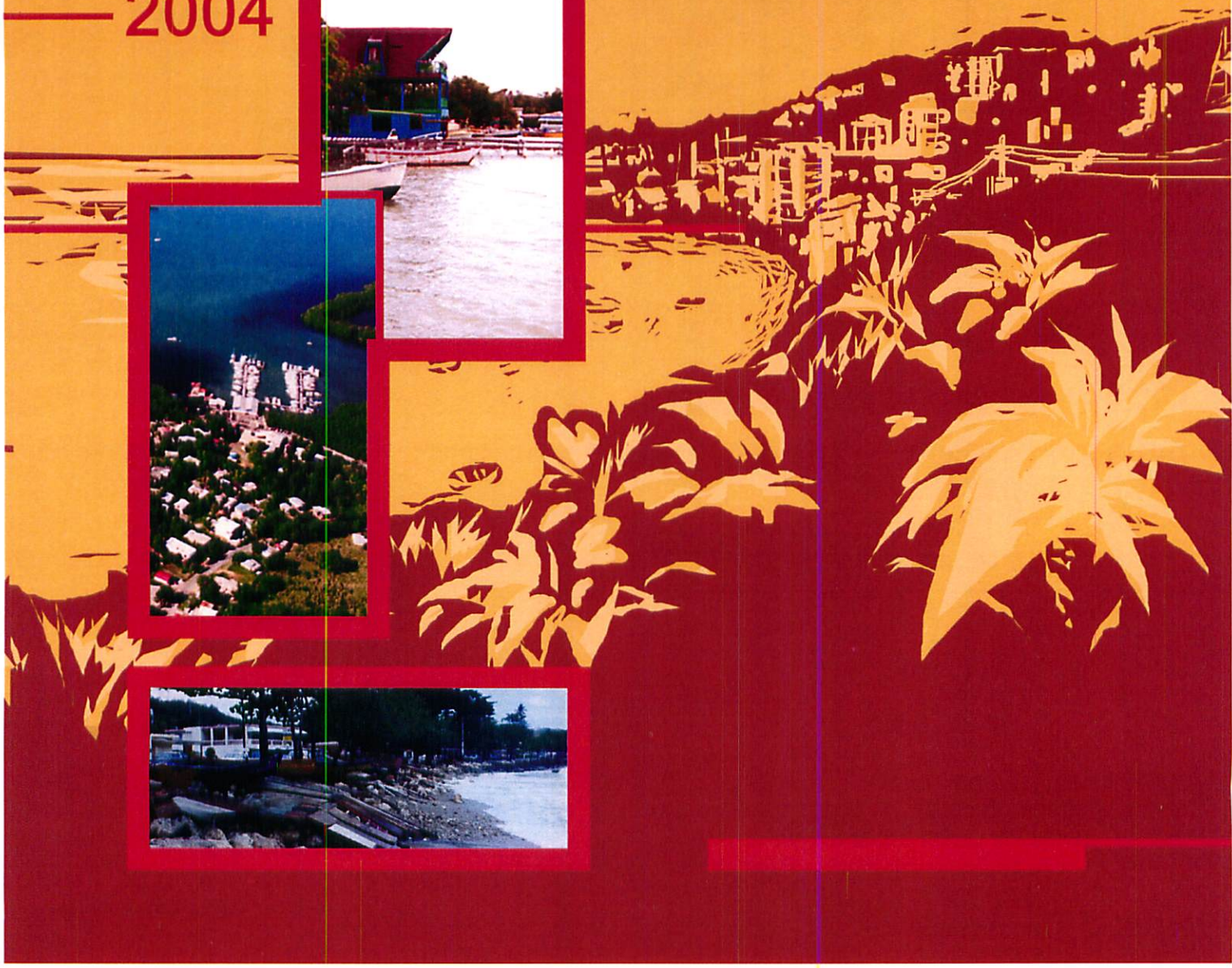


UNIVERSITY OF PUERTO RICO
SEA GRANT COLLEGE PROGRAM

Implementation Plan

2002

2004

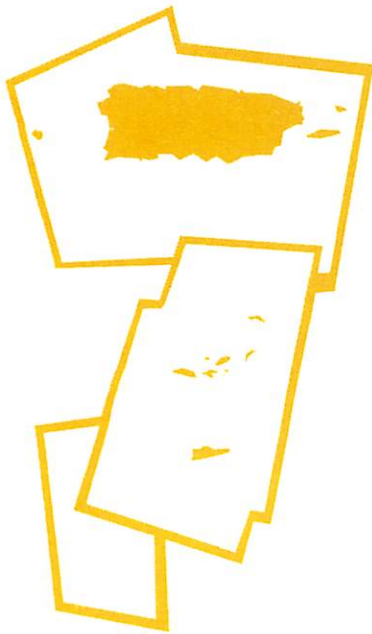


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Implementation Plan 2002-2004



**Puerto Rico Sea Grant
is based at the
University of Puerto
Rico . . . our key
institutional partner is
VIMAS at the
University of the
Virgin Islands.**

Introduction

The University of Puerto Rico Sea Grant College Program is based at the University of Puerto Rico in the western municipality of Mayagüez. The program also has offices at the Department of Natural and Environmental Resources in San Juan, and at the UPR-Humacao, in the east coast.

Our program is one of the key programs and research institutions of the UPR-Mayagüez Research and Development Center. Administratively, Puerto Rico Sea Grant responds to the R&D Center, the UPR-Mayagüez chancellor office, and to the president of the UPR system. The University of the Virgin Islands, and its Center for Marine and Environmental Studies, is our key institutional partner housing the Virgin Islands Marine Advisory Service (VIMAS).

In 1998 our Program prepared, and distributed a draft of its Strategic Plan 2000-2010. The ambitious time span of a decade was selected to provide us with a set of general guidelines that could effectively lead us to tackle critical ocean and coastal issues in our region. It was also designed as a tool for future planning activities, and the establishment of a long-term commitment to key processes pertaining to program administration, research and outreach.

The UPR Sea Grant Strategic Plan has been the main planning instrument for the preparation of proposals (1998-2000 & 2000-2002), implementation of projects and initiatives, and the preparation of the Program's assessment in June 2001. This planning process served the program well in the midst of continuous administrative changes at the University of Puerto Rico. However, the rapid turnover of administrators (chancellors and deans) precluded the formal authorization of the Strategic Plan. This milestone will be reached in the first half of 2002.

This Implementation Plan presents the main goals and objectives that we will accomplish, and the milestones we will reach during the 2002-2004 biennium.



Implementation Plan 2002-2004

This Implementation Plan presents the main goals and objectives that we will accomplish, and the milestones we will reach during the 2002-2004 biennium.

UPR Sea Grant's functional areas are: Program Administration, Research, and Outreach.

There are two fundamental themes that will characterize our implementation actions for 2002-2004, these are: (1) Assessment of various Program's activities and components (Education, Research, Outreach, publications, and projects), and (2) Streamlining of the Program Administration. In line with such effort, we will continue with the integration of all outreach components (Marine Advisory Services, Marine Education and Communications) into one solid unit.

Strategic Goals

Our Program efforts will be devoted to the development and implementation of projects and activities that help us address our mission, and contribute to continue building the program along those lines.

We have the challenge of growing as an educational program devoted to the conservation and sustainable use of coastal and marine resources in Puerto Rico, the U.S. Virgin Islands and the Caribbean region.

A key goal is to strengthen our information and technology transfer program to educate and change the attitudes, perceptions and practices of legislators, elected officials, resource users, resource managers, and the general public.

Sustainability is our major goal, which permeates our functional areas (Program Administration, Research, and Outreach), as well as our thematic areas: Water Quality, Fisheries and Mariculture, Coastal Communities Economic Development, and Coastal Hazards.

Our functional areas will engage in a number of operational strategies to reach our goals. These strategies are: communications, extension, educational activities, and program evaluation methodologies. In addition, our program engages in actions (tactics) to achieve our objectives.

The most prominent tactics are: development of conservation projects (such as Marine Fisheries Reserves), pilot



Functional Areas

* Program Administration

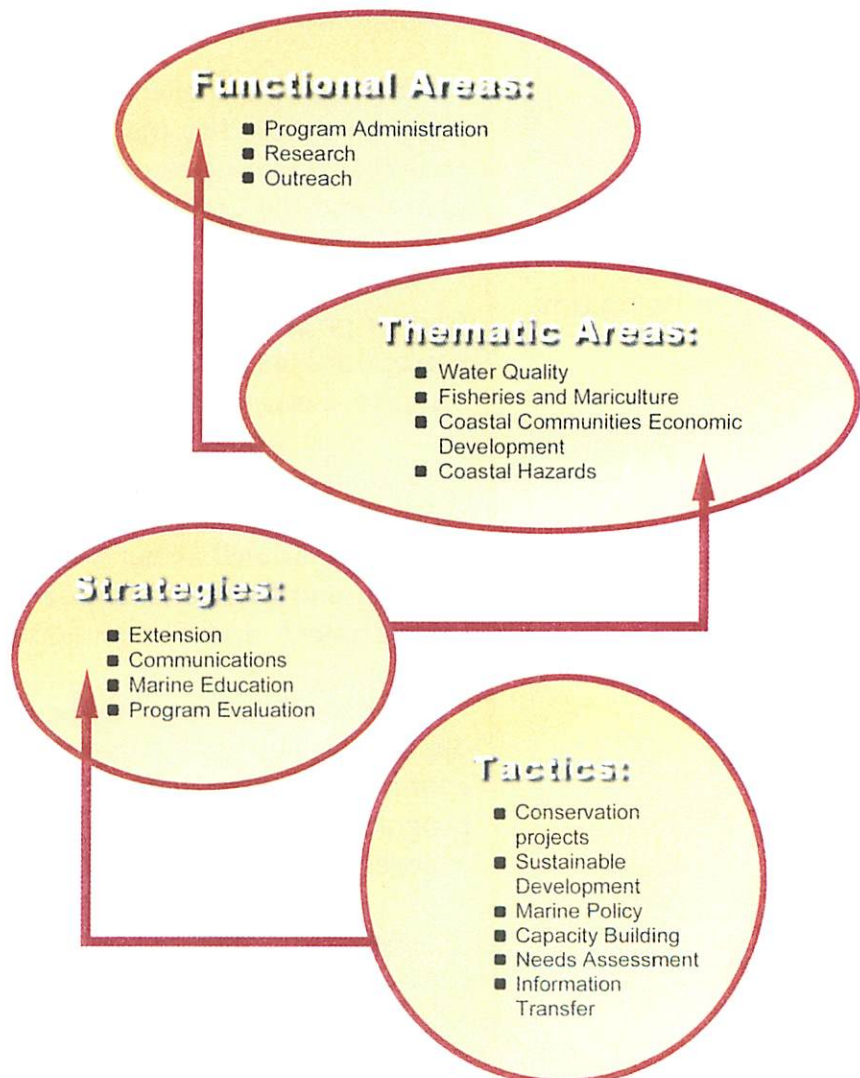
* Research

* Outreach

projects on sustainable development, marine policy debates and propositions, assessment of needs, information transfer, and capacity building.

In general terms, our Implementation Plan is devoted to guide us through the following pathways: program administrative capabilities, research efforts, improve communications at all levels of program effort, continue our excellence in outreach efforts, develop effective mechanisms for the assessment and accountability of all our efforts, and to actively engage in activities that promote sustainability. These pathways lead to the following coordinates:

*A program of excellence
The region's foremost educational program for
conservation and sustainability
A leader in research and marine outreach*



Functional Areas

Administration



Photo Carlos Díaz

The main tasks of the University of Puerto Rico Sea Grant's administration team, for 2002-2004, will be to maintain the level of excellence in connecting Sea Grant with users, continue improving the management of the program, and bring our research efforts to a level of excellence. To accomplish these, the preparation of the UPR Sea Grant's proposal, and its Institutional Plan 2002-2004, included funding allocation for all the activities conducive to reaching the goals, and achieving the objectives of the implementation plan.

Strategic Goal:

Strengthen the administrative, managerial, and operational capabilities of the Program.

Objective 1:

To provide UPR Sea Grant with a formal and functional administrative structure within the UPR system.

Action:

Review the composition of the Technical Review Panel and the Advisory Council to provide a more appropriate group of members.

Projection:

The Technical Review Panel and the Advisory Council will have a renewed membership by the summer of 2002.

Action:

Establishment of the Program's Executive Council composed by the President of UPR, UPR-Mayagüez Chancellor, the Director of the Center for Research and Development, and a member of the Advisory Council, and one representative of the Director's Consultive Board.

Projection:

To formally establish the Program's Executive Council, and to convene two meetings per year.

Action:

Organize the proposed Director's Consultive Board with representatives from the University of Virgin Islands (UVI),



Functional Areas

Department of Marine Sciences (DMS), an Environmental NGO, Center for Applied Social Research (CISA), UPR-Humacao (CUH), School of Natural Sciences, a government representative, and a member of the clientele. This will be accomplished with input from the Technical Review Panel (TRP), Advisory Council (AC) and staff.

Projection:

Document this process in a publication, and provide a formal agreement on the Program's structure, signed by UPR officials, by the summer of 2003.

Administration

Objective 2:

To strengthen the Program's planning and implementation process, to increase productivity and accountability in our efforts.

Action:

Develop a procedure for the formal documentation of all of the Program's activities, and for accountability in Education, Outreach, Research and Administration.

Projection:

A procedure will be designed and implemented by May, 2002.

Action:

Implement an assessment schedule and program for all of UPR Sea Grant components: Marine Outreach Program, Virgin Islands Marine Advisory Services, Research, and Administration.

Projection:

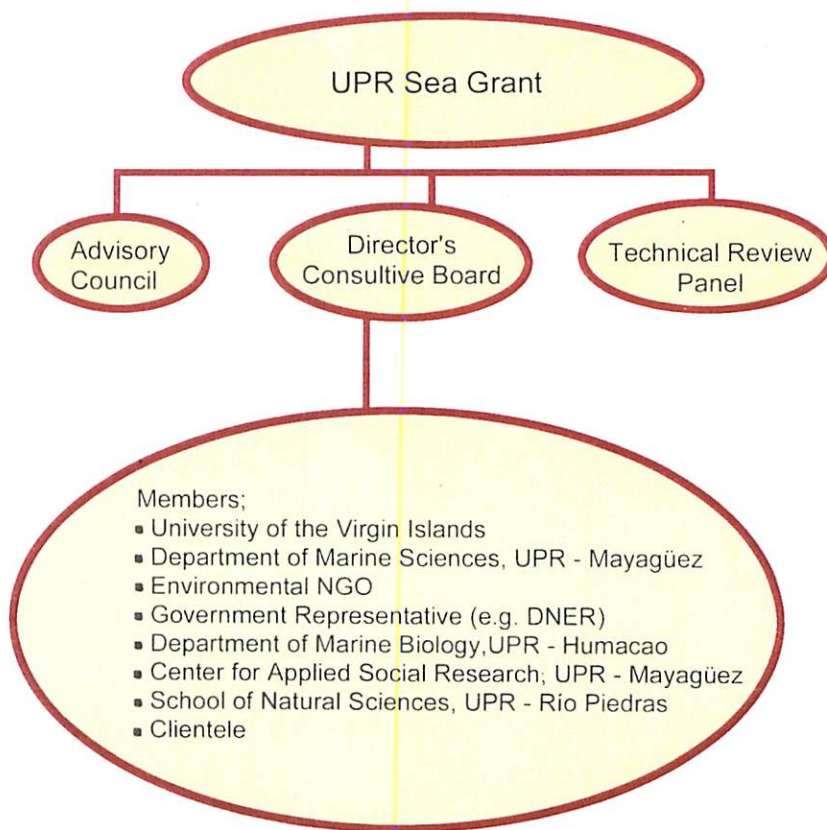
An assessment plan will be designed by March of 2002. The plan will include the following critical areas that require assessment: administration, marine outreach (selected projects), VIMAS and Marine Education, schedule, and allocation of funds.



Functional Areas

Administration

Proposed Program Structure for 2000 - 2010 UPR Sea Grant Consultive Bodies



Functional Areas

Research

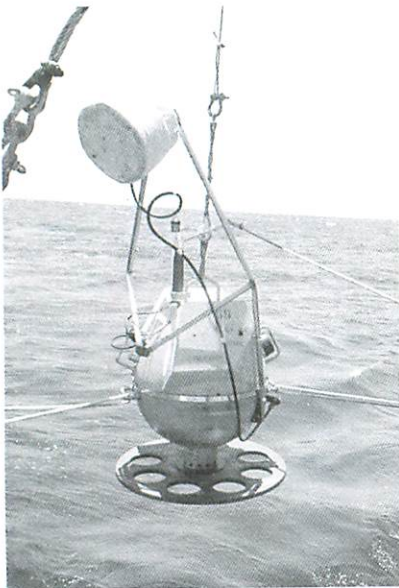


Photo courtesy P.R. Seismic Network

Research is one of the areas with the greatest potential in our program. UPR Sea Grant has a tremendous cadre of investigators, capable of carrying out innovative and pertinent projects. It is our goal to continue providing the means for the development of a diversified portfolio of investigative activities, with a wide participation of researchers and academic programs, in line with our thematic areas. This plan also presents activities and benchmarks to encourage, facilitate and provide opportunities to increase researchers' writings and publications, and for the appropriate dissemination of scientific information.

Strategic Goal:

Enhance research management and focus research efforts to an interdisciplinary, theoretical and applied strategy pertinent to the conservation of coastal ecosystems, and the sustainable use of resources.

Objective I:

Improve the quality, impact, and diversity of our research activities, in order to achieve our strategic goals in programmatic areas.

Action:

Review and change our procedures for: identification of potential researchers in all pertinent areas, development of a comprehensive data base of researchers in Puerto Rico and the U.S. Virgin Islands, advertisement of research opportunities, communications with researchers, seed money proposals, and Omnibus Request for Proposals.

Projection:

Preparation and publication of guidelines and documents, and implementation of each revised procedure, as part of the management activities throughout the 2002-2004 biennium.

Action:

Re-assess the critical areas for research linked to the conservation of coastal and marine ecosystems, and the sustainable use of resources. This assessment will be the base for future revisions of the Strategic and Implementation Plans, and the elaboration of the Omnibus proposals.



Functional Areas

Research

Increase the output and dissemination of research findings.

Projection:

The Program will conduct a formal assessment of critical research areas, and the publication and dissemination of the results by the end of 2002.

Action:

Increase the number of joint efforts and partnerships in concrete research-extension projects with Federal and commonwealth agencies, and non-governmental organizations.

Projection:

To develop at least two research-extension projects with federal and commonwealth agencies, and non-governmental organizations.

Objective 2:

Increase the output of research findings and their dissemination through program publications, the media, and journals.

Action:

Support the effort of researchers to publish in peer review journals through editorial assistance and funding.

Projection:

To actively help at least four researchers per year, in publishing in peer-review journals.

Action:

Encourage researchers to publish research results in Sea Grant publications, "translating" research reports into publications of wider reach.

Projection:

To have six researchers engage in Sea Grant publications over the next two years, in the following thematic areas: coral reefs, tsunamis, marine protected areas, and ecosystems health. These are in-house publications not subjected to peer-review. The thematic areas chosen reflect those where we have accumulated considerable expertise.



Functional Areas

Action:

Support the effort of researchers to publish in peer review journals, through editorial assistance and funding.

Projection:

To actively help at least four researchers per year, in publishing in peer review journals.

Action:

Encourage two researchers to edit two compilations of Sea Grant supported research. A compilation is a collection of research papers on the same general topic.

Projection:

Develop two manuscripts on Sea Grant research by the spring of 2003 for Sea Grant research compilations.

Outreach

Outreach

According to the evaluation of the Program Assessment Team, all of our efforts in “connecting Sea Grant with users” were assessed as excellent. At the core of those efforts is the Marine Outreach Program.

Outreach is our program’s forte, and this component is expected to grow accordingly. In fact, for the 2002-2004 biennium this program received an increase in its budget, in addition to the allocation of funds for Coastal Community Economic Development. Funding for Coastal Community Economic Development will enhance an already important area of our program, fundamental for the development of projects relevant to sustainability.

The presentation of the objectives, actions, and projections of the Marine Outreach Program follow the outline of the Program’s four thematic areas, and the key topics under each one. The core of the Communications, and the Marine Education projects are presented at the end. These are the targets of streamlining activities by the program administration.



Thematic Areas



Water Quality

*Volunteer monitoring

*Community participation

*Non-Point Source Pollution

*Eco-system Health

Strategic Goals:

Strengthen the information and technology transfer projects and activities to educate, change attitudes, and transform practices of coastal and marine resource users, in relation to the sustainable use of resources in Puerto Rico, the U.S. Virgin Islands, and the Caribbean. Increase effective and appropriate liaisons with the research community, government agencies, private industry, resource users, and the general public.

Strategic Goals in Water Quality:

Reduce the levels of contamination in rivers, estuaries, bays, beaches and coastal waters through public education campaigns, changes in policy, demonstration projects, and changes in practices.

Objective:

Educate the general public about its links with coastal waters and collaborate with insular agencies and coastal communities in water quality projects.

Action:

Promote community participation in water quality projects and activities, through lectures, publications, visits, one-on-one consultation, and capacity building.

Projection:

Develop and publish an "easy guide to monitor water quality," by the summer of 2002.

Projection:

Train thirty new volunteers, and four community organizations, to expand the efforts of the Water Quality Citizen Volunteer Monitoring Program, by the spring of 2003.

Action:

Promote the timely dissemination to the public of coastal water quality data collected by the Environmental Quality Board.



Thematic Areas

Fisheries and Mariculture

- * Marine Protected Areas
- * Seafood Safety
- * Ornamentals
- * Divers Safety
- * Aquaculture



Projection:

Publish the coastal water quality data in the UPR Sea Grant Internet page, and disseminate this data.

Action:

Promote the reduction of the amount of Non-Point Sources (NPS) of pollution reaching our beaches.

Projection:

Contribute to the development of effective policies for the reduction of NPS pollution, through our participation in the NPS Pollution Committee of the Department of Natural and Environmental Resources.

Projection:

Develop and implement a pilot project for the education, and changes of practices of 200 homemakers (summer of 2003).

Action:

Promote sustainable activities in our watersheds and coastal areas.

Projection:

Incorporate ten communities and NGOs in activities and practices conducive to the improvement of water quality in Puerto Rico, by December 2003.

Strategic Goals in Fisheries and Mariculture

To be at the forefront of the transfer of information and management technologies related to the sustainable use of fishery resources, including the identification and conservation of essential fish habitats, promotion of marine protected areas, conservation practices, and the participation of constituents in fisheries management.

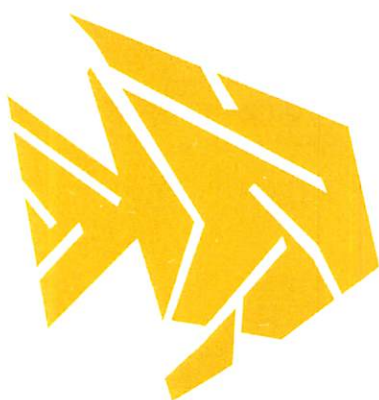
Improve the quality and safety of the seafood products marketed and consumed. Promote the development of the mariculture industry in the Archipelago of Puerto Rico.

Objective 1:

Promote Marine Protected Areas (MPA) as appropriate management tools to protect tropical fisheries, and to enhance the conservation of essential fish habitats.

Thematic Areas

Fisheries and Mariculture



Action:

Support the establishment of pilot conservation projects aimed at the conservation of essential fish habitats, and the conservation of fisheries through MFR and MPA technologies.

Projection:

Participate in the efforts for the enhancement and implementation of a MPA in the island municipality of Culebra (eastern Puerto Rico), in partnership with the Department of Natural and Environmental Resources, Sea Grant researchers, fishers, and local authorities.

Projection:

Continue our support and leadership in the establishment of a MPA in La Parguera, southern Puerto Rico.

Objective 2:

Transfer information and technology about quality and safety issues and seafood regulations to fishers, fishermen associations, and small businesses.

Action:

Design and implement workshops, publications, pilot programs, and one-on-one consultations on the “Hazard Analysis of Critical Control Point” techniques and regulations.

Projection:

Transfer information and change practices of 100 fishers on HACCP techniques (by March 2004).

Projection:

Transfer information, and change practices of 200 health professionals, government officials, and the public on HACCP (by March 2004).

Projection:

Expand the group of sophisticated consumers (estimated 2,000) by engaging in activities (workshops, media events, conferences, publications) designed to educate the general public about safety issues related to seafood.



Thematic Areas

Fisheries and Mariculture



Objective 3:

Educate fishers on the sustainable uses of fishery resources and habitats.

Action:

Provide guidance and advisory services to the artisanal fishermen of Puerto Rico and empower them to take charge of their social, political and natural environments.

Projection:

Continue strengthening an island-wide fishermen organization promoted by Sea Grant, and involve 200 active members in the development and implementation of educational activities.

Objective 4:

Aggressively promote the development of mariculture activities (in commercial fishes, and ornamentals).

Action:

Identify needs and priorities for the development of commercial mariculture in Puerto Rico.

Projection:

Organize and conduct workshops and expert consultations to identify priorities and target species. Produce a set of guidelines on these aspects by the spring of 2003.

Projection:

Produce and disseminate information regarding the protocol for mariculture operations permits and about viable alternatives to supply market demands for protein, by the summer of 2003.

Action:

Encourage the development of mariculture ventures in Puerto Rico.

Projection:

Provide technical assistance and public education in relation to the commercial mariculture venture of mutton snapper in the east coast.



Thematic Areas



Coastal Communities Economic Development

Projection:

Stimulate the development of two small-scale commercial mariculture ventures in Puerto Rico, with target species identified in the expert consultations, by February 2004.

Strategic Goals in Coastal Communities Economic Development

As a Program our main goal is to effectively and appropriately contribute to the design and implementation of sustainable economic and social activities in coastal communities throughout Puerto Rico and the U.S. Virgin Islands.

Objective 1:

Promote sustainability as the fundamental principle for the development and implementation of policies, projects and programs related to the conservation, use and consumption of coastal and marine resources.

Action:

Actively engage in the design and implementation of a coherent outreach and education program for coastal sustainability.

Projection:

Assess the social, political, economic and policy conditions for the establishment of a program for coastal sustainability. Build the program based on the findings of the research project to be finished by May, 2002.

Objective 2:

Increase our outreach, research and educational efforts devoted to the improvement of sustainable economic opportunities for coastal communities.

Action:

Commit resources and funding to the development of a Coastal Community Development initiative.

Projection:

Hire a Coastal Community Development specialist with expertise in economic and capacity building (March 2002).



Thematic Areas

*Community Participation

*Sustainable Development

*Beach Management

*Recreation



Projection:

Build a Coastal Community Economic Development program joining efforts with the Environmental Protection Agency Smart Growth Program, the UPR and UVI Economic Development programs, and the Commonwealth and Territory government programs for poor coastal communities (the end of 2002).

Projection:

Design and implement a program with capacity building activities (workshops on leadership, economic opportunities, sustainable alternatives, conservation and profitability), and pilot projects in conservation and economic sustainability in at least three coastal communities (Summer of 2003).

Objective 3:

Change the attitudes of beach resources managers regarding the need for a comprehensive beach management program. Such program will contribute to both the conservation of the resources and the enhancement of coastal economic opportunities.

Action:

Educate resource managers on water safety, proper utilization and conservation of recreational marine facilities, tourist security and protection.

Action:

Promote a unified beach code as well as the creation of a Beach Management Department.

Action:

Collaborate with government agencies to develop positive attitudes toward beach conservation and protection.

Projection:

Transfer information on the benefits of a comprehensive beach management program to ten NGOs, 100 coastal businesses, and 100 government officials, through publications, visits, lectures, and community workshops (to be completed by the Summer of 2003).



Thematic Areas

Coastal Hazards

*Tsunamis

*Coastal Erosion



Projection:

Design and implement (jointly with the government, and other concerned parties) a comprehensive beach management program by March 2004.

Strategic Goals in Coastal Hazards

Reduce risk, loss of life and property through dissemination and transfer of information and technology to resource users, emergency personnel, and municipal, insular and federal government agencies.

Objective:

Promote a better understanding, both qualitatively and quantitatively, of coastal hazards in Puerto Rico and the United States Virgin Islands (USVI).

Action:

Contribute to the understanding of the legal, social, economic and scientific parameters defining the shoreline.

Projection:

An expert consultation (workshop) to assess and elucidate the multiple interpretations of the shoreline and maritime zone in Puerto Rico will be completed by the end of 2002.

Action:

Disseminate information on the impacts of tsunamis in the Caribbean.

Projection:

Transfer information to 200 public officials, and the general public through workshops, one-on-one consultations, articles and radio programs.

Projection:

Contribute to the development of the Puerto Rico Tsunami Warning System, jointly with government agencies, and other programs. This system is expected to be fully developed by 2004. Information on this effort is found at: <http://Poseidon.uprm.edu>



Communications Component

* Publications

* Partnerships



In terms of our Communications component, the following are key areas of effort for 2002-2004: continue with the production of our landmark publications, strengthen our partnerships with government agencies, increase the output of research findings, maintain the level of effort of outreach publications, and increase our participation in radio and television. Our program will assess the effectiveness and feasibility of various products, including the Marine Clippings Service, and the fusion of the Boletín Marino and Sea Grant in the Caribbean, into a comprehensive bilingual publication.

Strategic Goals in Communications

Develop a strong and aggressive communications strategy to improve the managerial capabilities of the program and serve all program components.

Objective 1:

Integrate the Marine Outreach Program and Communications into a unified information and technology transfer program.

Action:

Evaluate the activities, products, and administrative structure of the Communications component.

Projection:

Finalize assessment by August 2002, and incorporate recommendations and actions by November 2002. Integration of Communications, within the Marine Outreach Program will be finalized by January 2003.

Objective 2:

Strengthen our Internet capabilities and apply them to the process of communications and information transfer.

Action:

Establish the Internet as the key media for launching outreach, educational and communications products, and for the overall communications strategy of the Program.

Projection:

Finalize the design of the architecture, and the construction of the Program's Internet site (<http://seagrant.uprm.edu>) by the



Marine Education Component

*Capacity building of
teachers

*Conservation of
endangered species

*Workshops



summer of 2002, and prepare it to become a fully educational, and interactive site by March of 2003.

Projection:

Increase the number and variety of publications (including research reports) available electronically. This projection also includes the availability of the *Boletín Marino*, and *Sea Grant in the Caribbean* by 2004.

Projection:

Provide our staff with educational opportunities on the use of the Internet, including the design and maintenance of web pages.

Projection:

Maintenance and improvement of the Program's director web site (<http://director35.tripod.com>) to increase bi-weekly communications with all staff and VIMAS, board, panel and council members, collaborators, researchers, and members of the clientele.

Marine Education

The activities of our Marine Education component are directed toward capacity building of teachers, as well as the conservation and protection of endangered species (marine turtles). We use these strategies as a mechanism for the transfer of information, and to entice the participation of teachers, students and local communities in conservation activities.

In terms of the management actions and projections related to Marine Education, the main task for 2002-2004 will be to review the structure, arrangements, activities, and orientation of the Marine Education project, to assess its potential transformation into one of the specializations of the Marine Outreach Program.

Strategic Goals in Marine Education:

Develop a strong educational component linked with the other functional areas of the program, and synchronized with the thematic areas, to promote educational activities aimed at



Marine Education Component



the conservation and sustainable uses of the coast. Marine Education will become a key strategic area defining the essence of our program.

Objective 1:

To increase the number of environmentally responsible and scientifically literate resource users.

Action:

Develop educational activities for resource users, based on the sustainable use of beaches.

Projection:

Transfer of educational materials and information on beach conservation to 1,000 resource users.

Action:

Continue with the incorporation of local communities in the conservation and monitoring of sea turtles nesting sites.

Projection:

Two communities in the eastern municipalities of Humacao and Naguabo will continue with their conservation and monitoring activities, and will help transfer conservation and educational materials to other communities and resource users.

Objective 2:

Expand the number of teachers capable of transferring interdisciplinary approaches to science education and conservation.

Action:

Continue with the development of the “Encounter with the Sea” and other workshops for teachers.

Projection:

A hundred and fifty new teachers, from various disciplines, will participate in the workshops, and will continue to work in marine education issues at their schools.



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