

Panel Scientific and Technical Review Form
(Note: Review comments will be anonymous, but public.)

Proposal number: 2001-E205

Proposal Title: Suisun Marsh Property Acquisition and Habitat Restoration

Note: Only one individual review of this proposal was received. The summary of reviewer comments is that of the one review received.

1a) Are the objectives and hypotheses clearly stated?

Summary of Reviewers comments:

The basic objectives of the project are well-founded and much needed from the perspective of regional estuarine ecosystem restoration. The proposal objectives for tidal marsh restoration are clear, but the species conservation objectives it claims are rather general. Hypothesis testing of the “conceptual model” described, which links the physical foundation of marsh restoration with special-status species habitat and populations, is not well articulated. The opportunity to test hypotheses regarding comparative effectiveness of different techniques of tidal marsh restoration appears to be neglected.

Panel Summary:

Project objectives and hypotheses are clearly stated. However, the improvement to water quality in the Delta objective and hypothesis should be more thoroughly discussed. Project objectives are well linked to ERP strategic goals. Project objectives are highly applicable to ERP goals.

1b1) Does the conceptual model clearly explain the underlying basis for the proposed work?

Summary of Reviewers comments:

The conceptual model is simplistic, and skirts the fundamental, substantive restoration design issue of how to achieve topography that will be conducive to new tidal marsh which is ecologically equivalent to surviving remnant pre-historic tidal marshes in Suisun Marsh, like Hill Slough/Rush Ranch marshes. The conceptual model seems to suggest that site factors are relatively neutral in their “imprinting” effect on final tidal marsh habitat restoration results, and that site engineering would have an overriding influence on ecological value of the restored site. This is not always true.

Panel Summary:

The conceptual model focuses on the uncertainties of restoring a functional tidal marsh. It does a good job presenting most of these factors. However, biological factors (e.g., plant colonization, growth, and

expansion; plant species composition and succession) and linkages to physical factors could be better described. Anthropogenic stressors affecting marsh ecological attributes are well described in the Statement of Problem section. Considering that water quality improvement is a project objective, a better description of the effects (i.e., benefits) of marsh restoration on water quality attributes is needed.

1b2) Is the approach well designed and appropriate for meeting the objectives of the project?

Summary of Reviewers comments:

The tidal marsh restoration approach overall is stated generally enough to avoid much criticism; this is a dual strength and weakness. The proposal defers much of the substance of the tidal marsh restoration design to subsequent (post-grant) phases, and some are deferred to later phases of the project than would ordinarily be optimal. The proposal would be strengthened by shifting some of the later-phase tasks earlier in the project, especially preliminary comparative study of candidate sites and restoration designs. The proposal relies on ECAT criteria and site availability or other arbitrary factors to determine the selection of the acquisition site.

Panel Summary:

The approach for most aspects of the project is well designed and appropriate. However, the approach for addressing the water quality objective is not adequate; the water quality objective is not really addressed. Other approach strengths: land acquisition selection factors are well defined; developing restoration project “success criteria”; and, conducting “review of other restoration projects to utilize an adaptive management approach in developing the restoration plan”

1c1) Has the applicant justified the selection of research, pilot or demonstration project, or a full-scale implementation project?

Summary of Reviewers comments:

The project itself may be construed as either a demonstration project or Full-scale Implementation of tidal restoration, since there is only one other contemporary tidal restoration project in progress in the Suisun Marsh area (Montezuma Wetlands), and it is at the extreme east end of the Marsh in a different salinity regime.

Panel Summary:

Yes; a pilot-demonstration tidal marsh restoration project. It is justified in that it has the potential to generate useful information on restoring diked marsh to tidal marsh and will contribute to ERP goals.

1c2) Is the project likely to generate information that can be used to inform future decision making?

Summary of Reviewers comments:

Reviewer did not answer this question.

Panel Summary:

Yes, if the monitoring period is of sufficient duration to assess the ecosystem responses (and thus benefits) of restoration actions (a critical project success factor). The proposed project has the potential to generate useful information on the effectiveness of techniques for restoring diked marshes to functional tidal marsh; hydrodynamic, topographic, sedimentation, and nonnative invasive species factors affecting tidal marsh restoration; and the ecological benefits of marsh restoration, especially regarding fish and hydrodynamic and sediment processes.

2a) Are the monitoring and information assessment plans adequate to assess the outcome of the project?

Summary of Reviewers comments:

The project defers detailed planning of these elements, and proposes their development only generally. The element regarding habitat-population relationships of special status species in restored habitats is not articulated. Basic elements of the monitoring plan should not be deferred until later stages of the project, but should be integrated closely with restoration designs that are adapted to the constraints and opportunities of the site.

Panel Summary:

The monitoring and assessment plans are described only very generally; there is little detail. More specifics are needed. Topographic/geomorphic and hydrodynamic elements are not included in the post-breach monitoring and assessment plans; they are in the pre-project monitoring program. The plans include the necessary biological, water quality, and project success criteria elements to assess project outcome. The duration of monitoring after restoration actions are completed to assess the ecosystem response to actions is not stated; this is a weakness. The proposal states that monitoring will be incorporated into a Suisun Marsh wide program which is a positive step in integrating monitoring efforts. The adaptive management section is good, including the utilization of “preliminary data being conducted at other restoration sites in the Bay-Delta”.

2b) Are data collection, data management, data analysis, and reporting plans well-described, scientifically sound and adequate to meet the proposed objectives?

Summary of Reviewers comments:

See 2a comments.

Panel Summary:

There is only a general description of the data collection (i.e. monitoring) plan; some necessary monitoring elements may not be included (see 2a response). There is insufficient information to assess if the monitoring plan is scientifically sound because it will not be developed until Phase II. Data management (handling and storage) and reporting are adequate. Data analysis is not discussed.

3) Is the proposed work likely to be technically feasible?

Summary of Reviewers comments:

The proposal presumes rather than demonstrates the feasibility of its approach. This presumption is probably justified, but the proposal would be strengthened by reference to precedents (review of tidal brackish marsh restoration projects or accidental breaches) which demonstrate this.

Panel Summary:

The panel believes the proposed work is feasible and likely to be successful. However, the panel agrees with the individual reviewer that the proposal would be strengthened by reference to precedents.

4) Is the proposed project team qualified to efficiently and effectively implement the proposed project?

Summary of Reviewers comments:

Two of the Principal Participants are experienced in management of Suisun Marsh non-tidal wetlands, and one is a qualified engineer with expertise in hydrodynamic modeling of tidal systems. The core team (not advisory team) need to include independent, qualified, and experienced hydrologists, engineers, geomorphologists, and ecologists with expertise in tidal marsh restoration within the region. Subordinating this expertise to a technical advisory committee which convenes intermittently may not be practical for day-to-day planning decisions of a tidal wetland restoration project, and could cause undue delays in the planning process. It is not clear that the proposed budget allows for this.

Panel Summary:

The principal participants appear to be qualified to implement most aspects of the project, except water quality. This is evident in the proposal inadequacies in addressing the water quality objective and hypothesis. None of the listed project technical advisors are identified as having water quality expertise relating to local effects of toxic contaminants and oxygen depleting substances (dissolved oxygen problems).

5)Other comments

None

INDIVIDUAL REVIEWER OVERALL EVALUATION SUMMARY RATING AND COMMENTS:

GOOD

Most of the limitations of the proposal are inherent in the type of the proposal, and do not reflect deficiencies in its scientific merit, prospects for environmental benefits, or the qualifications of its proponents. Overall, the proposal has much basic, ineradicable merit, despite some misdirection in its emphasis in planning.

**Overall Evaluation
PANEL SUMMARY COMMENTS**

Proposal strengths are the approach and potential information and adaptive management benefits regarding restoring diked marsh to functional tidal marsh. The proposal provides good site selection criteria and has a very strong approach to the habitat restoration plan process. The proposal demonstrates a close linkage to most ERP goals. Project weaknesses: the objective and hypothesis regarding water quality benefits from restoration actions are inadequately addressed; and, the lack of detail regarding monitoring and assessment, particularly the monitoring period duration after completion restoration actions is not stated.

OVERALL PANEL EVALUATION SUMMARY RATING: VERY GOOD