Panel Scientific and Technical Review Form

(Note: Review comments will be anonymous, but public.)

Proposal number:_J-201___ **Short Proposal Title:Bio Assessment of Green Sturgeon**

PROJECT SUMMARY: The green sturgeon is an anadromous, native fish that occurs in low numbers in our Bay/Delta system, but little is known about its life history. Phases I and 2 in progress (CALFED 98-C15) are concentrating on food consumption, metabolic, and growth responses; spawning, egg fertility, larval survival characteristics; and developing genetic techniques to distinguish green sturgeon from white sturgeon. Funding is requested for Phase 3 to determine 1) environmental tolerance limits and behavioral tendencies, stress responses, and swimming performance; 2) reproductive characteristics and temperature influences on larval development; 3) genetic analyses to distinguish between early life history stages of green sturgeon and white sturgeon; 4) telemetry to assess spatial distribution of the species; and 5) extension of the CDFG sturgeon tagging period to increase green sturgeon captures for mortality rates and abundance determination.

Explain connection to proposal, to applicant, co-applicant or subcontractor or to submitting institution (write "none" if no connection): NONE

1a) Are the objectives and hypotheses clearly stated?

Summary of Reviewers comments:

Yes.

Panel Summary:

This is an excellent proposal with clearly stated objectives and hypotheses. Very little is known about green sturgeon life history and this project will supply much needed data on the physiology and genetics of this species. There are several hypotheses separated out by task and objective. Hypotheses are discrete and could be evaluated independently of the others if partial funding were granted.

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

Summary of Reviewers comments:

The conceptual model describes causal interconnections among key ecosystem components of the project. The model demonstrates how physical and biotic system components respond to anticipated stressors or limiting factors. The model links green sturgeon life history in the Sacramento-San Joaquin watershed ecosystems (rivers, including bypass, and estuary) to the Pacific Ocean. There is a short discussion and a flow chart relating life history and certain limiting factors. The relation ship of the tasks to the model could use a better explanation.

Panel Summary:

The conceptual model is clear and life history uncertainties are defined by life stage and function.

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

Summary of Reviewers comments:

I believe the approach is quite complete and would meet the objectives of the project proposal.

Panel Summary:

The experimental design and methods, including the parameters measured and existing knowledge are clearly and well described. The data analysis and interpretation are appropriate for meeting goals of the project and promise to be well integrated with the conceptual model.

1c1) Has the applicant justified the selection of research, pilot or demonstration project, or a full-scale implementation project?
Summary of Reviewers comments:
This is clearly a research project to gather pure information for further development. Applied science

Panel Summary:
This is a targeted research project. Very little is known about green sturgeon. This project seeks to reduce the uncertainty regarding green sturgeon to support restoration goals and strategies.

1c2) Is the project likely to generate information that can be used to inform future decision making?
Summary of Reviewers comments:
The applicants have clearly justified the selection of the project. The green sturgeon is classified as a CALFED At-Risk Species (Priority Group I), but very little is known about its life history. This information is critical to protection of the species and the project's focus is on resolving unknown life history traits and furthering understanding of important habitats essential to sensitive life stages, such as eggs, larvae, and juveniles.

Panel Summary:
There is a dearth of information on green sturgeon in the Bay-Delta system. This project will supply much needed information that could relate to green sturgeon managment and recovery/restoration actions.

2a) Are the monitoring and information assessment plans adequate to assess the outcome of the project?
Summary of Reviewers comments:
CALFED-supported biological studies with green sturgeon are ongoing (Project No. 98-C15). For many aspects of the current project, the experimental approach, design, methods, and analyses have already been subjected to rigorous discussion and review.
I believe this factor has been adequately addressed. A more complete assessment of data collection etc is in the appendix. QA/QC has been identified as a work product requirememt.

Panel Summary:
Yes. The plans are adequate, and the project proponents have demonstrated through past performance that they are highly qualified to assess project outcome and communicate results to CALFED and the scientific community.

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:
Yes. See 2a).

Panel Summary:
Yes. Phase 3 plans are sound and well presented. Phases 1 and 2 have proven to be logical and appropriate.

3) Is the proposed work likely to be technically feasible?
Summary of Reviewers comments:
Ambitious but feasible. The methods described are widely used. The electronic tags are widely used. The genetic techniques proposed are already been used with success. UC Davis has the equipment necessary to do the laboratory work.

Panel Summary:
The proposed work is technically feasible.

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

Summary of Reviewers comments:
Yes. The applicants have attempted to utilize other agency and NGO research efforts to integrate data collection and a range of scientists from both agencies and academia.
The project team is extremely well qualified to efficiently and effectively implement the proposed project. The project is ongoing and the team has already produced peer-reviewed papers. The team members are well known and well published in the areas of their expertise. This is an excellent team with many years of experience in fish physiology, reproductive ecology, genetics, and fisheries science.

Panel Summary:
The applicants are well respected scientists with a track record of getting the job done. Past performance on early phases of this CALFED funded project have been highly successful. U.S. Fish and Wildlife Service has expressed interest in continuing this work to support green sturgeon recovery. CALFED goals would be well served by this study.

5) Other comments
There is a lot of missing info on sturgeon and the applicants have developed a pretty good proposal based on a dearth of info. Individual science reviews ranked this proposal very good to excellent.

Overall Evaluation Summary Rating **PANEL SUMMARY COMMENTS [include the consensus conclusions by the panel including the strengths and weaknesses of the proposal]**
The proposal follows a systematic approach. A suggestion to benefit the study would be to include a modeler at this phase of the project and incorporate a population dynamics analysis.

This is a well written, solid proposal. It promises good science and should be funded. The proponents should consider applying for Phase IV funds to synthesize overall results of this major effort. It was a pleasure to review the proposal.

XXX Excellent
Very Good
Good
Fair
Poor