

## CALFED ECOSYSTEM REVIEW TEAM MEETING - March 6, 1996

### INTRODUCTION

A meeting was held of the CALFED ERT to discuss:

- ecosystem restoration issues (follow-up to Asilimar meeting)
- the Core Action Package
- request by Category III for a list of actions
- to provide further opportunity for discussion of alternatives.

### PARTICIPANTS

- Dick Daniel - CALFED
- Sharon Gross - CALFED
- Steve Yeager - CALFED
- Rick Breitenbach - CALFED
- Rick Soehren - CALFED
- Lester Snow - CALFED
- Larry Puckett - CVPIA/CDFG
- Jim Arthur - USBOR
- Ken Lentz - USBOR
- Mike Thabault - USFWS
- Chris Mobley - NMFS
- Frank Wernette - CDFG
- Don Stevens - CDFG
- Jim White - CDFG
- Ed Littrell - CDFG
- Bill Laudermilk - CDFG
- Steve Ford - CDWR
- Lynn Oleary - CDWR
- Bellory Fong - CDWR
- Leo Winternitz - CDWR
- Kate Hansel - CDWR
- Bruce Herbold - EPA
- Loren Bottoroff - CALFED consulting team
- Jordan Lang - CALFED consulting team
- Tom Cannon - CALFED consulting team

### SOME KEY POINTS

- Other species should be of special concern for Core Actions: DFG asked that striped bass and other important species should be considered with Core Actions not just species of special concern. There was not much support for this suggestion. One participant stated that our canary (striped bass) may be dead. Another thought there

should be more focus on non-fish such as salamanders and clapper rails, as well as native habitats.

- **Role of Hatcheries:** Mixed feelings on hatcheries in ecosystem restoration program.
- **Activities and Evaluation as Core Actions:** There were suggestions that evaluations and monitoring activities should be included in core actions.
- **Staged Programs:** Actions should have staged implementation, starting with planning - this is consistent with adaptive management objectives.
- **Pilot Programs:** Before embarking on unproved actions, testing and evaluation should first be done.
- **Programmatic Activities:** Activities such as standardizing the permitting process for the Program should also be considered for core actions. Monitoring and assessment planning would be another such activity.
- **IEP Role:** IEP has limited support capability for CALFED. Should IEP be the focus of support for CALFED? Is IEP focused on CALFED needs? Should questions be addressed to IEP? Should IEP support activities be included in core actions? Will IEP simply require more monitoring and research to answer CALFED questions?
- **Screening diversions:** Does not have a solid base of support from ERT (not cost effective nor effective for larval fish). Screening in rearing areas and along the migration corridor of salmon has strong support. Consolidation and relocation of intakes has strong support. Screening issue should be covered by other programs. CALFED should adopt recommendations. *(There is a lack of consensus on whether screens should be built in Suisun Marsh as presently planned and approved.)*
- **Habitat restoration:** There was concern that habitat restoration alone may not resolve problems. Some actually felt it could be a sham and waste of money, as there may not be any response in the fish populations. At a minimum habitat restoration should be a long-term program that is first tested adequately to ensure technical feasibility and cost-effectiveness. Some suggested the focus should be in the north Delta away from pumps, while others though it be important to improve habitat everywhere. Some questioned the value of flooding levied lands, as being less effective than simply improving riparian habitats. Little is known about habitat, and should be studied carefully first. Mixed feelings about the benefits of opening managed wetlands to tidal action (buying duck clubs and converting to tidal marsh).
- **Further suggested Core Actions:** Survey what has happened where levied lands have been flooded (Little Holland Tract). Winter flooding of rice fields may cause loss of juvenile salmon. Need core actions for San Joaquin River salmon. Core actions relating to floodway bypasses could be expanded to reduce stranding of adults and juvenile salmon. More flow would be a benefit to the San Joaquin River salmon runs.
- **Concerns about proposed Core Actions:** Question the value of spawning gravel introductions. Acoustic barriers are not effective. Shallow water habitat may not be as effective as improvements in riparian habitat.

## COMMENTS/DISCUSSION

### *Comments on Core Action Lists*

1. DD: The Core Action lists are presented by watershed and species/races of special concern. The list of Core Actions was prepared from various plans. No priorities are provided for the list.
2. DS: What about striped bass? They should be a special concern in the CALFED program, as should other important species whether they are native or not. Other species like American shad and sturgeon should have core actions directed toward them.
3. DD: Not a species of special concern for state or federal ESA. Striped bass are covered in the core actions for eco-zones. Category III program would like to concentrate on special concern species.
4. CM: The program has an ecosystem focus, but evaluation should include fish species goals.
5. PC: The ecosystem perspective is provided by the sum of all the important species considered individually.
6. BL: The sum of actions for the San Joaquin does not help striped bass.
7. EL: Our canary (striped bass) is dead; we need to switch to another. Instead of focusing on salmon, we should focus on all anadromous fish.
8. LS: The Category III program goal is a healthier overall ecosystem, not just project for individual species. We should have a strategy of actions that reflects this goal.
9. MT: Concern about dropping any species component. Objectives should include ecosystem and individual species.
10. CM: We should be concerned about salamanders, lizards, habitat, and not just fish alone.
11. DD: There are three categories of actions being considered. (1) Core actions are independent of the long-term. Category III, Four Pumps, and other active programs fund core actions; everyone agrees that core actions should be implemented now; they should not be controversial. (2) Base actions: high early priority funding. (3) Major alternative specific actions: higher cost, more uncertainty, controversial, and possibly requiring EIR/EIS process. The major flow changes required to fully benefit striped bass are type 3.
12. PC: The core actions do not include flow related actions?
13. SF: Where does striped bass growout program fit?
14. DD: It could be core, but we have made it a type 2.
15. SF: Funding is year to year. There is an inconsistency in the way the pen rearing action (a base action) is treated as compared to the salmon barrier on the San Joaquin near mouth of Merced River (a core action).
16. PC: Something like the barrier that is funded for the next 15 years should not be a core action.
17. CM: Harvest and hatchery issues should be addressed in short and long term perspectives. *(Harvest rules and hatchery programs may be short term to bring populations back quickly, whereas habitat actions are more long term solutions.*

*Hatcheries and drastic harvest rule actions can be dropped once populations rebound and benefits of long-term measures are realized.)*

18. DS: The ideal is habitat restoration: but we can't resolve the problems with general habitat measures. So we need to include actions that target individual species to ensure they are protected over the short term.
19. DD: Core actions that focus on hatcheries and harvest are contrary to our ecosystem perspective, but we have them in core actions.
20. CM: Many of the core actions proposed are not actions. We should take a closer look at hatcheries: could fit in to our goals and objectives.
21. BL: Tuolumne hatchery may not be funded as proposed under Four Pumps agreement. *(Four Pumps objectives may be different from CALFED. CALFED may want to fund the hatchery as a short term core action. See discussion in last weeks notes from ERT meeting at Asilimar.)*
22. CM: Some core actions should start right away: for example: "review of hatchery programs" - we have to do these for striped bass and Coleman for ESA.

### **Suggestions for Other Core Actions**

23. BL: The activities related to developing proposals for future actions should be funded as core actions.
24. DD: As core actions come up funding will be made available.
25. BL: We should stage core actions with planning as the first stage. *(We should fund planning stage immediately for all core actions.)*
26. MT: A programmatic fish screen program should be a core action. A program to address permitting for core actions should be a core action. We need to streamline permitting. We should lump actions to facilitate permitting.
27. CM: Core actions should be good and get quick attention. Things that are not liked or controversial take time.
28. MT/CM: We should develop a permitting fast track now.
29. LP: CVPIA is working on this now for its activities.
30. DD: How about an ERT permit review team?
31. MT: Corps regulatory would allow regional permitting based on a bio-regional plan.
32. DD: This idea was introduced to CALFED directors; they gave nod of approval.
33. CM: Baseline monitoring and evaluations up front of actions should be considered as core actions. We will need to show actions work, so we need a baseline for comparison. We should make sure we have all the necessary baseline information. We will have to fill in existing gaps in monitoring programs.
34. DD: Monitoring is built into the evaluation process for all actions. Monitoring overall conditions of ecosystem is not within CALFED purview. *(It would seem that CALFED would have to ensure that the necessary baseline information was collected upfront to ensure proper evaluation. It would seem that an evaluation of the existing monitoring programs like an evaluation of hatchery programs would be a reasonable core activity.)*
35. EL: Long-term evaluations of monitoring programs are ongoing among the CALFED agencies.

36. LW: We should spend money on a pilot basis before embarking on costly long-term activities. We should develop study plans and pilots studies as core actions.
37. CM: We should develop study plans for our potential monitoring needs as core actions. We should consider what technical information is missing and develop plans to get the information.
38. DD: These studies should be distinct from monitoring impacts. Some basic monitoring has yet to be done. We should evaluate if IEP is doing everything that is needed for the long-term CALFED program.
39. CM: All actions will have monitoring and assessment needs. It will be difficult to assess impacts of new projects without long-term perspective. We will need to develop the long-term data for later evaluation of the effectiveness of actions.
40. BH: IEP is studying estuary ecology to see where problems are. IEP is waiting for CALFED to ask IEP for new data needs. Answers to many questions needs to be taken out of the researchers heads and into documents. *(A good example is all the information collected in the entrapment zone studies over the past several years has yet to be documented and peer reviewed. Could such activities be included as core actions?)*
41. LS: Agrees with CM: it is an adaptive management issue that requires information. This should evolve through the CALFED process. Habitat improvements will cost billions of dollars. Staging with pilot studies and comprehensive evaluations will provide the groundwork for later judgments.
42. DD: Pilot restoration program would address the information needs of program through pilot projects.
43. BH: We should focus where the major questions are. Information needed for restoration does not now exist. We should begin to collect this information.
44. CM: We should first develop the questions we need to answer before setting a core evaluation effort.
45. LW: We need to design the studies well to address the questions. We should spend a few dollars upfront on studies and pilot programs before committing millions. Concerned that restoration money will be wasted if we do not have adequate information.
46. DD: We should stage activities - lends itself to adaptive management and interim evaluations.

### **Habitat Restoration**

47. DD: Should we let nature make its own changes, or should we engineer restoration as the Corps has done for Prospect Island? Little Holland track has evolved naturally - unengineered.
48. LW/MT: We should study these areas (Little Holland and Liberty) now to see what has evolved with the natural reclamation process.
49. DS: There is information available for the Delta flooded islands such as Frank's Tract that hasn't been looked at in the specific detail of effects of reclamation. *(DS is suggesting that much information can be gleaned on future restoration potential from the existing data bases. This is very true: this could be a core action, possibly in the form of a comprehensive planning process such as an HCP/ESA process.)*

50. BH: Delta restoration needs to be engineered; we can't leave to nature (*may take too long or could cause short term problems*).

### Questions for IEP

51. FW: CALFED needs to develop questions for IEP to address.
52. LW: Questions need to be answerable.
53. PC: CALFED ERT should review IEP Plan relative to CALFED program goals, objectives, actions, questions, and information needs.
54. BH: Conceptual models are out there. Start from theories. (*BH is possibly referring to existing IEP documents such as the Food Web discussion paper and the SFEP reports. The problem with these is that their focus is on scientific questions and not restoration questions; their focus is not directed. A similar approach but directed at CALFED Bay-Delta programs and objectives could be undertaken immediately as an important foundation to the Restoration Program.*)
55. LW: Project work groups in IEP have theories and potential questions. (*LW suggests going to IEP workgroups to develop information and questions. Having worked with these groups, I think their focus and expertise is too much on science and population dynamics, and they lack expertise and experience on habitat restoration. New groups should be developed under CALFED [within the formal restoration program] with appropriate expertise which may include some IEP staff. Most likely the group will have to include experts from out of state or even from Canada [for estuarine salmon habitat] because of the lack of habitat emphasis to date.*)
56. DD: Would like the group to put together questions over the next two weeks to put forth to IEP. He will synthesize and reformat before sending them to IEP. (*It may be premature to send questions to IEP before determining whether they are the right forum for this process. With a few exceptions, they are focused primarily on monitoring and individual species (primarily striped bass), and very much lack a habitat perspective.*)
57. KH: Should we adopt a zone or project type breakout of the questions?
58. DD: IEP will dole questions to workgroups. Some questions will be new and some will be old. Question their mandate to support and be responsive to CALFED.
59. JA: Should send a letter to Pat Coulston about what we want from IEP. (*JA, LW, BH, and DS are members of the management team of IEP. KL, Randy Brown, and Gerry Johns are IEP program directors. Pat Coulston is only the study manager. The interaction, whatever form, should probably be planned first within the CALFED Bay-Delta Program and its PCT-ERT, and then communicated to the program directors [most are in PCT] possibly through the CALFED directors.*)
60. BL: Everything to date in IEP has focused on the Bay and Delta; this limits their ability to address the full watershed perspective. What is the geographic scope of these questions? What is the study wish list? (*Though Marty Kjelson has a greater perspective than just the Bay-Delta because he has both an IEP and a CVPIA group, BL makes a good point. BL's and other DFG, FWS, DWR, and BOR programs are not part of IEP.*)

61. DD: The focus is not strictly on the Bay-Delta. A core action would be the convening of the IEP work groups to address questions and concepts that are fundamental to ecosystem restoration.
62. BL: Does IEP and other agency groups have the necessary funding to address CALFED questions?
63. JA: IEP can answer quickly or not at all. May require further study to address questions. *(IEP's programs and personnel were not designed to address many of the potential questions CALFED may pose [e.g. those related to habitat restoration]. Further study be it analytical or field may also not be suited for IEP at least in its present configuration.)*
64. BH: We want answers to questions and supporting evidence, not just opinions or just statements about the need for more information. *(I agree; IEP may have the information to answer some questions, but they may not have the ability to readily access the information and effectively analyze and present data in a way necessary to support an answer. Much of the IEP data remains unanalyzed; it is only synthesized for their specific purposes - annual abundance indices. Synthesis of the data for the specific needs of CALFED has not been done and would be difficult for IEP to accomplish within existing funding, staff configuration, and program mandates. Analysis of their data in a habitat perspective is limited, and although their studies were not designed for this in mind, much about habitat can be gleaned from the data. BH was an instrumental part of the SFEP, which recommended that more such analysis be done with the data and that IEP should focus more on habitat in general.)*
65. BL: Answering questions goes beyond who it should be assigned to, to whether they are able given existing time and money constraints.
66. SF: Suggested question - what evidence is there as to whether adding gravel to salmon spawning areas has any benefits. *(A very good question: IEP can't address this question; other FWS, DFG, DWR, and BOR programs are focused on this question, which by the way is controversial with varying degrees of opinions from knowledgeable scientists. A CALFED ERT subteam-workgroup could be convened to address this question [I think the CALFED PCT-ERT is a much better forum to address questions and find solutions than IEP; the IEP of course is a source for such teams]. The CALFED Program could provide whatever funding or infrastructure is necessary to allow the PCT-ERT to convene such subgroups - consultant could support such groups with whatever needs they may require).*
67. CM: Category III does not want to spend any of their resources on monitoring or addressing scientific questions. Existing monitoring is inadequate for CALFED needs. Monitoring and evaluation needs should be part of Core program. *(Are there any potential problem with accessing these or other program funds for addressing CALFED questions or planning actions [or designated core actions of this type] that may pertain to specific future actions they may cost share with these programs? By taking many of these programs under their wing, the CALFED Bay-Delta program and its PCT-ERT could become an effective force for coordinating and effectively planning and implementing ecosystem restoration. Since stakeholders are an important force in these other programs, their involvement in the PCT-ERT may be an important consideration. They could remain involved only in the other programs*

*and receive overall guidance from the resource agencies represented on the CALFED program.)*

68. LP: Some of the tougher questions will take a long time to answer; this is a fundamental recognition of the CVPIA program.
69. CM: We could start some focused long-term addressing of questions through research at universities under the direction of CALFED program. *(The IEP program has a sizable university grant program.)*
70. BL: CALFED could help integrate IEP and other programs.
71. MT: We have heard mention of a CALFED coordinator for restoration program.
72. BL: Many programs are funded and driven by private water rights stakeholders interests, but should be integrated under coordination by CALFED. *(BL may be pleading for help in coordinating such programs; he has to broker such watershed programs himself and would like to see more such programs and control over them.)*
73. MT: We need to get our work coordinated and in order.
74. KL: Need to realize the finite limits of the IEP staff and funding. Need to integrate IEP and CALFED needs. Without adding staff support to IEP, there will be a problem addressing CALFED needs. IEP would like to help, but has too many obligations.
75. DD: CALFED doesn't have enough questions to burden IEP, but would like to craft core actions to get funding to IEP to answer fundamental questions to help make the process more efficient.

#### **Summary of Discussion this Far**

76. DD: To summarize:
- a). We should keep track of habitat loss while we begin restoration.
  - b). Habitat restoration programs implemented under CALFED will have to be build into post-project planning evaluation process to satisfy adaptive management process.
  - c). Core actions ought to be developed to pursue answers to questions on fundamental aspects of program. White papers on questions could be prepared. New research or monitoring could be considered. Questions should be winnowed down to the fundamental basis to be a core action.

#### **Suggested Core Actions**

77. DD: Is spawning gravel restoration linked to productivity of fall run chinook in San Joaquin basin?
78. BL: No.
79. KL: How about studying what has happened in Little Holland Tract?

80. LW: We got approval to look into it. (*Little Holland Tract is an excellent opportunity to see what could happen with breaching shallow levied lands and converting to tidal aquatic habitat. The opportunity to study and test different activities [engineered] is too good to pass up. We should consider more than just adding an IEP fish sampling station.*)
81. CM - Concerned about losing salmon to winter flooding of rice fields.

**Are there any Core Actions that are not clear or should not be included?**

**Acoustic Barriers**

82. MT: Acoustic barriers - there is a substantial concern for their effectiveness. Only considering for Georgianna Slough; not really considering for other location; especially not intakes given 25% effectiveness at best at RD 1004 and 108.
83. CM: Electrical barriers would be better.
84. DD: We should first establish their effectiveness before implementing.

**Shallow Water Habitat / Riparian Corridors**

85. BL: Not convinced that more shallow water habitat in the Delta is good. It may cause too much warming. Riparian habitat would be better. We don't want to stop salmon from moving through the Delta. We should improve migration habitat (temperature and flow) in tributaries of San Joaquin .
86. DD: For the San Joaquin corridor we should focus restoration on the migration corridor.
87. CM: We can provide an array of habitat as long as it is designed properly.
88. DD: Flow related actions have to go through an environmental analysis process. Have to show that non-flow actions work or not first.
89. MT/SF: We need to combine flow and habitat changes where needed. Will we have enough flow for such pairings?
90. BL: Why not consider short-term or interim core actions? (*He is probably speaking to actions such as his Tuolumne hatchery.*)
91. PC: There are no core actions for the San Joaquin salmon.
92. CM: That is because most of the San Joaquin River water ends up being exported. There is not much you can do as a core action. (*BL and FWS would disagree: BL believes a small hatchery can produce enough smolts to get some salmon produced in dry years. FWS thinks habitat should first be restored in San Joaquin River tributaries before resorting to hatcheries. Both actions can probably help San Joaquin River salmon in conjunction with other CVPIA actions and pulsed flows of 1995 WQCP.*)
93. PC: Focus should be on riparian habitat restoration rather than on shallow water.
94. MT: Focus on the riparian habitat of the migration corridors: provide shade and cover.
95. SF: MWD's idea is that shallow water habitat is a biological filter that slows fish movement toward the south Delta pumps.
96. MT: For what species? Holding San Joaquin River salmon may not be a good thing.
97. CM: Though the south Delta may not be a good place to place vital habitat, we should make the best habitat regardless.
98. MT: Where do we target the little money we have for habitat restoration? He

- suggests the north for delta smelt, until the south Delta problem is solved.
- 99.DS: The benefits of creating shallow water habitat may be non-existent anywhere it is created. Populations of key species may not benefit at all. *(DS makes a good point; all the more reason for doing pilot studies and more research on existing habitat use patterns before investing in large scale habitat restoration.)*
- 100.CM: Investing in screens is known to be worthwhile; habitat is as yet unproved.
- 101.MT: How many delta smelt are we going to get for our investment.
- 102.DS: We need to get numbers of fish produced per acre of habitat and then compare that to costs.
- 103.KL: We should make small investments in pilot studies. We should do paper studies first, then go out and test the model. We should not invest in untested actions before doing the necessary testing and research.
- 104.BL: Flow and habitat must be used in conjunction at least in the San Joaquin River watershed.
- Duck Clubs vs Tidal Marshes**
- 105.DD: Should we be buying duck clubs to return tidal habitat instead of screening the intakes of managed wetlands?
- 106.FW: Location is key. We should look to the Ecosystem Goals Workgroup for guidance. Where, when, why's. What will be the cost of maintaining habitat after it is converted from duck clubs? Levee maintenance?
- 107.MT: Waterfowl loss could be mitigated elsewhere. There would be benefits to other important species like clapper rail and saltmarsh harvest mouse.
- 108.DS: Converting duck clubs would sacrifice one group for another. Fish screens for the managed wetlands wouldn't hurt either.
- 109.DD: We should evaluate this opportunity.
- 110.BH: Tidal marsh habitat is good. Open managed marshes to tidal action. Does not make sense to screen the managed marshes, especially if they won't protect delta smelt.
- 111.SF: We can buy habitat in the marsh for conversion.
- 112.CM: The intent is to create salmon habitat.
- 113.MT: We can buy habitat further east for the displaced ducks; tidal marshes are more natural and would be used by other species of waterfowl, including the endangered clapper rail.
- 114.DD: The first 100 yards on each side of Montezuma Slough would be important.
- 115.PC: What happens to the marshes after they are breached and open to the tides?
- 116.BH: Simply breaching the levees will be beneficial.
- 117.DD: If land is available, we should pursue this option, especially if it obviates the need for screens.

**Floodway Habitat Improvements**

- 118.CM/DS: Floodway drainage problems for anadromous fish?
- 119.CM: Today more salmon smolts are in the bypasses than in the river. Can we improve habitat in the bypasses. What about upstream passage at the upper end of the bypasses? What happens at the lower end in Little Holland Tract and Liberty Island? Are there rearing benefits to be had in these areas if habitat improvement can be made? Drainage to the toe drains is important when draining, otherwise water and salmon

young get trapped in fields.

- 120.TC: Salmon and splittail are trapped in large numbers when flows fall in Sacramento and Yolo bypasses. Warren Shaul of Jones & Stokes Associates has observed this phenomenon in wet years. Randy Baxter has also observed it in the Sutter bypass, as well as in the upper Yolo Bypass.
- 121.BH: Drainage salvage of bypass fish is a core action.
- 122.DS: There is a fish ladder on the Fremont Weir (head of Yolo bypass), but it doesn't work well. Winter run salmon adults can be trapped below this weir at this time of the year.
- 123.CM: Adult salmon have to be salvaged out of the ship channel.

### Screening

- 124.LW: Larval striped bass are not conducive to screening. If screen are used then they should be placed on migratory routes. High tech expensive screens are required for larval fish.

### More San Joaquin River Flow

- 125.DD: We should consider transfer water for the San Joaquin River over and above CVPIA water.
- 126.BL: More water would help the spring pulse provided in 1995 WQCP (DEC 15 Accord).
- 127.DD: We should consider long-term transfers.
- 128.BL: At least up to 5 years.
- 129.SF: South Delta people may not like San Joaquin River transfers.

### Summary of Recent Discussion Points

- 130.DD: We should instigate a pilot ecosystem restoration program: a stage 1 implementation. We should not install screens in Delta; however, we can consider consolidating diversions.
- 131.PC: We should also focus on minimizing loss of existing habitat. For example there should be a channel island protection program. *(This is a core action. The loss of channel islands continues to be rather dramatic. These once large and numerous tule berms have been lost in many of the Delta channels to erosion, especially from boat wakes. Likewise many tule shelves and shallows along the margins of many levees have also been lost from boat traffic over the last several decades. The joint water users are attempting a study of this as another non-flow factor in the decline of fish in the Delta.)*
- 132.DD: Channel islands should be protected against an unregulated activity.
- 133.KH: For our list to Category III, we have out upstream actions.
- 134.BL: We should develop a pilot suite of actions.