DRAFT
Approach to Conducting DRERIP Analyses

BDCP anticipates three areas of interaction with the Ecosystem Restoration Program's (ERP) Delta Regional Ecosystem Restoration Implementation Plan (DRERIP) process: 1) collegial review of DRERIP species models, 2) training of BDCP technical experts in application of DRERIP conceptual models and the DRERIP evaluation process, and 3) conducting DRERIP evaluations of draft BDCP conservation measures.

1. Collegial Review

The ERP has proposed to release the draft DRERIP fish species conceptual models for collegial review to BDCP technical specialists from among the NGO and PRE caucuses and the SAIC Consultant Team. The purpose of this review is to provide additional peer review to the draft fish models and provide PRE and NGO technical specialists with an opportunity to familiarize themselves with the format and content of DRERIP species conceptual models.

NGO, PRE, and SAIC technical specialists identified for collegial review are listed in Table 1. These individuals should be the same individuals participating on behalf of these caucuses in the DRERIP evaluations of draft BDCP conservation measures (see below).

Table 1. PRE and NGO Technical Specialists Participating in the Collegial Review of DRERIP Conceptual Species Models

Technical Specialist Reviewers[1]		
PREs	**NGOs**	**SAIC Consultant Team**
Rick Sitts Pete Rhoads Bill Harrell Frances Brewster Mike Chotkowski.	John Cain Campbell Ingram	Chuck Hanson Rick Wilder

The process and schedule for conducting collegial reviews will be determined by the ERP.

2. DRERIP Conceptual Model Training Workshop

The ERP would conduct a one-day training workshop on the DRERIP process for technical specialists from the PREs, NGOs, Fishery Agencies, and the SAIC Consultant Team. SAIC would coordinate with ERP and DRERIP Adaptive Management Program Team (AMPT) to develop the format and content of the workshop to ensure that it meets

the needs of BDCP's anticipated application of DRERIP conceptual models and process as described below under *BDCP DRERIP Conservation Measure Evaluations*.

It is anticipated that DRERIP will develop 18 conceptual models. To provide a sufficient level of training in a one-day workshop, the workshop may include breakout groups to address each of the general categories of models, with workshop participants attending breakout sessions according to their area of expertise. A potential agenda for the workshop is provided in Table 2 and suggested BDCP participants are listed in Table 3.

Table 2. Potential Training Workshop Agenda

Time	Agenda Topic	Focus
8:00-9:30am	Overview of DRERIP models and process	▪ Overview of models and relationship among models ▪ Overview of DRERIP action evaluation steps
9:30-10:30	**Breakout Sessions-Group Scenario Orientation** ▪ Processes model group ▪ Habitat model group ▪ Species model group ▪ Stressors model group **Background to breakout sessions:** SAIC develops a complex conservation scenario comprised of multiple complementary conservation measures. Each group is charged with evaluating the scenario through at least one of the models in the model category.	▪ Each group reviews and familiarizes itself with the conservation scenario. ▪ SAIC provides each group with necessary assumptions and background information to apply models.
10:30-12:00	Conduct Group Evaluations of Conservation Scenarios	▪ Each group initiates its evaluation of the scenario. ▪ SAIC records deliberations using applicable DRERIP forms.
12:00-12:30	Lunch	
12:30-2:30	Continue/Complete Group Scenario Evaluations	
2:30-3:00	Group Summarization of Findings	▪ Group summarizes outcomes, etc. in DRERIP form format for presentation to full workshop. ▪ SAIC records outcomes in format for group presentation.

Time	Agenda Topic	Focus
3:00-4:45	Group Presentation of Evaluation Outcomes	▪ Each group presents its evaluation outcomes to the other groups. ▪ Group outcomes are compared and workshop participants collaboratively craft overall conservation scenario outcomes based on assessment of full positive/negative effects on processes, habitats, species, and stressors.
4:45-5:00	Closing Remarks	▪ Thanks to DRERIP/ERP for their time/effort. ▪ Brief overview of anticipated schedule/process for conducting BDCP DRERIP evaluations.

Table 3. Potential DRERIP Workshop BDCP Breakout Session Participants

Models	Technical Specialists[1]			
	PREs	**NGOs**	**Fishery Agencies**	**SAIC Consultant Team[2]**
Ecosystem Process ▪ Transport ▪ Sediment ▪ Organic carbon ▪ Aquatic foodweb				Chuck Hanson Armin Munevar
Habitat ▪ Tidal marsh ▪ Riparian ▪ Aquatic vegetation ▪ Floodplains ▪ Habitat linkage				Pete Rawlings Armin Munivar
Species ▪ Delta smelt ▪ Longfin smelt ▪ Salmonids ▪ Sturgeon ▪ Splittail				Rick Wilder Armin Munevar
Stressor ▪ Toxicity ▪ Pyrethroids ▪ Selenium ▪ Mercury ▪ Low DO				Paul Cylinder Armin Munevar Mike Aceituno Rick Wilder

[1]To be determined which breakout sessions apply to PRE and NGO participants. Would not include members of the AMPT.
[2]Armin Munevar would sit in on all sessions to gain an understanding of the role and application of hydrodynamic modeling in the DRERIP evaluation process.

BDCP DRERIP Conservation Measure Evaluations

Two types of DRERIP evaluations of draft BDCP conservation measures would be conducted: 1) coarse-level evaluations and 2) full DRERIP-evaluations. Conservation measures could be evaluated as single measures or as conservation "scenarios" comprised of bundles of related measures. The conservation measures development and evaluation processes referred to in the following sections are presented in Figure 1.

Coarse-Level DRERIP Evaluations

Coarse-level DRERIP evaluations will be conducted to provide an early, rapid assessment of the performance of draft conservation measures in achieving their stated objectives. Outcomes of coarse-level evaluations would be used by the SAIC Consultant Team and appropriate BDCP working groups and technical teams (WG/TT) to refine draft conservation measures as needed to improve their efficacy for achieving BDCP goals.

The purpose of coarse-level evaluations is to provide information necessary to refine and improve draft conservation measures as appropriate and to identify major ecological issues that may be associated with their implementation. While the DRERIP process is designed to apply every applicable DRERIP conceptual model to each evaluated action, such an approach would be excessive for coarse-level evaluation and would be schedule-prohibitive for the purpose of refining draft conservation measures.

Draft conservation measures will be evaluated using only the conceptual species models. Other models would only be used if they directly apply to the primary ecosystem processes, habitats, and stressors that the conservation measure is intended to address or outputs from which are needed to apply the species models. For example, floodplain restoration conservation measures address primarily restoration of food production and floodplain habitat. In this example, the evaluation would be conducted using the aquatic foodweb, organic carbon, and floodplain habitat models along with the applicable species models. This approach would focus on identifying the level of benefits that each conservation measure would provide for covered fish species. Compared to a full DRERIP evaluation, this coarse-level approach would not identify the full range of possible adverse effects (e.g., methylation of mercury) or ancillary benefits. It is expected that the evaluators will be able to identify likely issues associated with the conservation measures without applying all of the DRERIP conceptual models at this time.

Elements of coarse-level DRERIP evaluations are expected to include the following.

1. Scheduling Coarse-Level DRERIP Evaluations

Coarse-level DRERIP evaluations would be handled within WG/TTs on an as-needed basis as draft conservation measures are developed. SAIC will work with the co-chairs

of WG/TTs and technical experts (e.g, identified in Table 3) to schedule meeting times for evaluation teams.

2. Coarse-Level DRERIP Evaluation Teams

To be efficient, coarse-level evaluation teams will be formed as needed with the thought of engaging a small number of technical specialists that have a wide-range of applicable knowledge (e.g., individuals that have a good understanding of ecological needs of multiple fish species and ecosystem processes in the Delta). Evaluation teams will **not** be assembled to ensure representation of the WG/TT members, although group members may participate if they have the necessary expertise and training.

SAIC recommends that to the extent feasible, evaluation teams be populated with individuals that attended the workshop (Table 3). The timing for assembling teams and team participants will be determined by the timing that draft conservation measures are ready for evaluation and the nature of the conservation measures to be evaluated.

SAIC will facilitate the evaluations and be responsible for recording evaluation team outcomes.

3. Preparation for Coarse-Level DRERIP Evaluations

Working with the appropriate WG/TT, SAIC will identify the assumptions regarding implementation, operation, and management of conservation measures to be provided to the evaluation teams. These assumptions may be necessary for some conservation measures pending development of other relevant BDCP elements (e.g., operations criteria). SAIC will also identify technical information that is currently available that would inform the evaluations (e.g., location of infrastructure, topography, land surface elevations). SAIC will also coordinate with DWR to conduct Cal-Lite or other rapid modeling information that would be useful for conducting the DRERIP evaluations.

4. Sharing Evaluation Results

Following completion of each coarse-level evaluation, SAIC will report the results to the WG/TT involved. SAIC will also determine if evaluation results would help inform the formulation of draft conservation measures by other WG/TTs and distribute that information as appropriate.

Full DRERIP Evaluations

Full DRERIP evaluations are defined as evaluations that will apply the full suite of DRERIP conceptual models to the comprehensive set of conservation measures assembled from all of the WG/TTs. Evaluations would be conducted under the range of operations scenarios proposed for Near-Term and Long-Term implementation periods. Outcomes of the full DRERIP evaluations would be used to revise conservation measures

for inclusion in the Draft Conservation Strategy and to provide the information necessary to conduct the BDCP impact assessment.

Full DRERIP evaluations would involve a more formal evaluation process than the coarse-level evaluations with a larger number of expert participants in a workshop setting.,

Elements of full DRERIP evaluations are expected to include the following.

1. Develop Draft Comprehensive Conservation Measures

Following completion of the coarse-level DRERIP evaluations SAIC will revised draft conservation measures prepared by the WG/TTs and prepare a comprehensive set of draft conservation measures (see Figure 1). Following concurrence of the Steering Committee with the comprehensive set of draft conservation measures, SAIC will reformat the measures as DRERIP actions for use in the full DRERIP evaluations.

2. Scheduling Full DRERIP Evaluations

The Management Team and SAIC will be responsible for scheduling full DRERIP evaluation sessions. It is anticipated that, depending on the number of conservation measures to be evaluated, evaluations would be conducted as a series of three to seven 8-hour sessions, with appropriate breakout work groups.

3. Full DRERIP Evaluation Teams

Full DRERIP evaluation teams would be comprised of experts from the DRERIP program and technical experts from the PREs, NGOs, and SAIC Consultant Team. To the extent possible, individuals that participated in the coarse-level DRERIP evaluations would be included. It may be necessary to involve additional technical experts to address any conceptual models that may not have been applied in the coarse-level DRERIP evaluations.

4. Preparation for Full DRERIP Evaluations

In preparation for full DRERIP evaluations, SAIC will prepare information packets for the expert participants. Information packets would include a clear statement of the

evaluation purpose; description of the comprehensive set of conservation measures; a full description of proposed Near-Term and Long-Term operations criteria and facilities; results of CALSIMII, DSM2, RMA, and other hydrodynamic modeling; and action statements appropriate for DRERIP evaluation.. Information packets could also include summaries of the outcomes of the coarse-level DRERIP evaluations. Providing this information should facilitate the evaluation process by avoiding the need for teams to re-evaluate elements of conservation measures evaluated and carried forward from coarse-level DRERIP evaluations.

5. Reporting Evaluation Results

Following completion of full DRERIP evaluation sessions, SAIC will prepare a description of evaluation results. SAIC will present a summary of the evaluation results to the Steering Committee.

Figure 1. Overview of the BDCP Conservation Plan Development Process in 2008