Clean Estuary Partnership

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CALFED Bay-Delta Program

Mr. Daniel Ray
CALFED Bay-Delta Program
1416 9'th Street
Sacramento, CA 95814

May 10, 2002

**Re: Comments on the 2002 CALFED ERP Proposal Package**

Dear Mr. Ray,

Thank you for the opportunity to comment on the Ecosystem Restoration Program's 2002 proposal package and review process. The Clean Estuary Partnership (CEP) is a collaborative effort between the San Francisco Bay Regional Water Quality Control Board (SFRWQCB), the Bay Area Clean Water Agencies (BACWA), and the Bay Area Stormwater Management Agencies Association (BASMAA). The mission of this partnership between local governments and the State's water quality control authority is to develop and implement plans to attain water quality standards. As such, we are very interested in CALFED projects that are directly or indirectly related to water quality standards.

We appreciate the level of effort that went into the scientific and administrative review of the proposals. That review process has produced an outstanding package of projects that will likely lead to significant improvements in the San Francisco Bay ecosystem falling within the CALFED solution area. There are eighteen proposals in the package that have direct overlap with our plans to attain water quality standards (Table 1), and another eighteen that provide indirect benefits. We have some specific comments regarding the feasibility of proposed wetland restoration projects, the importance of results from previously funded CALFED projects, linkages between CALFED projects and water quality standards, the need to fund effective outreach for environmental justice, the need to address endocrine disrupting compounds, pesticide-related projects, the importance of exotic and invasive species proposals, and selenium-related projects.

**Feasibility of Wetland Restoration Projects**

The package includes four wetland restoration projects in the Bay Area, totaling approximately $12 million (proposals #29, #17, #31, and #90). A key factor affecting the

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feasibility of proposed wetland restorations is the adequacy of adaptive management plans with respect to monitoring for mercury methylation and bioaccumulation. Mercury in the aquatic ecosystem of San Francisco Bay is a limiting factor for the success of endangered wildlife, such as the California Clapper Rail. Wetlands are known to have the potential for enhanced mercury methylation due to their microbial communities, and enhanced methylmercury bioaccumulation due to their trophic complexity. Although the proposed restoration projects anticipate significant habitat benefits for the California Clapper Rail, there is no discussion within the proposals themselves as to how monitoring plans will quantify mercury risks vs. habitat restoration benefits.

The package overall very likely contains the scientific studies needed to provide such a risk assessment. For example, proposal #90 proposes to breach a levee between existing subsided Baylands and San Pablo Bay to restore tidal wetlands, but does not discuss what affect this could have on the net flux of methylmercury to San Pablo Bay. Proposal #129 contains much of the science needed to answer that question. *All San Francisco Bay-Delta mercury monitoring studies that are "considered as directed actions" (i.e., #234, #228, #196, and #129) should be implemented concurrently with wetland restoration projects.*

The proposed habitat restoration project at Big Break (proposal #29) will restore tidal marsh at the mouth of Marsh Creek. Previous studies have demonstrated that significant mercury loads are discharged from mining waste from the inoperative Mt. Diablo mercury mine into Marsh Creek. One question that could be reasonably asked in a public process is whether it makes sense to restore a tidal marsh immediately downstream of an unremediated mercury mine. The Contra Costa Water District's water supply intakes are also near this project area. Since the quality of municipal intake water affects the quality of discharged municipal wastewater, there is additional concern about a restoration project that ignores a nearby documented mercury source. *The feasibility of proposal #29, with respect to water quality standards, would be greatly enhanced by a plan to reduce mercury loads discharged into Marsh Creek from the Mt. Diablo Mercury Mine.*

**Important Remaining Products from Previously Funded CALFED Projects**

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The integrated mass balance assessment of mercury in the Bay Delta (#18) is an extension of a previously funded (1999-2001) CALFED mercury project which has produced science information critical to mercury strategic planning in the San Francisco Bay region. The 1999-2001 CALFED mercury project included specific mercury source identification tasks that were to provide site maps, summaries of in-place mining waste, estimates of offsite transport, and estimates of remediation costs. In a December 20, 2000 comment letter regarding the proposed Total Maximum Daily Load (TMDL) for mercury in San Francisco Bay, the United States Environmental Protection Agency (USEPA) expressed concern over the lack of quantitative information regarding plans to reduce

mercury loads from inoperative mines in the Central Valley. *The deliverables from the previously funded CALFED mercury project directly address load estimates and economic analyses needed to establish a TMDL for mercury. We look forward to reviewing them at the earliest possible opportunity.*

Previously and currently funded mercury source assessment work appears to be focused on the Sacramento River Basin, although the CALFED mercury project has also identified a mercury bioaccumulation gradient within the San Joaquin River Basin near Mud Slough. The New Idria Mercury Mine, the second largest historic producer of mercury in North America, drains into the Panoche Fan, which is episodically flushed into the San Joaquin River near Mud Slough. *Mercury source assessments should include known mining legacy sources within the San Joaquin River drainage.*

In addition to loads assessments, contract funds provided by the San Francisco Bay Regional Water Quality Control Board have extended the CALFED Mercury Project into the entire San Francisco Bay estuary. The resulting analyses of methylmercury concentrations in sediments and in avian eggs are vital pieces of information for risk assessment and development of numeric targets. *The funding partnerships between the SFRWQCB and the CALFED Mercury Project team, as well as the team's accessibility and enthusiasm, have improved the quality of science used to support policy decisions in the San Francisco Bay Region; we thank all team members for their thoughtful comments and diligent efforts.*

**Linkage to Water Quality Standards**

The CEP's interest in attainment of water quality standards is shared by the State Water Resources Control Board (SWRCB) and the USEPA, which are both CALFED agencies. Our comments regarding mercury loads and methylation highlight the need to explain connections between CALFED-funded projects and water quality standards. *The mercury strategic planning workshop proposed by the CALFED Science program is an important forum for linking the mercury science funded by CALFED to impending regulatory actions, such as development of tissue-based water quality objectives for methylmercury and implementation of mercury TMDLs.*

The CALFED ERP has brought together some of the best scientific minds in the world to work on complex problems of mercury loading, cycling, and accumulation in the food web. Although the proposal package can't be expected to provide final answers to all adaptive management questions, it does represent a significant and well-planned investment of public resources in solutions to public problems. *It would be helpful to make sure that the USEPA and the SWRCB are fully briefed as to how the science produced relates to attainment of water quality standards and implementation of TMDLs. This includes discussion of how proposed wetland restorations will affect mercury*

*bioaccumulation in the San Francisco Bay ecosystem, how CALFED projects have contributed to identification of controllable mercury loads, and how scientific information developed will affect adaptive management decisions regarding mercury.*

**Effective Outreach and Environmental Justice**

Outreach to the public is an important part of the linkage between science and policy. Effective outreach is especially important to attain the environmental justice goal of providing people with equal opportunity for significant, meaningful engagement in public decisions affecting public health. Subsistence fishers are concerned about factors that affect concentrations of bioaccumulative pollutants and endocrine disrupting compounds (EDCs) in fish. But the CALFED ERP proposal package did not contain sufficient funding to help underserved communities understand the links between CALFED-funded projects and the beneficial use of fishing. *An additional directed action should be included in the annual work plan to fund a proposal connecting local stakeholder groups with scientists and policy makers who can help people consider the available science information and meaningfully participate in policy discussions related to CALFED-funded projects.*

**Need to Address Endocrine Disrupting Compounds (EDCs)**

Preliminary information from the United States Fish and Wildlife Service indicates that EDCs, such as certain chlorinated hydrocarbons, may also be limiting factors for the success of endangered wildlife. The 2002 proposal package does not contain any assessment of EDCs or their effects in the Bay-Delta. *Some assessment of EDC occurrence and effects should be considered as a directed action in your annual work plan in order to ensure that the beneficial uses of wildlife habitat and protection of rare and endangered species are restored and protected.*

**Pesticide application and monitoring**

The proposal to monitor pyrethroid pesticides (#242) will directly help in the characterization and assessment of water quality within the bay, delta, and tributaries. This is particularly important as the pesticide market is shifting toward these newer pesticides. Development of analytical test methods capable of detecting these pesticides at ecologically relevant levels will be essential for tracking their fate and effects in the ecosystem. *We fully support the goals and approach of proposal #242.*

The evaluation of alternative agricultural practices (#213) is an important piece of the economic analysis needed for implementation planning of an agricultural pesticide TMDL. It has the potential to provide useful information as to how conservation tillage and cover cropping can reduce sediment, nutrient, and pesticide loads. However, the

proposal does not indicate what pesticides will be evaluated, and none of the proposed sustainability indicators directly addresses water quality. *Task 1 of proposal #213 should strategically determine which pesticides would be of greatest concern for water quality and ensure that the study evaluates runoff of these pesticides. Task 2 should include attainment of water quality standards as an indicator.*

The proposal to control purple loosestrife (#22) has made a substantive case for the need to prevent the spread of this noxious weed. We support the use of integrated pest management, and would like to see that concept reinforced. Application of the herbicide Rodeo cannot be considered benign just because it's application will comply with the label. Compliance with pesticide-related laws and regulations does not, by itself, ensure that applications will not cause a violation of water quality standards. This is a concern to us because, with a 35 day half-life due to hydrolysis, glyphosate (the active ingredient of Rodeo) released into the aquatic ecosystem upstream can reach San Francisco Bay. The proposal mentions that an NPDES permit for application will be applied for "if necessary." Our understanding is that applications of aquatic herbicides require NPDES permits. The project could choose to operate pursuant to the Statewide NPDES general permit. That general permit contains specific monitoring requirements and requires Best Management Practices consistent with integrated pest management principles. *While proposal #22 contains reasonable funds for water quality monitoring, the feasibility of successfully implementing NPDES monitoring requirements for herbicide application would be enhanced by a clear statement as to beneficial uses potentially affected, levels of concern for glyphosate, and the analytical detection limits proposed.*

**Exotic and Invasive Species**

Introduction of exotic and invasive species is a critical problem threatening the beneficial uses of San Francisco Bay. Invasive species not only directly degrade habitat but also, as observed with the invasive Asian clam, *Corbicula fluminea,* can exacerbate bioaccumulation of toxic pollutants such as selenium. Given the current legislative restrictions on the direct regulation of ballast water discharge, the proposed outreach projects (#185, #215) are critical to effectively reduce introduction of invasive species. In conjunction with the anticipated SWRCB report to the legislature on best attainable technology, these projects constitute important steps towards eliminating vectors of invasive species. *We fully support the goals and approaches of proposal #185 and #215, and would like to see more projects of this kind funded.*

**Management of Suisun Marsh**

Suisun Marsh is on the California list of impaired waterbodies (the "303-d list") due to low dissolved oxygen concentrations. Low dissolved oxygen is also a concern for mercury methylation, which is mediated by anaerobic bacteria. Receiving water

monitoring in the Suisun Marsh region demonstrates a strong correlation between low dissolved oxygen and methylmercury concentrations. Because of the low dissolved oxygen conditions in Suisun marsh, and because the CALFED mercury project has identified enhanced bioaccumulation of mercury in avian eggs in the Suisun Bay region, we are very interested in projects related to Suisun Marsh.

The proposal to update individual ownership adaptive management habitat plans (proposal #161) is a golden opportunity to communicate with landowners in Suisun marsh regarding the connection between pond management and dissolved oxygen in adjacent receiving waters. The proposal is not, however, funded at a level sufficient to make any quantitative links between adaptive management plans and receiving water quality. *We fully support the goals and approach of proposal #161, and ask the CALFED ERP to consider an additional directed action in its annual workplan to develop links between the Suisun Marsh adaptive management plans and water quality, and to provide a stakeholder forum to discuss the importance of attaining the dissolved oxygen water quality standard.*

**Selenium**

The proposal to assess selenium hazards to birds (#234) is an important contribution to selenium target setting. *We fully support the goals and approach of proposal #234.*

The Big Break restoration proposal (#29) proposes to monitor for selenium, stating that there are refineries nearby. While we support selenium monitoring, the discussion is perplexing with respect to selenium sources, given that the nearest refinery is twenty miles downstream. *Project proponents should include an objective discussion of all selenium sources, including agricultural drainage, when revising proposal #29 for consideration as a directed action.*

The water recycling via membrane technology proposal (#249) could produce useful selenium load reduction options. We understand that if the first phase, testing the nanofiltration technology is successful, the project will proceed to test the full reverse osmosis system. *We fully support the goals and approach of proposal #249, and agree with the reviewer comment that the project should be coordinated with a regional plan to reduce selenium loads.*

Again, we appreciate the opportunity to comment on the proposal package, and look forward to working with you in the future on collaborative efforts to restore and protect the aquatic ecosystem of San Francisco Bay through implementation of Water Quality Standards.

If you have any questions, please contact our Program Coordinator, Dr. Andrew Gunther, at 510-420-1570 (gunther@amarine.com).

Best regards,

Donald Freitas, Vice-chairman, Executive Management Board
Clean Estuary Partnership

| Proposal# | Title | Overlap with CEP Goals | Amount |
|---|---|---|---|
| #234 | Assessing the hazards of mercury and selenium to the reproductive success of birds | Mercury and Selenium | $384,922 |
| #22 | Expanded Prevention, Detection, and Control of Purple Loosestrife in the CALFED Bay-Delta Watershed | Pesticide Toxicity | $457,162 |
| #195 | West Coast Ballast Outreach Project | Invasive Species | $526,259 |
| #196 | Development and Implementation of Bioaccumulation-Based Mercury Monitoring in Support of Restoration, Remediation, and the Regulatory Process for Cache Creek, Prospect Island and Adjacent Tracts, the Yolo Bypass, and Cosumnes River | Mercury | $885,571 |
| #229 | Mercury in Biota of the Bay/Delta Watershed: adverse effects to reproduction and patterns of bioaccumulation | Mercury | $1,890,855 |
| #128 | Mercury and Methylmercury Processes in North San Francisco Bay Tidal Wetland Ecosystems | Mercury | $1,108,980 |
| #29 | Big Break and Marsh Creek Water Quality and Habitat Restoration Program | Wetland Restoration and Management | $2,998,049 |
| #91 | Napa-Sonoma Marsh Restoration Project | Wetland Restoration and Management | $4,311,480 |
| #215 | Reducing the Introduction and Damage of Aquatic Nonindigenous Species through Outreach and Education, Phase 2 | Invasive Species | $179,783 |
| #237 | Evaluation Of Mercury Transformations And Trophic Transfer In The San Francisco Bay/Delta. Identifying Critical Processes For The Ecosystem Restoration Program | Mercury | $2,262,567 |
| #18 | Transport, Cycling, and Fate of Mercury and Monomethyl Mercury in the San Francisco Delta and Tributaries—An Integrated Mass Balance Assessment Approach | Mercury | $3,881,215 |
| #69 | Estuary Action Challenge Environmental Education Program | Outreach and Environmental Justice | $120,000 |
| #242 | Pyrethroid Insecticides: Analysis, Occurrence, and Fate in the Sacramento and San Joaquin Rivers and Delta | Pesticide Toxicity | $800,000 |
| #213 | The ecological and economic costs and benefits of alternative agricultural practices: Sediment, nutrient, and pesticides in runoff from conservation tillage and cover cropped systems | Pesticide Toxicity | $1,892,916 |
| #249 | Full-Scale Demonstration of Agricultural Drainage-Water Recycling Process Using Membrane Technology | Selenium | $316,090 |
| #161 | Update Individual Ownership Adaptive Management Habitat Plans | Wetland Restoration and Management | $136,244 |
| #90 | Bania Acquisition and Tidal Wetland Restoration | Wetland Restoration and Management | $3,345,000 |
| #17 | Suisun Marsh Land Acquisition and Tidal Marsh Restoration | Wetland Restoration and Management | $1,046,400 |

**Table 1: CALFED ERP Proposals recommended by Review Panel that overlap with CEP goals. Shaded background indicates proposals considered as directed actions, light background indicates proposals funded in part or as-is.**