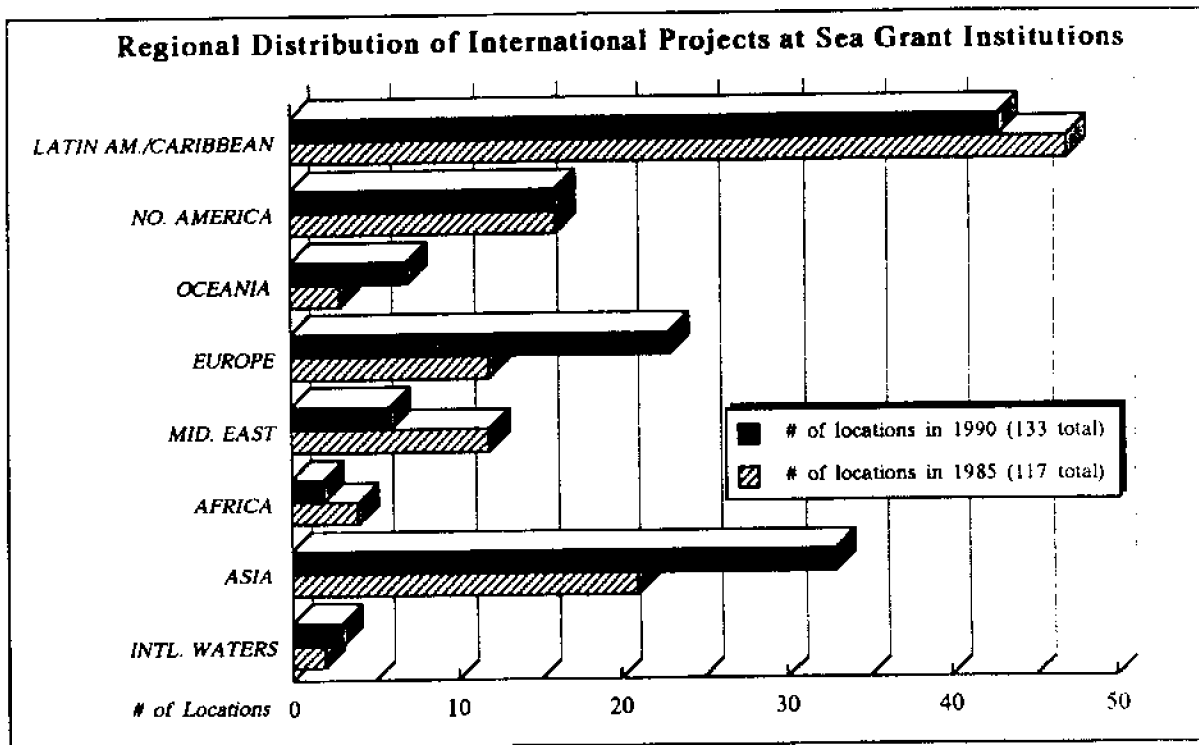


Figure 1: Regional distribution of international projects sponsored at Sea Grant institutions as of 1985 and 1990.

Many of the projects represented in this inventory are cooperative programs. Cooperative programs in marine science, whether they are land-based or sea-going, fit into all sizes of research agendas: global, bilateral (between governments or institutions) or simply scientist to scientist. The need to promote cooperative marine research programs worldwide is underscored by the growth of global science programs (which often do not include less developed countries as research partners), and by the heightened interest of developing coastal states in their marine territory and resources.

As global programs continue, the flow of international cooperative research will grow. As part of this growth and by providing access for developing countries to U.S. marine science expertise (through collaborative programs such as Sea Grant supports), we can pull more scientists from the developing countries into international collaborative programs. This process will help these countries to assess and manage their own marine resources, and most important of all, to build the educational bases from which successive generations of "global" marine scientists will come.

Criteria for the Inventory

The questionnaire upon which this inventory is based was distributed by the International Marine Science Cooperation Program in June 1989 to the Sea Grant Directors (30) and marine advisory leaders (32) at all Sea Grant institutions, as well as to all principal investigators (60) who completed questionnaires in the 1985 survey. A sample of the questionnaire mailing is at the back of this report (Appendix 1). The Sea Grant institutions represent a broad geographic network of colleges and universities engaged in marine science research; and although they do not encompass all U.S. institutions engaged in this vein of research, they do contain a wide variety of researchers with specific interests in international marine science.

We asked of the questionnaire's recipients that a questionnaire be completed for each international marine project (scientific, advisory or educational) which had been initiated at their participating institution. Project specifications included:

- 1) Projects where the principal investigator or a project staff member worked in a foreign country (land-based or research vessel-based in foreign waters);
or
- 2) Projects on which foreign scientists collaborated; on which foreign scientists worked with a P.I. at the P.I.'s home institution or were sponsored to work in the U.S. by P.I.'s project funding;
or
- 3) Projects which were funded in whole or in part by foreign sources.

Projects need not have Sea Grant funding to be included (only 29 of the 122 projects received Sea Grant funding). Projects were to be current or recent (active within the past five years). There were no limits as to dollar amounts or time involved in reported projects, since relatively low-cost activities often yield significant returns. In most instances questionnaires were completed by the principal investigator. Returns were received between June 1989 and May 1990.

Results of the Inventory

We have organized this report to serve two immediate functions. First, to analyze the data obtained from 122 inventory questionnaires (each representing an international project) completed by individuals through 20 of 29 Sea Grant programs. Second, to serve as a reference piece for persons seeking information and assistance on initiating cooperative international marine science projects. Indexes give the reader quick access to pertinent

areas of the project summaries, and addresses of the principal investigators are offered as part of each project summary for direct contact.

This inventory is a partial representation of active international programs at Sea Grant institutions. When we completed the first inventory in 1985 we had no yardstick against which to measure the response rate. Now with two sets of data on international projects we still cannot boast a yardstick or measure how encompassing our inventory has been. The rate of return on completed questionnaires, however, improved substantially with this second inventory, up from 98 returns in 1985 to 122 returns in 1990. A broader base of Sea Grant institutions was also represented, climbing from 17 institutions in 1985 to 20 institutions in 1990. Six new institutions joined the ranks of those with international projects, while three dropped from the ranks reporting no active international projects, along with six institutions who had no appropriate international projects for this or the previous inventory. Overall institutional response to the 1985 and 1990 inventories is shown on page 8. The charts and tables which follow track some of the trends in international cooperative research, utilizing data from the 1985 and 1990 inventories.

Geographic Distribution: (Chart 1, Table 1)

The data from 1990 shows a substantial increase over 1985 in research projects located in Europe (↑ 11), Asia (↑ 12), Canada (↑ 5), and Oceania (↑ 4). The number of projects in Central America and the Caribbean has remained constant, whereas projects have declined in South America (↓ 8), Africa (↓ 2) and the Middle East (↓ 6) with project numbers decreasing there by 50% or more from 1985 to 1990.

Principal Investigators' Disciplines: (Chart 2, Table 2)

The distribution of P.I. disciplines has changed markedly since the 1985 inventory, particularly in the biological sciences. The 1990 results indicate that fewer researchers in the biological sciences (Biology, Fisheries, Ecology) have been working on international projects with numbers decreasing (↓ 19) from 105 researchers in 1985 to 86 in 1990. Scientists in the fields of geology (↑ 5), engineering (↑ 3), and chemistry (↑ 8) have increased slightly. The largest increase in discipline of P.I., perhaps indicative of the types of projects reported, are in the fields of Administration / Education (↑ 11, tripling since 1985) and Social Sciences (↑ 13, more than doubling since 1985).

Funding Sources: (Chart 3, Table 3)

The majority of international research in this survey was funded by the U.S. federal government through its various departments and agencies, with U.S. federal and foreign governments funding more projects than in the 1985 survey. Of the 122 projects at Sea Grant institutions, only 29 were directly funded in part or entirely by Sea Grant. Educational institutions (both foreign and U.S.) have slightly increased their research support. Unfortunately, a substantial decline is evident in the number of projects supported by private monies and foundations.

Based on our inventory, there is no way to ascertain the level of financial commitment by the various funding sources. It is possible that a decline in the numbers of projects funded by a particular type of agency is compensated for by the size and cost of individual research projects. It is clear, however, that contrary to the desires of the U.S. federal government in the last decade, funding source alternatives to federal support have actually declined.

**INSTITUTIONAL RESPONSE TO INVENTORY OF
INTERNATIONAL PROJECTS AT SEA GRANT INSTITUTIONS**

<i>Sea Grant Institutions Responding to Survey</i>	<i># of Projects 1990</i>	<i># of Projects 1985</i>
Univ. of California Sea Grant College Program	15	2
Univ. of Southern California Sea Grant Program	5	0
Univ. of Connecticut Sea Grant Program	2	0
Univ. of Delaware Sea Grant College Program	3	7
Florida Sea Grant College Program	10	2
Georgia Sea Grant College Program	3	2
Univ. of Hawaii Sea Grant College Program	4	0
Illinois / Indiana Sea Grant Program	4	2
Louisiana Sea Grant College Program	3	2
Maine / New Hampshire Joint Sea Grant College Program	7	3
Michigan Sea Grant College Program	5	2
New Jersey Marine Sciences Consortium Sea Grant Program	1	1
New York Sea Grant Institute	10	8
Univ. of North Carolina Sea Grant College Program	1	0
Oregon Sea Grant College Program	4	0
Univ. of Puerto Rico Sea Grant Program	17	31
Rhode Island Sea Grant College Program	5	0
South Carolina Sea Grant Consortium	7	3
Texas A & M Univ. Sea Grant College Program	5	6
Woods Hole Oceanographic Institution Sea Grant Program	11	4
<hr/>		
<i>Sea Grant Institutions that reported no international projects</i>		
Univ. of Alaska Sea Grant College Program	0	0
Maryland Sea Grant Program	0	0
Massachusetts Institute of Technology Sea Grant College Program	0	0
Minnesota Sea Grant Program	0	0
Mississippi / Alabama Sea Grant Consortium	0	0
Ohio Sea Grant College Program	0	1
Wisconsin Sea Grant Institute	0	0
Virginia Graduate Marine Science Consortium Sea Grant Program	0	1
Washington Sea Grant College Program	0	21
<hr/>		
Total Projects	122	98

Geographic Distribution of Projects in 1985 and 1990 Inventories

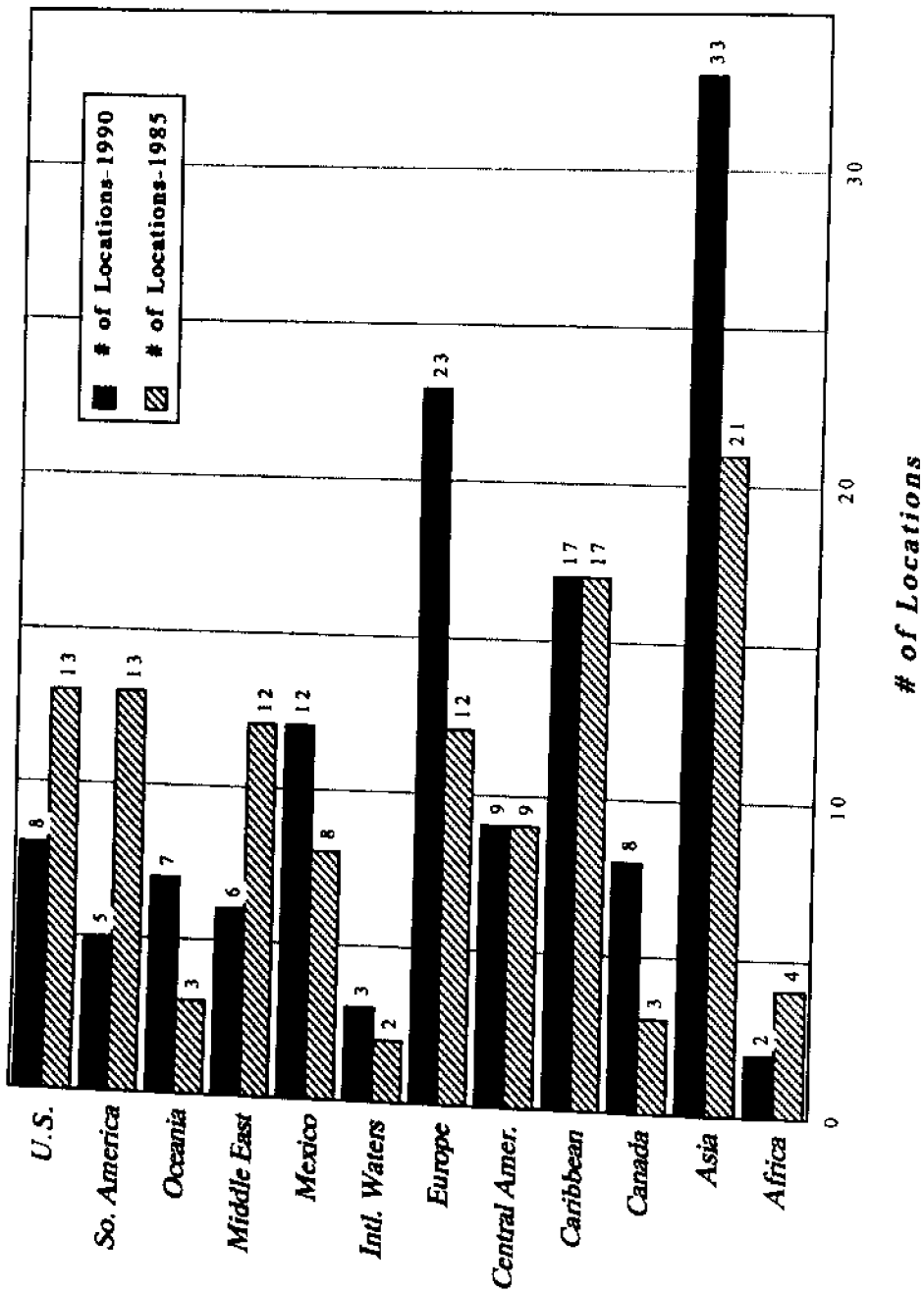


Chart 1: Geographic distribution of projects; illustrates distribution of 98 projects (117 locations) from 1985 data and 122 projects (133 locations) from 1990 data. Since some projects took place in more than one geographic location, the number of locations exceeds the base number of projects.

Disciplines of Principal Investigators--1985 and 1990 Inventories

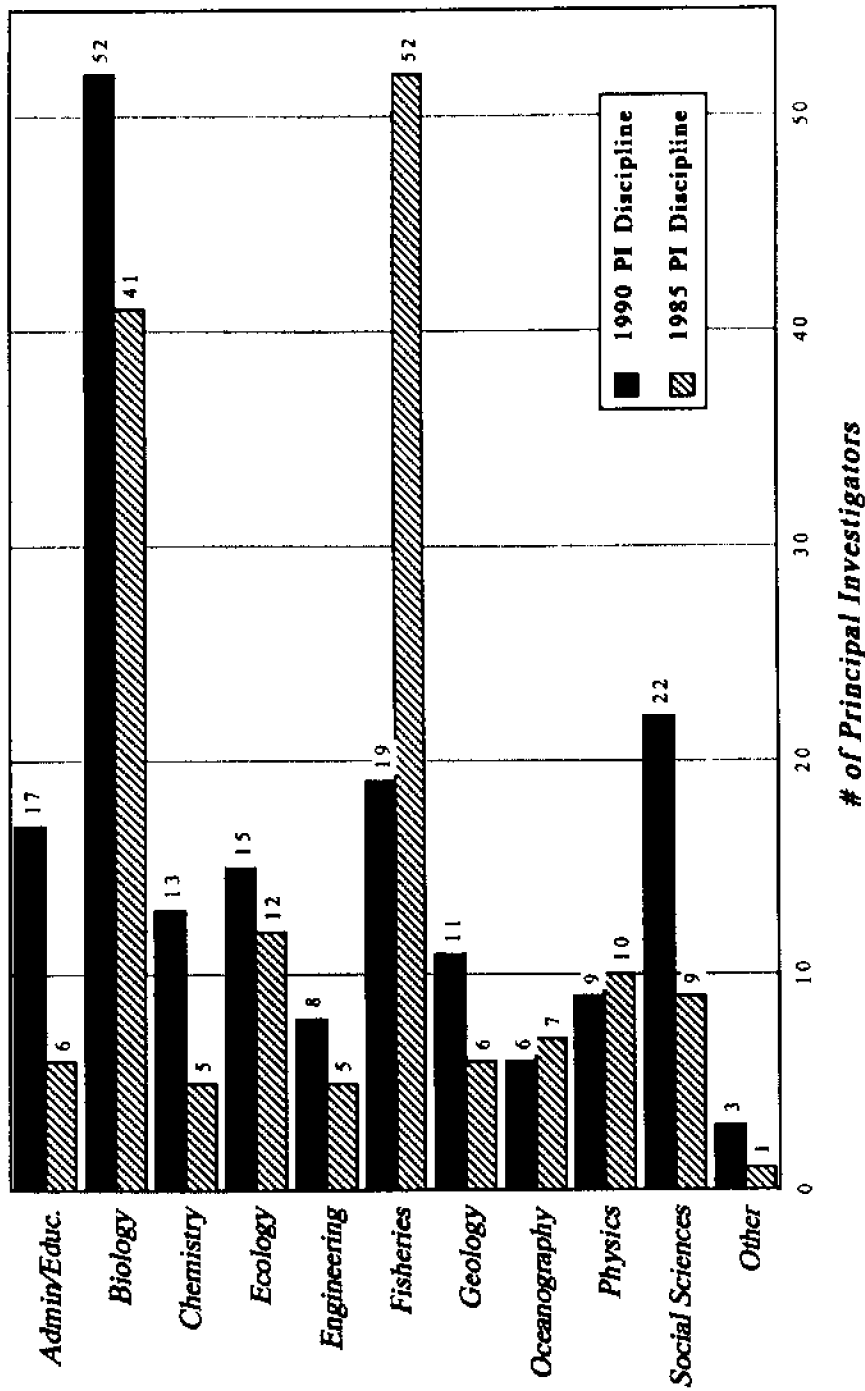


Chart 2: Disciplines of principal investigators; illustrates the distribution of principal investigators from 98 projects in 1985 and 122 projects in 1990 inventories. Since some projects had multiple PIs, the number of PIs exceeds the base number of projects.

Funding Sources in 1985 and 1990 Inventories

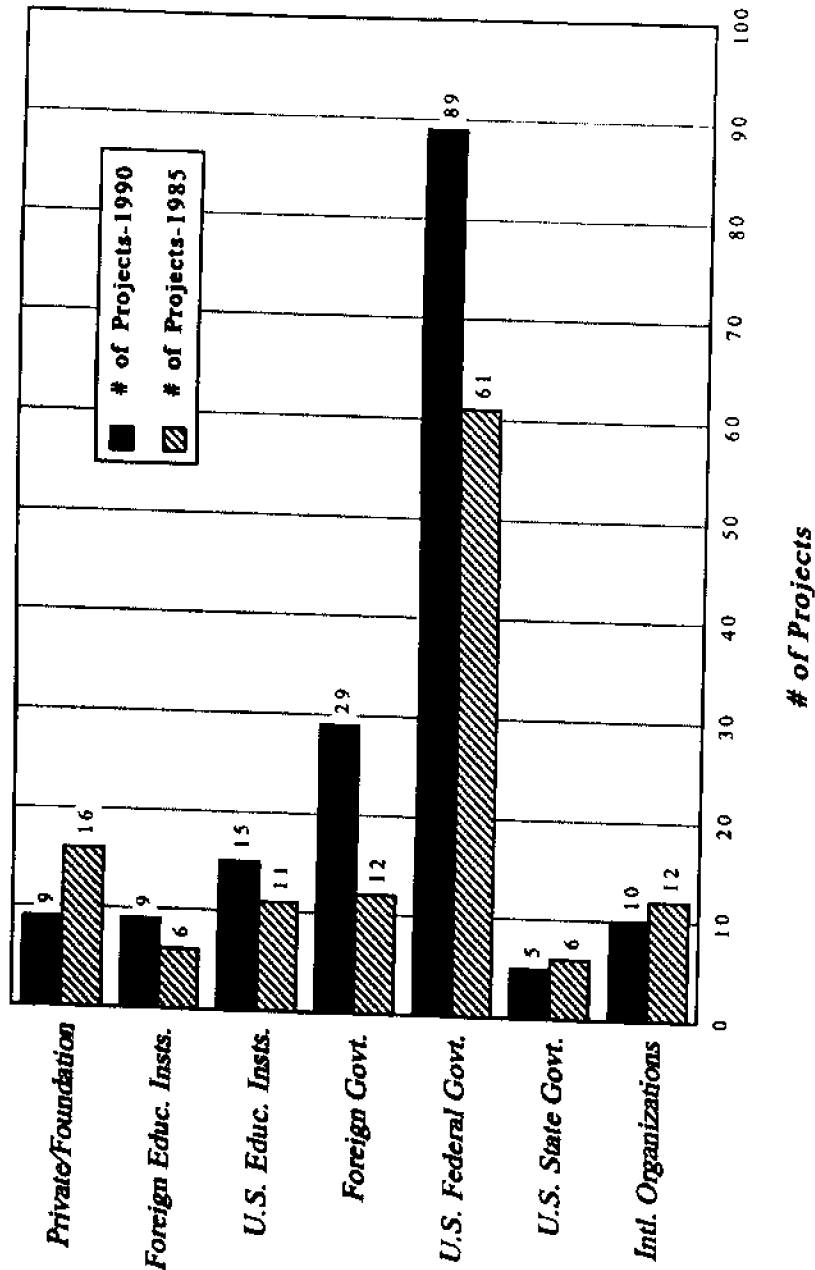


Chart 3: Funding sources in 1985 and 1990 inventories; illustrates the number of funding sources in seven funding categories for 98 projects in 1985 and 122 projects in 1990 inventories. Since some projects had more than one source of funding, the number of funding sources exceeds the base number of projects.

<i>Geographic Location</i>	<i># of Locations 1985</i>	<i>% of Locations 1985</i>	<i># of Locations 1990</i>	<i>% of Locations 1990</i>
U.S.	13	11.1	8	6.0
So. America	13	11.1	5	3.7
Oceania	3	2.6	7	5.3
Middle East	12	10.3	6	4.5
Mexico	8	6.8	12	9.0
Intl. Waters	2	1.7	3	2.3
Europe	12	10.3	23	17.3
Central America	9	7.7	9	6.8
Caribbean	17	14.5	17	12.8
Canada	3	2.6	8	6.0
Asia	21	17.9	33	24.8
Africa	<u>4</u>	<u>3.4</u>	<u>2</u>	<u>1.5</u>
TOTAL	117	100.0	133	100.0

Table 1: Geographic distribution of projects; tabulates the number of locations from 98 projects in 1985 and 122 projects in 1990 inventories. Since some projects took place in more than one geographic location, the number of locations exceeds the base number of projects.

<i>Disciplines of P.I.s</i>	<i># of P.I.s 1985</i>	<i>% of P.I.s 1985</i>	<i># of P.I.s 1990</i>	<i>% of P.I.s 1990</i>
Admin. / Educ.	6	3.9	17	9.7
Biology	41	26.6	52	29.7
Chemistry	5	3.3	13	7.4
Ecology	12	7.8	15	8.6
Engineering	5	3.3	8	4.6
Fisheries	52	33.8	19	10.9
Geology	6	3.9	11	6.3
Oceanography	7	4.5	6	3.4
Physics	10	6.5	9	5.1
Social Sciences	9	5.8	22	12.6
Other	<u>1</u>	<u>0.6</u>	<u>3</u>	<u>1.7</u>
TOTAL	154	100.0	175	100.0

Table 2: Distribution by discipline of principal investigators; tabulates the number of principal investigators from 98 projects in 1985 and 122 projects in 1990 inventories. Since some projects had multiple PIs, the number of PIs exceeds the base number of projects.

<i>Funding Sources</i>	<i># of Sources 1985</i>	<i>% of Sources 1985</i>	<i># of Sources 1990</i>	<i>% of Sources 1990</i>
Private/Foundation	16	12.9	9	5.4
Foreign Educ. Insts.	6	4.8	9	5.4
U.S. Educ. Insts.	11	8.9	15	9.0
Foreign Govt.	12	9.7	29	17.5
U.S. Federal Govt.	61	49.2	89	53.6
U.S. State Govt.	6	4.8	5	3.0
Intl. Organizations	<u>12</u>	<u>9.7</u>	<u>10</u>	<u>6.0</u>
TOTAL	124	100.0	166	100.0

Table 3: Funding sources; tabulates the number of funding sources from 98 projects in 1985 and 122 projects in 1990 inventories. Since some projects had more than one source of funding, the number of funding sources exceeds the base number of projects.

SUMMARIES OF QUESTIONNAIRES

Guide to the Summaries

These summaries have been condensed from 122 completed questionnaires (see Appendix A for a sample of the questionnaire). Each summary gives the name and address of the principal investigator to allow a direct contact for the curious reader who wishes further project information.

This guide offers an explanation and source for each entry shown on the summaries:

<i>Project number</i>	At the onset of the inventory each Sea Grant institution (by alphabetical order) was assigned a number, and each questionnaire as it was received was given a letter to follow the institution number. Thus the sequence of project numbers shows some gaps where a Sea Grant institution did not have applicable projects to include in the inventory.
<i>S.G. Institution</i>	This indicates the Sea Grant institution through which the questionnaire was passed.
<i>Project Title</i>	As indicated by preparer of the questionnaire.
<i>Project Location</i>	As indicated by preparer of the questionnaire; an index for this subject is found after the project summaries.
<i>Description</i>	As indicated by preparer of the questionnaire; some descriptions were shortened due to space constraints.
<i>Funding Source</i>	As indicated by preparer of the questionnaire; an index for this subject is found after the project summaries.
<i>Proj. Dates</i>	As indicated by preparer of the questionnaire.
<i>Assessment</i>	Excerpted from full questionnaire; this section offers comments and identifies problems the PI encountered working with or in particular locations, and sometimes offers advice on the mechanisms for dealing with problems.
<u><i>Involvement of</i></u>	
<i>U.S. Government</i>	As indicated by preparer of the questionnaire; this category specifically applies to U.S. government agencies, federal or state level.
<i>U.S. Institutions</i>	As indicated by preparer of the questionnaire; this category applies to U.S. academic and industrial organizations.
<i>Foreign Governments</i>	As indicated by preparer of the questionnaire; this category covers foreign government agencies and departments on national and regional levels; unless otherwise indicated, all agencies listed are in the country specified under "Project Location."

<i>Foreign Institutions</i>	As indicated by preparer of the questionnaire; this category lists foreign academic and industrial organizations; unless otherwise indicated, all institutions listed are in the country specified under "Project Location."
<i>Principal Investigator</i>	As indicated by preparer of the questionnaire; affiliations and addresses supplied by preparer of the questionnaire; an index for P.I. names is found after the project summaries.
<i>P.I. Disciplines</i>	As indicated by preparer of the questionnaire; an index for this subject is found after the project summaries.
<i>P.I. Skills</i>	As indicated by preparer of the questionnaire; questionnaire specified that preparer list particular skills that would be useful in consulting or collaborating on international projects.
<i>Proj. Keywords</i>	Keywords assigned to project by WHOI Sea Grant, based on project title, description and National Sea Grant Network "Keyword Listing"; an index for this subject is found after the project summaries.

Project # 02 A *Sea Grant Institution* **California Sea Grant College Program, Univ. of**

Project Title **Assessment of the Early Impacts of New Zealand's Individual Transferrable Quota Scheme (ITQs)**

Project Location(s) NEW ZEALAND

Description Completed 77 in-depth case studies of fishermen, processors and agency staff to assess the effects of ITQs on their businesses and careers. Found that ITQs are motivating a reduction in fishing costs and an increased effort to obtain top prices. Results are now used by U.S. industry and agencies considering ITQs.

Funding Source(s) New Zealand Ministry of Agric. & Fisheries (in-country travel, supplied office, secretarial and computer support), Univ. of California Cooperative Extension (PI salary), and personal funds (PI paid intl. travel and living costs)

Project Dates *Start* Dec. 1986 *Completion* Aug. 1987

Assessment Met and exceeded expectations. No complications. Recommendation: Work closely and openly with agency, industry or university staff

Involvement of:

U.S. Government Regional Fisheries Management Councils are utilizing project results

U.S. Institutions Univ. of California

Foreign Governments New Zealand Ministry of Agriculture and Fisheries (shared results with them; they will publish technical report)

Foreign Institutions New Zealand Federation of Commercial Fishermen (Peter Stevens)

Principal Investigator(s) Christopher M. Dewees
Sea Grant Extension Program
University of California
Davis CA 95616

Disciplines Marine Fisheries, Fisheries Management

Skills Evaluation of fisheries management schemes, social science research with fishermen, fisheries extension

Project Keywords Fisheries Management

Project Title Hormonal Enhancement of Fish Growth

Project Location(s) SCOTLAND: Marine Biological Laboratory, Aberdeen

Description The goals of this project are to enhance hormonal treatment programs for stimulating fish growth by determining hormonal effects on growth rates and intestinal nutrient absorption, size effects on intestinal nutrient absorption, and intestinal hormone absorption.

Funding Source(s) California Sea Grant College Program

Project Dates *Start* Oct. 1987 *Completion* Sept. 1989

Assessment Project met expectations.

Involvement of:

U.S. Government

U.S. Institutions

Foreign Governments

Foreign Institutions

Principal Investigator(s) Jared M. Diamond
 Dept. of Physiology
 University of California Medical School
 Los Angeles CA 90024-1751

Disciplines Physiology

Skills Digestive physiology, nutrient transport

Project Keywords Nutrient, Hormone

Project Title **Collaborative Project in Marine Natural Product Chemistry**

Project Location(s) **INDIA**

Description **Marine natural products isolated at Andhra Univ. are sent to UCSD for high resolution spectroscopic measurements and for evaluation as potential drugs.**

Funding Source(s) **ONR**

Project Dates *Start* *Completion* **Ongoing**

Assessment

Involvement of:

U.S. Government **ONR (provided travel funds for visit to India)**

U.S. Institutions **Univ. California, Santa Barbara (Dr. R.S. Jacobs)**

Foreign Governments

Foreign Institutions **Andhra Univ. (C.B. Rao, Dept. of Chemistry)**

Principal Investigator(s)

**D. John Faulkner
Scripps Inst. of Oceanography
Univ. of California, San Diego
Marine Research Division
La Jolla CA 92093**

**C.B. Rao
Dept. Of Chemistry
Andhra Univ.
Visakhaptnam 530 003 INDIA**

Disciplines **Marine Chemistry**

Skills

Project Keywords **Drugs**

Project # 02 D Sea Grant Institution California Sea Grant College Program, Univ. of

Project Title **Distribution, Abundance and Population Parameters of the Sardine and Anchovy Species of Northwest Mexico**

Project Location(s) MEXICO: La Paz, Baja California Sur, Mazatlan, Fuaymas

Description A study of the biochemical genetic and morphological divergence among three species of thread herring (*Opisthonema*) confirmed previous published taxonomy based on numbers of gillrakers and extended these results by demonstrating close genetic relationships.

Funding Source(s) CONACYT (Mexico)

Project Dates *Start* - *Completion* -

Assessment The project met expectations. Collaboration was productive and pleasant.

Involvement of:

U.S. Government

U.S. Institutions UC Davis/Aquaculture and Fisheries Program

Foreign Governments

Foreign Institutions Centro de Investigaciones Biologicas (CIB) de Baja California Sur (Dr. Daniel Lluch Belda, Director)

Principal Investigator(s) Dennis Hedgecock
Bodega Marine Lab
Univ. of California/Davis
Bodega Bay CA 94923

Disciplines Genetics

Skills All facets of modern population, quantitative and aquacultural genetics

Project Keywords Sardine, Anchovy, Genetic

Project Title **Elasmobranchs as Living Resources: Recent Advances in Systematics, Physiology, and Ecology**

Project Location(s) JAPAN: Tokai Univ. and the Univ. of Tokyo

Description Collaboration with several Japanese ichthyologists on a comparative growth study of the two species of sharks, *Prionace glauca* (the blue shark) and *Mustelus manazo* (the Japanese smooth-hound shark). Calcified structures were cross-exchanged for age determination and to see if differences between the populations of these sharks could be detected, relative to the technique used.

Funding Source(s) National Science Foundation

Project Dates *Start* July 1985 *Completion* Jan. 1990

Assessment All expectations were met and no changes in the project were necessary. Arrangements were made during the initial visit and specimens were exchanged by mail. Working with scientists in Japan was a very worthwhile experience. It broadens one's knowledge and understanding of the field of science and the differences in the ways that different individuals approach it.

Involvement of:

U.S. Government National Science Foundation (funded initial trip to Japan and subsequent travel to Hawaii for the workshop)

U.S. Institutions Calif. State Univ. (Moss Landing Marine Lab.), National Marine Fisheries Service (NOAA) involved in workshop.

Foreign Governments Japan Society for the Promotion of Science

Foreign Institutions Univ. Tokyo (Dr. Toru Taniuchi), Tokai Univ. (Dr. Sho Tanaka), Okinawa Expo Aquarium (Mr. Senzo Uchida), Hokkaido Univ. (Dr. Kazuhiro Nakaya)

Principal Investigator(s) Gregor M. Cailliet
Moss Landing Marine Laboratories
P.O. Box 450
Moss Landing CA 95039

Disciplines Ichthyology

Skills

Project Keywords Ichthyology, Sharks

Project # 02 F *Sea Grant Institution* **California Sea Grant College Program, Univ. of**

Project Title **Endocrinology of Salmonid Development and Seawater Adaptation**

Project Location(s) **JAPAN, FRANCE, CANADA, SWEDEN, ICELAND**

Description Endocrinology of salmonid development and seawater adaptation.

Funding Source(s) Sea Grant, National Science Foundation

Project Dates *Start* 1977 *Completion* 1990

Assessment Build personal/professional relationship before research cooperation is initiated.

Involvement of:

U.S. Government Sea Grant, National Science Foundation: Funds for research and foreign researchers

U.S. Institutions Univ. of California, California State Dept. of Fish and Game

Foreign Governments

Foreign Institutions Univ. Tokyo at Nakano (T. Hirano), Univ. Tokyo at Otsuchi (M. Iwata), Univ. of Hokkaido at Hakodate (K. Yamauchi), Natl. Inst. for Basic Biology (Y. Nagahama), INRA- Rennes, France (P. Prunet)

Principal Investigator(s) Howard A. Bern
Dept. of Integrative Biology
Univ. of California
Berkeley CA 94720

Richard S. Nishioka
Dept. Of Integrative Biology
Univ. Of California
Berkeley CA 94720

Disciplines Comparative Endocrinology and Fish Physiology

Skills

Project Keywords Physiology, Salmon

Project Title **Improvement and Development of Ecological Research in Argentina**

Project Location(s) ARGENTINA: Buenos Aires and Mar del Plata

Description Assist Argentinian ecologists as they attempt to revitalize and modernize their science.

Funding Source(s) CONICET - Argentina, UNESCO - MAB

Project Dates *Start* Feb. 1988 *Completion* Mar. 1988

Assessment Project met expectations.

Involvement of:

U.S. Government

U.S. Institutions

Foreign Governments Argentina: CONICET, INIDEP (Dr. Norman Sardella)

Foreign Institutions SPAIDERA - Special Program for Improvement & Development of Ecological Research in Argentina (Dr. Jorge Rabinovich)

Principal Investigator(s) Armand M. Kuris
Marine Science Inst./Dept. Biological Sciences
Univ. of California
Santa Barbara CA 93106

Disciplines Ecological Parasitology

Skills Ecological parasitology, crustacean growth and reproduction

Project Keywords Ecology

Project Title Influence of Freshwater Inflow on Coastal Wetlands of
Mediterranean-type Climate

Project Location(s) AUSTRALIA: Perth, Western Australia

Description Hypotheses developed in southern California coastal wetlands were tested experimentally in wetland ecosystems of south Western Australia. The role of salinity dilution in intertidal salt marshes was confirmed--where freshwater inflows are augmented, non-native vegetation invades the native marsh. Substrate disturbances are also needed to allow successful establishment of the invaders. Management recommendations followed.

Funding Source(s) Calif. Sea Grant College Program, San Diego State Univ.

Project Dates Start July 1987 Completion Dec. 1987

Assessment Project met expectations.

Involvement of:

U.S. Government Sea Grant (NOAA)--funding

U.S. Institutions

Foreign Governments

Foreign Institutions Univ. of Western Australia (Dr. Arthur McComb and Eric Paling), Waterways Commission (Bob Atkins)

Principal Investigator(s) Joy B. Zedler
Biology Dept.
San Diego State Univ.
San Diego, CA

Disciplines Ecology

Skills

Project Keywords Wetland, Ecology, Salt Marshes

Project # 02 I *Sea Grant Institution* **California Sea Grant College Program, Univ. of**

Project Title **Interamericas Program**

Project Location(s) ARGENTINA, CHILE, MEXICO

Description The Interamericas Program at the Scripps Inst. of Oceanography serves to facilitate interaction between Latin American marine scientists and those of SIO. Liaison functions, information services, arranging meetings between investigators, promoting collaboration, and sharing surplus journals and texts are common tasks of the program.

Funding Source(s) At this moment, 99% volunteer services, 1% State of California

Project Dates *Start* 1977 *Completion* Continuing

Assessment Recommendation: Learn the language, customs, and geography. Be aware of differences between Latin American cultures, be in for the long haul (trust is not won overnight), accept Latin priorities and pace.

Involvement of:

U.S. Government Sea Grant International Cooperation Assistance Program (funding)

U.S. Institutions Tinker Foundation, San Diego State Univ., Bodega Bay Marine Lab, NOAA-Southwest Fisheries Center (La Jolla), Calif. Dept. of Fish and Game, and others.

Foreign Governments MEXICO: Secretaria de Pesca de Mexico, Secretaria de Marina, CICESE, CONACYT, Turismo; ECUADOR: Armada de Ecuador
ARGENTINA: Inst. National de Inv. y Desarrollo Pesquera

Foreign Institutions ARGENTINA: Univ. Nal. Mar de Plata
CHILE: Pontificia Univ. Catolica de Chile, Sede Talcahuano; Univ. Nacional de Chile, Sede Concepcion
MEXICO: Univ. Auton. de Baja Calif.
Mailing list of contacts available on request (over 500 entries)

Principal Investigator(s) George T. Hemingway
Marine Life Research Group A-027
Scripps Inst. of Oceanography, UCSD
La Jolla CA 92093

Disciplines Marine Biology/Ecology

Skills See above

Project Keywords Information, International Collaboration

Project # 02 J *Sea Grant Institution* **California Sea Grant College Program, Univ. of**

Project Title **International Technology and Information Transfer Program**

Project Location(s) **JAPAN, CHINA (PEOPLE'S REPUBLIC OF) , SOVIET UNION, FRANCE**

Description This program is intended to establish a formal mechanism for transferring information to and from scientists and entrepreneurs in California and other nations.

Funding Source(s) Foreign governments and institutions, U.S. state and federal for U.S. travel

Project Dates **Start** Oct. 1, 1989 **Completion** Sept. 30, 1992

Assessment Project is still active. Recommendation: Personal contacts are essential.

Involvement of:

U.S. Government

U.S. Institutions Seafood and aquaculture industries, Univ. of California

Foreign Governments

Foreign Institutions JAPAN: Oyster Research Inst. (Tetsuo Seki); FRANCE: IFREMER (Phillipe Paquote)

Principal Investigator(s)

James J. Sullivan
Calif. Sea Grant College Prog., A-032
Univ. of California
La Jolla CA 92093

Disciplines Economist, Administrator/Director CA Sea Grant

Skills Languages, contacts

Project Keywords Information, Technology Transfer

Project # 02 L **Sea Grant Institution** **California Sea Grant College Program, Univ. of**

Project Title **Recruitment and Lipid Storage of the Subantarctic Copepod *Neocalanus tonsus***

Project Location(s) **NEW ZEALAND**

Description Investigation of the lipid metabolism and life history of a large oceanic planktonic copepod that predominates in subantarctic planktonic food webs.

Funding Source(s) US: National Science Foundation, New Zealand: N.Z. Oceanographic Inst., Univ. of Otago

Project Dates **Start** Sept. 1, 1984 **Completion** March 1, 1986

Assessment Met and exceeded expectations. A very smooth and highly successful research program. Recommendation: Complete a preliminary visit prior to engaging in research (or writing full research proposal). Visit people, labs, understand logistics prior to planning research. Work closely with foreign sponsors.

Involvement of:

U.S. Government National Science Foundation- New Zealand Cooperative Science Program Funding

U.S. Institutions Univ. Washington, Seattle

Foreign Governments

Foreign Institutions N.Z. Oceanographic Inst. [NZOI], Dept. of Scientific and Industrial Research (Dr. Janet Bradford), Portobello Marine Lab at Univ. of Otago (Dr. John Jillett)

Principal Investigator(s) Mark D. Ohman
MLRG A-027
Scripps Inst. of Oceanography, UCSD
La Jolla CA 92093

Disciplines Biological Oceanography

Skills Ability to devise alternate methods from original plans

Project Keywords Antarctic, Copepod, Lipid

Project Title **Reproductive Physiology and Controlled Maturation of Tiger Prawn
(Penaeus monodon)**

Project Location(s) TAIWAN

Description Determine physiological parameters, especially hormonal, that regulate female reproduction in the tiger prawn.

Funding Source(s) USDA - Foreign Research Grants

Project Dates *Start* Sept. 30, 1986 *Completion* Sept. 29, 1989

Assessment

Involvement of:

U.S. Government USDA - Foreign Research Grants (funding)

U.S. Institutions

Foreign Governments

Foreign Institutions National Taiwan Univ. (Dr. C.M. Kuo)

Principal Investigator(s)

Ernest S. Chang
Bodega Marine Lab.
Univ. of California
P.O. Box 247
Bodega Bay CA 94923

Disciplines Endocrinology

Skills Invertebrate endocrinology, reproductive physiology

Project Keywords Physiology, Hormone, Prawn

Project # 02 N *Sea Grant Institution* **California Sea Grant College Program, Univ. of**

Project Title **Sea bass Kidney Disease**

Project Location(s) **THAILAND: Kaoseng, Songkhla**

Description Investigations into the causes of a newly recognized kidney disease of sea bass (*Lates calcarifer*) reared in seawater net pens in Thailand.

Funding Source(s) USAID

Project Dates *Start* June 1, 1988 *Completion* May 31, 1991

Assessment Still active

Involvement of:

U.S. Government USAID (funding)

U.S. Institutions Univ. California, Davis

Foreign Governments

Foreign Institutions

Principal Investigator(s) Ronald P. Hedrick
Dept. Medicine, Veterinary Medicine
Univ. of California
Davis CA 95616

Sidhti Boonyaratpalin
National Inst. Of Coastal Aquaculture
Kaoseng, Songkhla 90000 Thailand

Disciplines Diseases of fish

Skills Diseases of fish and shellfish

Project Keywords Disease, Bass

Project # 02 O **Sea Grant Institution** California Sea Grant College Program, Univ. of

Project Title Seafood Marketing

Project Location(s) SPAIN, MEXICO, AUSTRALIA

Description Seafood Marketing

Funding Source(s) Sea Grant

Project Dates *Start* 1984 *Completion* 1989

Assessment Heat treatment of salmon for exportation to Australia proved to be impractical.
Australian trade regulations on importation of salmon prohibited continuation of this work.

Involvement of:

U.S. Government NOAA (provided display space)

U.S. Institutions Palladini Fish Co., Union Fish Co., San Francisco

Foreign Governments Customs
Regulations prohibited continuing this work

Foreign Institutions

Principal Investigator(s) Bruce Wyatt
University of California Coop. Extension
2604 Ventura Ave, Room 100P
Santa Rosa CA 95403-2894

Disciplines County Extension Agent

Skills

Project Keywords Seafood, Marketing

Project # 03 A *Sea Grant Institution* **California, Univ. of So. California Sea Grant Program**

Project Title **Studies on Development and Metamorphosis of Japanese Sea Urchins: A Comparative Approach for Evaluating Phylogenetic Factors in Evolving Lineages**

Project Location(s) JAPAN: Misaki Marine Biological Station, Univ. of Tokyo, Kanagawa-ken

Description Collaborated with colleague (Dr. Shonan Amemiya, Univ. of Tokyo) on studies of development of several species of echinoids with modified larval development. Particular interest in the implications for developmental and phylogenetic studies. Also studied development of several deeper water (>100m) echinoid species.

Funding Source(s) Japanese Society for Promotion of Science (JSPS) Fellowship

Project Dates *Start* Apr. 1, 1989 *Completion* Aug. 18, 1989

Assessment Project partially met expectations. Future scientists should be aware of many differences between Western and Japanese science and culture. For example: Access to marine environment and organisms is controlled by local fishermen's unions.
Recommendation: Clarify project and obligations with sponsor. Clarify amount of research support with JSPS and how much more the work will cost the sponsor. Assure access to organisms of study and/or study sites.

Involvement of:

U.S. Government

U.S. Institutions

Foreign Governments Japanese Society for Promotion of Science (funding). Collaboration with Japanese colleague required

Foreign Institutions Univ. of Tokyo (Dr. Shonan Amemiya, Faculty of Science)

Principal Investigator(s) Richard Emlet
Dept. of Biological Sciences, Marine Biology Research Section
University of Southern California
Los Angeles CA 90089-0371

Disciplines Larval Biology of Marine Invertebrates, Marine Zoology

Skills Invertebrate larval biology, especially echinoid larvae; recruitment and population dynamics of benthic invertebrates

Project Keywords Echinoid, Evolution, Phylogenetic

Project # 03 B *Sea Grant Institution* **California, Univ. of So. California Sea Grant Program**

Project Title **Negotiating the New Ocean Regime: A Bargaining Analysis of UNCLOS III**

Project Location(s) N/A

Description A book analyzing the negotiation of the 150+ issues of UNCLOS III by 150+ delegations under conditions of parliamentary diplomacy. The bargaining was modeled, the outcome forecast, the bargaining behavior of states and groups demonstrated. The nature of the regime negotiated using the particular bargaining modes available is shown, and the bargaining process analyzed, making a contribution to bargaining theory as well as regime theory.

Funding Source(s) U.S. Navy, Office of Naval Research (ONR), State Dept.

Project Dates *Start* 1967 *Completion* 1990

Assessment See "Research Utilization Problems in Forecasting the United Nations Law of the Sea Conference; Or, the Perils of the Persian Messenger" in, *Formulating Marine Policy: Limits to Rational Decision Making* (Kingston, R.I., Center for Ocean Management Studies, 1978)

Involvement of:

U.S. Government U.S. Navy, ONR, Joint Chiefs of Staff, U.S. Dept. of State. Project began as an activity for the Center for Naval Analyses (CNA) in support of Navy, Dept. of Defense, State Dept., and the U.S. delegation to UNCLOS III. Received funding from CNA, ONR, State. Delegation members provided data, helped in scaling data and judging results.

U.S. Institutions

Foreign Governments

Foreign Institutions

Principal Investigator(s) Robert L. Friedheim
School of International Relations
University of Southern California
Los Angeles CA 90089-0043

Disciplines Political Science / International Relations

Skills

Project Keywords Marine Policy, International Relations, Law of the Sea

Project # 03 C *Sea Grant Institution* California, Univ. of So. California Sea Grant Program

Project Title Earthquake Mitigation Management for Harbors and Seaports

Project Location(s) CHILE

Description Survey of pre- and post- earthquake mitigation management in Pacific Basin Seaports (Chile and the U.S.)

Funding Source(s) National Science Foundation, grant CEE-14227, 1985

Project Dates *Start* 1985 *Completion* 1986

Assessment Chile portion of work was disappointing. One investigator traveled to Chile where there was almost a total absence of documentation.

Involvement of:

U.S. Government National Science Foundation assisted with funding

U.S. Institutions

Foreign Governments

Foreign Institutions

Principal

Investigator(s) Gilbert B. Siegel
School of Public Administration
University of Southern California
Los Angeles CA 90089-0041

Dorothy Bjur
School of Public Administration
University of Southern California
Los Angeles CA 90089-0041

Disciplines Public Administration

Skills Spanish language, large group interviewing

Project Keywords Public Administration, Earthquake

Project # 03 D *Sea Grant Institution* **California, Univ. of So. California Sea Grant Program**

Project Title **The Role of Antifouling Substances in Shallow Marine Environments (U.S.), Marine Biofouling Program (India), Marine Bioactive Substances (India)**

Project Location(s) INDIA and THE MALDIVES

Description Testing the hypothesis that marine bacteria are essential for normal fouling community succession. Collecting marine organisms and testing their crude extracts against fouling organisms in Los Angeles Harbor.

Funding Source(s) ONR Marine Bioactive Substances Program, Indo-U.S. Marine Bioactive Substances Program, Indo-U.S. Marine Biofouling Program

Project Dates *Start* U.S.: 1987 *Completion* U.S.: 1990
 Biofouling: 1989 Biofouling: 1994
 Bioactive: 1985 Bioactive: 1989

Assessment Project still active

Involvement of:

U.S. Government ONR, Marine Bioactive Substances Program assisted with funding

U.S. Institutions

Foreign Governments INDIA: Council on Scientific & Industrial Research (contact: Johry), National Institute of Oceanography (contacts: Desai, Parulekar, Sen Gupta, Wagh and many others), Central Drug Research Institute (contact: Bhakuni), Bose Institute (contact: Chakrabarty); MALDIVE ISLANDS: Marine Research Section (Fisheries contact: Maizan)

Foreign Institutions

Principal Investigator(s) Gerald J. Bakus
 Dept. of Biological Sciences
 University of Southern California
 Los Angeles CA 90089

Disciplines Marine Ecology

Skills Training in marine collections, bioassays with bioactive substances, computer techniques.

Project Keywords Bioactive Substances, Biofouling

Project # 03 E **Sea Grant Institution** California, Univ. of So. California Sea Grant Program

Project Title Treatment of Bilge Wastewater

Project Location(s) CHINA (PEOPLE'S REPUBLIC OF)

Description Degradation of citric acid and triethanolamine and chelating metals by membrane-mimetic chemical principles using ultraviolet-hydrogen peroxide treatment.

Funding Source(s) U.S. Navy

Project Dates *Start* 1987 *Completion* 1990

Assessment Project is still active

Involvement of:

U.S. Government U.S. Naval Civil Engineering Lab assisted with funding

U.S. Institutions

Foreign Governments

Foreign Institutions East China Univ. of Chemical Technology (Prof. Yu Wang, Environmental Engineering Dept.), Shanghai

Principal Investigator(s) Teh Fu Yen
Dept. Civil And Envir. Engineering
University of Southern California
213A BHE, 920 W. 36th Pl.
Los Angeles CA 90089-0231

Disciplines Environmental Engineering, Chemistry, Bioengineering

Skills Communication in Chinese Language

Project Keywords Environment, Engineering, Wastewater Treatment, Chemistry

Project Title **French-American Co-operative Air-Sea Interaction Experiment:
CLUSE-HEXIST**

Project Location(s) **FRANCE: Luminy, Marseille**

Description **Laboratory investigation of the contribution of sea spray droplets to sea-air water vapor flux.**

Funding Source(s) **National Science Foundation and French National Center for Scientific Research (CNRS)**

Project Dates **Start Jan. 1988 Completion July 1990**

Assessment **Project still active**

Involvement of:

U.S. Government **National Science Foundation supported participation of U.S. scientists**

U.S. Institutions **Naval Postgraduate School, Monterey; Penn. State Univ.; and Ann Arundel Community College**

Foreign Governments **French National Center for Scientific Research (CNRS)**

Foreign Institutions **Institut de Mecanique Statistique de la Turbulence, Univ. d'Aix-Marseille II (Dr. P.G. Mestayer, Mr. M. Rouault)**

Principal Investigator(s)

**Edward C. Monahan
Marine Sciences Institute
Univ. of Connecticut
Avery Point
Groton CT 06340**

**P.G. Mestayer
Institut de Mecanique Statistique de la Turbulence
Univ. d'Aix Marseille II
Rue du General Leclerc
13003 Marseille III FRANCE**

Disciplines **Monahan: Physical Oceanography;
Mestayer: Fluid Mechanics**

Skills

Project Keywords **Air-sea Exchange**

Project #	04 B	Sea Grant Institution	Connecticut Sea Grant Program, Univ. of
Project Title	American-Irish Applied Aquaculture Initiative		
Project Location(s)	IRELAND and NORTHERN IRELAND		
Description	Establishment of three-way Applied Aquaculture Program between University College (Galway), Queen's University (Belfast), and northeast U.S. Sea Grant programs to exchange technical knowledge and practical experience in finfish, shellfish, and seaweed farming.		
Funding Source(s)	Sea Grant		
Project Dates	Start 1990	Completion	continuing
Assessment	Project still active		
Involvement of:			
U.S. Government	National Sea Grant College Program		
U.S. Institutions	Northeast Sea Grant institutions		
Foreign Governments	Udarás na Gaeltachta (govt. development agency)		
Foreign Institutions	University College (Galway), Portaferry Marine Station of Queen's Univ. (Belfast, No. Ireland; P.J.S. Broaden, director), Irish Salmon Growers Assoc.		
Principal Investigator(s)	Edward C. Monahan Marine Sciences Institute Univ. of Connecticut Avery Point Groton CT 06340		
Disciplines	Monahan: Physical Oceanography, Sea Grant administration		
Skills			
Project Keywords	Aquaculture		

Project #	05 A	Sea Grant Institution	Delaware Sea Grant College Program
Project Title	Scholarly Exchange for Research in Materials Science and Corrosion		
Project Location(s)	CHINA (PEOPLE'S REPUBLIC OF): Beijing, Shenyang, and Qingdao		
Description	Mr. Gao spent 18 months in S.C. Dexter's lab at the Univ. of Delaware starting February, 1985. S.C. Dexter spent two weeks in China during August, 1987 touring corrosion research facilities and giving lectures.		
Funding Source(s)	Chinese government through Academia Sinica		
Project Dates	Start	Feb. 1985	Completion Aug. 1987
Assessment	Gao and Dexter have published papers from their collaboration. Students from Inst. of Metal Research are doing graduate studies with Dexter. Recommendation: Personal contact with scientists in the PRC is essential in order to make anything happen.		
Involvement of:			
U.S. Government			
U.S. Institutions			
Foreign Governments	Academia Sinica, Beijing and Shenyang		
Foreign Institutions	Inst. of Corrosion and Protection of Metals (G. Y. Gao), Shenyang; Inst. of Metal Research, Shenyang; Inst. of Marine Corrosion (Z. Zhang), Qingdao		
Principal Investigator(s)	Stephen C. Dexter College of Marine Studies Univ. of Delaware Lewes DE 19958 Geng Yu Gao Inst. of Corrosion and Protection of Metals Shenyang, People's Republic Of China		
Disciplines	Dexter: Marine Materials Science and Corrosion; Gao: Corrosion		
Skills	Sensitivity to people and the ways of other cultures; flexibility.		
Project Keywords	Corrosion, Education		

Project # 05 B *Sea Grant Institution* **Delaware Sea Grant College Program**

Project Title **Development of a Blue Crab Fishery in Costa Rica**

Project Location(s) **COSTA RICA: Gulf of Nicoya**

Description Investigation of larval recruitment dynamics of tropical crabs. Larval flux in a mangrove system.

Funding Source(s) National Science Foundation

Project Dates *Start* Apr. 1987 *Completion* Sept. 1989

Assessment The project met expectations.

Involvement of:

U.S. Government National Science Foundation assisted with funding

U.S. Institutions

Foreign Governments

Foreign Institutions Univ. of Costa Rica (A.I. Dittel)

Principal Investigator(s) Charles E. Epifanio
College of Marine Studies
Univ. of Delaware
Lewes DE 19958

Disciplines Biology

Skills Foreign language

Project Keywords Crab, Larvae

Project # 05 C **Sea Grant Institution** **Delaware Sea Grant College Program**

Project Title **U.S.-Argentina Workshop on Biodeterioration**

Project Location(s) ARGENTINA

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 study of past research efforts and current case histories. Sessions to deal with experimental methods and remedial measures.

Funding Source(s) National Science Foundation, Govt. of Argentina

Project Dates *Start* 1985 *Completion* 1985

Assessment This project resulted in many new and still ongoing professional interactions between the participants from Argentina and the U.S. These interactions have included both joint research and joint authorship of published papers.

Involvement of:

U.S. Government National Science Foundation-International Programs assisted with funding

U.S. Institutions NORDA, NSTL-MS

Foreign Governments ARGENTINA: CONICET

Foreign Institutions ARGENTINA: INIFTA

Principal Investigator(s) Stephen C. Dexter
College of Marine Studies
Univ. of Delaware
Lewes DE 19958

Disciplines Dexter: Materials Science

Skills

Project Keywords Corrosion, Biodeterioration

Project # 06 A *Sea Grant Institution* **Florida Sea Grant College Program**

Project Title **Effect of Transition Metals on Rates of Oxidation of Hydrogen Sulfide in Seawater**

Project Location(s) MEXICO: Mexico City

Description Study the effect trace metals have on the oxidation of hydrogen sulfide.

Funding Source(s) National Science Foundation, Office of Naval Research, National Science and Technology Council

Project Dates *Start* - *Completion* -

Assessment

Involvement of:

U.S. Government

U.S. Institutions

Foreign Governments

Foreign Institutions Univ. Autonoma de Mejico Internacional (Dr. Felipe V. Gutierrez)

Principal Investigator(s) Frank J. Millero
Rosenstiel School of Marine and Atmospheric Science
Univ. of Miami
Miami FL 33149-1098

Disciplines Marine Physical Chemistry

Skills

Project Keywords Physical Chemistry, Trace Metals

Project # 06 C *Sea Grant Institution* **Florida Sea Grant College Program**

Project Title **King Mackerel Migration and Stock Assessment Study in the Southern Gulf of Mexico**

Project Location(s) MEXICO: Mexican Gulf Coast

Description Obtain movement and migration data through tagging of king and Spanish mackerel off the Mexican Gulf coast; obtain length/frequency and CPUE data for both species; mackerel otolith collection; obtain Mexican historical landings data for mackerel; and obtain mackerel tissue samples for electrophoretic studies for stock identification.

Funding Source(s) MARFIN

Project Dates *Start* Nov. 1989 *Completion* Dec. 1990

Assessment Although this project comes up for review and funding each year, it has been ongoing since Nov. 1985 and has been funded again for 1990. For 1985-current, the project has met or exceeded expectations. Recommendations: Learn Spanish, expect and accept delays and changes; learn the hierarchy and standard operating procedures of the institution; remember that there are different customs and priorities so things may not begin or progress as fast as in U.S.

Involvement of:

U.S. Government NOAA/National Marine Fisheries Service, Southwest Fisheries Center (work done under auspices of MEX-US Gulf Agreement)

U.S. Institutions

Foreign Governments Mexico's Instituto Nacional de la Pesca--Mexico City contacts: A. Bavcena Ibarra, J. Vasconcelos, M.W. Rios; Centro Regional de Investigaciones Pesquera (CRIP): Puerto Morelos, Yucalpeten, Campeche, Cd. de Carmen, Alvarado. Mexican Federal Administration has indicated desire for strong control over joint scientific research and would like to coordinate all research on a federal-government to federal-government basis. We provided equipment for Puerto Morelos CRIP which was badly damaged by Hurricane Gilbert.

Foreign Institutions Industry: owners of fish houses and seafood exporters in Yucatan, Campeche, Veracruz

Principal Investigator(s) Karen M. Burns
Mote Marine Laboratory
1600 City Island Park
Sarasota, FL 34236

Bruce D. Fortune
Mote Marine Laboratory
1600 City Island Park
Sarasota, FL 34236

Disciplines Fisheries Biology

Skills Burns: Ichthyoplankton taxonomy and ecology, fisheries biology, marine and estuarine ecology, bilingual English/Spanish, knowledgeable about Mexican Gulf fishing industry.
Fortune: Hydrography, coastal geography, fisheries, environmental studies, field coordination, bilingual English/Spanish, knowledge of Mexican Gulf fishing industry.

Project Keywords Fisheries, Mackerel, Stock Assessment

Project # 06 D *Sea Grant Institution* **Florida Sea Grant College Program**

Project Title **Physico-Chemical Characterization of Trace Metals in Electrolytes and in Seawater**

Project Location(s) YUGOSLAVIA: Zagreb

Description To study redistribution of trace elements and their reactivity in natural waters; to develop procedures for study of kinetics of different ionic interactions which take place in natural waters.

Funding Source(s) National Science Foundation-International Programs

Project Dates *Start* June 1985 *Completion* June 1990

Assessment Project is meeting expectations.

Involvement of:

U.S. Government National Science Foundation-International Programs (funding)

U.S. Institutions

Foreign Governments

Foreign Institutions Rudjer Boscovic Inst. (Dr. M. Branica)

Principal Investigator(s) Frank J. Millero
Rosenstiel School of Marine and Atmospheric Science
Univ. of Miami
4600 Rickenbacker Causeway
Miami FL 33149-1098

Disciplines Marine Physical Chemistry

Skills

Project Keywords Physical Chemistry, Trace Metals

Project # 06 E *Sea Grant Institution* **Florida Sea Grant College Program**

Project Title **Residual Circulation in the EMS-Dollard Estuary**

Project Location(s) **NETHERLANDS**

Description Measurement and calculation of residual currents. For the calculations use is made of a 2D - Horizontal - Finite Difference Model including horizontal density gradients and wetting and drying of shallows.

Funding Source(s) Dutch Government

Project Dates **Start** Jan. 1988 **Completion** Indefinite

Assessment Recommendation: Speak and write language of foreign country

Involvement of:

U.S. Government

U.S. Institutions Rand Corp., Santa Monica, CA

Foreign Governments Rykswaterstaat, Tidal Water Division

Foreign Institutions Netherlands Inst. for Sea Research (J.T.F. Zimmerman)

Principal Investigator(s) J. van de Kreeke
Rosenstiel School of Marine and Atmospheric Science
Univ. of Miami
Division of Applied Marine Physics
Miami FL 33149-1098

Disciplines Applied Marine Physics/Ocean Engineering

Skills

Project Keywords Circulation, Estuary

Project # 06 G *Sea Grant Institution* **Florida Sea Grant College Program**

Project Title **Stegastes leucostictus Relative Abundance and Distribution: The Role of Competition**

Project Location(s) PANAMA: San Blas Islands

Description Stegastes leucostictus relative abundance and distribution: The role of competition. Note: Stegastes leucostictus, the beaugregory, is a benthic territorial damselfish.

Funding Source(s) Smithsonian Tropical Research Institute

Project Dates *Start* Sept. 1986 *Completion* Dec. 1986

Assessment Project met expectations. Smithsonian works hard to maintain good relations with the Kuna Indians, in whose area the research was conducted. The situation in Panama is potentially unstable. However, the Smithsonian provides excellent information for scientists when working there under their auspices.

Involvement of:

U.S. Government Smithsonian Tropical Research Institute (funding, research station on the reef, project administration)

U.S. Institutions

Foreign Governments

Foreign Institutions

Principal Investigator(s) Carole C. McIvor
Florida Cooperative Fish & Wildlife Research Unit
Univ. of Florida
117 Newins Ziegler Hall
Gainesville FL 32611

Disciplines Ecology

Skills Reef fish community ecology, factors affecting habitat selection of reef fishes

Project Keywords Ecology, Reef, Benthic Fisheries

Project # 06 H *Sea Grant Institution* **Florida Sea Grant College Program**

Project Title **Synthesis, Structure and Chronometric Validation of Skeletal Growth Rings in the Black Coral *Antipathes ciperta***

Project Location(s) **NEW ZEALAND: Fiordland**

Description **Determination of the nature of growth ring structure, skeletal synthesis and ultrastructure and use of C-14 on live colonies to validate growth ring periodicity by harvest 18-24 months post-incubation.**

Funding Source(s) **National Science Foundation and New Zealand funds through Dept. of Scientific and Industrial Research and U.S.-New Zealand Cooperative Science Program**

Project Dates **Start** Jan. 1987 **Completion** Jan. 1990

Assessment **Project met expectations.**

Involvement of:

U.S. Government **NSF Ocean Sciences Program and U.S.-New Zealand Cooperative Science Program (funding)**

U.S. Institutions

Foreign Governments **N.Z. Dept. of Scientific and Industrial Research, Division of Water Science (Ken Grange)**

Foreign Institutions

Principal Investigator(s) **Walter M. Goldberg
Dept. of Biological Sciences
Florida International Univ.
University Park Campus
Miami FL 33199**

Disciplines **Marine Biology**

Skills

Project Keywords **Coral**

Project # 06 I *Sea Grant Institution* **Florida Sea Grant College Program**

Project Title **Thirteenth Annual Meeting of the American Fisheries Society Early Life History Section**

Project Location(s) **MEXICO: Merida, Yucatan**

Description International Larval Fish Conference including invited speakers from U.S., Mexico, Caribbean and South America; paper and poster presentations on all aspects of the early life history of fishes, 3 workshops (Special Larval Scombrid Identification; Taxonomy; Age and Growth).

Funding Source(s) Mote Marine Lab, NOAA/NMFS (Southeast Fisheries Section), UN Environment Programme, Inst. Nacional de la Pesca, and other Mexican sources

Project Dates **Start** May 21, 1989 **Completion** May 27, 1989

Assessment Project met expectations: 136 researchers from U.S. and 12 foreign countries attended.

Involvement of:

U.S. Government NOAA/NMFS, Southeast Fisheries Section (funding)

U.S. Institutions American Fisheries Society, Terramar Trading Co., Mexicana Airlines, and institutions of participants

Foreign Governments UN Environment Programme (Lat. Am. division); MEXICO: Instituto Nacional de la Pesca; Colegio Nacional de Education Profesional Tecnica; CPI; Itzamex, CINVESTAV Univ.

Foreign Institutions numerous through participants

Principal Investigator(s) Karen M. Burns
Mote Marine Laboratory
1600 City Island Park
Sarasota FL 34236

Andrea Frank
Mote Marine Laboratory
1600 City Island Park
Sarasota FL 34236

Disciplines Fisheries Biology

Skills Burns: Ichthyoplankton taxonomy and ecology, fisheries biology, marine and estuarine ecology, bilingual English/Spanish;
Frank: Ichthyoplankton and meroplankton identification, marine and estuarine species

Project Keywords Larval Fish

Project # 06 J *Sea Grant Institution* **Florida Sea Grant College Program**

Project Title **Twenty-First Annual Meeting of the Association of Island Marine Laboratories of the Caribbean**

Project Location(s) U.S.: 1988 conference held in U.S., prior sites include Colombia, Puerto Rico, Cuba, Bahamas

Description International conference concentrating on marine research in the Caribbean. Topics included: Fate and Effects; Chemistry and Toxicology; Marine Biology; Fisheries; Physical and Chemical Oceanography; Coral; Coral Bleaching. There are currently 26 international member laboratories throughout the Gulf of Mexico and the Caribbean.

Funding Source(s) Mote Marine Laboratory and Participant Registration Fees

Project Dates *Start* May 24, 1988 *Completion* May 27, 1988

Assessment Project met expectations.

Involvement of:

U.S. Government Various through conference attendees

U.S. Institutions Various conference attendees

Foreign Governments Various conference attendees

Foreign Institutions Various conference attendees

Principal Investigator(s) Kumar Mahadevan
Mote Marine Laboratory
1600 City Island Park
Sarasota FL 34236

Karen M. Burns and Andrea Frank
Mote Marine Laboratory
1600 City Island Park
Sarasota FL 34236

Disciplines Mahadevan: Benthic Ecology; Burns & Frank: Fisheries Biology

Skills Mahadevan: Benthic ecology, marine resource administration, environmental problem solving
Burns: Ichthyoplankton taxonomy and ecology, fisheries biology, marine and estuarine ecology, bilingual English/Spanish, contacts in Latin Am. and the Caribbean
Frank: Ichthyoplankton and meroplankton identification of marine and estuarine species

Project Keywords Caribbean

Project Title **Trace Element Mobilization and Transport by Diverse Rivers to the Marine Environment**

Project Location(s) THAILAND, SOUTH KOREA, TAIWAN, JAPAN

Description Comparative study of trace elements concentration in rivers draining a variety of watersheds.

Funding Source(s) National Science Foundation

Project Dates *Start* 1986 *Completion* 1990

Assessment Project still active.

Involvement of:

U.S. Government

U.S. Institutions

Foreign Governments National Research Councils (or equivalents) of Thailand, Taiwan, South Korea, and Japan

Foreign Institutions THAILAND: Chulalongkorn Univ. (Dr. M. Hungspreugs); KOREA: Korea Ocean Research and Development Inst. (Dr. Dong Su Lee); TAIWAN: Chinese Cultural Univ. (Dr. Ying Chi Chen); JAPAN: Tokyo Univ. of Fisheries (Dr. Masaru Maeda)

Principal Investigator(s) H.L. Windom
Skidaway Institute of Oceanography
P.O. Box 13687
Savannah GA 31416

Disciplines Geochemistry

Skills Familiarity with cooperative programs in Asia

Project Keywords Sediment, Trace Elements

Project # 07 B *Sea Grant Institution* **Georgia Sea Grant College Program**

Project Title **Turtle Excluder Device Effectiveness In Mexican Shrimp Fisheries**

Project Location(s) **MEXICO: Tampico**

Description To demonstrate the effectiveness of turtle excluders in Mexican waters on shrimp trawlers.

Funding Source(s) U.S. Fish and Wildlife

Project Dates **Start** July 10, 1987 **Completion** July 18, 1987

Assessment Project met expectations. Recommendation: Determine and confirm travel and logistic support prior to departure from U.S.

Involvement of:

U.S. Government U.S. Fish and Wildlife; NOAA/NMFS; assisted with travel - stipend funds

U.S. Institutions

Foreign Governments Mexican Fisheries Ministry, Instituto Nacional de Pesca (J.M. Grande)
[Complications: Poor logistics. Special Requests: Requested updates on TED info. films and publications on harvesting gear.]

Foreign Institutions

Principal Investigator(s) David Harrington
Marine Extension Service
Univ. of Georgia
P.O. Box Z
Brunswick GA 31523

Disciplines Marine Fisheries

Skills

Project Keywords Shrimp Fishery, Turtle

Project Title **Workshop on the Use of Sediments in Pollution Monitoring**

Project Location(s) CHINA (PEOPLE'S REPUBLIC OF): Dalian

Description This workshop designed to demonstrate techniques of sediment analysis and data interpretation.

Funding Source(s) Intergovernmental Oceanographic Commission, UNESCO

Project Dates *Start* Sept. 1989 *Completion* Jan. 1990

Assessment

Involvement of:

U.S. Government

U.S. Institutions Univ. of Maryland

Foreign Governments State Oceanic Administration of the People's Republic of China

Foreign Institutions Institute for Marine Environmental Protection (Dr. Zhon Jayi, Director)

Principal Investigator(s) H.L. Windom
Skidaway Institute of Oceanography
P.O. Box 13687
Savannah GA 31416

Disciplines Geochemistry

Skills

Project Keywords Sediment, Pollution Monitoring

Project Title **Pacific-Asia Marine and Environmental Science and Technology Education, Training and Monitoring Network at the Secondary and Tertiary Level: A Link in Strategy for Combatting Global Change in the 21st Century**

Project Location(s) Sites visited include: FIJI, SOLOMON ISLANDS, NEW CALEDONIA, PAPUA NEW GUINEA, PHILIPPINES, THAILAND, SINGAPORE, INDONESIA, AUSTRALIA, MALAYSIA, INDIA, PAKISTAN, BANGLADESH, and HONG KONG

Description A regional network is proposed to conduct faculty and student exchanges, establish teaching resource centers, hold training workshops, and monitor global change.

Funding Source(s) Univ. of Hawaii, Pacific Congress on Marine Science and Technology (PACON) International, and Pacific International Center for High Technology Research (PICHTR)

Project Dates *Start* June 15, 1989 *Completion* Present

Assessment A proposal was completed and submitted to UNESCO and the Asian Development Bank. It is under review and in continuing development.

Involvement of:

U.S. Government Dept. of State Embassy (Jakarta), Consulate (Honiara), USAID (Suva, Port Moresby) all provided consultation and contacts regarding local marine science activities

U.S. Institutions Univ. of Hawaii, Pacific Congress on Marine Science and Technology (PACON) International, and Pacific International Center for High Technology Research (PICHTR)

Foreign Governments Government agencies and departments in all 14 countries listed above were involved

Foreign Institutions More than 350 individuals from 120 institutions were met and consulted. Names of contacts can be supplied upon request.

Principal Investigator(s) Sherwood Maynard
Marine Option Program
Univ. of Hawaii at Manoa
1000 Pope Road, Marine Science Bldg., Rm 229
Honolulu HI 96822

J.R.E. Harger
Unesco/ROSTSEA
Jl. M.H. Thamrin 14, Tromolpos 1273/JKT
Jakarta 10002 INDONESIA

Disciplines Maynard: Biological Oceanography; Harger: Marine Biology

Skills Fluency in foreign languages, personal contacts throughout region and U.S. in spectrum of marine sciences.

Project Keywords Education, Global Change

Project # 08 B *Sea Grant Institution* **Hawaii Sea Grant College Program, Univ. of**

Project Title **U.S./Asia Exchange of Aquaculture Technology**

Project Location(s) CHINA (PEOPLE'S REPUBLIC OF)

Description To advance science and technology for aquaculture in the United States and in Asian nations through the exchange of aquaculture scientists and other professionals.

Funding Source(s) Univ. Hawaii Sea Grant College Program

Project Dates *Start* Dec. 1988 *Completion* Mar. 1990

Assessment

Involvement of:

U.S. Government

U.S. Institutions

Foreign Governments

Foreign Institutions Zhongshan Univ., PRC (Prof. Lin Hao Ren); Univ. of Alberta, Canada (Prof. Peter Pang); Laboratory of Reproductive Biology, National Inst. for Basic Biology, Japan (Prof. Yoshitaka Nagahama); Lab. of Physiology, Ocean Research Inst., Univ. Tokyo, Japan (Prof. Tetsuya Hirano)

Principal

Investigator(s)

E. Gordon Grau
Hawaii Inst. of Marine Biology
Univ. of Hawaii
46-007 Lilipuna Rd.
Kaneohe HI 96744

Jack R. Davidson
Zoology Dept. and Sea Grant Program
Univ. of Hawaii
1000 Pope Rd., MSB 204
Honolulu HI 96822

Disciplines Fish Endocrinology and Development

Skills Fish endocrinology and development

Project Keywords Aquaculture, Education

Project Title **Validation of the Universal Decompression Table Concept**

Project Location(s) JAPAN: Yokosuka

Description Validation of a group of decompression tables designed for safe decompression for rats from 300m saturation dive. These tables, UDT.300R, are formulated according to the concept of Universal Decompression Tables.

Funding Source(s) Sea Grant (NOAA)

Project Dates **Start** Aug. 6, 1989 **Completion** Aug. 20, 1989

Assessment Recommendation: Establish close personal contact prior to the project

Involvement of:

U.S. Government Office of Undersea Research (NOAA) assisted with travel funds, negotiated cooperative agreement

U.S. Institutions Univ. of Hawaii

Foreign Governments Science and Technology Agency, Ministry of the Prime Minister

Foreign Institutions Japan Marine Science and Technology Center, Yokosuka (Dr. Motohiko Mohri)

Principal Investigator(s) Yu-Chong Lin
Dept. of Physiology
Univ. of Hawaii
J.A. Burns School of Medicine
Honolulu HI 96822

Disciplines Environmental Physiology

Skills Speak Japanese

Project Keywords Decompression

Project Title **Hawaii-China Aquaculture Research and Information Exchange**

Project Location(s) CHINA (PEOPLE'S REPUBLIC OF); Univ. of Zhong Shan

Description Characterization of the effects of 17 α -methyltestosterone on growth in pond aquaculture; strengthening of collaboration with Zhong Shan Univ.; exchange of scientific information with China in order to coordinate aquaculture research; broaden communication among aquaculture researchers in China and Hawaii.

Funding Source(s) Univ. of Hawaii Sea Grant

Project Dates *Start* June 1, 1989 *Completion* May 31, 1991

Assessment

Involvement of:

U.S. Government

U.S. Institutions Univ. of Hawaii

Foreign Governments

Foreign Institutions CHINA: Univ. of Zhong Shan (Hoa-Ren Lin); CANADA: Univ. of Alberta (Peter Pang)

Principal Investigator(s) E. Gordon Grau
Dept. of Zoology
Hawaii Institute of Marine Biology
P.O. 1346
Kaneohe, HI 96744

Disciplines Zoology

Skills Fish endocrinology

Project Keywords Aquaculture, Hormone

Project Title **Adaptive Physiology of the Mediterranean Seagrass, *Cymodocea nodosa***

Project Location(s) **ITALY: Stazione Zoologica di Napoli, Laboratorio del Benthos Ecologia, Naples**

Description Examination of the role of light in regulating seedling establishment, growth and depth distribution of the seagrass, *Cymodocea nodosa*.

Funding Source(s) U.S.: National Science Foundation International Program, ITALY: Consiglio Nazionale delle Ricerche (CNR), Sta. Zoologica di Napoli

Project Dates *Start* Feb. 1987 *Completion* Nov. 1989

Assessment

Involvement of:

U.S. Government National Science Foundation- International Program: offered support and coordinated joint review with CNR in Italy; deadlines for NSF and CNR are different

U.S. Institutions Hopkins Marine Station of Stanford Univ.

Foreign Governments ITALY: CNR

Foreign Institutions Sta. Zoologica di Napoli, Lab. del Benthos Ecologia (Dr. Lucia Mazzella)

Principal Investigator(s)

Randall S. Alberte
Dept. Molec. Genetics and Cell Biology
Univ. of Chicago
1103 E. 57th St.
Chicago IL 60637

Disciplines Plant Cell and Molecular Biology

Skills Familiar with the research facilities and capabilities of the Stazione Zoologica di Napoli

Project Keywords Physiology, Seagrass

Project # 09 A *Sea Grant Institution* **Illinois/Indiana Sea Grant Program**

Project Title **Adaptive Physiology of the Mediterranean Seagrass, *Cymodocea nodosa***

Project Location(s) ITALY: Stazione Zoologica di Napoli, Laboratorio del Benthos Ecologia, Naples

Description Examination of the role of light in regulating seedling establishment, growth and depth distribution of the seagrass, *Cymodocea nodosa*.

Funding Source(s) U.S.: National Science Foundation International Program, ITALY: Consiglio Nazionale delle Ricerche (CNR), Sta. Zoologica di Napoli

Project Dates *Start* Feb. 1987 *Completion* Nov. 1989

Assessment

Involvement of:

U.S. Government National Science Foundation- International Program: offered support and coordinated joint review with CNR in Italy; deadlines for NSF and CNR are different

U.S. Institutions Hopkins Marine Station of Stanford Univ.

Foreign Governments ITALY: CNR

Foreign Institutions Sta. Zoologica di Napoli, Lab. del Benthos Ecologia (Dr. Lucia Mazzella)

Principal Investigator(s) Randall S. Alberte
Dept. Molec. Genetics and Cell Biology
Univ. of Chicago
1103 E. 57th St.
Chicago IL 60637

Disciplines Plant Cell and Molecular Biology

Skills Familiar with the research facilities and capabilities of the Stazione Zoologica di Napoli

Project Keywords Physiology, Seagrass

Project # 09 B *Sea Grant Institution* **Illinois/Indiana Sea Grant Program**

Project Title **Chloroplast Development in Brown Seaweeds**

Project Location(s) SWEDEN: Univ. of Göteborg

Description Examination of cellular and molecular features regulating chloroplast development in the brown alga, *Laminaria*.

Funding Source(s) Sweden: Research Council of Sweden; U.S.: National Science Foundation--Biol. Oceanography

Project Dates *Start* June 1987 *Completion* Dec. 1991

Assessment Still active

Involvement of:

U.S. Government

U.S. Institutions Stanford Univ.

Foreign Governments Research Council of Sweden

Foreign Institutions Univ. of Göteborg, Plant Physiology Institute (Dr. C. Sundquist, Ms. C. Gevby)

Principal Investigator(s) Randall S. Alberte
Dept. Molec. Genetics and Cell Biology
University of Chicago
1103 E. 57th St.
Chicago IL 60637

Disciplines Plant Cell and Molecular Biology

Skills Familiarity with marine stations in Sweden and capabilities of Plant Physiology Inst. in Göteborg

Project Keywords Physiology, Seagrass

Project # 09 C *Sea Grant Institution* Illinois/Indiana Sea Grant Program

Project Title **Coupling of Nitrogen Nutrition and Carbon Metabolism in Plants**

Project Location(s) JAPAN: Univ. of Nagoya

Description Examination of the role of nitrogen nutrition on carbon assimilation potential in vascular plants.

Funding Source(s) U.S.: National Science Foundation-International Programs; Japan: Univ. of Nagoya

Project Dates *Start* Feb. 1986 *Completion* Aug. 1988

Assessment The project worked well and the interactions with the Japanese were outstanding.

Involvement of:

U.S. Government National Science Foundation-International Programs: for funding, coordination and review

U.S. Institutions

Foreign Governments

Foreign Institutions Institute for Metabolic Regulation, Univ. of Nagoya; Applied Sciences, Univ. of Tokyo (Dr. T. Akazawa, Dr. K. Sujumar, Dr. S. Katoh)

Principal Investigator(s)

Randall S. Alberte
Dept. Molec. Genetics and Cell Biology
Univ. of Chicago
1103 E. 57th St.
Chicago IL 60637

Steven Hubert
Dept. Crop Sciences
North Carolina State Univ.
Raleigh NC 27650

Disciplines Alberte: Plant Cell and Molecular Biology;
Hubert: Plant Biochemistry

Skills Familiarity with several Japanese labs, their modes of operation and their capabilities.

Project Keywords Nitrogen, Nutrition, Carbon, Assimilation

Project Title **Stable Isotope Ratios as Naturally Occurring Tracers in the Aquacultural Food Web**

Project Location(s) ISRAEL

Description Experimental environments were 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.

Funding Source(s) U.S.: Dept. of Agriculture (USDA); Israel: Ministry of Agriculture

Project Dates *Start* 1983 *Completion* 1985

Assessment Project met expectations. The project was administered and completed with a minimum of redtape and aggravation.

Involvement of:

U.S. Government USDA assisted with funding

U.S. Institutions

Foreign Governments ISRAEL: Ministry of Agriculture

Foreign Institutions ISRAEL: Agricultural Research Organization (Gerald L. Schroeder)

Principal Investigator(s) David Homer Buck
Illinois Natural History Survey
607 E. Peabody
Champaign IL 61820

Dennis Coleman
Illinois State Geological Survey
611 E. Peabody
Champaign IL 61820

Disciplines Buck: Aquatic Biology; Coleman: Chemistry

Skills

Project Keywords Foodweb, Carbon Isotope, Aquaculture

Project Title **Biological Oceanography of the Yellow River (Huangho) Plume**

Project Location(s) CHINA (PEOPLE'S REPUBLIC OF): Qingdao

Description Investigation of phytoplankton and benthic ecology of Yellow River Estuary, Gulf of Bohai, PRC.

Funding Source(s) Institutional/Foundations

Project Dates *Start* 1986 *Completion* 1989

Assessment Project exceeded expectations. Recommendation: Have patience.

Involvement of:

U.S. Government

U.S. Institutions Virginia Institute of Marine Science, Oregon State Univ. (cooperating inst. responsible for agreement)

Foreign Governments Geological Survey of Canada

Foreign Institutions Shandong College of Oceanology, Qingdao (Prof. Zhang Zhinan and 6-10 other colleagues)

Principal Investigator(s)

Robert Eugene Turner
Marine Sciences
Louisiana State University
Baton Rouge LA 70803-7503

Nancy N. Rabalais
Louisiana Universities Marine Consortium
Cocodrie LA

Disciplines Biological Oceanography (both)

Skills

Project Keywords Phytoplankton, Benthos, Ecology, Estuary

Project # 10 B *Sea Grant Institution* Louisiana Sea Grant College Program

Project Title **Nutrient and Light Dynamics in Relation to Seagrass Community Production in Laguna de Terminos (Campeche, Mexico)**

Project Location(s) MEXICO: Lagune de Terminos, Campeche

Description To describe how seasonal and spatial changes in light and nutrients affect seagrass production.

Funding Source(s) National Science Foundation and Sea Grant

Project Dates *Start* Feb. 1, 1983 *Completion* Jan. 31, 1986

Assessment Project met expectations. Recommendations: Be sure contacts are made, proper homework is done, and foundation is laid. Careful coordination with foreign scientific counterparts.

Involvement of:

U.S. Government National Science Foundation (2 grants), Sea Grant (3 grants), State Dept. provided NSF International with information about status of NSF/CONACYT (Consejo Nacional de Ciencia y Tecnologia) proposal

U.S. Institutions Univ. of So. Carolina, Univ. of Georgia (contact: C.S. Hopkinson), Virginia Institute of Marine Science, Univ. of Maryland

Foreign Governments

Foreign Institutions Instituto de Ciencias del Mar y Limnologia (ICML) and Universidad Nacional Autonoma de Mexico (UNAM) [contact: Alejandro Yanez-Arancibia]

Principal Investigator(s) John W. Day, Jr.
Center For Wetland Resources
Louisiana State University
Baton Rouge LA 70803-7503

Disciplines Coastal Ecology

Skills

Project Keywords Ecology, Seagrass, Nutrient, Productivity

Project # 10 C Sea Grant Institution Louisiana Sea Grant College Program

Project Title Study of the Role of Hydrology on Wetland Structure and Productivity

Project Location(s) NETHERLANDS: Univ. of Utrecht

Description To conduct an analysis of the role of hydrology in controlling wetland structure and function.

Funding Source(s) Potential: National Science Foundation, Fulbright

Project Dates Start June 1, 1986 Completion June 30, 1987

Assessment

Involvement of:

U.S. Government

U.S. Institutions Proposals submitted to National Science Foundation and Fulbright agency

Foreign Governments

Foreign Institutions Univ. of Utrecht, Dept. of Plant Ecology (Dr. Jos Verhoever)

**Principal Investigator(s) John W. Day, Jr.
Center For Wetland Resources
Louisiana State University
Baton Rouge LA 70803-7503**

Disciplines Coastal and Wetland Ecology

Skills

Project Keywords Ecology, Wetland, Hydrology, Productivity

Project Title A Seasonal and Spatial Study of the Uptake, Sequestering and Transformation of Paralytic Shellfish Toxins by the Giant Scallop *Placopecten magellanicus*

Project Location(s) CANADA: Maurice Lamontagne Inst., Quebec

Description The study is designed to elucidate the fate of paralytic shellfish toxins in the tissues of the scallop, *Placopecten magellanicus*. The study is also designed to provide seasonal information on the uptake and sequestering of toxins by the individual tissues of the scallops.

Funding Source(s) U.S.: Dept. of Marine Resources, State of Maine; CANADA; Dept. of Fisheries and Oceans

Project Dates *Start* Summer 1988 *Completion* Winter 1989

Assessment

Involvement of:

U.S. Government

U.S. Institutions

Foreign Governments

Foreign Institutions see co-P.I. information

Principal Investigator(s) Sandra E. Shumway
Dept. of Marine Resources
West Boothbay Harbor ME 04575

Alan Cembella
Maurice Lamontagne Inst.
P.O. Box 1000
850 Route de la Mer
Mont Joli, Quebec G5H 3Z4 CANADA

Disciplines Shumway: Environmental Physiology, Invertebrate Biology
Cembella: Phytoplankton, Biochemistry

Skills Shumway: Physiological techniques
Cembella: Biochemical techniques including HPLC

Project Keywords Toxins, Scallop

Project Title **Effects of Diuretic Shellfish Poison (DSP) on Shellfish**

Project Location(s) **SWEDEN: Lund**

Description **To assess the effects of DSP on the heart rates of mussels, *Mytilus edulis*.**

Funding Source(s) **SWEDEN: Univ. of Lund**

Project Dates **Start June 30, 1989 Completion July 7, 1989**

Assessment

Involvement of:

U.S. Government

U.S. Institutions

Foreign Governments

Foreign Institutions **see co-P.I. information**

Principal Investigator(s)

Sandra E. Shumway
Dept. of Marine Resources
West Boothbay Harbor ME 04575

Lars Edler
Dept. of Marine Ecology
Univ. of Lund
Lund SWEDEN

Disciplines **Shumway: Environmental Physiology, Invertebrate Biology
Edler: Phytoplankton Physiology, Marine Biology**

Skills **Physiological techniques including measurement of heart rates, feeding rates,
metabolic rates**

Project Keywords **Toxins, Mussel**

Project # 11 C *Sea Grant Institution* **Maine Sea Grant College Program**

Project Title **Heavy Mineral Studies of Maine's Estuaries**

Project Location(s) CANADA: Huntsman Marine Lab., St. Andrews, New Brunswick

Description Collected bottom samples for heavy mineral analyses in the Oak Bay estuary.

Funding Source(s) U.S. Minerals Management Service

Project Dates *Start* June 1985 *Completion* Aug. 1988

Assessment Project met expectations.

Involvement of:

U.S. Government U.S. Minerals Management Service assisted with funding

U.S. Institutions Maine Geological Survey, Univ. of Maine

Foreign Governments CANADA: Huntsman Marine Lab

Foreign Institutions

Principal Investigator(s)

Joe Kelley
Dept. of Geological Sciences, Maine Geological Survey
Univ. of Maine
Orono ME 04469

Dan F. Belknap
Dept. of Geological Sciences, Maine Geological Survey
Univ. of Maine
Orono ME 04469

Disciplines Geology

Skills Marine Sedimentology, Geophysics

Project Keywords Estuary, Pollution

Project Title **New Tectonic Studies of the Oak Bay Fault**

Project Location(s) **CANADA: Huntsman Marine Lab., St. Andrews, New Brunswick**

Description Studied with seismic reflection and side scan sonar methods the seafloor of Oak Bay on the U.S.-Canadian boundary for evidence of modern faulting.

Funding Source(s) U.S. Nuclear Regulatory Commission

Project Dates *Start* June 1985 *Completion* Aug. 1988

Assessment Project met expectations. Recommendation: When bringing electronics equipment across the border, write in advance to the lab and get director's letter to customs or time can be lost in searches at border.

Involvement of:

U.S. Government U.S. Nuclear Regulatory Commission assisted with funding

U.S. Institutions Maine Geological Survey, Univ. of Maine

Foreign Governments **CANADA: Huntsman Marine Lab**

Foreign Institutions

Principal Investigator(s) Joe Kelley
Dept. of Geological Sciences, Maine Geological Survey
Univ. of Maine
Orono ME 04469

Dan F. Belknap
Dept. of Geological Sciences, Maine Geological Survey
Univ. of Maine
Orono ME 04469

Disciplines Geology

Skills Marine Sedimentology, Geophysics

Project Keywords Fault, Seismic Reflection, Side Scan Sonar

Project #	11 E	Sea Grant Institution	Maine Sea Grant College Program
Project Title	Ongoing Experiments on the Biology of <i>Placopecten magellanicus</i>		
Project Location(s)	CANADA: Nova Scotia		
Description	Ongoing experiments on the biology of <i>Placopecten magellanicus</i> .		
Funding Source(s)	U.S.: Dept. of Marine Resources, State of Maine; CANADA; Dalhousie Univ., and Scientific Research Council		
Project Dates	Start 1986	Completion	Ongoing
Assessment	Project still active.		
Involvement of:			
U.S. Government			
U.S. Institutions			
Foreign Governments			
Foreign Institutions	see co-P.I. information		
Principal Investigator(s)	Sandra E. Shumway Dept. of Marine Resources West Boothbay Harbor ME 04575 Jon Grant Dept. of Oceanography Dalhousie Univ. Halifax Nova Scotia CANADA		
Disciplines	Shumway: Environmental Physiology, Invertebrate Biology Grant: Oceanography, Marine Biology		
Skills	Shumway: Physiological techniques		
Project Keywords	Shellfish, Scallop		

Project # 11 F **Sea Grant Institution** **Maine Sea Grant College Program**

Project Title **Transboundary Herring Investigations**

Project Location(s) CANADA: Bay of Fundy

Description Investigations into the early life history of Atlantic herring (*Clupea harengus*) population inhabiting the coastal waters of Maine and southwestern New Brunswick.

Funding Source(s) U.S.: Interjurisdictional Fisheries Act of 1986

Project Dates *Start* Apr. 1, 1986 *Completion* Continuing

Assessment Project is meeting expectations.

Involvement of:

U.S. Government National Marine Fisheries Service, State-Federal Relations Branch, (Gloucester, MA) coordinated federal grant

U.S. Institutions

Foreign Governments Canadian Dept. of Fisheries and Oceans, Biological Station, St. Andrews, N.B.

Foreign Institutions

Principal Investigator(s) Stanley Chenoweth
Bureau of Marine Science
Dept. of Marine Resources
West Boothbay Harbor ME 04575

Disciplines Marine Biology

Skills

Project Keywords Herring

Project # 11 G *Sea Grant Institution* **Maine Sea Grant College Program**

Project Title **Viruses of Fish and Shellfish in Taiwan and Thailand**

Project Location(s) TAIWAN and THAILAND

Description Isolation and characterization of viruses from fish and shellfish in Taiwan and Thailand. Establishment of fish cell cultures. Development of monoclonal antibodies and immunodiagnostic assays for virus diseases in aquaculture. Fish disease diagnosis and control technology transfer.

Funding Source(s) U.S.: National Science Foundation, US Dept. of Agriculture (Maine Agric. Exper. Sta.), Sea Grant-NOAA

Project Dates *Start* 1981 *Completion* 1989

Assessment Project met expectations. Recommendation: Develop personal contacts in advance and work closely with them.

Involvement of:

U.S. Government National Science Foundation assisted with grants for travel and research; U.S. Dept. of Agriculture and NOAA-Sea Grant assisted with U.S. portion of research

U.S. Institutions

Foreign Governments Taiwan: National Science Council

Foreign Institutions TAIWAN: Academia Sinica (Dr. J.L. Wu, Dr. Y.L. Hsu), National Pingtung Agricultural College (Dr. M. Tung); THAILAND: Chulalongkorn Univ. (Dr. V. Lipipun and Dr. K. Saitanu)

Principal Investigator(s) Bruce L. Nicholson
Dept. of Microbiology and Center For Marine Studies
Univ. of Maine
Orono ME 04469

Disciplines Microbiology

Skills Extensive travel and work in Asia, Europe and Middle East. Expertise in technology development and transfer related to fish diseases important in aquaculture.

Project Keywords Disease, Virus, Technology Transfer, Shellfish

Project Title	A Research Plan for Faculty of Fisheries, Institut Pertanian Bogor, Indonesia	
Project Location(s)	INDONESIA: Bogor, West Java	
Description	Served as counterpart in fisheries extension in a five-member team of scientists that traveled to Indonesia to work on a fisheries research planning project. Developed a detailed five-year plan for staff research for the Faculty of Fisheries at Institut Pertanian Bogor in Bogor, West Java. The plan addressed staff research in aquaculture, aquatic resource management, fisheries economics and extension, and post harvest management.	
Funding Source(s)	US Agency for International Development (US AID), Collaborative Research Support Program (CRSP)	
Project Dates	<i>Start</i> Jan. 1986	<i>Completion</i> April 1986
Assessment	The project met expectations.	
Involvement of:		
U.S. Government	USAID and CRSP assisted with funding	
U.S. Institutions	Univ. of Rhode Island	
Foreign Governments		
Foreign Institutions	Institut Pertanian Bogor, Bogor, Indonesia (H.Muhammad Eidman, Pong Suwignjo, Kusman Sumawidjaja, S.M.H. Simandjuntak, Rudy R. Nitibaskara)	
<hr/>		
Principal Investigator(s)	Ronald E. Kinnunen Cooperative Extension Service Univ. of Michigan 1030 Wright St. Marquette MI 49855	
Disciplines	Fisheries Biology and Management	
Skills	Fisheries biology, aquaculture, fish diseases and pathology, and fisheries extension	
Project Keywords	Fisheries, Education	

Project # 14 B *Sea Grant Institution* **Michigan Sea Grant College Program**

Project Title **Gambia River Basin Study**

Project Location(s) **THE GAMBIA, GUINEA, SENEGAL**

Description A multidisciplinary study of the Gambia River in West Africa included extensive investigations of the hydrology, chemistry and biology of the aquatic environment. Studies were conducted from the mangrove estuaries at the river's mouth to the headwaters.

Funding Source(s) US Agency for International Development (US AID)

Project Dates *Start* Sept. 1982 *Completion* Aug. 1985

Assessment The project met almost all expectations. Only by full cooperation of local governments was the project able to meet its goals. African institutions are resource limited. You must provide adequate support for required staff. Recommendation: Develop local contacts and obtain local approval before starting work in Africa. This is essential if project is to succeed.

Involvement of:

U.S. Government US AID, River Basin Development Office, Dakar, Senegal assisted with funding, logistics, personnel

U.S. Institutions Michigan State Univ., Univ. of Wisconsin, Univ. of Maryland, Univ. of Florida

Foreign Governments THE GAMBIA: Dept. of Fisheries; SENEGAL: Dept. of Fisheries

Foreign Institutions SENEGAL: Centre de Recherches Oceanographiques de Dakar - Thiaroye--CRODT (J. Pages) ; plus six African scientists from The Gambia, Guinea, and Senegal

Principal Investigator(s) Russell A. Moll
Great Lakes & Marine Waters Center
Univ. of Michigan
Ann Arbor MI 48109

Alfred M. Beeton
Great Lakes & Marine Waters Center
Univ. of Michigan
Ann Arbor MI 48109

Disciplines Moll: Aquatic Biology;
Beeton: Limnology

Skills Knowledge of local language

Project Keywords Hydrology, Chemistry, Mangrove, Estuary

Project Title **Michigan State University International Extension Education Program**

Project Location(s) MONTSERRAT, West Indies

Description Externship working with fisheries/coastal resource agent in Montserrat. Exchange of past and present experiences with extension education, media use, fishery improvement, business management, etc.

Funding Source(s) US Agency for International Development (US AID), Michigan State Univ., Montserrat Govt.

Project Dates *Start* Jan. 1984 *Completion* Feb. 1984

Assessment The project was very successful. Changes did occur on Montserrat and follow up exchanges of information were made. Recommendation: Recognize the unique character of the island culture and history. Adjust to pace of island life and politics.

Involvement of:

U.S. Government USAID assisted with funding

U.S. Institutions Michigan State Univ.

Foreign Governments Montserrat Ministry of Agriculture, Trade, Lands and Housing (includes extension education in fisheries); contacts: John Pitman, Dir. of Agriculture; John Jeffers, Fisheries Agent in field

Foreign Institutions

Principal Investigator(s) John McKinney
Sea Grant College Extension Program
Michigan State Univ.
400 Boardman Ave.
Traverse City MI 49684

Disciplines Water Resource Management

Skills Experience in extension education in marine resources management, coastal development, water use, water quality, tourism/recreation.

Project Keywords Education, Fisheries, Resource Management

Project Title **Partners of the Americas Network Resource Management Program**

Project Location(s) BELIZE and GUATEMALA

Description Partnership exchange to assess natural resource environmental issues. In-depth look at specific country concerns and plans followed by a seminar to identify opportunities for solutions: Belize 1982 and 1987; Guatemala 1987.

Funding Source(s) US Agency for International Development (US AID), Michigan State Univ., Tinker Foundation

Project Dates *Start* June 1987 *Completion* July 1987

Assessment The project met expectations. New levels of contact and exchange effected, leading to increased focus on the natural water resource issues of the region. Recommendation: Miss no opportunities to encourage increased education to the principles of management of the resource base.

Involvement of:

U.S. Government USAID assisted with funding and organization support

U.S. Institutions Michigan State Univ. (partner to Belize and Dominican Republic), also representatives to institutions in Oregon, Louisiana, Alabama, Vermont, Wisconsin, Delaware

Foreign Governments BELIZE: Fisheries Unit and Parks (Ministry); GUATEMALA: Agriculture and Transportation

Foreign Institutions Companeros de Guatemala and Companeros de las Americas (H. Munoz), Belize Partners Assoc., Belize Audubon Society (V. Gonzalez)

Principal Investigator(s) John McKinney
Sea Grant College Extension Program
Michigan State Univ.
400 Boardman Ave.
Traverse City MI 49684

Disciplines Water Resource Management

Skills Experience in extension education in marine resources management, coastal development, water use, water quality, tourism/recreation.

Project Keywords Environment, Natural Resources

Project Title **Red Tides in Coastal China**

Project Location(s) CHINA (PEOPLE'S REPUBLIC OF)

Description To understand the distribution, frequency, and cause of red tides in coastal China.

Funding Source(s) CHINA: Chinese Natural Science Foundation; Oceanic Administration

Project Dates *Start* 1987 *Completion* 1992

Assessment Project is still active.

Involvement of:

U.S. Government

U.S. Institutions National Academy of Sciences / Committee on Scholarly Communication with People's Republic of China (CSCPRC)

Foreign Governments Oceanic Administration, People's Republic of China

Foreign Institutions Jinan Univ., Red Tides Research Center (Prof. Qi Yu-Zao, Chairman of Inst. of Hyrobiology)

Principal Investigator(s) William Y.B. Chang
Center for Great Lakes & Aquatic Science
Univ. of Michigan
Ann Arbor MI 48109

Disciplines Aquatic Ecology, Marine Biology

Skills Knowledge of Chinese language

Project Keywords Red Tide

Project # 17 A **Sea Grant Institution** **New Jersey Marine Sciences Consortium Sea Grant Program**

Project Title **Cooperative Marine Technology Program for the Middle East**

Project Location(s) EGYPT, ISRAEL

Description Egyptian, Israeli, and American scientists collaborate on projects in fisheries, aquaculture, lakes management, shore processes, seafood toxins, waste water reuse and circulation and air-sea interchange.

Funding Source(s) U.S. Agency for International Development (US AID), Scheuer Family Foundation, Rockefeller Foundation, and others

Project Dates **Start** 1980 **Completion** Ongoing

Assessment The program's progress has exceeded everyone's expectations. We constantly change facets of the program to capitalize on opportunities.

Involvement of:

U.S. Government U.S. AID provided sponsorship; special requests: audit requirements per OMB circulars A-110 and A-133

U.S. Institutions Scripps Inst. of Oceanography, Texas A & M Univ., Univ. of Michigan, Princeton Univ.

Foreign Governments EGYPT: Academy of Scientific Research and Technology, Ministry of Science, Ministry of Agriculture, National Research Center;
ISRAEL: Min. of Energy and Infrastructure

Foreign Institutions EGYPT: Coastal Res. Inst., Alexandria Univ., Inst. of Oceanography and Fisheries, Nutrition Inst., Ain Shams Univ.
ISRAEL: Kinneret Limnological Lab., Israel Oceanographic & Limnological Research Ltd., Hebrew Univ., National Center for Mariculture.
Special requests from foreign institutions generally involve equipment and vehicle purchase.

Principal Investigator(s) Robert B. Abel
New Jersey Marine Sciences Consortium
Bldg 22
Ft. Hancock NJ 07732

Sayed Z. El-Sayed
Dept. Of Oceanography
Texas A & M University
College Station TX 77843

Disciplines Oceanography (Both P.I.s)

Skills Skills of 14 P.I.s involved include aquaculture, limnology, seafood technology, water sanitation, erosion control, marine biology, and program coordination

Project Keywords Fisheries, Aquaculture, Circulation, Lake Management, Seafood, Toxins, Air-sea Interchange

Project # 18 A *Sea Grant Institution* **New York Sea Grant Institute**

Project Title **Copepod production in the Skagerrak in relation to hydrography, primary production, and bacterial production**

Project Location(s) DENMARK: Copenhagen

Description Danish scientists are studying plankton dynamics in the Skagerrak, investigating 1) the proportion of primary production which passes through the microbial loop vs. classical food web and 2) effects of mixing processes on partitioning of primary production.

Funding Source(s) National Science Foundation

Project Dates *Start* Feb 1, 1989 *Completion* Jan 31, 1990

Assessment Project still active

Involvement of:

U.S. Government

U.S. Institutions

Foreign Governemnts Danish Inst. for Fisheries and Marine Research (Thomas Kiørboe)

Foreign Institutions

Principal Investigator(s) William T. Peterson
Marine Sciences Research Center
State Univ. of New York
Stony Brook, NY 11794-5000

Disciplines Biological Oceanography

Skills Zooplankton and larval fish ecology

Project Keywords Copepod, Food web

Project # 18 B *Sea Grant Institution* **New York Sea Grant Institute**

Project Title **Circulation and Frontogenesis in Mid-Gulf as Determinant Factors in Distributions of Seaweed: Cruise Participation and Project Development with Universidad Autonoma de Baja California, Ensenada, Mexico**

Project Location(s) MEXICO: Gulf of California, Ensenada

Description Participation in a two-week cruise in the middle part of the Gulf of California, aboard a Mexican research vessel, for the purpose of collaborating in a survey of hydrographic data in the region. Initial contacts to develop a joint research program to investigate the circulation in mid-Gulf of California.

Funding Source(s) National Science Foundation

Project Dates *Start* Oct. 25, 1987 *Completion* Nov. 14, 1987

Assessment Project met expectations. Contact P.I. for specific information [516/632-8742]

Involvement of:

U.S. Government National Science Foundation Co-operative Science Program with Latin America assisted with funding

U.S. Institutions

Foreign Governments

Foreign Institutions Univ. Autonoma de Baja California (Jose Zertuche, Roman Lizarraga)

Principal Investigator(s) Mário E.C. Vieira
Marine Sciences Research Center
State Univ. of New York
Stony Brook, NY 11794-5000

Disciplines Physical Oceanography

Skills Familiarity with the Ensenada, Mexico physical oceanographic community; speak the language; and understand "how things work"

Project Keywords Hydrography, Seaweed, Circulation

Project # 18 C *Sea Grant Institution* **New York Sea Grant Institute**

Project Title **Effects of Topographic and Wind-Induced Upwelling on Biological Productivity off Chile**

Project Location(s) CHILE

Description The long-term goal of this project is to understand the ways in which physical and biological processes interact to maintain the Talcahuano (Chile) region as a major spawning center for sardines, jack mackerel, and anchovies. We propose to study the effects of upwelling events on hydrography, biological productivity and plankton distribution, on a daily basis, for a three-week period in January 1986.

Funding Source(s) National Science Foundation - International Program, Science in Developing Countries

Project Dates *Start* 1985 *Completion* 1986

Assessment Publications: The Nearshore Zone during Coastal Upwelling: Daily Variability and Coupling between Primary and Secondary Production off Central Chile, W.T. Peterson, et. al., Prog. Oceanog, 20: 1-40; Marine Ecol. Prog. Ser. 43: 11-17

Involvement of:

U.S. Government National Science Foundation - International Program, Science in Developing Countries; assisted with funding

U.S. Institutions

Foreign Governments

Foreign Institutions Catholic Univ., Talcahuano, Chile

Principal Investigator(s) William T. Peterson
Marine Sciences Research Center
State Univ. of New York
Stony Brook, NY 11794-5000

Robert E. Wilson
Marine Sciences Research Center
State Univ. of New York
Stony Brook, NY 11794-5000

Disciplines Peterson: Biological Oceanography; Wilson: Physical Oceanography

Skills

Project Keywords Upwelling, Productivity

Project # 18 D *Sea Grant Institution* **New York Sea Grant Institute**

Project Title **Long Term Effects of Artificial Reef Constructed of Stabilized Coal-fired Power Plant Wastes [Lange termijngedrag van een kunstmatig rif van steenkoolas blokken]**

Project Location(s) NETHERLANDS: Netherlands Energy Research Center, Petten

Description Investigation of interactions of blocks of stabilized coal-fired power-plant wastes in the sea. Compacted blocks of coal wastes used to construct an artificial fishing reef in 1980 have been retrieved after eight years of marine exposure and are being analysed for effects on chemistry, mineralogy, physical properties, and biological settlement.

Funding Source(s) Netherlands Energy Research Foundation, NY State Energy Research and Development Authority

Project Dates *Start* Jan. 1, 1987 *Completion* Sept. 30, 1989

Assessment The project met expectations. Dutch cooperation was excellent.

Involvement of:

U.S. Government

U.S. Institutions NY State Energy Research and Development Authority (NYSERDA)

Foreign Governments Netherlands National Coal Research Program, Netherlands Energy Research Foundation

Foreign Institutions Netherlands Energy Research Center--ECN (Dr. H. A. van der Sloot)

Principal Investigator(s) Peter M.J. Woodhead
Marine Sciences Research Center
State Univ. of New York
Stony Brook NY 11794-5000

Disciplines Biological Oceanography

Skills Woodhead: Biological oceanography, artificial reefs, fisheries, waste management
van der Sloot: Chemical oceanography, wastes chemistry, analytical chemistry

Project Keywords Reef, Waste Management

Project Title	Mariculture of Economically Important Red Seaweeds from the Gulf of California, Baja California, Mexico
Project Location(s)	MEXICO: Ensenada and Bahia de los Angeles, Baja California

Description	This project determined physiological and ecological characteristics of two endemic red seaweeds, <i>Eucheuma uncinatum</i> and <i>Gigartina pectinata</i> . We successfully cultivated these two "annual" species for periods up to two years in tank systems. These species have a potential economic use as carrageenan sources and can be intensively cultivated.
Funding Source(s)	U.S.: National Science Foundation (travel proposal for planning), NY Sea Grant (3 yr grant) ; MEXICO: CONACYT, Univ. Autonoma de Baja California, Secretaria de Pesca
Project Dates	<i>Start</i> Jan. 1, 1986 <i>Completion</i> Mar. 31, 1989
Assessment	All objectives were met as planned. Many additional studies were conducted because of cooperation. No complications. Renewal proposal submitted to Sea Grant for another effort at pilot scale cultivation. Industry now involved. Recommendation: Know your counterparts very well and make sure they have contact with CONACYT. They must be persistent.

Involvement of:

U.S. Government	
U.S. Institutions	
Foreign Governments	MEXICO: CONACYT, International Programs (Lengthy delays; bureaucracy delayed project by one year)
Foreign Institutions	Instituto de Investigaciones Oceanologicas, Univ. Autonoma de Baja California (UABC), Ensenada (Dr. José A. Zertuche-Gonzalez--completed his Ph.D. under PI; study formed basis of his dissertation) Institution and contact very helpful; developed Memorandum of Understanding between UABC and SUNY-Stony Brook

Principal Investigator(s)	B.H. Brinkhuis Marine Sciences Research Center State Univ. of New York Stony Brook, NY 11794-5000
Disciplines	Physiological Ecology of Seaweeds
Skills	Diplomacy, language

Project Keywords	Seaweed, Physiology
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Project # 18 F *Sea Grant Institution* **New York Sea Grant Institute**

Project Title **Nitrogen Metabolism in Laminaria japonica**

Project Location(s) CHINA (PEOPLE'S REPUBLIC OF): Qingdao

Description This project examined aspects of nitrogen metabolism in a commercial kelp species, including nitrate reductase activity and nitrogen uptake. This species takes up significant quantities of nitrite, a feature that invalidates use of in vivo assays of nitrate reductase.

Funding Source(s) National Science Foundation International Programs and National Academy of Sciences/Committee on Scholarly Communication with People's Republic of China (CSCPRC)

Project Dates *Start* July 1, 1987 *Completion* Jan. 31, 1989

Assessment Project largely met expectations. Certain plans had to be changed because of communications problems. **Recommendation:** Bring all research supplies with you.

Involvement of:

U.S. Government

U.S. Institutions

Foreign Governments Bureau of International Cooperation, Academia Sinica, Beijing (no complications, they were very helpful)

Foreign Institutions Inst. of Oceanology, Qingdao, PRC (Prof. Wu Chaoyuan)

Principal Investigator(s) B.H. Brinkhuis
Marine Sciences Research Center
State Univ. of New York
Stony Brook, NY 11794-5000

Disciplines Physiological Ecology of Seaweeds

Skills Diplomacy

Project Keywords Kelp, Nitrogen

Project # 18 G *Sea Grant Institution* **New York Sea Grant Institute**

Project Title **Physiological Basis for the Annual Cycle of *Escheuma uncinatum***

Project Location(s) **MEXICO: Bahia de los Angeles, Gulf of California, Baja California**

Description This project determined photosynthesis versus irradiance relationships of *E. uncinatum* and *Gigartina pectinata* periodically over a two year interval. These data were used to explain competitive interactions between these two red seaweeds.

Funding Source(s) National Science Foundation International Programs and Univ. Autonoma de Baja California (UABC)

Project Dates *Start* July 1, 1987 *Completion* Apr. 30, 1990

Assessment Project meeting expectations; still active. Recommendation: Know your counterparts very well and make sure they know how to deal with CONACYT

Involvement of:

U.S. Government

U.S. Institutions

Foreign Governments MEXICO: CONACYT, International Programs (lengthy delays and bureaucracy)

Foreign Institutions Instituto de Investigaciones Oceanologicas, Univ. Autonoma de Baja California, Ensenada--Institution was very supportive and contributed funds to the project (contact: Dr. J. A. Zertuche-Gonzales)

Principal Investigator(s) B.H. Brinkhuis
Marine Sciences Research Center
State Univ. of New York
Stony Brook, NY 11794-5000

Disciplines Physiological Ecology of Seaweeds

Skills Diplomacy, language

Project Keywords Seaweed

Project # 18 H *Sea Grant Institution* **New York Sea Grant Institute**

Project Title **Shelf/Slope Exchange in the Balearic Sea**

Project Location(s) **SPAIN: Barcelona, Balearic Sea**

Description A frontal filament on the shelf break in the Balearic Sea, Spain, was examined using hydrographic, drifter and satellite sensor measurements. The field study took place in June 7-12, 1986 aboard a Spanish research vessel.

Funding Source(s) U.S.-Spain Joint Committee for Scientific and Technological Cooperation

Project Dates *Start* June 1, 1986 *Completion* May 31, 1988

Assessment Project met expectations. May contact PI M. Vieira for information.

Involvement of:

U.S. Government U.S. Dept. of State, Office of Marine Science and Technology Affairs

U.S. Institutions

Foreign Governments No involvement other than customs complications

Foreign Institutions Instituto de Ciencias del Mar, Barcelona (contacts: Jordi Salat, Jordi Font, Joaquim Tintoré)

Principal Investigator(s) Dong-Ping Wang
Marine Sciences Research Center
State Univ. of New York
Stony Brook, NY 11794-5000

Mário E. C. Vieira
Marine Sciences Research Center
State Univ. of New York
Stony Brook, NY 11794-5000

Disciplines Physical Oceanography

Skills Vieira: Familiarity with Spanish physical oceanography community, Spanish language and customs.

Project Keywords Physical Oceanography

Project # 18 I **Sea Grant Institution** **New York Sea Grant Institute**

Project Title **Studies on the Microbial Food Web**

Project Location(s) **SWEDEN: Norrbylaboratoriet, Univ. of Umeå**

Description Bacterial growth rates were investigated in the Bothnian Sea at a coastal station which has been occupied regularly for 10 years. Methods were evaluated, and effects of added nutrients were examined.

Funding Source(s) Swedish NFR, Environmental Protection Board

Project Dates **Start** May 16, 1989 **Completion** July 19, 1989

Assessment Project met expectations.

Involvement of:

U.S. Government

U.S. Institutions

Foreign Governments Swedish NFR, Environmental Protection Board

Foreign Institutions Univ. of Umeå (Åke Hagström), Univ. of Stockholm (Frederic Wulff)

Principal Investigator(s) Sarah Horrigan
Marine Sciences Research Center
State Univ. of New York
Stony Brook, NY 11794-5000

Disciplines Biological Oceanography

Skills

Project Keywords Bacteria, Nutrient

Project # 18 J *Sea Grant Institution* **New York Sea Grant Institute**

Project Title **The Physical Oceanography of the Sado Estuary, Portugal**

Project Location(s) **PORTUGAL: Lisbon**

Description Collaborative research grant from NATO. Analyses of existing data towards characterization of circulation, dispersive processes and subtidal variability in the Sado Estuary, Portugal.

Funding Source(s) NATO Collaborative Research Grant

Project Dates *Start* July 1, 1985 *Completion* April 30, 1988

Assessment Project met expectations. Contact P.I. for specific information at 516/632-8742

Involvement of:

U.S. Government

U.S. Institutions

Foreign Governments Portuguese Navy

Foreign Institutions Portuguese Hydrographic Institute (Cdr. Francisco V. Abreu, Lt. Jose S. Melo)

Principal Investigator(s) Mário E.C. Vieira
Marine Sciences Research Center
State Univ. of New York
Stony Brook, NY 11794-5000

Disciplines Physical Oceanography

Skills Familiarity and connections with the Portuguese oceanographic community and institutions.

Project Keywords Physical Oceanography, Estuary

Project Title **Australian Wildlife - An Education Institute Down Under**

Project Location(s) **AUSTRALIA: Queensland**

Description Using cooperative learning strategies, investigated major communities available at sites in light of global environmental issues and education/policy responses and classroom application- (keys) coral reefs, rainforests, biological diversity, rising sea level. Participants were 17 North Carolina teachers.

Funding Source(s) U.S. Dept. of Education

Project Dates **Start** June, 1989 **Completion** Aug., 1989

Assessment

Involvement of:

U.S. Government UNC Sea Grant/NOAA, U.S. Dept. of Education assisted with funding

U.S. Institutions North Carolina State Univ., Univ. of North Carolina at Charlotte, Massachusetts Audubon Society

Foreign Governments Great Barrier Reef Park Authority

Foreign Institutions James Cook Univ. Marine Lab

Principal Investigator(s) Lundy Spence
UNC Sea Grant
North Carolina State University
Box 8605
Raleigh NC 27695-8605

Cathy Conwell
Dept. Curriculum & Instruction
Univ. of North Carolina-Charlotte
Charlotte NC 28223

Disciplines Spence: Marine Science, Science Education; Conwell: Science Education

Skills Educational strategies and needs, generic science concepts for teachers

Project Keywords Education

Project # 21 A *Sea Grant Institution* **Oregon Sea Grant College Program**

Project Title **Rwanda--Pond Dynamics/Aquaculture Collaborative Research Support Project**

Project Location(s) **RWANDA: Butare**

Description Aquaculture research into the biological, chemical, physical and ecological factors effecting the efficiency of pond aquaculture systems from a global perspective.

Funding Source(s) U.S. Agency for International Development (US AID)

Project Dates *Start* Sept., 1982 *Completion* August, 1990

Assessment Project is meeting expectations. Recommendation: Work through the U.S. Mission at Kigali, Rwanda

Involvement of:

U.S. Government Bureau of Science and Technology, US AID assisted with funds and clearances for university personnel

U.S. Institutions Univ. of Arkansas at Pine Bluff

Foreign Governments

Foreign Institutions National Univ. of Rwanda (Eugene Rurangwa)

Principal Investigator(s)

Wayne Seim
Dept. of Fisheries and Wildlife
Oregon State Univ.
Corvallis OR 97331

Tom Popma
Dept. of Fisheries and Allied Aquaculture
Auburn Univ.
Auburn AL 36849

Disciplines Seim: Fisheries Biology and Water Pollution Biology
Popma: Aquaculture

Skills Pond aquaculture and water pollution biology

Project Keywords Aquaculture

Project Title **Oman Fisheries Development Project**

Project Location(s) **OMAN: Muscat**

Description To staff and develop an educational and research program for the marine fishery resources of Oman.

Funding Source(s) Omani-American Joint Commission, U.S. Agency for International Development

Project Dates **Start** June 11, 1986 **Completion** June 12, 1990

Assessment Project is meeting expectations. Recommendation: Work through the Omani-American Joint Commission in Muscat, Oman

Involvement of:

U.S. Government Omani-American Joint Commission (US AID) assisted with funding and clearances for U.S. university personnel

U.S. Institutions Consortium for International Aquaculture Development

Foreign Governments Directorate General of Fisheries, Min. of Agriculture, Sultanate of Oman

Foreign Institutions

Principal Investigator(s) Richard A. Tubb
Dept. of Fisheries and Wildlife
Oregon State Univ.
Corvallis OR 97331

Disciplines Fisheries Biology and Limnology

Skills

Project Keywords Fisheries, Education

Project # 21 C *Sea Grant Institution* **Oregon Sea Grant College Program**

Project Title **Honduras--Pond Dynamics/Aquaculture Collaborative Research Support Project**

Project Location(s) HONDURAS: Comayagua

Description Aquaculture research into the biological, chemical, physical and ecological factors affecting the efficiency of pond aquaculture systems from a global perspective.

Funding Source(s) U.S. Agency for International Development (US AID)

Project Dates *Start* Sept. 1982 *Completion* Aug. 1990

Assessment Project is meeting expectations. Recommendation: Work through the U.S. Mission in Tequigalpa, Honduras

Involvement of:

U.S. Government Bureau of Science and Technology, US AID assisted with funds and clearances for university personnel

U.S. Institutions Univ. of Hawaii

Foreign Governments Ministry of Natural Resources, Republic of Honduras

Foreign Institutions Escuela Agricola Panamericana, Zamorano, Honduras (Dan Meyer)

Principal Investigator(s) Howard F. Horton
Office of Inter. Research & Development
Oregon State Univ.
Corvallis OR 97331-1641

Bryan Duncan
Dept. of Fisheries and Allied Aquaculture
Auburn Univ.
Auburn AL 36849-5419

Disciplines Horton: Fisheries Biology and Ecology
Duncan: Aquaculture

Skills Pond aquaculture, limnology, ecology, fisheries science

Project Keywords Aquaculture

Project Title Thailand--Pond Dynamics/Aquaculture Collaborative Research Support Project

Project Location(s) THAILAND: Ayuthaya

Description Aquaculture research into the biological, chemical, physical and ecological factors affecting the efficiency of pond aquaculture systems from a global standpoint.

Funding Source(s) U.S. Agency for International Development (US AID)

Project Dates *Start* Sept. 1982 *Completion* Aug. 1990

Assessment Project is meeting expectations. Recommendation: Work through the U.S. Mission in Bangkok, Thailand

Involvement of:

U.S. Government Bureau of Science and Technology, US AID provided funds and clearances for U.S. university personnel

U.S. Institutions Univ. of Hawaii; Oregon State University Office of Research and Development supplied questionnaire information on this project

Foreign Governments Thailand Dept. of Fisheries

Foreign Institutions Asian Institute of Technology (Dr. Peter Edwards)

Principal Investigator(s) James Diana
School of Natural Resources
Univ. of Michigan
Ann Arbor MI 48109

Cal McNabb
Dept. of Fisheries and Wildlife
Michigan State Univ.
East Lansing MI 48824

Disciplines Diana: Fisheries Biology and Ecology
McNabb: Biology of fishes and invertebrates

Skills Fisheries biology, ecology, aquaculture

Project Keywords Aquaculture

Project # 22 A *Sea Grant Institution* **Puerto Rico Sea Grant Program, Univ. of**

Project Title **A Study of Interrelationship of the Rhombosoleinae (Pleurorectiformes)**

Project Location(s) JAPAN: Hokkaido Univ.

Description Cladistic methodology will be used in an attempt to meet the following objectives: 1) to define the Rhombosoleinae; 2) to formulate a hypothesis for the sister group of the Rhombosoleinae; 3) to determine interrelationships among rhombosoleinae species; and 4) to present a historical hypothesis for the present distribution pattern of the group.

Funding Source(s) National Science Foundation

Project Dates *Start* Jan. 1987 *Completion* Jan. 1989

Assessment Project met expectations.

Involvement of:

U.S. Government National Science Foundation assisted with funding

U.S. Institutions

Foreign Governments

Foreign Institutions Hokkaido Univ., Laboratory of Marine Zoology, Faculty of Fisheries (Dr. K. Amaoka)

Principal Investigator(s) Dannie Hensley
Dept. of Marine Sciences
Univ. of Puerto Rico
Mayaguez PR 00709

Kunio Amaoka
Hokkaido Univ.
Japan

Disciplines Hensley and Amaoka: Ichthyology

Skills

Project Keywords Ichthyology

Project # 22 B *Sea Grant Institution* **Puerto Rico Sea Grant Program, Univ. of**

Project Title **Caribbean Institute for Resource Management**

Project Location(s) PAN-CARIBBEAN

Description Development of university curricula to be used by various cooperating universities in the Caribbean (UNICA) to provide special courses, workshops, etc. for resource managers.

Funding Source(s) Univ. of Puerto Rico, UN Environment Program, MacArthur Foundation, East Caribbean Natural Areas Management Program

Project Dates *Start* 1987 *Completion* Continuing

Assessment Project still active.

Involvement of:

U.S. Government

U.S. Institutions East Caribbean Natural Areas Management Program, UPR

Foreign Governments

Foreign Institutions

Principal Investigator(s) Manuel Hernández-Avila
Sea Grant College Program
Univ. of Puerto Rico
P.O. Box 5000
Mayaguez PR 00709-5000

Robert Lankford
Sea Grant College Program
Univ. of Puerto Rico
P.O. Box 5000
Mayaguez PR 00709-5000

Disciplines Hernández-Avila: Director of UPR-Sea Grant, Physical Oceanography
Lankford: Asst. Administrator of UPR-Sea Grant

Skills

Project Keywords Education, Resource Management

Project # 22 C *Sea Grant Institution* **Puerto Rico Sea Grant Program, Univ. of**

Project Title **CARIPOL (IOCARIBE Group of Experts on Marine Pollution in the Caribbean Region)**

Project Location(s) **CARIBBEAN: Participating member countries of the IOC Caribbean sub-commission**

Description **Research and monitoring of marine pollution in the Caribbean region.**

Funding Source(s) **Intergovernmental Oceanographic Commission / UNESCO**

Project Dates **Start** 1976 **Completion** Continuing

Assessment **Project met expectations.**

Involvement of:

U.S. Government NOAA / AOML, assisted with database, monitoring efforts; National Science Foundation with Symposium funding 1985

U.S. Institutions Univ. Puerto Rico (monitoring, data submissions, host for meeting, training and lab facilities)

Foreign Governments IOC/UNESCO

Foreign Institutions

Principal Investigator(s) Jorge Corredor
Dept. of Marine Sciences
Univ. of Puerto Rico
Mayaguez PR 00709

Disciplines **Chemical Oceanography**

Skills

Project Keywords **Pollution**

Project # 22 D *Sea Grant Institution* **Puerto Rico Sea Grant Program, Univ. of**

Project Title **Catalog of Sinistral Flounders for FAO Project: Survey and Identification of World Marine Fish Resources**

Project Location(s) ITALY

Description Preparation of an FAO species catalog of the sinistral flounders of the world.

Funding Source(s) UN Food and Agricultural Organization (FAO), Univ. of Puerto Rico

Project Dates *Start* 1981 *Completion* 1985

Assessment

Involvement of:

U.S. Government

U.S. Institutions

Foreign Governments UN Food and Agricultural Organization (FAO)

Foreign Institutions

Principal Investigator(s) D.A. Hensley
Dept. of Marine Sciences
Univ. of Puerto Rico
Mayaguez PR 00709

Disciplines Ichthyology

Skills

Project Keywords Flounder

Project # 22 E *Sea Grant Institution* **Puerto Rico Sea Grant Program, Univ. of**

Project Title **Developing Strategies to Enhance Charter and Headboat Fishing Operations in Puerto Rico and the U.S. Virgin Islands**

Project Location(s) U.S.: Puerto Rico and the U.S. Virgin Islands

Description To assist charter and headboat operators in Puerto Rico and the U.S. Virgin Islands to become better integrated into existing coastal tourism systems in order to manage fishing demand better and enhance the industry's economic vitality.

Funding Source(s) NOAA / Saltonstall-Kennedy funds

Project Dates *Start* Mar., 1989 *Completion* Feb., 1990

Assessment

Involvement of:

U.S. Government NOAA assisted with funding

U.S. Institutions

Foreign Governments

Foreign Institutions

Principal Investigator(s)

Ruperto Chaparro
Sea Grant Program
Univ. of Puerto Rico
RUM-UPR
P.O. Box 5000
Mayaguez PR 00709-5000

Manuel Valdes-Pizzini
Sea Grant Program
Univ. of Puerto Rico
RUM-UPR
P.O. Box 5000
Mayaguez PR 00709-5000

Disciplines Chaparro: Marine Recreation; Valdes-Pizzini: Anthropology

Skills

Project Keywords Recreational Fishing

Project # 22 F *Sea Grant Institution* **Puerto Rico Sea Grant Program, Univ. of**

Project Title **Development of Marine Sciences Undergraduate and Graduate Programs at the Univ. of Cadiz, Spain**

Project Location(s) **SPAIN: Cadiz**

Description Consultation on organization and administration of a Marine Sciences undergraduate and graduate program. Advise in planning and design of formal courses, necessary installations, scientific equipment and laboratory facilities to institute a formal degree granting (BS, MS) program in Marine Sciences.

Funding Source(s) Joint support Univ. of Puerto Rico and Univ. of Cadiz

Project Dates *Start* August, 1989 *Completion* 1991

Assessment

Involvement of:

U.S. Government

U.S. Institutions Univ. of Puerto Rico

Foreign Governments

Foreign Institutions Univ. of Cadiz, Spain (Dr. J. L. Romero, Chancellor; Dr. M. Galvan, Dean)

Principal Investigator(s) Manuel Hernández-Avila
Sea Grant College Program
Univ. of Puerto Rico
P.O. Box 5000
Mayaguez PR 00709-5000

Disciplines Director of UPR-Sea Grant, Coastal Physical Oceanography

Skills

Project Keywords Education

Project # 22 G *Sea Grant Institution* **Puerto Rico Sea Grant Program, Univ. of**

Project Title **Foreign Graduate Student Education in the Marine Sciences**

Project Location(s)

Description Foreign graduate student education in the marine sciences.

Funding Source(s) Univ. of Puerto Rico (Dept. of Marine Sciences)

Project Dates *Start* - *Completion* continuing

Assessment

Involvement of:

U.S. Government

U.S. Institutions

Foreign Governments

Foreign Institutions

Students from: Argentina, Belgium, Chile, Colombia, Dominican Republic, England, Japan, Mexico, Pakistan, Panama, Peru, Spain, Taiwan, Venezuela

Principal Investigator(s)

Manuel Hernández-Avila
Sea Grant College Program
Univ. of Puerto Rico
P.O. Box 5000
Mayaguez PR 00709-5000

Disciplines Director of UPR-Sea Grant, Coastal Physical Oceanography

Skills

Project Keywords Education

Project Title **Informal Aquaculture Training and Technical Assistance for Persons
from Latin America and the Caribbean**

Project Location(s) U.S., ECUADOR, PANAMA

Description Informal training at the Dept. of Marine Sciences (Univ. of Puerto Rico, Mayaguez),
for work with aquaculture operations. Trainees receive hands-on experience and
technical information.

Funding Source(s) Univ. Puerto Rico, UPR Sea Grant

Project Dates *Start* *Completion* **Ongoing**

Assessment Participants from South Africa, Venezuela, Dominican Republic, Suriname, Grenada,
Mexico and Haiti; meetings ongoing; visits to aquaculture ventures in Panama,
Ecuador.

Involvement of:

U.S. Government

U.S. Institutions

Foreign Governments

Foreign Institutions Caribbean Aquaculture Association, World Aquaculture Association

**Principal
Investigator(s)** Dallas E. Alston
Dept. of Marine Sciences
Univ. of Puerto Rico
Mayaguez PR 00709

Disciplines Aquaculture

Skills

Project Keywords Aquaculture, Education

Project Title **Initiation and Control of Sex Reversal in Coral Reef Fish**

Project Location(s) **ISRAEL, RED SEA**

Description The first part of the project examined three hypotheses concerning the behavioral induction of adult female-to-male sex reversal in a hermaphroditic coral reef fish. The second portion of the project studied the genetic relatedness of fish living in the same social group.

Funding Source(s) National Institutes of Health (NIH), Univ. of Puerto Rico, National Hebrew Univ., Tel Aviv Univ.

Project Dates *Start* 1978 *Completion* Continuing

Assessment The project met expectations. This type of project requires a lot of time in the field.

Involvement of:

U.S. Government National Institutes of Health assisted with funding

U.S. Institutions

Foreign Governments

Foreign Institutions National Hebrew Univ., Tel Aviv Univ.

Principal Investigator(s) Douglas Shapiro
Dept. of Marine Sciences
Univ. of Puerto Rico
Mayaguez PR 00709

Disciplines Biological Oceanography

Skills

Project Keywords Reef, Genetics, Behavior, Coral Reef Fish

Project # 22 J Sea Grant Institution Puerto Rico Sea Grant Program, Univ. of

Project Title International Workshop on Parks and Protected Areas

Project Location(s) DOMINICA

Description Financial and participation support of workshop to define needs and actions to establish a cooperative development of marine and terrestrial parks and protected areas.

Funding Source(s) Univ. of Puerto Rico Sea Grant; Caribbean Conservation Assoc. (Barbados); Intl. Centre for Ocean Development (Canada); UN Environment Program (Jamaica); FAO (Trinidad)

Project Dates *Start* Feb., 1989 *Completion* March, 1989

Assessment Project met expectations.

Involvement of:

U.S. Government

U.S. Institutions East Caribbean Natural Area Management Program

Foreign Governments Caribbean Conservation Association (Barbados)

Foreign Institutions

Principal Investigator(s) Manuel Hernández-Avila
Sea Grant College Program
Univ. of Puerto Rico
P.O. Box 5000
Mayaguez PR 00709-5000

Robert Lankford
Sea Grant College Program
Univ. of Puerto Rico
P.O. Box 5000
Mayaguez PR 00709-5000

Disciplines Hernandez-Avila: Director, UPR-Sea Grant
Lankford: Asst. Adm. UPR-Sea Grant

Skills

Project Keywords Park Management

Project #	22 K	Sea Grant Institution	Puerto Rico Sea Grant Program, Univ. of
Project Title	IOC Sub-commission for the Caribbean and Adjacent Regions (IOCARIBE)		
Project Location(s)	CARIBBEAN		
Description	Caribbean-wide intergovernmental cooperation to develop national marine science infrastructures and to address marine research issues of regional and global scope.		
Funding Source(s)	Univ. of Puerto Rico, National Science Foundation		
Project Dates	Start	1984	Completion Continuing
Assessment			
Involvement of:			
U.S. Government	U.S. Depts. of State and Commerce/NOAA, and National Science Foundation assisted in developing U.S. positions and support of U.S. national delegations		
U.S. Institutions			
Foreign Governments	National delegations of IOCARIBE Member States		
Foreign Institutions			
Principal Investigator(s)	<p>Manuel Hernández-Avila Sea Grant College Program Univ. of Puerto Rico P.O. Box 5000 Mayaguez PR 00709-5000</p> <p>Robert Lankford Sea Grant College Program Univ. of Puerto Rico P.O. Box 5000 Mayaguez PR 00709-5000</p>		
Disciplines	Hernández-Avila: Director, UPR-Sea Grant Lankford: Asst. Adm. UPR-Sea Grant		
Skills			
Project Keywords	International Cooperation, Caribbean		

Project # 22 L *Sea Grant Institution* **Puerto Rico Sea Grant Program, Univ. of**

Project Title **Jefindo Fish Project Trawling Survey in Southern Indonesia for UN
Food and Agriculture Organization (FAO)**

Project Location(s) **INDONESIA: Bali**

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

Funding Source(s) **FAO**

Project Dates **Start 1984** **Completion 1985**

Assessment

Involvement of:

U.S. Government

U.S. Institutions

Foreign Governments **United Nations FAO**

Foreign Institutions

Principal Investigator(s) **Thomas Gloevfelt-Tarp
Dept. of Marine Sciences
Univ. of Puerto Rico
Mayaguez PR 00709**

Disciplines **Ichthyology**

Skills

Project Keywords **Fisheries, Trawling**

Project # 22 M Sea Grant Institution Puerto Rico Sea Grant Program, Univ. of

Project Title Peace Corps Small-scale Marine Fisheries Extension Training Program

Project Location(s)

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.

Funding Source(s) U.S. Peace Corps

Project Dates *Start* 1984 *Completion* Ongoing

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

Involvement of:

U.S. Government Peace Corps assisted with support to Univ of Puerto Rico and trainees

U.S. Institutions Univ. of Rhode Island

Foreign Governments

Foreign Institutions

Principal Investigator(s) John Kubaryk
Dept. of Marine Sciences
Univ. of Puerto Rico
Mayaguez PR 00709

Disciplines Aquaculture

Skills

Project Keywords Fisheries, Training

Project # 22 N *Sea Grant Institution* **Puerto Rico Sea Grant Program, Univ. of**

Project Title **Second Western Atlantic Turtle Symposium (WATS II)**

Project Location(s) **CARIBBEAN: Western Atlantic Region, 36 participating countries**

Description **Four year program on research and assessment on Sea Turtles in the Western Atlantic Region, from Bermuda and the US on the North, to Brazil on the South.**

Funding Source(s) **NOAA/National Marine Fisheries Service**

Project Dates **Start** July 1984 **Completion** April 1988

Assessment **Project met expectations.**

Involvement of:

U.S. Government **Dept. of Commerce/NOAA/National Marine Fisheries Service: Endangered Species Program; Dept. of the Interior/Fish and Wildlife Service; both gave financial and expert advisors/assistance, assisted with publication of transactions**

U.S. Institutions **More than 20 conservation groups**

Foreign Governments **Countries from the Western Atlantic Region; about 15 countries requested and received WATS II grants to support national research.**

Foreign Institutions

Principal Investigator(s)

**Manuel Hernández-Avila
Sea Grant College Program
Univ. of Puerto Rico
P.O. Box 5000
Mayaguez PR 00709-5000**

**Robert Lankford
Sea Grant College Program
Univ. of Puerto Rico
Mayaguez PR 00709-5000**

Disciplines **Hernández-Avila: Director, UPR-Sea Grant
Lankford: Asst. Adm. UPR-Sea Grant**

Skills

Project Keywords **Turtles (Sea)**

Project # 22 O *Sea Grant Institution* **Puerto Rico Sea Grant Program, Univ. of**

Project Title **Site Visits to Evaluate Areas for Macrobrachium Culture in Grenada**

Project Location(s) **GRENADA**

Description Evaluated three areas as potential sites for Macrobrachium culture and advised pond construction and selection of feed formulation materials, utilizing local raw materials.

Funding Source(s) Organization of American States, Univ. of Puerto Rico

Project Dates *Start* 1984 *Completion* 1985

Assessment

Involvement of:

U.S. Government

U.S. Institutions

Foreign Governments Organization of American States, Ministry of Agriculture, Grenada

Foreign Institutions

Principal Investigator(s) Dallas E. Alston
Dept. of Marine Sciences
Univ. of Puerto Rico
Mayaguez PR 00709

Disciplines Aquaculture

Skills

Project Keywords Aquaculture

Project # 22 P **Sea Grant Institution** **Puerto Rico Sea Grant Program, Univ. of**

Project Title **Strengthening Aquaculture Aid for Less Developed Countries**

Project Location(s) **DOMINICAN REPUBLIC**

Description Technical assistance in aquaculture to Fisheries Resource Division of Agriculture Department of the Dominican Republic.

Funding Source(s) US Agency for International Development (AID), Univ. of Puerto Rico

Project Dates *Start* 1982 *Completion* 1984

Assessment

Involvement of:

U.S. Government US AID-Title XII; US AID Mission/Dominican Republic assisted with funding

U.S. Institutions

Foreign Governments

Foreign Institutions

Principal Investigator(s) Ricardo C. Cortes
Dept. of Marine Sciences
Univ. of Puerto Rico
Mayaguez PR 00709

Disciplines Aquaculture

Skills Spanish and knowledge of cultural background of Dominican people

Project Keywords Aquaculture

Project # 22 Q *Sea Grant Institution* **Puerto Rico Sea Grant Program, Univ. of**

Project Title **Training Program in Practical Aquaculture**

Project Location(s) **BELGIUM, HAITI**

Description Provide training to Belgian volunteers for fish culture project in Haiti.

Funding Source(s) Univ. of Puerto Rico

Project Dates *Start* 1984 *Completion* 1985

Assessment

Involvement of:

U.S. Government

U.S. Institutions

Foreign Governments **BELGIUM: Protos, Ghent**

Foreign Institutions

Principal Investigator(s)

Andrew McGinty
Dept. of Marine Sciences
Univ. of Puerto Rico
Mayaguez PR 00709

Disciplines **Aquaculture**

Skills

Project Keywords **Aquaculture, Training**

Project Title Fisheries Development Support Services (FDSS) USAID Cooperative Agreement

Project Location(s) WORLDWIDE: At request of USAID missions

Description Fisheries Development Support Services (FDSS) provides for the development and maintenance of a Resource Center at the recipient institution that will be a repository for skills and information in fishery development and management through the combination of applied research and practical experience; and to strengthen and expand the recipient's institutional capacity to assist programs in developing countries aimed at improving the nutritional, employment and living conditions of the poor majority.

Funding Source(s) US Agency for International Development (AID) S-T AGR/RNR

Project Dates *Start* July 1982 *Completion* June 1992

Assessment Project still active

Involvement of:

U.S. Government USAID S-T AGR/RNR (The project is conducted as a cooperative agreement under a collaborative assistance mode.)

U.S. Institutions FDSS Workshop presentations

Foreign Governments

Foreign Institutions CHINA (PRC): Shanghai Fisheries College; ECUADOR: Escuela Superior Politecnica del Litoral (ESPOL); MEXICO: Inst. Tecnológico y de Estudios Superiores de Monterrey Guaymas Campus (ITESM); MOROCCO: Inst. Agronomique et Veterinaire Hassan II (IAVHII); PHILIPPINES: Intl. Center for Living Aquatic Resources Management (ICLARM), SE Asian Fisheries Development Center (SEAFDEC), Univ. of the Philippines in the Visayas College of Fisheries (UPVCF); PORTUGAL: Univ. of the Azores; SIERRA LEONE: Univ. of Sierra Leone/Inst. for Marine Biology and Oceanography; THAILAND: Kasetsart Univ. Funding constraints limit the in-country assistance.

Principal Investigator(s) Dr. Donald E. McCreight
ICMRD
Univ. of Rhode Island
126 Woodward Hall
Kingston RI 02881

Disciplines Resource Development Education

Skills

Project Keywords Fisheries Development, Fisheries Management

Project # 23 B *Sea Grant Institution* **Rhode Island Sea Grant College Program**

Project Title **Fisheries Stock Assessment Collaborative Support Research Program (CRSP)**

Project Location(s) PHILIPPINES

Description The Collaborative Support Research Program is intended to support collaborative research between U.S. and developing countries' universities and institutions on fisheries stock assessment and management strategies. Scientists from the Univ. of Rhode Island are directing research in tropical fish stock assessment in the Philippines.

Funding Source(s) US Agency for International Development S-T AGR

Project Dates *Start* July, 1985 *Completion* June, 1993

Assessment Project is still active.

Involvement of:

U.S. Government USAID S-T AGR/RNR assisted with clearances, monitoring and evaluation. Funding constraints limit assistance that can be provided.

U.S. Institutions Univ. of Maryland (Management Entity), Univ. of Washington (Seattle), Univ. of Maryland (Solomons)

Foreign Governments PHILIPPINES: Bureau of Fisheries & Aquatic Resources; THAILAND: Dept. of Marine Fisheries; INDONESIA: Dept. of Marine Fisheries

Foreign Institutions Univ. of Philippines/Marine Sci. Inst. (Dr. Eduardo Gomez), Univ. of Philippines/College of Fisheries at Visayas (Dr. Eferen Flores)

Principal Investigator(s) Dr. Saul Saila
Graduate School of Oceanography
Univ. of Rhode Island
Narragansett RI 02882

Dr. Donald E. McCreight
ICMRD
Univ. of Rhode Island
126 Woodward Hall
Kingston RI 02881

Disciplines Saila: Oceanography and Fisheries Biology
McCreight: Resource Development Education

Skills

Project Keywords Fisheries, Stock Assessment

Project Title Indonesian Fisheries Research and Development Project

Project Location(s) INDONESIA

Description To improve the technological and management resources available to both the private and public entities in the Indonesia fisheries sector.

Funding Source(s) US Agency for International Development

Project Dates *Start* Nov. 1988 *Completion* Dec. 1991

Assessment Project still active.

Involvement of:

U.S. Government USAID--Project sponsors

U.S. Institutions Auburn Univ.

Foreign Governments Ministry of Fisheries

Foreign Institutions Hasanudden Univ., Pattimura Univ.

Principal Investigator(s) Spiros Constantinides
ICMRD
Univ. of Rhode Island
126 Woodward Hall
Kingston RI 02881

Disciplines Food Science and Nutrition

Skills Extensive international research and teaching experience in Latin America and the Middle East; project director for Quality Control Directorate for the Consumer Protection Dept., Saudi Arabia

Project Keywords Resource Management, Fisheries

Project # 23 D *Sea Grant Institution* **Rhode Island Sea Grant College Program**

Project Title **International Coastal Resources Management Project**

Project Location(s) **ECUADOR, SRI LANKA, THAILAND**

Description The International Coastal Resources Management Project applies existing experience in coastal resources management to developing countries, assists developing nations in the design and implementation and advancement of integrated coastal resources management programs, and builds U.R.I.'s capability to assist developing nations with coastal resources management. Pilot project countries are Ecuador, Sri Lanka, and Thailand.

Funding Source(s) US Agency for International Development

Project Dates *Start* May 1985 *Completion* Sept. 1992

Assessment Project still active.

Involvement of:

U.S. Government USAID, Bureau of Science and Technology assisted with funding

U.S. Institutions Individuals from over 20 universities and the private sector have been involved

Foreign Governments THAILAND: Office of the National Environment Board; SRI LANKA: Coast Conservation Dept.; ECUADOR: Dept. of the Environment

Foreign Institutions Many per country

Principal Investigator(s) Stephen Olsen
Coastal Resources Center
Univ. of Rhode Island - Bay Campus
Narragansett RI 02882

Disciplines Coastal Resources Management

Skills

Project Keywords Resources Management

Project # 23 E **Sea Grant Institution** **Rhode Island Sea Grant College Program**

Project Title **Non-Degree Technical Training in Fisheries Science and Technology for the Sultanate of Oman**

Project Location(s) **OMAN**

Description Provide technical training in fisheries science for members of the Directorate General of Fisheries and Sultan Qaboos University.

Funding Source(s) US Agency for International Development

Project Dates **Start** Apr. 1986 **Completion** May 1990

Assessment Project still active.

Involvement of:

U.S. Government Oman/America Joint Commission, USAID assisted with funding

U.S. Institutions Checchi and Co.

Foreign Governments Directorate General of Fisheries

Foreign Institutions Sultan Qaboos Univ., Marine Science Fisheries Center
(Dr. Richard Dudley, Dr. Jackson Davis)

Principal Investigator(s) George Aelion
International Center For Marine Resource Development
Univ. of Rhode Island
126 Woodward Hall
Kingston RI 02881

Disciplines M. Ed. Administration

Skills Training and manpower needs assessment

Project Keywords Training, Fisheries

Project # 24 A	Sea Grant Institution	South Carolina Sea Grant Consortium
Project Title	A Research Framework for International Small-scale Fisheries Development	
Project Location(s)	PHILIPPINES	
Description	To develop an explicit link between development programs and supportive research endeavors in small-scale fisheries development in the Philippines.	
Funding Source(s)	South Carolina Sea Grant Consortium	
Project Dates	Start May 1986	Completion Sept. 1986
Assessment	Project met expectations.	
Involvement of:		
U.S. Government		
U.S. Institutions		
Foreign Governments	Bureau of Fisheries and Aquatic Resources	
Foreign Institutions	Intl. Center for Living Aquatic Resources Management-ICLARM (Dr. Max Aquero)	
Principal Investigator(s)	Robert Pomeroy Dept. of Agricultural Economics Clemson Univ. 240 Barre Hall Clemson, SC 29634-0355	
Disciplines	Agricultural Economics	
Skills	Small-scales fisheries economics	
Project Keywords	Fisheries	

Project # 24 B *Sea Grant Institution* **South Carolina Sea Grant Consortium**

Project Title **Age and Growth of Fishes**

Project Location(s) JAPAN: Hakodate, Hokkaido

Description Determine mechanisms of calcification of fish otoliths.

Funding Source(s) National Science Foundation

Project Dates *Start* 1977 *Completion* Open

Assessment Project met expectations. Recommendation: Support for intensive language instruction is very important.

Involvement of:

U.S. Government National Science Foundation International Program (1979-1981 Co-op Program)

U.S. Institutions

Foreign Governments

Foreign Institutions Hokkaido Univ./Faculty of Fisheries, Hakodate (Dr. J. Yamada, Dr. Y. Mugiya)

Principal Investigator(s)

John Mark Dean
Baruch Institute
Univ. of South Carolina
Columbia, SC 29208

Norimitsu Watabe
Electron Microscopy Center
Univ. of South Carolina
Columbia, SC 29208

Disciplines Marine Biology

Skills Japanese language, personal communications

Project Keywords Otoliths

Project # 24 D *Sea Grant Institution* **South Carolina Sea Grant Consortium**

Project Title **Graduate Student Exchange Program in Marine Biology between Univ. of South Carolina and Kagoshima Univ., Japan**

Project Location(s) JAPAN: Kagoshima

Description An exchange student program for not more than two graduate students to carry out graduate research in marine biology at the Univ. of South Carolina or Kagoshima Univ. for the period of one year.

Funding Source(s) Ministry of Education, Japan

Project Dates *Start* Nov. 1981 *Completion* open

Assessment Project met expectations. *Recommendation:* Learn language of the country

Involvement of:

U.S. Government

U.S. Institutions

Foreign Governments Ministry of Education, Japan

Foreign Institutions Kagoshima Univ./Faculty of Fisheries (Dr. H. Hirata)

Principal Investigator(s) Norimitsu Watabe
Electron Microscopy Center
Univ. of South Carolina
Columbia, SC 29208

John Mark Dean
Baruch Institute
Univ. of South Carolina
Columbia, SC 29208

Disciplines Biology

Skills

Project Keywords Education, Marine Biology

Project # 24 E *Sea Grant Institution* **South Carolina Sea Grant Consortium**

Project Title **Research and Training in Cultivation of Aquatic Organisms through Japanese Ministry of Education Research Fellowship**

Project Location(s) JAPAN: Kagoshima Univ.

Description Research and training in cultivation of aquatic organisms. Techniques were learned and practiced in live food cultivation (plankton), larval and postlarval shrimp and larval fish production. Research was conducted on the propagation of larval and juvenile porgy and rabbitfish. Extensive travel throughout Japan.

Funding Source(s) Japanese Education Ministry (Monbusho Research Fellowship)

Project Dates *Start* Jan., 1986 *Completion* April, 1987

Assessment Most expectations were met. Some laboratory resources were not available because of the large number of users. Written materials from the country were not translated into English. Reference systems are poor.
Recommendation: Language is limiting, few Japanese students or scientists speak English. Scientists who study in Japan must gain language skills prior to visit. Note that inter-laboratory projects are often politically difficult.

Involvement of:

U.S. Government

U.S. Institutions Univ. of South Carolina

Foreign Governments Japanese Education Ministry (Monbusho)

Foreign Institutions Kagoshima Univ. (Dr. H. Hirata, Dr. S. Yamasaki, Dr. S. Kudowaki); Nagasaki Univ. (Dr. Y. Natsukaji); Hokkaido Univ. (Dr. J. Yamada and Dr. Y. Mugiya)

Principal Investigator(s) David H. Secor
Baruch Institute
Univ. of South Carolina
Columbia, SC 29208

Disciplines Fisheries Biology

Skills Listening and comprehension skills in Japanese (some reading and writing skills).
Extensive training in techniques used in aquaculture in Japan.

Project Keywords Fisheries, Aquaculture

Project # 24 F *Sea Grant Institution* South Carolina Sea Grant Consortium

Project Title The early life-history of Tarpon, *Megalops atlanticus* from Costa Rica

Project Location(s) COSTA RICA: Gondoca

Description Tarpon are being collected from Gondoca lagoon and adjacent streams in southeastern Costa Rica. These leptocephalus larvae and juveniles will be aged using otoliths. Temporal and spatial distribution will be described with respect to local water quality parameters.

Funding Source(s) The Pate Foundation

Project Dates *Start* May 1989 *Completion* May 1991

Assessment Project is ongoing.

Involvement of:

U.S. Government

U.S. Institutions

Foreign Governments

Foreign Institutions Asociación de los Nuevos Alquimistas (Dr. W.D. McLamey), Univ. Nacional de Costa Rica (Dr. D. Chacor). Special requests from foreign institutions included funding requests.

Principal Investigator(s) Ned Cyr
Baruch Institute
Univ. of South Carolina
Columbia, SC 29208

John Mark Dean
Baruch Institute
Univ. of South Carolina
Columbia, SC 29208

Disciplines Fisheries Ecology

Skills Knowledge of fish age and growth techniques, coastal policy and fisheries management, extensive experience with research on international sport fisheries.

Project Keywords Tarpon, Sport Fisheries, Otoliths

Project # 24 G *Sea Grant Institution* South Carolina Sea Grant Consortium

Project Title **The Influence of Mussel Beds on Nutrient Cycling in Dutch Estuaries**

Project Location(s) NETHERLANDS

Description The uptake and release of nutrients, O₂ and sediments by mussel beds were measured directly. Rates were observed in the western Wadden Sea and Eastern Scheldt estuaries.

Funding Source(s) National Science Foundation and Rijkse Inst. for Nature Management

Project Dates *Start* May 1985 *Completion* Aug. 1988

Assessment Project met expectations.

Involvement of:

U.S. Government National Science Foundation - International Programs assisted with travel funds

U.S. Institutions

Foreign Governments Rijkse Inst. for Nature Management (RIN)

Foreign Institutions

Principal Investigator(s) Richard Dame
Coastal Carolina College, Marine Science
P.O. Box 1954
Conway, SC 29526

Disciplines Marine Ecology

Skills

Project Keywords Nutrient Cycling, Mussels

Project # 25 A *Sea Grant Institution* **Texas A & M Univ. Sea Grant College Program**

Project Title **Control of the Arribada Mass Nesting Behavior in Ridley Sea Turtles**

Project Location(s) **COSTA RICA**

Description Study of the behavioral endocrinology and environmental factors that regulate mass nesting in this threatened sea turtle species.

Funding Source(s) National Science Foundation, Sea Grant College Program

Project Dates *Start* Oct. 1989 *Completion* Sept. 1991

Assessment Project is still active.

Involvement of:

U.S. Government U.S. Fish and Wildlife Service collaborated on project; permits required for importation of blood samples (this has caused major delay in recent past).

U.S. Institutions Univ. of California/Berkeley

Foreign Governments Costa Rica National Park Service

Foreign Institutions Univ. of Costa Rica (Dr. D. Robinson, Ms. A. Chavez); National Univ. of Costa Rica (Dr. J. Frazier, Mr. R. Valverde) provided logistical help

Principal Investigator(s) David Owens
Biology Dept.
Texas A & M Univ.
College Station TX 77843

Max Amoss
Vet. Physiology and Pharmacology Dept.
Texas A & M Univ.
College Station TX 77843

Disciplines Owens: Behavioral Physiology; Amoss: Endocrinology

Skills

Project Keywords Physiology, Turtles (Sea)

Project # 25 B *Sea Grant Institution* Texas A & M Univ. Sea Grant College Program

Project Title Behavioral Physiology of Marine Turtles

Project Location(s) MEXICO, GRAND CAYMAN (UK), AUSTRALIA, COSTA RICA

Description Sea turtle behavior, reproductive physiology and endocrinology are studied to improve understanding of the turtles' unique adaptations.

Funding Source(s) National Science Foundation- (Psychobiology and US-Australia Joint Progs.), Sea Grant, Sea Turtles Inc.

Project Dates Start 1979 *Completion* Ongoing

Assessment Project is still active. Recommendation: Best to collaborate with a Mexican university rather than Mexican government.

Involvement of:

U.S. Government U.S. Fish and Wildlife Service, National Park Serv., Nat'l Marine Fisheries Serv., National Science Foundation assisted with collaboration and funding

U.S. Institutions Univ. of Calif./Berkeley, Sea Turtles Inc.

Foreign Governments Inst. Nacional de Pesca (Mexico), Secretaria de Pesca, Queensland National Park Service (Australia), Costa Rica National Park Service. Obtaining permits in Mexico is often difficult and the system changes frequently.

Foreign Institutions Cayman Turtle Farm

Principal Investigator(s) David Owens
Biology Dept.
Texas A & M Univ.
College Station TX 77843

Max Amoss
Vet. Physiology and Pharmacology Dept.
Texas A & M Univ.
College Station TX 77843

Disciplines Owens: Behavioral Physiology; Amoss: Endocrinology

Skills

Project Keywords Turtles (Sea)

Project Title Living Marine Coastal Diatoms of Southern India

Project Location(s) INDIA: Madras

Description The living phytoplankton is increasingly important as coastal blooms, some of which are harmful to fish, shellfish, or people, become more abundant. The combination of currents and topography during the non-monsoon months make sampling of tropical phytoplankton an ideal project.

Funding Source(s) Indo-American Fellowship Program of the Indo-US Subcommittee on Educ. & Culture

Project Dates *Start* Jan. 1991 *Completion* June 1991

Assessment Project is meeting expectations. Although shipboard collections would be ideal, either foreign and/or female participation on board ship is complicated. Recommendation: Correspond with individuals to give direct feasibility and input as to mutual benefits to be gained.

Involvement of:

U.S. Government Council for International Exchange of Scholars assisted with logistics

U.S. Institutions Texas A & M Univ.

Foreign Governments Various Indian agencies

Foreign Institutions Univ. of Madras (A.K.S.K. Prasad, Reader, Center for Advanced Study in Botany). Copies of proposal sent in advance to various administrators on advice of Indian colleague.

Principal Investigator(s) Greta A. Fryxell
Dept. of Oceanography
Texas A & M Univ.
College Station TX 77843-3146

Disciplines Marine Phytoplankton

Skills Research in physical environment and equipment directly available for research

Project Keywords Diatoms

Project # 25 D *Sea Grant Institution* **Texas A & M Univ. Sea Grant College Program**

Project Title **Oceanographic Program Development with Saudi Arabia**

Project Location(s) SAUDI ARABIA

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

Funding Source(s) Saudi Arabian government

Project Dates *Start* 1979 *Completion* -

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

Involvement of:

U.S. Government

U.S. Institutions

Foreign Governments

Foreign Institutions Univ. of Petroleum and Minerals, Dhahran, Saudi Arabia

Principal Investigator(s) Charles Giammona
Texas A & M Univ.
College Station TX 77843

Disciplines Oceanography and Environmental Engineering

Skills

Project Keywords Education

Project # 25 E *Sea Grant Institution* **Texas A & M Univ. Sea Grant College Program**

Project Title **Underwater Mining Institute**

Project Location(s) CANADA: Halifax, Nova Scotia, 1985; Victoria, B.C., 1990

Description An international forum for ocean miners, researchers and resource managers providing current information on exploration, mining and management of marine minerals.

Funding Source(s) Univ. of Wisconsin Sea Grant

Project Dates *Start* - *Completion* -

Assessment Project met expectations

Involvement of:

U.S. Government NOAA - Sea Grant sponsored conference

U.S. Institutions

Foreign Governments CANADA: Energy, Mines and Resources

Foreign Institutions Participants typically include several people from other countries. Speakers have included Russian, Danish, Irish, British, German, and Canadian scientists

Principal Investigator(s)

J. Robert Moore
Dept. of Marine Studies
Univ. of Texas-Austin
Austin TX 78712

Allen H. Miller
Sea Grant Inst.
Univ. of Wisconsin-Madison
1800 Univ. Ave.
Madison WI 53705

Disciplines Moore: Geology; Miller: Engineering / Landscape architecture

Skills

Project Keywords Mining, Resource Management

Project # 29 A *Sea Grant Institution* **Woods Hole Oceanographic Inst. Sea Grant Program**

Project Title **Database of Maritime Boundary Claims and Marine Science Research Jurisdiction for 145 Coastal States**

Project Location(s) U.S./WORLDWIDE

Description Database profiles for 145 coastal states: Status on 1958 Geneva Conventions and 1982 Law of the Sea Treaty; approximate marine area in square nautical miles; marine jurisdictional zones (breadth and date claimed) including territorial sea, continental shelf, fisheries zone, and exclusive economic zone; maritime boundaries as potential or resolved with neighboring coastal countries; jurisdiction over marine science (specifying national legislation and extent of jurisdiction) and marine science research regulations other than formal jurisdiction.

Funding Source(s) WHOI Sea Grant Program

Project Dates *Start* 1987 *Completion* continuing

Assessment Database updated monthly; country profiles to be published with information from Research Clearance History database (see listing 29B). We are exploring accessibility of this database and several others of the International Marine Science Cooperation Program through electronic mail/bulletin board.

Involvement of:

U.S. Government U.S. Department of State provided information; NOAA Sea Grant funding

U.S. Institutions

Foreign Governments

Foreign Institutions UN Office for Ocean Affairs and Law of the Sea provided information

Principal Investigator(s) David A. Ross
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Woods Hole MA 02543

Judith Fenwick
Intl. Marine Science Cooperation Program
Woods Hole Oceanographic Inst.
Woods Hole MA 02543

Disciplines Ross: Marine Geology, Marine Policy
Fenwick: Marine Policy

Skills Ross: Extensive international experience in marine science and policy
Fenwick: marine policy, computerized database and communications

Project Keywords International Cooperation, Marine Policy, Database Management

Project # 29 B *Sea Grant Institution* **Woods Hole Oceanographic Inst. Sea Grant Program**

Project Title **Database of U.S. Marine Science Research Clearance Histories with 145 Coastal States**

Project Location(s) U.S./WORLDWIDE

Description To assist marine science institutions, scientists and administrators in planning research cruises and collaborative international programs, this database covers data from 1972 on all research clearance requests that have passed through official U.S. channels (Dept. of State) for work in foreign waters. Database details the number of clearance requests submitted annually to each country; outcome of each request (approved or denied, and if problem occurred whether the U.S. or foreign state prompted the problem); and anecdotes where available describing any glitch in the process for each clearance request.

Funding Source(s) WHOI Sea Grant Program

Project Dates *Start* 1988 *Completion* continuing

Assessment Database updated monthly; information to be published along with country profiles (see listing 29A). We are exploring accessibility of this database and several others of the International Marine Science Cooperation Program through electronic mail/bulletin board.

Involvement of:

U.S. Government Department of State provided information and NOAA/Sea Grant Program funding

U.S. Institutions

Foreign Governments

Foreign Institutions

Principal Investigator(s) David A. Ross
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Judith Fenwick
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Disciplines Ross: Marine Geology, Marine Policy
Fenwick: Marine Policy

Skills Ross: Extensive international experience in marine science and policy
Fenwick: experience in marine policy, computerized database and communications

Project Keywords International Cooperation, Marine Policy, Database Management

Project # 29 C *Sea Grant Institution* Woods Hole Oceanographic Inst. Sea Grant Program

Project Title **Development of Phase Two of a Special Focus Program: Hurricane Impacts on the Caribbean Coast Environment**

Project Location(s) CARIBBEAN

Description Individual research proposals dealing with the impact of hurricanes on the tropical ecosystem will be assembled into a single coherent program. The combined research information, presented with introductory text, schedule and budget data, will aid scientific understanding that is required for formulation of effective tropical ecosystem management policies.

Funding Source(s) WHOI Sea Grant Program

Project Dates *Start* Feb. 1990 *Completion* June 1990

Assessment Project still active.

Involvement of:

U.S. Government NOAA/Sea Grant (funding)

U.S. Institutions

Foreign Governments

Foreign Institutions

Principal Investigator(s) G.S. Giese
Dept. of Geology And Geophysics
Woods Hole Oceanographic Institution
Woods Hole MA 02543

Disciplines Geology

Skills

Project Keywords Hurricane Impact, Caribbean, Environment, Ecosystem

Project # 29 D *Sea Grant Institution* **Woods Hole Oceanographic Inst. Sea Grant Program**

Project Title **Hurricane Impacts on Eastern Caribbean Coastal Ecosystems - A
Special Focus Program, Rapid Response Phase**

Project Location(s) CARIBBEAN

Description The relationship between episodic events and the structure of tropical coastal and marine ecosystems will be studied in order to provide guidance for use and management of coastal resources. Objectives include quantifying hurricane impacts on tropical ecosystems and monitoring their post-storm recovery, understanding the processes responsible, and improving modeling and forecasting capability of tropical storm impacts.

Funding Source(s) WHOI Sea Grant Program

Project Dates *Start* Dec. 1989 *Completion* June 1990

Assessment Project still active.

Involvement of:

U.S. Government NOAA Sea Grant (funding)

U.S. Institutions

Foreign Governments

Foreign Institutions

Principal Investigator(s) D.A. Ross
Sea Grant Program
Woods Hole Oceanographic Institution
Woods Hole MA 02543

D.G. Aubrey
Coastal Research Center
Woods Hole Oceanographic Institution
Woods Hole MA 02543

Disciplines Ross: Geology, Marine Policy; Aubrey: Geology

Skills Ross: Extensive international experience in marine science and policy
Aubrey: Extensive international experience in marine geology, coastal processes

Project Keywords Hurricane Impact, Caribbean, Environment, Ecosystem

Project # 29 E *Sea Grant Institution* **Woods Hole Oceanographic Inst. Sea Grant Program**

Project Title **International Marine Science Funding Sources: Database and Funding Guide**

Project Location(s) U.S.

Description Database of >200 funding sources for international marine science activities. Sources include foundations, educational institutions, corporations, government agencies, national, multinational, and international organizations. Information tailored for scientists who wish to pursue international marine scientific research by way of exchange programs, research grants, fellowships, monies for travel, conferences, workshops, seminars, publications, or collaborative research activities.

Funding Source(s) WHOI Sea Grant Program

Project Dates *Start* 1987 *Completion* continuing

Assessment Funding guide published in 1990 has proven very popular; database updated monthly.

Involvement of:

U.S. Government WHOI Sea Grant Program provided funding

U.S. Institutions

Foreign Governments Various agencies that provided information on funding in their countries

Foreign Institutions Various institutions that provided information on funding sources

Principal Investigator(s) David A. Ross
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Judith Fenwick
Intl. Marine Science Cooperation Program
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Woods Hole MA 02543

Disciplines Ross: Marine Geology, Marine Policy; Fenwick: Marine Policy

Skills Ross: Extensive international experience in marine science and policy
Fenwick: experience in marine policy, computerized database and communications

Project Keywords International Cooperation, Marine Policy, Database Management

Project # 29 F *Sea Grant Institution* **Woods Hole Oceanographic Inst. Sea Grant Program**

Project Title **International Red Tide Information and Assistance Service**

Project Location(s) **WORLDWIDE**

Description This project is intended to improve and accelerate international information exchange and cooperation regarding toxic plankton blooms and red tides and their impact on fisheries and public health, and to help expedite rapid international assistance during red tide emergencies, especially in developing countries. An international database on red tides activities is being established.

Funding Source(s) **WHOI Sea Grant Program**

Project Dates *Start* July 1, 1988 *Completion* June 30, 1992

Assessment Project begun when P.I. was Marine Advisor for WHOI Sea Grant Program.

Involvement of:

U.S. Government NOAA Sea Grant College Program provided funding

U.S. Institutions

Foreign Governments

Foreign Institutions

Principal Investigator(s) Alan W. White
NOAA/National Marine Fisheries Service
Woods Hole MA 02543

Disciplines Biology

Skills International experience in fisheries and public health repercussions of red tides.
Working knowledge of Japanese language.

Project Keywords Red Tide, Database Management

Project # 29 G *Sea Grant Institution* **Woods Hole Oceanographic Inst. Sea Grant Program**

Project Title **Inventory of International Marine Science Projects at Sea Grant Institutions**

Project Location(s) U.S.

Description Two inventories of international marine science projects at Sea Grant institutions have been completed (the first in 1985, the second in 1991). The inventories profiled the extent of research projects' foreign locations, sources of funding, areas of expertise for principal investigators, and contacts at foreign and U.S. agencies and institutions.

Funding Source(s) WHOI Sea Grant Program

Project Dates *Start* 1984 *Completion* continuing

Assessment Helpful gathering of diverse information to target the international involvement of Sea Grant.

Involvement of:

U.S. Government NOAA Sea Grant College Program provided funding

U.S. Institutions Sea Grant College Programs at 29 institutions

Foreign Governments

Foreign Institutions

Principal Investigator(s)

David A. Ross
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Judith Fenwick
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Woods Hole Oceanographic Inst.
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Disciplines Ross: Marine Geology, Marine Policy; Fenwick: Marine Policy

Skills Ross: Extensive international experience in marine science and policy
Fenwick: experience in marine policy, computerized database and communications

Project Keywords International Cooperation, Marine Policy, Database Management

Project # 29 H *Sea Grant Institution* **Woods Hole Oceanographic Inst. Sea Grant Program**

Project Title **Latin American / Caribbean Databases on Regional Marine Science Institutions and Research Areas**

Project Location(s) CARIBBEAN and U.S.

Description Development of several relational databases begun in mid-1990 with primary database covering marine science institutions (and individual contacts) in the region; secondary databases will cover research areas of expertise in the region and areas of need for education, training, etc.

Funding Source(s) WHOI Sea Grant Program

Project Dates *Start* 1990 *Completion* continuing

Assessment Still in preliminary data collection stages

Involvement of:

U.S. Government NOAA Sea Grant College Program providing funding

U.S. Institutions Sea Grant College Programs at 29 institutions

Foreign Governments Various agencies and departments in Caribbean countries and dependent territories

Foreign Institutions Various institutions in Caribbean countries and dependent territories

Principal Investigator(s) David A. Ross
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Judith Fenwick
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Disciplines Ross: Marine Geology, Marine Policy; Fenwick: Marine Policy

Skills Ross: Extensive international experience in marine science and policy
Fenwick: experience in marine policy, computerized database and communications

Project Keywords International Cooperation, Marine Policy, Database Management, Caribbean

Project # 29 I **Sea Grant Institution** **Woods Hole Oceanographic Inst. Sea Grant Program**

Project Title **Mapping Worldwide Maritime Boundary Claims and Marine Science Research Jurisdictions**

Project Location(s) **WORLDWIDE**

Description Four-color world map depicting scope and variety of national maritime claims as they affect marine scientific research (first edition of map prepared in 1986; second edition expected 1991).

Funding Source(s) WHOI Sea Grant Program

Project Dates *Start* 1986 *Completion* continuing

Assessment First edition of map out of print; total press run (1500) of first edition was distributed free to international marine science community.

Involvement of:

U.S. Government Department of State provided information and NOAA Sea Grant College Program provided funding

U.S. Institutions

Foreign Governments

Foreign Institutions United Nations Office for Ocean Affairs and Law of the Sea provided information

Principal Investigator(s)

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Judith Fenwick
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Disciplines Ross: Marine Geology, Marine Policy; Fenwick: Marine Policy

Skills Ross: Extensive international experience in marine science and policy
Fenwick: experience in marine policy, computerized database and communications

Project Keywords International Cooperation, Marine Policy, Database Management, Maritime Boundaries

Project # 29 J *Sea Grant Institution* **Woods Hole Oceanographic Inst. Sea Grant Program**

Project Title **Orinoco River Outflow - Effects on Coastal and Eastern Caribbean Waters: Nutrients and Primary Productivity**

Project Location(s) CARIBBEAN

Description Data from two cruises in 1988 that transected the eastern Caribbean, the Gulf of Paria, paralleling the Orinoco Delta for 120 miles and terminated in low-salinity Orinoco Mainstream water, will be reduced, plotted and contoured. Interpretation of this data of coastal input from the world's little studied second largest river will contribute significant knowledge on baselines, seasonality, and productivity and foster continued U.S.-Venezuelan collaboration.

Funding Source(s) WHOI Sea Grant

Project Dates *Start* Jan. 1990 *Completion* Dec. 1990

Assessment

Involvement of:

U.S. Government NOAA-Sea Grant provided funding

U.S. Institutions

Foreign Governments

Foreign Institutions

Principal Investigator(s) Oliver C. Zafiriou
Dept. of Chemistry
Woods Hole Oceanographic Institution
Woods Hole MA 02543

Disciplines Chemistry

Skills

Project Keywords Caribbean, Nutrient, Productivity

Project # 29 K *Sea Grant Institution* **Woods Hole Oceanographic Inst. Sea Grant Program**

Project Title **US / Portugal Marine Science Clearinghouse**

Project Location(s) **PORTUGAL**

Description International cooperative program with Portugal focusing on: exchange of information concerning scientific research projects and publications between U.S. Sea Grant and Portuguese marine science institutions; assistance in establishing cooperative research projects between the two countries; assistance in placement and exchange of students and staff with marine science interests between U.S. Sea Grant and Portuguese institutions.

Funding Source(s) WHOI Sea Grant Program

Project Dates *Start* 1988 *Completion* continuing

Assessment Formal agreement signed with Junta Nacional de Investigaçao Cientifica e Tecnologica-JNICT (Portugal) in 1989; operating guidelines still being formalized. Preliminary ventures have included hosting Portuguese scientists for short visits at various Sea Grant programs, doing subject-specific bibliographic searches for Portuguese scientists; review by U.S. scientists for JNICT of projects proposed by Portuguese MS community.

Involvement of:

U.S. Government NOAA Sea Grant College Program provided funding

U.S. Institutions Sea Grant College Programs at core institutions

Foreign Governments Portugal's Junta Nacional de Investigaçao Cientifica e Tecnologica (JNICT) and the Regional Assembly of the Azores (Jose Reis Leite, President)

Foreign Institutions Porto University (Prof. Jose Novais Barbosa, Prof. Adelio Machado); University of Aveiro (Prof. Aristides Hall), Luso American Foundation (Charles Buchanan)

Principal Investigator(s) David A. Ross
Dept. of Geology & Geophysics
Woods Hole Oceanographic Inst.
Woods Hole MA 02543

Judith Fenwick
Intl. Marine Science Cooperation Program
Woods Hole Oceanographic Inst.
Woods Hole MA 02543

Disciplines Ross: Marine Geology, Marine Policy; Fenwick: Marine Policy

Skills Ross: Extensive international experience in marine science and policy
Fenwick: marine policy, computerized database and communications

Project Keywords International Cooperation, Marine Policy, Database Management

INDEXES:	PAGES
➔ by Geographic Location	140
➔ by Funding Sources	142
➔ by Disciplines of Principal Investigators	144
➔ by Name of Principal Investigators	146
➔ by Keyword	148

Index by Geographic Location

<i>Geographic Location</i>	<i>Project #</i>	<i>Geographic Location</i>	<i>Project #</i>
ARGENTINA	02G	HAITI	22Q
	02I	HONDURAS	06F
	05C		21C
AUSTRALIA	02H	HONG KONG	08A
	02O	ICELAND	02F
	08A	INDIA	02C
	19A		03D
	25B		08A
BANGLADESH	08A		25C
BELGIUM	22Q	INDONESIA	08A
BELIZE	14D		14A
CANADA	02F		22L
	02K		23C
	11A	IRELAND	04B
	11C	ISRAEL	09D
	11D		17A
	11E		22I
	11F	ITALY	06B
	25E		09A
CARIBBEAN	22B		22D
	22C	JAMAICA	06F
	22K	JAPAN	02E
	22N		02F
	29C		02J
	29D		02K
	29H		03A
	29J		07A
CHILE	02I		08C
	03C		09C
	18C		22A
CHINA (PEOPLE'S REPUBLIC OF)	02J		24B
	03E		24D
	05A		24E
	07C	MALAYSIA	08A
	08B	MALDIVES	03D
	08D	MAURITIUS	24C
	10A	MEXICO	02D
	14E		02I
	18F		02O
COLOMBIA	06F		06A
COSTA RICA	05B		06C
	24F		06I
	25A		07B
	25B		10B
DENMARK	18A		18B
DOMINICA	22J		18E
DOMINICAN REPUBLIC	22P		18G
ECUADOR	22H		25B
	23D	MONTSERRAT	14C
EGYPT	17A	NETHERLANDS	06E
FIJI	08A		10C
FRANCE	02F		18D
	02J		24G
	04A	NEW CALEDONIA	08A
GRAND CAYMAN	25B	NEW ZEALAND	02A
GRENADA	22O		02L
GUATEMALA	14D		06H
GUINEA	14B	NORTHERN IRELAND	04B

Index by Geographic Location

<i>Geographic Location</i>	<i>Project #</i>
OMAN	21B
	23E
PAKISTAN	08A
PANAMA	06G
	22H
PAPAU NEW GUINEA	08A
PHILIPPINES	08A
	23B
	24A
PORTUGAL	18J
	29K
RED SEA	22I
RWANDA	21A
SAUDI ARABIA	25D
SCOTLAND	02B
SENEGAL	14B
SINGAPORE	08A
SOLOMON ISLANDS	08A
SOUTH KOREA	07A
SOVIET UNION	02J
SPAIN	02O
	18H
	22F
SRI LANKA	23D
SWEDEN	02F
	09B
	11B
	18I
TAIWAN	02M
	07A
	11G
THAILAND	02N
	07A
	08A
	11G
	21D
	23D
THE GAMBIA	14B
UNITED KINGDOM	02K
UNITED STATES OF AMERICA	06J
	22E
	22H
	29A
	29E
	29G
	29H
WORLDWIDE	23A
	29A
	29B
	29F
	29I
YUGOSLAVIA	06D

Index by Funding Source

<i>Funding Source</i>	<i>Project #</i>	<i>Funding Source</i>	<i>Project #</i>
Argentina-CONICET	02G	National Science Foundation (cont.)	11G
Argentina Govt.	05C		18A
California, State of	02I		18B
	02J		18E
Canadian Dept. of Fish. and Oceans	11A		22A
Canadian Sci. Res. Council	11E		22K
Caribbean Conservation Assoc.	22J		24B
China (PRC-Acad. Sinica)	05A		24C
China (PRC) Natural Sci. Fdn.	14E		24G
China (PRC) Oceanic Adm.	14E		25A
Collab. Res. Supp. Prog. (CRSP)	14A		25B
Dalhousie Univ.	11E	NSF-International Prog.	09A
East Caribbean Nat. Areas Mgt. Prog.	22B		09C
Foreign Governments	02J		18C
French Natl. Ctr. for Sci. Res.	04A		18F
Indo-U.S. Marine Bioact. Sub. Prog.	03D		18G
Indo-U.S. Marine Biofoul. Prog.	03D	NSF-U.S.-Australia Joint Prog.	25B
Indo-U.S. Fellowship Prog.	25C	NSF-U.S.-New Zealand Coop. Sci.	06H
Inst. Nacional de la Pesca	06I	NATO Collaborative Research Grant	18J
Institutional/Foundations	10A	Netherlands, Govt. of	06E
Int'l. Centre for Ocean Devel. (Canada)	22J	Netherlands Energy Res. Fdn.	18D
Israel Ministry of Agriculture	09D	New York State Energy R&D Auth.	18D
Italian Consiglio Naz. delle Ricerche	09A	New Zealand (DSIR)	06H
Japanese Ministry of Education	22D	New Zealand Min. of Agri. and Fish.	02A
	22E	New Zealand Oceanographic Inst.	02L
Japanese Soc. Prom. of Sci. Fel.	03A	NOAA-Natl. Marine Fisheries Serv.	22N
MacArthur Foundation	22B	NOAA-NMFS-Southeast Fish. Sec.	06I
Maine Dept. of Natural Resources	11A	NOAA-Saltonstall-Kennedy Funds	22E
	11E	NOAA-Sea Grant	02F
MARFIN	06C		02O
Mexico-CONACYT	02D		04B
	18E		08C
Mexico-Sec. de Pesca	18E		10B
Michigan State Univ.	14C		11G
	14D		25A
Montserrat, Govt. of	14C		25B
Mote Marine Laboratory	06I	NOAA-Sea Grant-California	02B
	06J		02H
	18F		02K
Natl. Acad. of Sciences (CSCPRC)	18F		18E
National Hebrew Univ.	22I	NOAA-Sea Grant-New York	24A
National Inst. of Health	22I	NOAA-Sea Grant-South Carolina	22H
National Science and Tech. Council	06A	NOAA-Sea Grant-U. of Puerto Rico	22J
National Science Foundation	02E		22J
	02F	NOAA-Sea Grant-U. of Wisconsin	25E
	02L	NOAA-Sea Grant-U. of Hawaii	08B
	03C		08D
	04A	NOAA-Sea Grant-WHOI	29A
	05B		29B
	05C		29C
	06A		29D
	06B		29E
	06D		29F
	06F		29G
	07A		29H
	09B		29I
	10B		29J
	10C		29K

Index by Funding Source

<i>Funding Source</i>	<i>Project #</i>	<i>Funding Source</i>	<i>Project #</i>
NOAA-Nat. Undersea Res. Prog.	06F	U.S. Dept. of State	03B
Office of Naval Research (ONR)	02C	U.S. Federal Agencies	02J
	03B	U.S. Fish and Wildlife	07B
	06A	U.S. Interjuris. Fisheries Act of 1986	11F
	06B	U.S. Minerals Management Service	11C
ONR-Marine Bioactive Subs. Prog.	03D	U.S. Navy	03B
Omani-American Joint Commission	21B		03E
Organization of American States	22O	U.S. Nuclear Regulatory Comm.	11D
Pacific Congress Marine Sci. & Tech. (PACON) International	08A	U.S. Peace Corps	22M
Pacific Intl. Ctr. for High Tech. Res.	08A	U.S.-Spain Joint Sci. & Tech. Coop.	18H
Pate Foundation	24F	Univ. Autonoma de Baja California	18E
Personal Funds	02A		18G
Rijkes Inst. for Nature Mgt.	24G	Univ. of Cadiz	22F
Rockefeller Foundation	17A	Univ. of Calif.-Boalt Hall Sch. of Law	02K
San Diego State Univ.	02H	Univ. of Calif.-Coop. Extension	02A
Saudi Arabia, Government of	25D	Univ. of Hawaii	08A
Scheuer Family Foundation	17A	Univ. of Lund, Sweden	11B
Sea Turtles Inc.	25B	Univ. of Nagoya, Japan	09C
Smithsonian Tropical Research Inst.	06G	Univ. of Otago, New Zealand	02L
Sta. Zoologica di Napoli	09A	Univ. of Puerto Rico	22B
Sweden, Research Council of	09B		22D
Sweden-NFR, Env. Protection Bd.	18I		22F
Tel Aviv Univ.	22I		22G
Tinker Foundation	14D		22H
UN Education, Sci. & Cultural Org. (UNESCO)	07C		22I
	22C		22O
UNESCO-Man & Biosphere Prog.	02G	Volunteer	22P
U.N.-Environment Prog. (UNEP)	06I		22Q
	22B		02I
	22J		
U.N.-Food & Agriculture Org. (FAO)	22D		
	22J		
	22L		
U.N.-Intergov. Ocean. Comm. (IOC)	07C		
	22C		
U.S. Agency for Intl. Devel. (AID)	02N		
	14A		
	14B		
	14C		
	14D		
	17A		
	21A		
	21B		
	21C		
	21D		
	22P		
	23A		
	23B		
	23C		
	23D		
	23E		
U.S. Dept. of Agriculture	09D		
U.S. Dept. of Agri.-Foreign Res.	02M		
U.S. Dept. of Agri.-Maine Exp. Sta.	11G		
U.S. Dept. of Education	19A		

Index by Disciplines of Principal Investigators

P. I. DISCH

<i>Discipline</i>	<i>Project #</i>	<i>Discipline</i>	<i>Project #</i>
Agricultural Economics	24A	Environmental Physiology	08C
Anthropology	22E		11A
Applied Marine Physics	06E		11B
Aquaculture	21A		11E
	21C	Fish Endocrinology and Development	08B
	22H	Fish Physiology	02F
	22M	Fisheries	24C
	22O	Fisheries Biology	06C
	22P		06I
	22Q		06J
Aquatic Biology	09D		21A
	14B		21B
Aquatic Ecology	14E		21C
Behavioral Physiology	25A		21D
	25B		23D
Benthic Ecology	06J		24E
Biochemistry	11A	Fisheries Biology and Management	14A
Bioengineering	03E	Fisheries Ecology	24F
Biological Oceanography	02L	Fisheries Management	02A
	08A	Fluid Mechanics	04A
	10A	Food Science and Nutrition	23C
	18A	Genetics	02D
	18C	Geochemistry	07A
	18D		07C
	18I	Geological Oceanography	06F
	22I	Geology	11C
Biology	05B		11D
	24D		25E
	29F		29C
Biology of Fishes and Invertebrates	21D		29D
Chemical Oceanography	22C	History	02K
Chemistry	03E	Ichthyology	02E
	09D		22A
	29J		22D
Coastal and Wetland Ecology	10C		22L
Coastal Ecology	10B	International Relations	03B
Coastal Physical Oceanography	22F	Invertebrate Biology	11A
	22G		11B
Coastal Resources Management	23D		11E
Comparative Endocrinology	02F	Larval Biology of Marine Invertebrates	03A
Corrosion	05A	Law	02K
County Extension Agent	02O	Limnology	14B
Diseases of Fish	02N		21B
Ecological Parasitology	02G	Marine Biology	02I
Ecology	02H		06H
	02I		08A
	06G		11B
	21C		11E
	21D		11F
Economist	02J		14E
Education Administration	23E		24B
Endocrinology	02M	Marine Chemistry	02C
	25A	Marine Ecology	03D
	25B		24C
Engineering	25E		24G
Environmental Engineering	03E	Marine Fisheries	02A
	25D		07B

Index by Disciplines of Principal Investigators

<i>Discipline</i>	<i>Project #</i>	<i>Discipline</i>	<i>Project #</i>	
Marine Geology	29A	Sea Grant Administration (cont.)	22J	
	29B		22K	
	29E		22N	
	29G	Water Pollution Biology	21A	
	29H	Water Resource Management	14C	
	29I		14D	
	29K	Zoology	08D	
	Marine Materials Science	05A		
	Marine Physical Chemistry	06A		
		06B		
06D				
Marine Phytoplankton	25C			
Marine Policy	29A			
	29B			
	29D			
	29E			
	29G			
	29H			
	29I			
	29K			
	Marine Recreation	22E		
	Marine Science	19A		
Marine Zoology	03A			
Materials Science	05C			
Microbiology	11G			
Ocean Engineering	06E			
Oceanography	11E			
	17A			
	25D			
	23B			
	Physical Oceanography	04A		
	04B			
	18B			
18C				
	18H			
	18J			
	22B			
Physiological Ecology of Seaweeds	18E			
	18F			
	18G			
Physiology	02B			
Phytoplankton	11A			
Phytoplankton Physiology	11B			
Plant Biochemistry	09C			
Plant Cell and Molecular Biology	09A			
	09B			
	09C			
Political Science	03B			
Public Administration	03C			
Resource Development Education	23A			
	23B			
Science Education	19A			
Sea Grant Administration	02J			
	04B			
	22B			
	22F			
	22G			

Index by Name of Principal Investigators

<i>Principal Investigator</i>	<i>Project #</i>	<i>Principal Investigator</i>	<i>Project #</i>
Abel, R.B.	17A	Fenwick, J.	29A
Aelion, G.	23E		29B
Alberte, R.S.	09A		29E
	09B		29G
	09C		29H
Alston, D.E.	22H		29I
	22O		29K
Amaoka, K.	22A	Fortune, B.D.	06C
Amoss, M.	25A	Frank, A.	06I
	25B		06J
Aubrey, D.G.	29D	Friedheim, R.L.	03B
Bakus, G.J.	03D	Fryxell, G.A.	25C
Belknap, D.F.	14C	Fu Yen, T.	03E
	14D	Gao, G.Y.	05A
Beeton, A.M.	14B	Giammona, C.	25D
Bern, H.A.	02F	Giese, G.S.	29C
Bjur, D.	03C	Gloevfelt-Tarp, T.	22L
Boonyaratpalin, S.	02N	Goldberg, W.M.	06H
Brinkhuis, B.H.	18E	Grant, J.	11E
	18F	Grau, E.G.	08B
	18G		08D
	18H	Harger, J.R.E.	08A
Buck, D.H.	09D	Harrington, D.	07B
Burns, K.M.	06C	Hedgecock, D.	02D
	06I	Hedrick, R.P.	02N
	06J	Hemingway, G.T.	02I
Cailliet, G.M.	02E	Hensley, D.A.	22A
Cembella, A.	11A		22D
Chang, E.S.	02M	Hernandez-Avila, M.	22B
Chang, W.Y.B.	14E		22F
Chaparro, R.	22E		22G
Chenoweth, S.	11F		22J
Coleman, D.	09D		22K
Constantinides, S.	23C		22N
Conwell, C.	19A	Hine, A.C.	06F
Corredor, J.	22C	Horrigan, S.	18I
Cortes, R.C.	22P	Horton, H.F.	21C
Cyr, N.	24F	Hubert, S.	09C
Darne, R.	24G	Jehangoer, I.	24C
Davidson, J.R.	08B	Kelley, J.	11C
Day, Jr., J.W.	10B		11D
	10C	Kinnunen, R.E.	14A
Dean, J.M.	24B	Kubaryk, J.	22M
	24C	Kuris, A.M.	02G
	24D	Lankford, R.	22B
	24F		22J
Deweese, C.M.	02A		22K
Dexter, S.C.	05A		22N
	05C	Lin, Y.	08C
Diamond, J.M.	02B	Mahadevan, K.	06J
Diana, J.	21D	Maynard, S.	08A
Duncan, B.	21C	McCreight, D.E.	23A
Edler, L.	11B		23B
El-Sayed, S.Z.	17A	McGinty, A.	22Q
Emlet, R.	03A	McIvor, C.C.	06G
Epifanio, C.E.	05B	McKinney, J.	14C
Faulkner, D.J.	02C		14D

Index by Name of Principal Investigators

<i>Principal Investigator</i>	<i>Project #</i>	<i>Principal Investigator</i>	<i>Project #</i>
McNabb, C.	21D	Wyatt, B.	02O
Mestayer, P.G.	04A	Zafiriou, O.C.	29J
Miller, A.H.	25E	Zedler, J.B.	02H
Millero, F.J.	06A		
	06B		
	06D		
Moll, R.A.	14B		
Monahan, E.C.	04A		
	04B		
Moore, J.R.	25E		
Muller, P.H.	06F		
Nicholson, B.L.	11G		
Nishioka, R.S.	02F		
Ohman, M.D.	02L		
Olsen, S.	23D		
Owens, D.	25A		
	25B		
Peterson, W.T.	18A		
	18C		
Pomeroy, R.	24A		
Popma, T.	21A		
Rabalais, N.N.	10A		
Rao, C.B.	02C		
Ross, D.A.	29A		
	29B		
	29D		
	29E		
	29G		
	29H		
	29I		
	29K		
Saila, S.	23B		
Scheiber, H.N.	02K		
Secor, D.H.	24E		
Seim, W.	21A		
Shapiro, D.	22I		
Shumway, S.E.	11A		
	11B		
	11E		
Siegel, G.B.	03C		
Spence, L.	19A		
Sullivan, J.J.	02J		
Tubb, R.A.	21B		
Turner, R.E.	10A		
Valdes-Pizzini, M.	22E		
van der Kreeke, J.	06E		
Vieira, M.E.C.	18B		
	18H		
	18J		
Wang, D.	18H		
Watabe, N.	24B		
	24D		
White, A.W.	29F		
Wilson, R.E.	18C		
Windom, H.L.	07A		
	07C		
Woodhead, P.M.J.	18D		

Index by Keyword

<i>Keyword</i>	<i>Project #</i>	<i>Keyword</i>	<i>Project #</i>
Air-sea Exchange	04A	Diatoms	25C
	17A	Disease	02N
Anchovy	02D		14A
Antarctic	02L	Drugs	02C
Aquaculture	04B	Earthquake	03C
	08B	Echinoid	03A
	08D	Ecology	02G
	09D		02H
	17A		06G
	21A		10A
	21C		10B
	21D		10C
	22H	Ecosystem	29C
	22O		29D
	22P	Education	05A
	22Q		08A
	24E		08B
Assimilation	09C		14A
Bacteria	18I		14C
Bass	02N		19A
Behavior	22I		21B
Benthic	06G		22B
Benthos	10A		22F
Bioactive Substances	03D		22G
Biodeterioration	05C		22H
Biofouling	03D		24D
Carbon	09C		25D
Carbon Isotope	09D	Engineering	03E
Carbonate	06F	Environment	03E
Caribbean	06J		14D
	22K		29C
	29C		29D
	29D	Estuary	06E
	29H		10A
	29J		11C
Chemistry	03E		14B
	14B		18J
Chromium	06B	Evolution	03A
Circulation	06E	Fault	11D
	17A	Fisheries	06C
	18B		06G
Copepod	02L		14A
	18A		14C
Coral	06H		17A
Coral Reef Fish	22I		21B
Corrosion	05A		22L
	05C		22M
Crab	05B		23B
Database Management	29A		23C
	29B		23E
	29E		24A
	29F		24E
	29G	Fisheries Development	23A
	29H	Fisheries Management	02A
	29I		23A
	29K	Flounder	22D
Decompression	08C	Foodweb	09D

Index by Keyword

<i>Keyword</i>	<i>Project #</i>	<i>Keyword</i>	<i>Project #</i>
Foodweb (cont.)	18A	Nutrient	02B
Genetic	02D		10B
	22I		18I
Global Change	08A		29J
Herring	11F	Nutrient Cycling	24G
History	02K	Nutrition	09C
Hormone	02B	Otoliths	24B
	02M		24C
	08D		24F
Hurricane Impact	29C	Pacific	02K
	29D	Park Management	22J
Hydrography	18B	Phylogenetic	03A
Hydrology	10C	Physical Chemistry	06A
	14B		06B
Ichthyology	02E		06D
	22A	Physical Oceanography	18H
Information	02I		18J
	02J	Physiology	02F
International Cooperation	02I		02M
	22K		09B
	29A		18E
	29B		25A
	29E		09A
	29G	Phytoplankton	10A
	29H	Pollution	11C
	29I		22C
	29K	Pollution Monitoring	07C
International Relations	03B	Prawn	02M
Kelp	18F	Productivity	10B
Lagoon	24C		10C
Lake Management	17A		18C
Larvae	05B		29J
Larval Fish	06I	Public Administration	03C
Law	02K	Recreational Fishing	22E
Law of the Sea	03B	Red Tide	14E
Lipid	02L		29F
Mackerel	06C	Reef	06G
Mangrove	14B		18D
Marine Biology	24D		22I
Marine Policy	03B	Resource Management	14C
	29A		22B
	29B		23C
	29E		23D
	29G		25E
	29H	Salmon	02F
	29I	Salt Marshes	02H
	29K	Sardine	02D
Maritime Boundaries	29I	Scallop	11A
Marketing	02O		11E
Marlin	24C	Seafood	02O
Mining	25E		17A
Mussel	11B	Seagrass	09A
	24G		09B
Natural Resources	02K		10B
	14D	Seaweed	18B
Nitrogen	09C		18E
	18F		18G

Index by Keyword

<i>Keyword</i>	<i>Project #</i>
Sediment	06F
	07A
	07C
Seismic Reflection	11D
Sharks	02E
Shellfish	11E
	11G
Shrimp Fishery	07B
Side Scan Sonar	11D
Sport Fisheries	24F
Stock Assessment	06C
	23B
Stratigraphy	06F
Tarpon	24F
Technology Transfer	02J
	14A
Toxins	11A
	11B
	17A
Trace Elements	07A
Trace Metals	06A
	06D
Training	22M
	22Q
	23E
Trawling	22L
Turtle	07B
Turtles (Sea)	22N
	25A
	25B
Upwelling	18C
Virus	14A
Waste Management	18D
Wastewater Treatment	03E
Wetland	02H
	10C

INTERNATIONAL MARINE SCIENCE COOPERATION PROGRAM WOODS HOLE OCEANOGRAPHIC INSTITUTION

INTERNATIONAL MARINE SCIENCE PROJECTS AT SEA GRANT INSTITUTIONS

1989 QUESTIONNAIRE

⇒ Why this questionnaire?

In 1985 we published International Marine Science Research Projects: Inventory and Analysis of Selected Projects at Sea Grant Institutions (Ross and Fenwick, 1985). The inventory was based on responses to a questionnaire circulated to Sea Grant institutions in late 1984 and resulted in a database on 98 marine research projects with international components.

We are now updating this database. With your cooperation we can expand the database, making it available: 1) to assist other U.S. scientists with similar research interests in specific foreign countries; 2) to improve access for foreign scientists and institutions to U.S. marine scientific research, education, and training opportunities; 3) to assist in the development of multidisciplinary and/or multinational teams; and 4) to document the interest and activity of Sea Grant in international efforts. A report that analyzes your input and compares it in light of the present database will be published with a copy sent to each respondent.

We are distributing this questionnaire to Sea Grant directors and marine advisory leaders at all Sea Grant institutions and to P.I.'s who completed questionnaires in the 1985 survey. If you know of any other appropriate persons who should complete this questionnaire, please provide them with copies to do so. This effort will not be truly successful unless we have input from all the programs. We very much appreciate your time and effort in contributing to this project.

Specifics on what projects qualify for this questionnaire and instructions on completing the questionnaire are given below.

⇒ Project Specifications--International marine projects (scientific, advisory, or educational) include:

- 1) Projects where the Principal Investigator or a project staff member worked in a foreign country (land-based or research vessel-based in foreign waters);
- 2) Projects on which foreign scientists collaborated; on which foreign scientists worked with a P.I. at the P.I.'s home institution or were sponsored to work in the U.S. by P.I.'s project funding;
- 3) Projects which were funded in whole or in part by foreign sources.

Projects need not have Sea Grant funding to be included; but, as before we have directed this questionnaire to Sea Grant institutions because they represent a broad geographic network of colleges and universities with interests in marine science.

Projects should be current, recent (within the past five years), or proposed. There are no limits as to dollar amounts or time involved in reported projects, since relatively low-cost activities can often yield significant returns.

⇒ Instructions-- Principal Investigators and Marine Advisory Leaders: Please complete one questionnaire for each recent (within the past five years), current, or proposed international marine science project which has been initiated at your institution and/or for which you have been a P.I. If you completed questionnaires in 1985, a printout is enclosed showing your 1985 listing(s).

Sea Grant Directors: Please distribute questionnaires to appropriate P.I.'s. If a P.I. is unavailable or unable to complete a questionnaire, please complete for international projects of which you are aware. If you had no international projects at your institution, please let us know. The enclosed printout shows those individuals at your institution to whom we have also sent questionnaires.

If you have any questions, please call David A. Ross or Judith Fenwick at 508 / 548-1400, X-2520.

✉ Return completed questionnaires as soon as possible to:

International Marine Science Cooperation Program
Woods Hole Oceanographic Institution
Swift House
Woods Hole, MA 02543

INTERNATIONAL MARINE SCIENCE PROJECTS AT SEA GRANT INSTITUTIONS

1989 QUESTIONNAIRE

[one project per questionnaire, please]

1. **NAME(s) OF PRINCIPAL INVESTIGATOR(s)**
 - A.
 - B.
2. **ADDRESS including INSTITUTION / AFFILIATION NAME (and department if applicable)**
 - A.
 - B.
3. **DISCIPLINE OF PRINCIPAL INVESTIGATOR(s)**
 - A.
 - B.
4. **INTERNATIONAL PROJECT TITLE**
5. **DATES OF PROJECT: Starting Date --**
Completion Date --
6. **DESCRIPTION OF PROJECT (limit of 50 words)**
7. **FOREIGN LOCATION(s) OF PROJECT**
8. **INVOLVEMENT OF U.S. GOVERNMENT AGENCIES**
 - A. Was there any U.S. government involvement?
 - B. If so, which agencies, departments, or offices? Please be specific.
 - C. How did they assist?
 - D. Any complications or special requests from the government?
9. **INVOLVEMENT OF OTHER U.S. INSTITUTIONS (ACADEMIC OR INDUSTRY)**
 - A. Which institutions?
 - B. Any complications or special requests from other U.S. institutions?

10. INVOLVEMENT WITH FOREIGN GOVERNMENT AGENCIES OR DEPARTMENTS

- A. Which foreign agencies or departments? Please be specific.
- B. Any complications or special requests from foreign agencies?

11. INVOLVEMENT WITH FOREIGN SCIENTISTS AND/OR INSTITUTIONS (ACADEMIC OR INDUSTRY)

- A. Which foreign institutions?
- B. Names of scientists and affiliations:
- C. Any complications or special requests from foreign institutions or scientists?

12. SOURCE(S) OF SUPPORT AND FUNDING FOR THE PROJECT

13. PROJECT ASSESSMENT (for those projects which have been completed)

- A. Did the project meet your expectations? Did you have to change any facet of the project because of international complications?
- B. Do you have any suggestions for individuals who may wish to deal with the country or countries of this project?

14. SKILLS ROSTER [Please list particular skills of each P.I. that would be useful in consulting or collaborating on international projects]

15. PREPARER OF THIS QUESTIONNAIRE IF OTHER THAN PRINCIPAL INVESTIGATOR (include address)

If you have any questions, call David A. Ross or Judith Fenwick at 508 / 548-1400, X-2520.

 Return completed questionnaires as soon as possible to:

International Marine Science Cooperation Program
Woods Hole Oceanographic Institution, Swift House
Woods Hole, MA 02543

Instructions-- Principal Investigators and Marine Advisory Leaders: Please complete one questionnaire for each recent (within the past five years), current, or proposed international marine science project which has been initiated at your institution and/or for which you have been a P.I. If you completed questionnaires in 1985, a printout is enclosed showing your 1985 listings.
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16. Abstract (Limit: 200 words) This inventory of marine science projects at Sea Grant institutions was completed in order to gauge the level and enhance a database of U.S./foreign collaboration in international marine research initiated at U.S. Sea Grant institutions. The inventory was done by the International Marine Science Cooperation Program at the Woods Hole Oceanographic Institution's Sea Grant Office. The first inventory of projects with international components at Sea Grant institutions was done in 1984-85 by the International Program. This second inventory continues in the tradition of the first to "take the pulse" of international interest at Sea Grant institutions. The pulse is very active despite the lack of direct funding accorded the formal Sea Grant International Program at the national level. Of the 122 projects at Sea Grant institutions, however, only 29 were directly funded in part or entirely by Sea Grant. The inventory analyzes data from 122 international projects initiated at 20 Sea Grant institutions by profiling and explicating the extent of project foreign locations, sources of funding, areas of expertise for principal investigators, and contacts at foreign and U.S. agencies and institutions. It presents one-page summaries of the 122 projects along with indexes by geographic location, funding source, PI discipline, PI name, and keywords. In addition, this report compares the data from the 1989-90 inventory with that of the 1985 inventory.			
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