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VALLEY WATER CONTROL BOARD
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January 14, 2014

Central Valley Regional Water Quality Control Board
ATTN: Mark Cady
11020 Sun Center Drive, #200
Rancho Cordova, CA 95670-6114

Dear Mr. Cady:

Please accept these comments from the Cosumnes River Preserve for inclusion in the record for the tentative waste discharge requirements (WDR) for discharges from irrigated lands within the Sacramento River Watershed.

The Cosumnes River Preserve is a cooperative partnership between federal, state, and local agencies as well as private, non-profit conservation organizations. For 25 years the Preserve's partnership has protected, restored and managed some of the California Central Valley's most threatened habitats, including freshwater wetlands, valley oak riparian forests and vernal pool grasslands, as well as the native species that depend upon these habitats for their survival.

In June 2013 we, along with the U.S. Fish and Wildlife Service's Stone Lake National Wildlife Refuge, met with Board staff to discuss our concerns and provide input into the development of the draft WDR as it related to managed wetlands. During the public meeting that was held on October 30, 2013, in Colusa, California we also provided oral comments to the Board that re-emphasized our concerns and the need to re-consider the inclusion of managed wetlands with irrigated agricultural lands. Both times our concerns have echoed the concerns and comments that the Board has received from others regarding managed wetlands including, the U.S. Fish and Wildlife Service San Luis National Wildlife Refuge and Grassland Water District during the development of the WDR for the Western San Joaquin River Watershed. The purpose of our comment letter is to once again re-iterate our continued concerns over issues in the tentative WDR that relate specifically to private and publicly managed wetlands.

We appreciate that the Board now acknowledges in the tentative WDR that managed wetlands do not receive applications of fertilizers and pesticides and, therefore, should not be treated in the same manner as agricultural lands. However, what the tentative WDR does not acknowledge is a well-documented, scientifically proven fact that wetlands are excellent systems for reducing nitrates, phosphorus, pesticides, sediments, and other would-be contaminants of surface and ground water and, as such, they should be completely excluded from the tentative WDR. For example, Fisher and Acreman (2004) did a literature review on the nutrient removal abilities of wetlands. They reviewed more than 57 wetlands from 60 scientific publications or other papers

Cooperators

Bureau of Land Management, California Department of Fish and Wildlife, California State Lands Commission, California Department of Water Resources, Ducks Unlimited, Galt Joint Union Elementary School District, Natural Resources Conservation Service, Sacramento County Department of Regional Parks, Sacramento Valley Conservancy, The Nature Conservancy, and the U.S. Fish and Wildlife Service

that spanned work done in 16 different countries from around the world. Their conclusion was that the majority (80%) of wetlands reduced nutrient loading. Long before Fisher and Acreman (2004) conducted their review, Bowden (1987) reported “In general, larger amounts of nitrogen cycle within freshwater wetlands than flow in or out.” Bowden (1987) further states: “At any given time the fraction of nitrogen in wetlands that could be lost by hydrologic export is probably a fraction of the potentially mineralizable nitrogen and is certainly a negligible fraction of the total nitrogen in the system.” Simply put, wetlands help to remove and/or retain nitrogen from incoming water. If further proof is needed to corroborate these author’s findings, see any one of several other scientific publications spanning 40+ years including Karpuzcu and Stringfellow (2012); Budd (2010); Gehrels and Mulamootil (2006); Reddy (2004); Ingersoll and Baker (1998); Horne (1995); Baker (1994); Johnston *et al.* (1984); Lowrance *et al.* (1984); Gersberg *et al.* (1983); Karr and Schlosser (1978); Khalid *et al.* (1977), Lee *et al.* (1975) and countless others that have documented the capacity of wetlands to remove nutrients and contaminants from water. These professional, peer-reviewed authors provided factual evidence that wetlands do not need to be subjected to the regulatory burdens of the tentative WDR because wetlands are, in fact, accomplishing the very objectives set forth in the tentative WDR.

In addition to the numerous scientists cited above, there are other scientists and professional engineers throughout the world that have designed, built, and tested hundreds of constructed wetlands over the past several decades for use as wastewater treatment systems. In Reddy and DeLaune’s (2008) book entitled the *“Biogeochemistry of Wetlands: Science and Applications”* the authors state: “constructed wetlands have been heavily used to treat a wide variety of wastewater, including domestic (ranging from individual homes to small towns), agricultural, mine drainage, landfill leachate, urban stormwater, and agricultural drainage or surface runoff water.” Reddy and DeLaune (2008) go on to state more specifically that: “The basic biogeochemical processes involved in removing contaminants from wastewaters are the same as those encountered in natural systems. These may include filtration, sedimentation, and microbial degradation. For example, total suspended solids are removed by filtration and sedimentation, biological oxygen demand (BOD) by microbial degradation, nitrogen by nitrification-denitrification, and phosphorus by adsorption and precipitation reactions.” Assuming from their reputations that Reddy and DeLaune (2008) are correct in their conclusions about the value and importance of wetlands when it comes to clean water, it seems counter-intuitive that the tentative WDR continues to state that managed wetlands should be further regulated as “waste dischargers.”

Contrary to the vast quantity of scientific evidence that is available, the tentative WDR does not specify any scientific evidence to support the inclusion of managed wetlands as “dischargers” of pollutants to surface or groundwater. The only justification provided for including managed wetlands among agricultural dischargers that we were able to find in the tentative WDR was in reference to sedimentation in Attachment A “Information Sheet” Section VII (A) where it was claimed that “wetland drainage channels, access roads, or stream crossings may contribute to discharge of excess sediment.” This justification is completely inadequate since the majority of managed wetlands are typically filled with emergent and submergent wetland vegetation that actually traps incoming sediments from upstream water sources. In cases where individual managed wetland ponds are mowed or disced to create specific habitat characteristics, the mowing and discing are done when the wetland pond is completely dry. Water is then applied in the fall where it is held for months at a time before it is eventually discharged during the spring drawdown. During this holding period emergent and submergent wetland vegetation reestablish and, once again, help to trap or settle sediments before they are discharged. In short, very little sediment is ever discharged by design from a managed wetland.

Erosion is essentially a non-issue as well since in a managed wetland unit water is not applied to large areas of bare ground as it is in a graded or contoured agricultural setting; it is applied to vegetated ground in wetland ponds that are built on nearly flat terrain with only enough of a gradient to allow water to drain through the outlet structure. Even in the case of summer irrigations following mechanical manipulations such as discing, “erosion” and discharges of sediments are not typically the case. Nearly all wetland managers hold water for a minimum of 7 to 28 days in order to stimulate the growth of the desired emergent and submergent vegetation that produces optimal food for resident and winter migratory waterfowl (*e.g.*, watergrass, smartweed, swamp timothy, etc.). In the Sacramento Valley if you can only do a single irrigation per year to promote watergrass, for example, then it is best to do one, 28-day irrigation rather than several shorter duration irrigations (J. Eadie, pers. com. 2012). Holding water for this length of time allows sediments to settle and since the topography of a pond is nearly flat, there is no erosion per se. In some cases, wetland managers irrigate and then allow the irrigation water to simply evaporate to further stimulate plant growth and/or provide temporal “mudflat” habitat for species such as resident or early migratory shorebirds. In this case, there is absolutely no discharge of water from a managed wetland pond or unit. Once again, erosion and sediment are essentially non-issues for managed wetlands. This further validates our position that managed wetlands are not “waste dischargers” and should not be included in the tentative WDR.

One final point regarding the inclusion of managed wetlands in the tentative WDR is in Attachment D “Findings of Fact and Statement of Overriding Considerations” Section D (4). It states that the Board will require “purchase [of] credits for the affected wetland type (*e.g.*, perennial marsh, seasonal wetland) at a locally approved mitigation bank” and/or “develop and ensure implementation of a wetland restoration plan that involves creating or enhancing the affected wetland type.” If wetlands are considered “waste dischargers” and are detrimental to clean water in the State of California in one section of the tentative WDR, then why are they considered suitable mitigation in another section of the document? Once again, this goes back to the countless number of authors that have demonstrated scientifically the value and importance of wetland ecosystems in helping to achieve the goal of clean water through the tentative WDR.

In the absence of further scientific evidence provided in the tentative WDR that demonstrates that managed wetlands are “waste dischargers” or, are otherwise contributing to the problem rather than solving the clean water problem, we strongly recommend that the Board reconsider the inclusion of managed wetlands under the tentative WDR. It is simply not appropriate to lump this critical natural resource in with irrigated agricultural in a “one size fits all” approach to clean water, especially since this ecosystem is helping to achieve the results that are desired through the implementation of the tentative WDR.

If you have any questions or need additional information regarding our comments or how we manage our wetlands, please contact me at 916-838-8475 or via email at hmcquill@blm.gov.

Regards,



Harry L. McQuillen
Preserve Manager

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Personal Communication

Dr. John Eadie. Annual Wetland Manager's Meeting, Sacramento National Wildlife Refuge, Willows, California. March 2012