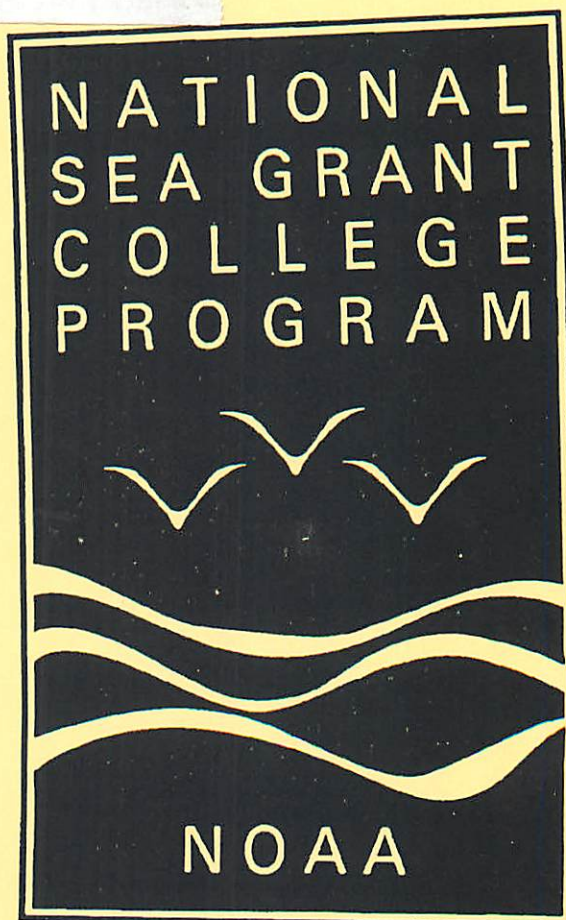


Projects '92



U. S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
February 1993

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I ntroduction

Projects '92 lists, by subject area, all projects supported by the National Sea Grant College Program during Fiscal Year 1992 (October 1, 1991–September 30, 1992). Information provided with each project includes the title, investigator, program affiliation, and the amount of federal, matching and pass through funds. The Sea Grant identification number (SID) is provided to facilitate project retrieval.

Projects frequently overlap subject areas. Thus, projects listed under one subject may also appear under another. Because of this situation, the sum of individual subject-area lists exceeds the total funds appropriated to Sea Grant during Fiscal Year 1992. The actual number of projects supported was 775, and these were pursued at approximately 130 academic and research institutions. Almost all of these projects were conducted through the network of 29 Sea Grant programs, whose directors are listed on the following pages.

The Sea Grant Directors shape programs to exploit the strengths of participating institutions, to focus on regional and national issues, and to address priorities set for research, education and training, and advisory services by the National Sea Grant Office. Decentralized, day-to-day management results in effective cooperation in marine affairs among academic institutions and federal, state, and local governments. The research programs, while normally dealing with local, state, or regional topics, produce results of generic importance that advance science, solve problems, and exploit opportunities for the wise use and development of the nation's marine and coastal resources. Peer review is used to select projects and reconcile proposals with budgets. Successful proposals often have an applied focus even if application relates to the very long term. The combination of research, education, and advisory services in a single program makes technology transfer more effective. Sea Grant encourages researchers, educators, and advisory personnel to work across institutional and program lines, and such cooperation and collaboration have proven successful.

Sea Grant Program Directors

***ALASKA**

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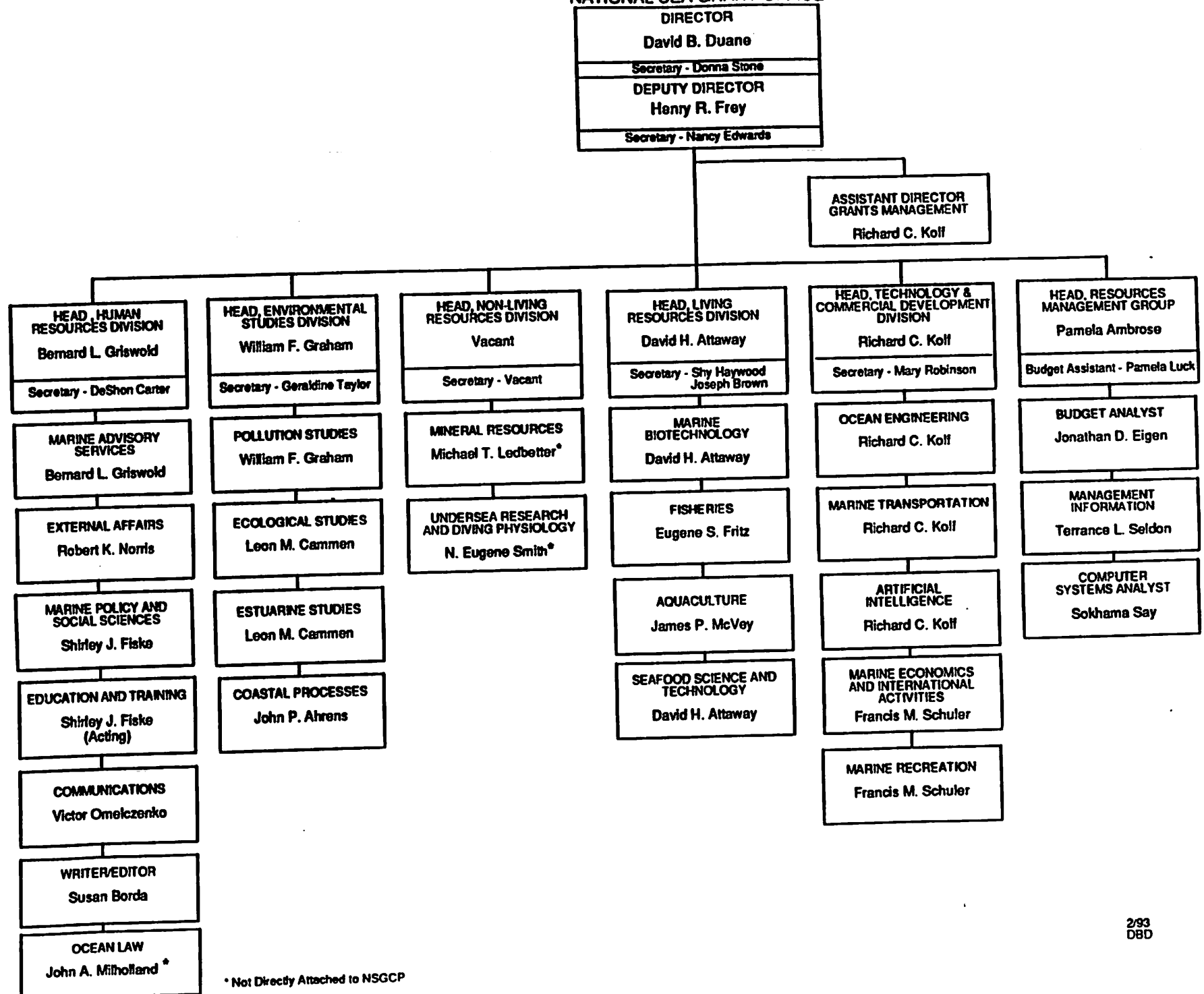
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* Sea Grant College (Total 26)
(ME/NH=1)

+ Institutional Program (3)

NATIONAL SEA GRANT OFFICE



* Not Directly Attached to NSGCP

Sea Grant Technical Staff

Following is a listing of Sea Grant's technical staff, their subject area(s), and their phone numbers. They can be reached at the following address:

**National Oceanic and Atmospheric Administration
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1335 East-West Highway
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Living Resources301/713-2451

Seafood Science and Technology - Dr. David H. Attaway
Marine Biotechnology - Dr. David H. Attaway
Fisheries - Dr. Eugene S. Fritz
Aquaculture - Dr. James P. McVey

Human Resources.....301/713-2431

Marine Advisory Extension Services - Dr. Bernard L. Griswold
Education and Training - Dr. Shirley J. Fiske
Social Science and Marine Policy - Dr. Shirley J. Fiske
Communications - Mr. Victor Omelczenko
Ocean Law - Mr. John A. Milholland

Technology and Commercial Development.....301/713-2445

Ocean Engineering & Marine & Coastal Transportation Systems - Dr. Richard C. Kolf
Marine Resource Economics - Dr. Francis M. Schuler
Marine Recreation - Dr. Francis M. Schuler
International Activities - Dr. Francis M. Schuler

Environmental Studies.....301/713-2435

Coastal Processes - Mr. John P. Ahrens
Environmental Studies - Dr. William F. Graham
Dr. Leon M. Cammen

Non-Living Resources301/713-2713

Marine Geological Resources - Dr. Michael T. Ledbetter
Diving Physiology & Technical Development - Mr. N. Eugene Smith

Living Resources

Following is a listing of Sea Grant's Living Resources Division technical staff, their subject area(s), and their phone number.

They can be reached at the following address:

**National Oceanic and Atmospheric Administration
National Sea Grant College Program
1335 East-West Highway
SSMC1, 5th Floor
Silver Spring, MD 20910**

Living Resources.....301/713-2451

Aquaculture - Dr. James P. McVey

Fisheries - Dr. Eugene S. Fritz

Seafood Science and Technology - Dr. David H. Attaway

Marine Biotechnology - Dr. David H. Attaway

Aquaculture

1. Aquaculture Systems and Engineering

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Attaining Suitable Water Supplies for Salmon Hatcheries Johnson, Ronald A. Alaska Sea Grant College Program SID# 189	48,297	0	0
Development and Characterization of a High Rate Biofilter for Recirculating Aquaculture Systems Piedrahita, Raul H. California Sea Grant College Program SID# 690	16,997	11,204	0
Preliminary Evaluation of a full-scale Computer Automated Microalgae System and a Recirculation System in a Greenhouse Bivalve Hatchery Heffernan, Peter B. Georgia Sea Grant College Program SID# 830	52,032	0	0
Aquaculture of the Surf Clam in the Coastal Waters of the Southeastern United States Walker, Randal L. Georgia Sea Grant College Program SID# 832	72,176	20,583	0
Industrial Microbiology of Blue-Green Algae (Cyanobacteria) Patterson, Gregory M Univ of Hawaii Sea Grant College Program SID# 596	29,070	60,447	0

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Fluorescent Age Pigment Quantification as a Novel Method for Age Determination for Commercially Important Crustacean Species Womersley, Christoph Univ of Hawaii Sea Grant College Program SID# 588	20,577	15,693	0
Survival of Farm-Raised Alligators for Wild Brood Stock Maintenance Chabreck, Robert Louisiana Sea Grant College Program SID# 856	25,530	17,902	0
Hatchery Production and Remote Setting of Oyster Larvae Crassostrea virginica (Gmelin) in Louisiana Supan, John Louisiana Sea Grant College Program SID# 847	29,243	12,972	0
The Effect of Salmon Net-pen Aquaculture on the benthic microfauna and macrofauna of coastal Maine waters Findlay, R. H. UM/UNH Sea Grant College Program SID# 1	43,814	43,611	0
Development of Advanced Technology for Micropropagation of Seagrasses for Coastal Habitat Restoration Bird, K. University of North Carolina SID# 985	9,591	12,390	0
Micropropagation and Aquaculture of Zostera Marina and Spartina Alterniflora Bird, K. University of North Carolina SID# 332	0	0	33,333

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Bioreactor Studies of Marine Plant Cells in Liquid Culture for Production of Valued Natural Products Rorrer, Gregory L. Oregon Sea Grant College Program SID# 429	37,500	21,300	0
Thermal Refuge to Protect Overwintering Red Drum from Cold-kill in Aquaculture Ponds Neill, William H. Texas A&M University Sea Grant College Program SID# 536	32,284	25,996	0
Microcomputer-Based Automation and Expert System Development of Aquaculture Lee, Phillip G. Texas A&M University Sea Grant College Program SID# 550	61,325	36,017	0
The Design of a Multi-Species Aquaculture Demonstration Facility in New Jersey Buckley, Earle N. Natl Coastal Res Research and Devel Institute SID# 1109	0	0	110,000
Native Shrimp Hatchery Miget, Russ Texas A&M University Sea Grant Program SID# 9219	6,000	4,000	0
Evaluation of Commercial Feeds and a High Density Closed System for the Production of <i>Penaeus setiferus</i> Davis, D. Allen SID# 9213	10,000	0	0
SUBTOTAL:	494,436	282,115	143,333

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
2. Genetics and Selective Breeding			
Genetic Engineering of Fast Growing Strains of Abalone Powers, Dennis A. California Sea Grant College Program SID# 794	54,618	30,692	0
Improved Genotypes of Submerged and Emergent Halophytes for Crops and Restoration Ecology through Somaclonal Variation, Transformation, and Protoplast Fusion Gallagher, John L. Delaware Sea Grant College Program SID# 169	18,096	77,570	0
Development of a Heritable Genetic "Tag" for Estimating Survivorship of Released Hatchery Fishes over Several Generations Wilson, R. R. Florida Sea Grant College Program SID# 85	38,712	19,356	0
The Interaction Between Genetic Selection for Adult Growth Rate and the Subsequent Impacts on Embryonic and Larval Performance - Efforts to Maximize Hatchery Production from Selected Hard Clam Lines Heffernan, Peter B. Georgia Sea Grant College Program SID# 831	132,989	29,485	0
Genetic Engineering of Secondary Metabolite Biosynthetic Pathways in Cyanobacteria Bylina, Edward J. Univ of Hawaii Sea Grant College Program SID# 595	34,688	25,130	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Genetic Tagging of Pacific Mahimahi: an Example of Non-Destructive Biotechnology Cann, Rebecca L. Univ of Hawaii Sea Grant College Program SID# 223	9,700	12,761	0
Reproduction in Marine Shrimp: Gamete Manipulation and In Vitro Cross Fertilization Lynn, John W. Louisiana Sea Grant College Program SID# 1024	31,325	17,258	0
Analysis of Mating Systems in Penaeid Shrimps: Identification of Key Factors Controlling Pairing and Sperm Transfer Bauer, Raymond T. Louisiana Sea Grant College Program SID# 1025	31,042	38,055	0
Aquaculture Applications of Biochemical Genetics to the Economic Kelps, Laminaria Saccharina and Laminaria Longicruris Mathieson, Arthur C. UM/UNH Sea Grant College Program SID# 5	41,999	18,718	0
Development of Genetic Engineering Techniques with Economically Important Marine Algae Minocha, Subhas C. UM/UNH Sea Grant College Program SID# 395	57,000	23,139	0
Development of Expression Vectors for Gene Transfer into Fish Hackett, Perry B. Minnesota Sea Grant College Program SID# 105	23,009	2,500	0

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Production of Sterile and Unisexual Populations of Salmonids for Aquaculture Schreck, Carl B. Oregon Sea Grant College Program SID# 318	31,800	11,500	0
Improvement of Hybrid Striped Bass Aquaculture Through Development of Cultured Broodstock and Improved Spawning Techniques Smith, T.I.J. South Carolina Sea Grant Consortium SID# 1049	77,779	44,610	0
Molecular Genetics of the Hard Clam Mercenaria and Other Aquacultured Bivalves Hilbish, Thomas J. South Carolina Sea Grant Consortium SID# 268	66,583	33,292	0
Genetics of Resistance to Bacterial Kidney Disease in Chinook Salmon Hershberger, W. K. Washington Sea Grant College Program SID# 143	44,900	11,077	0
Transcriptional Gene Regulation in Marine Algae Cattolico, Rose Ann Washington Sea Grant College Program SID# 159	101,400	59,140	0
DNA Fingerprints as Genetic Markers in Salmon Thorgaard, Gary H. Washington Sea Grant College Program SID# 158	42,100	9,451	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Production of Interspecific, Chimeric Salmonids Cloud Washington Sea Grant College Program SID# 1079	52,600	27,418	0
Aquaculture Potential of Sterile Triploid Trout X Salmon Hybrids Thorgaard, Gary H. Washington Sea Grant College Program SID# 147	36,800	28,451	0
Control of Growth, Sex and Reproduction in Great Lakes Cool-Water Fishes by Genetic and Endocrine Manipulation Malison, Jeffrey A. Wisconsin Sea Grant College Program SID# 272	78,660	44,581	0
Genetic Substructuring of the Eastern Oyster, Crassostrea virginica, in Texas DiMichele, Leonard SID# 9214	12,741	14,520	0
SUBTOTAL:	1,018,541	578,704	0
3. Physiology and Endocrinology			
Environmental Effect on the Ovarian Development in Captive Sturgeon Broodstock Doroshov, Serge I. California Sea Grant College Program SID# 509	2,352	4,516	0
Development of Technologies for Long-Term Storage and Genetic Manipulation of Penaeoidean Eggs Wallis, Clark H. California Sea Grant College Program SID# 512	101,450	65,367	0

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Stimulation of Growth Hormone Gene Expression in Abalone: Applications for Acceleration of Growth and Improvement of Food-Conversion Efficiency and Resistance Morse, Daniel E. California Sea Grant College Program SID# 684	71,343	39,716	0
Hormone Stimulation of Sturgeon Female Reproduction Maturation Moberg, Gary P. California Sea Grant College Program SID# 682	51,091	64,746	0
Hormonal Regulation of Crustacean Growth and Reproduction Chang, Ernest S. California Sea Grant College Program SID# 511	67,910	48,408	0
Control of Growth and Survival in the Striped Bass Bern, Howard California Sea Grant College Program SID# 685	77,962	52,614	0
Endocrine Control of Crustacean Reproduction With Some Emphasis on Shrimp Resources Laufer, H. Connecticut Sea Grant College Program SID# 179	62,400	40,959	0
Hormonal Regulation of Reproduction in Male Morphotypes of Spider Crab Resources Laufer, H. Connecticut Sea Grant College Program SID# 817	32,678	47,959	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Enzyme Activities as Biochemical Indices of Condition in Larval and Juvenile Red Drum Clarke, M. E. Florida Sea Grant College Program SID# 824	49,759	24,929	0
Regulation of Yolk Production in a Marine Shrimp, <i>Penaeus vannamei</i> Quackenbush, L. S. Florida Sea Grant College Program SID# 83	48,394	24,197	0
Endocrine Manipulation of Fish Growth and Development in the United States and China Grau, Gordon E. Univ of Hawaii Sea Grant College Program SID# 581	17,275	5,000	0
Effect of Temperature, Maternal Nutrition, and Feeding on Survival of Larval Mahimahi, <i>Coryphaena hippurus</i> Kraul, Sydney A. Jr. Univ of Hawaii Sea Grant College Program SID# 583	14,042	54,661	0
Non-Invasive Hormone Treatments for Promotion of Larval Growth and Survival Brown, Christopher L Univ of Hawaii Sea Grant College Program SID# 582	36,836	55,129	0
Endocrine regulation of crustacean growth Borst, David W. Illinois-Indiana Sea Grant College Program SID# 657	41,044	35,674	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Stimulation of Growth Hormones and Growth Factor Gene Expression in Shellfish: Effects of Growth Hormones on Larval, Juvenile, and Adult Life Stages of Eastern Oyster, <i>Crassostrea virginica</i> Chen, Thomas Maryland Sea Grant College Program SID# 884	79,890	34,128	0
Basic and Applied Studies on Gonadotropin Releasing Hormone Induction of Sperm Production, Ovulation and Spawning in Morone Species Zohar, Yonathan Maryland Sea Grant College Program SID# 885	71,000	28,971	0
The Use of Ultrasound to Effect the Administration of Chemical Compounds into Fish Langer, R. Massachusetts Institute of Technology SID# 900	75,000	42,119	0
Evaluation of Biochemical Indicators of Growth in Crustaceans Wang, Shiao Y. Mississippi-Alabama Sea Grant Consortium SID# 940	34,956	42,931	0
Controlled Reproduction and Reproductive Physiology of Striped Bass Sullivan, C. V. University of North Carolina SID# 972	82,581	0	0
Isolation and Characterization of the Interferon Genes of Rainbow Trout II. Expression and Biological Activity Leong, Jo-Ann C. Oregon Sea Grant College Program SID# 435	74,500	25,000	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Atlantic Salmon: Manipulation of Readiness for Sea Cage Culture Specker, Jennifer Rhode Island Sea Grant College Program SID# 603	94,959	27,556	0
Influence of Temperature on Survival During the Critical Period of Larval Development in Winter Flounder Durbin, Ann Rhode Island Sea Grant College Program SID# 686	0	0	0
Neuroendocrine Control of Reproduction in Penaeid Shrimp Keeley, L. L. Texas A&M University Sea Grant College Program SID# 702	73,731	40,639	0
Physiology of Gonadotropins and Prolactin in Atlantic Croaker, Red Drum and Spotted Seatrout Thomas, Peter Texas A&M University Sea Grant College Program SID# 705	52,022	27,565	0
Field and Laboratory Evaluation of Endocrine Indices of Reproductive Dysfunction in Atlantic Croaker Thomas, Peter Texas A&M University Sea Grant College Program SID# 489	0	12,719	68,993
SUBTOTAL:	1,313,175	845,503	68,993
4. Nutrition			
Lipid and Fatty Acid Requirements of Marine Shrimp, <i>Penaeus vannamei</i> Brown, Christopher L Univ of Hawaii Sea Grant College Program SID# 580	16,013	62,302	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Feeds Technology Research (Phase 3): Sensory, Hormonal and Nutritional Aspects Grau, Gordon E. Univ of Hawaii Sea Grant College Program SID# 222	54,258	108,196	0
Nutritional and Ecological Importance of Protozoans in the Diet of First-Feeding Winter Flounder Larvae, <i>Pseudopleuronectes americanus</i> Gallager, Scott M. Woods Hole Oceanographic Institution SID# 260	29,835	28,381	0
Role of Microbial Ecology in Larval Fish Nutrition Holt, Joan G. Texas A&M University Sea Grant College Program SID# 534	35,280	18,750	0
Nutritional Requirements and Microencapsulated Diets for Hybrid Striped Bass Larvae Chu, Fu-Lin Virginia Graduate Marine Science Consortium SID# 1071	24,675	29,883	0
Larval Fish Micro-diet Development and Nutrition Stickney, R. R. Washington Sea Grant College Program SID# 144	50,000	26,954	0
Development of a Novel, Low-cost Diet for Larval Fish and Crustaceans Buddington, Randal K SID# 9208	23,922	12,813	0
The Role of Vitamin C in Performance and Stress of Salmonid Stocking Material Dabrowski, Konrad SID# 9209	2,800	46,412	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Lipid Nutrition of Red Drum: Effects on Cold Tolerance and Body Composition Gatlin, Delbert M. I SID# 9215	10,150	14,040	0
SUBTOTAL:	246,933	347,731	0
5. Disease/Parasites			
Control of White Sturgeon Indovirus Hedrick, Ronald P. California Sea Grant College Program SID# 795	32,799	15,799	0
Abalone Wasting Disease: Role of Coccidian Parasites and Environmental Factors German, Bruce J. California Sea Grant College Program SID# 540	2,171	1,514	0
Evaluation of a Solid-Phase Enzyme-Immunoassay Procedure for the Detection of Infectious Hypodermal and Hematopoietic Necrosis Virus (IHHNV) Infection and the Growth of the Virus in Cell Cultures Loh, Philip C. Univ of Hawaii Sea Grant College Program SID# 193	31,608	64,086	0
Use of Anti-Idiotypic Antibodies as Potential Vaccines, Diagnostic Reagents and Research Probes for Aquatic Birnaviruses Nicholson, Bruce L. UM/UNH Sea Grant College Program SID# 34	44,736	73,520	0

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Etiology and Treatment of Shell Disease in Miane Bayer, Robert C. UM/UNH Sea Grant College Program SID# 874	28,024	11,683	0
Development of Gene Probe Assays for the Detection of Microbial Pathogens Margolin, Aaron B. UM/UNH Sea Grant College Program SID# 33	50,000	7,519	0
Comparative Studies of Macrophage Function: Bivalve Hemocyte Chemiluminescence Anderson, R. S. Maryland Sea Grant College Program SID# 728	0	0	34,966
Molecular Recognition in Host-Parasite/Bacterial Pathogen Interactions for Two Invertebrate Models: Crassostrea virginica vs. Perkinsus marinus and Callinectes sapidus vs. Vibrio parahaemolyticus Vasta, Gerardo R. Maryland Sea Grant College Program SID# 883	60,000	24,529	0
Fluoroquinolone Treatment of Bacterial Diseases of Salmonids Bowser, Paul R. New York Sea Grant Institute SID# 97	59,840	47,356	0
Identification and Isolation of Immune Factors in Fish for Protection against Infections in Aquaculture Facilities Noga, E. J. University of North Carolina SID# 973	0	38,221	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Development of Therapeutics for Stress-related Immune Dysfunction in Intensive Aquaculture Kaattari, Stephen L. Oregon Sea Grant College Program SID# 319	37,700	86,600	0
Virulence Factors of Fish Pathogens Rohovec, John S. Oregon Sea Grant College Program SID# 436	95,900	186,500	0
Molecular Characterization of Marine Algae and Their Viral Pathogens Meints, Russel H. Oregon Sea Grant College Program SID# 437	24,900	7,400	0
Rapid Investigation of Imported and Domestic Shrimp Davis, Scott K. Texas A&M University Sea Grant College Program SID# 551	29,976	17,805	0
Rejuvenation of the Chesapeake Bay Oyster Industry: Development of Disease-Resistant Crassostrea virginica and Assessment of Disease Resistance in Crassostrea gigas Burreson, Eugene Virginia Graduate Marine Science Consortium SID# 203	65,000	33,399	0
Workshops on Harmful Algal Blooms Banse, Karl Washington Sea Grant College Program SID# 1078	0	0	17,053

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Differentiation of <i>Vibrio anguillarum</i> , a Marine Fish pathogen, to a starvation-stress resistant form Nelson, David R. SID# 9226	9,301	0	0
SUBTOTAL:	571,955	615,931	52,019
6. Policy Economics			
An Economic Analysis of World Markets for Wild and Farmed Salmon Herrmann, Mark L. Alaska Sea Grant College Program SID# 787	36,278	16,428	0
Economic Analysis of Hard Clam Aquaculture Systems Under Price and Yield Risk Thunberg, E. M. Florida Sea Grant College Program SID# 90	22,871	11,776	0
Co-sponsorship of the Conference on "Introductions and Transfers of Marine Species: Achieving a Balance Between Economic Development and Resource Protection" DeVoe, Richard M. South Carolina Sea Grant Consortium SID# 1045	0	0	5,000
Aquaculture Regulation Guidebook Rubino, Michael C. Bluewaters International Inc SID# 1108	5,000	2,500	0
Evaluation of the Environmental and Public Health Impacts of Salmon Net Pen Culture Hershberger, W.K. SID# 9220	25,085	12,740	0
SUBTOTAL:	89,234	43,444	5,000

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
7. Other			
Controlled Culture of a New Marine Model, the Sea Anemone <i>Nematostella vectensis</i> Hand, Cadet California Sea Grant College Program SID# 515	395	1,042	0
Investigate Eelgrass-blue Mussel Interactions for their Application to the Aquaculture Industry Short, F. T. UM/UNH Sea Grant College Program SID# 487	38,982	13,077	0
The Influence of Eelgrass Cover on Growth and Survival of Post-Settlement Bay Scallops, with a View Towards Optimizing Scallop Transplants Bricelj, Monica V. New York Sea Grant Institute SID# 517	33,699	28,310	0
Noxious Phytoplankton Blooms and Marine Salmon Culture in Puget Sound Banse, Karl Washington Sea Grant College Program SID# 59	66,000	33,082	0
An Individual-based Approach to the Survival of Larval and Juvenile Fish: Modeling and Experiments Binkowski, Fred P. Wisconsin Sea Grant College Program SID# 1091	73,375	39,293	0
SUBTOTAL:	212,451	114,804	0
TOTAL:	3,946,725	2,828,232	269,345

Fisheries

A. Improve the Capability for Predicting Yields, Age-Class Strength and Long-Term Population Status

1. Improve Predictive Capability of Single Species and Multispecies Models:

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Modeling Long-Term Changes in Multispecies Fisheries Collie, Jeremy S. Alaska Sea Grant College Program SID# 781	19,635	15,585	0
Northern California Red Sea Urchin Fishery Botsford, Louis W. California Sea Grant College Program SID# 518	3,423	2,703	0
Influence of Compensatory Mechanisms in Lake Trout Population Dynamics Taylor, William W. Michigan Sea Grant College Program SID# 353	34,554	15,197	0
Individual-Based Population Modeling of Atlantic Menhaden Crowder, L. B. University of North Carolina SID# 628	0	0	55,000
An Individual-based Approach to the Survival of Larval and Juvenile Fish: Modeling and Experiments Binkowski, Fred P. Wisconsin Sea Grant College Program SID# 1091	73,375	39,293	0
SUBTOTAL:	130,987	72,778	55,000

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
2. Determine the Developmental Stage of Fish and Shellfish at Which Year Class Strength is established:			
Otolith Technique for Tracing Geographic Life History of Pollock Norcross, Brenda Alaska Sea Grant College Program SID# 681	0	0	9,948
Temporal Aspects of Recruitment and Spawning of the Gag Grouper in the Gulf of Mexico Travis, J. Florida Sea Grant College Program SID# 84	48,517	24,500	0
Estimating Year Class Strength at Inlets to Pamlico Sound Miller, J. M. University of North Carolina SID# 617	0	0	95,000
SUBTOTAL:	48,517	24,500	104,948
3. Determine the Physical, Chemical, and Biological Factors most Important to Recruitment:			
Cooperative Fisheries and Oceanographic Studies (CFOS) Cooney, Robert T. Alaska Sea Grant College Program SID# 178	69,963	28,413	0
Zooplankton Abundance and Effects of Prey Variation on Walleye Pollock Larvae in the Bering Sea Paul, A. J. Alaska Sea Grant College Program SID# 679	0	0	47,472

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Analysis of Time Series of Fisheries and Oceanographic Variables Quinn, T. J. II Alaska Sea Grant College Program SID# 782	0	0	28,000
The Importance of Transport Processes in Recruitment of Rockfishes (Genus Sebastes) to Nearshore Areas of Monterey Bay, California Loeb, Valerie J. California Sea Grant College Program SID# 687	27,449	107,749	0
Variation in Coastal Pelagic Fish Populations Over the Past Millennium as a Response to Global Climate Change and Biological Interaction Baumgartner, Tim California Sea Grant College Program SID# 688	2,925	3,224	0
Natural Time Scales of Variability in Coastal Pelagic Fish Populations of the California Current Over the Past 1500 Years: Response to Global Climate Change and Biological Interaction Baumgartner, Tim California Sea Grant College Program SID# 796	64,150	42,624	0
Mathematic Model of Larval Transport and Recruitment Epifanio, Charles E. Delaware Sea Grant College Program SID# 71	16,536	64,016	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
The Effect of Prey Limitation on Growth and Survival of Early Juvenile Summer Flounder (<i>Paralichthys dentatus</i>): Interaction with Temperature and Latitude Targett, Timothy E. Delaware Sea Grant College Program SID# 173	7,240	42,455	0
Physiological Condition and Potential Survival of Larvae During Cross-Shelf Transport Clarke, M. E. Florida Sea Grant College Program SID# 829	0	0	25,516
Physical Oceanography and Modeling Lee, Thomas N. Florida Sea Grant College Program SID# 408	0	0	35,000
Enzyme Activities as Biochemical Indices of Condition in Larval and Juvenile Red Drum Clarke, M. E. Florida Sea Grant College Program SID# 824	49,759	24,929	0
SABRE: Physical Oceanography and Modelling Blanton, Jackson O. Georgia Sea Grant College Program SID# 357	0	49,138	75,000
Mechanisms of Transport of Decapod Crustaceans through Estuarine Inlets Blanton, Jackson O. Georgia Sea Grant College Program SID# 834	145,424	99,830	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Recruitment, Abundance, and Growth of Postlarval and Juvenile Blue Crabs in a Southeastern Coastal Estuary Wiegert, Richard G. Georgia Sea Grant College Program SID# 836	58,920	28,743	0
Fine-Scale Assessment and Modeling of Crab Recruitment in A Coastal Bay Ecosystem: The Role of Winds and Current Transport Power, James Louisiana Sea Grant College Program SID# 857	56,675	38,494	0
Vertical Distributions of Larval Lobsters: Offshore vs. Inshore patterns Incze, Lewis S. UM/UNH Sea Grant College Program SID# 28	17,893	0	0
Modelling the Upper Ocean Production Dynamics of Plankton and Larval Pollock in the Bering Sea Bollens, Stephen M. Woods Hole Oceanographic Institution SID# 663	0	0	68,226
Nutritional and Ecological Importance of Protozoans in the Diet of First-Feeding Winter Flounder Larvae, <i>Pseudopleuronectes americanus</i> Gallager, Scott M. Woods Hole Oceanographic Institution SID# 260	29,835	28,381	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Year Class Strength of Rainbow Smelt and Lake Whitefish as Influenced by Interspecific Interactions and Climate Taylor, William W. Michigan Sea Grant College Program SID# 930	54,878	37,645	0
Alewife Survival Rates and Recruitment Under Low Population Levels in Lake Michigan Jude, David Michigan Sea Grant College Program SID# 604	41,160	5,827	0
Cross-Shelf Transport Mechanisms Regulating Larval Dispersal and Settlement of Blue Crabs Morgan, Steven G. New York Sea Grant Institute SID# 964	44,024	41,748	0
Cross-Shelf Transport of Larval Fish Cowen, Robert K. New York Sea Grant Institute SID# 963	61,560	37,668	0
Age and Elemental Analysis of Atlantic Menhaden Otoliths: Validation and Field Application Rice, J. A. University of North Carolina SID# 622	0	0	105,000
Salmonid Fishery Oceanography of the Northeast Pacific Ocean Percy, William G. Oregon Sea Grant College Program SID# 440	26,500	17,600	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Recruitment Dynamics of Juvenile Dover Sole on an Outer Continental Shelf Nursery Ground Markle, Douglas F. Oregon Sea Grant College Program SID# 438	71,200	30,300	0
Mechanisms of Transport of Decapod Crustaceans Through Estuarine Inlets Barans, Charles A. South Carolina Sea Grant Consortium SID# 1050	57,731	26,534	21,500
Juvenile and Adult Fishes as Predators on Red Drum Larvae in Texas Bays Fuiman, Lee Texas A&M University Sea Grant College Program SID# 542	39,590	22,897	0
Blue Crab Megalopae Recruitment: Role of Fronts and Mesoscale Physics on Aggregation and Transport into the Estuary McConaughy, John R. Virginia Graduate Marine Science Consortium SID# 207	92,072	46,527	0
Recruitment Dynamics of the Blue Crab: Patterns, Processes and Fisheries Applications Van Montfrans, Jacques Virginia Graduate Marine Science Consortium SID# 205	96,533	93,894	0
Salmonid Fisheries Oceanography of the Northeast Pacific Ocean Francis, Robert C. Washington Sea Grant College Program SID# 162	83,000	51,416	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Growth, Transport, and Mortality Studies of Larval Walleye Pollock Francis, Robert C. Washington Sea Grant College Program SID# 1081	0	0	39,933
SUBTOTAL:	1,215,017	970,052	445,647
4. Develop Cost Effective Techniques for Assessing Stock Size and Distribution:			
Acoustic Sensing of Pelagic Fish Stocks Jaffe, Jules S. California Sea Grant College Program SID# 691	71,590	2,080	0
Paralabrax as a Model for Predicting Effects of Ocean Warming Rosenblatt, Richard California Sea Grant College Program SID# 549	24,728	24,018	0
Remote Sensing of Pelagic Fish Eggs Checkley California Sea Grant College Program SID# 790	0	3,676	55,000
Interactive Acoustic Data Display and Statistical Analysis Swartzman, G. L. Washington Sea Grant College Program SID# 267	73,700	30,442	0
SUBTOTAL:	170,018	60,216	55,000
TOTAL	1,564,539	1,127,546	660,595

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
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**B. Determine the Relationships of Habitat to Fisheries Production
and the Means of Managing Habitats for Multiple Users**

**1. To Determine the Environmental Characteristics of Primary
and Secondary Nursery Areas and Explain Why Some Areas are
More Productive Than Other Similar Areas:**

Inlets and Estuaries

The Biological Environment of Estuarine Nurseries: Resource Availability and the Effects of Resident Species on the Growth and Survival of Juvenile Penaeid Shrimp Kneib, Ronald T. Georgia Sea Grant College Program SID# 833	49,444	18,752	0
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Identification of Actively used Near-shore Lake Trout Spawning Sites in Southwestern Lake Michigan Marsden, Ellen J. Illinois-Indiana Sea Grant College Program SID# 659	29,920	36,555	0
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Colonization, Growth and Habitat Utilization of Juvenile Fishes in Estuarine Primary Nursery Areas Miller, J. M. University of North Carolina SID# 981	33,648	0	0
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SUBTOTAL:	113,012	55,307	0
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**2. The Environmental Factors that Affect Fisheries and Quantity
Their Relationships to Fisheries Productivity in Major Habitats
Inshore and Offshore.**

Development Rate & Instream Survivals of Early and Late Run Pink Salmon Gharrett, A. J. Alaska Sea Grant College Program SID# 172	45,773	12,843	0
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TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
The Influence of Inundation Regime on the Use of Gulf Coast Marshes by Fishes and Macrocrustaceans Rozas, Lawrence P. Louisiana Sea Grant College Program SID# 377	0	3,320	29,171
Ecological Linkages Among Wetland, Bay, and Shelf Systems in Fourleague Bay, Louisiana: IV. Ichthyoplankton Utilization (Distribution, Abundance and Age Structure) and Habitat Coupling Shaw, Richard F. Louisiana Sea Grant College Program SID# 863	48,637	30,035	0
Investigate Eelgrass-blue Mussel Interactions for their Application to the Aquaculture Industry Short, F. T. UM/UNH Sea Grant College Program SID# 487	38,982	13,077	0
The Biology of Estuarine Lobsters Watson, W. H. UM/UNH Sea Grant College Program SID# 12	39,300	16,671	0
Recruitment to and use of Great Bay Estuary by the Larval and Juvenile Stages of Coastal Fishes Sale, Peter F. UM/UNH Sea Grant College Program SID# 30	38,999	19,495	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Effects of Low Dissolved Oxygen in the Chesapeake Bay II. Trophic Interactions in a Zooplankton-Fish Larvae-Nekton Assemblage Breitburg, Denise L. Maryland Sea Grant College Program SID# 51	72,000	61,258	0
Abundance and Comparative Trophic Ecology of Schooling Pelagic Fishes in the Chesapeake Bay Houde, Edward D. Maryland Sea Grant College Program SID# 41	79,999	23,305	0
Habitat Specific Patterns of Distribution, Movement, and Growth in Estuarine Dependent Fishes: Determinants of Habitat Quality Able, Ken New Jersey Marine Science Consortium SID# 317	70,852	30,821	0
Synthesis of Summer Flounder Habitat Requirements for Resource Managers Abe, Ken New Jersey Marine Sciences Consortium SID# 944	0	4,733	40,982
The Influence of Eelgrass Cover on Growth and Survival of Post-Settlement Bay Scallops, with a View Towards Optimizing Scallop Transplants Bricelj, Monica V. New York Sea Grant Institute SID# 517	33,699	28,310	0
Biomass and Production Dynamics of Pelagic Planktivores: A Comparative Analysis of Lakes Ontario and Michigan Stewart, Donald J. New York Sea Grant Institute SID# 524	32,875	34,439	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Complex Interactions in Estuarine Food Webs: An Experimental Approach Crowder, L. B. University of North Carolina SID# 984	36,236	0	0
Structure and Function of Continental Shelf Hardbottom Fisheries Habitat Riggs, S. University of North Carolina SID# 979	24,512	22,722	0
Synthesis of Estuarine Life History and Ecology of Juvenile Salmon in Puget Sound and Coastal Washington Simenstad, C. A. Washington Sea Grant College Program SID# 1083	25,900	10,288	0
Estuarine Slough Function and Restoration for Juvenile Salmon Residence and Foraging Simenstad, C. A. Washington Sea Grant College Program SID# 282	0	0	69,850
SUBTOTAL:	587,764	311,317	140,003

3. To Develop Models for Predicting the Consequences of change
in Environmental Parameters On Fisheries Production:

Limits to Recruitment of Spiny Lobster in Florida: Assessment of Artificial Enhancement Techniques Butler, M. J. Florida Sea Grant College Program SID# 738	62,919	27,410	0
Cellular Immunity in a Marine Teleost, the Red Drum, as a Potential Model for Environmental Health Assessment Burnett, Karen G. South Carolina Sea Grant Consortium SID# 1052	53,000	110,294	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Otolith Calcium Concentrations as Indicators of Reproductive History in Red Drum (<i>Sciaenops ocellatus</i>) Fuiman, Lee A. SID# 9217	6,200	0	0
Status and Development of Restored Estuarine Wetlands: Functional Equivalency of the Gog-Le-Hi-Te Wetland system, Puyallup River Estuary, Washington, After Six Years Simenstad, C. A. Washington Sea Grant College Program SID# 1080	0	0	61,889
Temporal Variation in the Lower Green Bay Fish Community: Evaluating the Impacts of Remedial Action Cochran, Phillip Wisconsin Sea Grant College Program SID# 1092	35,257	9,831	0
Global Climate Change and the Great Lakes Changes in Habitat Use and Potential Invasions by Exotic Species Magnuson, John J. Wisconsin Sea Grant College Program SID# 1097	38,660	32,276	0
Compensatory Responses in Great Lakes Food Webs: Predicting Results of Species Interactions Kitchell, James F. Wisconsin Sea Grant College Program SID# 1093	62,222	35,757	0
SUBTOTAL:	258,258	215,568	61,889

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
4. Develop Means of Estimating the Consequences of Anthropogenic Changes in the Environment			
Effect of Pesticides on Chitin Synthesis in Blue Crabs Horst, Michael N. Georgia Sea Grant College Program SID# 837	16,525	6,858	0
Ecological Risk Assessment of Complex Mixtures of Polybrominated Aromatic Hydrocarbons in Feral Fish Eggs Peterson, Richard Wisconsin Sea Grant College Program SID# 1094	0	35,060	69,972
SUBTOTAL:	16,525	41,918	69,972
TOTAL:	975,559	624,110	271,864

C. Restoring and/or Enhancing Heavily Exploited Stocks

1. Develop Means for Evaluating management options in Enhancing Fisheries and the Consequences of Various Associated Strategies:

Inlets and Estuaries

International Management Regimes, the EEZ, and the U.S. Pacific Fisheries Scheiber, Harry N. California Sea Grant College Program SID# 529	789	763	0
Dynamic Fishery Stock Recuperation under Variable Annual Quota Allocations: The Florida Mackerels Ehrhardt, N. M. Florida Sea Grant College Program SID# 96	48,064	28,838	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Multi-Fishery Direct Effort Management: Development of Techniques Orbach, M. K. University of North Carolina SID# 975	20,629	2,440	0
SUBTOTAL:	69,482	32,041	0

2. Integrating Biological Environmental, Social, and Economic Knowledge into Management Plans for Enhancement or Rehabilitation of Fisheries:

Optimal Allocation of Groundfish in the Fisheries off Alaska: A New Estimation Approach Smith, Terrence P. Alaska Sea Grant College Program SID# 786	49,354	9,174	0
Management of Mixed Stock Fisheries: A Turning Point Pikitch, Ellen K. Washington Sea Grant College Program SID# 161	104,900	52,970	108,750
SUBTOTAL:	154,254	62,144	108,750

3. Develop, Through Hybridization and Genetic Engineering, Better Strains of Fish and Shellfish:

Genetic Engineering of Fast Growing Strains of Abalone Powers, Dennis A. California Sea Grant College Program SID# 794	54,618	30,692	0
Development of Expression Vectors for Gene Transfer into Fish Hackett, Perry B. Minnesota Sea Grant College Program SID# 105	23,009	2,500	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Production of Interspecific, Chimeric Salmonids Cloud Washington Sea Grant College Program SID# 1079	52,600	27,418	0
SUBTOTAL:	130,227	60,610	0
4. Evaluate the Effectiveness of Fish Attraction Devices and Artificial Reefs on Local Fish Populations and Fishermen:			
Nutrient Cycles and Optimum Productivity of Shallow-Water Artificial Reefs Szmant, A. M. Florida Sea Grant College Program SID# 86	49,947	9,371	0
SUBTOTAL:	49,947	9,371	0
TOTAL:	403,910	164,166	108,750
D. Increase Commercial Uses of Underutilized Fish and Shellfish.			
1. Identify and Evaluate Species with the Greatest Potential for Development:			
Spawning Grounds and Life History of the Commercially Valuable Squid, <i>Ommastrephes bartramii</i> , within the Hawaiian EEZ Young, Richard E. Univ of Hawaii Sea Grant College Program SID# 587	32,501	160,426	0
Potential Exploitation of the Coastal Herring Complex Veal, David C. Mississippi-Alabama Sea Grant Consortium SID# 939	0	0	59,700
SUBTOTAL:	32,501	160,426	59,700
TOTAL:	32,501	160,426	59,700

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
E. Developing Efficient and Selective Methods to Harvest Fish and Shellfish.			
1. Improve the Selectivity of Harvesting Gear:			
Center for Fisheries Engineering Goudey, Clifford A. Massachusetts Institute of Technology SID# 309	6,475	6,667	0
North Pacific Bycatch Survival Study Pikitch, Ellen K. Washington Sea Grant College Program SID# 1082	0	0	50,000
SUBTOTAL:	6,475	6,667	50,000
2. Develop Harvesting Gear With Reduced Friction Drag:			
Models for Fish Harvest Technology and the Choice of Fishing Location Sampson, David B. Oregon Sea Grant College Program SID# 461	49,800	44,100	0
SUBTOTAL:	49,800	44,100	0
3. Analyze Fish Behavior as It Relates to the Development of Fishing Gear			
Fish Behavior in the Vicinity of Bottom Trawls in the New England Fisheries DeAlteris, Joseph Rhode Island Sea Grant College Program SID# 606	38,371	53,703	0
SUBTOTAL:	38,371	53,703	0
TOTAL:	94,646	104,470	50,000

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
F. Investigating Promising Areas of Research or Acquisition of Needed Information			
1. Hormonal Controls:			
(no projects 1992)			
2. Physiology/Behavior			
Neutral Basis of Olfactory Imprinting in Salmon Ebbesson, Sven O. Alaska Sea Grant College Program SID# 783	41,720	0	0
Sensory Development and Feeding Behavior in the Larval Alewife and Rainbow Smelt Jones, Warren R. Illinois-Indiana Sea Grant College Program SID# 658	29,620	26,770	0
Analysis of Mating Systems in Penaeid Shrimps: Identification of Key Factors Controlling Pairing and Sperm Transfer Bauer, Raymond T. Louisiana Sea Grant College Program SID# 1025	31,042	38,055	0
Interaction Between Juvenile Fish and the Cladoceran Bythotrephes: Behavioral Aspects of Predation Kerfoot, Charles W. Michigan Sea Grant College Program SID# 929	41,693	23,365	0
Determining the Olfactory Sensitivity of Sea lamprey: An essential First Step in Evaluating Whether Natural Odors Can Be Used for Biocontrol Sorensen, Peter W. Minnesota Sea Grant College Program SID# 669	22,500	2,500	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Evaluation of Biochemical Indicators of Growth in Crustaceans Wang, Shiao Y. Mississippi-Alabama Sea Grant Consortium SID# 940	34,956	42,931	0
The Capacity for Growth Among Latitudinal Populations of Fishes: Testing the Countergradient Hypothesis in Striped Bass Conover, David O. New York Sea Grant Institute SID# 519	58,983	32,629	0
Field and Laboratory Evaluation of Endocrine Indices of Reproductive Dysfunction in Atlantic Croaker Thomas, Peter Texas A&M University Sea Grant College Program SID# 489	0	12,719	68,993
SUBTOTAL:	260,514	178,969	68,993
3. Life History:			
Reproductive Biology and Growth in Bering Sea Snow Crab Armstrong, David E. Washington Sea Grant College Program SID# 389	0	0	9,300
Population Dynamics and Stock Identification of Rainbow Smelt (<i>Osmerus mordax</i>) in Green Bay and Adjacent Waters of Lake Michigan Copes, Frederick A. Wisconsin Sea Grant College Program SID# 451	23,889	22,599	0
SUBTOTAL:	23,889	22,599	9,300

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
4. Species Interactions:			
Chaetognaths as Predators and Competitors of Larval Fish in the South Atlantic Bight Purcell, Jennifer E. Maryland Sea Grant College Program SID# 879	0	31,737	49,960
The Influence of Zebra Mussels on the Recruitment of Saginaw Bay Fishes Jude, David Michigan Sea Grant College Program SID# 933	0	81,323	104,258
SUBTOTAL:	0	113,060	154,218
5. Stock Separation:			
The Use of Molecular Techniques to dissect the Genetic Architecture of Pollock Populations: Analysis of Mitochondrial & Nuclear Genes by the Polymerase Chain Reaction Powers, Dennis A. California Sea Grant College Program SID# 806	0	19,213	90,691
Mitochondrial DNA Sequences for the Assessment of Fish Stocks in the Gulf of Maine Kocher, Thomas D. UM/UNH Sea Grant College Program SID# 873	45,001	29,432	0
Identification of Cobia <i>Rachycentron Canadum</i> Breeding Populations in the Gulf of Mexico Using Mitochondrial DNA Sequence Analysis Biesiot, Patricia M. Mississippi-Alabama Sea Grant Consortium SID# 117	42,189	21,263	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Population Genetic Studies of Red Snapper in the Northern Gulf of Mexico Gold, John R. Texas A&M University Sea Grant College Program SID# 538	23,595	74,923	0
Genetic Substructuring of the Eastern Oyster, Crassostrea Virginica, in Texas DiMichele, Leonard SID# 9214	12,741	14,520	0
Statistical Algorithms for Stock Identification of Marine Resource Organisms Prager, Michael Virginia Graduate Marine Science Consortium SID# 32	35,599	21,359	0
DNA Fingerprints as Genetic Markers in Salmon Thorgaard, Gary H. Washington Sea Grant College Program SID# 158	42,100	9,451	0

SUBTOTAL:	201,225	190,161	90,691
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6. Information for Managing Exploited Stocks:

Maturity and Molting in Tanner Crab Paul, A. J. Alaska Sea Grant College Program SID# 780	50,978	0	0
Protection of Reproductive Animals in a Spider Crab Fishery Kuris, Armand M. California Sea Grant College Program SID# 516	5,038	3,717	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Radiometric Age Verification of Commercially Important Deep-Water Fishes Cailliet, Gregor M. California Sea Grant College Program SID# 798	37,975	49,551	0
Development of a Heritable Genetic "Tag" for Estimating Survivorship of Released Hatchery Fishes over Several Generations Wilson, R. R. Florida Sea Grant College Program SID# 85	38,712	19,356	0
Genetic Tagging of Pacific Mahimahi: an Example of Non-Destructive Biotechnology Cann, Rebecca L. Univ of Hawaii Sea Grant College Program SID# 223	9,700	12,761	0
Fluorescent Age Pigment Quantification as a Novel Method for Age Determination for Commercially Important Crustacean Species Womersley, Christoph Univ of Hawaii Sea Grant College Program SID# 588	20,577	15,693	0
Age Determination of the Long-finned squid using statoliths Mac, William Rhode Island Sea Grant College Program SID# 605	61,965	36,282	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Rejuvenation of the Chesapeake Bay Oyster Industry: Development of Disease-Resistant Crassostrea Virginica and Assessment of Disease Resistance in Crassostrea gigas Burreson, Eugene Virginia Graduate Marine Science Consortium SID# 203	65,000	33,399	0
Biology and Management of Rockfish Stocks Gunderson, D. R. Washington Sea Grant College Program SID# 390	0	0	41,784
Gutshp 92: Theory and Application in Fish Food Habit Studies Stouder, Deanna SID# 9221	30,505	19,969	0
SUBTOTAL:	320,450	190,728	41,784
7. Parasitology:			
Abalone Wasting Disease: Role of Coccidian Parasites and Environmental Factors German, Bruce J. California Sea Grant College Program SID# 540	2,171	1,514	0
Molecular Recognition in Host-Parasite/Bacterial Pathogen Interactions for Two Invertebrate Models: Crassostrea virginica vs. Perkinsus marinus and Callinectes sapidus vs. Vibrio parahaemolyticus Vasta, Gerardo R. Maryland Sea Grant College Program SID# 883	60,000	24,529	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Fluoroquinolone Treatment of Bacterial Diseases of Salmonids Bowser, Paul R. New York Sea Grant Institute SID# 97	59,840	47,356	0
SUBTOTAL:	122,011	73,399	0
8. Toxicity:			
Uptake of Dissolved and Particle-Associated Toxicants by the Eastern Oyster Newell, Roger I. E. Maryland Sea Grant College Program SID# 502	0	0	93,126
DNA Adducts as a Measure of Polycyclic Aromatic Hydrocarbon Exposure in fish McElroy, Anne E. Massachusetts Institute of Technology SID# 903	18,000	16,431	0
Cell Proliferation: A Potential Marker for the Biological Effect of Chronic Exposure to Epigenetic Carcinogens in Coastal Benthic Finfish and Shellfish Stegeman, John J. Woods Hole Oceanographic Institution SID# 488	0	39,173	71,400
SUBTOTAL:	18,000	55,604	164,526
9. Training			
(no projects 1992)			
10. Threatened and Endangered Species			
Resistance to Hypoxia in the Seal Heart Elsner, Robert Alaska Sea Grant College Program SID# 785	18,287	0	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Physiological Health Status of Steller Sea Lions: Ecological Implications Castellini, Michael Alaska Sea Grant College Program SID# 784	24,646	0	0
Regional Estimation of Harbor Seal and Harbor Porpoise in Alaska Wynne, Kate Alaska Sea Grant College Program SID# 776	0	0	48,346
The Role of Environmental Factors in Promoting Papilloma Disease in the Green Sea Turtle Cato, J. C. Florida Sea Grant College Program SID# 827	0	0	10,000
Behavioral Modification of the Male Hawaiian Monk Seal Grau, Gordon E. Univ of Hawaii Sea Grant College Program SID# 585	14,339	11,165	0
Population Implications of Various Management Approaches to Threatened and Endangered Sea Turtles Crowder, L. B. University of North Carolina SID# 414	0	0	51,241
SUBTOTAL:	57,272	11,165	109,587
TOTAL:	1,003,361	835,685	639,099
GRAND TOTAL	4,074,516	3,016,403	1,790,008

Marine Biotechnology

1. Natural Products: Chemistry and Bioactivity

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Marine Inflammation Research Program 1. Pharmacological Studies of Inflammatory Processes Jacobs, Robert S. California Sea Grant SID# 801	101,251	76,969	0
Marine Inflammation Research Program: Anti-inflammatory Agents from Cultured and Collected Marine Organisms Fenical, William H. California Sea Grant SID# 803	51,070	31,312	0
Marine Inflammation Research Program: Anti-inflammatory Agents from Marine Invertebrates Faulkner, John D. California Sea Grant SID# 804	56,479	28,252	0
Marine Natural Products in Pharmacology: Anti-infectious Disease Drug Discovery and Screening Using Marine Invertebrates Crews, Phillip California Sea Grant SID# 805	31,267	24,011	0
The Secondary Metabolites of Eurasian Watermilfoil and Their Relation to Potential Control Agents Gleason, Florence K. Minnesota Sea Grant SID# 936	28,759	3,200	0
Biologically Active Compounds of Marine Organisms Sharma, Gurdial M. New Jersey Sea Grant SID# 321	42,869	60,805	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Continuing Structural and Synthetic Studies on Marine Natural Products Clardy, Jon C. New York Sea Grant SID# 967	77,145	47,372	0
Biomedicinals from Marine Algae Gerwick, William H. Oregon Sea Grant SID# 444	66,000	26,400	0
Marine Metabolites for Medicine and Agriculture Scheuer, Paul J. Hawaii Sea Grant SID# 206	42,273	5,000	0
Crab Shell Chitosan: Utilization of Its Gene Activation Properties Hadwiger, Lee A. Washington Sea Grant SID# 165	67,700	26,708	0
Marine Inflammation and Metal Ion Conjugation Studies Butler, Alison California Sea Grant SID# 802	43,478	23,175	0
SUBTOTAL:	608,291	353,204	0
2. Molecular Biology			
Development of Technologies for Long-Term Storage and Genetic Manipulation of Penaeoidean Eggs Wallis, Clark H. California Sea Grant SID# 512	101,450	65,367	0
Detection and Monitoring of Bacteria with Molecular Probes Chapman, David J. California Sea Grant SID# 697	31,415	29,537	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
The Use of Molecular Techniques to dissect the Genetic Architecture of Pollock Populations: Analysis of Mitochondrial & Nuclear Genes by the Polymerase Chain Reaction Powers, Dennis A. California Sea Grant SID# 806	0	19,213	90,691
Stimulation of Growth Hormone Gene Expression in Abalone: Applications for Acceleration of Growth and Improvement of Food-Conversion Efficiency and Resistance Morse, Daniel E. California Sea Grant SID# 684	71,343	39,716	0
Genetic Engineering of Fast Growing Strains of Abalone Powers, Dennis A. California Sea Grant SID# 794	54,618	30,692	0
Genetic Detection of Red Tide Dinoflagellates Triplett, Edward L. California Sea Grant SID# 543	2,239	1,007	0
Genetic Engineering of Secondary Metabolite Biosynthetic Pathways in Cyanobacteria Bylina, Edward J. Hawaii Sea Grant SID# 595	34,688	25,130	0
Genetic Tagging of Pacific Mahimahi: an Example of Non-Destructive Biotechnology Cann, Rebecca L. Hawaii Sea Grant SID# 223	9,700	12,761	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Evaluation of a Solid-Phase Enzyme-Immunoassay Procedure for the Detection of Infectious Hypodermal and Hematopoietic Necrosis Virus (IHNV) Infection and the Growth of the Virus in Cell Cultures Loh, Philip C. Hawaii Sea Grant SID# 193	31,608	64,086	0
Detection of Hepatitis A Virus in Oysters Using Antigen-capture Polymerase Chain Reaction Siebeling, Ronald J. Louisiana Sea Grant SID# 866	24,495	26,344	0
Mitochondrial DNA Sequences for the Assessment of Fish Stocks in the Gulf of Maine Kocher, Thomas D. Maine/New Hampshire Sea Grant SID# 873	45,001	29,432	0
Development of Genetic Engineering Techniques with Economically Important Marine Algae Minocha, Subhas C. Maine/New Hampshire Sea Grant SID# 395	57,000	23,139	0
Use of Anti-Idiotypic Antibodies as Potential Vaccines, Diagnostic Reagents and Research Probes for Aquatic Birnaviruses Nicholson, Bruce L. Maine/New Hampshire Sea Grant SID# 34	44,736	73,520	0
Development of Gene Probe Assays for the Detection of Microbial Pathogens Margolin, Aaron B. Maine/New Hampshire Sea Grant SID# 33	50,000	7,519	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Stimulation of Growth Hormones and Growth Factor Gene Expression in Shellfish: Effects of Growth Hormones on Larval, Juvenile, and Adult Life Stages of Eastern Oyster, <i>Crassostrea virginica</i> Chen, Thomas Maryland Sea Grant SID# 884	79,890	34,128	0
Development of Expression Vectors for Gene Transfer into Fish Hackett, Perry B. Minnesota Sea Grant SID# 105	23,009	2,500	0
Development of Multiplex Polymerase Chain Reaction (PCR) Method for Detection of <i>Salmonella</i> and <i>Vibrio</i> spp. from Contaminated Shellfish Bej, Asim K. Mississippi/Alabama Sea Grant SID# 9223	24,946	25,108	0
Molecular Population Genetics of Benthic Anthozoans Lasker, Howard R. New York Sea Grant SID# 522	62,315	31,718	0
Isolation and Characterization of the Interferon Genes of Rainbow Trout II. Expression and Biological Activity Leong, Jo-Ann C. Oregon Sea Grant SID# 435	74,500	25,000	0
Diagnostic Probes for Detecting Pathogenic Marine Caliciviruses in Foods from the Sea Smith, Alvin W. Oregon Sea Grant SID# 1035	0	0	41,756

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Production of Sterile and Unisexual Populations of Salmonids for Aquaculture Schreck, Carl B. Oregon Sea Grant SID# 318	31,800	11,500	0
Molecular Genetics of the Hard Clam Mercenaria and Other Aquacultured Bivalves Hilbish, Thomas J. South Carolina Sea Grant SID# 268	66,583	33,292	0
Population Genetic Studies of Red Snapper in the Northern Gulf of Mexico Gold, John R. Texas Sea Grant SID# 538	23,595	74,923	0
Rapid Investigation of Imported and Domestic Shrimp Davis, Scott K. Texas Sea Grant SID# 551	29,976	17,805	0
Genetic Substructuring of the Eastern Oyster, Crassostrea virginica, in Texas DiMichele, Leonard Texas Sea Grant SID# 9214	12,741	14,520	0
DNA Fingerprints as Genetic Markers in Salmon Thorgaard, Gary H. Washington Sea Grant SID# 158	42,100	9,451	0
Transcriptional Gene Regulation in Marine Algae Cattolico, Rose Ann Washington Sea Grant SID# 159	101,400	59,140	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Control of Growth, Sex and Reproduction in Great Lakes Cool-Water Fishes by Genetic and Endocrine Manipulation Malison, Jeffrey A. Wisconsin Sea Grant SID# 272	78,660	44,581	0
SUBTOTAL:	1,209,808	831,129	132,447
3. Biochemical Engineering & Industrial Chemicals			
Controlled Culture of a New Marine Model, the Sea Anemone <i>Nematostella vectensis</i> Hand, Cadet California Sea Grant SID# 515	395	1,042	0
Industrial Microbiology of Blue-Green Algae (Cyanobacteria) Patterson, Gregory M Hawaii Sea Grant SID# 596	29,070	60,447	0
Development of New Antifouling Coating Utilizing Controlled Release Technology Weisman, G. R. Maine/New Hampshire Sea Grant SID# 35	52,999	25,480	0
Relationship Between Vanadium and Tunichrome in Sea Squids Kustin, Kenneth MIT Sea Grant SID# 902	59,334	35,507	0
Degradation of Trichloroethylene and Other Pollutants by Ammonia-Oxidizing Bacteria Hooper, Alan B. Minnesota Sea Grant SID# 673	25,856	2,900	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Use of Natural and Synthetic Antifreeze Proteins as Cryoprotectants for Stored Frozen Seafood Products Harrington, John P. Mississippi-Alabama Sea Grant SID# 941	36,850	22,872	0
Accumulation of a Biodegradable Polymer in a Cyanobacterium Heinhorst, Sabine Mississippi-Alabama Sea Grant SID# 118	60,317	30,207	0
Polypeptide Inhibitors of Corrosion from Marine Organisms Sikes, Steven C. Mississippi-Alabama Sea Grant SID# 499	34,157	17,877	0
Bioreactor Studies of Marine Plant Cells in Liquid Culture for Production of Valued Natural Products Rorrer, Gregory L. Oregon Sea Grant SID# 429	37,500	21,300	0
Proteins from Oyster Shell as a Basis for Biodegradable Water Treatment and Super-Absorbent Polymers Wheeler, A.P. South Carolina Sea Grant SID# 1054	63,475	34,087	0
Synthetic Ice-Suppressing Macromolecules: Development of Enhanced Bioengineered Mimics of Marine Antifreeze Peptides Caceci, Thomas Virginia Sea Grant SID# 208	72,207	54,120	0
SUBTOTAL:	472,160	305,839	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
4. Microbiology/Phycology			
Accelerating Salt Marsh Functional Development through Plant Genotype Selection: Intraspecific Diversity from Natural Populations and the Tissue Culture Laboratory Seliskar, Denise M. Delaware Sea Grant SID# 425	0	0	75,000
Anticorrosive Properties of Adhesive Proteins Isolated from the Mussel <i>Mytilus edulis</i> Dexter, Steven C. Delaware Sea Grant SID# 166	18,720	24,334	0
Bacterial Fouling of Metal Surfaces: Implications for Biocorrosion Kirchman, David L. Delaware Sea Grant SID# 58	12,636	30,629	0
Influence of Marine Bacterial Films on Crevice Corrosion Dexter, Steven C. Delaware Sea Grant SID# 60	7,800	22,377	0
Improved Genotypes of Submerged and Emergent Halophytes for Crops and Restoration Ecology through Somaclonal Variation, Transformation, and Protoplast Fusion Gallagher, John L. Delaware Sea Grant SID# 169	18,096	77,570	0
Expression of Transfected Oncogenes in Marine Bivalve Cell Cultures Ellis, Lehman L. Louisiana Sea Grant SID# 865	29,312	16,723	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Investigate Eelgrass-blue Mussel Interactions for their Application to the Aquaculture Industry Short, F. T. Maine/New Hampshire Sea Grant SID# 487	38,982	13,077	0
Aquaculture Applications of Biochemical Genetics to the Economic Kelps, Laminaria saccharina and Laminaria longicruris Mathieson, Arthur C. Maine/New Hampshire Sea Grant SID# 5	41,999	18,718	0
Bacterial Inhibitors of Adhesion of Marine Biofilm Bacteria Burchard, Robert P. Maryland Sea Grant SID# 886	19,049	7,075	0
Interaction of Copper and Cadmium with Microbial Benthos Biofilm and Effects on Oyster Larva Set Weiner, Ron Maryland Sea Grant SID# 880	0	7,300	37,265
Development of Advanced Technology for Micropropagation of Seagrasses for Coastal Habitat Restoration Bird, K. North Carolina Sea Grant SID# 985	9,591	12,390	0
Molecular Characterization of Marine Algae and Their Viral Pathogens Meints, Russel H. Oregon Sea Grant SID# 437	24,900	7,400	0

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Isolation of Viruses That Infect Toxic and Economically Important Phytoplankton Suttle, Curtis A. Texas Sea Grant SID# 562	52,152	27,113	0
SUBTOTAL:	273,237	264,706	112,265
TOTAL:	2,563,496	1,754,878	244,712

Seafood Science and Technology

1. Engineering and Waste Treatment

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Design and Testing of a Wastewater Treatment Configuration for Small Seafood Processing Operations Malone, Ronald F. Louisiana Sea Grant Program SID# 868	47,108	14,607	0
SUBTOTAL:	47,108	14,607	0

2. Product Development and By-Product Recovery

An Economic Analysis of World Markets for Wild and Farmed Salmon Herrmann, Mark L. Alaska Sea Grant Program SID# 787	36,278	16,428	0
Opportunities for Flake Products from Pink Salmon Crapo, Charles Alaska Sea Grant Program SID# 788	28,417	7,725	0
A Study of the Nature and Use of Fish Muscle Myofibrillar Proteins Solubilized in Water Hultin, Herbert O. MIT Sea Grant SID# 901	50,010	27,070	0
Frozen Stabilized Mince as a Source of Surimi--Initial Feasibility Kolbe, Edward R. Oregon Sea Grant SID# 462	49,200	82,900	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Management and Use of Solid and Liquid Wastes from the Blue Crab (<i>Callinectes sapidus</i>) Industry Boardman, Gregory Virginia Sea Grant SID# 212	44,966	24,314	0
Crab Shell Chitosan: Utilization of Its Gene Activation Properties Hadwiger, Lee A. Washington Sea Grant SID# 165	67,700	26,708	0
SUBTOTAL:	276,571	185,145	0
3. Microbial, Nutritional, and Organoleptic Quality			
Phenolic Compounds in Seawater: Rates and Mechanisms of Biodegradation Carlucci, Angelo F. California Sea Grant SID# 544	590	818	0
Edible Films to Prevent Quality Loss in Frozen Fish Krochta, John M. California Sea Grant SID# 541	14,646	37,304	0
Genetic Detection of Red Tide Dinoflagellates Triplett, Edward L. California Sea Grant SID# 543	2,239	1,007	0
Detection and Monitoring of Bacteria with Molecular Probes Chapman, David J. California Sea Grant SID# 697	31,415	29,537	0
Domoic Acid in Coastal Food Webs Silver, Mary W. California Sea Grant SID# 810	0	0	23,000

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Evaluation of Lactic Treatment, Cryogenic Freezing and Depuration of Salmonella in Oysters of the Suwannee Region Rodrick Florida Sea Grant SID# 89	24,012	12,064	0
Quality and Safety Enhancement of Thermoformed Packaged Frozen Breaded Shrimp in Air and Modified Atmospheres Gates, Keith W. Georgia Sea Grant SID# 570	44,946	35,637	0
Determination of the Causes of Burnt Tuna and Reasons for Differential Susceptibility to the Problem Holland, Kim N. Hawaii Sea Grant SID# 586	21,929	15,498	0
Detection of Hepatitis A Virus in Oysters Using Antigen-capture Polymerase Chain Reaction Siebeling, Ronald J. Louisiana Sea Grant SID# 866	24,495	26,344	0
Chemical and Immunological Characterization of the Polysaccharide Capsules of Vibrio vulnificus Siebeling, Ronald J. Louisiana Sea Grant SID# 867	27,485	26,708	0
Development of Gene Probe Assays for the Detection of Microbial Pathogens Margolin, Aaron B. UM/UNH Sea Grant SID# 33	50,000	7,519	0
Uptake of Dissolved and Particle-Associated Toxicants by the Eastern Oyster Newell, Roger I. E. Maryland Sea Grant SID# 502	0	0	93,126

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
A Novel Cell Culture Assay to Detect Contamination of Marine Resources Stegeman, John J. Woods Hole Sea Grant SID# 920	33,313	12,578	0
Toxic Red Tides in Massachusetts and Cape Cod Bays Anderson, Donald M. Woods Hole Sea Grant SID# 913	50,027	48,470	0
The Economic Value of Fish Contamination Advisories to Individual Great Lakes Sport Anglers Hoehn, John Michigan Sea Grant C SID# 262	33,465	17,841	0
Development of Multiplex Polymerase Chain Reaction (PCR) Method for Detection of Salmonella and Vibrio spp. from Contaminated Shellfish Bej, Asim K. Mississippi/Alabama Sea Grant SID# 9223	24,946	25,108	0
The Transfer of Toxic Metals from Contaminated Sediment to the Blue Crab: An Integrated Field and Laboratory Study Levinton, Jeffrey S. New York Sea Grant SID# 104	50,541	40,974	0
Effects of Purified Omega-3 Fatty Acids from Fish Oil upon Plasma Lipids, Lipoproteins, and Platelet Function in Humans Connor, William E. Oregon Sea Grant SID# 453	42,000	13,400	0
Diagnostic Probes for Detecting Pathogenic Marine Caliciviruses in Foods from the Sea Smith, Alvin W. Oregon Sea Grant SID# 1035	0	0	41,756

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Rapid Investigation of Imported and Domestic Shrimp Davis, Scott K. Texas Sea Grant SID# 551	29,976	17,805	0
Biology of the Oyster Crassostrea Virginica: Is Domoic Acid a Threat? Fryxell, G. Texas Sea Grant SID# 545	51,485	20,180	0
Norwalk and HAV Virus in Shellfish Estes, Mary K. Texas Sea Grant SID# 644	67,329	21,151	0
Workshops on Harmful Algal Blooms Banse, Karl Washington Sea Grant SID# 1078	0	0	17,053
Evaluation of the Environmental and Public Health Impacts of Salmon Net Pen Culture Hershberger, W.K. Washington Sea Grant SID# 9220	25,085	12,740	0
Coplanar Polychlorinated Biphenyls in the Green Bay Ecosystem Armstrong, David E. Wisconsin Sea Grant SID# 1090	52,257	37,320	0
The Role of communication in Risk Judgements of Wisconsin Anglers and Their Families Dunwoody, Sharon L. Wisconsin Sea Grant SID# 1100	69,193	34,570	0
SUBTOTAL:	771,374	494,573	174,935

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
4. Handling and Processing Technology			
Enhanced Recover and Functionality of Protein Enriched Products French, John S. Alaska Sea Grant SID# 191	40,407	24,126	0
Determination and Modeling of Pathogen Survival Associated with Seafoods Cooked by Microwave Ovens Gates, Keith W. Georgia Sea Grant SID# 838	17,413	48,806	0
Use of Natural and Synthetic Antifreeze Proteins as Cryoprotectants for Stored Frozen Seafood Products Harrington, John P. Mississippi-Alabama Sea Grant SID# 941	36,850	22,872	0
Effects of Antioxidants on Vibrio vulnificus virulence in Depuration Systems Oliver, J. D. North Carolina Sea Grant SID# 988	8,206	5,134	0
Advanced Seafood Technology: A) Texturization and Fat Replacement as Additives, and B) Inhibition of Fish Proteases Hamann, D. D. North Carolina Sea Grant SID# 989	0	49,234	0
Suppression of Off-Flavors in Oxidizing Fish Oils and Seafoods Lindsay, Robert C. Wisconsin Sea Grant SID# 464	27,387	12,817	0
SUBTOTAL:	130,263	162,989	0
TOTAL:	1,225,316	857,314	174,935



Human Resources

Following is a listing of Sea Grant's Human Resources Division technical staff,
their subject area(s), and their phone number.
They can be reached at the following address:

**National Oceanic and Atmospheric Administration
National Sea Grant College Program
1335 East-West Highway
SSMC1, 5th Floor
Silver Spring, MD 20910**

Human Resources..... 301/713-2431

Marine Advisory/Extension Services - Dr. Bernard L. Griswold
Education and Training - Dr. Shirley J. Fiske
Social Science and Marine Policy - Dr. Shirley J. Fiske
Communications - Mr. Victor Omelczenko
Ocean Law - Mr. John A. Milholland

Marine Advisory Extension Services

A. Advisory Services

1. Core Programs

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Alaska Marine Advisory Program Kramer, D. E. Alaska Sea Grant College Program SID# 650	519,000	523,103	0
Sea Grant Extension Program Skoog, Ronald O. California Sea Grant College Program SID# 556	719,022	405,338	0
Marine Advisory Services and Education Fawcett, James A. Univ of Southern California Sea Grant College SID# 667	190,536	40,859	0
Sea Grant Marine Advisory Program Bender, N. Connecticut Sea Grant College Program SID# 185	147,274	178,328	0
Marine Advisory Services Price, Kent Delaware Sea Grant College Program SID# 176	233,467	216,450	0
Florida Sea Grant Extension Program Woeste, J. T. & M. Clarke Florida Sea Grant College Program SID# 563	532,500	268,724	0
Advisory Services: General Lyda, Fred M. Georgia Sea Grant College Program SID# 575	225,876	148,598	0

Sea Grant Extension Service Miller, Bruce J. Univ of Hawaii Sea Grant College Program SID# 730	398,800	256,642	0
Pacific Island Network (PIN) Project Initiatives Miller, Bruce Justin Univ of Hawaii Sea Grant College Program SID# 293	67,000	107,377	222,100
Marine Extension Program O'Leary, Joseph Illinois-Indiana Sea Grant College Program SID# 375	117,659	128,414	0
Legal Advisory Service Wascom, Michael Louisiana Sea Grant College Program SID# 1002	76,950	48,509	0
Hatchery Production and Remote Setting of Oyster Larvae Crassostrea virginica (Gmelin) in Louisiana Supan, John Louisiana Sea Grant College Program SID# 847	29,243	12,972	0
Marine Advisory Services in Louisiana Cooperative Extension Service Fowler, James F. Louisiana Sea Grant College Program SID# 1001	203,768	298,686	0
Sea Grant Marine Advisory Program Doyle, B. & Dow, D. UM/UNH Sea Grant College Program SID# 490	361,400	313,907	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Sea Grant Extension Program Adkins, Ralph Maryland Sea Grant College Program SID# 52	225,000	391,576	0
Massachusetts Marine Liaison Service Hall-Arber, Madelein Massachusetts Institute of Technology SID# 310	3,647	1,383	0
MIT Sea Grant Marine Industry Collegium Moore, John Jr. Massachusetts Institute of Technology SID# 308	11,700	8,150	0
Center for Fisheries Engineering Goudey, Clifford A. Massachusetts Institute of Technology SID# 309	6,475	6,667	0
National Sea Grant Marine Industry Collegium Program Moore, John Jr. Massachusetts Institute of Technology SID# 895	10,000	3,500	0
MIT Sea Grant Advisory Services Doelling, Norman Massachusetts Institute of Technology SID# 893	303,100	182,246	0
Marine Advisory Service Giese, Graham S. Woods Hole Oceanographic Institution SID# 912	101,921	0	0
Michigan Sea Grant Extension Schwartz, John Michigan Sea Grant College Program SID# 273	307,000	173,411	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Minnesota Sea Grant Extension Program Baker, Dale Minnesota Sea Grant College Program SID# 137	153,990	117,000	0
Mississippi Sea Grant Advisory Service Program—Mississippi Component Veal, David C. Mississippi—Alabama Sea Grant Consortium SID# 505	71,374	187,736	0
Sea Grant Advisory Services — Alabama Component Hosking, William Mississippi—Alabama Sea Grant Consortium SID# 4	83,805	51,653	0
New Jersey Sea Grant Marine Advisory Service Wypyszinski, A. W. New Jersey Marine Science Consortium SID# 244	156,700	274,419	0
Sea Grant Extension Program Voiland, Michael P. New York Sea Grant Institute SID# 110	596,216	891,738	0
Marine Advisory Service Murray, J. M. University of North Carolina SID# 27	520,398	355,066	0
Ohio Sea Grant Advisory Service Program Hushak, Leroy Ohio Sea Grant College Program SID# 638	269,851	177,962	0
Extension Sea Grant Program Extension Sea Grant DeYoung, Bruce R. Oregon Sea Grant College Program SID# 589	687,900	785,300	0

TITLE/INVS./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
U.S. Virgin Islands Marine Advisory Services Quinn, Norman Univ of Puerto Rico Sea Grant College Program SID# 150	50,084	122,786	0
UPR Marine Advisory Services for Puerto Rico and the USVI Chaparro, Ruperto Univ of Puerto Rico Sea Grant College Program SID# 149	151,992	90,875	0
Development of Approaches to Improve Safety and Quality of Seafood in Puerto Rico and U.S. Virgin Islands Riesco, Maria B. Univ of Puerto Rico Sea Grant College Program SID# 1101	6,000	336	0
Rhode Island Sea Grant Advisory Services: Coastal Management Program Lee, Virginia Rhode Island Sea Grant College Program SID# 614	203,201	92,157	0
Rhode Island Sea Grant Advisory Services: Fisheries, aquaculture, seafood processing, and seafood marketing DeAlteris, Joseph Rhode Island Sea Grant College Program SID# 683	65,930	88,052	0
South Carolina Marine Extension Program Bacon, Robert South Carolina Sea Grant Consortium SID# 257	190,603	185,662	0
Marine Advisory Service Hightower, Mike Texas A&M University Sea Grant College Program SID# 721	505,847	289,524	0

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Virginia Sea Grant Marine Advisory Services DuPaul, William Virginia Graduate Marine Science Consortium SID# 677	593,757	422,632	0
Washington Sea Grant Marine Advisory Services Spranger, M. Washington Sea Grant College Program SID# 72	679,900	401,474	0
Docks and Marinas Advisory Services Worthley, Allen C. Wisconsin Sea Grant College Program SID# 476	16,345	15,120	0
Advisory Services Coordination and Field Offices Miller, Allen H. Wisconsin Sea Grant College Program SID# 473	176,579	192,416	0
Fisheries Development Advisory Services Stuiber, David A. Wisconsin Sea Grant College Program SID# 475	41,813	36,405	0
Managerial Assistance for Great Lakes Based/Allied Business Sadowske, Sue Wisconsin Sea Grant College Program SID# 1086	1,420	1,394	0
Developing, Demonstrating and Promoting Alternative Aquaculture Strategies Through Advisory Services Binkowski, Fred P. Wisconsin Sea Grant College Program SID# 1085	17,237	16,176	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Coastal Engineering Advisory Services Keillor, Philip Wisconsin Sea Grant College Program SID# 474	20,301	19,066	0
SUBTOTAL:	10,052,581	8,529,789	222,100

B. Advisory Services

2. Pass Through Projects

Long Island Sound Study: Public Education and Participation Arnold, C. Connecticut Sea Grant College Program SID# 424	0	0	114,000
Coastal Resource Inventory: Territory of American Samoa Rappa, Peter J. Univ of Hawaii Sea Grant College Program SID# 839	0	0	13,420
Marine Debris Awareness Campaign (Phase II) Miller, Bruce J. Univ of Hawaii Sea Grant College Program SID# 841	0	0	8,800
Great Lakes Water Quality and Public Participation Education Program: Illinois-Indiana Sea Grant Element O'Leary, Joseph T. Illinois-Indiana Sea Grant College Program SID# 846	0	0	51,444
Conference Culminating the Green Bay Mass Balance Effort Goettel, Robin Illinois-Indiana Sea Grant College Program SID# 845	0	0	19,890

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Methodology and Mechanisms for Management of Cumulative Coastal Environmental Impacts Rieser, Alison UM/UNH Sea Grant College Program SID# 875	0	8,808	56,407
The Sanctuary Setting for Thunder Bay, Michigan: A Literature Review and Synthesis of Information Schwartz, John Michigan Sea Grant College Program SID# 925	0	0	15,100
Education Program for the Lakewide Management Planning Process Schwartz, John Michigan Sea Grant College Program SID# 492	0	0	29,872
Environmental Education Pertaining to the Gulf of Mexico Veal, David C. Mississippi-Alabama Sea Grant Consortium SID# 409	0	0	49,500
Synthesis of Summer Flounder Habitat Requirements for Resource Managers Abel, Ken New Jersey Marine Sciences Consortium SID# 944	0	4,733	40,982
Investigation of Recycling/Reprocessing with Marine Plastics - A Cost-Effective Method of Dealing with Plastic Debris with Emphasis on Fishing Gear (Phase II). Xanthos, Marino New Jersey Marine Sciences Consortium SID# 947	0	0	138,000

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
A Long Island Sound Study Public Participation Coordinator Based in New York Voiland, Michael P. New York Sea Grant Institute SID# 439	0	0	116,000
Great Lakes Water Quality and Public Participation Education for the LaMP Process Voiland, Michael P. New York Sea Grant Institute SID# 948	0	0	24,865
National Marine Advisory Services: Global Environmental Change Training Project Spranger, M. Washington Sea Grant College Program SID# 1075	0	0	16,028
Great Lakes Water Quality and Public Participation Education Program for the Lakewide Management Planning Process Miller, Allen H. Wisconsin Sea Grant College Program SID# 1087	0	0	46,123
SUBTOTAL:	0	13,541	740,431
TOTAL:	10,052,581	8,543,330	962,531

C. Zebra Mussel Initiative

1. Research

Carbon Dioxide as a Narcotizing pre-treatment for Chemical Control of Dreissena polymorpha Elzinga, William J. Illinois-Indiana Sea Grant College Program SID# 843	0	27,989	16,691
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TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
An Investigation of the Larval Development and Shell Morphology of the Zebra Mussel, <i>Dreissena polymorpha</i> (Pallas) Lima, Gail M. Illinois-Indiana Sea Grant College Program SID# 844	0	32,760	69,153
New Approaches to Control of Zebra Mussels by Targeted Microbial Products Mitchell, Ralph Massachusetts Institute of Technology SID# 907	0	180,000	200,000
Direct Experimental Assessment of the Impact of <i>Dreissena polymorpha</i> on Unionid Growth, Mortality, and Condition in Lake St. Clair Hunter, Douglas R. Michigan Sea Grant College Program SID# 932	0	2,533	5,000
Impact of <i>Dreissena polymorpha</i> on the Plankton Diatoms in Western Lake Erie and Lower Saginaw Bay, Lake Huron Beeton, Ruth H. Michigan Sea Grant College Program SID# 931	0	28,552	55,679
The Influence of Zebra Mussels on the Recruitment of Saginaw Bay Fishes Jude, David Michigan Sea Grant College Program SID# 933	0	81,323	104,258
Species Identities and Relationships of North American and European <i>Dreissena</i> (Bivalvia: Dreissenidae) Rosenberg, Gary New Jersey Marine Sciences Consortium SID# 946	0	32,686	65,215

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Phosphorus Budget of a Zebra Mussel Population Makarewicz, Joseph New York Sea Grant Institute SID# 954	0	68,402	120,440
Application of Wide-Range Ultraviolet Radiation for Zebra Mussel Control Chalker-Scott, Linda New York Sea Grant Institute SID# 951	0	100,330	155,950
Influence of Zebra Mussel Invasion on Nutrient Dynamics in Plankton Communities: Field Verification of Mesocosm Findings in Saginaw Bay Heath, Robert T. Ohio Sea Grant College Program SID# 1032	0	32,047	36,890
Influences of Temperature and Diet on Physiological Energetics of Growth and Reproduction of Dreissena polymorpha Garton, David W. Ohio Sea Grant College Program SID# 998	0	48,038	87,147
Nutrient Regeneration by Zebra Mussels and Its Impact on Phytoplankton Vanni, Michael Ohio Sea Grant College Program SID# 1028	0	68,671	136,288
A Policy Framework for Nonindigenous Species in the Great Lakes Randall, Alan Ohio Sea Grant College Program SID# 1000	0	76,548	150,672
The Impact of Zebra Mussel Filtering on Pelagic Food Webs Culver, David A. Ohio Sea Grant College Program SID# 1030	0	89,771	136,382

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
The Use of Potassium in Control of the Zebra Mussel, Dreissena polymorpha, Pallas Fisher, S. W. Ohio Sea Grant College Program SID# 999	0	83,349	115,235
The Impact of Zebra Mussels on the Dynamics of Heavy Metals Fraleigh, Peter C. Ohio Sea Grant College Program SID# 1029	0	67,066	108,354
The Impact of Zebra Mussels on the Benthic Food Web in Saginaw Bay, Lake Huron Lowe, Rex L. Ohio Sea Grant College Program SID# 1031	0	99,050	150,811
SUBTOTAL:	0	1,119,115	1,714,165
D. Zebra Mussel Initiative			
2. Outreach			
Zebra Mussel Outreach and Education Program Balcom, Nancy C. Connecticut Sea Grant College Program SID# 812	0	15,968	31,768
Mid-Atlantic Sea Grant Network Zebra Mussel Outreach Plan Falk, James M. Delaware Sea Grant College Program SID# 176	0	0	26,393
1992-93 Zebra Mussel Outreach Program: Illinois-Indiana Sea Grant Program O'Leary, Joseph T. Illinois-Indiana Sea Grant College Program SID# 842	0	0	83,496

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Zebra Mussel Education and Monitoring Project Doyle, B. UM/UNH Sea Grant College Program SID# 869	0	13,430	26,478
The Zebra Mussel in the Mid-Atlantic: Education and Outreach Terlizzi, Daniel E. Maryland Sea Grant College Program SID# 891	0	0	25,382
MIT Sea Grant College Program's Zebra Mussel Outreach Hall-Arber, Madelein Massachusetts Institute of Technology SID# 899	0	10,080	20,000
Woods Hole Oceanographic Institution Sea Grant Program Zebra Mussel Outreach Sub-Proposal of the Northeast Regional Proposal Giese, Graham S. Woods Hole Oceanographic Institution SID# 910	0	6,000	10,619
Michigan Sea Grant Zebra Mussel Outreach Program Schwartz, John Michigan Sea Grant College Program SID# 234	0	31,767	100,877
Zebra Mussel Outreach Plan for Minnesota: The Great Lakes Sea Grant Network Baker, Dale Minnesota Sea Grant College Program SID# 236	0	35,999	70,310

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
The Mid-Atlantic SG Network Zebra Mussel Outreach Plan (NJ Section) Wypyszinski, A. W. New Jersey Marine Sciences Consortium SID# 942	0	0	25,000
Extension Program Zebra Mussel Outreach: New York Sea Grant Institute Voiland, Michael P. New York Sea Grant Institute SID# 230	0	17,500	35,000
Zebra Mussel Outreach Klauber, Avery New York Sea Grant Institute SID# 950	0	22,450	40,000
Maintaining and Improving a National Zebra Mussel Information Clearinghouse Voiland, Michael P. New York Sea Grant Institute SID# 949	0	66,830	131,587
Mid-Atlantic Sea Grant Network Zebra Mussel Outreach Plan Murray, James D. University of North Carolina SID# 971	0	0	26,972
Ohio Sea Grant Zebra Mussel Outreach Educational Proposal Hushak, Leroy Ohio Sea Grant College Program SID# 233	0	54,052	108,045
Zebra Mussel Outreach Program DeAlteris, Joseph Rhode Island Sea Grant College Program SID# 1036	0	11,008	21,977
The Mid-Atlantic Sea Grant Network Zebra Mussel Outreach Plan DuPaul, William Virginia Graduate Marine Science Consortium SID# 1067	0	13,595	26,140

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Observing and Disseminating Information on the Spread and Control of Zebra Mussel in the Upper Great Lakes Miller, Allen H. Wisconsin Sea Grant College Program SID# 478	0	0	94,423
SUBTOTAL:	0	298,679	904,467
TOTAL:	0	1,417,794	2,618,632
GRAND TOTAL:	10,052,581	9,961,124	3,581,163

Education and Training

1. University Level

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Graduate Research Fellowship Program Holmes, Robert W. California Sea Grant College Program SID# 555	27,542	5,662	0
California Sea Grant State Fellowship Program Sullivan, James J. California Sea Grant College Program SID# 554	21,667	11,397	0
John D. Isaacs Memorial Sea Grant Scholarship Sullivan, James J. California Sea Grant College Program SID# 553	10,833	2,708	0
Opportunities for Undergraduate Research and Development in Marine Science and Engineering Harris, L. UM/UNH Sea Grant College Program SID# 397	23,000	22,969	0
MIT Sea Grant/Undergraduate Research Opportunities Program Doelling, Norman Massachusetts Institute of Technology SID# 307	27,083	21,008	0
MIT Sea Grant/MMA Joint Program in Marine Education and Training Callahan, John J. Massachusetts Institute of Technology SID# 306	63,833	249,018	0

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Sea Grant Fellowship Program Hanson, Roger Mississippi-Alabama Sea Grant Consortium SID# 3	20,000	0	0
Sea Grant Scholars Schlenk, Cornelia G. New York Sea Grant Institute SID# 531	273,000	0	0
Sea Grant Marine Policy Fellowship Queen, W. University of North Carolina SID# 9	15,000	0	0
Marine Fellowship Program Guseman, L. F. Jr. Texas A&M University Sea Grant College Program SID# 719	0	57,000	0
Cooperative Virginia Sea Grant College Program/Chesapeake Bay National Estuarine Research Reserve System Research Fellowship Rickards, William L. Virginia Graduate Marine Science Consortium SID# 1069	10,000	0	5,000
Special Marine Education Programs Andren, Anders W. Wisconsin Sea Grant College Program SID# 279	22,915	24,925	0
SUBTOTAL:	514,873	394,687	5,000
2. Knauss Fellowships			
Knauss Sea Grant Fellowship for Carl Rebstock Dearborn, R. K. Alaska Sea Grant College Program SID# 778	30,000	0	0

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Knauss Sea Grant Fellowship for William Robie Dearborn, R. K. Alaska Sea Grant College Program SID# 777	30,000	0	0
National Sea Grant Fellowships - Alessandra Conversi Sullivan, James J. California Sea Grant College Program SID# 791	30,000	0	0
National Sea Grant Fellowship - David Wilmot Sullivan, James J. California Sea Grant College Program SID# 792	30,000	0	0
Sea Grant Fellowship - Susan Pultz Monahan, E. C. Connecticut Sea Grant College Program SID# 814	30,000	0	0
Knauss Sea Grant Fellowship- Diana Olinger Tarpley, R. W. Delaware Sea Grant College Program SID# 156	60,000	17,143	0
Dean John A. Knauss Marine Policy Fellowship - Wade Bryant Cato, J. C. Florida Sea Grant College Program SID# 821	30,000	0	0
Internships - Peter Rice Doyle, B. UM/UNH Sea Grant College Program SID# 870	30,000	0	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Dean John A. Knauss Marine Policy Fellowship: Carol Collinson Kahl and Benjamin D. Haskell D'Elia, Christopher Maryland Sea Grant College Program SID# 878	60,000	0	0
Dean John A. Knauss Marine Policy Fellowship - Dierdre Kimball Chryssostomidis, C. Massachusetts Institute of Technology SID# 897	30,000	0	0
NOAA Sea Grant Fellow - Lauren L. Wenzel Parsons, Michael Michigan Sea Grant College Program SID# 926	0	0	30,000
NOAA Sea Grant Fellow - Benjamin B. Witherell Parsons, Michael Michigan Sea Grant College Program SID# 928	0	0	30,000
NOAA Sea Grant Fellow - Nathaniel Stevens Parsons, Michael Michigan Sea Grant College Program SID# 927	0	0	30,000
1992 Dean Jean A. Knauss Federal Fellow - Laurie J. Sullivan Jones, James I. Mississippi-Alabama Sea Grant Consortium SID# 937	30,000	1,487	0
Dean John A. Knauss Marine Policy Fellowship for Sanjay Gupta McElroy, Anne E. New York Sea Grant Institute SID# 953	30,000	0	0

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Dean John A. Knauss Marine Policy Fellowship for Cynthia Decker McElroy, Anne E. New York Sea Grant Institute SID# 952	30,000	0	0
Dean John A. Knauss Marine Policy Fellow: Joseph Cione Copeland, B. J. University of North Carolina SID# 968	30,000	11,940	0
Dean John A. Knauss Marine Policy Fellowship (Jodi Cassell) Malouf, Robert E. Oregon Sea Grant College Program SID# 1033	30,000	0	0
Dean John A. Knauss Marine Policy Fellowship - Pamela Barrick Baker Nixon, Scott Rhode Island Sea Grant College Program SID# 1037	30,000	15,000	0
Dean John A. Knauss Marine Policy Fellowship - Ellen Morris Nixon, Scott Rhode Island Sea Grant College Program SID# 1038	30,000	15,000	0
Sea Grant Fellowship: Russell Callender Bright, Thomas J. Texas A&M University Sea Grant College Program SID# 1056	30,000	0	0
Dean John A. Knauss Marine Policy Fellowship - 1992 for Barbara Jeanne Bowry Olmi, Eugene J. Virginia Graduate Marine Science Consortium SID# 1070	30,000	0	0

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Knauss Sea Grant Fellowships - David Jansen Echols, Louie S. Washington Sea Grant College Program SID# 76	30,000	0	0
SUBTOTAL:	660,000	60,570	90,000
3. Traineeships (Research Assistantships)			
Sea Grant Traineeships Dearborn, R. K. Alaska Sea Grant College Program SID# 422	135,900	0	0
Sea Grant Graduate Student Trainee Program Fawcett, James A. Univ of Southern California Sea Grant College SID# 668	45,000	9,000	0
Graduate Student Support Tarpley, R. W. Delaware Sea Grant College Program SID# 155	369,380	0	0
Sea Grant Trainee Program Mackierman, Gail B. Maryland Sea Grant College Program SID# 53	142,514	16,440	0
Sea Grant Assistantships Spangler, George Minnesota Sea Grant College Program SID# 135	123,030	0	0
Graduate Traineeships Copeland, B. J. University of North Carolina SID# 10	181,116	0	0
SUBTOTAL:	996,940	25,440	0

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
4. Minority Programs			
NOAA Marine Engineering/Science Career Orientation Program Cox, Elbert L. Howard University SID# 280	0	56,700	26,380
American Indians in Marine Science Hill, Gerald L. Minnesota Sea Grant College Program SID# 136	50,000	0	0
Marine Education: An Interdisciplinary Approach to Minority Science Programs Tinnin, Richard K. Texas A&M University Sea Grant College Program SID# 720	50,656	27,746	0
SUBTOTAL:	100,656	84,446	26,380
5. K-12 and Teacher Training			
A Marine Educator to Coordinate Activities in Support of Long Island Sound Teachers Arnold, C. L. Connecticut Sea Grant College Program SID# 815	37,700	0	0
Marine Education and Training Calkins, Jay R. Georgia Sea Grant College Program SID# 574	48,343	79,161	0
Project Water: Wild and Aquatic Teacher Education Resources Soniat, Lyle Louisiana Sea Grant College Program SID# 848	25,658	27,038	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Aquatic and Marine Environments: A Three-part Study for Elementary and Middle School Teachers Walker, Sharon H. Mississippi-Alabama Sea Grant Consortium SID# 121	34,964	36,697	0
Curriculum Materials for Global Change and Integrative Earth Systems Education Fortner, Rosanne W. Ohio Sea Grant College Program SID# 990	45,351	23,251	0
A Comprehensive Marine Education Program for Puerto Rico Ortiz, Alida Univ of Puerto Rico Sea Grant College Program SID# 277	65,207	48,534	0
SUBTOTAL:	257,223	214,681	0
6. Public Outreach Education and Training			
Continuation of University-Based Marine Resource Observer Training Ellis, Carl O. Alaska Sea Grant College Program SID# 649	0	0	100,000
Education Outreach Hartley, Karen Massachusetts Institute of Technology SID# 898	17,000	5,000	0
Coastal Processes Interactive Computer Software Development for Teachers and Science Education Centers Riggs, Sallie K. Woods Hole Oceanographic Institution SID# 911	0	0	0

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Marine Safety Training: Development of Port-based Training for Commercial Fishermen Killion, Patrick J. Oregon Sea Grant College Program SID# 481	62,900	21,400	0
The Narragansett Bay Classroom Hickox, Sara Rhode Island Sea Grant College Program SID# 613	5,584	4,202	0
Observer Training Program Landy, A. Texas A&M University Sea Grant College Program SID# 1057	0	0	28,011
Liberty Bay Plankton Exhibit and Curriculum Project: Education to Increase Marine Literacy and Reduce Pollution Kolb Washington Sea Grant College Program SID# 1076	38,100	27,551	0
SUBTOTAL:	123,584	58,153	128,011
TOTAL:	2,653,276	837,977	249,391

Social Science and Marine Policy

A. Recreation and Tourism

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
1. Recreational Fishing			
A Decision Support System for Estimating Angler Harvests Wilkins, Bruce T. New York Sea Grant Institute SID# 966	25,551	29,386	0
Estimating Sportfishing Participation and Consumption of Fish in the Great Lakes Brown, Tommy L. New York Sea Grant Institute SID# 965	34,531	17,470	0
SUBTOTAL:	60,082	46,856	0
2. Tourism and Other Recreation (no projects 1992)			
TOTAL:	60,082	46,856	0

B. Commercial Fisheries

1. Sociocultural, Political, and Historical

International Management Regimes, the EEZ, and the U.S. Pacific Fisheries Scheiber, Harry N. California Sea Grant College Program SID# 529	789	763	0
Coping Strategies of Fishing Families in Response to Perceived Impacts of Changes in Marine Regulations Smith, S. Florida Sea Grant College Program SID# 91	13,946	7,095	0

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Safety and Perceptions of Risk Among Fishermen in Southern New England Poggie, John Rhode Island Sea Grant College Program SID# 608	65,136	47,273	0
Periodic Absences and Coping Strategies Among Fishing Families: Family Stress, Risk-Taking and Management Policies Mederer, Helen SID# 9225	7,600	0	0
SUBTOTAL:	87,471	55,131	0
2. Fisheries Management			
Tracking the Socio-Economic Impacts of Changes in Groundfish Management in New England Hall-Arber Massachusetts Institute of Technology SID# 892	29,997	0	0
Multi-Fishery Direct Effort Management: Development of Techniques Orbach, M. K. University of North Carolina SID# 975	20,629	2,440	0
Workshop on Social Science Research in Fisheries Gates, John M. Rhode Island Sea Grant College Program SID# 1041	0	0	5,000
Decision-Making Behavior and Economic Information Needs for Regulating the U.S. Sea Scallop Fishery Kirkley, James E. Virginia Graduate Marine Science Consortium SID# 211	46,436	26,380	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Social Impacts of ITQs in the Sea Clam Fisheries McCay, B. J. New Jersey Marine Science Consortium SID# 323	28,064	17,076	0
SUBTOTAL:	125,126	45,896	5,000
3. Aquaculture			
Aquaculture Regulation Guidebook Rubino, Michael C. Bluewaters International Inc SID# 1108	5,000	2,500	0
SUBTOTAL:	5,000	2,500	0
4. Fisheries Development			
(no projects 1992)			
TOTAL:	217,597	103,527	5,000
C. Marine Resources – Policy and Governance			
1. Estuaries, Wetlands and Coastal Zone			
Boat Traffic Monitoring Geographic Information System (GIS) for Planning Estuarine Waterways: Florida Case Study Antonini, G. A. Florida Sea Grant College Program SID# 94	67,155	33,688	0
Methodology and Mechanisms for Management of Cumulative Coastal Environmental Impacts Rieser, Alison UM/UNH Sea Grant College Program SID# 875	0	8,808	56,407

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
The Chesapeake Bay in an International Perspective: An Analytical Comparison of the Role of Scientific Communities in the Formation and Stability of Regimes for the Governance of Coastal and Inland Seas Sagoff Mark Maryland Sea Grant College Program SID# 889	28,175	15,949	0
Citizen's Monitoring Effort for Falmouth's Coastal Ponds Howes, Brian L. Woods Hole Oceanographic Institution SID# 914	30,993	16,428	0
Mississippi-Alabama Sea Grant Legal Program McLaughlin, Richard Mississippi-Alabama Sea Grant Consortium SID# 500	50,943	111,625	0
Conflicts Between Commercial and Recreational Fishermen Over Limited Coastal Resources Griffith, D.C. University of North Carolina SID# 974	19,057	0	
A Policy Framework for Nonindigenous Species in the Great Lakes Randall, Alan Ohio Sea Grant College Program SID# 1000	0	76,548	150,672
Sea Grant Public Perception Study Ward, Harold SID# 9227	28,817	0	0
SUBTOTAL:	225,140	263,046	207,079

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
2. Ocean Policy and Water Policy			
Science, Economic Theory, and Ocean Resources: Fisheries Law and Management Regimes for the Coastal Ocean Scheiber, Harry N. California Sea Grant College Program SID# 800	10,518	15,469	0
Multiple-Use Ocean Management in the U.S. Toward a New Conceptual Framework Cicin-Sain, Bilianna Delaware Sea Grant College Program SID# 56	9,694	37,089	0
Law of the Sea Institute Craven, John P. Univ of Hawaii Sea Grant College Program SID# 204	30,000	80,787	0
Coalition Building for Wise Water Management in the Great Lakes Basin: Climatic Uncertainties and Cultural Boundaries Gerlach, Luther P. Minnesota Sea Grant College Program SID# 107	32,710	3,600	0
SUBTOTAL:	82,922	136,945	0
TOTAL:	308,062	399,991	207,079
D. Archaeology			
Archeological Assessment of Historic Great Lakes Shipwrecks Cooper, David J. Wisconsin Sea Grant College Program SID# 1099	10,396	8,331	0
SUBTOTAL:	10,396	8,331	0
TOTAL:	10,396	8,331	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
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E. Public Health and Safety

TITLE/INVEST./INST.			
Sociobehavioral and Emergency-Management Aspects of Catastrophic Marine Oil Spills Nigg, Joanne M. Delaware Sea Grant College Program SID# 57	40,560	96,906	0
Applied Physiology of Diving Lin, Yu-Chong Univ of Hawaii Sea Grant College Program SID# 200	43,016	69,919	0
The Role of communication in Risk Judgements of Wisconsin Anglers and Their Families Dunwoody, Sharon L. Wisconsin Sea Grant College Program SID# 1100	69,193	34,570	0
Modification of Stress Responses in Scuba Divers Morgan, William P. Wisconsin Sea Grant College Program SID# 1098	40,322	27,089	0
Literature Assessment on Great Lakes and Human Health Swanson, Marie G. SID# 9205	4,950	4,902	0
Feasibility of a Statewide Consumer Level Organization Study Ditton, Robert Texas A&M SID# 9212	9,671	0	0
SUBTOTAL:	207,712	233,386	0
TOTAL:	207,712	233,386	0

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
F. Valuation of Non-market Resources			
Economic Evaluation of Artificial Reefs: The Case of Lorain County, Ohio Artificial Reef Hushak, Leroy Ohio Sea Grant College Program SID# 994	12,937	6,762	0
Economics of Endangered Species in the Columbia River Basin Huppert, D. D. Washington Sea Grant College Program SID# 1084	0	0	115,300
Valuation of Great Lakes Fisheries Bishop, Richard C. Wisconsin Sea Grant College Program SID# 465	49,410	24,204	0
SUBTOTAL:	62,347	30,966	115,300
TOTAL:	62,347	30,966	115,300
Marine Industry/Ports			
Management of Human Error in Operations of Marine Systems Bea, Robert G. California Sea Grant College Program SID# 533	2,569	1,563	0
SUBTOTAL:	2,569	1,563	0
TOTAL:	2,569	1,563	0
GRAND TOTAL:	868,765	824,620	327,379

Communications

1. Communications – Base Programs

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Public Information Services Baxter, Brenda; Byers Kurt Alaska Sea Grant SID# 88	128,131	361,436	0
Communications Program Sullivan, James J.; Amidei, Rosemary California Sea Grant SID# 557	295,324	45,779	0
Communications and Publications Grifman, Phyllis Southern California Sea Grant SID# 666	111,633	72,530	0
Core Communications Program Van Patten, Margaret Connecticut Sea Grant SID# 188	86,175	0	0
Sea Grant Communications Bryant, Tracey L. Delaware Sea Grant SID# 177	140,026	63,455	0
Sea Grant Communication Program Woeste, J. T.; Humphreys, Jay Florida Sea Grant SID# 564	114,500	57,252	0
Communications Program Rivers, Reita Georgia Sea Grant SID# 576	81,658	20,880	0
The Communications Program Davidson, Jack R.; Katter, Jill Hawaii Sea Grant SID# 227	106,100	38,175	0

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Communications Goettel, Robin Illinois-Indiana Sea Grant SID# 419	48,144	6,975	0
Publications and Information Dissemination Coleman, Elizabeth Louisiana Sea Grant SID# 1004	58,075	105,238	0
Communications and Information Program Lignell, Kathleen; Adams, Stephen Maine/New Hampshire Sea Grant SID# 400	183,000	73,605	0
Sea Grant Communications Greer, Jack Maryland Sea Grant SID# 40	136,700	145,775	0
Marine Communications/ Information Service Hartley, Karen Massachusetts Institute of Technology Sea Grant SID# 314	262,324	9,388	0
Communications and Public Outreach Ross, David A.; Crago, Tracy Woods Hole Oceanographic Institution Sea Grant SID# 641	65,776	95,000	0
Sea Grant Communications Flory, Mildred Michigan Sea Grant SID# 274	162,100	137,097	0
Communications Tibbetts, Alice Minnesota Sea Grant SID# 1	74,940	70,000	0
Program Management: Communications Jones, James I.; Skupien, Linda Mississippi-Alabama Sea Grant SID# 6	92,400	33,554	0

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Communications Kosko, Kim New Jersey Sea Grant SID# 245	69,386	14,991	0
Program-Wide Activities Klauber, Avery New York Sea Grant SID# 111	110,059	80,457	0
Program Communications Hart, Kathy North Carolina Sea Grant SID# 8	78,221	128,254	0
Communications Program Brainard, Maran Ohio Sea Grant SID# 637	46,723	94,264	0
Sea Grant Communications Larison, James R. Oregon Sea Grant SID# 486	154,000	130,500	0
Communications/Publications Cotte, Laura Puerto Rico Sea Grant SID# 151	101,273	132,192	0
Sea Grant Advisory Services: Information and Education Program Jaworski, Carole Rhode Island Sea Grant SID# 615	219,489	14,390	0
Communications and Information Services Handal, Leigh South Carolina Sea Grant SID# 1048	78,102	29,317	0
Marine Information Service Broussard, Amy Texas Sea Grant SID# 722	161,977	99,894	0
Sea Grant Communication Hens, Elizabeth; Waters, Susan Virginia Sea Grant	Funding for base communications program is included in the advisory services and in the program management budgets.		

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Sea Grant Communications Peyton, Patricia Washington Sea Grant SID# 73	253,200	84,453	0
Communications Office and Subprogram Coordination Wittman, Stephen Wisconsin Sea Grant SID# 479	163,894	112,650	0
SUBTOTAL:	3,583,330	2,257,501	0

2. Communications – Special Projects, Initiatives, and Pass Throughs

Long Island Sound: A Public Discussion of Critical Issues/Video Bender, Norman; Van Patten, Margaret Connecticut Sea Grant SID# 1113	32,300	49,155	0
Lakewide Management Plan (LaMP) Video/Slide Program Baker, Dale Minnesota Sea Grant	0	0	10,800
On Campus recycling project Cotte, Laura Puerto Rico Sea Grant SID# 1102	0	2,000	0
Sea Grant Activities Club Cotte, Laura Puerto Rico Sea Grant SID# 1103	0	3,900	0
Sea Grant Video Nights Cotte, Laura Puerto Rico Sea Grant SID# 1104	0	1,900	0
Support of Continuing and New Activities of the National Sea Grant Depository Murray, Cynthia J. University of Rhode Island SID# 725	123,959	0	0

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Earthwatch Public Service Radio Program Hoops, Richard Wisconsin Sea Grant SID# 480	55,301	23,723	0
Sea Grant Abstracts Quarterly Publication Shephard, Frank Woods Hole Data Base, Inc.	80,000	0	0
SUBTOTAL:	291,560	80,678	10,800
TOTAL:	3,874,890	2,338,179	10,800

Ocean Law

Coastal, International, and Other:

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Mississippi-Alabama Sea Grant Legal Program McLaughlin, Richard Mississippi-Alabama Sea Grant Consortium SID# 500	50,943	111,625	0
Law of the Sea Institute Craven, John P. Univ of Hawaii Sea Grant College Program SID# 204	30,000	80,787	0
International Management Regimes, the EEZ, and the U.S. Pacific Fisheries Scheiber, Harry N. California Sea Grant College Program SID# 529	789	763	0
Multiple-Use Ocean Management in the U.S. Toward a New Conceptual Framework Cicin-Sain, Biliana Delaware Sea Grant College Program SID# 56	9,694	37,089	0
Integrating International and Domestic Ocean Law Hildreth, Richard G. Oregon Sea Grant College Program SID# 443	128,000	170,800	0
Louisiana Sea Grant College Program Legal Advisory Service Wascom, Michael Louisiana Sea Grant College Program Program SID # 1002	76,950	48,509	0
TOTAL:	286,376	449,573	0

Technology and Commercial Development

Following is a listing of Sea Grant's Technology and Commercial Development Division technical staff, their subject area(s), and their phone number.

They can be reached at the following address:

**National Oceanic and Atmospheric Administration
National Sea Grant College Program
1335 East-West Highway
SSMC1, 5th Floor
Silver Spring, MD 20910**

Technology and Commercial Development301/713-2445
Ocean Engineering & Marine & Coastal Transportation Systems - Dr. Richard C. Kolf
Marine Resource Economics - Dr. Francis M. Schuler
Marine Recreation - Dr. Francis M. Schuler
International Activities - Dr. Francis M. Schuler

Ocean Engineering and Marine and Coastal Transportation Systems

Ocean Engineering

1. Education

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Opportunities for Undergraduate Research and Development in Marine Science and Engineering Harris, L. UM/UNH Sea Grant College Program SID# 397	23,000	22,969	0
MIT Sea Grant/Undergraduate Research Opportunities Program Doelling, Norman Massachusetts Institute of Technology SID# 307	27,083	21,008	0
Faculty, Graduate Student Marine Advisory Service Doelling, Norman Massachusetts Institute of Technology SID# 894	3,750	1,955	0
Public Education and Training Short Courses McGarry, Frederick J Massachusetts Institute of Technology SID# 313	0	4,046	0
Annual MIT Sea Grant Lecture/Seminar Hartley, Karen Massachusetts Institute of Technology SID# 312	2,083	4,365	0
SUBTOTAL:	55,916	54,343	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
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2. Fisheries and Seafood Processing

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
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Center for Fisheries Engineering Goudey, Clifford A. Massachusetts Institute of Technology SID# 309	6,475	6,667	0
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A Decision Support System for Estimating Angler Harvests Wilkins, Bruce T. New York Sea Grant Institute SID# 966	25,551	29,386	0
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SUBTOTAL:	32,026	36,053	0
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3. Aquaculture

Development and Characterization of a High Rate Biofilter for Recirculating Aquaculture Systems Piedrahita, Raul H. California Sea Grant College Program SID# 690	16,997	11,204	0
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Microcomputer-Based Automation and Expert System Development of Aquaculture Lee, Phillip G. Texas A&M University Sea Grant College Program SID# 550	61,325	36,017	0
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SUBTOTAL:	78,322	47,221	0
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4. Erosion Control Structures

A Rational Analysis and Design Procedure for Rubble Mound Coastal Structures McDougal, William G. Oregon Sea Grant College Program SID# 330	121,900	95,200	0
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SUBTOTAL:	121,900	95,200	0
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TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
5. Coastal Construction			
Reliability Based LRFD Criteria of Anchored Bulkheads Sandford, Thomas UM/UNH Sea Grant College Program SID# 391	41,025	20,155	0
"Collision Tolerance Pile Structure: Long Term Field Measurement and Life Expectancy Analysis" Doyle, B. UM/UNH Sea Grant College Program SID# 494	0	0	69,650
SUBTOTAL:	41,025	20,155	69,650
6. Ship Design, Construction, and Safety			
An Intelligent Control System for Underwater Robotic Vehicles Yuh, Junku Univ of Hawaii Sea Grant College Program SID# 597	11,040	24,799	0
Nonlinear Dynamics of Fishing Vessels Falzarano, Jeffrey M Louisiana Sea Grant College Program SID# 858	26,315	14,348	0
Hydrodynamics of Marine Propulsors Kerwin, Justin Massachusetts Institute of Technology SID# 433	0	0	173,130
Development of a Computational Model for Ducted Propellers with Cyclic Pitch Control Kerwin, Justin Massachusetts Institute of Technology SID# 904	0	0	42,785

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Geometry Data Representation, Exchange and Inspection Chrysostomidis, C. Massachusetts Institute of Technology SID# 434	0	0	348,250
Control of Vorticity and Oscillating Foils for Optimal AUV Propulsion Triantafyllou, Micha Massachusetts Institute of Technology SID# 905	75,000	80,000	0
Hydrodynamics of Integrated Propulsors Kerwin, Justin Massachusetts Institute of Technology SID# 906	0	0	124,375
6. Ship Design, Construction, and Safety			
Map Representation and Interrogation for Autonomous Underwater Vehicle Navigation Patrikalakis, Nichol Massachusetts Institute of Technology SID# 909	75,000	30,000	0
Continuation of Seakeeping and Dynamic Analysis of High-Speed Planing Craft Troesch, Armin W. Michigan Sea Grant College Program SID# 349	57,474	10,638	0
A Nonlinear Probabilistic Approach to Fishing Vessel Capsizing Shaw, Steven W. Michigan Sea Grant College Program SID# 350	83,903	10,660	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Continuing Development of an Improved Method for Predicting the Resistance and Seakeeping of Planing Boats Vorus, William S. Michigan Sea Grant College Program SID# 348	58,089	14,319	0
SUBTOTAL:	386,821	184,764	688,540
7. Water and Waste Treatment			
Design and Testing of a Wastewater Treatment Configuration for Small Seafood Processing Operations Malone, Ronald F. Louisiana Sea Grant College Program SID# 868	47,108	14,607	0
SUBTOTAL:	47,108	14,607	0
8. Offshore Structure Design and Analysis			
Repair of Damaged Offshore Structural Steel Members Using Grouting Ricles, James M. California Sea Grant College Program SID# 535	2,387	3,718	0
A Knowledge-Based Approach for Assessing the Integrity of Offshore Platforms Subjected to Seismic Loading Ibbs, William C. California Sea Grant College Program SID# 689	43,960	27,411	0
SUBTOTAL:	46,347	31,129	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
9. Biofouling and Metal Corrosion			
Anticorrosive Properties of Adhesive Proteins Isolated from the Mussel <i>Mytilus Edulis</i> Dexter, Steven C. Delaware Sea Grant College Program SID# 166	18,720	24,334	0
Bacterial Fouling of Metal Surfaces: Implications for Biocorrosion Kirchman, David L. Delaware Sea Grant College Program SID# 58	12,636	30,629	0
Influence of Marine Bacterial Films on Crevice Corrosion Dexter, Steven C. Delaware Sea Grant College Program SID# 60	7,800	22,377	0
Development of New Antifouling Coating Utilizing Controlled Release Technology Weisman, G. R. UM/UNH Sea Grant College Program SID# 35	52,999	25,480	0
Bacterial Inhibitors of Adhesion of Marine Biofilm Bacteria Burchard, Robert P. Maryland Sea Grant College Program SID# 886	19,049	7,075	0
Polypeptide Inhibitors of Corrosion from Marine Organisms Sikes, Steven C. Mississippi-Alabama Sea Grant Consortium SID# 499	34,157	17,877	0
SUBTOTAL:	145,361	127,772	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
10. Materials in the Marine Environment - Other			
Improved Fatigue Life for Moorings Seymour, Richard J. California Sea Grant College Program SID# 537	2,049	1,001	0
Investigation of Recycling/Reprocessing with Marine Plastics - A Cost-Effective Method of Dealing with Plastic Debris with Emphasis on Fishing Gear (Phase II). Xanthos, Marino New Jersey Marine Sciences Consortium SID# 947	0	0	138,000
Application of Stress Wave Methodology to Nondestructive Evaluation of Marine Wooden Pillings Douglas, R. University of North Carolina SID# 978	0	29,346	0
SUBTOTAL:	2,049	30,347	138,000
11. Ocean Mining			
Benthic Community Disturbance and Succession Following Simulated Manganese-nodule Mining in the Equatorial Pacific Ocean Smith, Craig R. Univ of Hawaii Sea Grant College Program SID# 219	0	5,000	329,892
Chemical and Isotopic Stratigraphy of Co-rich Ferromanganese Crusts from the Hawaiian Archipelago McMurtry, Gary M. Univ of Hawaii Sea Grant College Program SID# 210	43,595	33,172	0

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Continuum of Ferromanganese Pavements on Seamounts of the Hawaiian EEZ Malahoff, Alexander Univ of Hawaii Sea Grant College Program SID# 591	33,911	10,154	0
The Environmental Impact and Feasibility of a Novel Method of Solution Recovery of Cobalt-Rich Ferromanganese Crusts from Seamounts Malahoff, Alexander Univ of Hawaii Sea Grant College Program SID# 592	22,082	22,154	0
A Submersible Investigation of Manganese Crust Deposits Off Johnston Island Wiltshire, John Univ of Hawaii Sea Grant College Program SID# 593	7,015	12,000	0
SUBTOTAL:	106,603	82,480	329,892
12. Instrumentation Development			
Acoustic Sensing of Pelagic Fish Stocks Jaffe, Jules S. California Sea Grant College Program SID# 691	71,590	2,080	0
Interactive Acoustic Data Display and Statistical Analysis Swartzman, G. L. Washington Sea Grant College Program SID# 267	73,700	30,442	0
SUBTOTAL:	145,290	32,522	0

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
13. Industry Relations - Industry Advisory Service			
Marine Research Center Chrysostomidis, C. Massachusetts Institute of Technology SID# 300	266,667	166,739	0
MIT Sea Grant Marine Industry Collegium Moore, John Jr. Massachusetts Institute of Technology SID# 308	11,700	8,150	0
National Sea Grant Marine Industry Collegium Program Moore, John Jr. Massachusetts Institute of Technology SID# 895	10,000	3,500	0
The University of Michigan/Sea Grant/Industry Consortium in Offshore Engineering Bernitsas, Michael Michigan Sea Grant College Program SID# 243	50,885	48,061	0
SUBTOTAL:	339,252	226,450	0
14. Miscellaneous			
Salinity Powered Distillation of Freshwater from Seawater Using Plastic-Sheet Heat Exchangers Lowrey, Preston D. California Sea Grant College Program SID# 539	2,078	794	0
Management of Human Error in Operations of Marine Systems Bea, Robert G. California Sea Grant College Program SID# 533	2,569	1,563	0

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Offshore Single Point Mooring Systems for Import of Hazardous Liquid Cargos Bea, Robert G. California Sea Grant College Program SID# 808	78,525	62,838	0
An Algae Harvesting System for Nahant Bay Goudey, Clifford A. Massachusetts Institute of Technology SID# 908	0	35,000	49,000
SUBTOTAL:	83,172	100,195	49,000
15. Marine and Coastal Transportation Systems			
A Spatial-Sectoral Economic Impact Model of Seaport Development for Evaluating the Development and Resolution of Intro-Community Conflicts Heikkila, Eric J. Univ of Southern California Sea Grant College SID# 508	48,114	34,022	0
Boat Traffic Monitoring Geographic Information System (GIS) for Planning Estuarine Waterways: Florida Case Study Antonini, G. A. Florida Sea Grant College Program SID# 94	67,155	33,688	0
SUBTOTAL:	115,269	67,710	0
TOTAL:	1,746,461	1,150,948	1,275,082

Marine Resource Economics

1. Fisheries and Aquaculture

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Optimal Allocation of Groundfish in the Fisheries off Alaska: A New Estimation Approach Smith, Terrence P. Alaska Sea Grant College Program SID# 786	49,354	9,174	0
An Economic Analysis of World Markets for Wild and Farmed Salmon Herrmann, Mark L. Alaska Sea Grant College Program SID# 787	36,278	16,428	0
International Management Regimes, the EEZ, and the U.S. Pacific Fisheries Scheiber, Harry N. California Sea Grant College Program SID# 529	789	763	0
Science, Economic Theory, and Ocean Resources: Fisheries Law and Management Regimes for the Coastal Ocean Scheiber, Harry N. California Sea Grant College Program SID# 800	10,518	15,469	0
Economic Analysis of Surf Clam and Ocean Quahog Individual Transferable Quotas Anderson, Lee G. Delaware Sea Grant College Program SID# 55	3,900	25,570	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Economic Analysis of Hard Clam Aquaculture Systems Under Price and Yield Risk Thunberg, E. M. Florida Sea Grant College Program SID# 90	22,871	11,776	0
Tracking the Socio-Economic Impacts of Changes in Groundfish Management in New England Hall-Arber Massachusetts Institute of Technology SID# 892	29,997	0	0
"Social Impacts of ITQs in the Sea Clam Fisheries" McCay, B. J. New Jersey Marine Science Consortium SID# 323	28,064	17,076	0
Improved Valuation of Fisheries Harvest: Application of the General Equilibrium Derived Demand Easley, J. E. Jr. University of North Carolina SID# 987	0	19,093	0
An Economics Evaluation of Management Alternatives and Market Factors in the West Coast Groundfish Fishery Hanna, Susan S. Oregon Sea Grant College Program SID# 442	9,000	42,800	0
Workshop on Social Science Research in Fisheries Gates, John M. Rhode Island Sea Grant College Program SID# 1041	5,000	0	0

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Decision-Making Behavior and Economic Information Needs for Regulating the U.S. Sea Scallop Fishery Kirkley, James E. Virginia Graduate Marine Science Consortium SID# 211	46,436	26,380	0
Economics for Hard Blue Crab Fishery Management Planning Shabman, Leonard Virginia Graduate Marine Science Consortium SID# 209	15,868	8,268	0
Economics of Limiting Access to Selected U.S. Pacific Fisheries Huppert, D. D. Washington Sea Grant College Program SID# 167	63,500	36,213	0
SUBTOTAL:	321,575	229,010	0
2. Coastal Resources			
An Economic Analysis of Beach Preservation Parsons, George R. Delaware Sea Grant College Program SID# 175	4,992	16,993	0
Methodology and Mechanisms for Management of Cumulative Coastal Environmental Impacts Rieser, Alison UM/UNH Sea Grant College Program SID# 875	0	8,808	56,407
Economic Aspects of Marine Debris McConnell, K. E. Maryland Sea Grant College Program SID# 430	0	20,002	67,595

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Economic Impacts of Harmful Algal Blooms and Red Tides Kaoru, Yoshiaki Woods Hole Oceanographic Institution SID# 922	27,945	20,346	0
Estimating Use and Existence Values for Coastal Amenities Smith, V. K. University of North Carolina SID# 986	54,500	7,950	0
A Policy Framework for Nonindigenous Species in the Great Lakes Randall, Alan Ohio Sea Grant College Program SID# 1000	0	76,548	150,672
Co-sponsorship of the Conference on "Introductions and Transfers of Marine Species: Achieving a Balance Between Economic Development and Resource Protection" DeVoe, Richard M. South Carolina Sea Grant Consortium SID# 1045	0	0	5,000
Economics of Endangered Species in the Columbia River Basin Huppert, D. D. Washington Sea Grant College Program SID# 1084	0	0	115,300

SUBTOTAL:	87,437	150,647	394,974
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3. Recreation and Tourism

Present and Projected Demand and Supply of Florida's Saltwater Boat Ramps Bell, F. W. Florida Sea Grant College Program SID# 823	34,257	17,129	0
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TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
The Economic Value of Fish Contamination Advisories to Individual Great Lakes Sport Anglers Hoehn, John Michigan Sea Grant College Program SID# 262	33,465	17,841	0
A Decision Support System for Estimating Angler Harvests Wilkins, Bruce T. New York Sea Grant Institute SID# 966	25,551	29,386	0
Estimating Sportfishing Participation and Consumption of Fish in the Great Lakes Brown, Tommy L. New York Sea Grant Institute SID# 965	34,531	17,470	0
Economic Evaluation of Artificial Reefs: The Case of Lorain County, Ohio Artificial Reef Hushak, Leroy Ohio Sea Grant College Program SID# 994	12,937	6,762	0
Feasibility of a Statewide Consumer Level Organization Study Ditton, Robert SID# 9211	9,671	0	0
Valuation of Great Lakes Fisheries Bishop, Richard C. Wisconsin Sea Grant College Program SID# 465	49,410	24,204	0
SUBTOTAL:	199,822	112,792	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
4. Coastal Business and Marine Industry Development			
A Spatial-Sectoral Economic Impact Model of Seaport Development for Evaluating the Development and Resolution of Intro-Community Conflicts Heikkila, Eric J. Univ of Southern California Sea Grant College SID# 508	48,114	34,022	0
National Sea Grant Marine Industry Collegium Program Moore, John Jr. Massachusetts Institute of Technology SID# 895	10,000	3,500	0
Third International Symposium on Coastal Ocean Space Utilization Abel, Robert New Jersey Marine Sciences Consortium SID# 943	0	0	25,000
Managerial Assistance for Great Lakes Based/Allied Business Sadowske, Sue Wisconsin Sea Grant College Program SID# 1086	1,420	1,394	0
SUBTOTAL:	59,534	38,916	25,000
TOTAL:	668,368	531,365	419,974

Marine Recreation and Tourism

1. Marine Recreational Fishing

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Nutrient Cycles and Optimum Productivity of Shallow-Water Artificial Reefs Szmant, A. M. Florida Sea Grant College Program SID# 86	49,947	9,371	0
The Economic Value of Fish Contamination Advisories to Individual Great Lakes Sport Anglers Hoehn, John Michigan Sea Grant College Program SID# 262	33,465	17,841	0
A Decision Support System for Estimating Angler Harvests Wilkins, Bruce T. New York Sea Grant Institute SID# 966	25,551	29,386	0
Estimating Sportfishing Participation and Consumption of Fish in the Great Lakes Brown, Tommy L. New York Sea Grant Institute SID# 965	34,531	17,470	0
Conflicts Between Commercial and Recreational Fishermen over Limited Coastal Resources Griffith, D. C. University of North Carolina SID# 974	19,057	0	0
Economic Evaluation of Artificial Reefs: The Case of Lorain County, Ohio Artificial Reef Hushak, Leroy Ohio Sea Grant College Program SID# 994	12,937	6,762	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Valuation of Great Lakes Fisheries Bishop, Richard C. Wisconsin Sea Grant College Program SID# 465	49,410	24,204	0
The Role of communication in Risk Judgements of Wisconsin Anglers and Their Families Dunwoody, Sharon L. Wisconsin Sea Grant College Program SID# 1100	69,193	34,570	0
SUBTOTAL:	294,091	139,604	0
2. Boating			
Present and Projected Demand and Supply of Florida's Saltwater Boat Ramps Bell, F. W. Florida Sea Grant College Program SID# 823	34,257	17,129	0
Boat Traffic Monitoring Geographic Information System (GIS) for Planning Estuarine Waterways: Florida Case Study Antonini, G. A. Florida Sea Grant College Program SID# 94	67,155	33,688	0
Docks and Marinas Advisory Services Worthley, Allen C. Wisconsin Sea Grant College Program SID# 476	16,345	15,120	0
SUBTOTAL:	117,757	65,937	0


TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
3. Coastal Tourism Development			
Marine Debris Awareness Campaign (Phase II) Miller, Bruce J. Univ of Hawaii Sea Grant College Program SID# 841	0	0	8,800
Advisory Services in Marine Recreation and Tourism Liffmann, Michael Louisiana Sea Grant College Program SID# 1003	25,164	22,300	0
Archeological Assessment of Historic Great Lakes Shipwrecks Cooper, David J. Wisconsin Sea Grant College Program SID# 1099	10,396	8,331	0
SUBTOTAL:	35,560	30,631	8,800
TOTAL:	447,408	236,172	179,090

International Activities

Sea Grant – International Activities

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
International Technology and Information Transfer Program Sullivan, James J. California Sea Grant College Program SID# 558	14,009	3,814	0
Program Development II: International Projects (IR-AM-AQUA Workshop) Monahan, E. C. Connecticut Sea Grant College Program SID# 816	14,000	0	0
Law of the Sea Institute Craven, John P. Univ of Hawaii Sea Grant College Program SID# 204	30,000	80,787	0
The Chesapeake Bay in an International Perspective: An Analytical Comparison of the Role of Scientific Communities in the Formation and Stability of Regimes for the Governance of Coastal and Inland Seas Sagoff Mark Maryland Sea Grant College Program SID# 889	28,175	15,949	0
International Marine Science Cooperation Program Ross, David A. Woods Hole Oceanographic Institution SID# 341	120,173	0	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Investigation of Recycling/Reprocessing with Marine Plastics - A Cost-Effective Method of Dealing with Plastic Debris with Emphasis on Fishing Gear (Phase II). Xanthos, Marino New Jersey Marine Sciences Consortium SID# 947	0	0	138,000
Third International Symposium on Coastal Ocean Space Utilization Abel, Robert New Jersey Marine Sciences Consortium SID# 943	0	0	25,000
Integrating International and Domestic Ocean Law Hildreth, Richard G. Oregon Sea Grant College Program SID# 443	128,000	170,800	0
Preparation and Publication of Proceedings: Fifth International Conference on Toxic Marine Phytoplankton Smayda, Theodore J. Rhode Island Sea Grant College Program SID# 1044	0	0	10,000
Assessment of Computer Networks and Clearinghouses Disseminating Global Change Information to Educators Lawrence, Lee F. Virginia Graduate Marine Science Consortium SID# 1068	0	0	6,090
TOTAL:	334,357	271,350	179,090



Environmental Studies

Following is a listing of Sea Grant's Environmental Studies Division technical staff,
their subject area(s), and their phone number.
They can be reached at the following address:

**National Oceanic and Atmospheric Administration
National Sea Grant College Program
1335 East-West Highway
SSMC1, 5th Floor
Silver Spring, MD 20910**

Environmental Studies301/713-2435
Coastal Processes - Mr. John P. Ahrens
Environmental Studies - Dr. William F. Graham
Dr. Leon M. Cammen

Coastal Processes

1. Coastal Sediment Transport

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Nearshore Long Waves Seymour, Richard J. California Sea Grant College Program SID# 807	41,897	16,223	0
Temporal Evaluation of Particulate Distributions in the Vicinity of an Ocean Outfall as Forced by Physical and Biological Dickey, Tommy Univ of Southern California Sea Grant College SID# 672	27,197	31,129	0
Nonlinear Wave Interactions in Surf Zones Kobayashi, Nobuhisa Delaware Sea Grant College Program SID# 64	2,652	51,961	0
Numerical Modelling of Nearshore Hydrodynamics Svendsen, Ib A. Delaware Sea Grant College Program SID# 163	4,212	46,176	0
Coastal Turbidity Associated with Natural and Man-Induced Phenomena Hanes, D. M. Florida Sea Grant College Program SID# 652	48,250	24,116	0
A Unified Model for Cross-shore and Longshore Sand Transport Dally, W. R. Florida Sea Grant College Program SID# 93	47,994	24,000	0

Quantifying Sediment Resuspension Flux of Nutrients and Contaminants in Estuaries Due to Episodic Events Sheng, P. Florida Sea Grant College Program SID# 95	50,326	25,163	0
Study of Sediment Processes to Investigate the Fate of Organic Matter in the Louisiana Shelf Ecosystem Twilley, Robert R. Louisiana Sea Grant College Program SID# 854	0	15,245	114,984
Random Walk Models of Coastal and Estuarine Transport Adams, Eric E. Massachusetts Institute of Technology SID# 265	54,166	27,279	0
Spatial and Temporal Scales of Sediment Accumulation in the Near-Shore Zone of Massachusetts Bay Wallace, Gordon T. Massachusetts Institute of Technology SID# 302	64,167	38,006	0
Cross-Shore Length Scales of Longshore Bars and Associated Forcing Perlin, Marc Michigan Sea Grant College Program SID# 354	42,593	15,310	0
Effects of Thin-Layer Disposal of Dredged Material in Louisiana Coastal Marshes Veal, David C. Mississippi-Alabama Sea Grant Consortium SID# 938	0	0	11,940

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Contaminant Transport in Large Rotating Systems Atkinson, Joseph F. New York Sea Grant Institute SID# 955	33,538	19,790	0
Seasonal Resuspension of Contaminated Sediments in a Great Lake Setting Flood, Roger D. New York Sea Grant Institute SID# 959	62,753	40,246	0
Experimental Analysis of the Effects of Thin-Layer Disposal of Dredged Materials on a Juncus roemerianus Marsh on Wysocking Bay, North Carolina Luczkovich, J. J. University of North Carolina SID# 976	0	0	30,006
A Climatology Protocol for Characterization of Long Term Entrainment and Resuspension Bedford, Keith W. Ohio Sea Grant College Program SID# 995	42,175	21,065	0
The Dynamics of Horizontal Sediment Transport and Focusing in Large Lakes Edgington, David N. Wisconsin Sea Grant College Program SID# 454	54,775	33,440	0
SUBTOTAL:	576,695	429,149	156,930
2. Inlets and Estuaries			
Modelling Effects of Vertical Current Shear in Wave-Propagation Schemes Kirby, James T. Delaware Sea Grant College Program SID# 63	7,800	37,972	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
An Analysis of the Lagrangian Motion in Delaware's Inland Bays Wong, Kuo-Chuin Delaware Sea Grant College Program SID# 68	5,928	23,814	0
Ecological Linkages Among Wetland, Bay, and Shelf Systems in Fourleague Bay, Louisiana: III. Bay-Shelf Exchange Through Oyster Bayou Rouse, Larry J. Louisiana Sea Grant College Program SID# 862	30,934	14,050	0
Citizen's Monitoring Effort for Falmouth's Coastal Ponds Howes, Brian L. Woods Hole Oceanographic Institution SID# 914	30,993	16,428	0
Modeling the Three Dimensional Circulation of Pulsed Fresh Water Discharges into an Estuarine System Spaulding, Malcolm Rhode Island Sea Grant College Program SID# 1042	50,144	34,788	0
SUBTOTAL:	125,799	127,052	0
3. Coastal Oceanography			
Southern California Waves: Model Verification and Utilization Guza, Robert T. California Sea Grant College Program SID# 530	3,773	665	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Development of a Numerical Model for Steep, Directional Seas Webster, William C. California Sea Grant College Program SID# 698	24,623	15,405	0
Seismic Risk of the Offshore San Gregorio-Hosgri Fault Zone Between Monterey and San Francisco, California Reed, Donald L. California Sea Grant College Program SID# 694	13,079	10,874	0
Wave-Driven Transport of Surface Oil Slicks Sobey, Rodney J. California Sea Grant College Program SID# 797	25,443	18,387	0
Physical Oceanography and Modeling Lee, Thomas N. Florida Sea Grant College Program SID# 408	0	0	35,000
A Lagrangian Study of the Louisiana Coastal Current Hitchcock, Gary H. Florida Sea Grant College Program SID# 826	0	0	63,910
SABRE: Physical Oceanography and Modelling Blanton, Jackson O. Georgia Sea Grant College Program SID# 357	0	49,138	75,000
A Lagrangian Study of the Louisiana Coastal Current Wiseman, William J. Louisiana Sea Grant College Program SID# 855	0	4,064	33,386

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Estimation of Wave Properties in Coastal Gulf of Maine Panchang, V. G. UM/UNH Sea Grant College Program SID# 36	57,096	10,172	0
A Lagrangian Study of the Louisiana Coastal Current Boicourt, William C. Maryland Sea Grant College Program SID# 877	0	0	34,627
Vertical Mixing Processes in Massachusetts Bay Geyer, Wayne R. Woods Hole Oceanographic Institution SID# 916	64,976	35,000	0
A Coastal Ocean and Estuarine Prediction System Mellor, George L. New Jersey Marine Sciences Consortium SID# 328	0	0	34,200
Tsunami Inundation at Hilo, Hawaii Liu, Philip L. New York Sea Grant Institute SID# 956	0	17,925	49,983
Wave Climate and Extreme Storm Events on the Oregon Coast Komar, Paul D. Oregon Sea Grant College Program SID# 472	41,900	45,600	0
Developing the first integrated mapping laboratory aboard ship Tyce, Robert C. Rhode Island Sea Grant College Program SID# 242	0	0	128,224
Breaking Waves on Beaches Grilli, Stephan T. Rhode Island Sea Grant College Program SID# 9224	24,342	0	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Mapping Temperature, Salinity and Velocity at Shallow Depth Gregg, M.C. Washington Sea Grant College Program SID# 168	62,700	22,870	0
Gravity Currents and Internal Bores Yeh, H. H. Washington Sea Grant College Program SID# 170	44,800	23,827	0
SUBTOTAL:	362,732	253,927	454,330
4. Coasts and Shore Protection			
Sea Level Rise over the Last 2000 Years: Investigations of Marsh Sequences in Connecticut Varekamp, J. C. Connecticut Sea Grant College Program SID# 182	19,120	24,016	0
Coastal Wetland Mapping and Change Detection in the Northeast United States Civco Connecticut Sea Grant College Program SID# 813	0	0	16,128
The Influence of Accelerated Sea Level Rise on Tidal Marsh Development at Barn Island, Stonington, Connecticut Orson, R. A. Connecticut Sea Grant College Program SID# 818	24,603	17,197	0
Water Waves in the Vicinity of Breakwaters and Jetties Dalrymple, Robert A. Delaware Sea Grant College Program SID# . 61	3,900	47,015	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
An Economic Analysis of Beach Preservation Parsons, George R. Delaware Sea Grant College Program SID# 175	4,992	16,993	0
Field Evaluation and Continued Development of Equilibrium Beach Profile Concepts Dean, R. G. Florida Sea Grant College Program SID# 92	51,296	26,144	0
Coastal Resource Inventory: Territory of American Samoa Rappa, Peter J. Univ of Hawaii Sea Grant College Program SID# 839	0	0	13,420
Use of Sediment Fences for Marsh Restoration and Creation Day, John W. Jr. Louisiana Sea Grant College Program SID# 378	0	4,017	32,999
Reliability Based LRFD Criteria of Anchored Bulkheads Sandford, Thomas UM/UNH Sea Grant College Program SID# 391	41,025	20,155	0
Public Risk Perception and Coastal Flood Insurance Kaoru, Yoshiaki Woods Hole Oceanographic Institution SID# 923	0	0	0
Shoreline Changes at Ocean Springs, MS Meyer-Arendt, Klaus SID# 9207	0	0	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Numerical Computations of Three-Dimensional Nonlinear Water Waves Interacting with Structures Liu, Philip L. New York Sea Grant Institute SID# 962	25,559	37,553	0
A Rational Analysis and Design Procedure for Rubble Mound Coastal Structures McDougal, William G. Oregon Sea Grant College Program SID# 330	121,900	95,200	0
Coastal Engineering Advisory Services Keillor, Philip Wisconsin Sea Grant College Program SID# 474	20,301	19,066	0
An Analysis of Coastal Erosion in Puerto Rico Morelock, Jack Univ of Puerto Rico Sea Grant College Program SID# 1106	48,575	22,317	0
SUBTOTAL:	361,271	329,673	62,547
5. Instrumentation			
NOAA Coastwatch--Feature Tracking Automation Yan, X. H. Delaware Sea Grant College Program SID# 819	0	0	40,400
Remote Sensing of Wetland Condition Indicators and Functional Health Klemas, V. Delaware Sea Grant College Program SID# 532	25,373	7,119	43,003

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Map Representation and Interrogation for Autonomous Underwater Vehicle Navigation Patrikalakis, Nichol Massachusetts Institute of Technology SID# 909	75,000	30,000	0
Evaluation of a Real-Time AVHRR and In-Situ data System for Use in Surface Heat Flux Predictions Merry, Carolyn J. Ohio Sea Grant College Program SID# 991	45,356	25,674	0
Developing the first integrated mapping laboratory aboard ship Tyce, Robert C. Rhode Island Sea Grant College Program SID# 242	0	0	128,224
Tide Amplitude and Timing Variation Impacts on Remote Sensing of Emergent Wetlands on the Virginia Coast Reserve Hayden, Bruce P. Virginia Graduate Marine Science Consortium SID# 1072	0	0	56,252
Interactive Acoustic Data Display and Statistical Analysis Swartzman, G. L. Washington Sea Grant College Program SID# 267	73,700	30,442	0
Acoustic Global Ocean Warming feasibility experiment Spindel, R. C. Washington Sea Grant College Program SID# 417	0	0	642,000
SUBTOTAL:	219,429	93,235	909,879
TOTAL:	1,645,926	1,233,036	1,583,686

Environmental Studies

A. Environmental Characterization

1. Biological

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Optimal Allocation of Groundfish in the Fisheries off Alaska: A New Estimation Approach Smith, Terrence P. Alaska Sea Grant College Program SID# 786	49,354	9,174	0
Modeling Long-Term Changes in Multispecies Fisheries Collie, Jeremy S. Alaska Sea Grant College Program SID# 781	19,635	15,585	0
Regional Estimation of Harbor Seal and Harbor Porpoise in Alaska Wynne, Kate Alaska Sea Grant College Program SID# 776	0	0	48,346
Otolith Technique for Tracing Geographic Life History of Pollock Norcross, Brenda Alaska Sea Grant College Program SID# 681	0	0	9,948
Cooperative Fisheries and Oceanographic Studies (CFOS) Cooney, Robert T. Alaska Sea Grant College Program SID# 178	69,963	28,413	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Physiological Health Status of Steller Sea Lions: Ecological Implications Castellini, Michael Alaska Sea Grant College Program SID# 784	24,646	0	0
Analysis of Time Series of Fisheries and Oceanographic Variables Quinn, T. J. II Alaska Sea Grant College Program SID# 782	0	0	28,000
Northern California Red Sea Urchin Fishery Botsford, Louis W. California Sea Grant College Program SID# 518	3,423	2,703	0
Abalone Wasting Disease: Role of Coccidian Parasites and Environmental Factors German, Bruce J. California Sea Grant College Program SID# 540	2,171	1,514	0
The Importance of Transport Processes in Recruitment of Rockfishes (Genus Sebastes) to Nearshore Areas of Monterey Bay, California Loeb, Valerie J. California Sea Grant College Program SID# 687	27,449	107,749	0
Spatial Management of the Northern California Red Sea Urchin Fishery Botsford, Louis W. California Sea Grant College Program SID# 799	47,047	37,052	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Mathematic Model of Larval Transport and Recruitment Epifanio, Charles E. Delaware Sea Grant College Program SID# 71	16,536	64,016	0
Physiological Condition and Potential Survival of Larvae During Cross-Shelf Transport Clarke, M. E. Florida Sea Grant College Program SID# 829	0	0	25,516
The Role of Environmental Factors in Promoting Papilloma Disease in the Green Sea Turtle Cato, J. C. Florida Sea Grant College Program SID# 827	0	0	10,000
Meiofauna: Tools for Evaluating the Environmental Impact of Polymetallic Nodule Mining in the Deep Sea Thistle, D. Florida Sea Grant College Program SID# 828	0	0	28,300
Temporal Aspects of Recruitment and Spawning of the Gag Grouper in the Gulf of Mexico Travis, J. Florida Sea Grant College Program SID# 84	48,517	24,500	0
Recruitment, Abundance, and Growth of Postlarval and Juvenile Blue Crabs in a Southeastern Coastal Estuary Wiegert, Richard G. Georgia Sea Grant College Program SID# 836	58,920	28,743	0

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
The Biological Environment of Estuarine Nurseries: Resource Availability and the Effects of Resident Species on the Growth and Survival of Juvenile Penaeid Shrimp Kneib, Ronald T. Georgia Sea Grant College Program SID# 833	49,444	18,752	0
Mechanisms of Transport of Decapod Crustaceans through Estuarine Inlets Blanton, Jackson O. Georgia Sea Grant College Program SID# 834	145,424	99,830	0
Benthic Community Disturbance and Succession Following Simulated Manganese-nodule Mining in the Equatorial Pacific Ocean Smith, Craig R. Univ of Hawaii Sea Grant College Program SID# 219	0	5,000	329,892
Spawning Grounds and Life History of the Commercially Valuable Squid, <i>Ommastrephes bartramii</i> , within the Hawaiian EEZ Young, Richard E. Univ of Hawaii Sea Grant College Program SID# 587	32,501	160,426	0
Microbiology and Chemistry of Active Hydrothermal Vents on Loihi Seamount Karl, David M. Univ of Hawaii Sea Grant College Program SID# 197	30,887	25,558	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Identification of Actively Used Near-shore Lake Trout Spawning Sites in Southwestern Lake Michigan Marsden, Ellen J. Illinois-Indiana Sea Grant College Program SID# 659	29,920	36,555	0
Ecological Linkages Among Wetland, Bay, and Shelf Systems in Fourleague Bay, Louisiana: III. Bay-Shelf Exchange Through Oyster Bayou Rouse, Larry J. Louisiana Sea Grant College Program SID# 862	30,934	14,050	0
Ecological Linkages Among Wetland, Bay, and Shelf Systems in Fourleague Bay, Louisiana: IV. Ichthyoplankton Utilization (Distribution, Abundance and Age Structure) and Habitat Coupling Shaw, Richard F. Louisiana Sea Grant College Program SID# 863	48,637	30,035	0
Fine-Scale Assessment and Modeling of Crab Recruitment in A Coastal Bay Ecosystem: The Role of Winds and Current Transport Power, James Louisiana Sea Grant College Program SID# 857	56,675	38,494	0
Recruitment to and Use of Great Bay Estuary by the Larval and Juvenile Stages of Coastal Fishes Sale, Peter F. UM/UNH Sea Grant College Program SID# 30	38,999	19,495	0

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Integrity of the Georges Bank Stock of Atlantic Herring Kornfield, Irv UM/UNH Sea Grant College Program SID# 29	25,959	20,952	0
Vertical Distributions of Larval Lobsters: Offshore vs. Inshore patterns Incze, Lewis S. UM/UNH Sea Grant College Program SID# 28	17,893	0	0
The Biology of Estuarine Lobsters Watson, W. H. UM/UNH Sea Grant College Program SID# 12	39,300	16,671	0
Investigate Eelgrass-blue Mussel Interactions for their Application to the Aquaculture Industry Short, F. T. UM/UNH Sea Grant College Program SID# 487	38,982	13,077	0
Abundance and Comparative Trophic Ecology of Schooling Pelagic Fishes in the Chesapeake Bay Houde, Edward D. Maryland Sea Grant College Program SID# 41	79,999	23,305	0
Chaetognaths as Predators and Competitors of Larval Fish in the South Atlantic Bight Purcell, Jennifer E. Maryland Sea Grant College Program SID# 879	0	31,737	49,960

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Alewife Survival Rates and Recruitment Under Low Population Levels in Lake Michigan Jude, David Michigan Sea Grant College Program SID# 604	41,160	5,827	0
Influence of Compensatory Mechanisms in Lake Trout Population Dynamics Taylor, William W. Michigan Sea Grant College Program SID# 353	34,554	15,197	0
Year Class Strength of Rainbow Smelt and Lake Whitefish as Influenced by Interspecific Interactions and Climate Taylor, William W. Michigan Sea Grant College Program SID# 930	54,878	37,645	0
Cross-Shelf Transport Mechanisms Regulating Larval Dispersal and Settlement of Blue Crabs Morgan, Steven G. New York Sea Grant Institute SID# 964	44,024	41,748	0
Benthic Population and Recolonization in the New York Bight Cerrato, Robert M. New York Sea Grant Institute SID# 960	0	12,964	77,718
Cross-Shelf Transport of Larval Fish Cowen, Robert K. New York Sea Grant Institute SID# 963	61,560	37,668	0
Structure and Function of Continental Shelf Hardbottom Fisheries Habitat Riggs, S. University of North Carolina SID# 979	24,512	22,722	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Estimating Year Class Strength at Inlets to Pamlico Sound Miller, J. M. University of North Carolina SID# 617	0	0	95,000
Age and Elemental Analysis of Atlantic Menhaden Otoliths: Validation and Field Application Rice, J. A. University of North Carolina SID# 622	0	0	105,000
Individual-Based Population Modeling of Atlantic Menhaden Crowder, L. B. University of North Carolina SID# 628	0	0	55,000
Salmonid Fishery Oceanography of the Northeast Pacific Ocean Percy, William G. Oregon Sea Grant College Program SID# 440	26,500	17,600	0
Recruitment Dynamics of Juvenile Dover Sole on an Outer Continental Shelf Nursery Ground Markle, Douglas F. Oregon Sea Grant College Program SID# 438	71,200	30,300	0
Mechanisms of Transport of Decapod Crustaceans Through Estuarine Inlets Barans, Charles A. South Carolina Sea Grant Consortium SID# 1050	57,731	26,534	21,500
Recruitment Dynamics of the Blue Crab: Patterns, Processes and Fisheries Applications Van Montfrans, Jacques Virginia Graduate Marine Science Consortium SID# 205	96,533	93,894	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Blue Crab Megalopae Recruitment: Role of Fronts and Mesoscale Physics on Aggregation and Transport into the Estuary McConaughy, John R. Virginia Graduate Marine Science Consortium SID# 207	92,072	46,527	0
Salmonid Fisheries Oceanography of the Northeast Pacific Ocean Francis, Robert C. Washington Sea Grant College Program SID# 162	83,000	51,416	0
Synthesis of Estuarine Life History and Ecology of Juvenile Salmon in Puget Sound and Coastal Washington Simenstad, C. A. Washington Sea Grant College Program SID# 1083	25,900	10,288	0
Growth, Transport, and Mortality Studies of Larval Walleye Pollock Francis, Robert C. Washington Sea Grant College Program SID# 1081	0	0	39,933
Biology and Management of Rockfish Stocks Gunderson, D. R. Washington Sea Grant College Program SID# 390	0	0	41,784
Population Dynamics and Stock Identification of Rainbow Smelt (Osmerus Mordax) in Green Bay and Adjacent Waters of Lake Michigan Copes, Frederick A. Wisconsin Sea Grant College Program SID# .451	23,889	22,599	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Coral Sclerochronology: Settling Unresolved Puzzles Goenaga, Carlos Univ of Puerto Rico Sea Grant College Program SID# 1105	17,000	50,065	0
SUBTOTAL:	1,787,728	1,396,380	965,897
 2. Chemical/Geological			
Seismic Risk of the Offshore San Gregorio-Hosgri Fault Zone Between Monterey and San Francisco, California Reed, Donald L. California Sea Grant College Program SID# 694	13,079	10,874	0
Coastal Turbidity Associated with Natural and Man-Induced Phenomena Hanes, D. M. Florida Sea Grant College Program SID# 652	48,250	24,116	0
Field Evaluation and Continued Development of Equilibrium Beach Profile Concepts Dean, R. G. Florida Sea Grant College Program SID# 92	51,296	26,144	0
A Unified Model for Cross-shore and Longshore Sand Transport Dally, W. R. Florida Sea Grant College Program SID# 93	47,994	24,000	0
The Role of Microbial Activity and Microbiogenic Detritus in the Growth and Composition of Ferromanganese Crusts Cowen, James P. Univ of Hawaii Sea Grant College Program SID# 590	24,831	29,591	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
The Combined Use of Chemical-and Biostratigraphy to Date Fe-Mn Crusts, Estimate Their Growth Rates, and Reconstruct Their History DeCarlo, Eric H. Univ of Hawaii Sea Grant College Program SID# 213	41,921	27,028	0
Chemical and Isotopic Stratigraphy of Co-rich Ferromanganese Crusts from the Hawaiian Archipelago McMurtry, Gary M. Univ of Hawaii Sea Grant College Program SID# 210	43,595	33,172	0
Continuum of Ferromanganese Pavements on Seamounts of the Hawaiian EEZ Malahoff, Alexander Univ of Hawaii Sea Grant College Program SID# 591	33,911	10,154	0
The Environmental Impact and Feasibility of a Novel Method of Solution Recovery of Cobalt-Rich Ferromanganese Crusts from Seamounts Malahoff, Alexander Univ of Hawaii Sea Grant College Program SID# 592	22,082	22,154	0
A Submersible Investigation of Manganese Crust Deposits Off Johnston Island Wiltshire, John Univ of Hawaii Sea Grant College Program SID# 593	7,015	12,000	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
The Geological Setting of Hydrothermal Vents and the Neovolcanic Zone of Loihi Seamount, Hawaii Malahoff, Alexander Univ of Hawaii Sea Grant College Program SID# 594	31,346	18,980	0
Geochemistry of Loihi Seamount Hydrothermal System McMurtry, Gary Univ of Hawaii Sea Grant College Program SID# 216	35,254	20,300	0
Spatial and Temporal Scales of Sediment Accumulation in the Near-Shore Zone of Massachusetts Bay Wallace, Gordon T. Massachusetts Institute of Technology SID# 302	64,167	38,006	0
Cross-Shore Length Scales of Longshore Bars and Associated Forcing Perlin, Marc Michigan Sea Grant College Program SID# 354	42,593	15,310	0
Shoreline Changes at Ocean Springs, MS Meyer-Arendt, Klaus Mississippi-Alabama Sea Grant Consortium SID# 9207	7,946	3,841	0
The Dynamics of Horizontal Sediment Transport and Focusing in Large Lakes Edginton, David N. Wisconsin Sea Grant College Program SID# 454	54,775	33,440	0

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
An Analysis of Coastal Erosion in Puerto Rico Morelock, Jack Univ of Puerto Rico Sea Grant College Program SID# 1106	48,575	22,317	0
SUBTOTAL:	618,630	371,427	0
3 . Physical			
Southern California Waves: Model Verification and Utilization Guza, Robert T. California Sea Grant College Program SID# 530	3,773	665	0
Development of a Numerical Model for Steep, Directional Seas Webster, William C. California Sea Grant College Program SID# 698	24,623	15,405	0
Nearshore Long Waves Seymour, Richard J. California Sea Grant College Program SID# 807	41,897	16,223	0
Wave-Driven Transport of Surface Oil Slicks Sobey, Rodney J. California Sea Grant College Program SID# 797	25,443	18,387	0
Buoyancy and Nutrient Exchange in the Mississippi Outflow Region Jones, Burton Univ of Southern California Sea Grant College SID# 811	0	0	12,001

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Numerical Modelling of Nearshore Hydrodynamics Svendsen, Ib A. Delaware Sea Grant College Program SID# 163	4,212	46,176	0
Water Waves in the Vicinity of Breakwaters and Jetties Dalrymple, Robert A. Delaware Sea Grant College Program SID# 61	3,900	47,015	0
Modelling Effects of Vertical Current Shear in Wave-Propagation Schemes Kirby, James T. Delaware Sea Grant College Program SID# 63	7,800	37,972	0
Nonlinear Wave Interactions in Surf Zones Kobayashi, Nobuhisa Delaware Sea Grant College Program SID# 64	2,652	51,961	0
An Analysis of the Lagrangian Motion in Delaware's Inland Bays Wong, Kuo-Chuin Delaware Sea Grant College Program SID# 68	5,928	23,814	0
A Lagrangian Study of the Louisiana Coastal Current Hitchcock, Gary H. Florida Sea Grant College Program SID# 826	0	0	63,910
Physical Oceanography and Modeling Lee, Thomas N. Florida Sea Grant College Program SID# 408	0	0	35,000

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
SABRE: Physical Oceanography and Modelling Blanton, Jackson O. Georgia Sea Grant College Program SID# 357	0	49,138	75,000
A Lagrangian Study of the Louisiana Coastal Current Wiseman, William J. Louisiana Sea Grant College Program SID# 855	0	4,064	33,386
Estimation of Wave Properties in Coastal Gulf of Maine Panchang, V. G. UM/UNH Sea Grant College Program SID# 36	57,096	10,172	0
A Lagrangian Study of the Louisiana Coastal Current Boicourt, William C. Maryland Sea Grant College Program SID# 877	0	0	34,627
Random Walk Models of Coastal and Estuarine Transport Adams, Eric E. Massachusetts Institute of Technology SID# 265	54,166	27,279	0
Vertical Mixing Processes in Massachusetts Bay Geyer, Wayne R. Woods Hole Oceanographic Institution SID# 916	64,976	35,000	0
Measurement of Gas Transfer Under Various Wind Conditions in Lake Superior Gulliver, John S. Minnesota Sea Grant College Program SID# 116	23,110	2,500	0

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Buoyancy and Nutrient Exchange in the Mississippi River Outflow Region Scott, Dinnel P. Mississippi-Alabama Sea Grant Consortium SID# 727	0	0	30,408
Tsunami Inundation at Hilo, Hawaii Liu, Philip L. New York Sea Grant Institute SID# 956	0	17,925	49,983
Naturally Fluorescent Dissolved Organic Compounds as Tracers of Surface Currents and Mixing in Large Water Masses Cabaniss, Stephen E. Ohio Sea Grant College Program SID# 992	24,192	17,070	0
Wave Climate and Extreme Storm Events on the Oregon Coast Komar, Paul D. Oregon Sea Grant College Program SID# 472	41,900	45,600	0
Modeling the Three Dimensional Circulation of Pulsed Fresh Water Discharges into an Estuarine System Spaulding, Malcolm Rhode Island Sea Grant College Program SID# 1042	50,144	34,788	0
CZCS-Chlorophyll and AVHRR-Sea Surface Temperature Variability and Co-Variability in the SABRE Study Area Yoder, James A. Rhode Island Sea Grant College Program SID# 675	0	0	54,999
Breaking Waves on Beaches Grilli, Stephan T. Rhode Island Sea Grant College Program SID# 9224	24,342	0	0

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Buoyancy and Nutrient Exchange in the Mississippi River Outflow Region Whittedge, T. E. Texas A&M University Sea Grant College Program SID# 1058	0	0	45,895
SUBTOTAL:	460,154	501,154	435,209
4. Instrumentation and Observation Techniques			
Acoustic Sensing of Pelagic Fish Stocks Jaffe, Jules S. California Sea Grant College Program SID# 691	71,590	2,080	0
Improved Utilization and Management of the U.S. Extended Economic Zone (EEZ) Using Advanced Satellite and Geographic Information Systems Technologies Simpson, James J. California Sea Grant College Program SID# 692	53,805	28,155	0
Improved Ocean Color and Plant Pigment Estimates from the Coastal Zone Color Scanner (CZCS) and the Sea-Viewing Wide-Field of View Sensor (SeaWIFS) Data Simpson, James J. California Sea Grant College Program SID# 809	33,480	24,441	0
Remote Sensing of Pelagic Fish Eggs Checkley California Sea Grant College Program SID# 790	0	3,676	55,000

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
NOAA Coastwatch--Feature Tracking Automation Yan, X. H. Delaware Sea Grant College Program SID# 819	0	0	40,400
Forest and Emergent Wetland Mapping and Change Detection Using an Integrated GIS and Expert Systems Approach Sader, Steven A. UM/UNH Sea Grant College Program SID# 876	0	7,934	53,052
Developing Accuracy Assessment Procedures for Change Detection Analysis Congalton, Russell UM/UNH Sea Grant College Program SID# 872	0	0	36,002
Phytoplankton Biomass and Nutrient Loading Relations for the Chesapeake Bay from Aircraft Remote Sensing Harding, Lawrence Jr Maryland Sea Grant College Program SID# 46	50,407	23,704	0
Detection of Spring and Summer Phytoplankton Blooms in the Chesapeake Bay Using Aircraft Remote Sensing Harding, Lawrence Jr Maryland Sea Grant College Program SID# 347	0	0	100,186
Autonomous Instrumental Technique for the Self-Calibrating, Time Series Measurement of Oxygen in Coastal Aquatic Ecosystems Taylor, Craig D. Woods Hole Oceanographic Institution SID# 917	46,500	20,035	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
A Coastal Ocean and Estuarine Prediction System Mellor, George L. New Jersey Marine Sciences Consortium SID# 328	0	0	34,200
Field Test and Calibration of an In Situ Instrument to Determine Groundwater/Surface Water Exchange in the Salt Marsh Complex at Stone Harbor New Jersey Carson New Jersey Marine Science Consortium SID# 1110	45,064	28,815	0
Development of Methodologies for Accuracy Assessment of Land Cover Change Detection Data Sets Khorram, Siamak University of North Carolina SID# 977	0	0	29,929
Evaluation of a Real-Time AVHRR and In-Situ Data System for Use in Surface Heat Flux Predictions Merry, Carolyn J. Ohio Sea Grant College Program SID# 991	45,356	25,674	0
Developing the First Integrated Mapping Laboratory Aboard Ship Tyce, Robert C. Rhode Island Sea Grant College Program SID# 242	0	0	128,224
The Impact of Tidal Stage on Remote Sensing of Wetland Resources: Refinement of the Coastwatch Protocol Jensen, John South Carolina Sea Grant Consortium SID# 1051	0	0	59,405

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Tide Amplitude and Timing Variation Impacts on Remote Sensing of Emergent Wetlands on the Virginia Coast Reserve Hayden, Bruce P. Virginia Graduate Marine Science Consortium SID# 1072	0	0	56,252
Technological Developments for Seafloor Ridge and Margin Studies Schultz, Adam Washington Sea Grant College Program SID# 164	119,500	24,107	0
Mapping Temperature, Salinity and Velocity at Shallow Depth Gregg, M.C. Washington Sea Grant College Program SID# 168	62,700	22,870	0
Interactive Acoustic Data Display and Statistical Analysis Swartzman, G. L. Washington Sea Grant College Program SID# 267	73,700	30,442	0
SUBTOTAL:	602,102	241,933	592,650
TOTAL:	3,468,614	2,510,894	1,993,756

B. Environmental Management

1. Aquaculture

Attaining Suitable Water Supplies for Salmon Hatcheries Johnson, Ronald a. Alaska Sea Grant College Program SID# 189	48,297	0	0
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TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
The Effect of Salmon Net-pen Aquaculture on the benthic microfauna and macrofauna of coastal Maine waters Findlay, R. H. UM/UNH Sea Grant College Program SID# 1	43,814	43,611	0
Evaluation of the Environmental and Public Health Impacts of Salmon Net Pen Culture Hershberger, W.K. Washington Sea Grant College Program SID# 9220	25,085	12,740	0
SUBTOTAL:	117,196	56,351	0
2. Coastal/Wetland Management			
Long Island Sound: A Public Discussion of Critical Issues Bender, N. Connecticut Sea Grant College Program SID# 424	32,300	49,155	114,000
Multiple-Use Ocean Management in the U.S. Toward a New Conceptual Framework Cicin-Sain, Biliana Delaware Sea Grant College Program SID# 56	9,694	37,089	0
Sociobehavioral and Emergency-Management Aspects of Catastrophic Marine Oil Spills Nigg, Joanne M. Delaware Sea Grant College Program SID# 57	40,560	96,906	0
Methodology and Mechanisms for Management of Cumulative Coastal Environmental Impacts Rieser, Alison UM/UNH Sea Grant College Program SID# 875	0	8,808	56,407

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
The Chesapeake Bay in an International Perspective: An Analytical Comparison of the Role of Scientific Communities in the Formation and Stability of Regimes for the Governance of Coastal and Inland Seas Sagoff Mark Maryland Sea Grant College Program SID# 889	28,175	15,949	0
Boston Harbor Outreach to Non-Traditional Audiences Hartley, Karen Massachusetts Institute of Technology SID# 896	0	0	0
Ecologically Based Environmental Management Howes, Brian L. Woods Hole Oceanographic Institution SID# 915	0	0	0
The Sanctuary Setting for Thunder Bay, Michigan: A Literature Review and Synthesis of Information Schwartz, John Michigan Sea Grant College Program SID# 925	0	0	15,100
Education Program for the Lakewide Management Planning Process Schwartz, John Michigan Sea Grant College Program SID# 492	0	0	29,872
The Economic Value of Fish Contamination Advisories to Individual Great Lakes Sport Anglers Hoehn, John Michigan Sea Grant College Program SID# 262	33,465	17,841	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Coalition Building for Wise Water Management in the Great Lakes Basin: Climatic Uncertainties and Cultural Boundaries Gerlach, Luther P. Minnesota Sea Grant College Program SID# 107	32,710	3,600	0
Third International Symposium on Coastal Ocean Space Utilization Abel, Robert New Jersey Marine Sciences Consortium SID# 943	0	0	25,000
Great Lakes Water Quality and Public Participation Education for the LaMP Process Voiland, Michael P. New York Sea Grant Institute SID# 948	0	0	24,865
A Long Island Sound Study Public Participation Coordinator Based in New York Voiland, Michael P. New York Sea Grant Institute SID# 439	0	0	116,000
Population Implications of Various Management Approaches to Threatened and Endangered Sea Turtles Crowder, L. B. University of North Carolina SID# 414	0	0	51,241
Rhode Island Sea Grant Advisory Services: Coastal Management Program Lee, Virginia Rhode Island Sea Grant College Program SID# 614	203,201	92,157	0
SUBTOTAL:	380,105	321,505	432,485

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
3. Environmental Quality Assessment			
Marine Debris Awareness Campaign (Phase II) Miller, Bruce J. Univ of Hawaii Sea Grant College Program SID# 841	0	0	8,800
Conference Culminating the Green Bay Mass Balance Effort Goettel, Robin Illinois-Indiana Sea Grant College Program SID# 845	0	0	19,890
Great Lakes Water Quality and Public Participation Education Program: Illinois-Indiana Sea Grant Element O'Leary, Joseph T. Illinois-Indiana Sea Grant College Program SID# 846	0	0	51,444
Economic Aspects of Marine Debris McConnell, K. E. Maryland Sea Grant College Program SID# 430	0	20,002	67,595
How-Clean-Is-Clean?: Boston Harbor and the Dynamics of Environmental Protection Susskind, Lawrence E Massachusetts Institute of Technology SID# 9204	16,185	0	0
Citizen's Monitoring Effort for Falmouth's Coastal Ponds Howes, Brian L. Woods Hole Oceanographic Institution SID# 914	30,993	16,428	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Investigation of Recycling/Reprocessing with Marine Plastics - A Cost-Effective Method of Dealing with Plastic Debris with Emphasis on Fishing Gear (Phase II). Xanthos, Marino New Jersey Marine Sciences Consortium SID# 947	0	0	138,000
Urbanization and Southeastern Estuarine System (USES) South Carolina Sea Grant Consortium SID# 215	0	115,978	496,519
Proposal for Planning a Status and Trends Monitoring Program for the Ecological Resources of the Coastal Zone of the Southeastern United States Holland, A. F. South Carolina Sea Grant Consortium SID# 1055	0	44,412	79,999
Changes in Fluxes in Estuaries: Implications from Science to Management Orth, Robert J. Virginia Graduate Marine Science Consortium SID# 1066	0	0	22,500
Liberty Bay Plankton Exhibit and Curriculum Project: Education to Increase Marine Literacy and Reduce Pollution Kolb Washington Sea Grant College Program SID# 1076	38,100	27,551	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Great Lakes Water Quality and Public Participation Education Program for the Lakewide Management Planning Process Miller, Allen H. Wisconsin Sea Grant College Program SID# 1087	0	0	46,123
SUBTOTAL:	85,278	224,371	930,870
4. Waste Disposal			
Physical Forcing, Particulate Fluxes, and Primary Productivity in the Area Around White's Point Sewage Outfall Jones, Burton Univ of Southern California Sea Grant College SID# 670	52,546	45,630	0
The Flux of Trace Metals and Nutrients from the Seafloor in the Area Around the White's Point Sewage Outfall Berelson, William Univ of Southern California Sea Grant College SID# 671	42,469	28,483	0
Temporal Evaluation of Particulate Distributions in the Vicinity of an Ocean Outfall as Forced by Physical and Biological Dickey, Tommy Univ of Southern California Sea Grant College SID# 672	27,197	31,129	0
Viruses in the Ocean Near Los Angeles Fuhrman, Jed Univ of Southern California Sea Grant College SID# 510	40,451	44,014	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Design and Testing of a Wastewater Treatment Configuration for Small Seafood Processing Operations Malone, Ronald F. Louisiana Sea Grant College Program SID# 868	47,108	14,607	0
Modeling and Control of Activated Sludge Waste Water Treatment Facility McAvoy, Thomas J. Maryland Sea Grant College SID# 9203	18,750	9,250	0
Program Management and Use of Solid and Liquid Wastes from the Blue Crab (<i>Callinectes sapidus</i>) Industry Boardman, Gregory Virginia Graduate Marine Science Consortium SID# 212	44,966	24,314	0
SUBTOTAL:	273,487	197,427	0
TOTAL:	856,066	799,654	1,363,355
C. Exotic and Non-Indigenous Species			
Zebra Mussel Outreach and Education Program Balcom, Nancy C. Connecticut Sea Grant College Program SID# 812	0	15,968	31,768
Marine Advisory Services Price, Kent Delaware Sea Grant College Program SID# 176	233,467	216,450	26,393

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
1992-93 Zebra Mussel Outreach Program: Illinois-Indiana Sea Grant Program O'Leary, Joseph T. Illinois-Indiana Sea Grant College Program SID# 842	0	0	83,496
An Investigation of the Larval Development and Shell Morphology of the Zebra Mussel, Dreissena Polymorpha (Pallas) Lima, Gail M. Illinois-Indiana Sea Grant College Program SID# 844	0	32,760	69,153
Carbon Dioxide as a Narcotizing pre-treatment for Chemical Control of Dreissena polymorpha Elzinga, William J. Illinois-Indiana Sea Grant College Program SID# 843	0	27,989	16,691
Zebra Mussel Education and Monitoring Project Doyle, B. UM/UNH Sea Grant College Program SID# 869	0	13,430	26,478
The Zebra Mussel in the Mid-Atlantic: Education and Outreach Terlizzi, Daniel E. Maryland Sea Grant College Program SID# 891	0	0	25,382
MIT Sea Grant College Program's Zebra Mussel Outreach Hall-Arber, Madelein Massachusetts Institute of Technology SID# 899	0	10,080	20,000

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
New Approaches to Control of Zebra Mussels by Targeted Microbial Products Mitchell, Ralph Massachusetts Institute of Technology SID# 907	0	180,000	200,000
Woods Hole Oceanographic Institution Sea Grant Program Zebra Mussel Outreach Sub-Proposal of the Northeast Regional Proposal Giese, Graham S. Woods Hole Oceanographic Institution SID# 910	0	6,000	10,619
Michigan Sea Grant Zebra Mussel Outreach Program Schwartz, John Michigan Sea Grant College Program SID# 234	0	31,767	100,877
Interaction Between Juvenile Fish and the Cladoceran Bythotrephes: Behavioral Aspects of Predation Kerfoot, Charles W. Michigan Sea Grant College Program SID# 929	41,693	23,365	0
Impact of Dreissena polymorpha on the Plankton Diatoms in Western Lake Erie and Lower Saginaw Bay, Lake Huron Beeton, Ruth H. Michigan Sea Grant College Program SID# 931	0	28,552	55,679
Direct Experimental Assessment of the Impact of Dreissena Polymorpha on Unionid Growth, Mortality, and Condition in Lake St. Clair Hunter, Douglas R. Michigan Sea Grant College Program SID# 932	0	2,533	5,000

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
The Influence of Zebra Mussels on the Recruitment of Saginaw Bay Fishes Jude, David Michigan Sea Grant College Program SID# 933	0	81,323	104,258
Determining the Olfactory Sensitivity of Sea lamprey: An essential First Step in Evaluating Whether Natural Odors can be used for Biocontrol Sorensen, Peter W. Minnesota Sea Grant College Program SID# 669	22,500	2,500	0
The Secondary Metabolites of Eurasian Watermilfoil and Their Relation to Potential Control Agents Gleason, Florence K. Minnesota Sea Grant College Program SID# 936	28,759	3,200	0
Zebra Mussel Outreach Plan for Minnesota: The Great Lakes Sea Grant Network Baker, Dale Minnesota Sea Grant College Program SID# 236	0	35,999	70,310
The Mid-Atlantic SG Network Zebra Mussel Outreach Plan (NJ Section) Wypyszinski, A. W. New Jersey Marine Sciences Consortium SID# 942	0	0	25,000
The Use of Acoustic, Vibrational, and Hydrodynamic Techniques to Control Zebra Mussel Infestation Donskoy, Dimitri M. New Jersey Marine Sciences Consortium SID# 945	0	99,377	199,735

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Species Identities and Relationships of North American and European Dreissena (Bivalvia: Dreissenidae) Rosenberg, Gary New Jersey Marine Sciences Consortium SID# 946	0	32,686	65,215
Maintaining and Improving a National Zebra Mussel Information Clearinghouse Voiland, Michael P. New York Sea Grant Institute SID# 949	0	66,830	131,587
Extension Program Zebra Mussel Outreach: New York Sea Grant Institute Voiland, Michael P. New York Sea Grant Institute SID# 230	0	17,500	35,000
Zebra Mussel Outreach Klauber, Avery New York Sea Grant Institute SID# 950	0	22,450	40,000
Application of Wide-Range Ultraviolet Radiation for Zebra Mussel Control Chalker-Scott, Linda New York Sea Grant Institute SID# 951	0	100,330	155,950
Phosphorus Budget of a Zebra Mussel Population Makarewicz, Joseph New York Sea Grant Institute SID# 954	0	68,402	120,440
Mid-Atlantic Sea Grant Network Zebra Mussel Outreach Plan Murray, James D. University of North Carolina SID# 971	0	0	26,972

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Influences of Temperature and Diet on Physiological Energetics of Growth and Reproduction of Dreissena polymorpha Garton, David W. Ohio Sea Grant College Program SID# 998	0	48,038	87,147
The Use of Potassium in Control of the Zebra Mussel, Dreissena polymorpha, PALLAS Fisher, S. W. Ohio Sea Grant College Program SID# 999	0	83,349	115,235
The Impact of Zebra Mussel Filtering on Pelagic Food Webs Culver, David A. Ohio Sea Grant College Program SID# 1030	0	89,771	136,382
Ohio Sea Grant Zebra Mussel Outreach Educational Proposal Hushak, Leroy Ohio Sea Grant College Program SID# 233	0	54,052	108,045
A Policy Framework for Nonindigenous Species in the Great Lakes Randall, Alan Ohio Sea Grant College Program SID# 1000	0	76,548	150,672
Influence of Zebra Mussel Invasion on Nutrient Dynamics in Plankton Communities: Field Verification of Mesocosm Findings in Saginaw Bay Heath, Robert T. Ohio Sea Grant College Program SID# 1032	0	32,047	36,890
The Impact of Zebra Mussels on the Dynamics of Heavy Metals Fraleigh, Peter C. Ohio Sea Grant College Program SID# 1029	0	67,066	108,354

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
The Impact of Zebra Mussels on the Benthic Food Web in Saginaw Bay, Lake Huron Lowe, Rex L. Ohio Sea Grant College Program SID# 1031	0	99,050	150,811
Nutrient Regeneration by Zebra Mussels and Its Impact on Phytoplankton Vanni, Michael Ohio Sea Grant College Program SID# 1028	0	68,671	136,288
Zebra Mussel Outreach Program DeAlteris, Joseph Rhode Island Sea Grant College Program SID# 1036	0	11,008	21,977
Co-sponsorship of the Conference on "Introductions and Transfers of Marine Species: Achieving a Balance Between Economic Development and Resource Protection" DeVoe, Richard M. South Carolina Sea Grant Consortium SID# 1045	0	0	5,000
The Mid-Atlantic Sea Grant Network Zebra Mussel Outreach Plan DuPaul, William Virginia Graduate Marine Science Consortium SID# 1067	0	13,595	26,140
Observing and Disseminating Information on the Spread and Control of Zebra Mussel in the Upper Great Lakes Miller, Allen H. Wisconsin Sea Grant College Program SID# 478	0	0	94,423
SUBTOTAL:	326,419	1,762,686	2,823,367
TOTAL:	326,419	1,762,686	2,823,367

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
D. Global Change			
Natural Time Scales of Variability in Coastal Pelagic Fish Populations of the California Current Over the Past 1500 Years: Response to Global Climate Change and Biological Interaction Baumgartner, Tim California Sea Grant College Program SID# 796	64,150	42,624	0
Paralabrax as a Model for Predicting Effects of Ocean Warming Rosenblatt, Richard California Sea Grant College Program SID# 549	24,728	24,018	0
Variation in Coastal Pelagic Fish Populations Over the Past Millenium as a Response to Global Climate Change and Biological Interaction Baumgartner, Tim California Sea Grant College Program SID# 688	2,925	3,224	0
The Influence of Accelerated Sea Level Rise on Tidal Marsh Development at Barn Island, Stonington, Connecticut Orson, R. A. Connecticut Sea Grant College Program SID# 818	24,603	17,197	0
Sea Level Rise over the Last 2000 Years: Investigations of Marsh Sequences in Connecticut Varekamp, J. C. Connecticut Sea Grant College Program SID# 182	19,120	24,016	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Impact of Enhanced UV-B Radiation on Primary Productivity in the Sea Kinzie, Robert A. II Univ of Hawaii Sea Grant College Program SID# 584	17,330	13,010	0
Models of the Biological Cycle of Carbon in the Ocean Sarmiento, Jorge L. New Jersey Marine Science Consortium SID# 327	90,000	69,834	0
Curriculum Materials for Global Change and Integrative Earth Systems Education Fortner, Rosanne W. Ohio Sea Grant College Program SID# 990	45,351	23,251	0
Assessment of Computer Networks and Clearinghouses Disseminating Global Change Information to Educators Lawrence, Lee F. Virginia Graduate Marine Science Consortium SID# 1068	0	0	6,090
Acoustic Global Ocean Warming feasibility experiment Spindel, R. C. Washington Sea Grant College Program SID# 417	0	0	642,000
Air Mass-Based Climate Change Scenarios for the Great Lakes Basin Brinkmann, Waltraud Wisconsin Sea Grant College Program SID# 471	36,052	21,057	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Global Climate Change and the Great Lakes Changes in Habitat Use and Potential Invasions by Exotic Species Mgnuson, John J. Wisconsin Sea Grant College Program SID# 1097	38,660	32,276	0
SUBTOTAL:	362,919	270,507	648,090
TOTAL:	362,919	270,507	648,090
E. Habitat Studies			
1. Habitat Restoration			
Methods to Improve Restoration of Pacific Estuarine Ecosystems Zedler, Joy B. California Sea Grant College Program SID# 695	41,551	24,975	0
Mitigating Loss of Eelgrass: Providing Sufficient Genetic Diversity Williams, Susan L. California Sea Grant College Program SID# 693	45,999	23,692	0
Accelerating the Development of Ecosystem Functions in Restored and Constructed Wetlands Broome, Stephen W. California Sea Grant College Program SID# 793	0	0	21,953
Accelerating the Development of Ecosystem Functions in Restored and Constructed Wetlands Zedler, Joy B. California Sea Grant College Program SID# 653	0	0	33,333

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Salinity and Low-Oxygen Stress Interactions: A Possible Tool for Regulating Vegetative Recovery in <i>Phragmites australis</i> Infested Wetland Impoundments Gallagher, John L. Delaware Sea Grant College Program SID# 65	8,580	42,295	0
Accelerating Salt Marsh Functional Development through Plant Genotype Selection: Intraspecific Diversity from Natural Populations and the Tissue Culture Laboratory Seliskar, Denise M. Delaware Sea Grant College Program SID# 425	0	0	75,000
Improved Genotypes of Submerged and Emergent Halophytes for Crops and Restoration Ecology through Somaclonal Variation, Transformation, and Protoplast Fusion Gallagher, John L. Delaware Sea Grant College Program SID# 169	18,096	77,570	0
Accelerating and Evaluating the Development of Restored and Created Seagrass Ecosystems Bell, S. Florida Sea Grant College Program SID# 402	0	0	83,330
Use of Sediment Fences for Marsh Restoration and Creation Day, John W. Jr. Louisiana Sea Grant College Program SID# 378	0	4,017	32,999

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Micropropagation and Aquaculture of Zostera marina and Spartina alterniflora Bird, K. University of North Carolina SID# 332	0	0	33,333
Accelerating the Development of Ecosystem Functions in Restored and Constructed Wetlands Broome, Stephen W. University of North Carolina SID# 351	0	0	64,719
Accelerating and Evaluating the Development of Restored and Created Seagrass Ecosystems Peterson, C. University of North Carolina SID# 352	0	0	50,000
Development of Advanced Technology for Micropropagation of Seagrasses for Coastal Habitat Restoration Bird, K. University of North Carolina SID# 985	9,591	12,390	0
An Ecosystem Comparison of Transplanted and Native Salt Marshes: The Chronological Development of Habitat Value for Fishery Species Webb, J. W. Texas A&M University Sea Grant College Program SID# 380	0	0	41,140
Status and Development of Restored Estuarine Wetlands: Functional Equivalency of the Gog-Le-Hi-Te Wetland system, Puyallup River Estuary, Washington, After Six Years Simenstad, C. A. Washington Sea Grant College Program SID# 1080	0	0	61,889

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Estuarine Slough Function and Restoration for Juvenile Salmon Residence and Foraging Simenstad, C. A. Washington Sea Grant College Program SID# 282	0	0	69,850
SUBTOTAL:	123,817	184,939	567,546
 2. Habitat Utilization			
The Influence of Inundation Regime on the Use of Gulf Coast Marshes by Fishes and Macrocrustaceans Rozas, Lawrence P. Louisiana Sea Grant College Program SID# 377	0	3,320	29,171
Synthesis of Summer Flounder Habitat Requirements for Resource Managers Abel, Ken New Jersey Marine Sciences Consortium SID# 944	0	4,733	40,982
The Influence of Eelgrass Cover on Growth and Survival of Post-Settlement Bay Scallops, with a View Towards Optimizing Scallop Transplants Bricelj, Monica V. New York Sea Grant Institute SID# 517	33,699	28,310	0
Colonization, Growth and Habitat Utilization of Juvenile Fishes in Estuarine Primary Nursery Areas Miller, J. M. University of North Carolina SID# 981	33,648	0	0

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Habitat Specific Patterns of Distribution, Movement, and Growth in Estuarine Dependent Fishes: Determinants of Habitat Quality Able, Ken New Jersey Marine Science Consortium SID# 317	70,852	30,821	0
SUBTOTAL:	138,199	67,184	70,153
 3. Wetland Dynamics			
Coastal Wetland Mapping and Change Detection in the Northeast United States Civco Connecticut Sea Grant College Program SID# 813	0	0	16,128
Remote Sensing of Wetland Condition Indicators and Functional Health Klemas, V. Delaware Sea Grant College Program SID# 532	25,373	7,119	43,003
Effects of Environmental Stresses on Productivity and Survival of Florida Seagrass Hanisak, M. D. Florida Sea Grant College Program SID# 822	49,062	24,531	0
Effects of Epiphyte Load and Light Limitation on Florida Seagrasses Norris, D. R. Florida Sea Grant College Program SID# 1110	39,006	19,500	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Factors and Processes Controlling Eelgrass Habitat Persistence and Loss Porter, David Georgia Sea Grant College Program SID# 285	0	0	22,500
Ecological Linkages Among Wetland, Bay, and Shelf Systems in Fourleague Bay, Louisiana: II. Influence of Marsh Processes on Bay-Wetland Exchange Twilley, Robert R. Louisiana Sea Grant College Program SID# 861	87,512	38,107	0
The Interactive Effects of Fire and Vertebrate Herbivory on Coastal Marshes Grace, James B. Louisiana Sea Grant College Program SID# 859	24,012	10,912	0
Survival of Farm-Raised Alligators for Wild Brood Stock Maintenance Chabreck, Robert Louisiana Sea Grant College Program SID# 856	25,530	17,902	0
Factors and Processes Controlling Eelgrass Habitat Persistence and Loss Short, Frederick UM/UNH Sea Grant College Program SID# 253	0	0	149,165
Modeling Spectral Light Available to Submerged Aquatic Vegetation in Relation to Water Quality and Epiphytic Growth Gallegos, Charles L. Maryland Sea Grant College Program SID# 298	0	0	33,333

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Effects of Thin-Layer Disposal of Dredged Material in Louisiana Coastal Marshes Veal, David C. Mississippi-Alabama Sea Grant Consortium SID# 938	0	0	11,940
Development of a Conceptual Model of Seagrass and Salt Marsh Contributions to Secondary Productivity Sutherland, J. University of North Carolina SID# 980	10,000	9,485	30,880
Experimental Analysis of the Effects of Thin-Layer Disposal of Dredged Materials on a Juncus roemerianus Marsh on Wysocking Bay, North Carolina Luczkovich, J. J. University of North Carolina SID# 976	0	0	30,006
Interactions Between Nitrate Enrichment, Suspended Sediments and Survival of Seagrass Communities Burkholder, J. M. University of North Carolina SID# 982	65,229	0	0
Nitrogen Metabolism and Intertidal Wetland Responses to a Salinity Gradient Morris, J.T. South Carolina Sea Grant Consortium SID# 1053	50,312	27,073	0
Seagrass Habitat and Its Management in Texas Estuaries: Effect of Extended Periods of Low Light Dunton, Kenneth H. Texas A&M University Sea Grant College Program SID# 715	57,231	28,947	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
The Role of Light Attenuation Processes and Plant Sediment Interaction in Determining Seagrass Survival Orth, Robert Virginia Graduate Marine Science Consortium SID# 416	0	0	125,000
SUBTOTAL:	433,267	183,576	461,955
TOTAL:	695,283	435,699	1,099,654
F. Human Health			
1. Pathogens and Toxic Pollutants			
Detection and Monitoring of Bacteria with Molecular Probes Chapman, David J. California Sea Grant College Program SID# 697	31,415	29,537	0
Detection of Hepatitis A Virus in Oysters Using Antigen-capture Polymerase Chain Reaction Siebeling, Ronald J. Louisiana Sea Grant College Program SID# 866	24,495	26,344	0
Chemical and Immunological Characterization of the Polysaccharide Capsules of <i>Vibrio vulnificus</i> Siebeling, Ronald J. Louisiana Sea Grant College Program SID# 867	27,485	26,708	0
Literature Assessment on Great Lakes and Human Health Swanson, Marie G. Michigan Sea Grant College Program SID# 9205	4,950	4,902	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Development of Multiplex Polymerase Chain Reaction (PCR) Method for Detection of Salmonella and Vibrio spp. from Contaminated Shellfish Bej, Asim K. Mississippi-Alabama Sea Grant Consortium SID# 9223	24,946	25,108	0
Effects of Antioxidants on Vibrio vulnificus virulence in Depuration Systems Oliver, J. D. University of North Carolina SID# 988	8,206	5,134	0
Diagnostic Probes for Detecting Pathogenic Marine Caliciviruses in Foods from the Sea Smith, Alvin W. Oregon Sea Grant College Program SID# 1035	0	0	41,756
Norwalk and HAV Virus in Shellfish Estes, Mary K. Texas A&M University Sea Grant College Program SID# 644	67,329	21,151	0
SUBTOTAL:	188,826	138,884	41,756
Genetic Detection of Red Tide Dinoflagellates Triplett, Edward L. California Sea Grant College Program SID# 543	2,239	1,007	0
Domoic Acid in Coastal Food Webs Silver, Mary W. California Sea Grant College Program SID# 810	0	0	23,000

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Toxic Red Tides in Massachusetts and Cape Cod Bays Anderson, Donald M. Woods Hole Oceanographic Institution SID# 913	50,027	48,470	0
Economic Impacts of Harmful Algal Blooms and Red Tides Kaoru, Yoshiaki Woods Hole Oceanographic Institution SID# 922	27,945	20,346	0
Use of HPLC-Photodiode Array Spectrophotometry to Develop Nuisance Algal Pigment Signature as Indicators of Coastal Water Quality Paerl, H. W. University of North Carolina SID# 983	11,825	25,150	0
Preparation and Publication of Proceedings: Fifth International Conference on Toxic Marine Phytoplankton Smayda, Theodore J. Rhode Island Sea Grant College Program SID# 1044	0	0	10,000
Nuisance Phytoplankton Blooms: Effects of Solar Ultraviolet Light Hargraves, Paul Rhode Island Sea Grant College Program SID# 607	40,364	51,498	0
Biology of the Oyster Crassostrea virginica: Is Domoic Acid a Threat? Fryxell, G. Texas A&M University Sea Grant College Program SID# 545	51,485	20,180	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Biology of the Oyster Crassostrea virginica: Is Domoic Acid a Threat? Landry, Andre M. Jr. Texas A&M University Sea Grant College Program SID# 546	0	0	0
Isolation of Viruses That Infect Toxic and Economically Important Phytoplankton Suttle, Curtis A. Texas A&M University Sea Grant College Program SID# 562	52,152	27,113	0
Noxious Phytoplankton Blooms and Marine Salmon Culture in Puget Sound Banse, Karl Washington Sea Grant College Program SID# 59	66,000	33,082	0
Workshops on Harmful Algal Blooms Banse, Karl Washington Sea Grant College Program SID# 1078	0	0	17,053
SUBTOTAL:	302,037	226,846	50,053
TOTAL:	490,863	365,730	91,809

G. Nutrient and Carbon Dynamics

1. Eutrophication

Increasing Eutrophication in Louisiana Estuaries: Evidence From the Sedimentary Record Turner, Robert E. Louisiana Sea Grant College Program SID# 864	64,635	32,629	0
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TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Community Metabolism of Chesapeake Bay: An Index of Ecosystem Trophic Condition and Potential Oxygen Kemp, Michael W. Maryland Sea Grant College Program SID# 887	35,026	9,827	0
Study of Sediment Processes to Investigate the Fate of Organic Matter in the Louisiana Shelf Ecosystem Twilley, Robert R. Louisiana Sea Grant College Program SID# 854	0	15,245	114,984
Effect of Increased Nutrient Loading on Seagrass Habitat: Importance of Nitrogen Removal via Denitrification - Year II (continuation) Seitzinger, Sybil P. New Jersey Marine Sciences Consortium SID# 291	0	0	10,816
Silicon Cycling and Limitation in Relation to Hypoxia and Carbon Flux on the Louisiana Continental Shelf Nelson, David M. Oregon Sea Grant College Program SID# 1034	0	0	45,660
A Retrospective Analysis of Mississippi Delta Sediments: The Time History of Hypoxia Indicators and Carbon Burial on the Louisiana Continental Shelf Trefry, John H. Florida Sea Grant College Program SID# 825	0	0	104,977
An Algae Harvesting System for Nahant Bay Goudey, Clifford A. Massachusetts Institute of Technology SID# 908	0	35,000	49,000

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Phytoplankton Size and Species Composition in Relation to Hypoxia and Carbon Flux on the Louisiana Continental Shelf Dortch, Quay Louisiana Sea Grant College Program SID# 849	0	6,750	54,398
A Retrospective Analysis of Mississippi Delta Sediments: The Time History of Hypoxia Indicators and Carbon Burial on the Louisiana Shelf McKee, Brent A. Louisiana Sea Grant College Program SID# 850	0	0	25,639
Zooplankton and the Fate of Fixed Carbon in Louisiana Coastal Waters Dagg, Michael Louisiana Sea Grant College Program SID# 851	0	0	56,997
Hypoxia Monitoring and Carbon Process Studies Rabalais, Nancy N. Louisiana Sea Grant College Program SID# 852	0	10,140	202,000
Hypoxia on the Louisiana Inner Shelf: A Modelling Study Wiseman, William J. Louisiana Sea Grant College Program SID# 853	0	3,651	125,000
Organic Matter Decomposition, Nitrogen Recycling, and Oxygen Consumption in the Mississippi River Plume/Gulf Shelf Region Benner, Ronald Texas A&M University Sea Grant College Program SID# 1059	0	0	55,133

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Benthic Metabolism - Oxygen Demand and Sulfate Reduction Rowe, G. T. Texas A&M University Sea Grant College Program SID# 1060	0	0	70,000
Nutrient Enhanced Coastal Ocean Productivity: The Role of Phosphate Ammerman, James Texas A&M University Sea Grant College Program SID# 1061	0	0	50,000
Nutrient Enhanced Coastal Ocean Productivity: The Role of Dissolved Organic Nitrogen Cifuentes, Luis A. Texas A&M University Sea Grant College Program SID# 1064	0	0	40,000
Effects of Eutrophication on Seagrass Habitats of Coastal Lagoons Taylor, David I. Rhode Island Sea Grant College Program SID# 680	0	0	75,000
Eutrophication and Phytoplankton Blooms; Bibliography and Review Hinga, Kenneth R. Rhode Island Sea Grant College Program SID# 1039	0	0	52,000
Assessing the Impact of Three Decades of Increased Nutrient Loading from Coastal Development on an Eelgrass Community Short, Frederick Rhode Island Sea Grant College Program SID# 609	50,752	0	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Experimental Studies of the Effects of Nutrient Enrichment in Coastal Lagoons - Limiting Nutrients and Flushing Nixon, Scott Rhode Island Sea Grant College Program SID# 610	133,000	158,563	0
Organic Matter Decomposition, Nitrogen Recycling and Oxygen Consumption in the Mississippi River Plume/Gulf Shelf Region Cotner, James B. Texas A&M University Sea Grant College Program SID# 1063	0	0	12,000
Eutrophication in Estuaries: Do Anthropogenic Inputs of Dissolved Organic N Contribute to Estuarine Eutrophication? Seitzinger, Subil P. New Jersey Marine Science Consortium SID# 324	73,665	35,866	0
SUBTOTAL:	357,078	307,671	1,143,604
2. Primary Production and Nutrient Cycling			
Persistent Effects of Environmental Stress on Algal Production Gerard, Valrie A. New York Sea Grant Institute SID# 520	6,382	13,086	0
Nutrient Cycles and Optimum Productivity of Shallow-Water Artificial Reefs Szmant, A. M. Florida Sea Grant College Program SID# 86	49,947	9,371	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Primary Production and Vertical Flux of Organic Carbon from Mississippi River Plume and Adjacent Shelf Waters Lohrenz, Steven E. Mississippi-Alabama Sea Grant Consortium SID# 303	0	0	103,776
Carbon and Nitrogen Isotopes as Tracers of Food Webs and Biogeochemical Cycles in Perturbed Estuaries Klump, J. Val Wisconsin Sea Grant College Program SID# 1089	46,650	36,376	0
Estuarine Nutrient Dynamics and Water Quality Interactions: Relation to River Flow, Land use and Wetland Exchanges McKellar, H. N. South Carolina Sea Grant Consortium SID# 254	52,019	36,798	0
Nutrient Controls in Chesapeake Bay: A Network Approach Ulanowicz, Robert E. Maryland Sea Grant College Program SID# 9201	23,873	26,367	0
SUBTOTAL:	178,871	121,998	103,776
3. Trophic Dynamics			
The Effect of Prey Limitation on Growth and Survival of Early Juvenile Summer Flounder (<i>Paralichthys dentatus</i>): Interaction with Temperature and Latitude Targett, Timothy E. Delaware Sea Grant College Program SID# 173	7,240	42,455	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
A Mesocosm Simulation of Estuarine Trophodynamics Using Dual Labelling Sharp, Jonathan A. Delaware Sea Grant College Program SID# 77	29,640	30,802	0
Bacterial Utilization of Marine Humic Substances in Salt Marsh and Coastal Waters of the Southeastern United States Hodson, Robert E. Georgia Sea Grant College Program SID# 835	77,560	30,272	0
Effects of Crayfish Grazing on Benthic Algal Standing Crops, Turnover Rates and Productivity Tuchman, Nancy C. Illinois-Indiana Sea Grant College Program SID# 369	29,684	30,322	0
Ecological Linkages Among Wetland, Bay, and Shelf Systems in Fourleague Bay, Louisiana: I. The Role of Marsh-Bay Exchanges in Estuarine Productivity Day, John W. Jr. Louisiana Sea Grant College Program SID# 860	40,975	33,766	0
Effects of Low Dissolved Oxygen in the Chesapeake Bay II. Trophic Interactions in a Zooplankton-Fish Larvae-Nekton Assemblage Breitburg, Denise L. Maryland Sea Grant College Program SID# 51	72,000	61,258	0
Control of Copepod Populations by Predators: Larval Ctenophores Purcell, Jennifer E. Maryland Sea Grant College Program SID# 888	39,719	29,533	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Trophic Dynamics in Chesapeake Bay: Ecological & Biochemical Approaches to the Study of Flows of Carbon from Phytoplankton to Bacteria. Fletcher, Madilyn Maryland Sea Grant College Program SID# 9202	28,000	13,281	0
Nutritional and Ecological Importance of Protozoans in the Diet of First-Feeding Winter Flounder Larvae, Pseudopleuronectes americanus Gallager, Scott M. Woods Hole Oceanographic Institution SID# 260	29,835	28,381	0
Modeling the Upper Ocean Production Dynamics of Plankton and Larval Pollock in the Bering Sea Bollens, Stephen M. Woods Hole Oceanographic Institution SID# 663	0	0	68,226
Primary Production Dynamics and Trophic Importance of Epiphytic Algae in Mississippi Seagrass Beds Sullivan, Michael J. Mississippi-Alabama Sea Grant Consortium SID# 501	57,798	28,899	0
An Investigation of Coupling Between Phytoplankton Productivity and Zooplankton Dynamics in Long Island Coastal Embayments Cosper, Elizabeth M. New York Sea Grant Institute SID# 521	43,653	23,271	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Biomass and Production Dynamics of Pelagic Planktivores: A Comparative Analysis of Lakes Ontario and Michigan Stewart, Donald J. New York Sea Grant Institute SID# 524	32,875	34,439	0
Complex Interactions in Estuarine Food Webs: An Experimental Approach Crowder, L. B. University of North Carolina SID# 984	36,236	0	0
Efficiency of Carbon Flow Through Algae, Bacteria and Zooplankton in Nearshore and Offshore Communities Heath, Robert T. Ohio Sea Grant College Program SID# 993	831,738	25,766	0
Development of an Advanced Ecosystem Model for Coastal Waters Kremer, James Rhode Island Sea Grant College Program SID# 612	22,819	0	0
Juvenile and Adult Fishes as Predators on Red Drum Larvae in Texas Bays Fuiman, Lee Texas A&M University Sea Grant College Program SID# 542	39,590	22,897	0
Role of Microbial Ecology in Larval Fish Nutrition Holt, Joan G. Texas A&M University Sea Grant College Program SID# 534	35,280	18,750	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Compensatory Responses in Great Lakes Food Webs: Predicting Results of Species Interactions Kitchell, James F. Wisconsin Sea Grant College Program SID# 1093	62,222	35,757	0
SUBTOTAL:	716,864	489,849	68,226
TOTAL:	1,252,813	919,518	1,315,606
H. Toxics			
1. Effects			
Assessment of Sublethal Toxic Effects in Marine Organisms by NMR Spectroscopy Tjeerdema, Ronald S. California Sea Grant College Program SID# 548	3,289	1,645	0
Effect of Pesticides on Chitin Synthesis in Blue Crabs Horst, Michael N. Georgia Sea Grant College Program SID# 837	16,525	6,858	0
Interaction of Copper and Cadmium with Microbial Benthos Biofilm and Effects on Oyster Larva Set Weiner, Ron Maryland Sea Grant College Program SID# 880	0	7,300	37,265
Trace Metal Stress in the Algal Community of Boston Harbor and Massachusetts Bay Morel, Francois M. Massachusetts Institute of Technology SID# 263	54,167	0	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
DNA Adducts as a Measure of Polycyclic Aromatic Hydrocarbon Exposure in fish McElroy, Anne E. Massachusetts Institute of Technology SID# 903	18,000	16,431	0
Cell Proliferation: A Potential Marker for the Biological Effect of Chronic Exposure to Epigenetic Carcinogens in Coastal Benthic Finfish and Shellfish Stegeman, John J. Woods Hole Oceanographic Institution SID# 488	0	39,173	71,400
Investigation of the Variability of Copper Speciation and the Potential Effects on Phytoplankton in Estuarine Waters Hanson, Alfred Rhode Island Sea Grant College Program SID# 611	99,742	50,780	0
Identification of Environmental Toxins and Other Disease-Causing Agents in the Tissues of Dolphins Stranded Along the Texas Gulf Coast Cowan, Daniel F. Texas A&M University Sea Grant College Program SID# 9218	9,900	20,287	0
Distribution of Heavy Metal-Resistant Bacteria, Their Mechanism(s) of Resistance, and Use of Biosensors (Genetic Fusions) To Determine Biologically Available Heavy Metals Nealson, Kenneth H. Wisconsin Sea Grant College Program SID# 459	40,318	21,452	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Early Life Stage Toxicity of Polychlorinated Aromatic Hydrocarbons in Salmonids Peterson, Richard Wisconsin Sea Grant College Program SID# 1096	57,046	50,813	0
Genetic Damage in Mangroves Resulting from Acute and Chronic Petroleum Pollution Klekowski, Edward Univ of Puerto Rico Sea Grant College Program SID# 1107	39,995	16,271	0
SUBTOTAL:	338,982	231,010	108,665
2. Transport, Cycling, and Fate			
Toxic-Element Sources and Fates in the Delaware Estuary and Mid-Atlantic Coastal Waters Church, Thomas M. Delaware Sea Grant College Program SID# 157	28,080	91,972	0
The Chemistry of Estuarine Bio-mineralization as Indicators of Past Pollution and Anoxia Luther, George W. II Delaware Sea Grant College Program SID# 69	68,141	37,850	0
The Assimilation of Metals from Particulate and Dissolved Sources in Marine Bivalves Fisher, Nicholas S. New York Sea Grant Institute SID# 958	70,072	44,643	0
Seasonal Resuspension of Contaminated Sediments in a Great Lake Setting Flood, Roger D. New York Sea Grant Institute SID# 959	62,753	40,246	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Contaminant Transport in Large Rotating Systems Atkinson, Joseph F. New York Sea Grant Institute SID# 955	33,538	19,790	0
Quantifying Sediment Resuspension Flux of Nutrients and Contaminants in Estuaries Due to Episodic Events Sheng, P. Florida Sea Grant College Program SID# 95	50,326	25,163	0
Degradation of Trichloroethylene and Other Pollutants by Ammonia-Oxidizing Bacteria Hooper, Alan B. Minnesota Sea Grant College Program SID# 673	25,856	2,900	0
Role of Organic Matter Production and Fate in Organic Contaminant Cycling in Lake Superior Eisenreich, Steven J Minnesota Sea Grant College Program SID# 934	36,000	4,000	0
Dynamics of Contaminant Bioaccumulation and Removal by Phytoplankton Swackhamer, Deborah Minnesota Sea Grant College Program SID# 935	30,619	3,400	0
In Situ Analysis of Volatile Organic Chemicals in the Marine Environment Hemond, Harold F. Massachusetts Institute of Technology SID# 264	43,187	9,373	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Geochemical Control of Toxicant Release Rates from San Diego Bay Sediments Reimers, Clare E. California Sea Grant College Program SID# 696	2,358	667	0
Phenolic Compounds in Seawater: Rates and Mechanisms of Biodegradation Carlucci, Angelo F. California Sea Grant College Program SID# 544	590	818	0
Benthic Processing of Sewage Additions: Role in Anoxia and Nitrogen Cycling Giblin, Anne E. Woods Hole Oceanographic Institution SID# 919	48,000	25,000	0
The Role of Colloids in Metal Transport in Coastal Waters Moran, Bradley S. Woods Hole Oceanographic Institution SID# 918	27,635	6,380	0
A Novel Cell Culture Assay to Detect Contamination of Marine Resources Stegeman, John J. Woods Hole Oceanographic Institution SID# 920	33,313	12,578	0
Quantifying the Effect of Discrete Contaminant Discharge on the Marine Environment Churchill Woods Hole Oceanographic Institution SID# 921	0	0	14,993

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Direct Measurements and Biogeochemical Controls of Sediment-Water Flux of Trace Metals from Estuarine Sediments Cornwell, Jeffrey C. Maryland Sea Grant College Program SID# 496	0	0	56,520
The Importance of Dinoflagellate Blooms in the Transport of Carbon and Toxic Trace Elements in Chesapeake Bay Sanders, James G. Maryland Sea Grant College Program SID# 498	0	0	119,395
Uptake of Dissolved and Particle-Associated Toxicants by the Eastern Oyster Newell, Roger I. E. Maryland Sea Grant College Program SID# 502	0	0	93,126
Contaminant Flux from Sediments: Impact on Chesapeake Bay Food Webs Riedel, Gerhardt F. Maryland Sea Grant College Program SID# 881	0	0	142,066
Ecosystem Processes in Relation to Transport, Partitioning, and Effects of Organic Contaminants in Chesapeake Bay: A Simulation Modeling Study Kemp, W. Michael Maryland Sea Grant College Program SID# 882	0	13,957	108,835
The Transfer of Toxic Metals from Contaminated Sediment to the Blue Crab: An Integrated Field and Laboratory Study Levinton, Jeffrey S. New York Sea Grant Institute SID# 104	50,541	40,974	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Patterns of Contaminant Flux in Great Lakes Food Webs Carpenter, Stephen R Wisconsin Sea Grant College Program SID# 456	19,374	46,885	0
Impact of Colloidal Material on Contaminant Fate in Lake Michigan Armstrong, David E. Wisconsin Sea Grant College Program SID# 1095	76,514	48,296	0
Coplanar Polychlorinated Biphenyls in the Green Bay Ecosystem Armstrong, David E. Wisconsin Sea Grant College Program SID# 1090	52,257	37,320	0
Ecological Risk Assessment of Complex Mixtures of Polybrominated Aromatic Hydrocarbons in Feral Fish Eggs Peterson, Richard Wisconsin Sea Grant College Program SID# 1094	0	35,060	69,972
The Acute Toxicity and Bioaccumulation of Azinphos-Methyl In Benthic Copepods and the Development of a Model for Trophic Transfer of Non-Persistent Pesticides to... Chandler, Thomas G. South Carolina Sea Grant Consortium SID# 379	0	7,047	41,279
Recent Chronology of the Atmospheric Deposition of PCB's, PAH's, Pesticides, and Metals to Western Long Island Sound and Environs Cochran, Kirk J. New York Sea Grant Institute SID# 961	0	4,666	22,170

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Mechanisms of Bioaccumulation: The Relative Importance of Absorption vs. Ingestion in Sediment-Dwelling and Detritus-Feeding Invertebrates Fisher, Susan W. Ohio Sea Grant College Program SID# 996	34,957	27,637	0
The Mobility of Contaminant-Laden Colloids in the Sedimentary Porewaters of the Great lakes Chin, Yu-Ping Ohio Sea Grant College Program SID# 997	30,732	20,848	0
Pollutant Metal Removal and Release Via Reactions with Sedimentary Pyrite Morse, John Texas A&M University Sea Grant College Program SID# 716	49,023	26,961	0
Modeling Toxic Material in Galveston Bay Armstrong, Neal Texas A&M University Sea Grant College Program SID# 573	40,016	21,588	0
Direct Measurements and Biogeochemical Controls of Sediment-Water Flux of Trace Metals from Estuarine Sediments Cornwell, Jeffrey C. Virginia Graduate Marine Science Consortium SID# 645	0	0	0
Temporal and Spatial Variability of the Chemical Speciation of Dissolved Copper and Cadmium in Chesapeake Bay Donat, John R. Virginia Graduate Marine Science Consortium SID# 647	0	0	68,317

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Chesapeake Bay Environmental Effects Research: New Project Initiatives Richards, William L. Virginia Graduate Marine Science Consortium SID# 624	0	0	64,812
Role of Benthic Communities in Sediment-Associated Toxic Organic Chemical Fate and Transport in Lower Chesapeake Bay Schaffner, Linda C. Virginia Graduate Marine Science Consortium SID# 1073	0	0	79,005
Determination of the Volatile/Absorptive Exchange of Hydrophobic Organic Contaminants Across the Air/Water Interface of Lower Chesapeake Bay Dickhut, Rebecca M. Virginia Graduate Marine Science Consortium SID# 1074	0	0	95,824
Wetland Reductions of Pollution to the Great Lakes: Quantification of a Model for Sediment, Nutrient and Pesticides Krieger, Kenneth A. Ohio Sea Grant College Program SID# 9210	8,351	7,011	0
The Chemistry of Estuarine Bio-mineralization as Indicators of Past Pollution and Anoxia Jacobsen, Timothy R. New Jersey marine Science Consortium SID# 326	32,563	8,450	0

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Processes that Control the Cycling of the Toxicant Lead in Galveston Bay Santschi, P. Texas A&M University Sea Grant College Program SID# 572	48,620	31,256	0
SUBTOTAL:	1,003,416	702,736	1,026,949
TOTAL:	1,342,398	933,746	1,135,614
GRAND TOTAL:	8,795,375	7,998,434	10,471,251

Non-Living Resources

Following is a listing of Sea Grant's Non-Living Resources Division
technical staff, their subject area(s), and their phone number.
They can be reached at the following address:

**National Oceanic and Atmospheric Administration
National Sea Grant College Program
1335 East-West Highway
SSMC1, 5th Floor
Silver Spring, MD 20910**

Non-Living Resources301/713-2713

Marine Geological Resources - Dr. Michael T. Ledbetter

Diving Physiology & Technical Development - Mr. N. Eugene Smith

Marine Geological Resources

1. Manganese nodules and crusts

TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Meiofauna: Tools for Evaluating the Environmental Impact of Polymetallic - Nodule Mining in the Deep Sea Thistle, D. Florida Sea Grant College Program SID# 828	0	0	28,300
Benthic Community Disturbance and Succession Following Simulated Manganese-nodule Mining in the Equatorial Pacific Ocean Smith, Craig R. Univ of Hawaii Sea Grant College Program SID# 219	0	5,000	329,892
The Role of Microbial Activity and Microbiogenic Detritus in the Growth and Composition Cowen, James P. Univ of Hawaii Sea Grant College Program SID# 590	24,831	29,591	0
The Combined Use of Chemical and Biostratigraphy to Date Fe-Mn Crusts, Estimate Their Growth Rates, and Reconstruct Their History DeCarlo, Eric H. Univ of Hawaii Sea Grant College Program SID# 213	41,921	27,028	0
Chemical and Isotopic Stratigraphy of Co-rich Ferromanganese Crusts from the Hawaiian Archipelago McMurtry, Gary M. Univ of Hawaii Sea Grant College Program SID# 210	43,595	33,172	0

Continuum of Ferromanganese Pavements on Seamounts of the Hawaiian EEZ Malahoff, Alexander Univ of Hawaii Sea Grant College Program SID# 591	33,911	10,154	0
The Environmental Impact and Feasibility of a Novel Method of Solution Recovery of Cobalt-Rich Ferromanganese Crusts from Seamounts Malahoff, Alexander Univ of Hawaii Sea Grant College Program SID# 592	22,082	22,154	0
A Submersible Investigation of Manganese Crust Deposits Off Johnston Island Wiltshire, John Univ of Hawaii Sea Grant College Program SID# 593	7,015	12,000	0
SUBTOTAL:	173,355	139,099	358,192

2. Hydrothermal Vent Deposits

The Geological Setting of Hydrothermal Vents and the Neovolcanic Zone of Loihi Seamount, Hawaii Malahoff, Alexander Univ of Hawaii Sea Grant College Program SID# 594	31,346	18,980	0
Geochemistry of Loihi Seamount Hydrothermal System McMurtry, Gary Univ of Hawaii Sea Grant College Program SID# 216	35,254	20,300	0

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Technological Developments for Seafloor Ridge and Margin Studies Schultz, Adam Washington Sea Grant College Program SID# 164	119,500	24,107	0
SUBTOTAL:	186,100	63,387	0
TOTAL:	359,455	202,486	358,192

Diving Physiology and Technical Development

A. Hyperbaric Physiology and Diving Technology

1. Hyperbaric Physiology

TITLE/INVES./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Resistance to Hypoxia in the Seal Heart Elsner, Robert Alaska Sea Grant College Program SID# 785	18,287	0	0
Applied Physiology of Diving Lin, Yu-Chong Univ of Hawaii Sea Grant College Program SID# 200	43,016	69,919	0
Decompression and Diver Safety Lanphier, Edward H. Wisconsin Sea Grant College Program SID# 467	52,250	31,000	0
Modification of Stress Responses in Scuba Divers Morgan, William P. Wisconsin Sea Grant College Program SID# 1098	40,322	27,089	0
SUBTOTAL:	153,875	128,008	0

B. Remotely Operated Vehicles (ROV'S) Manned Submersibles, and Instrumentation

1. ROV

An Intelligent Control System for Underwater Robotic Vehicles Yuh, Junku Univ of Hawaii Sea Grant College Program SID# 597	11,040	24,799	0
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TITLE/INVEST./INST.	FEDERAL FUNDS	MATCHING FUNDS	PASS THROUGH
Map Representation and Interrogation for Autonomous Underwater Vehicle Navigation Patrikalakis, Nichol Massachusetts Institute of Technology SID# 909	75,000	30,000	0
SUBTOTAL:	86,040	54,799	0
2. Manned Submersibles			
Management of Human Error in Operations of Marine Systems Bea, Robert G. California Sea Grant College Program SID# 533	2,569	1,563	0
Control of Vorticity and Oscillating Foils for Optimal AUV Propulsion Triantafyllou, Micha Massachusetts Institute of Technology SID# 905	75,000	80,000	0
SUBTOTAL:	77,569	81,563	0
TOTAL:	163,609	136,362	0
GRAND TOTAL:	317,484	264,370	0

