

# Proposal Reviews

## #72: Chipps Island Tidal Marsh Restoration Study

Fishery Foundation of California

**Initial Selection Panel Review**

**Research and Restoration Technical Panel Review**

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#1

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## Initial Selection Panel Review:

### CALFED Bay-Delta 2002 ERP PSP Initial Selection Panel Review

**Proposal Number:** 72

**Applicant Organization:** Fishery Foundation of California

**Proposal Title:** Chipps Island Tidal Marsh Restoration Study

Please provide an overall evaluation rating.

#### Explanation of Recommendation Categories: Fund

- **As Is** (a proposal recommended for funding as proposed)
- **In Part** (a proposal for which partial funding is recommended for selected project phases or components)
- **With Conditions** (a proposal for which funds are recommended if the applicant contractually agrees to meet the specified conditions)

**Consider as Directed Action in Annual Workplan** (a proposal addressing a high priority action that requires some revision followed by additional review prior to being recommended for funding)

**Not Recommended** (a proposal not currently recommended for funding-after revision may be considered in the future)

#### Note on "Amount":

For proposals recommended as Fund As Is, Fund In Part or Fund With Conditions, the dollar amount is the amount recommended by the Selection Panel.

For proposals recommended as Consider as Directed Action in Annual Workplan, the dollar amount is the amount requested by the applicant(s).

<b>Fund</b>	
<b>As Is</b>	-
<b>In Part</b>	-
<b>With Conditions</b>	-
<b>Consider as Directed Action</b>	-
<b>Not Recommended</b>	<b>X</b>

Amount: **\$0**

Conditions, if any, of approval (if there are no conditions, please put "None"):

**None**

Provide a brief explanation of your rating:

**This project conforms to the CALFED ERP goal of restoring acreage in Suisin marsh. It could provide a good pilot project for reintroducing tidal action to the extensive areas of marsh in Suisin that are currently managed for waterfowl. The Technical Panel recommended that the project be revised according to their comments and that it be given a more scientific basis. The Selection Panel recommends that this project not be funded at this time because of critical concerns regarding the conceptual model. However, Chipps Island is a potentially important location for tidal marsh restoration and the proposers are encouraged to work with others involved in tidal marsh restoration across the estuarine gradient to further work at this site.**

# Research and Restoration Technical Panel Review:

## CALFED Bay-Delta 2002 ERP PSP Research and Restoration Technical Panel Review Form

**Proposal Number:** 72

**Applicant Organization:** Fishery Foundation of California

**Proposal Title:** Chipps Island Tidal Marsh Restoration Study

**Review:**

**Please provide an overall evaluation summary rating:**

**Superior:** outstanding in all respects;

**Above Average:** Quality proposal, medium or high regional value, and no significant administrative concerns;

**Adequate:** No serious deficiencies, no significant regional impediments, and no significant administrative concerns;

**Not Recommended:** Serious deficiencies, significant regional impediments or significant administrative concerns.

Overall Evaluation Summary Rating	Provide a brief explanation of your summary rating
-Superior	The panel felt that there were internal inconsistencies in the proposal regarding subsidence. If subsidence isnt a problem at this site then it may not be the best place to test the muted marsh application. They dont justify why CALFED should pay for the easement. There was a minimal amount of scientific literature cited. Since it is not time-sensitive, the proposal could be revised to address the issues discussed above and to develop a research plan that will result in a scientifically sound study. The regional panel ranked it high which makes the panel feel that if resubmitted it would be a strong candidate.
-Above average	
XAdequate	
-Not recommended	

1. **Goals and Justification.** Does the proposal present a clear statement of goals, objectives and hypotheses? Does the proposal present a clear justification and conceptual model for the project?

### Goals.

The goals and objectives are stated clearly. The map (Fig. 1) is confusing. The proposal states that they will restore 450 acres (or 420 acres depending on where in the proposal) of diked wetlands on the 950 acre island, some as fully tidal marsh and some as muted tidal marsh, and then possibly enhance marsh on the other 520 acres of the island. The proposal states that there is a 450 acre North Section, a 250 acre east section, and a 250 acre west section, but it does not work on the map.

Regarding Hypothesis 2, a reviewer says comparison between muted and openly flooded marshes should be interesting. But it is indicated that subsidence is not an issue here. They dont develop the biological reasons for why a muted marsh may benefit non-native species

(Hypothesis 3). How will the project determine the importance of the tidal marsh corridor (Hypothesis 4)? Hypothesis 5 seems to be how to build the berm not whether protection is needed or not.

**Justification.** A pilot/demonstration project is justified with the main goal being to restore marsh in this location to provide habitat for at-risk species. In Hypothesis 3 they don't say how non-native invasive species would be favored by the muted marsh. Some literature references would be nice here. With Hypothesis 4, determining the importance of the marsh corridor, they don't say how it will be tested. In Hypothesis 5, is the levee that is being built with a 10:1 slope different than the levees already there, i.e. would it not also accommodate invasive species? And why would it be a better means of testing whether protection of habitat from erosion is needed or not?

This project is a resubmission in which they have addressed the major concerns of the first round of reviewers that were 1) the area is already functioning as a non-tidal marsh, and 2) lack of scientific basis and experimentation. They discuss the first problem by addressing the value of the site for fish habitat, which is logical if tidal flow is restored. The second issue they address by proposing a study comparing fully tidal and muted marshes, but they don't really have a good experimental set up for this. They have two marsh areas they will compare, one of each type, so there are no replicates. Also because of the position of the two types with regard to the water edge, their shape and size, you would expect differences in circulation potential, etc. even if they were restored in the same manner.

**Reviewer:** Their conceptual model is in the form of hypotheses which makes it a little confusing. Diagrammatic models would have been helpful.

The conceptual models are not well documented.

2. **Likelihood of Success (Approach, Feasibility, Capabilities and Performance Measures).** Is the project likely to succeed based on the approach, feasibility and project team capabilities? Are the proposed performance measures adequate for measuring the project's success?

**Approach.** Their approach is to acquire the conservation easement, do baseline surveys, and then do the construction and monitoring. After 3 years they will propose another phase for full scale restoration of Chipps Island. A major goal of the project is to compare a fully tidal marsh to a muted marsh that allows controlled tidal flow through culverts or gates. The idea of the latter is to retain water on the marsh surface for a period of time to enhance sedimentation. It is an interesting approach. A few questions here: 1) What is the sediment load of the water that would be flooding both types of marshes? How much sedimentation is expected? 2) Have there been other studies dealing with sedimentation from the muted marsh design? I didn't see any literature cited as to the amount of sedimentation to be expected. There has been a lot of work in Louisiana on marsh subsidence and I'm surprised there was no literature cited from there dealing with sedimentation. I know they've done a lot of sedimentation research there. 3) Will there be more erosion along the channels to the water-control structure outlet when the water is released due to increased velocity in the more restricted pathway?

How much of a problem is subsidence? The applicants state that the entire island is unique in that it has little or no subsidence. So I'm not sure this is a good site to test the muted marsh theory. Although in another location in the proposal they say there is partial subsidence. It would have been useful for them to state what percentage of the two restoration areas are subsided and by how much.

**In the fully tidal portion, how many breaks will there be in the existing dike or will the dike be removed entirely?**

**Where exactly are the reference sites? Are these on the other two portions of the island that they say are geomorphologically distinctly different?**

**They say the project will address non-native invasive species including research into the relationship between inundation, salinity, and other habitat needs. These studies are not described.**

**Reviewer: It would have been useful for them to state what percentages of the two restoration areas are subsided and by how much since in one place in the proposal they say there is little or no subsidence on Chipps Island and another place they say there is partial subsidence. For example, they could say 10% of the area has subsided 6 inches or 40% has subsided 5 feet. The map was very confusing because it didnt mesh with the text in acreages. They suggest that there will be more predation of fish on the muted marsh, but if the water drains off completely the small fish are subjected to predation in the creeks. They dont develop a rationale for the statement that non-native invasive species are favored by the muted marsh.**

**Reviewer: The overall approach is well reasoned. Details regarding the experimental areas (e.g. how much subsidence?) and the monitoring design and procedures are lacking. They also failed to include measurements of sediment dynamics to test one of their key hypotheses.**

**Feasibility. The restoration is certainly feasible. Restoration-wise the project will probably be a success. Regarding the testing of the muted marsh hypothesis, some valuable information will come out of it, but it probably wont be a truly scientific test of the hypothesis. The site is owned by the Foundation so acquiring an easement should not present a problem. The location of this marsh in the Suisun Marsh seems a good site for restoration.**

**Reviewer: The experimentation involves no reps and the two test areas are not really equivalent. The full tidal has a different shape, size, and circulation potential than the muted tidal.**

**Reviewer: The approach is not documented in the detail necessary to assess feasibility.**

**Capabilities. The team appears well qualified and very experienced and will be able to conduct the work and have it result in a successful outcome.**

**Reviewer: The key to success is the adaptive management oversight team that is well constructed to deal with problems.**

**The team is composed of good water and sediment engineers with experience in the area.**

**Performance Measures. The monitoring plan is very well detailed in Table 1 for all but the plants. How will the vegetation, including the aquatic macrophytes, be mapped? aerial photography? ground truth data? GPS for locating specific plants of interest? A lot of detail was given for collecting fish data, but no detail on the vegetation assessment techniques.**

**Reviewer: The monitoring program for the animals is explained in sufficient detail but the methods for the plants are not as good and the methods to prepare the vegetation map are vague. How will a topo map be prepared? How will sedimentation be measured?**

**There are no performance measures based on the expected ecological responses.**

3. **Outcomes and Products.** Will the project advance the state of scientific knowledge in general and/or make an important contribution to the state of knowledge of the Bay-Delta Watershed? For restoration proposals, is the project likely to contribute to ecosystem restoration or species recoveries in a significant way? Will the project produce products useful to decision-makers and scientists?

**They list various reports as products/outcomes that will be helpful in executing other projects in the area. It would be nice if theyd publish papers in refereed journals as well so the results get broad distribution and are useful to others outside the local area taking on restoration projects.**

**Reviewer: There will be reports and a GIS database. The project would benefit from better mechanisms to share information with other agencies and the public.**

4. **Cost/Benefit Comments.** Is the budget reasonable and adequate for the work proposed?

**It is hard to say what construction costs, etc. will be before the design is complete. It might be best to fund the and restoration design plans and the pre-construction monitoring now and the easement acquisition, construction, and post-construction monitoring as a second phase.**

**The reviewer concurs and adds that acquiring the land for easement rights rather than total purchase is a big plus for the project.**

**Engineering costs appear reasonable as do monitoring if this includes the undescribed analysis of sediment dynamics. The development of the monitoring plan may be under-funded.**

5. **Regional Review.** How did the regional panel(s) rank the proposal (High, Medium, Low)? Did the regional panel(s) identify significant benefits (regional priorities, linkages with other activities, local involvement) or impediments (local constraints, conflicts with other activities, lack of local involvement) to this proposal? What were they?

**Rank High, restoring critical habitat in the Bay and Suisun Marsh**

**No local constraints, applicant is owner, good location on main channel, good potential habitat for species of concern.**

**This will be a first restoration project in the Suisun Marsh where CalFed wants to restore 5,000 to 7,000 acres to tidal marsh.**

**Good local participation and wide review.**

**It is suggested that the vegetation map follow DWR/DFGs mapping protocols.**

6. **Administrative Review.** Were there significant concerns about the proposal with regard to the prior performance, environmental compliance and budget administrative reviews? What were they?

**Prior Performance no review**

**Environmental Compliance not all permits are in hand yet but all appropriate permits and documents are listed. More time and money may be needed to obtain them.**

**Budget no problems**

**Miscellaneous comments:**

**The proposal should have been better written to eliminate confusion, i.e. map, hypotheses. The restoration and monitoring parts of the project could be successful. The experimentation described does not meet traditional research criteria, but some valuable information would come out of this pilot project that would be applicable to other restoration projects. The site itself looks very appropriate for restoration and for meeting CalFed goals.**

**External Scientific Review. 3 - Good (one is high side of good)**



## **Land Acquisition:**

**Proposal Number:** 72

**Applicant Organization:** Fishery Foundation of California

**Proposal Title:** Chipps Island Tidal Marsh Restoration Study

1. Is the site's ecological importance documented in the proposal?

Yes -No

If yes, please import relevant text and citations here:

**Chipps Island is located in Suisun Bay and is the southern-most extension of Suisun Marsh into the Bay. The island encompasses approximately 950 acres with three distinct parts: (1) North Section - a 450-acre diked waterfowl hunting area (commonly called duck clubs) with seasonal and permanent non-tidal wetlands; (2) East Section - a 250-acre tidal marsh water fowl hunting area with levees that is partially tidal via openings in the levees and culverts; and (3) West Section - a 250-acre tidal marsh waterfowl hunting area whose levees have eroded substantially over a period of many years. Though diked in the past and less so at present, the entire island is unique in that it has little or no subsidence. All three portions of the island contain permanent sloughs, ponds, and ditches that are remnants of historical agricultural activities on the island.**

**The islands three distinct habitat areas offer a unique natural laboratory to demonstrate the importance of tidal marsh within and adjacent to Suisun Bay to fish, waterfowl, and native plants. The three areas on the island have distinctly different geomorphologic characteristics that influence the ultimate form of the habitat restored. The Foundations diked marsh and the two adjacent managed areas have areas of partial subsidence and varying internal elevation from past management including agriculture and managed seasonal nontidal wetlands (duck club/waterfowl management). Slough connections, internal circulation, ditches, mudflats, ponds, shorelines, and levee form and function all differ, as do habitat and animal and plant communities. Tidally driven hydrodynamics differ between the three areas with the non-levee area having what appears to be some semblance of a natural tidal channel configuration and function. The two more recent managed areas have differing potential hydrodynamic characteristics because of levee design and function, and relative aspect and relationship with the surrounding Bay (the western boundary of the island forms the eastern boundary of Honkers Bay). The outer shoreline habitat and their function relative to the Bay also differ on at least three sides of the island. Because the island is within the varying salinity reach of the estuary, each area may also differ in salinity conditions. The location within the estuary where salinity is approximately 2000 EC units (often referred to as the X2 location) tends to be east of the island in drier years and west of the island in wet years. Therefore habitat function and the animal and plant communities can vary from season to season and year to year. These unique characteristics provide an opportunity to study the nature of native and non-native biological communities in different environmental and habitat conditions.**

**All three areas of the island retain various types of riparian habitat and varying degrees of corridor continuousness. On the managed areas, levees offer significant potential for riparian habitat.**

**The island is located in the low salinity (generally 0-10 mg/L) portion of the estuary that is habitat for chinook salmon, delta smelt, splittail, striped bass, and other fishes. The conversion of the present diked marsh portion of the island offers a unique opportunity to show potential value to these fish species from converting Suisun Marsh diked lands to tidal marsh. Chinook salmon, delta smelt, and splittail are often abundant at least seasonally in waters within and around Chipps Island. The island has potentially important spawning and rearing habitat for splittail and delta smelt, and has seasonally important fry and fingerling rearing habitat for juvenile chinook salmon.**

**Chipps Island is an essential element for a continuous band of tidal marsh along the southern shore of Suisun Marsh and is necessary to provide a fully functional tidal marsh including a corridor for wildlife and fish that migrate through the Bay-Delta. Chipps Island provides a key link in this corridor as it is on the boundary of the Bay and Delta and would encompass a major portion of the corridor along the southern edge of Suisun Marsh. The island also makes up most of the eastern boundary of Suisun Bay/Honker Bay. Acquisition and restoration of Chipps island provides a unique opportunity to meet CALFED goals and objectives.**

2. Is the owner's willingness to sell the site documented in the proposal?

Yes No

If no, please explain:

3. Is evidence of local government support for the purchase included in the proposal?

Yes No

If yes, please explain:

4. Is the use proposed for the site after its purchase clearly consistent with the site's general plan designation and zoning?

Yes No

If no, please explain:

**Because the project will not change use of the site (it remains a managed fish and wildlife habitat), the application forms did not gather information about zoning and general plan designations for the site. The application does not indicate local land use approvals are required, indicating either that the use is consistent by right with applicable zones or that the applicant does not understand local rules + polices.**

**The proposed project is consistent with the Suisun Resources Conservation District (SRCD) goal to restore 1500 acres of tidal marsh habitat within its zone of influence. The Foundation says that it and its cooperators will work closely with the SCRCD throughout the project phases to ensure that they are allowed input during each phase.**

5. Is the land mapped as prime farmland, farmland of statewide significance, unique farmland, or farmland of local importance?

-Yes No

If yes, please explain the classification:

Is the site under a Williamson Act contract?

-Yes No

Will use of the site change from agriculture after its purchase?

-Yes -No Not Currently in Agriculture

6. Is this a time-sensitive acquisition opportunity, according to the proposal?

-Yes No

If yes, please import relevant text here:

Other Comments:

## Bay Regional Review:

**Proposal Number:** 72

**Applicant Organization:** Fishery Foundation of California

**Proposal Title:** Chipps Island Tidal Marsh Restoration Study

Overall Ranking:    -Low    -Medium    **XHigh**

Provide a brief summary explanation of the committee's ranking:

**The regional panel favors action-oriented projects that secure and restore critical habitats in the Bay and Suisun Marsh, such as this one. The proposed work fulfills tidal marsh restoration goals of multiple agencies/plans, including CALFED; will provide habitat for at-risk species; is in an excellent location and has great potential for success. Prompt CALFED funding is necessary to ensure success.**

1. Is the project feasible based on local constraints?

**X**Yes -No

How?

**The project is appropriate for the site given its location on the main channel (on the southern edge of Suisun Marsh, and potential habitat for many species of concern), and the presence of good control areas on the island. This phase of the project can realistically be completed in the proposed time (monitoring necessary to evaluate the study will need to be in later phases). The applicant is the owner; permission not a problem. Land use regulations and neighbors are apparently not issues.**

2. Does the project pursue the restoration priorities applicable to the region as outlined in the PSP?

**X**Yes -No

How?

**PSP (Bay) Priority 1, bullet 2, the project will restore tidal marsh along southern side of Suisun Bay (Strategic Goal 4); bullet 3, the project will create muted marsh as first step toward full tidal; bullet 4, the project will convert seasonal pond (diked) to muted tidal, analyze which species benefit/lose by muted tidal restoration; bullet 5, the project will retrofit dikes to more natural gradient to encourage native species. Priority 3, bullet 2, the project will investigate relation between muted tidal and NIS invasions. Priority 5, bullet 6 (in part), the project will track species of concern and species diversity in tidal vs. managed marshes. The project will address Strategic Goal 4s objectives of increasing riparian habitat on the new low-gradient levees and to restore connectivity. PSP priority 8, the project will tie existing fisheries monitoring data from IEP, DFG, and USFWS to information collected on the Chipps Island (Chipps Island has 40 yrs of fish data). Strategic Goal 2, the project will develop a program to monitor zooplankton from tidal marshes to open water.**

3. Is the project adequately linked with other restoration activities in the region, such as ongoing implementation projects and regional planning efforts?

Yes -No

How?

**It is part of the Suisun Marsh Charter Program (this project will be the initial contribution to CALFEDs goal of restoring 5,000 to 7,000 acres of Suisun to tidal marsh in 7 years) per the Suisun Marsh Charter Implementation Plan (SCIP), and so helps carry out a widely supported ecosystem restoration plan, and will provide information for future projects in Suisun. Good control marshes exist on the island. The applicants will work closely with the Resident Fish Project Work Team of IEP.**

4. Does the project adequately involve local people and institutions?

Yes -No

How?

**As part of SCIP, local participation will be pursued, and it will receive the review of DWR, DFG, SRCD, BOR, and USFWS (at a minimum).**

Other Comments:

**Suggest (if appropriate) that the vegetation map follow DWR/DFGs mapping protocols/classification for Suisun Marsh.**

**Lack of CALFED funding may make this worthwhile project infeasible for the applicant/landowner.**

# External Scientific: #1

## Research and Restoration External Scientific Review Form

Proposal Number: 72

Applicant Organization: Fishery Foundation of California

Proposal Title: Chipps Island Tidal Marsh Restoration Study

### Conflict of Interest Statements:

I have no financial interest in this proposal.

XCorrect

-Incorrect

In the blank below please explain any connection to proposal, to applicant, co-applicant or subcontractor or to submitting institution (write "none" if no connection):

NONE

### Review:

Please provide an overall evaluation summary rating:

**Excellent:** outstanding in all respects;

**Good:** quality but some deficiencies;

**Poor:** serious deficiencies.

Overall Evaluation Summary Rating	Provide a brief explanation of your summary rating
-Excellent	<b>The applicants have a good project idea (examination of the benefits from different amounts of tides) and approach (application over four study sites), but specific details are lacking (monitoring sediment dynamics, performance measures). Without these details, it is difficult to imagine that such a detailed budget could be composed. Therefore, I rated the proposal as good.</b>
XGood	
-Poor	

1. **Goals.** Are the goals, objectives and hypotheses clearly stated and internally consistent? Is the concept timely and important?

**The goal of the project is "to restore Chipps Island to a fully functional tidal marsh." First, the applicant wants CALFED to pay for an easement on the central portion of the island. The pilot project is a large experiment for the 420 acre area achieved through: baseline monitoring of the entire system, a pilot project that includes engineering and construction to restore full and muted tides, and monitoring to inform management for full scale implementation (next phase). The proposal language is less than clear in many areas. The latter three of the four objectives presented could be rewritten as hypotheses, and these would be internally consistent with the goal and objectives listed above. The plan fulfills several of CALFEDs ERP goals and it could provide information useful for the program.**

2. **Justification.** Is the study justified relative to existing knowledge? Is a conceptual model clearly stated in the proposal and does it explain the underlying basis for the proposed work? Is the selection of research, pilot or demonstration project, or a full-scale implementation project justified?

**The study could provide an important contribution to understanding the role of tidal action in restoring marsh functions, especially self-maintenance and support of at risk species. The conceptual models are well articulated, supporting the project, but they are not well documented. The scale of the project is appropriate and if well designed, the work would provide a good test of their hypotheses.**

3. **Approach.** Is the approach well designed and appropriate for meeting the objectives of the project? Are results likely to add to the base of knowledge? Is the project likely to generate novel information, methodology or approaches? Will the information ultimately be useful to decision-makers?

**The overall approach of the project is well reasoned and designed to provide a detailed case study that will help to reduce uncertainties of the ERP and SCIP. However, details regarding the experimental areas (e.g., how much subsidence has occurred within the berm?), and the monitoring design and procedures are lacking, precluding evaluation of this aspect. The proposal also failed to include measurements of sediment dynamics to test one of their key hypotheses.**

4. **Feasibility.** Is the approach fully documented and technically feasible? What is the likelihood of success? Is the scale of the project consistent with the objectives?

**The approach is not documented in the detail that is required to assess feasibility. If the project is funded the chance of success appears to be very good; there are no novel approaches here. The team is composed of good water and sediment engineers with experience in the area.**

5. **Project-Specific Performance Measures.** Does the project include appropriate performance measures to measure success relative to the project's goals and objectives? Is there enough detail as to how the performance measures will be quantified? For restoration projects, are monitoring plans explicit and detailed enough to determine if performance measures will be adequately assessed?

**The proposal includes administrative milestones, but no measures based on the expected ecological responses. The plan with these details is a project task, and will be developed with the help of an existing science advisory group.**

6. **Products.** Are products of value likely from the project? Specifically for restoration projects, are products of value also likely from the monitoring component? Are interpretative outcomes likely from the project?

**Project reports and a GIS database are promised along with articles in peer-reviewed journals that will provide information for the CALFED program. The project would benefit from better mechanisms to share information with other agencies and the public, but this could be developed in a second project phase.**

7. **Capabilities.** What is the track record of applicants in terms of past projects? Is the project team qualified to efficiently and effectively implement the proposed project? Do they have available the infrastructure and other aspects of support necessary to accomplish the project?

**The project team appears well qualified to undertake and complete the work successfully.**

8. **Cost/Benefit Comments.** Is the budget reasonable and adequate for the work proposed?

**It is not explained why a conservation easement needs to be purchased by CALFED. There is some match identified, and if this is in cash, then the easement costs could be viewed as reduced. The engineering costs appear reasonable as do monitoring (\$450,000) if this includes the undescribed analysis of sediment dynamics. However, development of the monitoring plan appears under-funded (\$10,000).**

**Miscellaneous comments:**



## External Scientific: #2

### Research and Restoration External Scientific Review Form

Proposal Number: 72

Applicant Organization: Fishery Foundation of California

Proposal Title: Chipps Island Tidal Marsh Restoration Study

#### Conflict of Interest Statements:

I have no financial interest in this proposal.

XCorrect

-Incorrect

In the blank below please explain any connection to proposal, to applicant, co-applicant or subcontractor or to submitting institution (write "none" if no connection):

none

#### Review:

Please provide an overall evaluation summary rating:

**Excellent: outstanding in all respects;**

**Good: quality but some deficiencies;**

**Poor: serious deficiencies.**

Overall Evaluation Summary Rating	Provide a brief explanation of your summary rating
-Excellent	<b>Although I have rated the project good,I think it is likely to turn out to be on the high side of good and I would have used that if such a category were available. Most of the problems I had with the proposal was when they wrote about the project as an experiment in the traditional research sense. Without replication and uniformity of conditions it is an experiment leaning toward a pilot project/demonstration. The treatments are not "fixed", but may change over time as the adaptive management team evaluates the way the restoration is progressing and perhaps changes water flow or other parameters of the restoration process. What to do will become obvious with time. These experiences may be very helpful to pass on to other managers of other sites.</b>
XGood	
-Poor	

1. **Goals.** Are the goals, objectives and hypotheses clearly stated and internally consistent? Is the concept timely and important?

**A succinct statement of the project is given on page 7 - (conservation easement, baseline surveys, pilot experiment, post construction monitoring).**

**Hypothesis #1. This one is OK, however the outcome is guaranteed for the anadromous fish since they have no access unless the dikes are breached.**

**Hypothesis #2. This one is OK, however the initial information about the Chipps Island indicated that subsidence wasn't an issue there. Never-the-less the "muted" flooding should result in buildup since the water won't be allowed to completely drain off of the marsh. The comparison with the open flooded part of the north end and the two other portions of the island will be interesting.**

**Hypothesis #3. Their discussion of these is logical except that they don't develop the biological reasons for why they suggest the muted tidal marsh may benefit non-native species.**

**Hypothesis #4. The hypothesis is a valid one, but it is not clear to me from the paragraph that follows it how it will be tested? It is stated that, "The proposed project is designed to help determine the importance of this tidal marsh corridor." - but how?**

**Hypothesis #5. The hypothesis is that berms may be necessary to protect some tidal marsh from excessive erosion. The paragraph goes on to say that non-native species are growing on the berms where remnant berms are present. It seems that building a 10-1 slope levee is a test of how to build a berm for marsh protection without setting the stage for the invasion of the non-natives. How to build the berm seems to be the subject of the hypothesis that is being tested, not whether protection is needed or not.**

2. **Justification.** Is the study justified relative to existing knowledge? Is a conceptual model clearly stated in the proposal and does it explain the underlying basis for the proposed work? Is the selection of research, pilot or demonstration project, or a full-scale implementation project justified?

**The conceptual model is interwoven with the hypotheses and it is a little hard to see exactly what it is. It would have been helpful to have conceptual models in the form of diagrams of how they think the system is working and how it will work after the wetlands are restored. The project plan is based on existing knowledge or to some extent intuition based on experience. It is of the scale of a pilot study/demonstration project.**

3. **Approach.** Is the approach well designed and appropriate for meeting the objectives of the project? Are results likely to add to the base of knowledge? Is the project likely to generate novel information, methodology or approaches? Will the information ultimately be useful to decision-makers?

**The sections titled Approach, Feasibility, Performance measures, Data handling and storage, Expected products/outcomes, work schedule are clearly written, easy to follow, and very reasonable.**

**As I reviewed the goals I became immediately confused since it says on page1 that Chipps Island is 950 acres and is divided into three sections. The north section is 450 acres of diked non-tidal wetland, the south section is 250 acres that are partially tidal because of openings in the levees and culvert pipes, and the west section a 250 acre tidal marsh with substantially eroded levees. The Foundation has purchased the 450 acre parcel. A unique feature of the island is that it has little or no subsidence. Many marshes in that part of San Francisco Bay estuary had major subsidence problems when I tramped those marshes with Herb Mason 25 years ago. In a way the lack of subsidence on Chipps Island is good, but because of that it might no be the best site to test the "muted" marsh flooding strategy. I think it would have been good to tell the reader what the particle load of the water flooding the marsh will be (particle size distribution would be useful for the designers to know). It is confusing to me to read on page one about the 950 acres of the island**

and then look at Figure 1 and it seems to show much less (the north end seems to be about 250 acres rather than 450). It is stated that the muted marsh transition may favor non-native invasive species, but the authors don't develop a rationale for the statement. It is also suggested that there will likely be more predation on fish residents in the muted marsh. I guess that could be by other fish or wading birds. However, if the water drains completely off then so do the fish, unless they remain in very small pools. If the fish all leave then they are together in the creeks and the small fish are subject to predation there.

4. **Feasibility.** Is the approach fully documented and technically feasible? What is the likelihood of success? Is the scale of the project consistent with the objectives?

They have a good approach to restoring the area they are working with in this phase of the program. I believe with their adaptive management team in place they will have success in carrying out the objectives as stated in the first statement in the review. However, some of the proposal is not clear to me and part of the problem may be because they were trying to answer criticisms of an earlier proposal. They stated that an earlier version of this proposal was criticized in that the north end was a functioning habitat (non-tidal seasonal wetland) and was OK the way it was. Given the goal of the program is to restore tidal wetland around the bay for fish and other animals and plants, leaving it as an impoundment is logical. On the other hand, calling it non-functional doesn't work either. I know of few wetlands that are non-functional, what people mean when they use the phrase is that it doesn't fulfill the values that they have for the wetland. They prefer blackbirds to black ducks or fish to wading birds. Given the goals, the non-tidal seasonal wetland will not produce the optimum function. The second criticism was that the program lacked a scientific basis and an experimental foundation. This has been addressed in this version, but there are still questions in that area. I think a better way to do a project such as this one with public funding is to take one step at a time. For example, I would think it is best to fund the planning stage separate from the construction stage. Given that nearly two million dollars are at stake I would rather fund the pre-construction monitoring and the planning phase first and then fund the conservation easement, "pilot project" construction, and post-construction monitoring after the planning and specification are known. The project description speaks of experimentation, but the project is limited in that respect because there are no reps and according to Figure 1 the two test areas are not really equivalent. "Full tidal" has different shape, size and circulation potential than "muted tidal". That said, it doesn't mean that the project shouldn't be done. It is just that it is not subject to the same interpretation as a typical small scale experiment. The focus here is more on a pilot project testing and demonstration of what the researcher believe is what needs to be done based on their collective previous experience. I concur with their judgement based on what they have written.

5. **Project-Specific Performance Measures.** Does the project include appropriate performance measures to measure success relative to the project's goals and objectives? Is there enough detail as to how the performance measures will be quantified? For restoration projects, are monitoring plans explicit and detailed enough to determine if performance measures will be adequately assessed?

These are listed clearly and I think it will be easy to follow.

The section on "Applicability" read well and presented the points very well, but confusion still exists in my mind about the acres relative to Fig 1. Also on page 11 there is a statement in paragraph three that there are "areas of partial subsidence" whereas on page one paragraph two it says, " the whole island is unique in that it has little or no subsidence." What is an area of partial subsidence? An area either has it or it doesn't. The subsidence might be slight or severe? I would think the writers could give some ball park idea to the readers whether they should picture a situation where 10% of the areas has subsided 6 inches or 40% has subsided 5 feet.

**The tasks under the scope of work generally give sufficient detail at this point to make the reader comfortable with the program. The monitoring program for the animals is explained in sufficient detail that one feels very comfortable that the team is very competent to do the job. The methods for the plants are not as good and the methods that will be used in the preparation of the vegetation map (subtask 3.2) are vague and no details are given. I expect stereo-Color IR aerial photographs will be acquired and interpreted. Those maps will be verified with ground truth. I would also imagine that GPS techniques will be used to identify the position of plants of special interest. How will a topo map be prepared to show the initial conditions? How will sedimentation be measured?**

6. **Products.** Are products of value likely from the project? Specifically for restoration projects, are products of value also likely from the monitoring component? Are interpretative outcomes likely from the project?

**I think the team will be able to produce the products they list and that they will be helpful in executing other restoration projects around the Bay. It appears that their skills in monitoring are very good and they should be able to thoroughly document the changes from the pre-construction phase and through the changes that occur as the result of either the open marsh or the "muted" marsh. The adaptive management team will be able to use the monitoring data to adjust water flow and other parameters as needed.**

7. **Capabilities.** What is the track record of applicants in terms of past projects? Is the project team qualified to efficiently and effectively implement the proposed project? Do they have available the infrastructure and other aspects of support necessary to accomplish the project?

**The qualifications of the team are well documented and the team is very experienced. Figure 4 clearly show the organization and the responsibilities of the members of the team. Key to the success of the project is the "adaptive management oversight team" and it is well constructed to deal with the problems that will come up.**

8. **Cost/Benefit Comments.** Is the budget reasonable and adequate for the work proposed?

**It is a little hard to judge costs when some of the tasks are planning the details of what to do and how much earth needs to be moved, so I defer to their educated estimates. They have all worked in the restoration arena in the region and should have good intuition about the costs. I think acquiring the land for easement rights rather than total purchase is a big plus for the project**

**Miscellaneous comments:**

**none**

# External Scientific: #3

## Research and Restoration External Scientific Review Form

Proposal Number: 72

Applicant Organization: Fishery Foundation of California

Proposal Title: Chipps Island Tidal Marsh Restoration Study

### Conflict of Interest Statements:

I have no financial interest in this proposal.

Correct

Incorrect

In the blank below please explain any connection to proposal, to applicant, co-applicant or subcontractor or to submitting institution (write "none" if no connection):

none

### Review:

Please provide an overall evaluation summary rating:

**Excellent:** outstanding in all respects;

**Good:** quality but some deficiencies;

**Poor:** serious deficiencies.

Overall Evaluation Summary Rating	Provide a brief explanation of your summary rating
-Excellent	<b>Although the proposal could have been better written to eliminate confusion, I think the restoration and monitoring parts of the project would be successful. The experimentation described does not meet traditional research criteria, but some valuable information would come out of this pilot project that would be applicable to other restoration projects. The site itself looks very appropriate for restoration and for meeting CalFed goals. Perhaps fund it in two phases.</b>
<input checked="" type="checkbox"/> Good	
-Poor	

1. **Goals.** Are the goals, objectives and hypotheses clearly stated and internally consistent? Is the concept timely and important?

**The Fishery Foundation wants to purchase easement rights and restore 450 acres of diked non-tidal wetlands on Chipps Island in Suisun Marsh. One parcel will be restored to fully tidal wetlands; another will be restored to a "muted" tidal wetland, whereby water movement in and out will be controlled by water-control structures. These will allow water to be maintained on the marsh surface for longer periods of time so that more sediments will accrete on the marsh. The idea is that this will raise the elevation of the subsided marsh surface (although they say subsidence isn't a problem on the island). Ecological surveys will be conducted prior to and following construction.**

The goals and objectives are stated clearly. The item that confused me throughout the whole proposal was the map (Fig. 1). The proposal states that they will restore 450 acres (or 420 acres depending on where in the proposal) of diked wetlands on the 950 acre island, some as fully tidal marsh and some as muted tidal marsh, and then possibly enhance marsh on the other 520 acres of the island. The proposal states that there is a 450 acre North Section, a 250 acre east section, and a 250 acre west section, but from the map I don't see how that works.

2. **Justification.** Is the study justified relative to existing knowledge? Is a conceptual model clearly stated in the proposal and does it explain the underlying basis for the proposed work? Is the selection of research, pilot or demonstration project, or a full-scale implementation project justified?

A pilot/demonstration project is justified with the main goal being to restore marsh in this location to provide habitat for at-risk species. In Hypothesis 3 they don't say how non-native invasive species would be favored by the muted marsh. Some literature references would be nice here. With Hypothesis 4, determining the importance of the marsh corridor, they don't say how it will be tested. In Hypothesis 5, is the levee that is being built with a 10:1 slope different than the levees already there, i.e. would it not also accommodate invasive species? And why would it be a better means of testing whether protection of habitat from erosion is needed or not?

This project is a resubmission in which they have addressed the major concerns of the first round of reviewers that were 1) the area is already functioning as a non-tidal marsh, and 2) lack of scientific basis and experimentation. They discuss the first problem by addressing the value of the site for fish habitat, which is logical if tidal flow is restored. The second issue they address by proposing a study comparing fully tidal and muted marshes, but they don't really have a good experimental set up for this. They have two marsh areas they will compare, one of each type, so there are no replicates. Also because of the position of the two types with regard to the water edge, their shape and size, you would expect differences in circulation potential, etc. even if they were restored in the same manner.

3. **Approach.** Is the approach well designed and appropriate for meeting the objectives of the project? Are results likely to add to the base of knowledge? Is the project likely to generate novel information, methodology or approaches? Will the information ultimately be useful to decision-makers?

Their approach is to acquire the conservation easement, do baseline surveys, and then do the construction and monitoring. After 3 years they will propose another phase for full scale restoration of Chipps Island. A major goal of the project is to compare a fully tidal marsh to a "muted" marsh that allows controlled tidal flow through culverts or gates. The idea of the latter is to retain water on the marsh surface for a period of time to enhance sedimentation. It is an interesting approach. A few questions here: 1) What is the sediment load of the water that would be flooding both types of marshes? How much sedimentation is expected? 2) Have there been other studies dealing with sedimentation from the "muted" marsh design? I didn't see any literature cited as to the amount of sedimentation to be expected. There has been a lot of work in Louisiana on marsh subsidence and I'm surprised there was no literature cited from there dealing with sedimentation. I know they've done a lot of sedimentation research there. 3) Will there be more erosion along the channels to the water-control structure outlet when the water is released due to increased velocity in the more restricted pathway?

How much of a problem is subsidence? The applicants state that "the entire island is unique in that it has little or no subsidence". So I'm not sure this is a good site to test the "muted" marsh theory. Although in another location in the proposal they say there is partial subsidence. In the fully tidal portion, how many breaks will there be in the existing dike or will the dike be removed

entirely?

**Where exactly are the reference sites? Are these on the other two portions of the island that they say are geomorphologically distinctly different?**

**They say the project will address non-native invasive species including "research into the relationship between inundation, salinity, and other habitat needs". I don't see where these studies are described or how they will do them.**

4. **Feasibility.** Is the approach fully documented and technically feasible? What is the likelihood of success? Is the scale of the project consistent with the objectives?

**The restoration is certainly feasible. I think that restoration-wise the project will probably be a success. Regarding the testing of the muted marsh hypothesis I think some valuable information will come out of it, but it probably won't be a truly scientific test of the hypothesis. The site is owned by the Foundation so acquiring an easement should not present a problem. The location of this marsh in the Suisun Marsh seems a good site for restoration.**

5. **Project-Specific Performance Measures.** Does the project include appropriate performance measures to measure success relative to the project's goals and objectives? Is there enough detail as to how the performance measures will be quantified? For restoration projects, are monitoring plans explicit and detailed enough to determine if performance measures will be adequately assessed?

**The monitoring plan is very well detailed in Table 1 for all but the plants. How will the vegetation, including the aquatic macrophytes, be mapped? - aerial photography? ground truth data? GPS for locating specific plants of interest? A lot of detail was given for collecting fish data, but no detail on the vegetation assessment techniques.**

6. **Products.** Are products of value likely from the project? Specifically for restoration projects, are products of value also likely from the monitoring component? Are interpretative outcomes likely from the project?

**They list various reports as products/outcomes which will be helpful in executing other projects in the area. It would be nice if they'd publish papers in refereed journals as well so the results get broad distribution and are useful to others outside the local area taking on restoration projects.**

7. **Capabilities.** What is the track record of applicants in terms of past projects? Is the project team qualified to efficiently and effectively implement the proposed project? Do they have available the infrastructure and other aspects of support necessary to accomplish the project?

**The team appears well qualified and very experienced and will be able to conduct the work and have it result in a successful outcome.**

8. **Cost/Benefit Comments.** Is the budget reasonable and adequate for the work proposed?

**It is hard to say what construction costs, etc. will be before the design is complete. It might be best to fund the restoration design plans and the pre-construction monitoring now and the easement acquisition, construction, and post-construction monitoring as a second phase.**

**Miscellaneous comments:**

## Prior Performance/Next Phase Funding: #1

New Proposal Number: 72

New Proposal Title: Chipps Island Tidal Marsh Restoration Study

1. Prior CALFED project numbers, titles, and programs: *(list only projects for which you are the contract manager)*

**CALFED # 98-B25, USBR # 99-FC-20-0027, Cosumnes River Salmonid Barrier Program (Granlees Diversion Dam**

2. Prior CVPIA project numbers, titles, and programs: *(list only projects for which you are the contract manager)*

N/A

3. Have negotiations about contracts or contract amendments with this applicant proceeded smoothly, without persistent difficulties related to standard contract terms and conditions?

Yes -No -N/A

If no, please explain any difficulties:

4. Are the status, progress, and accomplishments of the applicant's current CALFED or CVPIA project(s) accurately stated?

-Yes No -N/A

If no, please explain any inaccuracies:

**Applicant didnt address the current status of the CALFED project possibly due to the unrelated natural of the two projects. However, the applicant is just about to receive an increase in both time and dollars on their current agreement concerning Granlees Dam fish ladders due to differing site conditions. The progress on the remaining wok under the current Agreement**

5. Is the applicant's progress towards these project(s)' milestones and outcomes to date satisfactory?

Yes -No -N/A

If no, please explain deficiencies:

6. Is the applicant's reporting, records keeping, and financial management of these projects satisfactory?

-Yes No -N/A

If no, please explain deficiencies:



**Applicant needs to be reminded of responsibility under the current agreement, however, they do furnish documents once requested.**

7. Will the project(s) be ready for next phase funding in 2002, based on its current progress and expenditure rates?

-Yes -No N/A

If no, please explain:

Other Comments:

## **Prior Performance/Next Phase Funding: #2**

**New Proposal Number:** 72

**New Proposal Title:** Chipps Island Tidal Marsh Restoration Study

1. Prior CALFED project numbers, titles, and programs: *(list only projects for which you are the contract manager)*
2. Prior CVPIA project numbers, titles, and programs: *(list only projects for which you are the contract manager)*

**11332-01-G006 Lower Calaveras River Salmon and Steelhead Life History/Limiting Factors Analysis. Program: AFRP.**

3. Have negotiations about contracts or contract amendments with this applicant proceeded smoothly, without persistent difficulties related to standard contract terms and conditions?

Yes -No -N/A

If no, please explain any difficulties:

**Yes (see comments)**

4. Are the status, progress, and accomplishments of the applicant's current CALFED or CVPIA project(s) accurately stated?

Yes -No -N/A

If no, please explain any inaccuracies:

5. Is the applicant's progress towards these project(s)' milestones and outcomes to date satisfactory?

Yes -No -N/A

If no, please explain deficiencies:

**Yes (see comments)**

6. Is the applicant's reporting, records keeping, and financial management of these projects satisfactory?

Yes -No -N/A

If no, please explain deficiencies:

**Yes (see comments)**

7. Will the project(s) be ready for next phase funding in 2002, based on its current progress and expenditure rates?

Yes -No -N/A

If no, please explain:

Other Comments:

**The applicants reporting, record keeping, and financial management for the described CVPIA projects is satisfactory. Both referred CVPIA projects are still active. CVPIA project 11332-00-J019 has been delayed one year due to state matching funds issues that are well beyond the applicants responsibility. The applicants have the required management capacity, flexibility and field experience to conduct this restoration project.**

## **Environmental Compliance:**

**Proposal Number:** 72

**Applicant Organization:** Fishery Foundation of California

**Proposal Title:** Chipps Island Tidal Marsh Restoration Study

1. Are the legal or regulatory issues that affect the proposal identified adequately in the proposal?

Yes -No

If no, please explain:

**Although not all permits are checked off on the Compliance Checklist, all appropriate documents and permits are listed under Scope of Work in Table 1.**

2. Does the project's timeline and budget reflect adequate planning to address legal and regulatory issues that affect the proposal?

-Yes No

If no, please explain:

**More time and money may be needed to obtain the proper permits and complete the supporting documents.**

3. Do the legal and regulatory issues that affect the proposal significantly impair the project's feasibility?

-Yes No

If yes, please explain:

Other Comments:

## **Budget:**

**Proposal Number:** 72

**Applicant Organization:** Fishery Foundation of California

**Proposal Title:** Chipps Island Tidal Marsh Restoration Study

1. Does the proposal include a detailed budget for each year of requested support?

Yes -No

If no, please explain:

2. Does the proposal include a detailed budget for each task identified?

Yes -No

If no, please explain:

3. Does the proposal clearly state the type of expenses encompassed in indirect rates or overhead costs?

Yes -No

If no, please explain:

4. Are appropriate project management costs clearly identified?

Yes -No

If no, please explain:

5. Do the total funds requested (Form I, Question 17A) equal the combined total annual costs in the budget summary?

Yes -No

If no, please explain (for example, are costs to be reimbursed by cost share funds included in the budget summary).

6. Does the budget justification adequately explain major expenses?

Yes -No

If no, please explain:

7. Are there other budget issues that warrant consideration?

-Yes No

If yes, please explain:

Other Comments: