

# MONTEREY BAY NATIONAL MARINE SANCTUARY

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## MULTICULTURAL EDUCATION PLAN Hispanic Component

### **“M.E.R.I.T.O.”** “Multicultural Education for Resource Issues Threatening Oceans”

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## Table of Contents

Executive Summary.....	2
I. Background and General Goals.....	6
A. Community Characteristics.....	6
B. Monterey Bay National Marine Sanctuary.....	7
C. Rationale, Methods and Objectives.....	7
II. Description of MBNMS Multicultural Education Plan.....	10
A. Areas of Need and Program Goals.....	10
1. Hispanic Serving Institution Program.....	10
2. Site-Based Bilingual Ocean Outreach Program.....	13
3. Community-Based Bilingual Ocean Outreach Program.....	15
B. Program Management.....	17
1. Personnel.....	17
2. Process.....	18
C. Evaluation.....	19
D. Funding Strategy.....	19
E. Conclusions.....	20
III. References.....	22
Appendix A. MBNMS Survey and Needs Assessment: Education & Outreach to Hispanic Audiences.....	23
Appendix B. Monterey Bay National Marine Sanctuary Multicultural Education Plan Partnership Organizations.....	24
Appendix C. Monterey Bay National Marine Sanctuary Multicultural Education Plan Work Plan.....	25

# **MBNMS Multicultural Education Plan**

## **Multicultural Education for Resource Issues Threatening Oceans –“MERITO”**

### **Executive Summary**

This document describes the Hispanic component of the Monterey Bay National Marine Sanctuary’s Multicultural Education Plan, a multi-agency collaboration to expand marine conservation education and outreach efforts to local Hispanic communities.

#### **Areas of Focus and Program Goals**

The Hispanic population of the central California coast is one of the largest and fastest-growing constituencies of the Monterey Bay National Marine Sanctuary, but is poorly reached by current Sanctuary outreach and resource threat reduction programs. This Multicultural Education Plan, known as “MERITO” (Multicultural Education for Resource Issues Threatening Oceans), has been developed in partnership with the local Hispanic community to provide expanded bilingual ocean and conservation-related outreach programs to Hispanic students, teachers, adults and families living near the National Oceanic and Atmospheric Administration’s (NOAA) Monterey Bay National Marine Sanctuary (MBNMS). Through enhanced knowledge of the Sanctuary and its associated watersheds, our diverse citizens will better understand the importance of protecting our resources and their special qualities. The Multicultural Education Plan includes three areas of focus:

1. A Hispanic Serving Institution Program for Hispanic teachers, undergraduate and graduate level students, to include the production of a set of universal, Spanish-language bilingual curricula and materials that can be utilized by other National Marine Sanctuaries, and beyond,
2. A Site-Based Bilingual Ocean Outreach Program for Hispanic youth and families in conjunction with California State Parks, National Estuarine Research Reserves and other partners, and
3. A Community-Based Bilingual Ocean Outreach Program for Hispanic youth, families, and migrant farm workers.

#### **Process and Products**

The MERITO (Spanish meaning is merit or worth) Plan was built in a systematic manner over an eight-month period with over thirty local groups that work with or within the Hispanic community. Through individual meetings, the MBNMS has worked with Hispanic representatives and leaders to 1) identify the critical gaps and “areas of need” (summarized in Appendix A.), 2) develop a series of partnership projects that address Hispanic community needs and build upon successful existing community programs, and 3) develop strategies for implementing and evaluating the partnership projects.

This plan will utilize a multi-level approach in order to reach young children, youth, families and adults in a variety of different ways. It will provide a variety of program offerings throughout the year targeting various groups within the Hispanic community. For example, a collaborative project with the Monterey County Office of Education Migrant Education Centers will provide educational materials and instruction for school age Hispanic children and presentations for their parents. A partnership with the City of Salinas will provide youth leadership development and instructional resources for an “at-

risk” youth program. At the same time, community events planned in cooperation with some of the major agricultural growers would attract participation by migrant workers and their families. This approach will optimize a vital component in effective education and outreach -- the ability to develop and nurture long-term relationships. We are confident that a multi-pronged approach to public education will help us to build and sustain strong community relationships.

Additionally, at the regional level the MBNMS will be in a better position to serve its largest constituency during the upcoming joint Management Plan Review. Since over 47% of Monterey County’s population is Hispanic, and 32% of the total California population (US Census Bureau, 2000), it is evident that the Sanctuary needs to focus on building their Hispanic constituents. This plan will help to facilitate communication between managers, scientists, local officials, Hispanic leadership, and private citizens. Timely and pertinent information will be exchanged between all parties through the expanded outreach and education efforts. At the staff level, successful implementation of this plan will require integration and exchange across all departments within the Sanctuary office. The outreach programs will link Hispanic students and teachers with research tools and information such as those described in SIMoN, migrant farm workers with vital resource protection information developed within the Sanctuary’s Water Quality Protection Program Agricultural Program, and, Hispanic leadership with Sanctuary managers and important policy issues.

The strength of this plan is that the MBNMS will be the hub for a long-term, collaborative program that is a product of the community, for the community. Hispanic-serving organizations will continue to provide their services to the community, but the Sanctuary will help generate the people power and funding required to support and expand existing efforts. The plan will reflect the specific needs of our Hispanic community and in doing so will help to catalyze necessary support from other agencies in the area. Twenty federal and state agencies, universities, and private groups are already onboard to support efforts described in this plan. Through this program, the MBNMS will be able to effectively address resource threat reduction in the context of the needs of the Hispanic communities.

The Multicultural Education Plan has been designed to serve as a collaborative network long into the future and will have a phased approach with periodic external evaluation and review. The first phase of the collaborative plan will include implementation of a number of local pilot projects instituting the various plan components (proposed to begin in 2001). A second phase of expanded programming will incorporate international efforts with Baja California and Mexico, with three following years needed for full-scale implementation throughout the Sanctuary and with other regional partners.

### **Areas of Need**

Individual meetings with over thirty Hispanic agencies and organizations have resulted in a list of critical needs that must be addressed in order for the MBNMS to provide effective multicultural education. The needs were evaluated and grouped into common themes:

1. Outreach Instruction - provide bilingual education staff for in-school and community-based programs that focus on Sanctuary-related and conservation programs,
2. Outreach Materials - provide bilingual lesson plans, posters, kits and other educational materials for in-class, after-school, and community-based programs,

3. Professional Development - provide science enrichment opportunities to pre-service and in-service Hispanic teachers (and those teaching Hispanic students), as well as supplemental lesson plans, teacher kits, and other materials for more effective classroom lessons and field activities,
4. Field Trip Instruction - provide bilingual education staff to lead field activities,
5. Field Trip Transportation - provide vehicles or funding for vehicles to transport groups to field trip site,
6. Student Internships - provide paid-internship opportunities for Hispanic students,
7. Community Event Support - provide hands-on activities and other resources (food, music) to support various Hispanic community events,
8. Conference Support - attend career fairs, coordinate and host field trip enrichment activities,
9. Job Shadowing & Mentorship - provide opportunities for Hispanic high school and undergraduate students to follow marine professionals for a day, and
10. In-kind Support - provide science lab equipment, supplies, computers, etc. to support school and college programs.

It is the intent of the plan that existing efforts will be enhanced and new programs initiated in the context of the areas of need.

### **Program Recommendations**

1. Hispanic Serving Institution Program - Regional colleges and universities provide teacher credential programs for new teachers, and graduate level programs for in-service teachers. Working with colleges and universities, the MERITO Plan will provide avenues for professional development that will not only take Hispanic-serving teachers into the marine environment to acquire hands-on experience, but also bring researchers out of the laboratory and into dialogue for a direct transfer of knowledge to teachers. The intended outcome is that teachers will multiply these experiences through their students over many years. Updating and training new and veteran teachers is a long-term process requiring a sustained effort and repetitive programs to assure impact on the greatest number of teachers and students.

In addition, through the MERITO Plan's Hispanic Serving Institution Program, scholarships will provide job experience and internship opportunities for Hispanic undergraduate and graduate level students. Interns will work with water quality specialists, marine educators, policy specialists, and GIS technicians at the Sanctuary office to enhance their own science and technology skills while producing valuable resources and products for the MBNMS and the MERITO Plan.

The goal of producing a set of universal, Spanish-language bilingual curricula and materials, to be utilized by other National Marine Sanctuaries and beyond, is included as an overarching goal. All deliverables will be crafted in cooperation with MERITO partnership organizations and will fulfill the needs expressed in Appendix 1.

Of the thirty groups surveyed, seventeen requested bilingual curricula and resource materials. When asked for more specific information, groups expressed the need for marine and coastal information and curricula that reflect a multidisciplinary knowledge base as well as a focus on issues important to local communities and ecosystems. In addition, other communication technologies will be explored such as CD ROM and interactive video, which will enable the MERITO Plan programs to produce materials of greater depth to the active learner.

2. Site-Based Bilingual Ocean Outreach Program – Effective on-site (outdoor) education is fundamental to resource protection and conservation. Gaining an understanding of how the local Hispanic communities interact with and utilize the Sanctuary is the first step to effective resource protection and integral to the success of the Multicultural Education Plan. For example, we know from observation that pier and onshore fishing and family visits to the beach are some ways that Hispanic residents enjoy the rich diversity of the Sanctuary. Many of these coastal visitation sites fall under the jurisdiction of other governmental agencies, such as California State Parks. By collaborating with these agencies, we will both increase our understanding of how Hispanic audiences utilize coastal areas and more effectively reach the Hispanic public. Thus, the first goal of the MERITO Plan’s Site-Based Bilingual Ocean Outreach Program will be to work closely with two of our closest regional partners, the Elkhorn Slough National Estuarine Research Reserve and California State Parks, Monterey County District, to provide bilingual staff and programs dedicated to Hispanic visitors.

3. Community-Based Bilingual Ocean Outreach Program – The most successful and long-term approach to expanding marine outreach to Hispanic youth and their families is to partner with already existing Hispanic-serving organizations. Many successful and sustainable “community-based” programs exist in this region, including after-school programs, in-school Head Start and Migrant Education programs, and ethnically diverse youth groups, to name a few. MERITO details a variety of educational partnerships with the above groups. MERITO also describes the need for partnerships with the agricultural industry, which employs predominantly Hispanic migrant workers. This program component explores ways that the Sanctuary can work with community groups and industry to provide marine conservation education and outreach opportunities.

### **Conclusions**

The MBNMS Multicultural Education Plan will be a multi-agency, long-term collaborative plan that utilizes a multi-level approach to expand needed outreach and education to local Hispanic communities. It will build upon and provide support for existing education efforts and also initiate new programs that will enhance understanding of our complex and important relationship with the marine environment. The MERITO Plan will provide a set of tangible Spanish-language education products and tools that can be utilized by other National Marine Sanctuaries and beyond. This plan will also facilitate critical communication between managers, educators, scientists, Hispanic leaders, and private citizens, mainly focusing on the Hispanic community. Finally, NOAA’s National Marine Sanctuary System is interested in using the MBNMS Multicultural Education Plan as a model marine conservation outreach and education program for other marine sanctuaries nationwide.

## **I. Background and General Goals**

## **A. Community Characteristics**

Effective community-based education and outreach are fundamental components of resource protection and conservation. Education, involvement and ultimately, stewardship, need to be accelerated in all coastal environments or the United States will lose its economic base of natural resources. It has been documented in studies that the general public does not rate ocean stewardship as a high priority. A response given by the general public in a 1999 national survey conducted by The Ocean Project states, "At the moment, the oceans are not perceived to be in immediate danger, and the need for action to protect the oceans is not readily apparent."<sup>1</sup>

The Central Coast, like much of California, supports culturally diverse communities including extensive Hispanic populations centered in the cities of Watsonville, Salinas and San Jose. A recent study released in August 1999 by the California Research Bureau (CRB)<sup>2</sup> shows that Hispanics are California's fastest-growing demographic group. Two of the largest Hispanic communities on the Central Coast are located along the Monterey Bay between Monterey and Santa Cruz. The City of Salinas is a major agricultural center in Monterey County's Salinas Valley, less than 15 miles from the Monterey Bay National Marine Sanctuary (MBNMS). Over 65% of its approximately 140,000 residents identify themselves as Hispanic. The City of Watsonville is located in the Pajaro Valley in Santa Cruz County, about five miles inland. Nearly 70% of Watsonville's population is Latino, making the city of 38,000 the 21st largest Hispanic market in the United States. Watsonville is also a young town, with almost 34% of its population under 18 years of age. Both the Watsonville and Salinas areas are nationally-significant agricultural centers; the Salinas Valley grows more produce than any other county in the U.S., including 80% of the nation's lettuce, thus earning it the nickname "The Salad Bowl of the World." The agricultural industry adjacent to the Sanctuary grosses approximately \$5 billion per year, and supports many Hispanic residents of the area.<sup>3</sup>

The CRB study also showed Hispanics earning significantly less and achieving lower educational levels than other ethnic groups. Many local academic, private and government organizations share a commitment to provide Hispanics with better access to science and technology and to create educational opportunities for Hispanic youth, adults and families. To date, the MBNMS has translated some basic materials into Spanish in an effort to reach the Hispanic community. Although these materials are available, the Sanctuary is not effectively reaching this large constituent group.

Despite some substantial efforts by other private and governmental organizations, marine conservation education and outreach programs to the central California Hispanic community are generally lacking in number, effectiveness, accessibility and consistency. This is commonly due to insufficiencies in the infrastructure and funding that are necessary for long-term commitment and nurturing of community relationships. To assure a successful collaborative program, resources and knowledge need to be pooled and a commitment of full support is required to create a sustained and productive community commitment into the future.

## **B. Monterey Bay National Marine Sanctuary**

The MBNMS is a federally protected marine area offshore of California's central coast (Fig. 1). Stretching from Marin County to Cambria (just north of Morro Bay), it encompasses nearly 300 miles of shoreline, 5,322 square statute miles of ocean and extends from mean high tide to a seaward

boundary an average of 35 miles offshore. At its deepest point the MBNMS reaches depths of 3,250 meters (nearly two miles). It is the nation's largest national marine sanctuary and by volume, possibly the world's largest as well (Australia's Great Barrier Reef is the largest by area).

The MBNMS was designated in 1992 by authority of the Secretary of Commerce (under the 1972 Marine Protection, Research, and Sanctuaries Act) because:

- The area is of special national significance due to its resource or human-use values
- existing state and federal authorities were inadequate to ensure coordinated and comprehensive conservation and management of the area, including resource protection, scientific research, and public education
- designation of the area would ensure comprehensive conservation and management, including resource protection, scientific research, and public education
- the area is of a size and nature that will permit comprehensive and coordinated conservation and management.

The MBNMS also supports a wide variety of commercial ventures important to both the local and national economy. For example, commercial fishing provides over \$50 million per year and 2,000 jobs to local economies of the MBNMS<sup>2</sup> and tourism in Monterey County alone (most of it centered on or adjacent to the ocean) is responsible for nearly \$2 billion per year and is approaching 20,000 travel and tourism related jobs.<sup>3</sup> California now boasts the largest number of Hispanic-owned firms in the nation, accounting for \$72 billion.<sup>3,5</sup>

### **C. Rationale, Methods and Objectives**

The MBNMS 1992 Final EIS/Management Plan states the need to “Broaden support for the Sanctuary and Sanctuary management by offering programs suited to an audience with a range of diverse interests” and, “Collaborate with other organizations interested in extension and outreach programs” (see Section IV. Education, PageV-24). The development and implementation of an outreach plan for the Hispanic community is well supported by these mandates. The U. S. Department of Commerce includes achievement of environmental stewardship as a prime goal in its mission statement. Clearly, achieving stewardship cannot be accomplished without public awareness, connection, and involvement. The MBNMS is prepared to meet that goal by initiating, planning, and implementing a large-scale community effort to expand and improve marine outreach and education to the local Hispanic community.

This component of the MBNMS Multicultural Education Program, known as the MERITO Plan, will focus on conservation messages in the context of multiple uses in order to help make a meaningful connection between the Hispanic communities and neighboring coastal environments. With eleven coastal watersheds that drain to almost 300 miles of coastline, contaminated runoff draining from the watersheds is of great concern to the Sanctuary. Sources of pollution include both urban and agricultural runoff. Coastal issues such as declining water quality, degraded wetland habitats, and multiple use conflicts require an informed public aware of the issues and of potential solutions. Crafting and delivering messages that celebrate diverse uses of the Sanctuary will help forge a connection with the ocean and carry the Hispanic public towards awareness and stewardship of the



MBNMS. Emphasizing culturally relevant marine activities, such as fishing, will help to make the nexus between our human actions on land, the resulting impacts to the Sanctuary, and ultimately our own quality of life.

The MERITO Plan is the culmination of a long and purposeful planning process, beginning with the development of bilingual (Spanish and English) outreach materials such as posters, brochures, and hands-on tools in July 1996. The posters and brochures educate the general public and school children about urban runoff and ways to prevent storm drain pollution. These popular materials accompany a hands-on watershed model that is available for teachers to check out from the Sanctuary. Classroom activities from the Project WET curriculum were translated into Spanish to accompany the model. The watershed model outreach has educated well over 10,000 students since inception. In 1998, two nonprofit groups incorporated the Sanctuary's watershed model into their programming. Save The Whales added the model to its existing hands-on marine mammal outreach program and has reached over 2,500 bilingual Salinas elementary school children with a Sanctuary awareness message. Save Our Shores adapted the Sanctuary's model to reach bilingual students in the Santa Cruz area, and S.E.A. Lab Monterey Bay, a new ocean science residential program, used the model during their 2000 summer pilot. This tool has become a cornerstone of their bilingual outreach program.

In 1999, the Monterey Bay National Marine Sanctuary supported a number of discrete bilingual outreach projects including: a bilingual door-to-door campaign in partnership with the City of Watsonville with a focus on motor oil recycling, water conservation techniques and storm drain pollution prevention; bilingual bus advertisements; a bilingual "Dirty Word" radio campaign highlighting urban runoff prevention; a bilingual restaurant video on best management practices to prevent storm drain pollution; and an online Spanish-language teacher curriculum. In addition, the Sanctuary supported a week-long summer pilot of S.E.A Lab Monterey Bay, which worked largely with Hispanic students. In short, the Sanctuary has successfully launched and supported a number of focused programs targeting the Hispanic community that have been well received and effective in their limited capacity. These programs serve as building blocks for the MERITO Plan and place the Sanctuary in an ideal position at the center of a framework upon which the pieces for a community-based model can be built.

Twenty-four pre-planning meetings and numerous follow-up communications preceded the development of the Multicultural Education Plan. Beginning in September 2000, personal interviews were conducted with leading representatives from Hispanic schools, universities, government agencies, private and nonprofit groups, and industry. During the meetings, Sanctuary staff was able to:

- share and present information about the Sanctuary (many groups were not aware of the Sanctuary's role);
- gather specific information (a survey and needs assessment) about their program and services currently offered to Hispanic students, teachers, parents, adults, and families;
- request open-ended input on how the Sanctuary might support their efforts and expand outreach to the Hispanic community.

Using the information gathered through the meetings, the MBNMS has worked with Hispanic representatives to 1) identify the critical gaps and "areas of need" which are summarized in Appendix A (Survey & Needs Assessment: Education & Outreach Programs for Hispanic Audiences), 2) plan a series of partnership projects that address Hispanic marine conservation education and

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outreach needs and build upon successful existing community programs, and 3) develop strategies for implementing and evaluating the partnership projects. The results of this planning are detailed in the next section. The Multicultural Education Plan currently has twenty community partners onboard (listed in Appendix 2) to assist with implementation of Phase One in 2001.

The strength of the Multicultural Education Plan is that the MBNMS will be the focus for a long-term, multi-agency collaborative program that utilizes a community-based planning approach to expand outreach and education to local Hispanic communities. Through this program, the MBNMS will be able to effectively address resource threat reduction in the context of the needs of the Hispanic community. This issue is of national importance, as Hispanic leaders of government agencies, chambers of commerce, and industry are important constituencies for NOAA to connect with on marine and coastal management issues. Their daily decisions and practices have enormous impacts on local coasts and oceans, ultimately affecting national resources.

As local Hispanic organizations continue to provide their services to the community, the Sanctuary will help generate the additional people power and funding required to expand existing efforts and to initiate new programs in the identified areas of need. The MBNMS will also organize the evaluation and interpreted results of each partnership project in the context of the larger community. The Sanctuary will serve as a communications “pipeline” to facilitate the sharing of resources and information within the community. Educational materials, including bilingual brochures, curricula, teaching kits, CD-ROMS and fact sheets will be developed with specific input from organizations involved in the Multicultural Education Plan. Finally, local organizations that serve the Hispanic community can use their involvement with the MERITO Plan as added justification of their work when submitting grant proposals. The resulting community development will help to promote the National Marine Sanctuary System’s goals of conservation and wise resource management.

## II. Description of the MBNMS Multicultural Education Plan “MERITO”

### A. Areas of Need and Program Goals

#### 1. Hispanic Serving Institution Program

The first phase of the Multicultural Education for Resource Issues Threatening Oceans Plan will include a Hispanic Serving Institution Program, which will:

- Provide professional development opportunities for Hispanic-serving teachers,
- Provide paid-internship and job training opportunities for Hispanic undergraduate and graduate level students,
- Produce a set of universal, Spanish-language bilingual curricula and materials that can be utilized by other National Marine Sanctuaries and beyond.

**a. Provide professional development opportunities for Hispanic teachers** – MERITO’s Hispanic Serving Institution Program responds to the need of new teachers flooding the Central California schools for professional development focused on how to effectively teach science to diverse students. While most university teaching credential programs require one course in scientific techniques, Dr. Josephine S. Hawkins, Vice Provost of the National Hispanic University in San Jose, states “most of our new teachers are uncomfortable with science and need additional professional development in that subject area”. Out of these discussions has emerged a partnership between a university offering teacher education, a local marine science laboratory, and the Monterey Bay National Marine Sanctuary that will provide Hispanic-serving teachers with additional knowledge and confidence in marine science.

Through the MERITO Plan, we propose a week-long Summer Teacher Institute for Hispanic teachers in partnership with the National Hispanic University (NHU) and California State University’s Moss Landing Marine Laboratories (MLML). The program (proposed to begin in 2001) will be conducted at the Moss Landing Marine Laboratory’s new state-of-the-art facility, where National Hispanic University teachers will be transported by bus on a daily basis. The objectives of the Summer Teacher Institute will be to 1) provide pre-service teachers with marine science knowledge and teaching skills that they can use to educate their Hispanic students about marine resources and stewardship; 2) enhance and support NHU’s teacher education program by targeting their pre-service teachers, and providing bus transportation and stipends; 3) provide support to MLML and their summer teacher institute by providing some aspects of the work such as interdisciplinary lesson plans, curricula, supplies and instruction costs; and 4) support the new California Science Framework and the National Science Framework by training teachers with effective science skills and techniques for implementation of the state standards and guidelines presented in the new frameworks.<sup>6,7</sup> NHU’s Dr. Hawkins fully supports the MERITO partnership for all of the above reasons, and also believes that Hispanic Serving Institution Programs with lasting influence are usually long-term and locally based, with teachers playing a substantial role in planning and implementation.

In July of 2000, MLML successfully piloted a one-week teacher institute that will serve as the model on which the MERITO Teacher Institute will be developed. The acclaimed pilot program serviced teachers from underrepresented high schools in Salinas and Watsonville and featured in-depth science

content and advanced marine research techniques in ichthyology, marine mammalogy, and phycology. Follow-up classroom labs are currently being conducted with support from graduate students who provide in-class instruction and all materials. MLML is interested in expanding their enrollment and developing more interdisciplinary curriculum materials for future teacher institutes. Additional partners for last year's pilot included Friends of Moss Landing Marine Laboratories, California State University at Monterey Bay, and the Marine Advanced Technology Education Center at Monterey Peninsula College. The MERITO Institute would use similar content and lab exercises but would be more transportable and rely less on MLML follow-up support. Thus, the NHU pre-service teachers will be able to implement what they have learned at their future schools. They will also be taught how to develop relationships with future nearby academic institutions for the type of support that MLML provides to local teachers."

Seventy percent of the 400 enrolled students at the National Hispanic University are low-income Hispanic women. In addition to teacher credential programs, NHU also offers degrees in computer science, liberal studies and business degrees. They have cooperative agreements with San Jose State University, Santa Clara County School District, NASA/Ames Research Center, and SAP business offices. They also have articulation agreements with East Side High School District, San Jose City College and Evergreen Community College. NASA has provided a scientist on loan for a past semester. A cooperative agreement between NHU and MBNMS would complement the enhancement efforts that are already in place.

An additional avenue to provide professional development to Hispanic-serving teachers is the recently established "Monterey Bay Professional Development Consortium." The consortium includes representatives from informal marine science organizations, universities, aquaria, museums, school districts and teachers who are interested in improving coordination of all regional offerings such as teacher workshops, lecture series and other teacher enrichments programs. The group is now investigating the development of a two-year "master teacher graduate program" offered through California State University, Monterey Bay. This Master of Arts and Science degree would allow teachers to earn college credit for participating in a series of institutes and workshops offered by regional marine science organizations, in conjunction with fulfilling three core credential courses. MERITO partners will work with the Consortium to insure that developing educational opportunities are made available and accessible to Hispanic-serving teachers and students in the greater Monterey Bay area.

**b. Provide paid-internship and job training opportunities for Hispanic undergraduate and graduate level students**

- This goal is based on the need to increase the number of Hispanic marine scientists, technicians, educators and policy-makers in our national workforce. On November 13, 2000, The White House's Office of the Press Secretary issued a press release "Extending Ocean Conservation, Encouraging the Next Generation of Scientists." In signing the National Marine Sanctuaries Amendment Act, Former President Clinton reaffirmed this nation's commitment to ocean conservation. In addition to strengthening and extending the National Marine Sanctuary System, the Act established the Dr. Nancy Foster Scholarships to recognize outstanding scholarship, particularly by women and minorities, in the fields of oceanography, marine biology, and maritime archeology. NOAA has set a precedent for supporting graduate level education through such initiatives. A local university, California State University, Monterey Bay (CSUMB's) qualifies by enrollment as a Minority Serving Institution (MSI). As such, the university is required to provide opportunities in

science and technology for women and minorities. They have a number of programs in place that are underutilized by that audience, and are interested in finding ways to recruit and enhance minority participation, particularly in the Institute for Earth Systems, Science and Policy, Teacher Education, and the Seafloor Mapping Lab. Students from the Seafloor Mapping Lab would make ideal candidates for Dr. Nancy Foster Scholarships. Both the Sanctuary and the Lab depend on Geographic Information System (GIS), a tool for conducting habitat mapping and stock assessments and assessing overall ecosystem health. Additionally, by focusing the scholarships on GIS technology, we can help the Department of Commerce to close the “digital divide”, by fostering Hispanic, female scientists with advanced computer skills that can become future role models.

These strategies are contiguous with NOAA’s MSI initiative by increasing opportunities and available programs for students in related professions to pursue research and educational programs in environmental science in partnership with MSI’s. They are also in agreement with the new NOS Partnership Program initiatives.

There are a variety of ways that the Sanctuary and CSUMB could partner to offer scholarships focusing on science and technology that would ultimately enhance knowledge and understanding for Hispanic undergraduate and graduate level students. Scholarships and internships would be administered through CSUMB and offered through the Sanctuary office, where students will receive training on a number of topics. The internships in the first year would include:

*MERITO Internship #1* - will focus on the application of GIS technology in resource management issues. Interns will work with the Sanctuary research team to assist with current habitat mapping projects such as kelp beds or marine zones, and will learn how this new tool can help answer critical management questions. There is an enormous need for GIS technicians who can also interpret and disseminate information to Sanctuary constituents. This internship would provide the Sanctuary with a valuable asset; especially in the upcoming management plan review.

*MERITO Internship #2* - will also utilize the Sanctuary’s GIS station, but will work across departments to develop, package and disseminate educational tools for use in conjunction with other MERITO Plan programs. A CD ROM of GIS data layers is one example of a product that would simultaneously promote GIS development and meet the MERITO Plan’s goal of producing universal, Spanish-language bilingual curricula and materials that can be utilized by other National Marine Sanctuaries and beyond.

*MERITO Internship #3* - will work with the Sanctuary’s water quality monitoring programs to train students to take GIS readings of the storm drain outfalls that are monitored by Urban Watch volunteers. This information will be added to reports and used as outreach material by the Sanctuary, city officials, local organizations and schools. In addition to the GIS readings, interns will conduct visual surveys of the urban areas surrounding storm drains looking for clues or problem areas that may contribute pollutants to Sanctuary waters.

*MERITO Internship #4* - will work directly with the MERITO education team to assist with community and site-based outreach programs, as described in the following sections. Marine education and outreach is a solid basis on which to develop knowledge of marine ecology and resource

management, and can serve as excellent training for Hispanic students interested in a marine science career.

In addition to continued support for the above scholarships and internships, the second phase of MERITO (proposed for 2002-2003) will include scholarships and internships for undergraduate and graduate level students in partnership with a local nonprofit organization, the Society for Advancement of Chicanos and Native Americans (SACNAS). The SACNAS mission is to provide a national forum for minority students to present their research for exposure and review by peers and large, nationally based scientific institutions. NOAA's Office of Civil Rights and the Office of National Marine Sanctuaries currently support the SACNAS annual conference by providing planning support, speakers and workshop presenters. MERITO can build upon those national efforts by working with SACNAS in a regional capacity.

Potential MBNMS and SACNAS partnership ideas to investigate include:

- Encouraging local undergraduate and graduate students enrolled in programs at universities/colleges aligned with MERITO/MBNMS to become members of SACNAS.
- Encouraging local marine scientists, K-12 educators, marine science faculty, and other professionals to become members of (and more involved in) SACNAS.
- Linking marine science, policy, technology, education scholarships and internships with local undergraduate and graduate level students who are members of SACNAS.
- Linking local marine scientists and educators to SACNAS' e-mentoring initiative, which fosters a year-round connection among scientists and mathematicians to K-12 educators.

**c. Produce a set of universal, Spanish-language bilingual curricula and materials that can be utilized by other National Marine Sanctuaries and beyond** - As mentioned in the Executive Summary, the education products that evolve from the MERITO Plan collaborations will fulfill the needs implicitly expressed in Appendix 1. Of the thirty groups surveyed, seventeen requested bilingual curricula and resource materials. When asked for more specific information, groups expressed their need for marine and coastal information and curricula that reflect a multidisciplinary knowledge base as well as a focus on issues important to local communities and ecosystems. All education products will be developed in partnership with the MERITO Education Committee and regional marine education experts such as the Monterey Bay Aquarium, and the Elkhorn Slough National Estuarine Research Reserve. Initial plans are to develop issue-based products focused on watersheds and wetlands, as this topic is relevant to Hispanic communities and highlights our vital land-based connections with the oceans. In addition, this topic coupled with careful translation to the Spanish-language will enable the products to be "universal", meaning not limited in terms of regional ecosystems, or in terms of regional Spanish dialects. Our goal is that the products are fully transferable, relevant, and accessible to people across the United States. We will be exploring new communication technologies such as CD ROM with GIS overlays and programs, and online products such as interactive video. These product technologies will enable MERITO programs to produce materials of greater depth to the active learner.

## **2. Site-Based Bilingual Ocean Outreach Program**

This second program area addresses the need for Hispanic students and adults to gain an appreciation of and connection to the marine environment by spending more time in it and near it. Effective on-site (outdoor) education is fundamental to resource protection and conservation. Gaining an understanding

of how the local Hispanic communities interact with and utilize the Sanctuary is the first step to effective resource protection and integral to the success of the Multicultural Education Plan. For example, we know from observation that pier and onshore fishing and family visits to the beach are some ways that Hispanic residents enjoy the rich diversity of the Sanctuary. In addition, families utilize the Salinas River and slough areas that connect to the Sanctuary. Many of these coastal visiting sites fall under the jurisdiction of other governmental agencies, such as California State Parks. By collaborating with these agencies, we will both increase our understanding of how Hispanic audiences utilize coastal areas and more effectively reach the Hispanic public.

The first phase of MERITO Plan implementation (proposed for 2001) addresses the outreach needs expressed by two of our closest regional partners - the Elkhorn Slough National Estuarine Research Reserve (ESNERR), and California State Parks, Monterey District - for on-site marine science programs to Hispanic youth and their families. Following is an outline of a site-based MERITO Plan pilot project that will meet the needs of the Hispanic community and further the common education missions of the MBNMS, ESNERR, and California State Parks.

Our sister program, ESNERR, is currently undergoing a management plan review and is assessing the strengths, weaknesses, and gaps in their education program. Like the MBNMS, they recognize the need to reach their Hispanic constituents. The Slough is a popular field trip site for school groups and hosts approximately 10,000 students annually. But, even with a large Hispanic student visitation, it has become apparent that students are not returning on the weekends with their families and that Hispanic adult visitors are limited. To begin to meet the need of their constituents, ESNERR education staff is in the initial phase of implementing a pilot after-school program with Hispanic students from a nearby school. The program will focus on plankton ecology and students will visit the Slough to collect and analyze plankton samples with Slough staff. Due to lack of funding, ESNERR is limited in their capacity to offer pre and post-visit outreach programs that would strengthen the effectiveness of this pilot program, as well as the entire school visit education program.

California State Parks is also very interested in expanding their outreach to more diverse audiences. On November 16, 2000, the California State Parks Director, Rusty Areias, issued a letter outlining a number of key strategic objectives and initiatives that will serve as their "Paths to the Future." Diversity was identified as one of five key objectives and included the quote, "In general, park visitors and employees are not reflective of the rich diversity that is the heart of the California experience. The State Park System is in danger of becoming irrelevant to many cultures and interest groups in the State." With the local State Parks District Interpretive Specialist, we identified two park sites that represent significant visitation from Hispanic audiences, yet lack staff resources to provide adequate programming. The sites identified include North Beaches (City of Marina), and San Juan Bautista State Historic Park. SJBSHP is a popular field trip location for Hispanic students and families traveling from the Salinas Valley and the Hollister/Gilroy area. A large number of Hispanic youth and families utilize North Beach Parks.

We propose a new FTE (permanent) Sanctuary position that will serve the MERITO Plan as a bilingual education specialist, working in partnership with both ESNERR and California State Parks. The educator will rotate between Elkhorn Slough, providing support for their Hispanic outreach programs, and selected State Park sites. Programs will be developed at each site, targeting school age youth and families, and incorporating issue-based curricula and hands-on activities that emphasize the

area's unique natural and cultural resources. State Parks has suggested a three-way partnership between Parks, the Sanctuary, and the O'Neill Sea Odyssey Program, an educational nonprofit based in Santa Cruz. The goal is to provide bilingual instruction for 4<sup>th</sup> through 6<sup>th</sup> grade students that participate in the O'Neill Sea Odyssey's educational cruises and are required to complete a community service project such as a dune restoration, or a beach clean-up. Similarly at ESNERR, a bilingual educator would be able to conduct bilingual interpretive tours, restoration activities, after school programs, and assist with existing professional development workshops.

This new Sanctuary position will be able to capitalize on the strengths of all of the agencies: well-established field programs at the Slough, high pre-existing visitation to State Parks, and sophisticated education products and resources of the Sanctuary. The new position will be able to maximize the environmental learning opportunities by highlighting the vital connections between coastal watersheds, wetlands, and the Sanctuary. As mentioned in the previous section, the newly developed MERITO curricula will emphasize the relationship between watersheds and the marine environment through outreach programs that include hands-on classroom and field-based activities, restoration activities, teaching kits, community events, teacher workshops, videos, CD-ROM's, and printed and online resources.

The next phase of MERITO (proposed for 2002-2003) will be to expand site-based programming to Santa Cruz County in partnership with California State Parks, Santa Cruz District. Three state beaches identified by Santa Cruz County Park staff as having very high Hispanic family visitation are Seacliff, Palm, and Sunset State Beaches. Future Dr. Nancy Foster Scholarships could be dedicated to this initiative. Interestingly, the MBNMS is discussing plans with State Parks of Santa Cruz to develop a visitor center at Seacliff State Beach, which has an annual visitation of 1,470,000 people, many of which are Hispanic. Establishing a Sanctuary visitor center at this site will directly support the MERITO Plan's efforts to expand site-based programs to this area, and will allow us to reach thousands more Hispanic families every year.

A later phase of MERITO will be to develop and implement education programs in partnership with the Monterey County Office of Education Migrant Education Division. In a December 2000 meeting with the MCOE Coordinator Advisory Council, members expressed the need for leadership training in science for all teachers of migrant students, and the need for outreach programs to serve the Migrant Education Even Start (MEES) Program. The MEES Program is a home and school based family education model which assists migratory parents with children ages 0-7 in increasing their literacy and parenting skills. MERITO partnerships under discussion include marine science workshops presented at the annual Summer Pre-service conference (in May) to MEES Program leaders (teachers and parents), followed by a series of focused, comprehensive summer outreach programs offered through the MEES Program. The goal of offering leadership training and professional development in conjunction with outreach instruction to the children is to ensure that marine science curriculum topics are fully integrated into the overall MEES Program curriculum. In fact, the goal of involving students, parents and educators is identified as a priority for all MERITO partnerships targeted to school or pre-school age audiences.

### **3. Community-Based Bilingual Ocean Outreach Program**

This third goal encompasses the largest number of MERITO partnerships and addresses the issue of providing outreach on marine and coastal management issues to Hispanic leaders of government



agencies, chambers of commerce, and industry. This is an issue of national importance, as daily decisions and practices have enormous impacts on local coasts and oceans, ultimately affecting national resources. In addition, MERITO hopes to support the overwhelming demand for marine science and technology-based programs to the generally overlooked and underrepresented minority groups that reside in both the urban and rural areas of Salinas Valley. This component of MERITO will provide a direct and vital interchange of communication (that currently does not exist here) between NOAA's National Marine Sanctuary System and its' Hispanic constituency.

According to leaders of Hispanic-serving organizations, most youth and neighborhood service programs are limited in funding and are not able to provide access to science-based activities. "We need to find creative ways to help our community make the connection between science and our everyday lives. How we interact with the Sanctuary and its environments affects our quality of life," says Wayne Green, Assistant Manager of the City of Salinas. As a city official, Mr. Green has been charged with developing science opportunities for all of Salinas' school age children and he sees working with the Monterey Bay National Marine Sanctuary as an excellent way to meet that goal.

Working together, the City of Salinas' Neighborhood Services coordinator and Sanctuary staff have developed a number of partnership opportunities. One idea is to provide marine science outreach presentations and field trips for groups that work to keep youth-at-risk out of gangs. One such group, called the "2<sup>nd</sup> Chance Program," is supported by a federal Weed and Seed initiative through the United States Department of Justice, and serves 9-12 year olds considered "at-risk" (defined as exposure to a high crime environment and other negative influences, and have little or no after-school and weekend adult supervision.). A second program identified as a good candidate for a MERITO pilot partnership program is "Kid's House," an after-school, early intervention program for children ages 3-11. Their motto is "No excuses," so parents, as well as their kids, are required to participate in trainings, field trips and enrichment activities. Another impressive city-run program is Mujercitas – It's a Girl's World! This year-long program for approximately 200 sixth grade girls and adult female family members involves girls in a variety of field trips and enrichment activities that culminate in an year-end conference in April.

The same kinds of MERITO partnership projects have been developed with the City of Watsonville. In recent planning meetings with Watsonville Parks and Recreation & Neighborhood Services and Pajaro Valley Unified School District (PVUSD) Extended Learning Programs, their Recreation Superintendent expressed great enthusiasm for the Sanctuary to support their after-school activities, which reach over 1000 Hispanic school children. He is very concerned with the lack of science and conservation-related activities that are now available to their youth, and youth leaders. The Watsonville program currently utilizes six elementary schools and four community centers. The MERITO partnership project that evolved will provide trainings to youth leaders and credentialed teachers who are leading the after-school sessions, production of bilingual support materials, bus transportation for field trips, and through the year support by our bilingual educators. Eventually, the goal is to integrate ocean conservation programs into Pajaro Valley's school science curricula.

Another MERITO partnership program is under development with the RISE Program (Recruitment in Science Education) of CSUMB. The mission of the RISE program is to support and encourage low-income students (who are primarily Hispanic) from Salinas and Marina areas to expand their interest in science, in order to increase the enrollment of underrepresented populations in the Institute for Earth

Systems, Science and Policy at CSUMB. The program currently utilizes service-learning university students for instruction of after school science programs. The RISE program coordinator has requested assistance from the Sanctuary in the form of after school, water quality monitoring field trips throughout the school year. The Sanctuary would provide pre-field visits, field program instruction, and transportation.

MERITO would also partner with S.E.A. Lab Monterey Bay in the development and delivery of curriculum. S.E.A. Lab is a newly forming residential ocean science camp for youth education and teaching training. A successful weeklong pilot program was held in July 2000. The RISE program assisted S.E.A. Lab by recruiting a largely Hispanic student body for the pilot program. Both RISE and S.E.A. Lab intend on continuing this collaboration. In 2001, the MERITO Plan could support RISE and S.E.A. Lab by assisting in the testing and evaluation of marine-related field experiences that may be integrated in the S.E.A. Lab residential program. A variety of day-long field experiences have been discussed, including on-the-water, monitoring, and restoration programs. This three way partnership would support the RISE program's need for science enrichment and contribute to a S.E.A. Lab curriculum that showcases the MBNMS and connects the region's unique array of world-class marine science programs. In the longer term S.E.A. Lab would like to expand it's outreach to other programs that target Hispanic youth, as well as other ethnic groups. MERITO could play a role in making these linkages and in expanding curriculum offerings. S.E.A. Lab plans include the development of pre and post curriculum to complement and enhance students camp experience and pre-service and in-service teacher training. S.E.A. Lab is excited about the opportunity to work with and through MERITO to accomplish these goals.

A MERITO partnership is currently being developed with the University of California, Santa Cruz's MESA (Mathematics, Engineering, and Science Achievement) Program. Nationally-based at twenty-four university and community college campuses, MESA's program goal is to track underrepresented students (who are primarily Hispanic) into science and engineering professions. They also provide professional development for teachers. Three local MESA Centers are based in Santa Cruz, Gilroy and San Jose, and students are mainly Hispanic in ethnicity. For the past four years, UCSC's MESA Program has offered "Natural Resource Management Days." Initiated by the Department of Interior's Bureau of Land Management, 60 to 80 middle and high school students are transported to Swanton Ranch (on the north coast of Santa Cruz) for a one-day outdoor education experience, three times during the year. U.S. Government and California State agency representatives lead the outdoor programs as small groups hike from the beach to the top of the mountain. Participating agencies include U.S. Fish and Wildlife, U.S. Bureau of Land Management, and California Department of Fish & Game, and include the career expertise of biologists, hydrologists, rangers, civil engineers, fire fighters and law enforcement professionals. Leaders share their professional perspectives and natural history information with their group, and lead discussions on issues of natural resource management. However, there is currently no ocean-related expert or information in the program, and the entire Sanctuary and coastal area components are missing from the program. Through a MERITO Plan partnership, we propose the development of an expanded "Natural Resource Management Days" that would include a second day focused on the Monterey Bay National Marine Sanctuary and its associated habitats. This would be a great first step toward working with the MESA Program and exploring how the Sanctuary can support one of several local MESA programs offered within our local Hispanic communities.

Looking out beyond city streets to the rich agricultural lands of the Salinas and Pajaro Valleys are the thousands of migrant farm workers who live within a few miles of the ocean but rarely visit or connect with it. Many are working to support families and have children enrolled in the programs that are described above. Initial discussions with the Natural Resources Conservation Service in Salinas and the Coalition of Central Coast County Farm Bureaus revealed a willingness to help explore ways to expand education and outreach to migrant farm workers and their families. Industry growers will be asked early on for their input on the best way to incorporate educational materials and events for farm workers into the watershed working group activities that they will be developing. One potential program idea is for the Sanctuary to increase participation in existing regional events with a marine conservation activity booth. Additionally, we might be able to arrange a series of Sunday community events that will invite migrant workers and their families to participate in a variety of engaging marine science activities (with conservation themes) and marine-themed food and music. The main goals would be to engage migrant families in some fun yet educational activities that raise awareness of the Sanctuary and some of the human impact issues that exist here. Working with the watershed-working group, we could focus outreach efforts on all aspects of water quality protection and celebrate the diversity of our region through community events and/or celebrations.

Lastly, another avenue in which to involve our Hispanic communities is through the Sanctuary Citizen Monitoring Network. The Monterey Bay Sanctuary is actively involved with several water monitoring partners throughout the Sanctuary region. Monitoring programs rely largely on the efforts of volunteers from local communities, colleges and schools to collect samples and record data. Currently there is an absence of Hispanic students and community members among the volunteers. In order to increase involvement, we propose the development of a mobile water quality outreach program that would travel to different communities, colleges, and schools to help generate and work with existing Hispanic programs and establish long-term ties with Hispanic communities. Venues to recruit volunteers and participation include the Hispanic Chamber in Salinas, Boy Scouts and Girl Scouts of America, high school classes, and many of the community programs described above. Storm drain stenciling and the Sanctuary's bilingual materials would complement the monitoring component.

These proposed collaborative programs are initial examples of high caliber, community-based efforts that will reach thousands of children, parents, and adults and offer learning opportunities that expand horizons, build academic skills, and promote good stewardship of the Marine Sanctuary.

## **B. Program Management**

### **1. Personnel**

The MERITO Plan will be a major component of the education program at the Monterey Bay National Marine Sanctuary. Its staff, partnership members, and Sanctuary management, with advisory support and assistance from the Sanctuary Education Panel, will direct the Plan. The MERITO Plan Partnership Committee will be established to periodically review the projects and to evaluate the effectiveness of the programs. The daily coordination, program development and supervision will require a new program manager with support from two new Spanish-speaking staff with expertise in teaching techniques and providing marine science programs for Hispanic audiences. Our goal is to hire Hispanic educators and begin the process of building a diverse staff for Monterey Bay National Marine Sanctuary, one that is truly a reflection of our community.

The program manager position is key to the success of the MERITO Plan, as it requires a person to effectively nurture and sustain all relationships contained within the partnerships, including coordination with other city, state and federal agencies, and be able to oversee the daily operational aspects. The program manager will oversee all three arms of the program and provide the main workload support for the “Hispanic Serving Institution Program.” A variety of professional skills are required for this position. The level of expertise equates to a GS-12 and includes:

- A master’s degree or higher in science and/or education or related field,
- Experience with all aspects of developing, implementing and evaluating marine science outreach programs to diverse audiences, including programs, publications, print materials, events, curricula, exhibits and displays,
- In-depth knowledge and understanding of our local Hispanic community’s worldview and needs,
- Experience working with and coordinating with diverse organizations and groups,
- In-depth knowledge of and familiarity with a broad range of marine conservation issues and their application to the Central California Coast and National Marine Sanctuaries,
- Outstanding verbal and written communication skills specifically in writing and public speaking for diverse audiences,
- Experience developing and providing professional development to teachers and interns.

One of the program manager’s initial duties will be to collaborate with the Monterey Bay Aquarium on the planning and development of new watershed and wetland curriculum and outreach materials. The Monterey Bay Aquarium and the Sanctuary have identified “watersheds and wetlands” as a common theme for 2001 that can be integrated into the education programs of both organizations. The product will be a series of issue-based curricula and materials that focus on watershed and wetland issues. This topic is highly relevant to Hispanic communities as it links activities in our everyday lives to the sea.

Two bilingual marine educators are required to support the MERITO Plan’s partnership programs in the first year. One of the education positions will be fully dedicated to provide the “Site-Based Bilingual Ocean Outreach Programs.” Programs under this umbrella include working with ESNERR and California State Parks in Monterey County to provide outreach programs for youth and families. The second bilingual education position will be dedicated to providing “Community-Based Bilingual Ocean Outreach Programs.” These programs include working with the City of Salinas and the City of Watsonville to augment science programs for both in-school and after school, working with Monterey County’s migrant education office and supporting programs developed for migrant farm workers, as described above.

The level of expertise for both positions equates to a GS-11 and includes:

- A bachelor’s degree or higher in life sciences, environmental studies and/or education or related field,
- In-depth knowledge and familiarity with a broad range of marine conservation issues and their application to the Central California Coast and National Marine Sanctuaries,
- Experience providing marine science outreach programs to diverse audiences,
- Ability to work effectively in a team environment and carry out assignments independently,
- Outstanding verbal and written communication skills including fluency in Spanish language.

## **2. Process**

While the MERITO Plan has been designed to serve as a comprehensive plan long into the future, it will have a phased approach. The first year of this effort, proposed for 2001, will focus on hiring staff, organizing the program management and administration, holding planning meetings and beginning program implementation for the three main areas of focus. The second year will refine and expand the most effective programs, and the three following years will install full-scale MERITO Plan efforts throughout the MBNMS, export the program to the other national marine sanctuaries, and investigate the possibilities for taking the plan across international borders. After the first five years, the MERITO partnership programs will be reevaluated for their effectiveness and to determine future direction. Formal evaluation will play a major role in the program implementation, and so a contract for a professional evaluation consultant will be secured in 2001 to develop evaluation strategies for all of the MERITO partnership programs. In addition, the MERITO Partnership Committee will meet periodically to review progress and provide feedback on how to proceed.

Appendix C: Table 1, "Work Plan for the Multicultural Education Program," will clarify its annual goals and projected goals through 2005. Three additional staff positions will be needed to implement programs 2002-2005, but can be developed congruently with larger projected community projects such as the Seacliff Visitor Center in Santa Cruz.

### **C. Evaluation**

The MBNMS Multicultural Education Plan provides a wide variety of targeted educational and research-related opportunities that promote a better understanding of the marine sciences and the MBNMS. Each program will be closely evaluated in its effectiveness in meeting its goals by both internal and external entities. The Hispanic Serving Institution Program inherently contains evaluation strategies due to the fact that the teacher and student programs require course or degree completion. The Site-Based Bilingual Ocean Outreach Program and the Community-Based Bilingual Ocean Outreach Program require a number of different approaches to measure their effectiveness. A contract for a professional evaluation consultant will be secured to develop evaluation strategies for all of MERITO Plan partnership programs.

### **D. Funding Strategy**

There are three basic funding mechanisms needed to support the MBNMS Multicultural Education Plan. First, we request that NOAA pledges a level of annual operating support. MERITO's total annual budget of \$410,000 (averaged over 5 years) includes funds for the three new MBNMS staff positions and administrative and program management support. In addition, \$550,000 in annual operating funds (averaged over 5 years) will be needed to implement the focused MERITO Plan programs. The Plan's total annual operating plan budget for the first year will amount to \$706,000. By year three, the MERITO Plan's total budget will have increased to almost \$1,000,000, primarily due to expanded program implementation.

Secondly, we will seek funding from state, local, and private funding organizations. Currently, we have one pending grant with the State Resources Agency in California in the amount of \$50,000 to support the Site-Based partnership program for one-year.

Lastly, the twenty partnership agencies working within the MERITO Plan will support the effort with their available infrastructure and resources, depending on the scope of their particular project. Since this plan reflects the specific needs of our Hispanic community, we hope and expect to leverage

needed support from other Hispanic-serving agencies in the area. A multitude of federal and state agencies, universities, and private groups are currently onboard to support efforts described in this plan. As the programs gather momentum, we hope to develop new partnerships and identify additional funding avenues that can further support this effort. In addition, the Monterey Bay National Marine Sanctuary will provide management and administrative oversight to the MERITO Plan. Total matching funds and in-kind support, including Sanctuary management, will be approximately \$30,000 per year.

## **E. Conclusions**

The Multicultural Education Plan is a comprehensive, long-term collaborative program that takes a community-based approach to expanding marine and coastal outreach and education to Hispanic communities in Central California. The MERITO Plan's programs were developed in direct response to issues and needs that our Hispanic communities have identified. By working closely with our community, we have identified and developed well-defined and focused programs that provide Hispanic-serving teachers, and Hispanic youth, adults and families with issue-based education that promotes ocean stewardship and enhanced understanding of science and technology. We feel strongly that this approach will ensure a better long-term success rate. The MERITO Plan will also provide a set of tangible Spanish-language education products and tools that can be utilized by other National Marine Sanctuaries and beyond.

In addition, this plan will empower decision-makers by providing a conduit for the vital exchange of information between resource managers, scientists, educators and our region's largest ethnic constituency, the Hispanic communities. Hispanic leaders of government agencies, chambers of commerce and industry (especially in agriculture and retail) are important constituencies for the Sanctuary to connect with on conservation and resource management issues. Their decisions and practices have a huge impact on our coast and oceans, and ultimately affect our entire economy. California now boasts the largest number of Hispanic-owned firms in the nation, which according to the US Census in 1997, account for \$72 billion. Through MERITO, we are developing relationships that provide an interchange of communication between the NMSS and its' Hispanic constituency.

Finally, NOAA's National Marine Sanctuary System is interested in using the Monterey Bay National Marine Multicultural Education Plan as a model marine conservation outreach and education program for other national marine sanctuaries, and will offer to help develop similar programs at other sites over the next five years. Due to the collaborative partnerships with Elkhorn Slough National Estuarine Research Reserve and California State Parks sites, other government agencies along the Central Coast and nationally will also be looking closely at this integrative approach to developing and implementing a community-based outreach and education plan.

## **III. References**

<sup>1</sup> The California Research Bureau, August 1999 Report

<sup>2</sup> The Ocean Project – Highlights of August 1999 National Survey. For more information: <http://www.theoceanproject.org/oac5.html>

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<sup>3</sup> Starr, R.M., K.A. Johnson, E.A. Laman and G.M. Cailliet. 1998. Fishery resources of the Monterey Bay National Marine Sanctuary. California Sea Grant System, T-042.

<sup>3.5</sup> U.S. Census Bureau –1997 Survey of Minority-Owned Business Enterprises

<sup>4</sup> McKenzie, R.J. 2000. Economic impact of tourism in Monterey County 1999. A report prepared for the Monterey County Travel and Tourism Alliance.

<sup>5</sup> Monterey County Farm Bureau and Monterey County Agricultural Commissioner.

<sup>6</sup> California Science Framework for K-12 Public Schools. Website address:  
<http://www.cde.ca.gov/cilbranch/cfir/drscfw.pdf>

<sup>7</sup> National Science Framework for K-12 Public Schools. Website address:  
<http://www.nagb.org/pubs/96-2000science/ch1.html>

## **Appendix A: MBNMS Survey & Needs Assessment**

<b>Monterey Bay National Marine Sanctuary</b>  Survey & Needs Assessment: Education & Outreach Programs for Hispanic Audiences	Type			Services Provided													* Services Needed													
	School or University	Government	Private or Non-profit	Educational Materials	Teacher Education	Education Prgms: Pre-K-6	Education Prgms: 6-12	Programs for Seniors	College/University Courses	Travelling Outreach Prgms.	Field Trips	Naturalist-Led Tours	Community Events	Conferences	Career Tracking	Internships	Summer Programs	Outreach Instruction	Outreach Materials	Curriculum & Resources	Field Trip Support	Field Trip Transportation	Teacher Education support	Student Internships	Community Event Support	Conference Support	Job Shadowing/Mentorship	Capital Support(i.e.salaries)	In-Kind Equipment Support	
Boys & Girls Clubs, Mtry. County			x		x	x				x							x	x	x										x	
Cabrillo College	x				x			x						x	x	x														
California State Parks		x		x	x	x					x	x					x		x											
California State University-MESA Pgrm	x			x				x					x	x				x		x	x									
City of Salinas - Park & Rec. Dept.		x			x	x	x					x					x	x	x	x					x					
City of Salinas-Administration		x			x	x					x						x	x	x	x					x					
City of Watsonville-Parks & Rec. Dept.		x			x	x				x		x					x	x		x					x					
City of Watsonville-Public Works Dept.		x			x	x				x		x					x							x						
Cntrl. Coast Coalition of Farm Bureau's			x										x												x					
CSUMB's Earth Systems & Policy	x	x						x						x	x	x			x			x	x							
CSUMB's RISE Program	x			x		x				x				x		x	x	x	x	x										
CSUMB's Seafloor Mapping Lab		x			x	x																		x						
CSUMB's Service Learning Program	x													x	x									x						
Elkhorn Slough NERR		x		x	x	x	x			x	x	x																	x	
Friends of Moss Landing Marine Lab	x				x			x				x				x			x					x				x		
Hartnell College	x				x			x						x	x	x							x	x			x			
Marine Mammal Center			x	x	x	x			x	x									x											
MCOE: Headstart Program	x				x	x												x	x	x					x					
MCOE: Migrant Education	x				x	x				x							x	x	x	x					x					
MESA Program - Univ. Calif.	x				x	x	x			x				x	x				x	x		x								
Monterey Bay Aquarium			x	x	x	x	x		x	x	x								x											
Monterey Peninsula College	x				x			x							x	x	x			x				x				x		
NASA Ames Research Center		x		x	x	x	x			x								x	x					x						
National Hispanic University	x				x			x						x					x	x		x								
National Park Service		x		x															x	x										
Natural Resources Conservation Service			x	x					x			x							x						x					
North County Park & Recreation		x				x	x											x	x	x	x	x								
O'Neill Sea Odyssey			x	x		x				x									x	x										
Pajaro Valley Unified School District	x				x	x	x										x	x	x	x	x	x								
S.E.A. Lab Monterey Bay			x	x	x		x			x							x	x	x	x	x	x	x	x	x	x	x	x	x	
Save Our Shores			x	x		x	x		x		x	x																x	x	
Sty. for Advmt.of Chicanos & Native Americans			x	x	x					x				x		x								x						
31 groups surveyed																														
<b>* Description of "Services Needed"</b>																														
<b>Outreach Instruction</b> - provide a trained educator to lead in-school or after-school instruction that focuses on marine science																														
<b>Outreach Materials</b> - provide outreach program curriculum development for in-class and after-school marine science programs																														
<b>Curriculum &amp; Resources</b> - provide teachers with supplemental lesson plans, teacher kits, and other materials for classroom lessons and field activities																														
<b>Field Trip Instruction</b> - provide a trained educator to lead field activities, ie. Mesa Programs "Natural Resource Management Days", or field monitoring activities for RISE Program																														
<b>Field Trip Transportation</b> - provide vehicles or funding for vehicles to transport groups to various sites																														
<b>Teacher Education Support</b> - provide funds, equipment, instruction, curriculum, enrichment activities or other to support program																														
<b>Student Internships</b> - provide coordination and placement of students within various marine science and education facilities																														
<b>Community Event Support</b> - provide hands-on activities, and other resources (food, music) to support various events																														
<b>Conference Support</b> - attend career faires, coordinate and host field trip enrichment activities																														
<b>Job Shadowing/Mentorship</b> - provide opportunities for high school and undergrads to follow staff members for a day																														
<b>Capital Support</b> - contribute funds for new staff positions, ie. A shared FTE between ESNERR and MBNMS that can implement pre-visit outreach activities for Hispanic groups visiting the Slough																														



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## **Appendix B: Monterey Bay National Marine Sanctuary Multicultural Education Plan Partnership Organizations**

The following groups and organizations have helped to identify and develop the MERITO partnership programs outlined in the proposal.

1. Boys & Girls Clubs of Monterey County
2. California State Parks, Monterey District
3. California State University, Monterey Bay – Earth System, Science & Policy Dept
4. California State University, Monterey Bay - Seafloor Mapping Lab
5. California State University, Monterey Bay – Teacher Education Dept
6. California State University’s Moss Landing Marine Laboratories (MLML)
7. Central Coast Coalition of Farm Bureau’s,
8. City of Salinas - 2<sup>nd</sup> Chance Program & Kid’s House Program
9. City of Watsonville: Parks and Recreation & Neighborhood Services
10. City of Watsonville: Public Works
11. Elkhorn Slough National Estuarine Research Reserve (ESNERR)
12. Monterey Bay Aquarium
13. Monterey County Office of Education – Migrant Education
14. National Hispanic University (NHU)
15. National Resources Conservation Service
16. O’Neill Sea Odyssey
17. Pajaro Valley Unified School District: Extended Learning Programs
18. Recruitment in Science Education, CSUMB
19. Save Our Shores
20. S.E.A. Lab Monterey Bay
21. Society of Advancement of Chicanos and Native Americans in Science (SACNAS)
22. University of California, Santa Cruz’s Mathematics, Engineering, Science Achievement Program (MESA)

## **Appendix C: Monterey Bay National Marine Sanctuary**

Multicultural Education Plan Work Plan

Year	MERITO Goals	Task Description	Target Hispanic Audience
2001 – 2002	i. MERITO Program Organization	i. Recruit MERITO Staff – Program Manager and two Bilingual Education Specialists. ii. Recruit MERITO Oversight Board and Education Committee to identify and develop evaluation strategies and initial bilingual outreach products.	ii. MERITO Partnership Members
	1. Professional Development Program:	1a. Develop and implement a Teacher Institute in partnership with the National Hispanic University and Calif. State University’s Moss Landing Marine Labs.  1b. Provide and coordinate four paid internships to Hispanic students enrolled in California State University, Monterey Bay. Emphasis on resource management applications of GIS technology and issue-based marine education.	1a. Pre-service & in-service teachers  1b. Undergraduate & graduate level students
	2. Site-Based Community Bilingual Ocean Outreach Program:	2a. Provide a Bilingual Education Specialist to implement outreach programs in partnership with Elkhorn Slough National Estuarine Research Reserve (ESNERR).  2b. Provide a Bilingual Education Specialist to implement outreach programs in partnership with California State Parks, Monterey County.	2a. K-12 <sup>th</sup> grade students & families  2b. K-12 <sup>th</sup> grade students & families
	3. Community-Based Bilingual Ocean Outreach Program:	3a. Develop and implement outreach programs with the City of Salinas’ Federal Weed & Seed Initiative - through its 2 <sup>nd</sup> Chance and Kid’s House Programs.  3b. Develop and implement outreach programs with the City of Watsonville Parks and Recreation & Neighborhood Services and Pajaro Valley Unified School District (PVUSD) Extended Learning Programs.  3c. Develop and implement a MERITO partnership to support CSU Monterey Bay RISE Program’s need for science enrichment, and contribute to a S.E.A. Lab Monterey Bay program curriculum.  3d. Develop and implement a MESA Program called “Natural Resource Management Days” that would include two days of focused national marine sanctuary activities for 80 Hispanic middle school students, 3 times/year.	3a. “At-risk”, 5 <sup>th</sup> -12 <sup>th</sup> grade students & their parents  3b. K-12 <sup>th</sup> grade students  3c. 7 <sup>th</sup> –12 <sup>th</sup> grade students  3d. 6 <sup>th</sup> -14 <sup>th</sup> grade students
Year	MERITO Goals	Task Description	Target Hispanic Audience
2002 –2003	1. Professional Development Program:	1a. Continue and expand teacher institute offerings in partnership with the National Hispanic University & CSU’s Moss Landing Marine Labs.  1b. Establish a teacher master credential program in partnership with CSU Monterey Bay and local organizations that offer marine science workshops.  1c. Continue to provide and coordinate internships with CSU, Monterey Bay.	1a. Pre-service & in-service teachers  1b. Pre-service & in-service teachers  1c. Undergraduate & graduate level students
	1. Professional Development Program continued:	1d. Establish and coordinate two graduate level internships in partnership with Society of the Advancement of Chicanos and Native Americans (SACNAS).  1e. Begin investigation into across the border partnerships with Baja California, Mexico regarding student and teacher exchange programs.	1d. Graduate level students  1e. TBD
	2.Site-Based Community Bilingual Ocean Outreach Program:	2a. Continue work with ESNERR and California State Parks, Monterey County.  2b. Expand MERITO programs to include California State Parks, Santa Cruz Co.,to be based at the Sanctuary Visitor Center at Sea Cliff State Beach.	2a. K-12 <sup>th</sup> grade students & families  2b. K-12 <sup>th</sup> grade students & families
	3. Community-Based Bilingual Ocean Outreach Program:	3a. Continue work with City of Salinas, City of Watsonville, CSUMB’s RISE Program, S.E.A. Lab Monterey Bay, and UC Santa Cruz’s MESA Program.  3b. Develop an outreach program in partnership with agricultural industry by working closely with the Coalition of Central Coast County Farm Bureaus.  3c. Recruit and train Hispanic community members to assist with Sanctuary Citizen Watershed Monitoring Network by collecting water quality data.	3a. “At-risk”, K-14 grade students & their parents  3b. Migrant farm workers & their families  3c. Secondary students & adults

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2003-2004	1. Professional Development Program:	1a. Continue to refine and expand teacher institute offerings in partnership with the National Hispanic University & CSU’s Moss Landing Marine Labs. 1b. Continue the teacher master graduate level program in partnership with CSU, Monterey Bay and local organizations that offer marine science workshops. 1c. Continue to provide and coordinate internships with CSU, Monterey Bay. 1d. Continue to coordinate two graduate level internships in partnership with Society of the Advancement of Chicanos and Native Americans (SACNAS). 1e. Develop & Implement international student and teacher exchange programs across-the- border with Baja California, Mexico.	1a. Pre-service & in-service teachers 1b. Pre-service & in-service teachers 1c. Undergraduate & graduate level students 1d. Graduate level students 1e. TBD
	1. Site-Based Community Bilingual Ocean Outreach Program:	2a. Develop & implement a partnership with Monterey County’s Office of Education Migrant Education Division. 2b. Continue site-based work with ESNERR, and California State Parks.	2a. Pre-K-12 <sup>th</sup> grade students & families 2b. K-12 <sup>th</sup> grade students & families
	3. Community-Based Bilingual Ocean Outreach Program:	3a. Continue work with City of Salinas, City of Watsonville, CSU, Monterey Bay’s RISE Program, S.E.A. Lab Monterey Bay, and UC Santa Cruz’s MESA Program. 3b. Continue & expand outreach program in partnership with the Ag. Industry by working closely with the Coalition of Central Coast County Farm Bureaus.	3a. “At-risk”, K-14 grade students & their parents 3b. Migrant farm workers & their families