

M e m o r a n d u m

To : Mr. Lester Snow
CALFED Bay-Delta Program

Date : July 29, 1997

From : Department of Fish and Game

Subject : Review of Documents: Vegetation and Wildlife: Environmental Impacts Technical Report; Draft Terrestrial Resources Technical Appendix - Affected Environment; Attachment A: Habitat Guild and Species Summary

The Department of Fish and Game (DFG) has reviewed the subject documents and offers the following comments to assist the CALFED Bay-Delta Program in its efforts to analysis the impacts of the alternatives describe the affected terrestrial environment.

Vegetation and Wildlife: Environmental Impacts Technical Report**General Comments**

The DFG is concerned with the Ecosystem Restoration Program Plan (ERPP) being represented as providing mitigation for impacts from construction of any of the alternatives. One example of this can be found on page 5-6, Impact 1.3 which lists *implementing the ERPP* for two of the three mitigation strategies presented.

Alternative 1 discusses losses of agricultural and non-agricultural land with the Levee System Integrity program and the ERPP. One of the other common programs, water quality, could also cause a loss due to the aquatic habitat restoration and new storage facilities discussed in the document *Phase II Alternative Descriptions* and yet it is not discussed in this section.

Specific Comments

Page 1-1, Paragraph 1, Sentence 1

The fisheries and aquatic resources technical report uses CALFED, this reads *Program*; these reports should be consistent.

Page 1-1, Paragraph 1, Sentence 1

End sentence one after *Delta estuary*, deleting *in Northern California*.

Mr. Lester Snow
July 29, 1997
Page Two

Page 1-1, Paragraph 1, Sentence 2
Capitalize the first letter of *overall*.

Page 1-1, Paragraph 2, Sentence 2
As this is a programmatic report, can an analysis actually be completed. Consider the sentence as reading, "The objective is to describe effects ..."

Page 1-1, Paragraph 2, Sentence 2
Add the word *potential* after analyze so it reads; ...describe and analyze *potential* effects on vegetation and wildlife...

Page 1-1, Paragraph 4, Sentence 2
It is not accurate to state that each of the three alternatives meets the program goals. This sentence should be deleted or modified; if not, it will represent a fatal flaw. Isn't *water supply reliability* suppose to be *water use efficiency*? Water supply reliability isn't a common program goal.

Page 3-1, Paragraph 1, Sentence 3
This reference is too vague as written. Is should be redrafted to reference the specific author, use Sawyer & Keeler-Wolf or delete sentence.

Page 3-3, Paragraph 4
This sentence mentions eight categories but only seven are shown on page 3-2.

Page 3-3, Section 3.2.1, Sentence 2
This reference is too vague as written. Is should be redrafted to reference the specific author, use Sawyer & Keeler-Wolf or delete sentence.

Page 3-3, Section 3.2.1, Sentence 3
Valley foothill is mentioned as a plant community. Should this read valley foothill woodland?

Page 3-4, First Bulleted Item
Is the Central Valley Project Improvement Act Programmatic EIS published or still an administrative draft?

Page 3-4, Section 3.2.2, Paragraph 2
Are these the only two ways quality of a plant community can be affected?

Mr. Lester Snow
July 29, 1997
Page Three

Page 3-5, Section 3.2.3, First Bulleted Item

Is the Central Valley Project Improvement Act Programmatic EIS Vegetation and Wildlife Technical Appendix published or still an administrative draft?

Page 3-5, Section 3.2.3, Paragraph 1, Sentence 1

This sentence needs to be better explained or clarified because the use of the word *dependent* is very misleading.

Page 3-6, Bulleted Items

Are the Biological Assessment for Interim North Delta Program and the EIS for South Delta Program really useful assessment tools for this evaluation?

Page 3-6, Last Bulleted Item

Is the Central Valley Project Improvement Act Programmatic EIS Vegetation and Wildlife Technical Appendix published or still an administrative draft?

Page 3-7, Fourth Bulleted Item

Is the Central Valley Project Improvement Act Programmatic EIS Vegetation and Wildlife Technical Appendix published or still an administrative draft?

Page 4-1, Significance Criteria

Are those items listed as significant going to be determined on a area-by-area basis, as they effect the entire Delta, or a geographic region.

Page 4-1, Paragraph 2

This section needs to be expanded to include a better description of the context of the proposed action. For example, explain the sensitivity of the Delta and the importance of restoring the Delta to achieve the Program's goals. Unmitigated adverse impacts would be inconsistent with the goal of the Program.

Page 4-2, Thresholds Should be Qualitative, Sentence 5

Change *may be* to *will be*.

Page 5-1, 5.1.1 Summary of Regional Effects by Alternative and Table 5.1-1

The number of species that are adversely affected should be shown separately from those that benefit.

Page 5-1, Impacts and Benefits to Habitat Area and Associated Wildlife

Is it known which impacts will be temporary and which will be permanent?

Mr. Lester Snow
July 29, 1997
Page Four

Page 5-1, Section 5.1.1, Paragraph 1, Sentence 1
Add agriculture to the list of habitats.

Table 5.1-2
Eliminate the words *that Improve Conveyance for* and replace with *in*.

Where are the acres for the created habitat originating? Are these acres from the agricultural and nonagricultural habitats?

The sums of nonagricultural and agricultural habitats do not always add up to equal the total (last column).

Table 5.1-3
Correct the title of the second column.

Page 5-2, Benefit 1.1
Why ERPP? What of other common programs?

Page 5-2, Impact 1.1
How does restoration (ERPP) result in degradation or loss of wetland and riparian communities? The whole foundation of ERPP is based on protection, enhancement, and restoration.

Page 5-2, Impact 1.2, Sentence 4
Add a "t" to change mortalities to mortalities.

Page 5-2, Impact 1.2
Having more acreage available for forage will most likely result in spreading out wintering waterfowl rather than creating heavier concentrations. Water management will also play a very significant role in prevention and/or control of potential disease outbreaks.

Page 5-2, Impact 1.3, Sentence 1
This sentence somewhat contradicts that on page 5-1 (second paragraph under section 5.1.1). Page 5.1.1 states that construction and operation would result in less than 100 acres and implementation of the ERPP would result in loss of 108,000 acres of agricultural habitats. The sentence on page 5-2 also states that the impact would be on 112,000 acres. Where did the other 4,000 acres come from?

Mr. Lester Snow
July 29, 1997
Page Five

Page 5-2, Impact 1.3

This contradicts Impact 1.2 which states that 95,000 acres of wetlands would be restored which will substantially increase the abundance and availability of forage... There will be an initial loss of agricultural residual byproducts but it will be a short term one and will most likely not be a significant loss to waterfowl. The significant loss will be more to the local economy and farmers.

Page 5-3, Impact 1.4

The whole foundation of ERPP is based upon protection, enhancement, and restoration. The team realizes that many habitats are severely fragmented currently and many of their efforts are to rejoin these patches. How is this going to result in the loss of habitat? Maybe the actions of the Levee System Integrity Team would result in the losses and use of ERPP in this sentence is not appropriate.

Page 5-2, Impact 1.3

See the following comment.

Page 5-4, Benefit 1.7

This contradicts Impact 1.4 on page 5-3. Maybe the use of ERPP in impact 1.4 is not appropriate and the actions of the Levee Team would cause the potential impacts.

Page 5-4, Benefit 1.8

This contradicts Impact 1.4 on page 5-3. Maybe the use of ERPP in impact 1.4 is not appropriate and the actions of the Levee Team would cause the potential impacts.

Page 5-4, Impacts and Benefits to Special-Status Species and Communities section

This paragraph states that ERPP would destroy and then rebuild natural plant communities and habitats. In fact, the foundation of the ERPP is to protect, enhance, and restore habitats from there current conditions, build from what already exists and expand.

Page 5-4, Impacts and Benefits to Special-Status Species and Communities section, Sentence 2

This sentence states that loss of agricultural areas would have a detrimental effect upon species such as the Swainson's hawk and giant garter snake because they are dependent upon those areas for foraging. While this is partially true, they use those areas for foraging, they do so only because that is all that is left for them to utilize. Implementation of the ERPP will result in more suitable areas restored that would benefit those species (and many others as well) and increase their chance for survival and eventual recovery and delisting.

Mr. Lester Snow
July 29, 1997
Page Six

Page 5-4, Impact 1.5

The foundation of ERPP is to restore a mosaic of habitats that benefits all species. Plans will be developed which will offer benefits to species such as the Swainson's hawk and giant garter snake. Wetland restoration will, in fact, increase foraging habitat for the giant garter snake as well as provide foraging areas for the Swainson's hawk. Restoration of riparian areas will increase the quality of habitat for Swainson's hawks.

Page 5-4, Impact 1.6

The same argument made in this impact could be used in any impacts mentioned up to this point. For example, in Impact 1.5, the ERPP plan would result in benefits to the species making the point raised in the text not significant.

Page 5-5, Impact 1.1

The activities listed for which potential mitigations strategies are needed are the construction of conveyance facilities and the implementation of the ERPP, etc. On the next page under Impact 1.3 the listing is reversed; in other words the ERPP is listed first. The order of listing should be consistent throughout the document.

Page 5-6, Impact 1.3

The first two mitigation measures don't link up with the discussion of Impact 1.3 on page 1-2. The mitigation measures state that implementation of the ERPP will mitigate. Is it the short-term loss of forage for waterfowl that is the impact? If it is, reword Impact 1.3 on page 1-2. If it isn't, separate mitigation, not just implementation of the ERPP, is needed.

Page 5-7, Impacts to Special-Status Species and Communities and Impact 1.5

The fonts are different in this heading and discussion than anywhere else in the document.

Page 5-7, Impacts to Special-Status Species and Communities and Impact 1.5, Bullet 1
"Restoration ... as part of the ERPP habitat restoration component."

Page 5-7, Impacts and Benefits to Habitat Area and Associated Wildlife

How can impacts be temporary and permanent?

Page 5-7, Impact 1.5, Third Bulleted Item

This mitigation strategy needs to be redone. The species of concern are primarily state listed under CESA and a reference should be made to consultation under 2090 or 2081 of CESA.

Mr. Lester Snow
July 29, 1997
Page Seven

Other mitigation measures are reasonable and should be included in this section. They include: Management of seasonal wetlands in a manner that allows these areas to serve a dual purpose for foraging special-status species; and management of agricultural lands using wildlife friendly techniques to maximize foraging habitat for special status species.

Page 5-7, Impact 1.5 (second one on the page)

The measures listed on Page 5-7 are implementable. This entire section should be deleted.

Page 5-8, Impacts and Benefits to Special-Status Species and Communities

It should not be stated or implied that any impacts of programs other than CALFED will use ERPP acreage as mitigation

Page 5-8, Impacts and Benefits to Special-Status Species and Communities

This states that loss of agricultural areas would have a detrimental effect upon species such as the Swainson's hawk and giant garter snake because they are dependent upon those areas for foraging. While this is partially true, they use those areas for foraging, they do so only because that is all that is left for them to utilize. Implementation of the ERPP will result in more suitable areas restored that would benefit those species (and many others as well) and increase their chance for survival and eventual recovery and delisting.

Page 5-8, Impact 1.1

The foundation of ERPP is to restore a mosaic of habitats that benefits all species. Plans will be developed which will offer benefits to species such as the Swainson's hawk and giant garter snake. Wetland restoration will, in fact, increase foraging habitat for the giant garter snake as well as provide foraging areas for the Swainson's hawk. Restoration of riparian areas will increase the quality of habitat for Swainson's hawks.

Page 5-8, Paragraph 3

This paragraph states that the type of impacts associated with the implementation of the Levee System Integrity Program is the same as described for Alternative 1. Is Page 5-2, Impact 1.3 the only mention of impacts due to the Levee Program? This is hard to follow and it is recommended that in place of referencing a prior section, cut and paste into a appropriate sections.

Page 5-8, Paragraph 4, Impacts and Benefits to Habitat Quality and Pattern, Sentence 2

Add *habitat quality* after "... magnitude of benefits to..."

Mr. Lester Snow
July 29, 1997
Page Eight

Page 5-9, Impact 1.2

Same comment as above applies. Additionally, this impact should be considered significant. It also isn't clear how implementation of the Water Quality and Water Use Efficiency Programs will enhance or expand rare natural communities or significant natural areas. The Water Use Efficiency Program is described here as a common program. Why is it called the Water Supply Reliability Program at the beginning of this technical report.

Page 5-9, Benefit 1.1

It also isn't clear how implementation of the Water Quality and Water Use Efficiency Programs will increase critical habitats for special-status species.

Page 5-9, Impact 1.1

Same comments as on Alternative 1 apply here as well.

Page 5-10, Impacts and Benefits to Habitat Area and Associated Wildlife

How can impacts be temporary and permanent?

Page 5-10, Impact 1.1

Same comments as on Alternative 1 apply here as well.

Page 5-10, Impact 1.1

Implementation of the ERPP would result in increased foraging habitat, it would not degrade habitat for species. The impacts will be to the agricultural communities and the local economies. The species mentioned only utilize those habitats because that is all that is available. Restoration of habitats will be developed to increase the quality of habitats, all required stages (food, cover, reproduction).

Page 5-11, Impacts Benefits to Special-Status Species and Plant Communities, Sentence 4

Implementation of the ERPP will result in more suitable areas restored that would benefit Swainson's hawks and giant garter snakes (and many others as well) and increase their chance for survival and eventual recovery and delisting.

Page 5-11, Impact 1.1

The foundation of ERPP is to restore a mosaic of habitats that benefits all species. Plans will be developed which will offer benefits to species such as the Swainson's hawk and giant garter snake. Wetland restoration will, in fact, increase foraging habitat for the giant garter snake as well as provide foraging areas for the Swainson's hawk. Restoration of riparian areas will increase the quality of habitat for Swainson's hawks.

Mr. Lester Snow
July 29, 1997
Page Nine

Page 5-11, Impacts and Benefits to Special-Status Species and Communities
Same comments as on Alternative 1 apply here as well.

Page 5-11, Impact 1.2
Same comments as on Alternative 1 apply here as well.

Page 5-11, Benefit 1.1
Same comments as on Alternative 1 apply here as well.

Page 5-12
The spacing between Benefit 1.1 and 1.2 needs to be corrected.

Page 5-12, Impact 1.1
Same comments as on Alternative 1 apply here as well.

Page 5-13, Impact 1.1
Same comments as on Alternative 1 apply here as well.

Page 5-14, Third Bullet
The words *delta smelt* should not be capitalized.

Page 5-19, Paragraph 1
The logic is flawed. We shouldn't state that nesting/roosting trees are limiting. Instead we should make the case that suitable foraging habitat and suitable roosting nest trees are needed. The pitch needs to be that seasonal wetlands can be managed for dual purposes (waterbirds and Swainson's hawks) and the ERPP has significant acres targeted for management that enhances foraging for Swainson's and sandhill cranes.

Page 5-20, Plant Communities and Associated Wildlife, Paragraph 1
This is confusing. I don't mind that the habitat elements of these actions are coordinated with and incorporated into the ERPP. Negative impacts of levee stabilization need to be mitigated separately from the ERPP.

Table 5.1-7
Add an X under Alternative 3F for the Swainson's hawk.
Add the greater sandhill crane.

Page 5-22, Natural Terrestrial, Riparian, and Wetland Communities
Delete not affect from the sentence so it reads, "...could potentially affect riparian and..."

Mr. Lester Snow
July 29, 1997
Page Ten

Page 5-23, Special-Status Species and Communities, Paragraph 2

The logic is flawed. We shouldn't state that nesting/roosting trees are limiting. Instead we should make the case that suitable foraging habitat and suitable roosting nest trees are needed. The pitch needs to be that seasonal wetlands can be managed for dual purposes (waterbirds and Swainson's hawks) and the ERPP has significant acres targeted for management that enhances foraging for Swainson's and sandhill cranes.

Page 5-25, Special-Status Species and Communities (first one), Sentence 2

This sentence needs to be re-written because it is very misleading and confusing. How does increased water quality improve the health of individuals of species? Through increased forage? more abundant forage? higher quality habitat? For the indirect affects, is that supposed to read improving rather than importing?

Page 5-25, Special-Status Species and Communities (second one)

This paragraph discusses how the Water Use Efficiency Program includes goals to reduce existing use and future demand on the states limited water supply. What are these goals? Where are they to be implemented? Statewide? In the Delta? North of the Delta? South of the Delta? This whole discussion contradicts the reasoning behind what CALFED is trying to accomplish. CALFED is working to restore the Delta, yes, but they are working even harder on increasing the amount of water available to the pumps.

Page 5-26, Natural Terrestrial, Riparian, and Wetland Communities (first one), Sentence 2.

Replace the word nonagricultural with *natural* so that it reads, "...200-300 acres of *natural communities including...*"

Page 5-26, Special-Status Species and Communities, Sentence 1

Replace the word nonagricultural with *natural* so that it reads, "...200-300 acres of *natural communities including...*"

Table 5.1-8

Why are some of the species that were listed in Tables 5.1-6 and 5.1-7 not included in this table.

Page 5-27, Natural Terrestrial, Riparian, and Wetland Communities

Add a discussion on Snodgrass Slough.

Page 5-29, Conveyance Facilities - Variation 2C, Agricultural Lands

The Old River setback will adversely impact the Palm Tract Wildlife Mitigation Area.

Mr. Lester Snow
July 29, 1997
Page Eleven

Page 5-29; Natural Terrestrial, Riparian, and Wetland Communities; Paragraph 3
Construction of setback levees on Palm Tract would destroy the Palm Tract Wildlife Mitigation Area.

Table 5.2-1
Consider adding salt ponds to the list of habitat types.

Page 5-31, Paragraph 1, Sentence 2
Change it to read: "Removal of *existing* levee sections..."

Page 5-32
Correct the spacing inconsistencies.

Page 5-32, Special-Status Species and Communities, Paragraph 2
The logic is flawed. We shouldn't state that nesting/roosting trees are limiting. Instead we should make the case that suitable foraging habitat and suitable roosting nest trees are needed. The pitch needs to be that seasonal wetlands can be managed for dual purposes (waterbirds and Swainson's hawks) and the ERPP has significant acres targeted for management that enhances foraging for Swainson's and sandhill cranes.

Page 5-33, Special-Status Species and Communities (fourth one)
This paragraph discusses how the Water Use Efficiency Program includes goals to reduce existing use and future demand on the state's limited water supply. What are these goals? Where are they to be implemented? Statewide? In the Delta? North of the Delta? South of the Delta? This whole discussion contradicts the reasoning behind what CALFED is trying to accomplish. CALFED is working to restore the Delta, yes, but they are working even harder on increasing the amount of water available to the pumps.

Page 5-33, Special-Status Species and Communities (third one)
This sentence needs to be re-written because it is very misleading and confusing. How does increased water quality improve the health of individuals of species? Through increased forage? more abundant forage? higher quality habitat? For the indirect affects, is that supposed to read improving rather than importing?

Page 5-33, Special-Status Species and Communities (fourth one)
This paragraph discusses how the Water Use Efficiency Program includes goals to reduce existing use and future demand on the states limited water supply. What are these goals? Where are they to be implemented? Statewide? In the Delta? North of the Delta? South of the Delta? This whole discussion contradicts the reasoning behind

Mr. Lester Snow
July 29, 1997
Page Twelve

what CALFED is trying to accomplish. CALFED is working to restore the Delta, yes, but they are working even harder on increasing the amount of water available to the pumps.

Page 5-42, Impacts and Benefits to Habitat Area and Associated Wildlife

This paragraph states that implementation of the ERPP could result in the permanent loss of native communities. If this is true, this needs to be addressed since the foundation of the ERPP is to increase native communities as is stated in the first part of the paragraph. Could this refer to a temporary loss of habitats while restoration takes place?

Page 5-42, Impact 2.1

Does the first sentence mean that wetland and riparian communities will be permanently lost to construction of conveyance facilities and temporarily lost to implementation of ERPP? This needs to be expanded and explained better.

Page 5-42, Impact 2.2

Having more acreage available for forage will most likely result in spreading out wintering waterfowl rather than creating heavier concentrations. Water management will also play a very significant role in prevention and/or control of potential disease outbreaks.

Page 5-43, Benefit 2.1

Would Alternative 1 really increase the area of wetland habitats or would it be the ERPP that increases the area?

Page 5-43, Benefit 2.2

Would Alternative 1 really increase the area of wetland habitats or would it be the ERPP that increases the area?

Page 5-44, Impact 2.1, Second bullet

If Alternative 1 causes impacts to wetlands and riparian communities, those must be mitigated separately from the ERPP. Work done under the ERPP will not count as mitigation for construction.

Page 5-45, Impacts to Habitat Area and Associated Wildlife (third one)

Add a 'd' to the end of an on the second line so it reads; ...on habitat area *and* associated....

Mr. Lester Snow
July 29, 1997
Page Thirteen

Page 5-46, 5.2.3

Doesn't the ERPP remain the same regardless of which alternative is ultimately chosen? The ERPP plan is separate from the alternatives and would accomplish the same thing no matter what alternative was chosen. This needs to be stated.

Page 5-48, Agricultural Lands, Sentence 3

Will ERPP cause the loss of agricultural land or will Alternative 1, this needs to be clarified. ERPP efforts will only take place on lands whom are willing to participate, have willing landowners. Put a comma in place of the period in 8.000.

Page 5-50, Conveyance Facilities - Variations All

Wouldn't the new open cut from Hood to Clifton Court Forebay be a new conveyance facility?

Page 5-51, Benefit 3.2

The ERPP would be responsible for the creation of riparian habitat, not Alternative 1.

Page 5-53, Impact 3.8

Why is the logic used in this impact not applied to impacts 3.5 and 3.6? Argument could be made that the temporary loss would be offset for them as well. The same applies in reverse as well, that impacts 3.7 and 3.8 could be significant impacts using the same logic as used in impacts 3.5 and 3.6.

Page 5-55, Impact 3.5

The ERPP is independent of any mitigation as a result of construction. Any mitigation necessary as a result of construction will have to be done in addition to the ERPP plan. This needs to be clarified.

Page 5-55, Impact 3.5, first bullet

Change it to read; Restoration of natural areas to serve as alternative foraging habitat *in addition and in conjunction with* the ERPP habitat restoration component.

Page 5-56, Impacts to Special-Status Species and Communities, Impact 3.6

The logic is flawed. ERPP is separate from the alternative and independent. In addition, proper management could increase the foraging area of species and should be addressed in this discussion. The impact here is to the agricultural community and local economy and not the species and forage.

Page 5-60, Special-Status Species and Communities (first one), last sentence of first paragraph

The logic is flawed. We shouldn't state that nesting/roosting trees are limiting. Instead

Mr. Lester Snow
July 29, 1997
Page Fourteen

we should make the case that suitable foraging habitat and suitable roosting nest trees are needed. The pitch needs to be that seasonal wetlands can be managed for dual purposes (waterbirds and Swainson's hawks) and the ERPP has significant acres targeted for management that enhances foraging for Swainson's and sandhill cranes.

Page 5-61, Special-Status Species and Communities

This paragraph discusses how the Water Use Efficiency Program includes goals to reduce existing use and future demand on the states limited water supply. What are these goals? Where are they to be implemented? Statewide? In the Delta? North of the Delta? South of the Delta? This whole discussion contradicts the reasoning behind what CALFED is trying to accomplish. CALFED is working to restore the Delta, yes, but they are working even harder on increasing the amount of water available to the pumps.

Page 5-63, Special-Status Species and Communities, Paragraph 1

The logic is flawed. We shouldn't state that nesting/roosting trees are limiting. Instead we should make the case that suitable foraging habitat and suitable roosting nest trees are needed. The pitch needs to be that seasonal wetlands can be managed for dual purposes (waterbirds and Swainson's hawks) and the ERPP has significant acres targeted for management that enhances foraging for Swainson's and sandhill cranes.

Page 5-66, Paragraph 1

The logic is flawed. We shouldn't state that nesting/roosting trees are limiting. Instead we should make the case that suitable foraging habitat and suitable roosting nest trees are needed. The pitch needs to be that seasonal wetlands can be managed for dual purposes (waterbirds and Swainson's hawks) and the ERPP has significant acres targeted for management that enhances foraging for Swainson's and sandhill cranes.

Page 5-68, 5.4.1 Summary of Regional Effects by Alternative and Table 5.4-1

The number of species that are adversely affected should be shown separately from those that benefit.

Page 5-69, Paragraph 1

This paragraph states that Table 5.4-2 summarized potential changes in the area of habitat types and then goes on to say that approximately 5,000 acres would be the result of Alternative 1. The table shows only "+" and "-"; will acres eventually get plugged into the table?

Page 5-69, Impact 4.1, Loss or Disturbance of Wetland and Riparian Communities

The paragraph states that as a result of construction and operation of storage facilities

Mr. Lester Snow
July 29, 1997
Page Fifteen

and implementation of the ERPP this impact is considered significant. Since the ERPP does not call for the loss of wetland and riparian communities within this region, the impacts are therefore due to the construction and operation of storage facilities. Additionally, this statement contradicts the statement on Page 5-70, Benefit 4.5.

Page 5-69, Benefit 4.2

Would implementation of the ERPP or of Alternative 1 substantially increase the area of riparian habitats? If it is from Alternative 1, wouldn't it be as mitigation for the construction of a new (or enlarged) reservoir?

Page 5-70, Impacts and Benefits to Special-Status Species and Communities, Sentence 3

It is believed that loss or degradation of aquatic, wetland, riparian, and grassland will communities will be due to the Levee System Integrity Program and not the ERPP; this needs to be stated.

Draft Terrestrial Resources Technical Appendix - Affected Environment

General Comments:

Table titles and headings should be at the top of each respective table and not at the end.

This report needs a lot of work to 1) be understandable, 2) be verifiable, and 3) be useful as a base technical document for future CALFED actions.

Geographic Areas: Discussion regarding the affected areas (e.g. the Central Valley, the Delta, the Sacramento Valley) is confusing and inconsistent. It is recommended that the technical report needs to include maps for all geographic areas mentions. These maps need to be detailed and clearly identify each area specifically referred to in the text.

Affected Species: Discussions regarding affected or important species is confusing, inconsistent with regard to detail, and too general (e.g. page 9, paragraph 2). In addition, tables IV-4, IV-5, and IV-6 are referred to in the text as listing the species when in fact these tables only list the number of species in habitat types within each CALFED region.

- **Appendices of affected species**
Include accurate, complete lists of affected species in appendices, including both scientific and common names. Currently the draft has two blank pages as place holders for wildlife and plant appendices. The term wildlife has many definitions;

Mr. Lester Snow
July 29, 1997
Page Sixteen

the preferred one includes plants. It is recommended that the Technical Report arrange the affected species in a more concise phylogenetic manner. Consider this as a possibility: protozoans, plants, aquatic invertebrates, terrestrial invertebrates, fishes, amphibians, reptiles, birds, and mammals.

- **Tables of affected species**
When initiated the discussion of any given CALFED region-habitat type combination, include a table of all the affected taxa.
- **Consistency in the discussion of affected species**
Too often one group of organisms, usually birds or mammals, receives noticeably more discussion. It is recommended that when introductory paragraphs mention several types of organisms, subsequent paragraphs elaborate on each group previously mentioned rather than a selective few previously mentioned.

Habitat Acreage: The Technical Report discusses the historical range and quantity of acreage and historical loss of the different types of habitat covered by the CALFED Bay-Delta Program. However, the computations relating the historical versus present acreage are not correct in some places, and in other places are difficult to confirm (e.g. page 7, computations regarding woody riparian habitat; page 9, computations regarding freshwater emergent wetlands and permanent wetlands).

- **Tables of habitats**
It is recommended that a set of tables be included that would illustrate: 1) historical acreage by habitat and by CALFED regions, and 2) present acreage by habitat and by CALFED region.
- **Maps of habitats**
It is recommended that a set of maps be included that would illustrate historical acreage and range of habitat types. The maps could either focus on the habitat type or the CALFED area, or preferably both.
- **Computations within the text**
When including numbers of acres, either 1) at more than one point in time for the same habitat type or 2) for the same habitat type scattered over more than one area, the text should be written so the reader can verify the calculations.

Citations: Many of the included citations are not listed in the references section and review of the report was hampered due to the omissions. Also, several paragraphs' sole citations were inserted at the end of the paragraph. It was hard to determine if the citation referred only to

Mr. Lester Snow
July 29, 1997
Page Seventeen

the sentence that included the citation or the entire paragraph (e.g. page 7, paragraph 2). Lastly, some statements and paragraphs addressing data, making conclusions, or dealing with scientific or management premises, lacked any citations. It is recommended that an intensive review be conducted when it is released for public comments to ensure 1) all citations are included in the Citations section, 2) the citations support the content of the Technical Report, and 3) statements of fact or interpretation are sufficiently cited.

Specific Comments:

Page 1, Introduction, Sentence 3

This sentence is so nebulous as to be useless. In additionally, there is nothing contained in the sentence or after to convince the reader that, in fact, the "detail" included in the appendix is the "appropriate" detail.

Page 1, Introduction, Paragraph 1, last sentence

Replace conserve with *preserve and protect*.

Page 1, Introduction, Paragraph 2, Sentence 2

Delete the ",", after the and between San Joaquin River, and", " State Water.... in the list of regions.

Page 1, Introduction, Paragraph 2, Sentence 3

Justification for this variation in detail is not given. It is believed that the same level of detail is appropriate for a technical document, especially because 1) land management actions are going to take place in all the regions, and 2) prioritization is going to have to be made and justified by data and analyses.

Page 1, Historical Perspective, Paragraph 1, Sentence 1

Change the word *centuries* to *decades*.

Page 1, Historical Perspective, Paragraph 2, Sentence 4

Explain how the existing and 1945 habitat acreages were correlated. Does this mean that existing habitat classifications lumped to equate with the broader habitat

Page 3, Section B1, Paragraph 3

Explain what knowledgeable individuals at major reservoirs are.

Page 3, Paragraph 1

Elaborate on WHR, e.g. California Statewide Wildlife Habitat Relationships System, Department of Fish and Game, etc.

Mr. Lester Snow
July 29, 1997
Page Eighteen

Page 3, Plant Communities and Associated Wildlife

The Department of Forestry and fire Protections' Forest and Rangeland Resources Assessment Program (FRRAP) is now the Fire and Resource Assessment Program (FRAP).

Page 3, Column 2, Paragraph 1

Was Landsat imagery used only for urban and agricultural areas? If not, this needs to be stated.

Page 3, Column 2, Paragraph 2

"...other available literature..."

This vague reference to sources is inappropriate for any document, let alone a technical reference. A reader cannot review an unspecified reference and cannot verify comments made in the Technical Report without access to specified references.

"... and contracts with knowledgeable individuals at major reservoirs."

Define what is meant by major reservoirs.

Page 3, Column 2, Paragraph 2

Delete *at major reservoirs* at the end of the sentence.

Page 3, Column 2, Paragraph 3, Riparian and Wetland Habitats

As in the comments before, the use of "unpublished data" does not aid the reader in reviewing or verifying information in the Technical Report.

Page 3, Column 2, Paragraph 4

The land-cover data comes from various sources, and age difference of these data spans 12 years. It is assumed there are problems with using data with age differences. If so, the biases, problems, and assumptions in using the data need to be discussed in the Technical Report.

Additionally it is hoped that CALFED plans to update and unify their land-cover data. If not, it is recommended that such an endeavor be incorporated into CALFED's work plan.

Page 4, Column 1, Paragraph 1

It is stated that upland and farmed wetland land use categories were replaced with DWR land use data for urban, agricultural and native vegetation. What land use was the native vegetation replacing? Can native vegetation be deleted from this sentence as it seems to be covered in the following sentence?

Mr. Lester Snow
July 29, 1997
Page Nineteen

Page 4, Column 1, Paragraph 3, Reservoirs

The use of "unpublished maps" does not aid the reader in reviewing or verifying information in the Technical Report.

Page 4, Column 2, Paragraph 1, Significant Natural Areas

Delete the word *the* so the sentence reads "... however, areas have been ..."

Additionally, the description does not appear to be accurate. NHD's Lands and Natural Areas Program will review and rewrite the paragraph.

Page 4, Special-Status Species

There are several "special status" designations that do not appear to be included in CALFED' considerations: DFG's Species-of-Special-Concern (animals), DFG's Special Plants, and some federal agencies sensitive species (U.S. Forest Service and Bureau of Land Management). Some of these designations are quite important for environmental consideration and review under the California Environmental Quality Act and the National Environmental Protection Act. It is recommended that either CALFED expand its efforts to consider additional species or justify why such inclusion is not necessary or appropriate.

Page 5, Column 1, Paragraphs 2 and 3

Both paragraphs make vague reference to other government documents related to wildlife and habitat information. Neither paragraph aids the reader in understanding specifically what is contained in the Technical Report. Precise documentation needs to be included.

Page 5, Column 2, Overview of Historical Trends, Paragraph 1, Sentence 1

This statement infers that people living in California prior to the Spaniards did not change the landscape. This is not the case. Possibly, measurable changes in the greater Bay-Delta area are not documentable. Is this what is meant? It is recommended that this issue be elaborated upon. Also, unless it has already occurred, it is recommended that CALFED contact the affected tribes and tribal historians to discuss this issue.

Page 5, Column 2, Overview of Historical Trends, Paragraph 1, Sentence 2

Can the word *inland* be substituted for *remote*? Would this wording change the meaning intended?

Page 5, Column 2, Overview of Historical Trends, Paragraph 3, Sentence 2

Add the word *native* so the sentence reads, "Extensive herds of native grazing animals..."

Mr. Lester Snow
July 29, 1997
Page Twenty

Page 5, Column 2, Overview of Historical Trends, Paragraph 4, Sentence 1

This is a technical document and overviews need to be included for every habitat.

Page 6, Table III-1

Consider showing the current acreage of agricultural and urban today; within this table illustrate the change. Additionally, one of the three habitats that have an overview is riparian habitat yet the table does not include miles/areas of this habitat. Also, the notes section takes up nearly the same space as the table proper. It is recommended that the table be revised to be more complete and more reader-friendly.

Page 7, Section B, Column 2, Paragraph 2

The transition from the second sentence to the third is somewhat confusing. Think about spelling out what the Central Valley is so it is very clear that this area includes all the tributaries as well as the Sacramento and San Joaquin rivers.

Page 7, Column 2, Paragraph 1, Sentence 2

What was the original acreage of riparian habitat in the Central Valley? What remaining percentage does 65,400 acres represent? Can this be expressed as a percentage?

Page 9, Paragraph 2, Sentence 1

Change the word developed to *were widespread*.

Page 11, Column 1, Paragraph 3

Two figures for grassland acreages are presented in this paragraph, one is for 10.4 million acres and the other for 5.8 million. The next paragraph states that today grasslands occupy 8.7 million acres, a decline in acreage. Clarify these paragraphs.

Page 11, Column 1, Paragraph 3

Two figures for grassland acreages are presented in this paragraph, one is for 10.4 million acres and the other for 5.8 million. The next paragraph states that today grasslands occupy 8.7 million acres, a decline in acreage. Clarify these paragraphs.

Page 11, Column 1, Paragraph 4

The loss of grasslands dominated by native bunchgrasses has been much greater; only a few small remnants of this type remain. It is recommended that this be quantified and a reference cited.

The degradation of grassland quality has also continued, especially on heavily grazed rangelands. These conclusions need to be supported by 1) more elaboration, 2) quantification, and 3) citation(s).

Mr. Lester Snow
July 29, 1997
Page Twenty-one

Page 11, Paragraph spanning both columns

Prior to European settlement, the abundance and diversity of wildlife using the Central Valley grasslands were comparable to those of the plains of East Africa. This seems at best a stretch and more likely incorrect. What are the citations that support this statement. It is recommended that some well-respected mammalogists be asked if they concur with this statement.

Page 11, Column 2, Historical Uses of the Delta and Bay Regions

These changes have led to the listing of many species in the region as threatened or endangered under the federal and State ESAs. What is actually more correct is that changes in the condition of the Delta-Bay region have resulted in the decline of many species and the federal government and State have taken the action of listing in an attempt to save the species.

Readers should note that species' common names are used instead of scientific names to ease readability of the document. This statement should be placed at the beginning of the document.

Page 12, Column 1, Paragraph 1

"400,000 to 18,000 acres in 1985... Change in to by.

Page 12, Column 1, Paragraph 3

There is a reference to hunting as the cause of reduced herds of elk and antelope herds. The previous page, column 2, paragraph 1 mentions market hunting as having all but eliminated the vast herds of grazing animals. These should be consistent.

Page 12, Column 1, Paragraph 3

There is a reference to hunting as the cause of reduced herds of elk and antelope herds. The previous page, column 2, paragraph 1 mentions market hunting as having all but eliminated the vast herds of grazing animals. These should be consistent.

Page 12, Column 2, Salt Water Intrusion

The Technical Report used the term salinity intrusion. Is not salinity a measurement and therefore a more correct term by either "salt water intrusion" or "salinity increases"?

Page 13, Plant Communities and Associated Wildlife, Sentence 1

Clarification is needed for the phrase *other habitats*.

Mr. Lester Snow
July 29, 1997
Page Twenty-two

Page 13, Plant Communities and Associated Wildlife, Sentence 1
Clarification is needed for the phrase *other habitats*.

Page 13, Waterfowl and Shorebirds
Something needs to be added to this discussion to clarify that the great majority of reproduction was taking place outside of California and that habitat was declining as well.

Page 13, Column 2, Recent Conditions
This section is 25 pages in length, yet the recent conditions of the plant communities and special-status species does not seem to be the topic. The topic seems to be community descriptions. Also, the introductory paragraph states: *Because the study area is so large, generalization is necessary to convey a sense of the recent conditions...* Twenty five pages are a considerable length to expend on a topic thus, it does not seem to be a case of generalization. It is recommended that either 1) remove the descriptions, replace them with citations for readers to obtain the descriptions, and replace them with a discussion of current conditions, or 2) supplement the existing text with a discussion of current conditions.

Page 13, Section B, Paragraph 1, Sentence 1
This states that annual grassland communities are abundant. Does take into account native plant composition?

Page 14, Column 2, Paragraph 2, Sentence 2
Change *actors* to *acorns*.

Page 14, Column 2, Paragraph 2, Sentence 2
Change *actors* to *acorns*.

Page 14
This page should be moved to page 18 and tables IV-1 and IV-2 should be moved up to begin on page 14.

Pages 15-17, Table IV-1, Comparison of vegetation types used in this document with other California vegetation classification systems
It is recommended that this be included as an appendix rather than a table. Too, include reference to this at pertinent cross-walks (e.g. Keeler-Wolf and Sawyer) otherwise the usefulness of the appendix/table is lessened.

Mr. Lester Snow
July 29, 1997
Page Twenty-three

Page 18, Table IV-2

The total acreage included in the *All* column does not equal the totals included in the other corresponding columns.

Page 23, Column 2, end of first sentence

Add a ' to the end of species(').

Page 23, Column 2, Paragraph 2

Consider discussing specialized species' such as bats to the great diversity of wildlife species.

Page 24, Column 2, Paragraph 3, Sentence 4

Add bats to the end of this sentence so that it reads ; ...insectivorous birds *and bats*.

Page 26, Column 1, Paragraph 2, Sentence 2

Delete the s on provides so the sentence reads; The diversity of plant species and growth forms *provide* a variety...

Page 29, Column 1

Add into the discussion that many of the plant and wildlife species associated with vernal pools are endemic and specialized.

Page 32, Column 2, Grain

Delete the "s" at the end of Grain(s), the first word of the first sentence, so that it reads; Grain crops include....

Page 32, Orchard-Vineyard

Wildlife species are mentioned as being associated with this habitat. It should be made clear that for the most part this habitat provides some limited foraging opportunities but very little roosting or breeding habitat.

Page 32, Row Crops, Sentence 2

Change to read, "Intensive management ... crops *greatly* limit their use by wildlife."

Page 33, Rice

It states that irrigation ditches often contain dense cattail vegetation which provides habitat. It should be noted in this paragraph that these ditches are routinely cleared of vegetation, therefore, the habitat provided is temporary.

Mr. Lester Snow
July 29, 1997
Page Twenty-four

Page 34, Table IV-3

The text on page 33 for Valley Oak Riparian states that it occurs in all of the study area regions but this is not reflected in the table. The Bay does not have an 'x' noting this plant community presence. This needs to be clarified.

Page 34 Table IV-3

The text for Fremont Cottonwood, Mixed Riparian, Stabilized Interior Dunes, Cismontane Alkali Marsh, and Northern Coastal Salt Marsh on pages 35-38 do not match Table IV-3.

Page 39, Resources in each CALFED Study Region

Include a better overview of what is to follow.

Page 39, Natural and Agricultural Communities and Associated Wildlife

Due to the fact that the value to wildlife of agricultural land varies widely depending upon the crops and how these are managed, these communities should not be grouped with natural communities when calculating acreages.

Page 39, Section E, Paragraph 1, Last sentence

Change it to read; Table IV-4 presents *numbers* of special....

Page 40, Table IV-4

The number of special-status species is meaningless in and of itself. Additionally, the table note states: *Many species have a federal and state status. However, in this table, each species was assigned to the highest-ranked category of legal protection (federally listed = highest, state-listed = lowest) and counted only once.* This statement suggests that the authors do not understand the differences between the federal and state acts. The Acts give different levels and types of protection to different types of organisms. It is recommended that the authors consult with the Department and U.S. Fish and Wildlife Service staff knowledgeable about the Acts as soon as possible.

Page 41-42, Table IV-5/IV-6

The number of special-status species is meaningless in and of itself.

Page 45, Column 2, Paragraph 2

This paragraph mentions waterfowl and sandhill cranes in the first two sentences. The third sentence then states that "The value of these lands to these upland gamebirds is enhanced by the presence of nearby riparian vegetation." This needs to be clarified so that it is not construed that sandhill cranes and waterfowl are upland gamebirds.

Mr. Lester Snow
July 29, 1997
Page Twenty-five

Page 45, Section 2, Paragraph 1, Last sentence

Change the last sentence to read "These factors are further *defined* (not defines) as follows:"

Page 46, Subsidence of Delta Islands, Paragraph 2

This second paragraph seems contradictory. It states that if farming becomes economically inviable due to subsidence the need for costly levee repairs would not be necessary. The next sentence states that levee repair results in periodic disturbance of riparian vegetation. This implies that subsidence, and the subsequent loss of agricultural land practices, would be beneficial to wildlife.

Page 46, Nonnative Species Populations

"...212 species of nonnative invertebrates (69%, fish and other vertebrates (15%), vascular plants (12%), and protists..." After this beginning there is no follow-up discussions of invertebrates, fishes, or protists. Include a discussion of all organisms mentioned as nonnative species populations affecting native species.

Page 47, Column 1, Paragraph 1

In this report, an occurrence indicates only that one or more individuals of a species was recorded as being observed; no inference is made about the status of the species' population at the location of the reported occurrence. This sentence represents another very great short-coming of the Technical Report: lack of species and population assessment. Information such as what exists at the Department's NDDB could greatly facilitate population and species assessments.

Page 47, Column 1, Paragraph 2, Sentence 1

Table IV-5 only lists the number of special-status species so this needs to be clarified.

Page 47, Column 1, Paragraph 2, Sentence 4

Delete the space at the end between the last word and the period.

Page 47, Column 1, Paragraph 2, Sentence 1

Table IV-5 only lists the number of special-status species so this needs to be clarified.

Page 47, Column 1, Paragraph 2, Sentence 4

Delete the space at the end between the last word and the period.

Page 48, Column 1, Paragraph 4

Although the VELB is found on McCormac-Williamson and New Hope tracts, this represents a dramatic shrinkage in suitable habitat.

Mr. Lester Snow
July 29, 1997
Page Twenty-six

Page 48, Column 2, Paragraph 1

It is stated that the areas mentioned are considered the northernmost portion of the kit fox range. It should read that these areas are considered the northernmost portion of the range that falls within the Delta. There are occurrences north of these areas.

Page 49, Section 6, Paragraph 2, Sentence 1 and 2

The first sentence states that the Delta supports 60% of the waterfowl in the Pacific Flyway, yet only 10% of California's waterfowl. Is this true? It needs to be clarified.

Page 49, Column 2

The term *tideflat* is used. Replace with *tidal flat*.

Page 49, Column 2

Delete the space to bring up the rest of the text on page 51 so large gap on page 49 is deleted.

Page 53, Section 3, Sentence 1

Table IV-6 only lists the numbers of special-status species so this needs to be clarified in the text here.

Page 53, Section 4, Sentence 1

It is stated that 70% of the waterfowl on the Pacific Flyway move through the Bay while on page 49 it states that 60% occur in the Delta. This needs to be clarified.

Page 55, Upland Communities, Paragraph 1, Sentence 2

It states that grassland is the most abundant natural community on the valley floor and adjacent foothills. Is this based upon the composition of natural vegetation or just all grass species, non-native included? This should be clarified.

Page 55, Riparian and Wetland Communities, Column 2, Paragraph 2

If possible, the acreage of wetlands should be adjusted so that those acreages that occur in the Delta and Marsh are not reflected in the acres listed in this discussion for the Sacramento River region.

Page 58, Column 1, Paragraph 2

Sentences 2 and 4 both state the same thing. This needs to be corrected.

Page 59, Section 3, Sentence 1

Table IV-5 does not list the species, only the number of species. This needs to be clarified.

Mr. Lester Snow
July 29, 1997
Page Twenty-seven

Page 59, Section 4, Sentence 1

Table IV-6 does not identify the species, only lists the number of species. This needs to be clarified.

Page 61, Waterfowl and Shorebirds, Paragraph 2, Sentence 2

It states that approximately 55% of the waterfowl that winter in the Central Valley use Sacramento Valley wetlands. On page 49, it states that 60% use the Delta. This needs to be clarified.

Page 61, Upland Communities

Same comment as for page 55 Upland Communities applies here as well.

Attachment A Habitat Guild and Species Summary

General Comments

Consider adding the following to the list:

- tule elk
- other habitat types
 - e.g. montane riparian
 - montane hardwood
 - chaparral

The tabs/spacing needs to be checked and corrected.

Specific Comments

Page 3

Add foraging and resting habitat to the Bay region for the river otter.
Add sandhill crane to the list of birds found in shallow water habitat.

Page 5

Add breeding habitat for the Canada goose in the Delta region.

Page 6

Add giant garter snake to the list of reptiles under the fresh emergent wetland habitat.