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-0208-2

Ms. Jeanine Townsend, Clerk to the Board
State Water Resources Control Board
1001 I Street
Sacramento, CA 95814

Subject: Comment Letter – San Joaquin River Selenium Control Plan Basin Plan Amendment

Dear Ms. Townsend:

The U.S. Fish and Wildlife Service (Service) submits this comment letter to the State Water Resources Control Board (State Board) in response to the September 1, 2010 Notice of Opportunity to Comment on the Proposed Approval of 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). The Service previously submitted comments to the California Central Valley Regional Water Quality Control Board (Regional Board) in May 2010 on the Draft Staff Report (Staff Report) concerning the proposed Basin Plan Amendments dated March 2010. We incorporate those comments to this letter by reference. We are submitting this comment letter to the State Board to provide an explanation as to why we believe additional modifications to the Basin Plan Amendment are needed. A copy of the Service's May 2010 comments are available on the Regional Board's website at: http://www.waterboards.ca.gov/centralvalley/water_issues/grassland_bypass/

The Basin Plan Amendment 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. 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 non-binding *Performance Goal* of 15 µg/L monthly mean by December 31, 2015, and a binding objective of 5 µg/L 4-day average for the reaches of Mud Slough (north) and the San Joaquin River by December 31, 2019. As stated in our May 8, 2010 letter to the Regional Board, our primary concerns regarding the Basin Plan Amendment 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 nor remedied; and 2) the inputs of selenium contamination (some outside of the scope 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 nor remedied.

Because of the concerns identified above, our May 2010 comment letter recommended that the Regional Board broaden the analysis and scope of the Staff Report and associated Basin Plan Amendment, by assessing and remedying the selenium water quality impairments in the San Joaquin River and the Grasslands wetland supply channels in order to achieve water quality objectives and protect beneficial uses in impacted surface waters in the Grasslands and San Joaquin River. The Regional Board's response to the Service's comments noted that the Service and the National Marine Fisheries Service had completed Endangered Species Act consultations, resulting in the conclusions of not likely to jeopardize and not likely to adversely affect federally listed species, respectively. Although the Regional Board's response is correct, the Service believes that the Basin Plan Amendment should include assessing and remedying the effects of selenium contamination in the San Joaquin River upstream of the Merced River, and in the Grassland wetland supply channels. Our detailed comments and recommendations are provided below.

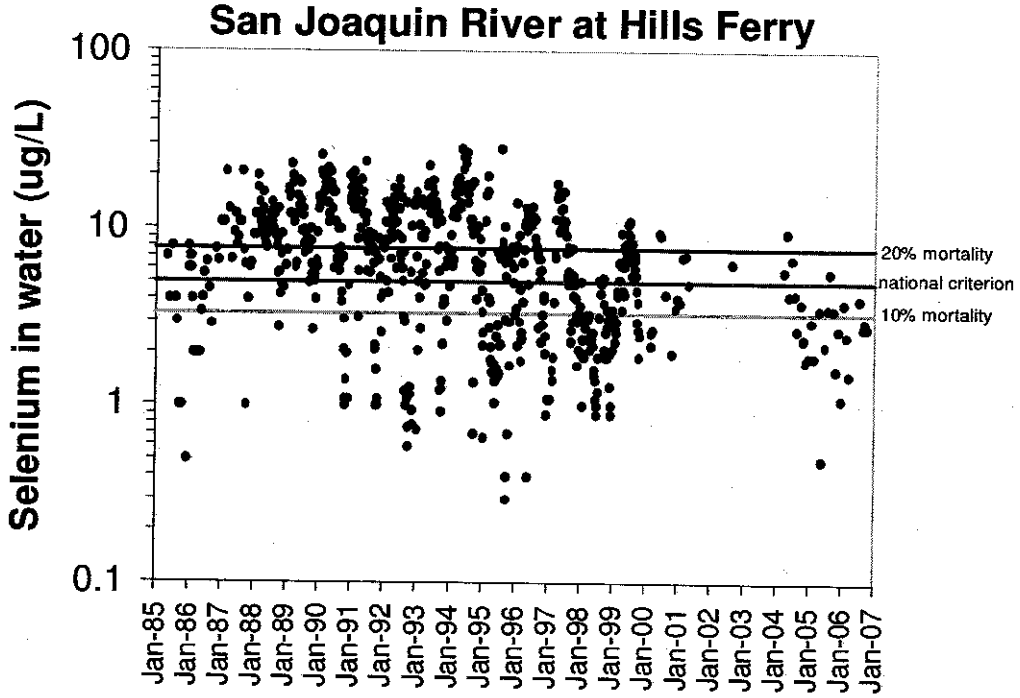
Effects of Deferring Compliance of Selenium Water Quality Objectives in the San Joaquin River

As we noted in our May 2010 comment letter to the Regional Board, significant spikes of selenium concentrations have been observed at Hills Ferry on the San Joaquin River. Recent GBP monthly monitoring reports documented elevated selenium concentrations at the Hills Ferry sampling station H for 6 months from August 2009 through January 2010. These spikes in selenium concentration at Hills Ferry are not an isolated event, and appear to be recurring with some frequency. Since January 2005, selenium in water collected at Hills Ferry has been at or above 5.0 micrograms per liter (µg/L) forty separate times. Of those samples, nineteen were at or above10 µg/L and nine were above 20 µg/L. All water samples at or above 10 µg/L were collected between May 2007 to January 2010. The three highest concentrations of selenium collected from Hills Ferry since 2005 were 86.1 µg/L on November 6, 2007, 52.0 µg/L on January 20, 2010, and 40.6 µg/L on November 25, 2008.

Elevated concentrations of selenium in the San Joaquin River from sources including the GBP may be problematic to efforts to restore salmon runs to the upper San Joaquin River ecosystem through the San Joaquin River Restoration Program. 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 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. Saiki et al. (1991) documented that juvenile salmonids are present in the lower San Joaquin River for periods of time that are sufficient for them to accumulate selenium to levels that could cause mortality. 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 shown in Figure 1 below.

Figure 1. Selenium concentrations measured in the San Joaquin River at Hills Ferry (data from the Central Valley Regional Water Quality Control Board).



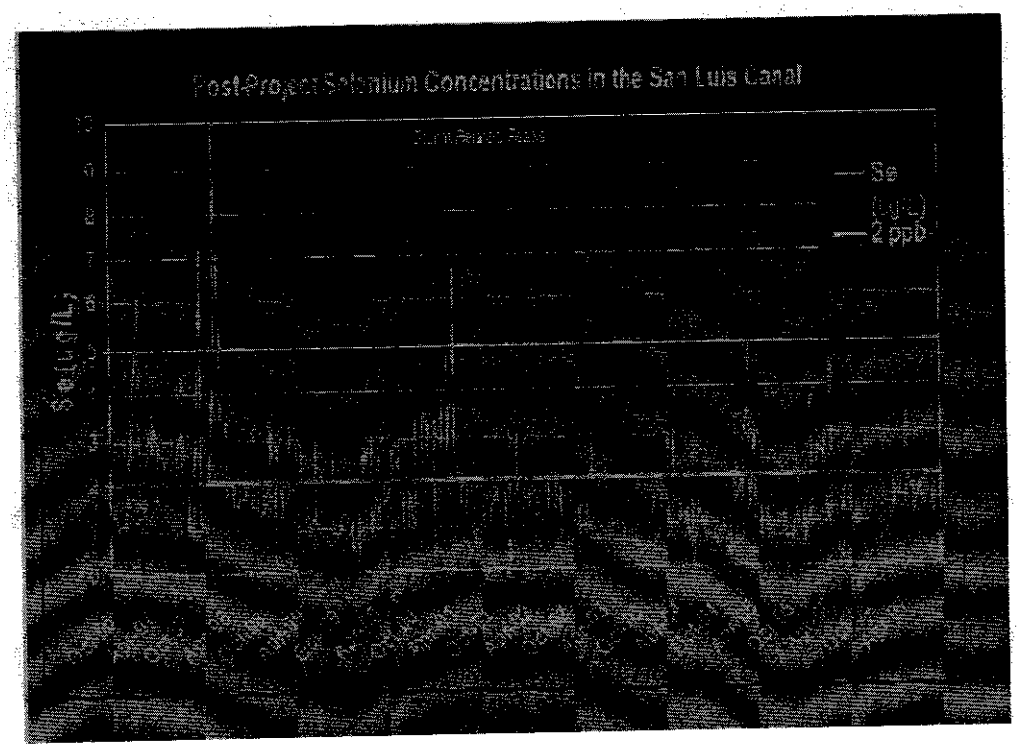
In our May 2010 comments to the Regional Board, we noted that the proposed revisions to the Basin Plan could adversely impact efforts to restore salmon to the upper San Joaquin River, scheduled to begin at the end of 2012. We remain concerned that continued spikes in selenium concentration in the San Joaquin River upstream of the Merced River could adversely impact salmon restoration.

Selenium Contamination in the Grassland Wetland Supply Channels

As we noted in our May 2010 letter to the Regional Board, 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; and, 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).

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, a recent GBP monthly monitoring report identified a highly elevated selenium concentration of 26.4 µg/L on August 10, 2009 in a Grassland wetland supply channel (Station K, Agatha Canal). Typically, these exceedences of 2 µg/L are associated with heavy rainfall events, occur in the spring of each year (usually in March and/or April), and occur during periods of low flow in the wetland channels as depicted in Figure 2 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 the Grassland wetland channels the State Board included the Grassland Marshes (Grassland Wetland Supply Channels) on the 2006 303(d) list of impaired water bodies for California (SWRCB 2007).

Figure 2. Weekly Selenium Concentrations in the San Luis Canal, 1996 – 2007 From Chilcott and Schnagl, 2008



Continuing unregulated sources of selenium contamination in the Grassland wetland supply channels are of concern to the health and integrity of wetland ecosystems, including federally listed species that utilize wetland habitats such as the giant garter snake. Selenium bioaccumulates rapidly in aquatic organisms and a single pulse of selenium (>10 µg/L) into aquatic ecosystems could have lasting ramifications, including elevated selenium concentrations in aquatic food webs (Besser *et al.* 1993; Graham *et al.* 1992; Maier *et al.* 1998; Nassos *et al.* 1980; Hamilton 2004).

The Service's biological opinion on the Third Use Agreement for the GBP 2010-2019 (GBP BO) concluded that, "*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.*" This conclusion was based on the definition of the scope of the GBP. However, the drainage problem in this area is a regional problem, and inputs of selenium outside of scope defined for the GBP still impact and impair water quality and the associated aquatic foodchain in the south Grasslands. The GBP BO included an updated Status of the Species and Environmental Baseline on the threatened giant garter snake (*Thamnophis gigas*) 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 GBP BO indicated 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.*" In our May 2010 comments we incorporated the GBP BO by reference and asked that the Regional Board staff review the Environmental Baseline for the giant garter snake pertaining to selenium water quality and the giant garter snake (pages 111-119 of the GBP BO). The Service's GBP BO is available at: http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=3513

The Service's May 2010 letter to the Regional Board recommended that all sources of selenium contamination that are impairing water quality and associated beneficial uses in the Grasslands wetlands be addressed in the Basin Plan Amendment or by means of some other Regional Board action. The Regional Board's responses to these recommendations were as follows, "*The proposed Amendments do not change the compliance dates for wetland supply channels. Central Valley Water Board staff are considering the most effective method for ensuring the drainage from areas not included in the GBP do not cause or contribute to exceedences…Grassland area wetland water supply channels have a selenium water quality objective of 2 µg/L. Irrigated lands and wetlands near but not within the GBP are regulated through a conditional waiver. The waiver does not exempt these areas from compliance with water quality objectives. Central Valley Water Board staff will work with the Westside San Joaquin River Watershed Coalition and other interested parties to determine appropriate follow-up actions to address any selenium discharge issues associated with areas outside the GBP…Management of drainage sumps is outside the scope of the proposed Amendments; however, USBR has told staff that it is investigating options for rerouting the discharge from the Firebaugh sumps to avoid the Delta Mendota Canal, including routing sump discharge to the drainage reuse*

area. This issue should be discussed at a future meeting of the GBP Data Collection and Reporting Team...Stormwater management is outside the scope of the Amendments, but the 2010 Use Agreement requires the discharges to develop a long-term stormwater management plan. This should include protocols for dealing with routine high rainfall events and the extreme events that now trigger use of the wetland water supply channels."

The Service believes that the Regional Board's responses to addressing all sources of selenium contamination that are impairing water quality and associated beneficial uses in the Grasslands wetlands while helpful, could allow these selenium inputs to continue to impair water quality and cause harm to fish and wildlife, including federally listed species, in the Grassland wetland supply channels indefinitely into the future.

Recommendations

In order to protect existing and future runs of anadromous fish in the San Joaquin River, to protect the quality of water delivered to wetland areas within the Grassland watershed, and to protect fish and wildlife resources, including federally listed species, in the Grassland wetlands, the Service recommends that the State Board modify the Basin Plan to include the following.

1. Complete an assessment of the effects of continued selenium inputs into the San Joaquin River on existing and future runs of anadromous fish, and develop remedies for any impairments in order to achieve water quality objectives which protect beneficial uses in the San Joaquin River including the reach upstream of the Merced River. Consideration should be given to ensuring adequate water quality to protect reintroduced salmon runs starting at the end of 2012;

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

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

4. Evaluate 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 Grassland wetland water supply channels.

We appreciate the opportunity to provide these comments to the State Board on the approval of the Basin Plan Amendment. If you have any questions or comments about this letter, please contact Mr. Mark Littlefield, or Ms. Joy Winckel of my staff at (916) 414-6600.

Sincerely,

for Susan K. Moore
Field Supervisor

cc:
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