

Draft Individual Review Form

Proposal number: 2001-B203-1

Short Proposal Title: Invasive Spartina project

1a) Are the objectives and hypotheses clearly stated?

Provide detailed comments in support of your conclusion

Objectives are concisely stated in the Project Description and are threefold:

1) Expand planning and implement control of invasive Spartina to reduce existing stands and to prevent its expansion

2) Investigate the impacts of 'ecologically engineering' species such as nonnative Spartina and investigate how hybridization (introgression) with native Spartina may lead to endangerment of purely native genotypes.

3) Develop a regional network to monitor, detect, and prevent spread of invasive nonnative species in the intertidal zone.

The hypothesis is put forward that expansion of nonnative Spartina in the South Bay and its exclusion from San Pablo and Suisun Bays is a practicable endeavor, presuming that limited genetic introgression has occurred in these areas.

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

Provide detailed comments in support of your conclusion

The conceptual model is laid out in detail in the Statement of the problem and graphically in figures 2a and 2b. Invasive, nonnative Spartina alterniflora is competitively dominant over native congeners, and has a wider range of colonization ability. The nonnative species' more extensive above- and below-ground growth accelerates processes of sediment accumulation and stabilization, thereby 'engineering' changes in the natural progression of ecologically driven geomorphological development. Additionally, hybridization of nonnative and native Spartina species is likely to promote genes that maintain competitive phenotypes, and this introgression could lead to local extinctions of the native species. Changes in the extent of mudflat areas due to invasion by nonnative Spartina would also have negative impacts on seasonal use of the area by migrating and resident shorebirds.

This model provides substantial basis for concerns and development of controlling action with respect to further expansion of invasive Spartina alterniflora in the area.

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

Provide detailed comments in support of your conclusion

The proposed activities display considerable thought, and the combined exploration of molecular genetic techniques and efficacy trials of herbicides should result in methods for identification of invasive Spartina and invasive hybrids, and methods for eradication/control of these stands. Prioritization of areas based on known centers of shorebird use will make this demonstration project more effective towards full-scale implementation

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

Provide detailed comments in support of your conclusion

Yes. Given previous research efforts showing that nonnative Spartina can be genetically identified, the proposal is to now demonstrate that such identification can be undertaken on a much broader scale. Experimental treatments with herbicides in combination with other control and eradication measures are vital to show that Spartina stands can be removed once identified.

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

Provide detailed comments in support of your conclusion

Yes. Establishment of a genetic index of hybridization coupled with correlates of plant growth and form may result in expediting identification of invasive Spartina in the future. Additionally, understanding the ecological implications of gene flow among Spartina species may become an important tool in future control efforts. Control and eradication trial proposed will face difficult logistical problems and the solution of these problems is needed to move into implementation phase. Targeted effects on control of nonnative Spartina with minimized effects on T/E species will be important for triage decisions in future.

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

Provide detailed comments in support of your conclusion

Plans appear to be more than adequate for monitoring and assessment: extensive mapping and prioritization using GIS with GPS ground truth, training of personnel in aims and need of the proposed work, and website development to coordinate the efforts of the many collaborators and stakeholders.

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

Provide detailed comments in support of your conclusion

Hardware, software, and personnel will be in place to collect, manage, analyze, and report on the data and ensure its quality.

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

Provide detailed comments in support of your conclusion

Genetic identification and control are likely to be quite feasible given the success of such efforts in other locations, the rapid development of control efforts by others, and the sharing of this information. Previous efforts have identified practical constraints (access, equipment limitations, phenology of plants and animals in control areas) that are likely to be overcome.

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

Provide detailed comments in support of your conclusion

The proposed team appears to be very qualified in aspects of administration, project management, coordination, and scientific research. Given the broad experience and track record of the proposed team, the project should be efficiently and effectively implemented.

Miscellaneous comments

Outstanding in all respects.

<p>Overall Evaluation Summary Rating</p> <p><input type="checkbox"/> Excellent</p> <p><input type="checkbox"/> Very Good</p> <p><input type="checkbox"/> Good</p> <p><input type="checkbox"/> Fair</p> <p><input type="checkbox"/> Poor</p>	<p>Provide a brief explanation of your summary rating</p> <p>Previous efforts by this team have demonstrated the feasibility of their proposed scaling-up to pre-implementation levels. The proposal is very well reasoned and has a great probability of success.</p>
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