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Analysis of CALFED Bay Delta Programmatic Draft EIS/EIS CEQA, NEPA and Endangered Species ActIssues

A. "Water Storage" Must be Addressed within a Broader Framework of "Water Supply Management Options"

1. Analysis of the CEQA/NEPA/ESA Issues

The "Project Alternatives" document states that the "mission of the Calfed Bay-Delta Program is to develop a long-term comprehensive plan to restore the ecosystem health and improve water management for beneficial uses of the Bay-Delta system." The Project Alternatives document then goes on to state:

> "Ecosystem Quality - The goal for ecosystem quality is to improve and increase aquatic and terrestrial habitats and improve ecological functions in the Bay-Delta to support sustainable populations of diverse and valuable plant and animal species.
>
> Water Supply Reliability - The goal for water supply reliability is to reduce the mismatch between Bay-Delta water supplies and current and projected beneficial uses dependent on the Bay-Delta system."

The Phase II Interim Report, which contains virtually all of the real environmental analysis of the potential impacts of the Alternatives, states that "significant increases in water supply opportunities are only provided if new storage is included under all Program alternatives" (p. 24; additionally, "without new storage average annual critical period supply ranges from an increase of about 100 TAF under Alternatives 1 and 2 to a decrease of about 100 TAF under Alternative 3").

The impact analysis indicates that it is predicated on the assumption that water channeled to new storage facilities can be diverted during peak wet weather periods and then used to emulate a properly functioning ecosystem. This assumption embodies "time-value"

concepts premised on the notion that "the value of water varies according to its quantity and timing in the system." According to the Phase II report, "it is possible to increase the diversion and storage of water during some high flow periods (while preserving peak flows that serve important functions in the system) in order to provide water supply later for diverters and the ecosystem." The report describes the operation of this "time-value" concept of water supply as follows:

> "Some of this stored water can be used to augment outflow peaks during dry years, when there is keen competition for water. At these times, water operations have their greatest impact on the ecosystem, and additional water is most needed by Bay-Delta species. In concept, water can be diverted from rivers upstream of the Delta into storage during high flow periods with relatively little impact on the system and can be released at other times to produce great benefit to the system. *Of course, this type of diversion must be operated in a way that preserves most of the variability in the flow ensuring that peak flows so important to ecosystem health still occur in the river.*"
> (p. 32, emphasis added)

There are three fundamental CEQA/NEPA/ESA flaws in the water storage assumptions that underly all of the alternatives analyses. First, the assumption that we can safely extract even more water out of this highly stressed ecosystem has not been analyzed in CEQA/NEPA terms. The Phase II Report concedes this when it states:

> "The validity and appropriate role for the "time value of water" concept in California water management have not been fully discussed within the broader stakeholder and scientific communities. Additional work remains to *identify and resolve controversy related to the concept*, determine specific paramters (flow rates and timing), and *scientifically evaluate potential effects* of this approach."
> (Phase II report, p. 33, emphasis added)

Second, the Alternatives Analysis does not assess "time-value" in another critical regard. Given the vast amount of land acquisition

required to implement the ERPP and the lack of implementation assurances regarding stream flows, the failure of the Alternatives Analysis to relate the timing of water supply for the ERPP to the timing of ERPP implementation habitat restoration measures raises fundamental questions regarding how the interdependency between water flows and habitat restoration will be effectively addressed . For example, Volume II of the ERPP makes clear that *all aspects of improved ecosystem health* are essential to listed species such as the chinook salmon:

> "All four races of chinook salmon require improved streamflows, gravel recruitment, water temperatures, riparian and riverine aquatic habitat, and stream meander corridors, and reduction in the adverse effects of stressors, such as high water temperatures, unscreened diversions, contaminants and harvest."
> (ERPP Volume II, p. 129)

Third, given the presence of state and federally listed species, the impacts of the alternatives must be analyzed in terms of "jeopardy" to listed species. The Phase II report asserts that the benefits of "Water Storage" peak flow diversions for later use is to be made *in comparative terms*, not in absolute terms: "Diversions would need to be made according to criteria ensuring that the environmental impacts of diversion during wet periods were *less* than the subsequent environmental benefits of releasing some of this water during critical periods." Under the requirements of the state and federal Endangered Species Acts, impacts on listed species cannot be offset by some notion of "net benefit" to the overall aquatic environment. Rather, impacts must be measured in terms of whether or not any particular impact would result in jeopardy to a specific listed species, even though there might be some "net" overall benefit to the system, at least in relative terms. The revised EIR/EIS needs to analyze the potential impacts of "Water Storage" peak flow diversions on listed species in light of the stated program goal of achieving "recovery" of several species including the delta smelt, the chinook salmon and steelhead trout (ERPP Volume I, p. 122).]

Given the need for further environmental analysis of "Water Storage," the draft EIR/EIS assumptions regarding water storage facilities are not appropriate. In the critical sensitivity analyses

conducted for the three Alternatives, potential new "Water Storage" facilities are *assumed to be fully operational*, for environmental as well as water supply purposes. In conducting the environmental analysis of potential impacts of the alternatives on changes in Bay Delta salinity, a key component of current Bay Delta standards, "the *upper end of the range of new storage facilities* described in Chapter 3 *was included in the simulated operations* for each Program alternative" (emphasis added). Such an approach assumes the operation of facilities, and the concomitant availability of water supplies, that may not pass environmental muster in the first instance and thus improperly assumes that adequate environmental water is in place under all three conveyance alternatives. The result is that the impact analysis for the three programmatic alternatives assumes vast quantities of water present in the ecosystem, thereby unrealistically reducing the potential impacts of each Alternative.

The above concerns point out the need for consideration of "Water Storage" in a much broader analytic context. Water Storage is proposed as the main vehicle for attaining two of the overall Bay-Delta program goals: (1) "Water Reliability" (through the provision of a new source of water), and (2) "Ecosystem Quality" (Water Storage is proposed as the main vehicle for providing water supplies for the Bay-Delta habitat systems, thereby lessening the significant effects of future water diversions). There are significant unresolved environmental questions inherent in the Water Storage proposals, but there is no comparison of Water Storage options with other means of providing reliable water supplies for environmental purposes such as Water Transfers. Rather than "assuming" Water Storage facilities, the potential for additional water storage facilities needs to be analyzed as an element of a much broader analysis of "Water Supply Management Options." In this way, the potential benefits and potential adverse impacts of "Water Storage" facilities can be assessed in relation to other options for providing water for estuarine life and riparian habitat systems such as water transfers.

2. Recommendations for Revised EIR/EIS Analysis

For CEQA/NEPA analytic purposes, there are just too many implications of water storage to treat it as an add-on "assumption" for the Alternatives analyses. The CEQA Guidelines indicate that "the range of potential alternatives . . . shall include those that could feasibly accomplish most of the basic goals of the project and could avoid or substantially lessen one or more of the significant effects." The revised EIR/EIS needs to provide an analysis of "Water Supply Management Options" that would in turn be related both to ERPP implementation issues and to potential means of lessening the effects of proposed Program Alternatives. Given the fact that water supply is so central to attaining Bay Delta Program goals, another approach could be to treat "Water Supply Management Options" as a formal CEQA/NEPA Bay-Delta Program Alternative to allow for an independent assessment of different options in relation to accomplishing "most of the basic goals of the project."

Key questions to be addressed in a revised Alternatives Analysis include:

- The revised EIR/EIS needs to carefully ***compare*** in detail the feasibility and the operational/geographic flexibility of Water Storage options with other means of providing water, such as Water Transfers, with respect to facilitating and assuring ERPP implementation and ESA-listed species needs (e.g. Water transfers may have greater geographic and operational flexibility than water storage facilities)

- The Phase II Interim Report indicates that ERPP may require flow augmentation of up to 500,000 acre feet and that "water purchases on this scale are unprecedented" (p. 52). However, the Drought Water Bank purchased a total of 820,805 acre feet, 300,000 acre feet more than the "unprecedented" level projected for the ERPP. A Water Supply Management Options analysis needs to address more realistically and accurately the potential for Water Transfers to provide ERPP ecosystem water supplies.

- According to the Phase II Interim Report statement of Storage Issues and Concerns, "The 'time value' concept for operating reservoirs to yield net environmental and water supply benefit must be analyzed carefully under different scenarios of operation and water year to confirm feasibility." A central question is whether we have the knowledge to manipulate the diversion of wet season flows in a manner consistent with implementing the ERPP and in a manner that supports the goal of recovery of listed species. The revised EIR/EIS analysis needs to analyze the potential impacts of diverting wet season flows, using commonly accepted ecological risk assessment methodology and current scientific knowledge regarding peak flow functions such as clearing silt from gravel beds used for spawning.

- The Phase II report states: ". . . Proposed storage ranges from zero to 6 MAF in all three alternatives. Accordingly, the overall effects of the storage and release is very similar between the alternatives." (p. 105) The difference between zero and 6 MAF is very substantial (especially since we currently have the capacity to store 25 MAF out of the total 27 MAF of unimpaired runoff in the Sacramento-San Joaquin rivers system - p. 63). The revised EIR/EIS should examine how much peak wet weather flow can be safely diverted consistent with restoration of the ecosystem and with listed species needs and whether this is consistent with the assertion that there is no difference between zero and 6 MAF. In turn, because the current Alternatives Analysis ***assumes the high end of storage***, the results of this analysis should be factored back into the the analysis of the three Alternatives currently in the document

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B. The Programmatic and Geographic-Specific Elements of ERPP Implementation Phasing Must be Defined and Then Related to Other Bay Delta Programmatic Elements which Substantially Affect the Scope and Timing of ERPP Implementation

1. Analysis of CEQA/NEPA/ESA Issues

The revised EIR/EIS must include a realistic game plan for ERPP implementation that includes funding, timing and phasing of the specific components of the ERPP. Many elements of the ERPP are not assured and other elements involve complex implementation actions extending over many years. For instance, major elements of the ERPP are contingent upon voluntary sale of land and water rights but no indication is given regarding the funds needed, the funds available and the likely timing and feasibility of such acquisitions. Likewise, important ERPP programmatic elements such as assuring adequate streamflows in the San Joaquin River are identified as "not assured" in the ERPP documents. Without an ERPP implementation road map, it will not be possible to define "performance milestones" for listed species recovery and for other elements of the Bay Delta program dependent on successful implementation of the ERPP (e.g. Water Supply Reliability).

A second missing element in the EIR/EIS is an analysis of the timing of ERPP implementation actions in terms of the need to understand which elements of the ERPP are dependent upon decisions regarding other elements of the Bay Delta program. For instance, the actual location of habitat restoration appears to be significantly affected by the different conveyance alternatives. According to the "Project Alternatives Technical Appendix:"

- Under Alternative 1A-1C, "Habitat restoration identified for the South Delta area would be relocated to the northern and western delta. This change would provide for intensive habitat restoration to be located prudently distant from the South Delta pumping facilities." (p. 28)

- Under Alternative 2, "Habitat restoration identified for the south Delta area would all be located west of the flow and stage control structures on MiddleRiver, Grant Line Canal and Old River. Habitat improvements along the North Fork Mokelumne River would be limited to establishing a riparian habitat corridor associated with setback levees constructed to modify channel conveyance." (pp. 41-42) Alternative 2D would create "about 5,000-10,000 acres more habitat than identified in the ERP." (p. 48)

In turn, some types of habitat restoration are likely dependent on the salinity of Delta waters. That is, certain types of habitat restoration may not be feasible without assured water supplies affecting salinity levels, sediment movement and nutrients. The maps on p. 112 and 114 of the Phase II Interim Report indicate wide variations in the location of salinity gradients under each of the three conveyance alternatives (e.g. Alternative 2 would improve (reduce) salinity by up to about 45% at some locations in the north and central Delta, while Alternative 3 would result in better conditions in the central Delta, but would reduce quality (increase salinity) by up to 80% in the eastern Delta). The changes in salinity analysis reviewed at pp. 112-116 of the Phase II Interim Report would appear to have significant implications for the location of different types of habitat restoration proposed under the ERPP.

In short, the revised EIR/EIS should present a clear picture of the timing and location of major ERPP implementation actions so that ERPP implementation can be related to other Bay Delta programmatic decisions that could substantially affect ERPP actions. Without a clear and careful review of the potential interaction among ERPP implementation decision-making, water supply management options and conveyance alternatives decision-making over time, it will not be possible to assess the environmental impacts of the current range of EIR/EIS Alternatives on ERPP implementation.

The timing and extent of habitat restoration and water supply actions under the ERPP also have significant implications for the attainment of other Program Goals. With respect to the goal of assuring "Water Supply Reliability, the Alternatives Description document states:

"Improvements in ecosystem quality should lead to healthier species populations, reduced constraints on water diversions and associated improvments in water supply reliability" (p. 6). The Alternatives Analysis of "Diversion Effects on Delta Flow Patterns" includes in its overall assessment the environmental benefits of implementing the ERPP: "Chinook salmon in the Sacramento River system would benefit substantially from habitat improvement features of the common programs both in the river and in the estuary" (Phase II Interim Report, p.144). Implementation of the ERPP is a distinct program element, but one that is intertwined with the environmental review of other program elements. As reviewed previously, the "time-value" of implementation of the ERPP is a factor just as significant, if not more so, than the "time-value" concept underlying Water Storage proposals.

Accordingly, *the phasing of the implementation of the ERPP itself should be fully analyzed in the revised EIR/EIS* - in part to be able to understand what is necessary to carry out the ERPP (e.g. How will the requisite water supply for ERPP implementation be assured) and, in part, because implementation of the ERPP is essential to attaining other goals specified for the program. Hence, the environmental implications of the phasing of the ERPP need to be understood in order to be able to understand the environmental implications of all of the Alternatives presently in the EIR/EIS.

One final note regarding CEQA case law. There is an appellate court decision holding that a local government is entitled to assume the future construction of a major transportation facility in assessing project alternatives. One might argue by analogy that the Bay Delta Program should also be allowed to assume the implementation of the ERPP without regard to phasing considerations. However, circumstances in the Bay Delta are dramatically different. In the case of a future transportation facility, under CEQA the approval of specific development projects would be keyed to available capacity in the local road system until such time as the future facility is constructed. In the case of the Bay Delta, there is no "capacity" left in the system (historical loss of habitat and historical reduction in water supply). The absence of "capacity" is clearly reflected in the repeated listings of aquatic species leading to the adoption of the Bay Delta standards.

2. Recommendations for the EIR/EIS Analysis

Since the ERPP will proceed over time, the alternatives analyses must include potential impacts of programmatic decision-making on different phases and elements of the ERPP. This analysis would be undertaken in order to understand: (a) the environmental implications of program elements that are functionally linked (e.g. water supply necessary for certain types of habitat restoration); (b) the environmental implications of Conveyance Alternatives which propose to "relocate" habitat to other areas in the Delta; (c) the environmental implications of the phasing of ERPP water supply and habitat restoration elements in terms of achieving ERPP listed species goals, which in turn affect other Bay Delta Program Goals such as Water Supply Reliability;
(d) environmental analysis of techniques potentially available to assess the actual, "real world" achievement of species protection goals over time in relation to overall habitat system improvement and to other Program Goals

Topics to be addressed should include:

(a) Timing, feasibility and phasing of acquisition of private lands required for habitat restoration purposes (availability of funds and likely availability of willing sellers)

- Acquisition of 200,000 acres, most of which is in private ownership, from willing sellers

(b) Timing, feasibility and phasing of water supply acquisition (see Phase II Interim Report statement at p. 52 that "Further assessment is needed of the flows required for ecosystem restoration and the variety of options to obtain these flows (including new storage, reoperation of existing storage and changes in diversion patterns, transfers, and regulatory measures)")

(c) Implications of the timing of water supply availability for specific habitat types and for the ultimate location of habitat restoration areas

(d) Implications of "habitat relocation" proposals set forth in the current Phase II Interim Report Alternatives 1, 2 and 3 for the habitat restoration program set forth in the ERPP

(e) Implications of salinity changes analysis in the current Phase II Report Alternatives analysis:

- implications of salinity gradients for habitat restoration measures and for individual listed species (maps on p. 112 and 114 of the Phase II Report and text indicate that Alternative 2 would improve (reduce) salinity by up to about 45% at some locations in the north and central Delta, while Alternative 3 would result in better conditions in the central Delta, but would reduce quality (increase salinity) by up to 80% in the eastern Delta).

- salinity changes impacts on habitat restoration and listed species if Alternatives 1, 2 and 3 do not include the upper end of the water storage facilities capacity

(f) Implications of lack of certainty for implementing water supply/water temperature objectives as set forth in the ERPP Vision documents for fish species recovery goal

Due to the timing considerations, the EIR/EIS ERPP phasing analysis should consider the option of either implementing the ERPP before any decision is made on any of the three Program Alternatives or of at least identifying at what point in the ERPP implementation program ESA listed species goals would be attained, thereby allowing for a decision as to which alternative is preferable (for instance, if the ERPP were only partially implemented, one of the Program Alternatives might be the preferred Alternative when it might not be the preferred alternative under a full ERPP implementation scenario).

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C. The EIR/EIS Impact Analysis Does Not Adequately Analyze the Impacts of the Proposed Alternatives on the Habitat of Listed Species and of the Ability of the ERPP to Achieve Recovery of Listed Species

1. Analysis of CEQA/NEPA/ESA Issues

a. What are the Standards for Determining Significant Impacts on the Habitat of Listed Species?

In reviewing the effects of water diversions on fisheries, the Phase II Interim Report draws a distinction between "direct effects" and "indirect effects." According to the Phase II Interim Report:

> "Diversion effects on fisheries recovery include ***direct*** mortality due to water diversion intakes and associated facilities as well as ***indirect effects***. The ***indirect effects include***: altered flow patterns, disturbed migratory cues, migratory delays and increased predation on migrating fish that can occur when migration is delayed or altered."
> (Phase II Interim Report, at p. 139, emphasis added)

The above distinction between direct and indirect effects has no validity under the California Endangered Species Act (CESA), the federal Endangered Species Act (FESA), CEQA or NEPA. Instead, the central question is what constitutes the "habitat" of aquatic species and the elements of such species' habitat that affect their essential behavioral patterns.

In its Sweet Home decision, the U.S. Supreme Court upheld the protection of the habitat of listed species as inherent in FESA's mandate to protect species themselves. The Department of the Interior "harm" regulation upheld in the Sweet Home decision stated the substantive test as follows:

> "Harm in the definition of 'take' in the Act means an act which actually kills or injures wildlife. Such act may include ***significant habitat modification or degradation*** where it actually kills or

injures wildlife *by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.*"

Thus, the question of assessing impacts on listed species is not one of classifying effects as "direct" or "indirect." Rather the analysis of potential impacts must examine all of those elements of the Bay Delta aquatic system that constitute the "habitat" of listed species and must assess any impacts on that habitat environment which have the potential to significantly impair "essential behavioral patterns, including breeding, feeding or sheltering." Virtually all of the diversion effects on fisheries cited in the Interim Phase II Report as "indirect effects" would impair the essential behavioral patterns of listed aquatic species and thus constitute direct and significant impacts for CEQA and NEPA purposes.
(50 CFR 17.3, emphasis added).

b. <u>The Relationship of Water Supply and Diversion Impacts to Achieving the Recovery Goals for Listed Fish Species Stated in the ERPP</u>

The following is a list of topics reviewed in the two ERPP volumes and in the Phase II Interim Report that highlight the critical interrelationship between adequate water supply and the functions of aquatic habitat affecting the "essential behavioral patterns" of listed species:

- Timing of water supply during normal years
- Water supply levels during critical drought years
- Spring "pulse" needs for fisheries
- Water supply to maintain natural processes: e.g. sediment, nutrient movement
- Directional flow requirements for migratory species - change in directional flows induced by export pumping

- Location of X2/brackish water

As Volume II of the ERPP states: "Improving late-winter and spring freshwater flows through the Delta and reducing losses to diversions are essential to the recovery of salmon."

Given the issues identified for review by an independent science review panel (see pp. 145-146 of the Phase II Interim Report), it seems to be exceedingly difficult to draw any conclusion at this time that even full implementation of the ERPP will achieve recovery of all of the listed fish species. This view appears to be supported by the statement in the Phase II Interim Report (at p. 52) that: "There are differing views on the likely success of restoring habitat in leading to recovery of fish populations without significant reductions in diversion effects at the export facilities and the restoration of natural delta flow patterns."

2. Recommendations for a Revised EIR/EIS Analysis

According to Volume II of the ERPP, "The ERPP will be an important, if not major, component in the successful implementation of recovery measures for species listed under either the State of Federal ESAs. For example, many of the targets and programmatic actions listed later in this section are derived from existing recovery plans. Two plans of major importance include the Recovery Plan for the Sacramento/San Joaquin delta Native Fishes (USFWS 1996) and the NMFS Proposed Recovery Plan for the Sacramento River Winter-run Chinook Salmon (NMFS 1997)" (Volume II of the ERPP, p.143)

Given the stated intent to achieve recovery of several listed fish species and the current listing proposal for additional chinook salmon runs, the revised EIR/EIS analysis should rigorously analyze the specific measures taken to carry out the specific recommendations of the recovery plans. With respect to Recovery Plan for Sacramento-San Joaquin Delta Native Fishes, the ERPP states:

> "The goals, strategies for recovery, and programmatic actions presented in the [recovery] plan have been included in the ERPP. The [recovery] plan includes targets for populations, habitat restoration,

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structural changes , and Delta outflow to the Bay that have been included in the ERPP. . . . Suitable placement of the 2 parts per thousand isohaline is key to providing adequate shallow water habitat for delta smelt, longin smelt, and splittail."

The revised and re-circulated EIR/EIS should provide the following analyses:

- Point-by-point analysis of the Native Fishes Recovery Plan showing precisely how the ERPP addresses each element of the Recovery Plan

- Review of the salinity analysis and X-2 locational differences of the current EIR/EIS Alternatives in terms of how the Alternatives affect "suitable placement of the 2 parts per thousand isohaline" that is "key to providing adequate shallow water habitat" for the Delta native fishes per the Recovery Plan

- Point-by-point analysis of all elements of the draft Proposed Recovery Plan for the Sacramento River Winter-Run Chinook Salmon in relation to to ERPP measures to assess ERPP measures effectiveness in attaining recovery

- Analysis of the proposed rule for the listing of other runs of the Chinook Salmon in relation to ERPP measures to assess ERPP measures effectiveness in attaining recovery

- Analysis of the phasing of ERPP measures in relation to the recovery objectives stated in the ERPP for specific listed species and of the performance standards and indicators that will be used to assure that recovery has been achieved; if recovery could be achieved prior to full implementation of the ERPP, the basis for such a conclusion should be stated and substantiated.

- Analysis of the statement in the Phase II Interim Report that: "ERPP alone may not provide for the recovery of listed species;

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recovery rates of listed species will also be influenced by the selected water storage and conveyance features"

- Thorough analysis of each of the issues identified at pp. 145-146 as issues to be addresses by an independent science review panel, including an analysis of the panel's assessment and conclusions regarding each issue

D. The ERPP Should be Considered, for CEQA, NEPA and ESA Purposes, to Constitute "Mitigation" for the Impacts of Past and Present Water Diversions

1. Analysis of CEQA/NEPA/ESA Issues

The Bay Delta Program asserts that the ERPP is not "mitigation" for impacts of past and present activities on the Bay Delta ecosystem. However, according to the Phase II Interim Report:

- ". . . the impact of water management activities on important peak flow events is greatest during years when natural flows may be most sensitive to disturbance" (p. 31)

- "Direct and indirect effects of the ***existing*** State and federal water projects are thought to be important, perhaps critical, factors in the decline and endangerment of some fish species." (p. 139) (also see listing of "aspects of the ***current*** problem" on p. 139)

Thus, water management activities clearly have ***ongoing impacts*** on the aquatic habitat of listed fish species, as well as mortality from entrainment.

The ERPP documents summarize the loss of aquatic habitat and the historic decline in natural freshwater flows into the Delta over time According to the ERPP Volume II:

"Central Valley water supply and hydroelectric projects have had a

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large effect on the freshwater flow through the Delta. Spring flows that, before water projects, average 20,000 to 40,000 cfs in dry years and 40,000 to 60,000 cfs in normal years have, in recent decades averaged only 6,000 to 10,000 cfs in dry years and 15,000 to 30,000 cfs in normal years. In the driest years, spring flows were once 8,000 to 14,000 cfs, while under present conditions they average only 2,500 to 3,000 cfs."

"Winter flows have fallen from the 15,000 to 60,000 -cfs range to the 7,000 to 35,00 cfs range because much runoff from winter rains is now stored in foothill reservoirs."
(pp. 10-11)

During the last 30 years, Delta water exports have grown from approximately 1.5 million acre feet/year to an average 6.0 million acre feet/year, with a 1989 peak of 6.7 million acre feet of water. During this time, populations of longfin smelt, Delta smelt, striped bass, steelhead, and every run of chinook salmon except the hatchery-dominated fall ruun have declined by 85-95 percent or more from their 1967 base. The San Joaquin River's mainstem spring run chinook population went extinct in the early 1950's, following completion of Friant Dam.

The fisheries listing decisions, including currently proposed listings, are clear and direct indicators of the devastating consequences of the decline in aquatic habitat functions of the Bay Delta system including its tributaries. The result is the Bay Delta standards, which effectively limit current withdrawals of water from the system for water supply purposes.

Given this historical context, in order to assess what actions constitute mitigation, it is essential to understand the definition of mitigation in applicable environmental laws. The CEQA Guidelines Section 15370 defines "mitigation" as:

- "(a) Avoiding the impact altogether . . ."

- "(b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation"

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- "(c) Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment"

- "(d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action"

- "(e) Compensating for the impact by replacing or providing substitute resources or environments."

In the context of historical modifications of the Bay Delta ecosystem, there has been little "avoidance." Habitats have been converted and water facilities have been constructed with consequent impacts on the behavioral patterns of aquatic species. Given the severity of past losses, the mitigation approach defined in subsection (d) above from the CEQA Guidelines, "preservation and maintenance operations," is not feasible. Due to cumulative impacts of past and present impacts on aquatic habitat, the current limitations on water withdrawals and reservoir releases resulting from the application of the Bay Delta standards can be viewed as "minimization" measures (subsection (b) above) undertaken in response to the severe decline in the quality of the Bay Delta ecosystem (the Bay Delta standards do not result in actual mitigation of impacts but instead provide a floor under current diversions intended to prevent actual "jeopardy" to listed fish species).

However, with regard to ongoing "minimization" measures (i.e. The Bay Delta standards), the Alternatives Description document discussion of the Water Supply Reliability goal states that a major Bay Delta Program objective is to shift from the restrictions imposed by Bay Delta "minimization" limitations to what, in CEQA/NEPA/ESA terms, would be considered "compensatory mitigation" (see subsections (c) and (e) of the above CEQA Guidelines excerpt):

> "Improvements in ecosystem quality should lead to healthier species populations, ***reduced constraints on water diversions*** and associated improvements in water supply reliability." (emphasis added)

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It is clear that the ERPP will, if implemented, have the effect of "mitigating" the impacts of past loss of aquatic and associated riparian/wetlands habitat and the impacts of both past and present water withdrawals for non-habitat uses. If habitat restoration in fact contributes to a "no jeopardy" finding for ESA-listed species which would, in turn allow increased export pumping, isn't such restoration a form of ***mitigation*** for the past and present cumulative impacts of water exports? Notwithstanding the assertions in the Bay Delta documents to the contrary, in CEQA, NEPA and ESA terms the ERPP is "mitigation."

It should also be noted that, once the ERPP implementation program attains stated species recovery and habitat restoration goals, any effects of future diversions which significantly reduce habitat system quality and functions would have to be offset by "compensatory mitigation" under CEQA and NEPA (and potentially under the ESA if mitigation were required to avoid "jeopardy").

2. Recommendations for a Revised EIR/EIS Analysis

If the revised EIR/EIS includes a clear blueprint of the timing and programmatic elements of ERPP implementation phasing, the EIR/EIS should be able to identify "performance milestones" to be incorporated into future phased decision-making for other Bay Delta goals dependent on ecosystem restoration and recovery of listed species populations. In essence, such "performance milestones" would necessarily reflect the results of mitigation actions taken to offset the impacts of past and present withdrawals of water supplies from the Bay Delta system, as well as habitat restoration measures that help further reduce such impacts on ESA listed species. The identification of such "performance milestones" needs to include species and habitat indicators that would be used as performance standards in assessing whether performance milestones have actually been attained.

The EIR/EIS should also identify the projected contribution of other mitigation measures such as improved screening and operational measures that could contribute to achieving specified "performance milestones. If these measures are then related to ERPP implementation actions, it would

be possible to allocate funding and operational responsibilities for mitigation actions.