

**CONSIDERATION OF A RESOLUTION APPOINTING DR. SAMUEL LUOMA AS
LEAD SCIENTIST FOR THE CALIFORNIA BAY-DELTA PROGRAM**

Agenda Item: 8

Meeting Date: 8-14-03

Summary: This resolution would appoint Dr. Samuel Luoma as Lead Scientist for the California Bay-Delta Program. Dr. Luoma has been acting as Interim Lead Scientist since August of 2000.

Recommended Action: Adopt Resolution 03-08-02.

Staff Recommendation: : Staff recommends the Authority adopt the attached resolution, which would appoint Dr. Samuel Luoma as Lead Scientist for the California Bay-Delta Program. The appointment of a Lead Scientist is required by the California Bay-Delta Authority Act.

Background

The CALFED Programmatic Record of Decision calls for an interim, and later an official, Lead Scientist to develop, direct, and implement the programmatic goals of the Science Program, as well as to “work with CALFED program managers and CALFED agencies to develop priorities for these program areas.”

The California Bay-Delta Authority Act expressly requires the Authority, with the advice of the Director, to appoint a lead scientist, who shall report to the Authority. The Act requires the Lead Scientist to, among other things, develop, in coordination with the State and Federal implementing agencies, the Science Program element, and to nominate to the Authority a board of independent scientists, which, once established by the Authority, would be known as the Executive Science Board. The Board would advise the Authority and the Bay-Delta Public Advisory Committee on science relative to implementation of all program elements.

Generally speaking, the Lead Scientist identifies the role of science in the Bay-Delta Program, establishes the level of world-class science called for in the Record of Decision and the Act, and promulgates use of the adaptive management framework. More specifically, this entails:

- developing and implementing a vision for how science will be conducted;
- keeping abreast of the state of sciences relevant to Bay-Delta Program issues, both locally, nationally, and globally;

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- identifying knowledge needs by obtaining stakeholder, agency and scientific input, as well as keeping abreast of scientific aspects of critical Bay-Delta Program issues;
- developing written documents that describe and solicit new science projects that meet knowledge needs;
- developing and leading implementation of a rigorous, balanced peer review system for the Ecosystem Restoration Program and Science Program, and promulgating evolution of that system to other programs;
- promulgating and leading the constructive discussion of scientific aspects of Bay-Delta Program issues, in a manner that attempts to forego unconstructive diversions
- leading identification of experts for scientific panels, standing boards, and the Executive Science Board;
- developing the charge for expert advisory panels and standing boards, working with those experts to assure their success in appropriately advising the Bay-Delta Program and promoting scientific discussions;
- leading the development and implementation of the appropriate mechanisms (workshops, symposia, white papers, review panels) to clarify the state of knowledge with regard to critical Bay-Delta Program issues as they develop; and
- participating as an ex-officio member of the Executive Science Board

It is critical that the Lead Scientist communicate the status of the science “vision” and scientific knowledge to the Authority staff, federal and state agencies, and stakeholders. The Lead Scientist must also enlist the intellectual resources necessary to implement an authoritative science effort by continually seeking advice from, and communicating with, relevant agency, university, NGO, and private sector scientists and scientific institutions.

Dr. Samuel Luoma has been the interim Lead Scientist since August 2000. Dr. Luoma is a highly-respected, world class scientist who has served nationally and internationally as an expert and advisor on technical issues and issues at the interface of science and environmental management. Dr. Luoma’s qualifications are included as an attachment to this staff report.

List of Attachments:

Curriculum Vitae for Dr. Samuel Luoma

Contact:

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**CALIFORNIA BAY-DELTA AUTHORITY
RESOLUTION NO. 03-08-02**

**CONSIDERATION OF A RESOLUTION APPOINTING DR. SAMUEL LUOMA AS LEAD
SCIENTIST FOR THE CALIFORNIA BAY-DELTA PROGRAM**

WHEREAS, the CALFED Programmatic Record of Decision called for an interim, and later an official, Lead Scientist to develop, direct, and implement the programmatic goals of the Science Program; and

WHEREAS, the California Bay-Delta Authority Act expressly requires the Authority to appoint a Lead Scientist, with the advice of the Director; and

WHEREAS, the Act requires the Lead Scientist, among other things, to develop, in cooperation with the state and federal implementing agencies, the Science Program element, and to nominate to the Authority a board of independent scientists, which, upon establishment, would be known as the Independent Science Board, and would advise the Authority and the Bay-Delta Public Advisory Committee on science relative to all program elements; and

WHEREAS, Dr. Samuel Luoma has successfully performed the role of interim Lead Scientist since August 2000; and

WHEREAS, the Director of the Authority full endorses Dr. Luoma's appointment as Lead Scientist;

NOW, THEREFORE, BE IT RESOLVED that the Authority hereby appoints Dr. Samuel Luoma as Lead Scientist for the California Bay-Delta Program and bestows upon him the roles and responsibilities of that position.

CERTIFICATION

The undersigned Assistant to the California Bay-Delta Authority does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the California Bay-Delta Authority held on August 14, 2003.

Dated:

Heidi Rooks
Assistant to the California Bay-Delta Authority

Attachment 1 - Curriculum Vitae

Dr. Samuel N. Luoma
US. Geological Survey
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Menlo Park, CA 94025
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EDUCATION:

1964-68 Bachelor of Science in Zoology, Montana State University, Bozeman, MT

1968-70 Master of Science in Zoology, Montana State University, Bozeman, MT. Emphasis physiology/ecology. (Thesis: Hibernation in the Western Jumping Mouse, *Zapus princeps*.)

1972-74 PhD Marine Biology, Dept. of Zoology, University of Hawaii, Honolulu, HI.
(Dissertation: Mercury cycling in a small Hawaiian estuary.)

Dr. Samuel N. Luoma is a Senior Research Hydrologist with the US Geological Survey. Since 2000 he has served as the first Lead Scientist for the CALFED Bay-Delta program, an innovative program of environmental restoration over 40% of California's watershed, and water management issues for 60% of California's water supply. His specific research interests are in the bioavailability and effects of pollutants in aquatic environments and developing better ways to merge environmental science and policy. He is an author on more than 160 peer-reviewed publications. He wrote the textbook, *Introduction to Environmental Issues*, in 1984; is an editorial advisor for the highly respected *Marine Ecology Progress Series* and is editor of *Marine Environmental Research*. He is a Fellow in the American Association for the Advancement of Science and was awarded the U. S. Department of Interior's Distinguished Service Award, the University of California at Davis' Wendell Kilgore award for environmental toxicology and the Soc. Environmental Toxicology and Chemistry's Government Service Award. He has served nationally and internationally as an expert or advisor on technical issues and issues at the interface of science and environmental management, including sediment quality criteria (USEPA SAB Sub-committee), Bioavailability of Contaminants in Soils and Sediments (Canadian National Research Council, 1987; US National Research Council sub-committee, 2000-2), mining issues (UNESCO, Global Mining Initiative), selenium issues, environmental monitoring, and metal effects.

Selected publications

Luoma, S. N. 1978. Detection of trace contaminant effects in aquatic ecosystems. *J. Fish. Res. Bd. Can.* 34:436_439.

Luoma S. N. and Bryan, G. W., 1978. Factors controlling availability of sediment-bound lead to the estuarine bivalve *Scorbicularia plana*. *J. Mar. Biol. Assoc., UK*, 58:793_802.

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Moore, J. N., and Luoma, S. N., 1990. Hazardous wastes from large scale metal extraction: A case study. *Environ. Sci. Technol.*, 24:1279-1285.

Luoma, S. N., Johns, C., Fisher, N. S., Steinberg, N. A., Oremland, R. S., and Reinfelder, J. 1992. Determination of selenium bioavailability to a benthic bivalve from particulate and solute pathways. *Environ. Sci. Technol.*, 26:485-491.

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Luoma, S. N. 1996. The developing framework of marine ecotoxicology: Pollutants as a variable in marine ecosystems? *J. Exptl. Mar. Biol. Ecol.*, 200: 29-55.

Luoma, S. N., and Fisher, N., 1997. Uncertainties in assessing contaminant exposure from sediments: Bioavailability. p. 211-239. In *Ecological Risk Assessments of Contaminated Sediments*, C. Ingersoll, T. Dillon, G. Biddinger, eds. SETAC Press, Pensacola, FL.

Luoma, S.N., van Geen, A., Lee, B-G., and Cloern, J.E. 1998. Metal uptake by phytoplankton during a bloom in south San Francisco Bay: Implications for metal cycling in estuaries. *Limnology & Oceanography*, 43:1007-1016.

van Geen, A., and Luoma S. N. (eds) 1999. The impact of human activities on sediments of San Francisco Bay. *Mar. Chemistry*. 64:1-127.

Lee, B.-G., Griscom, S. B., Lee, J-S., Choi, H. J., Koh, C-H., Luoma, S. N., and Fisher, N. S. 2000. Influence of dietary uptake and reactive sulfides on metal bioavailability from aquatic sediments. *Science*, 287: 282-284.

Luoma, S.N., W Clements, T DeWitt, J Gerritsen, A Hatch, P Jepson, T Reynoldson, and R Thom. 2001. Role of Environmental Variability in Evaluating Stressor Effects. p. 141-176 In DJ Baird & GA Burton, eds. *Ecological Variability: Separating Natural from Anthropogenic Causes of Ecosystem Impairment*. SETAC Press, Pensacola, FL.

Luoma SN, Brown SS, Foster WG, Leckie JO, Teisl MF, Thomas JK, and Williams-Fleetwood, SO. 2002. Chapter4: Characteristics and Implications. P. 67-103 In RT DiGiulio and WH Benson, eds. *Interconnections between Human Health and Ecological Integrity*. SETAC Press, Pensacola, FL.