State of California—Health and Human Services Agency
California Department of Public Health

MARK B HORTON, MD, MSPH
Director

ARNOLD SCHWARZENEGGER
Governor

June 26, 2008

Dr. Burton Jones
Department of Biology
University of Southern California
3616, Trousdale Parkway, AHF B-30
University Of Southern California
Los Angeles, CA 90089-0371

Dr. Meredith Howard
University of Southern California
Southern California Coastal Water Research Project
3535 Harbor Blvd. Suite 110
Costa Mesa, CA 92626

Dear Burt and Meredith:

Thank you for the opportunity to review your proposal entitled "Evaluation of anthropogenic and natural nutrient loadings and their effects in the coastal Southern California Bight". I am writing to voice my strong support for the proposed work. The following is a brief description of our role in coastal monitoring and an explanation of the benefits the proposed work could provide to our program and to the scientific community's understanding of harmful algal bloom (HAB) dynamics.

As coordinator of the California Department of Public Health's (CDPH) Marine Biotoxin Monitoring Program I have been involved with the monitoring of HABs and marine biotoxins along the California coast since 1989. I have seen our program evolve from one based solely on end-product monitoring to one that has increasingly incorporated a variety of other data sources for providing better public health protection. We have developed a strong volunteer-based network for phytoplankton observations and have incorporated a variety of remote sensing data such as buoy SST, satellite AVHRR and ocean color imagery. There are serious challenges in managing for marine biotoxin outbreaks: HAB dynamics are complex and remain difficult to understand, making it especially challenging to analyze their impacts in such complex ecosystems as the southern California bight.

Your proposed use of advanced technology (gliders) and computer modeling could greatly improve our understanding of bloom dynamics (e.g., causative factors, optimum

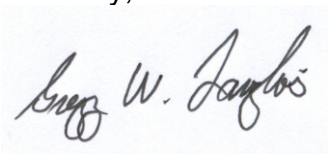
Environmental Management Branch
850 Marina Bay Parkway, MS G165, Richmond, CA 94804
(510) 412-4635, Fax (510) 412-4637
Internet Address:: www.cdph.ca.gov

growth conditions, and transport mechanisms) and fill the data gap associated with existing satellite imagery. The latter only provides information on the ocean surface and is limited due to cloud and fog cover, creating a need for subsurface remote sensing data offshore. In the short term the establishment of routine shore-based phytoplankton monitoring stations for bloom detection will provide valuable near real-time reports on the presence/absence of toxigenic phytoplankton species via the newly created California Harmful Algal Bloom Monitoring and Alert Program's list server. The timing of this project coincides with the period of greatest of domoic acid toxicity events in recent years. Therefore the monitoring efforts of this project will improve CDPH's ability to focus our sampling efforts for better public health protection. Hopefully the interaction between our public health monitoring program and the Bight '08 project will help the partners in this effort to evaluate and translate the scientific results relative to the needs of resource managers, which will facilitate the incorporation of these results into coastal decision-making processes. The current proposal would greatly assist our efforts to better understand the mechanisms responsible for the onset of a toxigenic bloom and its transport onshore where coastal seafood resources are impacted.

Sound coastal management will require the maintenance of existing monitoring efforts and observing systems, the development of improved and sustained remote-sensing capacity (e.g., subsurface gliders), and reliable bloom models for our coastal waters. This approach, coupled with the broad network coverage of the state's marine biotoxin monitoring programs, will improve our understanding of HAB dynamics and will allow us to do a better job of protecting the public's health by ensuring the safety of California seafood.

Thank you for the opportunity to learn more about your proposed work as part of the Bight '08 project and to voice our support for this work. If I can be of any assistance, or if you have any questions, please feel free to contact me at (510) 412-4635.

Sincerely,



Gregg W. Langlois, Chief
Marine Biotoxin Monitoring Program
California Department of Public Health

State Water Resources Control Board

Division of Water Quality
1001 I Street • Sacramento, California 95814 • (916) 341-5455
Mailing Address: P.O. Box 100 • Sacramento, California • 95812-0100
FAX (916) 341-5463 • http://www.waterboards.ca.gov

Linda S. Adams
Secretary for Environmental Protection

Arnold Schwarzenegger
Governor

JUN 2 6 2008

Dr. Burton Jones
Department of Biological Sciences
University of Southern California
3616 Trousdale Parkway, AHF B-30
Los Angeles, CA 90089-0371

Dr. Meredith Howard
University of Southern California
Southern California Coastal Water
Research Project
3535 Harbor Blvd. Suite 110
Costa Mesa, CA 92626

Dear Dr. Jones and Dr. Howard:

EVALUATION OF ANTHROPOGENIC AND NATURAL NUTRIENT LOADINGS AND THEIR EFFECTS IN THE COASTAL SOUTHERN CALIFORNIA BIGHT

This letter is intended to provide my endorsement for your proposed project titled "Evaluation of anthropogenic and natural nutrient loadings and their effects in the coastal Southern California Bight".

This project will provide critical information necessary for the State Water Resources Control Board and Regional Water Quality Control Boards (Water Boards) to determine if nutrient inputs are affecting the ocean and how such inputs should be regulated. At the present time, with the exception of ammonia nitrogen, nutrient objectives for the ocean do not exist and this project will evaluate whether the nutrient inputs from two major sources, storm water and wastewater discharge, are initiating or exacerbating algal blooms. This issue is central to the mission of the Water Boards.

The State Water Resources Control Board believes this project to be very important, so much so, that it is now considering providing funding even during a very difficult budget year. The additional funding requested from the Ocean Protection Council is to support the ocean observing system which will add immeasurably to this project.

I am fully supportive of this project and I recommend that the Ocean Protection Council fund this research, which will help to determine if nutrient regulation to the coastal ocean is necessary.

Sincerely,

Bruce Fujimoto
Manager, Storm Water Section

USC
UNIVERSITY OF SOUTHERN CALIFORNIA

Program in Marine Environmental Biology
Biological Sciences
College of Letters, Arts and Sciences

University of Southern California
3616 Trousdale Pkwy., AHF 107
Los Angeles, California 90089-0371

28 October 2008

Dr. Burton Jones
Department of Biological Sciences
University of Southern California
3616 Trousdale Parkway, AHF B-30
Los Angeles, CA 90089-0371

Dr. Meredith Howard
University of Southern California
Southern California Coastal Water Research Project
3535 Harbor Blvd. Suite 110
Costa Mesa, CA 92626

Dear Burt and Meredith:

I write this letter in enthusiastic support for your proposal "Evaluation of Anthropogenic and Natural Nutrient Loadings and their Effects in the Coastal Southern California Bight" submitted to the Ocean Protection Council.

Your proposed project will bring together multiple agencies as well as academic researchers in a research programs that will help characterize nutrient loading in coastal waters and relate that to harmful algal blooms on a regional perspective. As you know, there have been numerous individual studies of harmful algal blooms (HABs) along the California coast that have been conducted primarily on a local basis. One very significant aspect of this project is that it will be the first regional, large scale evaluation of HAB occurrence, and the corresponding characterization of the physical and chemical parameters driving the event. The proposed project will fill significant gaps in our knowledge that cannot be attained through the implementation of localized research and monitoring efforts. The regional perspective that will be attained therefore has a high scientific value.

The multiple, cutting-edge technologies that will be employed to conduct this work (autonomous gliders, modeling and remote sensing etc.) will provide observation over a large geographical area. These observations will coordinate extremely well with local observational capabilities and considerably expand their interpretive abilities. Your project will help collate the disparate measurement from local observations in order to provide a unique opportunity to evaluate algal bloom dynamics on a regional scale. I anticipate that this program will substantively increase our scientific knowledge of west coast HAB events, nutrient dynamics and consequent phytoplankton dynamics. These technologies coupled with the California Harmful Algal Bloom

Monitoring and Alert Network (HABMAP) provides a powerful study that has never been performed on such a large and extensive scale.

I recommend the Ocean Protection Council fund this research. If you have any questions, please feel free to contact me (213) 740-0203.

Sincerely,

David A. Caron, Professor
Department of Biological Sciences
University of Southern California
3616 Trousdale Ave., AHF 301
Los Angeles, CA 90089-0371
(213) 740-0203
(213) 740-8123