



# Science News

News from the CALFED Science Program



*After a dry January, snow returns to the Sierras.*

## Lead Scientist Identifies Science Program Priorities

Highlighting his vision and priorities for the CALFED Science Program, new Lead Scientist Michael Healey emphasized the need for comprehensive science in the coming year to help guide critical decisions about the Delta.

Speaking at the February 22, 2007, Independent Science Board meeting, Healey stressed an adaptive, integrated vision for the Science Program using four elements. First, adopting a broad, synthetic view of the Delta and its scientific needs. Second, promoting a landscape perspective of the Delta stressing its unique nature and the interrelation of its parts. Third, integrating science across agencies and their mandates. Finally, emphasizing an ecosystem perspective and promoting adaptive management to help with better decision-making.

With a number of critical decisions regarding future management of the Bay-Delta to be made in the next 18 months, Healey has begun prioritizing Science Program activities to meet the short term needs of policymakers. Highest priority will be publishing the *State of Science for the Bay-Delta System* report for informing decision makers about Delta science. The report will provide a solid scientific foundation for upcoming Bay-Delta decisions including: End of Stage 1 decisions, which includes recommendations for future water supply reliability and ecosystem actions in the Delta; the Delta Vision process, an integrated vision and strategy for the environmental and economic stability of the Delta as a resource; and the Bay-Delta Conservation Plan, a conservation plan prepared to meet the requirements of the Federal Endangered Species Act, California Endangered Species Act, or the Natural Community Conservation Planning Act.

An additional priority for the Science Program will be communicating scientific knowledge about the Delta to managers, policymakers, and the public. Healey expects the Science Program to adopt a vigorous and proactive communication strategy to ensure that debates about the future of the Delta are well informed about Delta science.

Looking to the future, the Science Program will be developing a strategic plan to guide its activities and responsibilities in relation to implementation of the new Delta Vision and Bay Delta Conservation Plan. For the full lead scientist report visit: [http://science.calwater.ca.gov/sci\\_tools/isb.shtml](http://science.calwater.ca.gov/sci_tools/isb.shtml).

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## CALFED Science Program

### Establishing a Body of Knowledge

*The CALFED Science Program's mission is to integrate peer reviewed science into every aspect of the CALFED Bay-Delta Program. The Science Program is establishing the best scientific information possible to guide decisions and evaluate actions critical to the CALFED Program's success.*

*The long-term goal of the Science Program is to establish an unbiased, relevant and authoritative body of knowledge integrated across program objectives and communicated to the scientific community, agency managers, stakeholders and the public.*

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## PPIC Presents Delta Alternatives to ISB

The Public Policy Institute of California presented possible futures for the Delta to the CALFED Independent Science Board February 21, 2007. Jay Lund, lead author of *Envisioning Futures for the Sacramento-San Joaquin Delta*, argued that the Delta, as it is currently being managed, is unsustainable.

Lund cautioned that the PPIC report is not a scientific peer-reviewed report, but offers a nonpartisan, non-stakeholder strategic assessment. Themes developed by the report include an appreciation for an improved understanding of the Delta over the past 10 years leading to new opportunities, acknowledgement that promising alternatives for the Delta do exist, and that most Delta users do have the ability to adapt. Lund also noted that promising solutions seem unlikely from a stakeholder-only process, though stakeholder input is valuable.

The report identifies and evaluates nine alternative management models divided broadly into categories of freshwater Delta, fluctuating Delta, and a fluctuating reduced-export Delta. The authors evaluated the performance of the alternatives in three areas: water supply, environmental effects, and economic costs. Lund pointed out that the authors intent was to

screen out unlikely options rather than endorsing one model over another. Alternatives that feature a freshwater Delta were eliminated as not being sustainable and too costly to maintain. Equally, Lund stated that the report does not advocate any type of peripheral canal. "We did not want to pick a favorite, only to point out the loser options."

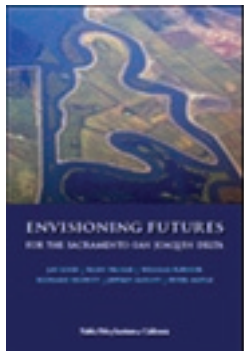
Recommendations include: focusing on promising alternatives, applying a more research and development approach to formulating alternatives for the Delta, enhancing regional and statewide representation in Delta land use decisions, implementing "beneficiaries pay" financing, and establishing mitigation mechanisms. Lund acknowledged that some users will get hurt in any Delta management alternative, however,

the key is to mitigate and limit harm.

The ISB welcomed the report citing it as an important work highlighting the current policy dilemmas of the Delta. An additional strength of the report is its "30,000 foot view" of the Delta, something that members of the ISB say has been missing. One problem is that many alternatives identified by the PPIC report will take about 20 years to be fulfilled. ISB members cautioned that the report does not tell us how to get from where we are now to new thinking.

The report was seen by the ISB as a first step in the process of identifying alternatives to the current management of the Delta. Areas of concern regarding the PPIC report include inadequately addressing water quality issues, the absence of an assessment of the vulnerability of alternatives to driving forces, and the lack of particulars for getting from the current Delta situation to alternatives proposed by the report.

The ISB agreed to write a letter to the Delta Vision Blue Ribbon Task Force highlighting the strengths and weaknesses of the PPIC report without endorsing it. William Fleenor, Ellen Hanak, Richard Howitt, Jeff Mount, and Peter Moyle coauthored the PPIC report. Because ISB member Mount is one of the authors of the report, he will not be involved in formulating any ISB response. The report is available as a free download from <http://www.ppic.org>, the ISB Letter will be available at [http://science.calwater.ca.gov/sci\\_tools/isb.shtml](http://science.calwater.ca.gov/sci_tools/isb.shtml)



## Upcoming Events of interest

### 2007 California Estuary Research Society (CAERS)

#### Annual Meeting

March 18-20, 2007

Bodega Marine Laboratory

Bodega, CA

For more information, visit:

<http://online.sfsu.edu/~caers/>

### Public Workshop: Consideration of the Pelagic Organism Decline in the San Francisco Bay/Sacramento-San Joaquin Delta Estuary

March 22-23, 2007

Joe Serna, Jr./Cal-EPA Building

Coastal Hearing Room

1001 I Street, Sacramento, CA

For more information, visit [www.waterrights.ca.gov/baydelta/pelagic-organism.html](http://www.waterrights.ca.gov/baydelta/pelagic-organism.html)

### Sacramento River Restoration Science Conference

April 9-10, 2007

Bidwell Park Room

California State University, Chico

For more information, visit [www.sacriver.org/events/](http://www.sacriver.org/events/)

### American River Watershed Conference

April 12-13, 2007

California State University,

Sacramento, University Union

6000 J Street

Sacramento, CA

For more information, visit [www.csus.edu/CREST/American\\_River\\_Watershed\\_Conference.html](http://www.csus.edu/CREST/American_River_Watershed_Conference.html)

### National Conference on Ecosystem Restoration

April 22-27, 2007

Kansas City, MO

For more information: <http://conference.ifas.ufl.edu/NCER2007>

### State of the Estuary Conference

October 16-18, 2007

Scottish Rite Center

1547 Lakeside Drive,

Oakland, CA

Call for posters and abstracts announced this month at the website.

For more information, visit <http://sfep.abag.ca.gov/soe>

## Editorial Board Named for *State of Science* Report

The CALFED Science Program has named the editorial board for its *State of Science for the Bay-Delta System* report. The editorial board will be responsible for developing content and selecting authors for the report which will compile, synthesize, and communicate the current scientific understanding of the Bay-Delta system for the purpose of informing critical decisions for the next year. The first of a series, the 2007 *State of Science* report will provide an integrated view of the Bay-Delta system and how it works, with particular focus on the current status of scientific knowledge relevant for End of Stage 1 and Delta Vision decisions. The report is expected to be released December 2007.

Editorial board members are: Michael Healey, lead scientist for the CALFED Science Program;

Jana Machula, staff environmental scientist for the Science Program, will serve as the managing editor;

Richard Norgaard, board member with the CALFED Independent Science Board, and a professor for the University of California, Berkeley's Energy and Resources Group, and of Agriculture and Resource Economics. Norgaard also served on the CALFED Water Management Science Board. He is a founder of ecological economics. His studies include looking at the epistemology and sociology of complex systems. He received his PhD in economics from the University of Chicago;

Michael Dettinger, Science Program advisor, served on the CALFED Water Management Science Board. He is a Research Hydrologist for the Branch of Western Regional Research, United States Geological Survey, and research associate of the Climate Research Division at Scripps Institution for Oceanography, La Jolla. He is well known for his work related to hydrology and climate change, and received his PhD in atmospheric sciences from the University of California, Los Angeles.

## Science Program's Ron Ott to Retire

Ron Ott, deputy director for the CALFED Science Program, announced he will retire in June 2007.

Ott, a hydrologist, joined CALFED in 1995 leading technical teams on issues of conveyance, fisheries, the Delta Cross Channel and Through Delta Facility, South Delta fish facilities, and CALFED's Environmental Water Account. Ott also served as the CALFED Delta regional coordinator. Ott became deputy director for the Science Program in February 2006.

Previous to CALFED, Ott served at CH2M HILL and with the California Department of Water Resources. Ott has received three advanced engineering degrees including a PhD from Stanford University in Water Resources Engineering.

## February's S.F. Estuary and Watershed Science Journal Available

The February issue of the online journal *San Francisco Estuary and Watershed Science* is available at <http://repositories.cdlib.org/jmie/sfews/vol4/iss3/>. The issue includes: the introduction of yellowfin goby in the Mokelumne River, a framework for assessing the viability of threatened and endangered Chinook salmon of the central valley, the occurrence of pesticides in the Yolo Bypass, and the effects of climate on the San Francisco Bay-Delta Estuary system during the last 10,000 years by CALFED Science Fellow, Frances Malamud-Roam.

*San Francisco Estuary and Watershed Science* is a peer-reviewed online journal sponsored by the Science Program. It is concerned with all aspects of the San Francisco Bay-Delta estuary.

## Sea Grant Fellow Dorian Fougères Welcomed

The CALFED Science Program welcomes California Sea Grant State Fellow Dorian Fougères. Fougères, received his doctorate in 2005 from UC Berkeley's Department of Environmental Science, Policy, and Management. His research will focus on the production, communication, and application of scientific information and practices in CALFED programs. Particularly, he will examine how climate change science is being applied and integrated into decision making processes such as the Delta Vision.

The Sea Grant State Fellowship provides educational opportunities for post-graduate interested in both environmental resources and public policy. For more information, visit <http://www-csgc.ucsd.edu/EDUCATION/StateFellow.html>.

## CALFED Science Fellow Frances Malamud-Roam Sediment Supply and Marsh Development in the San Francisco Estuary

Ten thousand years ago, San Francisco, San Pablo, and Suisun Bays were very different from how they exist today. Then, during the end of the last great ice age, much of the bays were canyons carved deep by the Sacramento and San Joaquin Rivers. As the ice melted and sea levels rose filling the canyons with saltwater, new geological processes took effect in the bays with the rivers providing sediment and fresh water creating the delicately balanced San Francisco Bay-Estuary.

While our knowledge of how the Estuary was created is extensive, much has changed during the past 150 years raising questions about whether sediment supply is sufficient to maintain San Pablo Bay tidal marsh habitats. More specific questions are where do sediment deposits in San Pablo Bay tidal marshes actually come from, and whether climate change or human activity will greatly change these processes.

To understand better the sources of mineral sediment deposits, 2003 CALFED Science Fellow Frances Malamud-Roam looked at which watersheds contributed more sediment, whether those deposits have greatly changed over the past 200

years, and if so, are those changes from climate change or human activity. She found that sediment deposits in San Pablo Bay are not, as many thought, from the major rivers, but from smaller local streams. Her finding suggests that dams and other flood control measures on the Sacramento and San Joaquin Rivers may have less of an effect on supplying marsh sediment than originally thought.

How sediment levels will react under climate change is still uncertain. While current sediment levels have decreased in the last 75 years, there should be enough to maintain the San Pablo Bay tidal marshes. However, if sea level rise accelerates, then the current supply may not be adequate, leading to more flooding of tidal marshes.

Frances Malamud-Roam was part of the 2003 CALFED Science Fellows Program. A postdoctoral researcher from University of California, Berkeley's Geography Department, she was awarded a fellowship to study sediment deposits and the long-term feasibility of restoring tidal marshes in the San Pablo Bay. Her fellowship ended in 2006. From this research, she has recently published *Holocene Climates and Connections between the San Francisco Bay Estuary and its Watershed: A Review* in *San Francisco Estuary and Watershed Science*. The article is available online at <http://repositories.cdlib.org/jmie/sfews>.

**Malamud-Roam's research focused on understanding of the long-term feasibility of maintaining and restoring tidal marshes in San Pablo Bay in the face of sea level rise**

## Delta Vision Blue Ribbon Task Force Named

The Blue Ribbon Task Force that will make recommendations for a sustainable Sacramento-San Joaquin Delta began meeting in early March. Appointed by Governor Arnold Schwarzenegger in February, the seven-member Task Force will develop both a vision for the Delta and a long-term implementation plan for that vision over the next 19 months.

In addition, a 41-member Stakeholder Coordination Group has been appointed by Secretary for Resources Mike Chrisman to represent a broad array of Delta stakeholders and provide technical assistance and make recommendations to the Task Force.

Former Assembly member and Sacramento Mayor Phil Isenberg will chair the Blue Ribbon Task Force.

In addition to Isenberg, members of the Blue Ribbon Task Force include: Monica Florian, Richard Frank, Thomas McKernan, Sunne Wright McPeak, William Reilly, and Raymond Seed.

To read more about the Delta Vision Task Force, visit: <http://www.deltavision.ca.gov>

## Science Advises Delta Vision

CALFED Lead Scientist Michael Healey and Independent Science Board Chair, Jeffrey Mount have both been named as science advisors for the Delta Vision Blue Ribbon Task Force by Secretary for Resources Mike Chrisman.

The Task Force will rely on Healey and Mount to help ensure a common understanding of the science that informs their policy choices.

To read more about the Delta Vision Task Force, visit: <http://www.deltavision.ca.gov>