Proposal Reviews

#125: Proposal to Coded-Wire Tag Wild Juvenile Chinook to Determine Contribution of Fry, Parr and Smolt Emigrants to Adult Recruitment from the San Joaquin Basin

S.P. Cramer & Associates, Inc.

Initial Selection Panel Review	
Research and Restoration Technical Panel Review	
San Joaquin Regional Review	
External Scientific Review	#1 #2 #3 #4
Prior Performance/Next Phase Funding	
Environmental Compliance	
Budget	

Initial Selection Panel Review:

CALFED Bay-Delta 2002 ERP PSP
Initial Selection Panel Review

Proposal Number: 125

Applicant Organization: S.P. Cramer & Associates, Inc.

Proposal Title: Proposal to Coded-Wire Tag Wild Juvenile Chinook to Determine Contribution of Fry, Parr and Smolt Emigrants to Adult Recruitment from the San Joaquin Basin

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).

Fund	
As Is	**-**
In Part	**-**
With Conditions	**-**
Consider as Directed Action	**-**
Not Recommended	**X**

Amount: **$0**

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

None

Provide a brief explanation of your rating:

The Selection Panel felt that the "new Technology" mentioned in the proposal was not adequately explained. A major problem was the uncertainty of success with the tagging and the likelihood of few results before the control expires. Who would collect and analyze this data? The Panel was also not satisfied with the overall thrust of the proposal and decided not to elevate the above adequate rating. This proposal is not recommended for funding.

Research and Restoration Technical Panel Review:

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

Proposal Number: 125

Applicant Organization: S.P. Cramer & Associates, Inc.

Proposal Title: Proposal to Coded-Wire Tag Wild Juvenile Chinook to Determine Contribution of Fry, Parr and Smolt Emigrants to Adult Recruitment from the San Joaquin Basin

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	**Preparation of the proposal was adequate in many aspects. Two issues raised by the regional review, training of crew and structure of the length of survival tests have considerable merit. The good, excellent, and good ratings by external reviewers indicated the approach and feasibility were adequate as a research project. The panel was uncertain about the acceptability of the applicants initiating a long-term monitoring project without significant involvement of responsible fisheries management agencies.**
-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?

   The objectives, hypotheses, and conceptual model for the project are stated in an exemplary manner.

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?

   The approach has some objectives that may not be entirely feasible. The panel was concerned about sample sizes and objective 3 determine if variation in freshwater environmental factors influences contribution rates by fry, parr, or smolts. Target sample sizes were presented in Table 1 and the applicants recognize that tag groups should include

50,000 individuals. However, sample sizes in Table 1 are as low as 10,000 fish for parr and smolt per year. The applicants indicate they will change tag codes about every two weeks and that strategy may allow them to draw some inferences about environmental factors, but the sample sizes will be very small. On the other hand, year to year comparisons over a three year period will be difficult if ocean survival rates change significantly and they can not account for those changes. The within year comparisons of fry, parr, and smolts do not have the same limitations. The applicants do address the issue of low adult returns under Feasibility. The applicants propose a 3 year study, but the panel believes meaningful results will only be achieved with a long-term monitoring program. Considerable deliberation at the regional level should take place before this project is started.

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?

   At some time in the future the community will be asking for evidence that ecosystem restoration is having some effect and these products will be useful if linked to environmental conditions. Uncertainty in ocean conditions and allowable harvest rates are beyond the control of the project but could affect the outcome.

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

   Most cost estimates were reasonable given the tasks required to meet the project objectives. However, the purchase of tagging equipment is not reasonable unless the equipment and technical support is not available from the responsible fisheries agencies.

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?

   The San Joaquin Regional Review expressed concern about training of the marking crew, short duration of the study (i.e., only three years for environmental data), and survival tests were not structured appropriately. The panelists have experience with CWT tagging and regional concerns have merit. The training of the crews is critical and that is a quality control issue that should be addressed by fisheries agency oversight. The second point concerning the short duration of the study is a concern, but it does not preclude a comparison of fry, parr, and smolt within a year. The third issue of the survival test not being structured appropriately was vague and not raised by any of the external reviewers. Other external reviewers ranked the proposal good, excellent, and good.

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?

   The Environmental Compliance reviewer states Start with a Section 7 Consultation and let the USFWS determine if a Section 10 Permit is required. If a Section 10 Permit is required for incidental take, a Habitat Conservation Plan is also required. The panel did not understand why a HCP would be needed.

Miscellaneous comments:

None

San Joaquin Regional Review:

Proposal Number: 125

Applicant Organization: S.P. Cramer & Associates, Inc.

Proposal Title: Proposal to Coded-Wire Tag Wild Juvenile Chinook to Determine Contribution of Fry, Parr and Smolt Emigrants to Adult Recruitment from the San Joaquin Basin

Overall Ranking: **X**Low **-**Medium **-**High

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

The committee reviewed this proposal and ranked it as having a low priority for the San Joaquin region. The committee had concerns over the training of the marking crews in the CWT procedure, the short duration of the study being able to adequately evaluate the effects of different environmental condition effects (wet/dry years)on the study and that the study 's survival test was not structured appropriately.

1. Is the project feasible based on local constraints?

   XYes **-**No

   How?

   Applicant has over five years of outmigrant research on the Stanislaus River. Has established contacts with local landowners, city governments, watershed interests and agency biologists, private researchers and the public. Currently, applicant has permits from CDFG for rotary screw trapping for the Stanislaus River. Would have to get coverage for new study for incidental take of steelhead in traps, but fall run is not listed, so ESA permitting not needed from federal services but CDFG permits likely needed. The length of the experiment is only 3 years and may not be long enough to gather enough data to adequately correlate river flows with the life stage of outmigrants and their contribution to the adult stocks and adult escapement.

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

   XYes **-**No

   How?

   Addresses Strategic Goals #1 (at risk species), #2 (ecological processes), #3 (harvested species), Multi-regional #6, San Joaquin #4 and #6 (at risk species, Adaptive management expts. for natural and modified flows), and CVPIA and AFRP goals.

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

   XYes **-**No

How?

Applicant's proposal is an outgrowth of current Tri Dam Project to monitor outmigrant #'s in RST on Stanislaus River. This monitoring helps to evaluate effectiveness of salmon restoration projects (i.e. gravel augmentation) that purportedly increase salmon spawning success. Also helps to correlate flow and water quality to outmigrant numbers and therefore spawning success. Project will correlate adult ocean harvest #'s and escapement #'s with life stage of outmigrant.

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

XYes **-**No

How?

Local CDFG biologists involved with the permitting and operation protocols of the RST. Local governments, landholders and environmental groups have previous interactions with the applicant on past work. Tri Dam Project is locally involved and will contribute approximately 40% of cost of proposed project.

Other Comments:

Concerned with the number of naturally spawned salmon in the Stanislaus River that the project intends to handle during the CWT procedures. The rate of injury or mortality may be unacceptable if the tagging crew is not very experienced with the procedure. In addition, the holding period is too short to adequately determine if the fish retains the CWT's. Reviewers were concerned that the survival test for tagged fish is too unstructured.

External Scientific: #1

Research and Restoration External Scientific Review Form

Proposal Number: **125**

Applicant Organization: **S.P. Cramer & Associates, Inc.**

Proposal Title: **Proposal to Coded-Wire Tag Wild Juvenile Chinook to Determine Contribution of Fry, Parr and Smolt Emigrants to Adult Recruitment from the San Joaquin Basin**

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:

<u>Excellent:</u> outstanding in all respects;
<u>Good:</u> quality but some deficiencies;
<u>Poor:</u> serious deficiencies.

Overall Evaluation Summary Rating	**Provide a brief explanation of your summary rating**
-Excellent	**I place this proposal as falling in the lower end of the good category but believe that the PI should consider other less expensive and more immediate indications of the possible success of fry releases and use of cheaper labor to accomplish tagging.**
XGood	
-Poor	

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

   I liked this proposals use of reasonable working hypotheses rather than dopey null hypotheses. Goals and objectives seemed clearly stated.

2. **<u>Justification.</u>** 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?

Justification was deficient in several important respects including near complete absence of published evidence that wild fry typically make a substantial contribution to returns of wild fish. It seems to me that scale pattern analysis might provide some evidence in support or in opposition of this proposition, especially when there are CWT groups of hatchery fish with known freshwater life history prior to release and also when hatchery fish have been released at different locations.

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 author claims that CWTs can now be applied to fish of approximately 30 mm but no reference is supplied. Conceptually, ideas make sense, but there is a serious lack of attention to CWT release group sizes that might be required to develop an adequate estimate of survival rates and also of the recovery data that could be used to develop indexes of survival rates or estimates of true survival rates. Release group sizes seem based more on recent rotary screw trap catches at Oakdale and Caswell than on tagging levels that might be statistically desirable. Again, no references were supplied to justify choice of presented tagging goals. Also, what would happen to project results if tagging goals could not be met? That problem is not infrequent with wild fish tagging studies. At page 12 the author presents a completely baffling table that may possibly address these issues.

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?

   Three years may likely be too short a period of time to be fortunate enough to catch a year during which survival of fry may be substantial (say 1-2%) rather than negligible (say 0.1-0.2%). Again, the costs and benefits of a longer-term tagging project (i.e., 6-10 years in duration) need to be played off against costs and benefits of scale-based analyses. For example, perhaps there is an otolith microchemistry signal that might establish the size at which returning chinook left freshwater for the marine environment. Perhaps scale analysis could do the trick? Objective 5 could not be realized based just on three years of data collection.

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?

   Performance is to be measured by achievement of proposed tagging goals.

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?

   The immediate project product, according to the authors, would be tagged wild chinook over three brood years in the Stanislaus R. Longer-term products (beyond the 3 year CALFED period) would include analysis of recovery data and relation of apparent survival rates to size at tagging (see misc. comments below). Three years duration is unlikely to make the long-term product of much value (see item 4. above).

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?

   OK.

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

   Costs seem OK except for costs of applying CWTs. At $35/hr, that cost smacks of using a high level biologist to carry out low level technician work.

Miscellaneous comments:

Project findings would not begin to become available until 2008 due to need to wait for full maturation of broods released in 2003, 2004 & 2005

External Scientific: #2

Research and Restoration External Scientific Review Form

Proposal Number: **125**

Applicant Organization: **S.P. Cramer & Associates, Inc.**

Proposal Title: **Proposal to Coded-Wire Tag Wild Juvenile Chinook to Determine Contribution of Fry, Parr and Smolt Emigrants to Adult Recruitment from the San Joaquin Basin**

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:

<u>Excellent:</u> outstanding in all respects;
<u>Good:</u> quality but some deficiencies;
<u>Poor:</u> serious deficiencies.

Overall Evaluation Summary Rating	**Provide a brief explanation of your summary rating**
-Excellent	**This proposal is generally strong and well-designed to meet the project goal of determining the contribution of out-migrating fry, parr and smolts to adult survival. However, there is an unstated assumption in the proposal that ocean survival in constant on an interannual basis. This is not correct and will make it very difficult to impossible to make the planned assessments of the influence of various factors upon juvenile to adult survival.**
XGood	
-Poor	

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

   The goal of this proposal is to assess separately the contribution of outmigrating fry, parr and smolts to adult fall-run salmon returns in the Stanislaus River. This goal as well as the intermediate objectives necessary to meet this goal are clearly presented. The hypotheses underlying the objectives of the proposal are very clearly stated and the objectives are well integrated and internally consistent. The concept of the proposal is very timely and meeting the goal of the proposal would provide information about the life-history of fall-run salmon important to managing these fish in the San Joaquin River basin. Indeed if the results of this proposal show that fry and parr contribute significantly to adult returns, the management

strategy of managing the water system to protect only down-migrating smolts may have to be modified.

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?

   It is extremely appropriate that the authors indicate that this is a research project. The justification that this project be considered as a research project is clear in the investigatory nature of the proposed research. The contribution of juvenile salmon younger than smolts to adult returns is unknown. Evidence that fry and parr contribute to adult return is extremely sparse. However, the conventional wisdom that juveniles smaller than smolts are insignificant contributors to adult recruitment has little factual support making it important to collect data to determine which life-history stage or stages are the major contributors to adult return. Because the timing of down-migration of smolts, parr and fry are different, the management implications of determining that down-migrating fry and parr do significantly contribute to adulte returns are large. Therefore, despite the scant evidence that fry and parr may contribute significantly to adult returns, meeting the goal of this research would improve our understanding of recruitment of fall-run salmon in the San Joaquin System. The authors do an excellent job of presenting their conceptual model and in using it as a framework to explain the basis for the proposed work.

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 approach detailed in the proposal is appropriate for meeting many of the objectives of the project; however, the proposal does have a major weakness. The major weakness of the project is the unstated assumption that ocean conditions are constant on an interannual basis. This assumption is inherent in the approach of conducting regression or ANOVA analyses of juvenile to adult survival as influenced by in-basin environmental conditions. It is well-known that there is considerable interannual variation in ocean survival. For example, it is known that ocean survival is generally poor in El Nino years. Without a plan for including the effect of varying ocean survival in their data analysis the authors can not meet the project objective of determining whether in-basin environmental factors during the juvenile residence period influence survival to adulthood. Not including the effect of variable ocean survival will make it extremely difficult to disentangle the complex in-basing factors influencing survival processes. If authors were to include variable ocean survival in their data analysis plan, this proposal would add an important piece of information--whether fry and parr contribute to adult return--to our knowledge of survival processes. This information would be a novel contribution to our understanding of survival of salmon in the San Joaquin system.

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 authors do an excellent job of documenting their approach and demonstrating the technical feasibility of the project. However, it is difficult to determine the likelihood of project success because of the short duration of the project. There is enormous interannual variability in the environment in this system making it difficult to understand the linkages between the environment and fish survival in the system. The authors address this explicitly by stating that they will seek funding to lengthen the study if early results are promising. The scale of the project--in this case the number of fish to be tagged is the most important scaling factor--seems

very appropriate. The authors indicate that they the number of fish they state as the number they plan to tag is a minimum and that they will tag more if possible. The minimum numbers, given the liklihood of low survival rates, would allow the authors to meet the project goal, but only barely.

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 stated performance measures are appropriate to the project assess the projects success relative to the project goal and objectives.

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?

   The planned products of this research project are extremely appropriate to the nature of the project. A variety of types of products designed to communicate the results to different audiences will be produced. The products will likely be useful to managers.

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 applicant is clearly well qualified to accomplish the work proposed. They have a long history of successful projects. The project team is includes individuals with an appropriate range of expertise to accomplish the work in an effective and cost-efficient manner. The project will be overseen by highly qualified senior scientists. All resources necessary to accomplish the project appear to be available.

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

   The nicely-detailed budget presented for the proposal is very consistent with the work necessary to meet the objectives of the proposal. Funds necessary to support the field work, data reduction and production of final products. The budget breakdown shows that the authors have carefully considered what equipment, facilities and personel are needed for the proposed work to succeed.

Miscellaneous comments:

The period covered by this proposal does not extend far enough into the future for the later maturing adults tagged during the proposal term to return. The authors state this clearly and that they will receive funding from the Tri-Dam Project to continue to accumulate CWT recovery data after the end of this proposal period. They also state that they will seek further CalFed funding if the project shows promise to warrant continuing tagging/tag recovery effort. It is of some concern that the proposal does not request funds to cover the time-period needed to complete the accumulation of CWT recoveries through the end of the maturity schedule of the cohorts tagged during the project period. However, the funds provided by the Tri-Dam Project should cover the time necessary to complete data aquisition and analysis.

The authors could correct the only major flaw in the proposal if they were to incorporate variable ocean survival in their data analysis.

External Scientific: #3

Research and Restoration External Scientific Review Form

Proposal Number: **125**

Applicant Organization: **S.P. Cramer & Associates, Inc.**

Proposal Title: **Proposal to Coded-Wire Tag Wild Juvenile Chinook to Determine Contribution of Fry, Parr and Smolt Emigrants to Adult Recruitment from the San Joaquin Basin**

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:

<u>Excellent:</u> outstanding in all respects;
<u>Good:</u> quality but some deficiencies;
<u>Poor:</u> serious deficiencies.

Overall Evaluation Summary Rating	**Provide a brief explanation of your summary rating**
XExcellent	**Overall the quality of the proposal is very high. However, note caveats under Feasibility (Q. 4)**
-Good	
-Poor	

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

   Goals , objectives, and hypotheses are clearly explained and internally consistent. The basic concept ? that fry out-migrants may contribute substantially to adult production under some (as yet poorly known) environmental conditions ? is timely, given competing uses for water in the basin.

2. **<u>Justification.</u>** 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 is well-justified, given existing knowledge (tagging and recoveries in the late 1980?s and early 1990?s). The conceptual model of varying contributions by different age classes of out-migrants is clearly stated and explains the underlying basis for the work, The full-scale implementation as proposed seems appropriate.

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 approach is well-designed and appropriate. While the project is unlikely to generate novel information (similar data already exists from past tagging efforts) the additional, similar types of information from the proposed study should be useful in assessing what environmental conditions contribute to out-migration as fry parr, or smolts, and on subsequent survival to adult salmon. This would be useful for managing flows and withdrawals.

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 well-documented and technically feasible. The likelihood of success depends crucially on two factors: the number of juveniles tagged (only partly within the control of the investigators, as this is likely to vary with environmental conditions) and survival from tagging to adult, which is of course entirely outside their control. Recent (mid-1990?s on) coast-wide trends in survival rates have generally been upward, making it more likely that sufficient adults will be captured to produce statistically useful results.

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?

   Appropriate performance measures (#?s tagged, statistical analysis and reporting of results, etc.) are included in the proposal. While an a priori power analysis would have been useful in assessing the proposal?s future results, the performance measures appear to be well-quantified.

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?

   The data and reports proposed are likely to be valuable in assessing contributions from out-migrants of different life stages and under differing hydrological conditions.

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?

   To the best of my knowledge, the applicants have a good track record, and sufficient experience to effectively implement the proposal. Infrastructure and support appear adequate to complete the project?s goals and objectives.

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

   The budget appears adequate for the proposed products (tagging, reports, statistical analysis, etc.).

Miscellaneous comments:

External Scientific: #4

Research and Restoration External Scientific Review Form

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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	**The information that might accrue from this work appears valuable, but it is not clear that it is possible to attain the sample sizes that are needed. The researchers should have the ability to outline the statistical strength expected and the power of their analyses to determine differences.**
XGood	
-Poor	

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

   The goals, objectives, and hypotheses are clearly stated and internally consistent. As identified in the Approach Section below, insufficient information exists to determine the feasibility of attaining the goals or having the ability to reject/accept hypotheses.

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?

If the study were to obtain the information identified, it appears it would provide valuable information that is presently lacking regarding the importance of chinook fry to adult returns. If chinook fry potentially provide large returns, then it will provide some basis for considering water use and stream habitat conditions during the fry outmigration.

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?

   This is the weak section of the proposal. There are several areas that have inadequate information to understand if the approach will provide answers to meet goals identified earlier. The investigators need to answer or address the following questions: 1) What is the efficiency of the screw traps to collect fry, parr, and smolts? To determine the contribution of fish from these different life stages will require some knowledge of their relative abundances as juveniles. Likely the traps selectively capture smaller fish at much higher rates because the small fish are unable to avoid the traps. 2) Will the expected adult recovery rates from the different juvenile life stages provide sufficient adult returns to allow determination of significant differences in in return rates between the different groups (provide the P-values, etc. to section 2.2.4)? or determine influence of environmental factors on the juveniles (3.2)? 3) Will expected adult returns provide sufficient numbers to develop useful correlations with environmental conditions? 4) If the juveniles are not externally marked (in addition to CWT) how is it possible to identify fish by marking group when they return to the proposed Stanislaus River weir (Activity 2.2.2)? 5) How is it possible to determine survival differences between juvenile wild and hatchery fish if the fish are not externally marked (Objective 4)? 6) Are expected adult return rates sufficient to make inferences about the impact of multiple environmental factors on suucees of juveniles migrating at different sizes and different timing within and between years?

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?

   It is not clear that goals outlined in the proposal are feasible to obtain based on the lack of information on sample sizes, detectible differences expected, and the apparent inability to determine differences between treatment groups, except on recovery of CWTs from dead adults. See issues outlined in the Approaches section above.

   Tables 2 and 3 provide ranges of expected recoveries. They are quite broad. If 10,000 fish marked provide only 0.1% recovery, it's likely too few fish on which to draw conclusions. See concerns about the adult weir as a means to increase sample sizes (will it lethally sample fish?).

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?

   No. See comments above. Just tagging fish and reporting on adult returns does not seem sufficient as a performance measure. It doesn't make much sense to mark fish without an a priori expectation that sufficient adult returns will accrue to provide meaningful results. If, on-the-other-hand the study is designed to mark juvenile fish and conduct statistical analyses on whatever adult returns occur to see if any statistical inferences are possible, then the study will likely succeed and may provide some useful information that is now lacking, but the goals and objectives will then need changing.

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?

   If sufficient sample sizes are available to determine the importance to adult returns of juvenile fish of different life stages, the proposed work may provide some valuable information for restoration purposes.

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?

   Based on the proposal, it appears that the proposers have the capability to mark fish and conduct statistical analyses on whatever adult returns occur. Whether sample sizes are sufficient to draw meaningful conclusions in not clear.

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

   Most of the budget covers costs associated with people needed to mark fish over an extended period of time and these costs seems reasonable.

Miscellaneous comments:

Prior Performance/Next Phase Funding:

New Proposal Number: 125

New Proposal Title: Proposal to Coded-Wire Tag Wild Juvenile Chinook to Determine Contribution of Fry, Parr and Smolt Emigrants to Adult Recruitment from the San Joaquin Basin

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*)

   11332-0-M007 Juvenile Salmon Outmigration Monitoring at Caswell

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

   XYes -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?

   XYes -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?

   XYes -No -N/A

   If no, please explain deficiencies:

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

   XYes -No -N/A

   If no, please explain deficiencies:

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

   -Yes -No **X**N/A

   If no, please explain:

Other Comments:

Environmental Compliance:

Proposal Number: 125

Applicant Organization: S.P. Cramer & Associates, Inc.

Proposal Title: Proposal to Coded-Wire Tag Wild Juvenile Chinook to Determine Contribution of Fry, Parr and Smolt Emigrants to Adult Recruitment from the San Joaquin Basin

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

   XYes **-**No

   If no, please explain:

   Start with a Section 7 Consultation and let the USFWS determine if a Section 10 Permit is required. If a Section 10 Permit is required for incidental take, a Habitat Conservation Plan is also required.

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

   XYes **-**No

   If no, please explain:

   Scientific Collecting Permit has been obtained. Did not find specific budget or timeline to obtain other permits.

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

   -Yes **X**No

   If yes, please explain:

Other Comments:

Budget:

Proposal Number: 125

Applicant Organization: S.P. Cramer & Associates, Inc.

Proposal Title: Proposal to Coded-Wire Tag Wild Juvenile Chinook to Determine Contribution of Fry, Parr and Smolt Emigrants to Adult Recruitment from the San Joaquin Basin

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

   XYes **-**No

   If no, please explain:

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

   XYes **-**No

   If no, please explain:

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

   XYes **-**No

   If no, please explain:

4. Are appropriate project management costs clearly identified?

   XYes **-**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?

   XYes **-**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?

   XYes **-**No

   If no, please explain:

7. Are there other budget issues that warrant consideration?

-Yes **X**No

If yes, please explain:

Other Comments: