United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

In Reply Refer To:
CRC-Grassland Bypass Project
81420-2010-CPA-0208

MAY 8 2010

Ms. Gail Cismowski
Regional Water Quality Control Board, Central Valley Region
11020 Sun Center Drive, #200
Rancho Cordova, California 95670-6114

Subject: Comments on the March 2010 Draft Staff Report Concerning the Proposed Basin Plan Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins to Address Selenium Control in the San Joaquin River Basin

Dear Ms. Cismowski:

The U.S. Fish and Wildlife Service (Service) submits these comments on the California Central Valley Regional Water Quality Control Board's (Regional Board) Draft Staff Report (Staff Report) concerning the proposed Basin Plan Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins to Address Selenium Control in the San Joaquin River Basin (Basin Plan Amendment), dated March 2010. We accessed a copy of the Staff Report from your website on March 16, 2010. The Notice of Filing regarding the Staff Report notes that written comments must be submitted by April 26, 2010, in order to be included in the written response to comments that is a part of the final administrative record. The Service contacted Rudy Schnagl on April 19, 2010, and again on May 4, 2010, to notify the Regional Board that the Service's comments would be submitted after the comment deadline listed in the notice. The Service committed to providing comments to the Regional Board by May 7, 2010, and we appreciate the additional time provided for our review of the Staff Report. We ask that these comments as well as previously transmitted comments by the Service submitted during the scoping phase for the Staff Report be included in the official response to comments that is part of the final administrative record.

The Staff Report focuses largely on allowing the continuation of the Grassland Bypass Project (GBP) by proposing to modify the compliance time schedule in the current Basin Plan for meeting selenium objectives in Mud Slough (north) and the San Joaquin River between Sack Dam and the Merced River. Our primary concerns regarding the Staff Report are related to: 1) the environmental impacts associated with deferring compliance of water quality objectives in Mud Slough (north) and the San Joaquin River are not adequately addressed; and 2) the inputs of selenium contamination (outside of the GBP) in the Grasslands wetland supply channels that result in continued exceedences of water quality objectives in those channels and environmental harm are not addressed. We recommend the Regional Board broaden the analysis in the Staff Report and associated Basin Plan, by assessing the selenium water quality impairments mentioned above and remedying those impairments in order to achieve water

quality objectives and protect beneficial uses in impacted waters in the Grasslands and San Joaquin River.

Background

The Service has had a long-standing interest in ensuring adequate water quality in the Grasslands Ecological Area and San Joaquin River. The Grasslands Ecological Area includes over 160,000 acres of Federal, State, and privately managed marsh, native pasture and riparian zones, including the largest contiguous block of wetlands remaining within the Central Valley. Prior to the early 1900's, this area was part of a vast network of some 4,000,000 acres of wetlands spread throughout the Central Valley. Today that valley-wide network is down to 300,000 acres, of which the Grasslands area is a critical component. As much as thirty percent of the migratory birds that utilize the Central Valley frequent the watershed each winter. The area annually hosts hundreds of thousands of ducks, geese and waterbirds, and is recognized by the Western Hemisphere Shorebird Reserve Network as a place of international importance to wintering and migrant shorebirds. The Grasslands Ecological Area has also been designated a Wetlands of International Importance under the Ramsar Convention, the only international agreement dedicated to the worldwide protection of wetlands. The Grasslands Ecological Area and vicinity also provides habitat to two known populations of the giant garter snake *(Thamnophis gigas)* (in Mendota and North and South Grasslands) as identified in the final rule listing this species as threatened (USFWS 1993) (56 **FR** 54053). The San Joaquin River provides habitat to the federally listed delta smelt (*Hypomesus transpacificus)*, Central Valley steelhead (*Oncorhynchus mykiss),* Central Valley spring run Chinook salmon (*Oncorhynchus tshawytscha*) and green sturgeon (*Acipenser medirostris).*

In 1988, the Regional Board adopted an amendment to the Basin Plan for regulation of agricultural subsurface drainage discharges from the Grassland Watershed of Merced and Fresno Counties. That amendment included a site-specific selenium objective for wetland water supplies in the Grasslands of 2 µg/L on a monthly mean basis. The available body of scientific evidence supports a chronic criterion of 2 µg/L for the protection of sensitive taxa of fish and wildlife. In the absence of site-specific and species-specific data regarding the sensitivity of particular species and/or populations, a criterion of at most 2 µg/L is required to assure adequate protection of threatened and endangered species of fish and wildlife (USFWS and NMFS 2000).

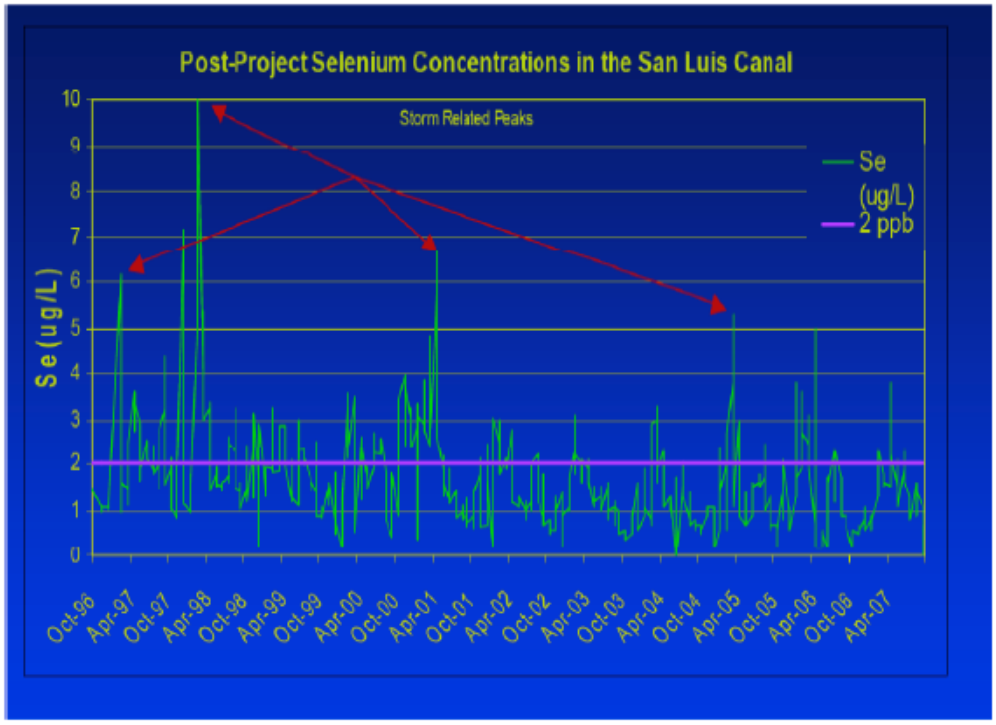
In 1990, the U.S. Environmental Protection Agency (USEPA) approved the 2 µg/L monthly mean selenium objective for the water delivered to wetland areas within the Grassland watershed. A revised Basin Plan amendment was adopted by the Regional Board in 1996, as part of a set of amendments that focused on the control of selenium-laden agricultural subsurface drainage discharges in and from the Grassland watershed. The need to reduce selenium loadings to, and concentrations in, the Grassland wetland water supplies and downstream waters in order to protect fish and wildlife, including threatened and endangered species, was one of the driving forces behind the Regional Board's adoption of the Control of Agricultural Subsurface Drainage Discharges (Grasslands Amendments). The Service previously commented on drafts of the Grasslands Amendments. The Grasslands Amendments were adopted May 3, 1996, via Regional Board Resolution 96-147, and approved by the State Water Resources Control Board Resolution 96-078 and by the State Office of Administrative Law on January 10, 1997. The Service completed a formal Endangered Species Act consultation with the USEPA on the Regional Board's Grassland Amendments on November 4, 2002 (Service File No. 00-F-0054). A copy of this consultation is provided in Attachment A.

Implementation of the GBP since 1996 has significantly improved water quality in the Grasslands wetland channels (with the exception of Mud Slough north which is used to route drainage water to the San Joaquin River), and reduced salt and selenium loading to the San Joaquin River. With implementation of the GBP from 1996 through the present time, most of the drainage from farmlands in and adjacent to the Grassland Drainage Area was no longer conveyed in about 93 miles of Grasslands wetland channels. However, exceedences of the 2 µg/L monthly mean selenium objective in water still occur in the Grassland wetland supply channels. Sources of ongoing selenium contamination in Grassland wetland channels include (1) continued contamination of the water supply in the Delta Mendota Canal; (2) unregulated and unmonitored discharges of agricultural subsurface drainwater from nearby farmland into local ditches and canals that feed into the Grassland wetland supply channels; (3) and large storm events that can overwhelm the GBP channel, requiring that uncontrollable storm runoff be diverted into wetland supply channels (Beckon *et al*. 2007; Paveglio and Kilbride 2007; Eppinger and Chilcott 2002).

The Service wrote the Regional Board regarding exceedences of the Grassland wetland supply channel monthly mean objective for selenium of 2µg/L on December 19, 1997 (Service File No. FWS EC-98- 013), and we incorporate that letter by reference to these comments. A copy of this letter is provided in Attachment B. In that letter the Service noted that, "*Impounded wetland systems like those on refuges are very susceptible to adverse effects from moderately elevated concentrations of selenium in their water supply*." The Service recommended that the sources of selenium causing exceedences need to be identified, and measures need to be taken to control those sources. On November 8, 2002, the Service again wrote the Regional Board regarding concerns over water quality in refuge water supplies in the Grasslands (Service File No. FWS EC-02-007), and we incorporate that letter by reference. A copy of this letter is provided in Attachment C. In that letter the Service found that, "*Exceedences of the State-adopted, federally approved chronic water quality objective for selenium in the Grassland wetland water supplies are a continuing problem and are resulting in failure to protect designated beneficial uses, including use by wildlife species*." The Service concluded that "*The lines of evidence implicating selenium in source waters from the DMC, Mendota Pool, and the Main Canal are sufficient to trigger corrective actions by the CVRWQCB*."

Since the onset of the second Use Agreement for the GBP in September 2001, there have been consistent short-term pulses of selenium inputs into the Grassland wetland supply channels that have resulted in exceedences of the 2 µg/L monthly mean selenium objective. For example, from September 2001 through June 2006, weekly water samples documented selenium levels above 2µg/L in the Grassland wetland supply channels 23 times in Camp 13 Ditch, 14 times in Agatha Canal, 4 times in the San Luis Canal, and 14 times in the Santa Fe Canal (USBR *et al.,* GBP Monthly Monitoring Reports, September 2001 to June 2006). Typically, these exceedences of 2 µg/L are associated with heavy rainfall events and/or occur in the spring of each year (usually in March and/or April), or occur during periods of low flow in the wetland channels as depicted in Figure 1 below, Weekly Selenium Concentrations in the San Luis Canal, 1996-2007 (a wetland supply channel in the South Grasslands). As a result of non-compliance with selenium water quality objectives and an existing TMDL for those channels the SWRCB included the Grassland Marshes (Grassland Wetland Supply Channels) on the 2006 303(d) list of impaired water bodies for California (SWRCB 2007).

Figure 1. Weekly Selenium Concentrations in the San Luis Canal, 1996 – 2007
from Chilcott and Schnagl, 2008



Service Involvement with the Current Proposed Basin Plan Amendment

The Service attended a public scoping meeting on November 12, 2008, for this action; met with you, Karl Longley, Pamela Creedon, Rudy Schnagl at the Regional Board's office in Rancho Cordova on February 2, 2009; and submitted scoping comments on March 19, 2009, on the proposed extension of the Grassland Bypass Project (GBP) and the associated Amendment of the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for the Control of Agricultural Subsurface Drainage Discharges. The Service's comments to the Regional Board on March 19, 2009, noted that although water quality in the Grassland wetland supply channels had improved with the implementation of the GBP, "… *exceedences of 2 µg/L selenium in water from wetland supply channels still occur, typically associated with heavy rainfall events and in the spring of each year (usually in March and/or April) as depicted in Figure 1 below, Post-Project Weekly Selenium Concentrations in the San Luis Canal (a wetland supply channel in the South Grasslands). As a result, the Grasslands wetland supply channels and Salt Slough were put back on the 2006 303(d) list of impaired water bodies for California due to noncompliance with water quality objectives and existing total maximum daily load (TMDL)s (for selenium) for those channels (SWRCB 2007).*" We ask that the Service's comments and all public comments received during the public scoping period, as well as on the Staff Report, be included in the administrative record for this action. In addition, we ask that the Regional Board respond to these comments and make those responses available in the administrative record for this action.

Service involvement with the GBP Environmental Impact Statement/Report

The Staff Report is largely based on the Final Environmental Impact Statement and Environmental Impact Report (FEIS/R) completed by the U.S. Bureau of Reclamation and the San Luis and Delta Mendota Water Authority dated December 21, 2009. The Service provided comments on the DEIS/R for the GBP on March 23, 2009, and those comments are included in the FEIS/R, Appendix I. The Service provided supplemental comments on the FEIS/R with respect to effects to wildlife at the GBP's San Joaquin River Improvement Project's drainage reuse area on October 27, 2009, and these comments are included as Attachment D to this letter. In addition, the Service provided supplemental comments on the FEIS/R relevant to effects of the GBP on San Joaquin River water quality and salmonids via e-mail on November 18, 2009, and these comments are included as Attachment E to this letter. We ask that the Regional Board include and respond to these comments in the final administrative record for this action.

The Service completed a biological opinion (BO) on the Third Use Agreement for the GBP 2010-2019 (GBP BO) on December 18, 2009 (Service File No. 2009-F-1036). The Staff Report correctly notes that the GBP BO concluded, "*the continuation of the GBP and execution of the third Use Agreement for use of the SLD, as described, is not likely to jeopardize the continued existence of the giant garter snake and the San Joaquin kit fox*." However, the Service found that under current conditions in the Grassland wetland supply channels, *"dietary selenium concentrations in the South Grasslands still pose a risk to growth, reproduction and survival of giant garter snakes. Further, contamination in the food chain in the North Grasslands, specifically Mud Slough (North) could preclude re-establishment of the snake in the vicinity of this waterway*." The GBP BO included an updated Status of the Species and Environmental Baseline on the threatened giant garter snake in the Grassland wetlands and Mendota Pool vicinity. The Service found that the garter snake has been adversely affected by water management actions (i.e. water transfers/exchanges, and ground water pumping, which have contributed to changes in cropping patterns), limited availability of summer water habitat (e.g., level 4 refuge water supplies) and by degradation of water quality in the San Joaquin Valley. The current baseline of the garter snake in the Grasslands wetlands and Mendota Pool vicinity indicates the species is experiencing significantly declining numbers, reduced reproduction and distribution through this portion of its range. We incorporate GBP BO by reference to these comments and ask that the Regional Board review the revised Environmental Baseline for the giant garter snake pertaining to selenium water quality and the giant garter snake (pages 111-119 of the GBP BO). This section was peer-reviewed by two scientific experts on environmental fate of selenium pollution, Dr. Dennis Lemly and Dr. Joseph Skorupa. Copies of these peer reviews are available upon request. The GBP BO is available at:
http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=3513

Additional Service Comments on the Staff Report

The Staff Report includes a revised compliance schedule for meeting selenium water quality objectives in Mud Slough (north) and the San Joaquin River (from Sack Dam to the Merced River). This revised compliance schedule includes a Performance Goal of 15 µg/L monthly mean by December 31, 2015, and a 5 µg/L 4-day average for these reaches of Mud Slough and the San Joaquin River by December 31, 2019. In an analysis of the effects of San Luis Unit selenium contamination on federally listed species, Beckon and Maurer (2008) found that seepage and flood flows carrying agricultural drainwater from the San Luis Unit to the San Joaquin River may adversely impact Chinook salmon and steelhead and could impair efforts to restore them to upstream reaches of this river. Central Valley Chinook salmon and steelhead are among the most sensitive fish and wildlife to selenium exposure. They are especially vulnerable

during juvenile life stages when they migrate and rear in selenium-contaminated Central Valley rivers and the San Francisco Bay/Delta estuary. Rivers and sloughs that carry agricultural drainwater have been found to concentrate selenium in invertebrates, small (prey) fish, and larger predatory fish. Selenium concentrations in the food-chain of these impacted waters have often reached levels that could impact or even kill a substantial proportion of young salmon (Beckon *et al*. 2008) if the salmon, on their downstream migration, are exposed to those selenium-laden food items for long enough for the salmon themselves to bioaccumulate selenium to toxic levels. Based on existing water quality data for selenium in specific reaches of the San Joaquin River, Beckon and Maurer (2008) concluded that there remains a substantial ongoing risk to migrating juvenile Chinook salmon and steelhead in the San Joaquin River as noted in Attachment E. The Service asks that the Regional Board consider the protection of Chinook salmon and steelhead in the San Joaquin River, including the reach between Sack Dam and the Merced River, in this Basin Plan Amendment. The Service believes that as written, the revised compliance schedule and lack of an enforceable water quality objective for selenium in the San Joaquin River upstream of the Merced River until December 31, 2019, is not protective of salmonids and could result in the loss of or harm to outmigrating young salmon in the San Joaquin River.

Recent GBP monthly monitoring reports (August through November 2009) identified elevated selenium concentrations in a Grassland wetland supply channel (Station K, Agatha Canal) and in the San Joaquin River upstream of the Merced River (Station H, San Joaquin River at Hills Ferry). Some of this data is provided in Tables 1 and 2 below. These exceedences in selenium concentrations in water are likely a result of continued unregulated discharges into the Grassland wetland channels (as described in our March 19, 2009, comments to the Regional Board) and low flow conditions likely associated with effects of water transfer and groundwater exchange programs in the GBP vicinity that can reduce flows in the Grassland wetland channels. A more detailed description of these water transfers and exchanges is provided in the GBP BO, Environmental Baseline Section, pages 107-111. The Service also incorporates by reference a comment letter dated April 9, 2010, to the U.S. Bureau of Reclamation on the Draft Environmental Assessment 10-12 on the Transfer of up to 20,500 acre-feet of CVP water from Central California Irrigation District to San Luis, Panoche, Del Puerto and Westlands Water Districts, and up to 5,000 acre-feet of CVP water from Firebaugh Canal Water District to San Luis and Wetlands Water Districts (Service File No. 2010-TA-0527). Substantive spikes of selenium in water at Station H on the San Joaquin River, with water concentrations exceeding 20 µg/L occurred during at least 4 months in 2009 (August through November). Elevated concentrations of selenium in the San Joaquin River associated with the GBP will likely be problematic to efforts to restore salmon runs to the upper San Joaquin River ecosystem through the San Joaquin River Restoration Program. The Service asks that the Regional Board review this new water quality information, and assess the cumulative effects of water transfers and groundwater exchange programs in the GBP vicinity that can reduce the flows in the Grasslands wetlands channels and San Joaquin River and impact compliance with water quality objectives. The Service believes that the proposed revisions to the Basin Plan in the Staff Report could adversely impact efforts to restore salmon to the upper San Joaquin River.

Table 1. Weekly water quality monitoring at Station K (Agatha Canal).

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	.	.	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	SLDMWA[11]	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Jul-06-2009	15	.	.	716	1.9	0.7
Jul-13-2009	0	.	.	528	1.1	0.4
Jul-20-2009	0	.	.	621	1.1	0.5
Jul-27-2009	0	.	.	1,030	1.9	1.1
Aug-03-2009	0	.	.	2,480	4.8	3.8
Aug-10-2009	0	.	.	4,150	26.4	6.7
Aug-17-2009	0	.	.	1,560	2.7	2.7
Aug-24-2009	0	.	.	1,080	1.5	1.6
Aug-31-2009	80	.	.	970	2.3	0.9
Sep-08-2009	125	.	.	570	0.6	0.2
Sep-14-2009	165	.	.	570	<0.4	0.2
Sep-21-2009	175	.	.	610	0.6	0.2
Sep-28-2009	175	.	.	580	0.5	0.2

Note: The peak in selenium is caused by no flow conditions at this site.

Table 2. Weekly water quality monitoring at Station H (San Joaquin River at Hills Ferry).

PARAMETER	.	.	.	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	.	.	.	SLDMWA	SLDMWA	SLDMWA
UNITS	.	.	.	µS/cm	µg/L	mg/L
Aug-04-2009	.	.	.	1,280	1.0	0.7
Aug-11-2009	.	.	.	2,420	20.3	2.8
Aug-18-2009	.	.	.	1,270	10.5	1.0
Aug-25-2009	.	.	.	1,840	2.7	1.5
Sep-01-2009	.	.	.	1,380	1.7	0.8
Sep-08-2009	.	.	.	1,730	13.6	1.7
Sep-15-2009	.	.	.	2,910	29.0	3.0
Sep-22-2009	.	.	.	1,960	8.3	2.4
Sep-29-2009	.	.	.	1,970	2.6	1.4
Oct-06-2009	.	.	.	1,920	20.6	1.5
Oct-21-2009	.	.	.	2,810	32.2	1.9
Oct-27-2009	.	.	.	1,610	2.6	1.2

The Regional Board identified **seven important points** that apply to water quality objectives in the 1998 revision to the Basin Plan. We ask that the Regional Board ensure that the Staff Report and associated Basin Plan Amendment are consistent with these seven points, in particular, points one through four. We have summarized those four points for the record below:

> The **first point** regards water quality impairments. The Regional Board uses the results from the Triennial Review of impaired water bodies to implement actions to assess, remedy, monitor, or otherwise address the impairments, as appropriate, in order to achieve objectives and protect beneficial uses.
>
> The **second point** regards *Controllable water quality factors:* are those actions, conditions, or circumstances resulting from human activities that may influence the quality of the waters of the State, that are subject to the authority of the State Water Board or the Regional Board, and that may be reasonably controlled. Controllable

factors are not allowed to cause further degradation of water quality in instances where uncontrollable factors have already resulted in water quality objectives being exceeded. The Regional Board recognizes that man made changes that alter flow regimes can affect water quality and impact beneficial uses.

The **third point** is that objectives are to be achieved primarily through the adoption of waste discharge requirements (including permits) and cleanup and abatement orders. When adopting requirements and ordering actions, the Regional Board considers the potential impact on beneficial uses within the area of influence of the discharge, the existing quality of receiving waters, and the appropriate water quality objectives. It can then make a finding as to the beneficial uses to be protected within the area of influence of the discharge and establish waste discharge requirements to protect those uses and to meet water quality objectives.

The **fourth point** is that the Regional Board recognizes that immediate compliance with water quality objectives adopted by the Regional Board or the State Water Board, or with water quality criteria adopted by the USEPA, may not be feasible in all circumstances. Where the Regional Water Board determines it is infeasible for a discharger to comply immediately with such objectives or criteria, compliance shall be achieved in the shortest practicable period of time (determined by the Regional Board), not to exceed ten years after the adoption of applicable objectives or criteria.

Conclusion

The Staff Report focuses largely on allowing the continuation of the GBP by proposing to modify the compliance time schedule in the Basin Plan for meeting selenium objectives in Mud Slough (north) and the San Joaquin River between Sack Dam and the Merced River. However, the Service believes that the Regional Board's action in the Staff Report and Basin Plan Amendment to control selenium in the San Joaquin River basin should more broadly address: 1) the impacts associated with deferring compliance of water quality objectives in Mud Slough (north) and the San Joaquin River; and 2) all sources of selenium contamination that are impairing water quality and associated beneficial uses in the Grasslands wetlands and San Joaquin River. The Regional Board should assess, remedy, monitor, or otherwise address the water quality impairments associated with delaying the compliance time schedule for selenium in Mud Slough (north) and the San Joaquin River upstream of the Merced River, in order to achieve objectives and protect beneficial uses. Further, the Regional Board should ensure that the Staff Report and associated Basin Plan Amendment are consistent with the seven points that apply to water quality objectives identified in the 1998 Basin Plan. In order to protect the quality of water delivered to wetland areas within the Grassland watershed, to protect federally listed species in the Grassland wetlands, and to protect existing and future runs of anadromous fish in the San Joaquin River, the Service recommends that the Regional Board include the following in the Basin Plan Amendment, or by means of some other Board action:

1. Inclusion of lands north of the GBP's Drainage Project Area into the GBP that continue to discharge directly into the south Grasslands wetland supply channels;

2. Elimination of discharges into the Delta Mendota Canal from the drainage sumps in the Firebaugh Canal Water District owned by the U.S. Bureau of Reclamation;

3. Evaluation of alternative routes of disposal and/or storage of excess drainage flows that occur during heavy rainfall events and that have historically been discharged into the Grasslands wetland water supply channels;

4. Assessment of the effects of continued selenium inputs into the San Joaquin River on existing and future runs of anadromous fish, and remedies of those impairments in order to achieve water quality objectives and protect beneficial uses in the San Joaquin River including the reach upstream of the Merced River.

5. Addition of RARE beneficial use designation for protection of the giant garter snake in the public and private wetlands of the Grasslands, and consideration and protection of that beneficial use in the Staff Report and Basin Plan Amendment.

Further, the Staff Report should include additional analysis, beyond what was considered in the GBP DEIS/DEIR on:

1 Consistency of the proposed modifications of the compliance time schedule for meeting water quality objectives for selenium provided in the Staff Report with the other Regional Board requirements for limits to salt and boron (Total Maximum Daily Loads) in the San Joaquin River;

2. Cumulative effects of water transfers and groundwater exchange programs in the GBP vicinity that that can reduce the flows in the Grasslands wetlands channels and San Joaquin River and impact compliance with water quality objectives.

We appreciate the opportunity to review your Staff Report. If you have any questions or comments about this letter, please contact Tom Maurer or Ms. Joy Winckel of my staff at (916) 414-6600. Please include the Service's Sacramento Fish and Wildlife Office on your distribution list for all further notices and Regional Board actions related selenium control efforts in the San Joaquin River Basin.

Sincerely,

for Susan K. Moore
Field Supervisor

Enclosures

cc:
Laura Fujii, Matt Mitchell, and Eugenia McNaughton, United States Environmental Protection Agency, San Francisco, CA
Theresa Presser, United States Geological Survey, Menlo Park, CA
Kim Forrest, U.S. Fish and Wildlife Service, San Luis National Wildlife Refuge Complex, Los Banos, CA
Maria Rea, National Marine Fisheries Service, Sacramento, CA
Julie Vance, California Department of Fish and Game, Los Banos, CA
Bill Cook, California Department of Fish and Game, Los Banos, CA
David Widell, Grassland Water District, Los Banos, CA
Mike Chotkowski, USBR MP, Sacramento, CA
Michael Jackson , USBR, Fresno CA

Literature Cited

Beckon, W.N. and T.C. Maurer. (2008). *Potential Effects of Selenium Contamination on Federally-Listed Species Resulting From Delivery of Federal Water to the San Luis Unit.* Prepared for the U.S. Bureau of Reclamation under Agreement # 05AA210003, by U.S. Fish and Wildlife Service, Sacramento Fish and Wildlife Office, Environmental Contaminants Division, Sacramento, CA. 46 pp.

Beckon, W. N., Eacock, M. C., and Gordus, A. G. (2008). *Biological Effects of the Grassland Bypass Project, January 1, 2004 - December 31, 2005.* Pages 93-167 *in* Grassland Bypass Project 2004-2005. Prepared by the San Francisco Estuary Institute, Oakland, CA.

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[USBR *et al.*] United States Bureau of Reclamation, Central Valley Regional Water Quality Control Board, U.S. Fish and Wildlife Service, California Department of Fish and Game, San Luis & Delta-Mendota Water Authority, U.S. Environmental Protection Agency, and U.S. Geological Survey. (September 2001 to June 2006). *Grassland Bypass Project Monthly Reports*. U.S. Bureau of Reclamation, Mid-Pacific Region, Sacramento, CA. Compiled and distributed by San Francisco Estuary Institute and available at: http://www.sfei.org/grassland/reports/gbppdfs.htm

(USFWS and NMFS) U.S. Fish and Wildlife Service and National Marine Fisheries Service. 2000. *Formal Section 7 Consultation on the Environmental Protection Agency's Final Rule for the Promulgation of Water Quality Standards: Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California*. U.S. Fish and Wildlife Service, Sacramento Fish and Wildlife Office, File No. 1-1-98-F-21, Sacramento, CA. 304 pp.

Attachment A. Service's Biological Opinion on USEPA's proposed approval of two amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins concerning regulation of agricultural subsurface drainage discharges from the Grassland Watershed of Merced and Fresno Counties, 11.4.2002.

Attachment B. Service Letter to the Regional Board on Exceedence of Selenium Criterion in Water Supply Channels in the San Luis National Wildlife Refuge Complex, Merced County, 12.19.1997.

Attachment C. Service Letter to the Regional Board regarding Exceedances of Water Quality Objective for Grassland Wetland Supply Channels, 11.08.2002

Attachment D. Service Supplemental Comments on the FEIS/R for the Continuation of the Grassland Bypass Project from 2010-2019, 10.27.2009.

Attachment E. Service's reply to the U.S. Bureau of Reclamation response to Service comment #10 on the Continuation of the GBP Draft EIS/EIR, 11.18.2009