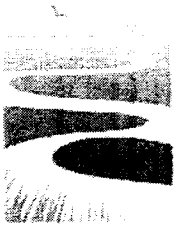

MORRO BAY
NATIONAL
ESTUARY
PROGRAM

The David and Lucille Packard Foundation
Attn: Barry Gold, Ph.D. Program Officer
300 Second St.
Los Altos CA, 94022

RE: Support for the Morro Bay Ecosystem-Based Management Program

Dear Dr Gold,

The Morro Bay National Estuary Program (MBNEP) enthusiastically endorses the proposed Morro Bay Ecosystem Based Management Project, and urges the Packard Foundation to support its full implementation. The proposed project will lead to improved management of coastal, estuarine, and marine resources in the Central Coast of California.

MBNEP Staff and Executive Committee members have been active participants in the Morro Bay EBM Advisory Committee meetings guiding the planning and preparation of the proposal before you, as have a diverse group of scientists, resource management agencies, and local stakeholders. The EBM Project will address the key research questions identified by the Advisory Committee, and it will help create and maintain the institutional framework necessary for ecosystem based management: bringing resource managers, scientists, and stakeholders together in a cooperative forum, communicating with the local community, and responding adaptively to new scientific information.

The Morro Bay Estuary is recognized as one of 28 National Estuaries around the country, and is one of largest and most biologically important coastal wetlands remaining in Central and Southern California. Morro Bay is recognized as a Critical Coastal Area (CCA) by the CA Coastal Commission, and our watershed based management plan is being used as the model for other CCA's statewide. The MBNEP is a collaborative effort of the local community and local, state, and federal agencies; our mission is to protect and restore the Morro Bay Estuary and watershed. The MBNEP devotes most of our resources toward 'on the ground' restoration projects to improve water quality in the estuary and watershed including protecting key habitats, restoring floodplains, protecting riparian corridors, and working with landowners to improve land management practices. The proposed research projects will greatly improve our ability to assess the effectiveness of these restoration efforts in improving ecosystem health, and therefore to better focus our significant restoration efforts and resources

The scientific questions addressed in this proposal are exciting and important; many of them have direct relevance to the MBNEP's mission of protecting and restoring the Morro Bay estuary and watershed. Yet it is the proposed organizational and institutional

601 Embarcadero, Suite 11 Morro Bay, CA 93442
805 772-3834 fax 805 772-4467 www.mbnep.org

framework that the MBNEP is most eager to see realized. The MIG and MBNEP have effective stakeholder participation and collaboration, but do not have the direct involvement of senior resource agency staff. The proposed regular meetings of the EBM Advisory Committee will provide a much needed forum for communication and coordination of resource management between and among senior agency staff, stakeholders, and scientists. This is the key to a successful EBM approach.

The Director of the MBNEP and members of our Executive and Implementation Committee are eager to continue our participation on the EBM Advisory Committee for the duration of the grant period. We have reviewed and support the key responsibilities and activities outlined for the Advisory Committee. These offer value in closer collaboration among agencies, improved communication with key stakeholder groups, and support to enhance and sustain important resources.

In addition, the MBNEP has a number of scientific efforts underway as well as public outreach tools and avenues for stakeholder participation that will be coordinated with the proposed EBM project to the benefit of each. The best example may be our ongoing Volunteer Monitoring Program, where local citizen volunteers are trained to collect important data on water quality, flow, and other parameters, providing an important avenue for citizens to actively learn about the health of the Morro Bay Ecosystem. The MBNEP has a wealth of information and resources that relate to the Morro Bay Ecosystem-Based Management Program and will aid in its success.

The Morro Bay National Estuary Program strongly encourages the Packard Foundation to fund the Morro Bay Ecosystem-Based Management Program. The Morro Bay Ecosystem has many of the necessary components for EBM already in place, as evidenced by the cooperation and interest of the many parties who helped develop the proposal. This project will bring those pieces together and provide the additional scientific and institutional linkages needed to fully realize an Ecosystem Based Approach to resource management on the Central Coast of California.

Sincerely yours,

Gordon Hensley, Vice-Chair
Morro Bay National Estuary Program Executive Committee

Dan Berman
Program Director, Morro Bay National Estuary Program

THE Bay Foundation

The David and Lucille Packard Foundation
300 Second St.
Los Altos CA, 94022

Attn: Barry Gold, Ph.D. Program Officer

RE: Support for the Morro Bay Ecosystem-Based Management Program

Dear Dr. Gold

On behalf of the Bay Foundation of Morro Bay, this letter expresses our enthusiastic support for the proposal to implement the Morro Bay Ecosystem-Based Management Program. A representative from our organization has participated in the monthly Advisory Committee meetings guiding the planning and preparation of the proposal. From the discussions, we believe that the approach outlined offers an important initiative to better understand the interrelationships between estuarine and marine resources and how to manage them more effectively on an ecosystem basis.

Linkage to Key Resource Management Questions
The proposal identifies a series of important activities. Each of these activities is complementary to the mission (*Provide leadership in restoring, enhancing, and protecting the marine resources and watersheds of Morro Bay, Estero Bay, and the Central Coast of California*) and primary objectives of the Bay Foundation of Morro Bay (*To study, conserve, and enhance the Morro Bay, and associated wetlands, nearshore, and watershed environments through scientific, historic, educational, ecological, recreational, agricultural, scenic or open space programs and related opportunities*).

Commitment to Participate on Advisory Committee
The Bay Foundation intends to continue our organization's participation on the Advisory Committee for the grant period. We have reviewed and support the key responsibilities and activities outlined for the Advisory Committee. These offer value in closer collaboration among agencies, improved communication with key stakeholder groups, and support to enhance and sustain important resources.

Additional Resources and Support
In addition to staff participation, the Bay Foundation provides the following additional resources and support

- working in partnership with the California Regional Water Quality Control Board, receives federal funding for support of the Morro Bay National Estuary Program

(MBNEP) and implementation of the Comprehensive Conservation Management Plan for the Morro Bay Estuary

- is trustee for the Morro Bay Restoration and Enhancement Fund for the purpose of restoring, conserving, and enhancing the Morro Bay Estuary;
- Has initiated a Reconnaissance Study of Morro Bay National Estuary habitat restoration projects to be conducted by the U.S. Army Corps of Engineers.

Each of these resources relates to the Morro Bay Ecosystem-Based Management Program and will aid in its success.

We strongly encourage you to fund the Morro Bay Ecosystem-Based Management Program. It will build on the strengths of existing local efforts, and will lead to improved management of the important coastal and marine resources of Central California.

Sincerely yours,

Joel Neel

President, Bay Foundation of Morro Bay

Marine Interests Group
San Luis Obispo County

Working Committee

Dan Berman
Dir., Morro Bay National Estuary Program
Shirley Bianchi
SLO County Supervisor
Tom Capen
Port San Luis Comm. Fishermen's Assn.
Nancy Dalman, Ph.D.
Asst. Prof., Cuesta College
Ray Fields
Aquaculture
Joy Fitzhugh
SLO County Farm Bureau
Matt Fleming
Chair, SLO Surfrider Foundation
Bob Hather
recreational fishing
Pam Heatherington
Exec. Dir., Environmental Center SLO
Tom Jones
Pacific Gas & Electric
Leslie Krinsk
at large, Sierra Club
Carolyn Moffatt
Commissioner, Port San Luis Harbor Dist.
Marla Morrissey
conservation
Jeremiah O'Brien
MB. Commercial Fishermen's Organization
Henry Pontarelli
Morro Coast Audubon Society
John Rowley
Virg's Fishing & Whale Watching
Dave Rymal
sport fishing
Dave Sears
at large, ret'd California State Parks
Margaret Webb
MBNMS Advisory Council
Dean Wendt, Ph.D.
Asst. Prof., Cal Poly State University
Patricia Wilmore
SLO Chamber of Commerce
Jim Wood
City of Morro Bay

Web site:
www.mbnep.org/mig

Don Maruska
independent facilitator
Phone: 805-772-4667
Fax: 805-772-4697
Email: don@donmaruska.com

RE: Support for the Morro Bay EBM Program

Dear Packard Foundation:

The members of the Marine Interests Group of San Luis Obispo County enthusiastically support the proposal to implement the Morro Bay Ecosystem-Based Management (EBM) Program. Members of our Working Committee have participated in the monthly Advisory Committee meetings guiding the planning and preparation of the proposal. From the discussions, we believe that the approach outlined offers an important initiative to better understand the interrelationships between estuarine and marine resources and how to manage them more effectively on an ecosystem basis.

Linkage to Key Stakeholder Objectives
After 14 workshops with local and national experts from January 2003 through January 2004, the Working Committee developed a set of conclusions and six key initiatives. The proposed EBMP addresses two areas of critical interest:

- *Key Indicators of Ecosystem Health*

Stakeholders across interests want to know the health of the ecosystem and factors influencing it. This is of major interest not only for public information but also for understanding and evaluating how changing conditions and use patterns affect the environment. Solid science developed with the active engagement of multiple stakeholders will improve public support for effective management activities.

- *Improved Coordination and Management of Marine Resources*

The current array of multiple agencies with differing jurisdictions, agendas, and programs frustrate stakeholders of all persuasions. EBMP will bring resource managers and key stakeholder group leaders together on a quarterly basis to improve communication and identify issues and opportunities for enhanced collaboration.

Commitment to Participate on Advisory Committee
Three members of MIG's Working Committee will be active participants on the Advisory Committee for the grant period. They have reviewed and support the key responsibilities and activities outlined for the Advisory Committee.

Additional Resources and Support
In addition to member participation, the MIG in collaboration with Cal Poly brings a solid foundation of collaborative research activity and results that will be an integrated part of the EBMP effort. This represents over two years of dedicated volunteer effort and ongoing collaborative research on fisheries, pelagic birds, and water quality.

We strongly encourage you to fund the Morro Bay Ecosystem-Based Management Program.

Sincerely yours,

Marine Interests Group of San Luis Obispo County

City of Morro Bay

HARBOR DEPARTMENT
1275 Embarcadero
Morro Bay, CA 93442
Ph. 805-772-6254
Fax: 805-772-6258

June 23, 2005

The David and Lucile Packard Foundation
ATTN: Barry D. Gold, Ph.D., Program Officer
300 Second ST
Los Altos CA 9402

RE: SUPPORT FOR THE MORRO BAY ECOSYSTEM-BASED MANAGEMENT PROGRAM

The City of Morro Bay supports the proposal to implement a Morro Bay ecosystem–based management program. We have participated to the extent possible in the monthly advisory committee meetings guiding the plans and preparation of the proposal and urge your favorable consideration of this program.

We believe the approach outlined offers an important initiative to better understand the interrelationship between estuarine and marine resources and how to manage them more effectively. The evolving definition that ecosystem-based management does include existing human uses presents a timely opportunity for this program. The interaction/balance between highly valued public access, traditional coastal dependent human uses, and the protection of our incredible natural resources is an area of special interest to us. There has been virtually no scientific work done on these issues to date, and it is our understanding that one of the important goals of the ecosystem-based management program is to begin to address these questions in a community based format.

We strongly encourage you to fund the Morro Bay ecosystem-based management program and will be pleased to assist in its success to the extent our budgetary and time resources allow.

Rick Algert
Harbor Director

RA/sl

cc: City Manager
Mayor & City Council

U:\CORRESPONDENCE\2005\PACKARD FOUNDATION 6-23-05.doc

Coastal San Luis Resource Conservation District

545 Main Street Suite B-1 Morro Bay. CA 93442 (805)772-4391 (fax)772-4398

June 23, 2005

David and Lucile Packard Foundation
Ecosystems-Based Management Regional Initiatives Grant

Regarding: Support for the Morro Bay Ecosystem-Based Management Program

Dear Packard Foundation:

On behalf of Coastal San Luis Resource Conservation District (CSLRCD), this letter expresses our support for the proposal to implement the Morro Bay Ecosystem-Based Management Program. Personnel from our agency have participated in the monthly Advisory Committee meetings guiding the planning and preparation of the proposal. We believe that the approach outlined offers an important opportunity to better understand the interrelationships between estuarine, marine, and watershed resources and how to manage them on an ecosystem basis.

The proposal identifies a series of important activities. The CSLRCD has particular interest in the following resource management questions and the specific activities that will help us address them.

- Resource management questions of interest to the CSLRCD - Water Quality –
    - What are the freshwater sources in the Morro Bay Watershed and how do the volume, quality, seasonality, and other characteristics of these sources affect the watershed, bay, estuary and the coastal marine environment on an ecosystem wide scale?
    - What is the impact of the watershed on water quality in the Morro Bay Ecosystem?
- Research activities of interest to the CSLRCD - Real time water quality analysis
    - Real-time equipment arrays placed in the watershed creeks that will monitor various physical and chemical aspects of water quality including temperature, turbidity (i.e., sediment), nitrates, CDOM, DO, and chlorophyll.
- Research results that will help the CSLRCD address resources management issues and effectiveness of conservation and restoration projects in the Morro Bay Watershed.
    - Real-time data from the water quality arrays will provide information about causative mechanisms of shifts in nutrients, temperature, and stream flows. The data generated will provide information on the effectiveness of watershed implementation projects and Best Management Practices (BMP's).The data will help resolve current issues regarding sources of nutrients to the ecosystem and effective on-the ground projects that reduce nutrient inputs.

The CSLRCD will designate a senior staff member to continue our agency's participation on the Advisory Committee for the grant period. We have reviewed and support the key responsibilities and activities outlined for the Advisory Committee. These offer value in closer collaboration among agencies, improved communication with key stakeholder groups, and support to enhance and sustain important resources.

In addition to staff participation, [Agency] has [existing data, current projects or programs underway or other resources] that relate to the Morro Bay Ecosystem-Based Management Program and will aid in its success.

We strongly encourage you to fund the Morro Bay Ecosystem-Based Management Program. It offers long-term sustainable benefits for our region and valuable insights for our agency's broader management responsibilities.

Sincerely yours,

Kathie L Matsuyama

Vice President, Board of Directors
Coastal San Luis Resource Conservation District

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DEPARTMENT OF ANIMAL SCIENCE
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ONE SHIELDS AVENUE
DAVIS, CALIFORNIA 95616-8521

6/10/05

To: Packard Foundation

Re: Letter of support for the Morro Bay Ecosystem-based Management Program

To Whom It May Concern:

This letter serves to support the initiative to develop a comprehensive ecosystem-based management program for Morro Bay and the adjacent Estero Bay. This initiative is highly meritorious because it directly addresses critical issues in this coastal area of California. Among those issues are water quality and the factors affecting it, the significance of Morro and Estero Bays as spawning and nursery areas for economically and ecologically critical species, issues of human access and utilization, and management of ecosystem and organismal health based on sensitive bioindicators that manifest themselves before adverse effects take hold such that actions can be taken early and during the initial stages of an ecosystem crisis.

The proposed use of proteomics approaches for identifying sensitive and robust molecular bioindicators of ecosystem health is a very powerful approach. By focusing on a few key species and early molecular changes in response to environmental, urban, and toxicant stresses using proteomics technology one can identify marker proteins that are induced early during stressful changes in the aquatic environment and are indicative of ecosystem health in general.

Currently proteomics technology is most powerful when performed on model organisms for which fully sequenced genomes are available although we are actively developing proteomics methods in my laboratory that extend the usefulness of this approach to non-model species as well. Thus, the choice of organisms that are abundant in Morro Bay, have a fully sequenced genome, and respond sensitively to environmental stresses is critical. The sea squirt Ciona and the purple sea urchin are such species and, therefore, represent excellent choices for model organisms that can be effectively used for proteomics approaches directed at the identification of bioindicator proteins that are robust and sensitive markers of exposure to stressful conditions.

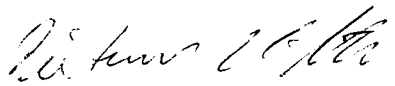
My laboratory specializes on proteomics and Dr. Lars Tomanek has gained impressive expertise in this area while working in my laboratory during the last 2 years. He is certainly in a great position to perform these experiments. In addition, we will be happy to advise, support, and collaborate should there be any need for proteomics expertise that is present on the UC Davis campus.

Following is a brief description of proteomics methodology available in my laboratory. Dr. Tomanek is familiar with these approaches and through continued collaboration has access to my laboratory and proteomics core laboratories at the UC Davis campus, including the Genome Center and

Molecular Structure Facility. Proteins are pre-fractionated after extraction from cells or renal tissue according to their isoelectric point (pI) in liquid phase using a multicompartment electrolyzer unit (IsoelectrIQ2, Proteome Systems). Then, 2D electrophoresis (2DE) is carried out using immobilized pH gradient (IPG) focusing gels for the first dimension in IPGphor (Amersham), IsoelectrIQ2 (Proteome Systems), or IEF-Cell (Bio-rad) IPG units. Gels are developed by multiplex staining with fluorescent Pro-Q Diamond phosphoprotein stain (Molecular Probes) and colloidal Coomassie blue, which provides good sensitivity and linearity for quantitative analysis of protein abundance. Protein spots on 2D gels are identified in two ways: 1. by mass spectrometry (MS); and 2. by Western blotting. Western blotting is used if the location of a particular protein of interest on 2D gels needs to be determined. We are using a 4700 MALDI-TOF-TOF proteomics analyzer for most studies but also have access to LCQ Deca Plus and LTQ ion trap MS (ThermoFinnigan) and a QStar ESI-quadrupole-TOF hybrid MS (PE-Sciex ABI). All three MS instruments can operate in MS/MS mode and are useful for obtaining peptide mass fingerprint and peptide de novo sequence information from 2D gel spots. MS data are analyzed by peptide mass fingerprinting using 4700 Explorer, GPS Explorer, MASCOT, De Novo Explorer and other software and by manual annotation of sequence based on mass differences between peaks of b, y, supporting a ion series as well as immonium ions.

This methodology is very powerful for identifying molecular biomarkers, which are more meaningful if they are proteins compared to mRNA/ cDNA because proteins are more closely associated with cellular and organismal function. The work proposed is based on a state-of-the art approach and I fully support the initiative for establishing a Morro Bay Ecosystem-based Management Program.

Yours truly,



Dietmar Kültz
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18 June 2005

Dr. Dean Wendt
Biological Sciences Department
California Polytechnic State University
San Luis Obispo, CA 93407

RE: Support for Packard Foundation grant, *"Morro Bay Ecosystem-Based Management Program."*

Dear Dr. Wendt:

I have been asked by Dr. Lars Tomanek to provide a letter in support of the research proposal that is to be submitted to the David and Lucile Packard Foundation, *"Morro Bay Ecosystem-Based Management Program."* I am pleased to respond to his request. Lars was one of my Ph.D. students (through Oregon State University) and also a postdoctoral scholar in my lab here at Stanford University. I know him well and also have a good sense of the focus and potential contributions of the studies he has described in the proposal to the Foundation.

The primary thrust of Lars' proposed studies is to utilize state-of-the-art molecular and proteomic technologies to monitor the "health" of several species of marine animals in the Morro Bay ecosystem. This type of environmental monitoring is coming to be recognized as an effective way of gauging the physiological status of populations, as this status might be influenced by natural (temperature, food availability, etc.) or anthropogenic factors such as pollution. As new technologies have come on-line, this type of monitoring has become more powerful and certainly more sophisticated. In his proposed studies, Lars would employ the tried-and-true method of using the ratio of RNA to DNA to determine the potential for protein synthesis. In addition, he would use a novel proteomics approach he recently developed during his postdoctoral studies with Professor Kültz at the University of California-Davis. Proteomics approaches are only now becoming useful for non-model species (organisms for which substantial information on gene and protein sequence is not yet available). The use of proteomics methods in studying field populations will enable hundred to thousands of proteins that are diagnostic of physiological state to be identified and quantified in terms of levels of expression. Lars' success in developing proteomic approaches for marine animals demonstrates that, for the first time, this new type of methodology is ripe for exploitation in studies of the environmental biology of marine organisms. Thus, this is a path breaking type of study that could pay high dividends in research designed to test for the effects of environmental change on organisms' status.

Lars is an accomplished ecological physiologist who is definitely the right sort of person to conduct the physiological aspects of this broad study of ecosystem-based management. He has broad expertise in physiological, biochemical and molecular biology, and is one of those rare individuals who can merge the diverse theories and methodologies of these different "levels" of biology into a creative research program. I think that his component of the proposed project is excellent—and essential for the success of the overall program.

Sincerely,

George N. Somero
David and Lucile Packard Professor of Marine Science
Director—Hopkins Marine Station

California Regional Water Quality Control Board
Central Coast Region

Alan C. Lloyd,Ph.D.
Agency Secretary

Internet Address: http://www.waterboards.ca.gov/centralcoast
895 Aerovista Place, Suite 101, San Luis Obispo, California 93401-7906
Phone (805) 549-3147 • FAX (805) 543-0397

Arnold Schwarzenegger
Governor

June 27, 2005

The David and Lucille Packard Foundation
Attn: Barry Gold, Ph.D. Program Officer
300 Second St.
Los Altos CA, 94022

RE: Support for the Morro Bay Ecosystem-Based Management Program

Dear Dr. Gold:

Over the past several months staff at the Central Coast Regional Water Quality Control Board has participated on the Advisory Committee for the Morro Bay Ecosystem-Based Management Program. As Executive Officer of our agency, I would like to endorse this well-conceived proposal. The proposal describes a series of interrelated studies, which we believe will bring important information to bear on management of the Morro Bay watershed, the bay itself, and nearshore areas. We have been impressed over the months working with this group regarding the extent to which they have strived to make strong linkages between research questions and key resource management issues. They have been responsive to the input of the several agencies and organizations participating on the Advisory Committee, and this responsiveness shows in the content of the proposal.

The proposal identifies a series of important activities. While each is valuable, the Central Coast Water Board has particular interest in the following resource management questions and the specific activities that will help address them.

1. What are the spatial and temporal sources of dissolved nutrients in the Morro Bay ecosystem? What are the spatial and temporal dynamics of dissolved oxygen levels, salinity and temperature in the Morro Bay ecosystem? How are the spatial and temporal dynamics of nutrient and physical parameters related to primary production in the Morro Bay ecosystem? What is the impact of the watershed water quality on the open coast within the Morro Bay ecosystem?

This program component will include installation of real-time equipment arrays and flow stations in the Morro Bay watershed, the estuary and the nearby open coast. Continuous monitoring of water quality and flow can provide a wealth of information not normally available to our agency. It is very difficult to link elevated levels of nutrients with the associated "biostimulation" which can result. The diurnal cycles of oxygen depletion and generation, and concentrations of chlorophyll resulting from over-enrichment will be captured by the arrays. This data will help us identify the extent of impairment and, in the long-term, the improvements we hope to see with the upgrade of the California Men's Colony treatment facility, the installation of the Los Osos sewer, and the implementation of agricultural management practices in the watershed in response to our new agricultural waiver program. The Morro Bay watershed has been listed as "impaired" by nutrients, specifically by nitrate. A TMDL has been adopted by our Board and an implementation plan is in place. This data will be valuable in tracking the success of TMDL implementation, and the water quality improvements resulting from construction of the two treatment plant projects.

2. What is the extent and distribution of rocky and sandy bottom habitats within the bay and open coast? What is the extent and distribution of kelp forests (open coast), salt marsh, mudflats, and eel grass

within the bay? How do their distributions change over time? What are the sensitive bay and coastal habitats and where are they located?

It is important for our agency to understand where sensitive coastal habitat is located. As an agency, we frequently make decisions related to locations of outfalls, quality of discharges, dredging and disposal of spoils, regulation of watershed activities affecting the quality of freshwater discharges, etc. All of these activities could potentially have impacts on coastal habitats. We will make better water quality decisions if we have a sound understanding of the location and nature of important habitats. It is also important for us to understand how these habitats are changing over time, particularly if these changes are in response to water quality impacts.

3. What are effective indicators of ecosystem health? How are they interrelated? How can we establish a systematic way of monitoring these and make timely data available for public understanding and use and adaptive management?

This program component will measure changes in gene and protein expression in several different organisms to quantify expressions of stress. It will then relate that stress to various environmental variables being measured, including salinity, temperature, nutrients and environmental pollutants. Detailed proteomic profiles will provide a differentiated picture of the biochemical and genetic responses to changing environmental factors and will allow the importance of these factors to be weighed. Our agency historically has used toxicity tests as a measure of impact from environmental pollutants. These tests are relatively "coarse" in terms of understanding low-level non-lethal effects; at best we measure chronic impacts to reproduction and growth, and at worst we measure only lethal effects. The proposed program component may provide us with a much more subtle tool for understanding effects of environmental pollutants, potentially before population-scaled impacts are apparent.

As senior technical staff for the Central Coast Water Board, Karen Worcester will continue to participate on the Advisory Committee for the grant period. She manages our Central Coast Ambient Monitoring Program and has access to a considerable amount of data about the Morro Bay watershed that may be of use to this program. For example, we have ten years of weekly or bi-monthly nutrient data that may provide a "baseline" to aid in detecting long-term trends in nutrient loads. She is also our agency's contact for related programs, including the Center for Integrative Coastal Observation Research and Education (CI-CORE) and Central California Ocean Observing System (CenCOOS).

We encourage you to fund the Morro Bay Ecosystem-Based Management Program. It offers not only concrete benefits for the immediate region but also valuable insights for our agency's broader management responsibilities. Thank you for considering these comments. If you have questions, Karen can be reached at (805) 549-3333 (kworcester@waterboards.ca.gov).

Sincerely,

Roger Briggs
Executive Officer

W:\Regional Monitoring & Assessment\Correspondence\MBEcosystem comments.doc

STATE OF CALIFORNIA – THE RESOURCES AGENCY

ARNOLD SCHWARZENEGGER, *Governor*

CALIFORNIA COASTAL COMMISSION

45 FREMONT, SUITE 2000
SAN FRANCISCO, CA 94105-2219
VOICE AND TDD (415) 904-5200
FAX (415) 904-5400

June 24, 2005

Barry D. Gold, Ph.D., Program Officer
The David & Lucile Packard Foundation
300 Second Street
Los Altos, CA 94022

RE: Support for the Morro Bay Ecosystem-Based Management Program

The staff of the California Coastal Commission would like to express support for the proposal to implement the Morro Bay Ecosystem-Based Management Program. The Morro Bay Estuary is a unique environment which has benefited greatly from the coordinated environmental protection efforts implemented since the completion of the Comprehensive Conservation and Management Plan for Morro Bay. The ecosystem based research and planning efforts outlined in the proposed program will enhance the agency and stakeholder efforts currently underway. The proposed program offers sound mechanisms to better understand the interrelationships between estuarine and marine resources and how to manage them more effectively as an ecosystem.

Linkage to Key Resource Management Questions

The proposal identifies a series of important activities. The California Coastal Commission has particular interest in the following resource management questions and the specific activities that will help us address them.

Public Access

Improving access to the California Coast is a primary objective of the California Coastal Commission. Planning for public access however must include the protection of sensitive coastal resources. The proposed regional assessment of public use of coastal areas and inventory of sensitive resources will help to improve planning for public use of the Morro Bay coast and estuary.

Water Quality:

The protection and restoration of water quality in the Morro Bay and its watersheds is a central goal for the California Coastal Commission Water Quality Unit. The proposed real time monitoring of nutrients within the watershed and the Bay will enable agency partners to better assess the values of various water quality protection efforts. Such monitoring will provide both temporal and spatial information on nutrient loading and its impacts on the bay and ocean. Such data will help to direct future grant funds to specific water quality problems using management practices that will best protect coastal resources.

Commitment to Participate on Advisory Committee

The Coastal Commission will continue to participate on the Advisory Committee for the grant period. The tasks outlined in this proposal will help to improve collaboration among agencies, improved communication with key stakeholder groups, and support to enhance and sustain important marine resources.

Additional Resources and Support

In addition to staff participation, the Coastal Commission will continue to help coordinate wetland monitoring and restoration projects within the Morro Bay watershed and will help to integrate the Morro Bay Ecosystem-Based Management Program with other watershed research and planning efforts.

We strongly encourage you to fund the Morro Bay Ecosystem-Based Management Program. It offers benefits for both the immediate region and provides an example of a successful watershed based multi-agency effort to restore sensitive coastal environments.

Sincerely yours,

Alfred L. Wanger
Deputy Director
Energy, Ocean Resources and Water Quality Division

State of California - The Resources Agency
ARNOLD SCHWARZENEGGER, Governor
DEPARTMENT OF FISH AND GAME
http://www.dfg.ca.gov
Marine Region
20 Lower Ragsdale Drive, Suite 100
Monterey, CA 93940

Flex your POWER
HELP CALIFORNIA CONSERVE ENERGY

June 15, 2005

Barry D. Gold, Ph.D., Program Officer
The David & Lucile Packard Foundation
300 Second Street
Los Altos, CA 94022

RE: Support for the Morro Bay Ecosystem-Based Management Program

Dear Dr. Gold:

On behalf of the California Department of Fish and Game (Department), I want to express our support for the proposal to implement the Morro Bay Ecosystem-Based Management Program (EBMP). I have participated on the EBMP Advisory Committee guiding the planning and preparation of the proposal. The Department believes the approach outlined offers an important initiative to better understand interrelationships between estuarine and marine resources and how to manage them more effectively on an ecosystem basis.

The proposal identifies a series of important activities. While each is valuable, the Department has particular interest in the following resource management questions and the specific activities that will help us address them:

Water Quality

The Department has a strong interest in understanding the impact of watershed and bay influences on the nearshore marine environment. The integrated real-time data collection and analysis will aid us understand the interrelationships and take more effective management actions.

Critical Spawning and Nursery Areas for Nearshore Fish and Invertebrate Species

The Department has a vital interest in knowing the habitat utilization of marine species. In addition, more in-depth understanding of trophic cascades will improve decision-making to protect and enhance regulated species.

Socioeconomic Indicators of Ecosystem Health

Socioeconomic indicators are one of the least developed areas of understanding about ecosystems. Both the Department and stakeholders desire improved data and practical models that illuminate the functional links between ecosystem indicators and economic productivity and value. Information from the proposed program will be directly relevant in ongoing regulatory decisions.

Commitment to Participate on Advisory Committee

The Department intends to designate staff to continue our participation on the Advisory Committee for the grant period. We have reviewed and support the key responsibilities and activities outlined for the Advisory Committee. These offer value in closer collaboration among agencies, improved communication with key stakeholder groups, and support to enhance and sustain important resources.

Additional Resources and Support

In addition to staff participation, the Department has contributed data for the ongoing collaborative research projects in the area and has helped the EBMP identify key sources of expertise and studies elsewhere (e.g. halibut tracking technologies and methodologies). The results of the Department's expanding habitat mapping resources will also aid this project.

We strongly encourage you to fund the Morro Bay Ecosystem-Based Management Program. It offers not only concrete benefits for the immediate region but also valuable insights for our agency's broader management responsibilities. We look to this project as a potential model for replication elsewhere along the California coast.

Sincerely

John Ugoretz
Central Marine Region Manager

cc: Mr. Don Maruska, Strategic Advisor & Facilitator
Morro Bay Ecosystem-Based Management Program
Don Maruska & Company, Inc.
895 Napa Avenue, Suite A-5
Morro Bay, CA 93442

State of California • The Resources Agency
Arnold Schwarzenegger, *Governor*

DEPARTMENT OF PARKS AND RECREATION
Ruth Coleman, *Director*

San Luis Obispo Coast District
750 Hearst Castle Road
San Simeon, CA 93452
(805) 927-2065 telephone

June 17, 2005

Dear Packard Foundation:

I am writing in support for the proposal to implement the Morro Bay Ecosystem-Based Management Program. Personnel from California State Parks have participated in the Advisory Committee meetings assisting the planning and preparation of the proposal. We believe that the proposal offers a wonderful opportunity to better understand the relationships between estuarine and marine resources and will help guide how we manage these resources on an ecosystem basis.

While all of the activities will be valuable to all the participants, California State Parks has a specific interest in the following management issues:

- Developing carrying capacities for the park properties within the ecosystem
- Planning for the development of a coastal trail through the parks within the ecosystem
- Managing the intertidal zones and looking at existing intertidal impacts to assist California State Parks in managing these resources statewide
- Planning for balancing the way we provide public coastal access while protecting the resources

California State Parks intends to continue our agency's participation on the Advisory Committee throughout the grant period. We have reviewed and support the key responsibilities and activities outlined for the Advisory Committee. We support the opportunities these offer to better collaborate among agencies, improve communications with stakeholders and support enhancement of these important resources.

In addition to staff participation, California State Parks will contribute the data gathered throughout the ecosystem by our ecologists. This includes data on the Western Snowy Plover, Morro Shoulderband Snail and other important plant and animal species.

I strongly encourage you to fund the Morro Bay Ecosystem-Based Management Program. It offers concrete benefits for the region and also will function as a model that can be used throughout the State Park System to assist with good stewardship of our important resources.

Sincerely,

Nicholas Franco
District Superintendent