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OCTOBER 14, 1997

ORIGINAL VIA MAIL AND COPY VIA FACSIMILE (916-657-9780)

Lester Snow, Executive Director
CALFED Bay-Delta Program
1416 Ninth Street, Suite 1155
Sacramento, California 95814

Re: CALFED Ecosystem Restoration Program Plan
Comments on Draft Volumes I, II and III

Dear Mr. Snow:

Thank you for the opportunity to comment on three volume *CALFED Ecosystem Restoration Program Plan ("ERPP").* The City's comments are divided between general comments regarding areas of concern and specific comments on the three volumes.

GENERAL COMMENTS

Striped Bass

The ERPP emphasizes the restoration of striped bass, a non-native game fish species, to the detriment of the restoration and protection of native game and non-game fish species. Restoration of striped bass makes little biological sense and may even compromise the ERPP. The following comments on striped bass were prepared by Dr. Peter B. Moyle, who consults for the City on fishery biology issues.

> "I think striped bass should be removed from either the [priority lists in Volume III, pages 29-31] for the following reasons:
>
> 1. It is an exotic species that is doing fine in its native range.
>
> 2. It is showing signs now that is it in fact poorly adapted to the Sacramento-San Joaquin estuary:
>
> a. Bill Bennett's analysis indicates that the bass, especially large fecund females, are leaving the estuary in ENSO years (which are increasingly frequent) and not coming back.

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b. Their spawning peaks later in the season than any native species, indicating that conditions during their successful colonization may have been unusual. There is probably a connection with hydraulic mining here as well.

3. Maintaining conditions for striped bass spawning will require extra water in May that will usually not have large benefits to other species. This water would be better spent improving conditions for native species.

4. Striped bass are piscivores with high metabolic rates. While they seem to eat mainly each other, they also consume salmon, splittail, and other species. If their populations are enhanced, it is likely they may suppress the recovery of other species, especially salmon.

5. The goal of 2-3 million large piscivorous bass is very high and assumes an estuarine ecosystem totally dominated by striped bass. This would seem to contradict other recovery goals.

6. The temptation to try to enhance striped bass through artificial propagation will be almost irresistible and if it works may actually increase predation on other species and prevent full recovery. I note in Vol. 2 that it states artificial propagation may be needed but will be tried only if there are "healthy populations" of the other species what ever that means. A population can be healthy without being especially large. It is also interesting to note that artificial propagation is not listed as an alternative for most other species, such as splittail.

7. The focus on striped bass detracts from native fish that support fisheries: chinook salmon, steelhead, white sturgeon green sturgeon, splittail.

8. Without a special management focus, striped bass will not go extinct in the estuary. In fact, if environmental conditions are right, there should be periodic strong year classes of bass which will support a fishery. The large fisheries for striped bass in the past can be regarded as a fluke, related in part to the wetter climate and degraded conditions that favored bass and did not favor other sport fish."

Steelhead

The ERPP's emphasis on "restoration" of steelhead in the San Joaquin River basin is also problematic. There does not appear to be habitat for steelhead spawning and rearing in the San Joaquin River basin. The "evidence" in favor of any existing steelhead runs is anecdotal at best. There have been no genetic studies to determine whether rainbow trout in the basin are endemic,

much less anadromous. Recovery would almost certainly involve release of hatchery fish from outside the basin, which would then prey on wild chinook salmon juveniles. The following comments on steelhead were prepared by Dr. Ronald M. Yoshiyama, who also consults for the City on fishery biology issues.

> "It is highly likely that native steelhead have been extirpated from the San Joaquin drainage--perhaps for decades--although isolated rainbow trout populations (mainly above major dams) possibly are the remnants of former steelhead populations.
>
> Steelhead populations could complicate efforts to restore salmon. If SJ steelhead are currently extinct (assuming there was genetic distinctiveness of SJ steelhead from other Central Valley steelhead runs), it does not seem logical to rush into restoring steelhead into the San Joaquin tributaries by using 'non-native' stocks (from the Sacramento drainage) in view of the somewhat tenuous state of the San Joaquin salmon population(s). Premature introduction of non-native steelhead into San Joaquin streams could compromise efforts to restore the San Joaquin salmon populations (since steelhead would prey upon salmon juveniles). The addition of steelhead into the picture could confound our efforts to evaluate the effectiveness of various salmon restoration efforts being instituted.
>
> Artificial production of large numbers of non-native steelhead would counteract efforts to maintain a productive natural population of salmon in the Tuolumne. This trade-off should be carefully considered. As flows and habitats improve in the San Joaquin basin, there is a fair chance that stray steelhead from the Sacramento drainage will eventually colonize the San Joaquin basin. Perhaps one option is to forgo artificial production of steelhead in the San Joaquin basin in favor of natural recolonization-letting Nature take its course and allowing steelhead colonists to reach their 'natural' equilibrium with the other faunal elements within the rehabilitated San Joaquin system."

<u>Invasive Species in the Delta</u>

The following comments were prepared by Dr. Moyle.

"INVASIVE SPECIES

A serious weakness of the ERPP is the way in which it minimizes the impact of invasive species. It cannot be overstated that a single invasive species can undo millions of dollars of restoration efforts. The estuarine ecosystem is changing profoundly and rapidly in response to new invasions and it is critical that these invasions be stopped.

Ballast water is singled out as the major source of invaders, which is appropriate, but there needs to be mention of other sources as well: unauthorized deliberate introductions (e.g., northern pike, white bass), releases from bait buckets, releases from aquaria, and releases from aquaculture operations. The latter three are related to industries in California that need to be more tightly regulated and made responsible for any creatures that get loose in our waterways. Better education and better law enforcement are needed for unauthorized introductions. Two suggestions for addition to action items (e.g., vol. 2~ p. 56)

1. Introductions by ballast water should be halted by the year 2010. As an immediate step in that direction, state and federal laws in regard to regulation of ballast water should come into conformity with the federal law governing the discharge of ballast water in the Great Lakes. The shipping industry needs to be forced to take responsibility for solving this problem; voluntary efforts have not worked.

2. An Exotic Species Emergency Response Team should be formed, with authorization, training, and funds to treat outbreaks of new, potentially harmful species. Perhaps it could be connected to the oil spill emergency response team."

Use of Hatchery Production in the San Joaquin River Basin

The Vision for the East San Joaquin Basin Ecological Zone (Vol. I, pages 373-374) states: "In the lower Stanislaus, Tuolumne, and Merced Rivers, emphasis will be on restoring fall-run chinook salmon and steelhead populations. Because spawning and rearing habitats are degraded, and poor streamflows and stressors have depressed the populations, it may be necessary to continue to expand hatchery rearing of salmon and steelhead, at least in the short term, to maintain sufficient production in these rivers to support sport and commercial fisheries."

San Joaquin River basin chinook salmon stocks are currently in such a weakened state that any hatchery operations in the basin should focus primarily on maintaining or bolstering the viability of naturally reproducing populations--especially in the short term--and only secondarily on maintaining high production to support sport and commercial fisheries. Expanded hatchery production in the San Joaquin basin, if not conducted properly, may threaten rather than help the recovery of natural populations in the tributaries.

The Vision for the Tuolumne River Ecological Unit should emphasize the priority of natural production over hatchery production. The option of utilizing artificial production of

salmon should be a fall-back measure to be used only if baseline salmon populations "do not respond favorably to improved flow and habitat conditions in the Tuolumne River, San Joaquin River and the Delta." This seems more appropriate than the suggestion on page 374 that hatchery production be used as a primary function to support fisheries immediately.

SPECIFIC COMMENTS

Volume I

The ERPP inadequately links the physical process and the anticipated biological response. One example is the statement that restoring floodplains will create better habitat for salmon or delta smelt. How exactly? The document needs to walk the reader through the mechanistic response.

Page 18: Woody debris should not be considered part of the natural sediment supply. Woody debris is not transported like sediment. Woody debris does have the same fate as natural sediment supply since it tends to decay whereas rocks erode to fine particles.

Page 28: Leveed rivers do not erode the beds rather they aggrade the bed, a consequence of the sediment not having any place to go except downstream.

Page 49: It is not possible to maintain water temperatures below 70F for salmon migratory routes in the Delta in all spring and fall time frames.

Page 137: High water temperatures have not been documented to reduce splittail use of the lower San Joaquin River. In fact, Young and Cech, 1996, indicate that splittail are extremely temperature tolerant.

Page 157-158: Why are American shad included in the ERPP? The graph on page 157 does not indicate that there is a declining trend for this species. American shad appear to have been included in the ERPP simply because it is a game fish and anadromous, thereby diluting the emphasis that needs to be placed on more important resources. If conditions for salmon are improved, shad will benefit anyway.

Volume II

Page 11: The ERPP presents a series of historical monthly average flows for Delta outflow, Sacramento inflow and San Joaquin inflow. The ERPP has been written for the layperson which is clear from all the parentheticals used to explain the technical terms. However, a nontechnical reader who does not read the Y-axis scales will conclude that the San Joaquin and Sacramento

Rivers contribute nearly equal inflows to the Delta. The Y-axis on the SJR graph should be scaled similarly to the other graphs on this page.

Page 346: The numbers cited for escapement of fall-run chinook salmon are peak runs, not average runs. Such of these numbers badly misrepresents the run size variation that has occurred in the basin.

Page 360: Splittail are not "presently restricted to a fraction of their historic range." A recent article in the IEP newsletter concluded that the splittail range today is very similar to the range that can be deduced from historic records of collections.

Page 389: It is doubtful that there is water available to provide the targeted temperature of 56F between October 15 and February 15, or 65F between April 1 and May 31 in many years for the Stanislaus, Tuolumne and Merced Rivers. A temperature model would be a more appropriate first step.

Volume III

Page 35 *et seq.* Ecosystem Monitoring/Central Valley Salmonid Monitoring Sub-Program: All major components that are listed in this section will provide crucial quantitative data. This sub-program deserves strong support.

Page 42: Add a bullet under Fish Passage and Screening for entrainment compared to presence/absence in the vicinity of the intake.

Under River and Delta-Channel Flow Modification: The first bullet refers to "intensive juvenile fish distribution (transport) sampling". Delete the word "transport" until such time as it has been determined whether it is transport or active movement that results in the distribution of such species as Delta smelt larvae.

Under Aquatic Contaminants Input Reduction: Unless already encompassed within chemical fate studies, include a study to identify sources and amounts of toxic contaminants entering the system.

Page 51: Fry emergence cannot be measured by the operation of rotary screw traps.

Page 65: Chinook salmon: Besides population parameter estimates, it is important to obtain data (as specified in this section) for (1) distinguishing between naturally spawning stocks and hatchery propagated fish, (2) distinguishing the various natural spawning stocks (e.g., between

drainage basins or between individual streams). Thus, various artificial marking programs and genetic analyses are of crucial importance.

Sincerely,

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Donn W. Furman
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cc: Steve Ritchie
Tom Berliner
Peter Moyle
Ron Yoshiyama
Tom Taylor
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