

**BDAC - Ecosystem Restoration Work Group
May 20, 1996**

Attendees: (Attached List)

Mary Selkirk
Peter Rhoads
Cindy Darling
Stu Pyle
Ron Fujida
Pete Chadwick
Nat Bingham
Lee Lehman
Bruce Herbold
Gary Bodker
Dave Fullerton
Greg Zlotnik
Kate Hansel
Ann Yale
Bob Raab

Introduction: (MS)

1. Seeking questions and policy concerns on:
 - Ecosystem Strategy - Draft
 - Ecosystem Indicators - Revised Draft
 - Key indicator targets
2. Need for balance between technical and policy issues.
3. Emphasis is on restoring ecosystem functions.
4. We still need more resolution on vision and supporting strategy.
5. Need more clear focus on starting point: maybe ESA species.
6. Need to tie in with alternatives we are taking into Phase II.

Discussion/Comments:

PC: Need some fundamental thinking on ecosystem restoration objectives and how they relate to the vision and strategy.

Ecosystem Restoration Strategy: (RS)

1. Vision statement - broad consensus needed; statements that tech and non-tech people can understand and relate to.
2. Strategy - limiting factors approach evolves into stressors approach. GB: suggested "stressor" instead of limiting factors.
3. Habitat restoration - not targeting pre-disturbance.
4. Functions:
 - which are impaired,
 - which are preventing us from reaching our vision,

- which drive objectives, which are keeping us from reaching objectives.
5. Matrix chart - distributed.

Discussion/Comments:

RF: Liked it; need to add specific targets for restoration; how to restore (which systems/functions); need to add near the end of the second paragraph of strategy.

BH: Under problems (page 1): impaired functions have declined is a given, what is needed is what we are trying to restore, what impaired functions? Take these out of list.

GB: More specificity is needed! Targets to implement the vision. More resolution of targets needed. Two levels: recognize we can't restore everything; but we want a quantitative target for improving natural habitats. We won't be able to quantify all targets; we may have broader vision of targets. We need to specify key eco-indicators as well as targets. A good target is 25 % of predisturbance habitat. We need a major habitat increase. To reach this vision we need specific performance targets.

MS: Do the objectives identify the habitats we need to restore? GB: Yes, components identify the habitats, but the target levels are often not identified.

SP: On the vision on p.4: add must be managed with other uses (land, urban, industrial, and agriculture). On p.1: add ecosystem restoration and management for the long-term program. For the fourth bullet see his memo for suggested rewording. Need to include the concept of a continuing management program that includes monitoring. On GB's comment: 25% is too high a target??

GB: Key principles - increase self-sustainability and long-term adaptive management.

RF: Emphasis is needed on the positional vision further up in the paper after the mission.

PR: Vision is good. (1) needs to be attractive to garner support - concerned that specific targets may be a problem - would objectives be better? (2) Strategy - adaptive management is not coming through; needs this strong flavor that we intend to get smarter as we go.

RS: Once we have actions in mind we need a management structure for the future so we can take action and make changes, and guarantee funding and make institutional changes as needed. Need structure for the institutional program.

BH: Need a description of what we want to accomplish. Adaptive management should allow us to adjust our treatments, but should not alter our goals. We should stick with our targets/goals, but adjust how we get there as needed. We want to restore functions and healthy populations - this shouldn't change. Diagnostic goals could vary depending on adaptive management.

NB: Not sure we know what we want. Not sure on how to interpret data. Need a risk aversion approach. Risks are too high to bet on. Refer to his paper in IEP newsletter for history. We may not see results of our efforts right away (should plan for this). Concern that we stop doing something valuable before results show. Faith and commitment to program are needed.

LL: On track to fail: too much emphasis on fish. Need more emphasis on agriculture and wetlands. What about impacts to diked wetlands from breaching? Fisheries people have overtaken process. To sell program we have to enlarge our focus/vision.

BH/FW/BH: Need to integrate these other areas into vision. BH - I emphasize fish because that is my expertise - I did not intend that all emphasis should go toward fish.

KH: On page 5 under approach: "this effort ----" this is important: how do we begin to stage actions of importance? In left column are the species of concern as the starting point. Reorder/refocu towards are key concerns.

GB: Interim goals should be recovery of ESA species. We know a lot; a lot can be done now; should get explicit (targets) as to what we want to do. We should have a full suite of species to work on over the longterm to achieve complete restoration. One last point: in reference to 25% goal for habitat restoration - how do we know how much money to spend? We need targets to determine how much land and water to buy - we need to develop a long-term revenue stream to accomplish these things.

RF: We need strong scientific consensus on the strategy: should not focus just on species; need ecosystem scale thinking. Need adaptive management, because science marches on and is never really certain because of uncertainty and natural variability. This requires a humble approach that recognizes these uncertainties. It should be more than just monitoring; a scientific approach to management is needed. We need active experimentation - controlled studies. We should seek to really learn what we need to know.

CD: We can't yet say how these studies will turn out - thus uncertainty in our adaptive management approach is a given. Measures we are talking about are those that would help species and make populations more resilient to the rigors of nature.

PC: The stated objectives pose some problems: locations are wrong - don't tie them in with strategy; a fundamental rethinking of the strategy is needed. Something beyond simply "increasing" is needed. Need a more explicit and quantitative vision.

GB: Restore or Improve? Need to reflect our mission better in vision and strategy.

CD: The vision is the statement at the top of a pyramid - the quantitative targets/goals/objectives are at the bottom of the pyramid. Each step builds upon the one below.

KH: Components are in the matrix table.

BR: Page 2 problems: "causes"? Useful to know what are the most important and less important causes. What are the relative percentages of the component causes? What are the yardsticks to measuring the degree of the problems should be stated. No time frame is given for the actions. These actions should not be planned in a vacuum with other social and political problems. Seems like all we want is a quick pro-quo. How do we satisfy other users?

BH: If we attempt to restore a salmon habitat corridor, we should tie in the needs of other species - provide a balance. Coincide with the needs of other system components.

Adaptive management allows us to see what works best. We may not know why, only that it works.

LL: Page 6: too much fish. Page 7: technical conversions/comparisons needed? What about protecting the managed wetlands? We need to work together to sell the program.

NB: Seems like things are out of balance in Suisun Marsh part of strategy. Waterfowl are well represented. Need to construct more screens for fish. Need to restore the more natural balance. No one wants to degrade natural values of wetlands to waterfowl, but we have to overcome a lack of balance in managing these wetlands in the past. Problem with existing baselines for fish populations: they are artificially high because of hatcheries. Marking all hatchery fish would be premature. We don't know hatchery versus natural balance - operating in an area of ignorance. Habitat issues are paramount first. How much of populations have we replaced? Hate to see ducks versus fish conflict.

LL: 50,000 marked salmon were recently released in Suisun Marsh to test effects of unscreened diversions. Only one of these were collected on his property. We have to work together to sell the need for screening all the marsh diversions.

PC: There is a good reason that "% change" works for wildlife and not for fish: you should restructure strategy to show this. We should restructure documents to state what is reasonably possible and what is not. There is just so much land out there; and if you change to get more of one type, some other type will decline. If we need more tidal wetlands, can't we find other sources than managed wetlands?

SP: Concerned about relationship of this program to the changes that have occurred in the condition of the ecosystem that resulted from water project activities. A dual-conveyance approach with flow standards - need to identify the improvements and how we are going to change major projects with new facilities. We will be making major changes in water management. How will such changes effect the Ecosystem Restoration Program?

GB: All alternatives will have to meet the program objectives.

KH: Stu has a good point. We don't know what affect plumbing changes will have on our vision and the strategy to meet the vision. Need a paragraph to acknowledge this.

DD: The strategy would change with plumbing because the stressors would change. Vision and mission won't change.

KH: Put this concept into the strategy document.

GB: Partly agree. Elements will vary depending on alternative. However, we seem to be moving toward a single strategy for ecosystem restoration: we should not sacrifice our overall objectives to a single focus.

PC: The answer will vary more than Gary thinks.

GB: Need a diversity of habitat restoration to meet objectives. May manage system a little different depending on alt; but objectives won't change.

PC: The objectives are not well formulated.

MS: The vision/strategy/objectives should be to restore ecosystem functions regardless of the solution approach.

PC: The degree we can restore ecosystem functions is limited. The varies approaches we employ in alternatives for water management will affect these functions differently, which is why the ERP should vary more.

BH: It should be a general plan, but heavily carved - we can't have one size fits all.

AY: Utility of vision will help choose among alternatives. Should not expect tom come up with same level of implementation for each alternative.

KH: Need to bring out more on wildlife. Do we want to address protection of managed wetlands? Ecosystem functions is a big point - nothing in strategy that discusses functions - examples would help.

RF: ERP goals are bottom line. Goals are a way to help choose an alternative that best addresses restoration of functions. Restoration goals should lead us to choosing alternatives.

GB: Ecosystem goals and criteria for selecting alternatives and developing alternatives would guide development, evaluation, and selection of alternatives.

KH: We have four objectives - all interact.

SP: Purpose of alternative is to contribute to program and also support water supply management. These should also be addressed. Important not to forget that alternatives also contribute to restorations goals through their facilities.

MS: Summary: comments to help guide preparation of new draft. Need a proposal for a single restoration program.

RS: One week to send in written comments.

KEY INDICATORS - DD

1. Page 37-47 of indicator report.
2. Matrix table provided.

Comments/Questions

RF: page 36 of report states:

- bias to think at population/species level
- restoration measures don't think of larger scale functions
- purposely identified people who think at the ecosystem level

Page 28 diagram shows organization by tributary, river, Delta, Bay, and Ocean. Within these zones are primary habitat types. We should focus our attention at the landscape level. We should also use the knowledge gained by other restoration programs. There are over a hundred ecosystem indicators that are proxies for things more difficult to measure.

BRUCE HERBOLD MEMO - BH

Important to define what you want the ecosystem to do that it is not doing now:
Diagnostic goals. Don't change these goals - manage for them with different arrays of actions depending on alternative. Alter level of implementation depending on alternative to meet a constant goal. We should phrase these so that actions achieve these goals.

Diagnostic goals are key ecosystem functions that are at the source of the fish problems (things the system is not now doing well):

1. migration success
2. floodplain inundation
3. tidal wetlands

Look at measuring success of actions. Measure how well actions work toward goals.

Tidal Wetlands: the only such habitat left are dead-end sloughs.

Prescription goals: allow us to achieve diagnostic goals.

Comments/Discussion:

PR: Nutrients/food: aren't these problems as important as physical habitat? What about the clams?

NB: Floodplain inundation - much changed since the turn of the century. Constrictions near Rio Vista often caused flooding upstream in Delta. Bypass is only place left that gets flooded.

BH: Fish need reststops to wait out the flood tides. Suisun Marsh is one of these places. Need more tidal wetlands for this purpose.

RF: Page 34. Table of resource objectives: identifies functions that are most important:

- food web support as a function of reduced toxics
- physical habitat
- native biodiversity
- viable fisheries - depends on all the above.

BH: Should focus on what CALFED may be changing, not on other factors such as clams. These other processes are important, but not much should be done with these.

SP: Where these other factors overlooked by CALFED in coming up with actions?

BH: Should focus on actions that meet objectives.

PC: Habitat prescriptions: flood inundation has been overlooked.

GB: How useful will it be to have quantitative targets. This should be focus at staff and consultant level.

KH: Sounds good, but diagnostic ecosystem quality goals?

DD: This is a good forum for reducing confusing aspects of the overall process: test terminology and process through ERWG. Should CALFED be stating more as to why we are doing something?

Annie: Bruce has provided a helpful conceptual look at things. Helps to see why things are important.

KH: We have a full plate of species - this is the place to start in the Delta.

MS: CALFED strategy and revised matrix will reflect these new concepts.

GARY BODKER MEMO - GB:

1. Reality is a moving target, thus we need a process to give assurance to get where we want to go.
2. targets/timelines/resources needed.
3. Levels to set? Tiers? Priorities?
4. Try and address both crisis and parts we know best such as recovery levels of species of concern.
5. Important to proceed with objectives.
6. Processes and habitat are good approaches to meet objectives.
7. Meeting targets won't meet all goals: need near- and long-term targets to get broader system goals (non-species goals).
8. Near versus long term goals: natural functions, resilience, self-sustainability.
9. Near term address flash points, recovery of species of concern.
10. Long term: 5-30 years; milestones along way; make progress.
11. Need set of schedules: interim, intermediate, long term.
12. First, second, and third tier targets
13. Series of milestones.

Need to have adequate resources to do all this:

- Planning process - not too much or too little; we won't finalize until Phase II, but we need a good draft.
- Devote adequate resources to the job.
- Adaptive management program: conduct plan and oversee implementation
- financial institutions for long-term program
- look to ways to increase protections of key species and habitat during restoration.

Comments/Discussions:

PC: Important management items - phases.

SP: Would not do it this way, rather as follows: 1) establish a strategy - longterm; 2) implement initial actions to get started in short term; 3) adapt as needed to meet long-term strategy.

RF: New institution: recognition of need on page 51 of report. Need to monitor and respond to what indicators say. Need the power in institutional guarantees to buy land, water, and measure performance.

GB: Development of institutional system should not drag behind EIR. WE are not going to finalize in Phase I, but we need a good strawman. Good direction and focus. Near-long term local and system wide program cannot be deferred.

NB: Large scale approach to management needed. Gravel and sediment not addressed. Not addressing sediment piling up in reservoirs. Whole system sediment budget needed.

AY: Monitoring and enforcement need emphasis. Continue into Phase II: do some work on institutions.

SP: Need a new draft strategy by next meeting.

NEXT MEETING - MS

1. This group will continue in later phases of program. Smaller groups for some activities.
2. June 26th next meeting.
3. Ecosystem functions will be basis for targets.

PUBLIC QUESTIONS

1. What about cost/benefit of actions?
2. What about temperature control from New Melones Reservoir on Stanislaus River?
3. What about spawning gravel in San Joaquin tributaries?
4. Also quality of gravels.
5. What about water quality in San Joaquin River?
6. What about new development and its effect on the Delta?