From: Lynes, Mike <mlynes@audubon.org>
Sent: Tuesday, July 29, 2014 3:01 PM
To: BDCP.comments@noaa.gov
Subject: Comments on the BDCP Draft EIR
Attachments: MBCP BDCP DEIR Comments 7-29-2014.pdf; CVJV Letter re BDCP May 2013.pdf; CVJV letter_BDCP_Jerry Meral July 2012.pdf

Hello Mr. Wulff,

Attached please find the joint comments of the Migratory Bird Conservation Partnership, which is comprised of The Nature Conservancy, Point Blue Conservation Science, and Audubon California. Each group may also submit additional comments independently.

Please note that two additional letters, from the Central Valley Joint Venture, are attached to our comments and incorporated by reference.

Thank you for consideration of our comments,
Mike Lynes

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BDCP1671

Point Blue Conservation Science

Audubon CALIFORNIA

The Nature Conservancy
Protecting nature. Preserving life.™

July 29, 2014

Via Electronic Submission and U.S. Mail
Ryan Wulff, NMFS
650 Capitol Mall, Suite 5-100
Sacramento, CA 95814
Email: BDCP.comments@noaa.gov

RE: Draft Bay-Delta Conservation Plan Environmental Impact Report

Dear Mr. Wulff:

The Nature Conservancy, Audubon California, and Point Blue Conservation Science, are submitting these comments jointly as the Migratory Bird Conservation Partnership (MBCP). We appreciate this opportunity to review and comment on the Draft Bay-Delta Conservation Plan (BDCP) Environmental Impact Report (DEIR). Each organization may also submit additional, independent comments.

Since 2008, the Migratory Bird Conservation Partnership has worked with a broad array of partners to develop conservation solutions for birds, wildlife, and human communities alike. We continue to work with non-governmental organizations (NGOs), government agencies, and a collection of nontraditional allies – including sporting clubs and agricultural organizations – to find novel solutions to common problems.

The MBCP's comments focus primarily on Chapter 3 (Conservation Strategies), Appendix 5.A.1 (Climate Change Implications for Natural Communities and Terrestrial Species), and Chapter 29 (Climate Change). As it prepared these comments, the MBCP recognized several points of concern that recurred throughout the document. These concerns, and suggested improvements to address them, are listed below and discussed at greater length in the supporting technical comments, attached to this letter.

1. In many places in the document, the focus on a narrow group of threatened and endangered species has led to narrowly defined recommendations. With some relatively minor adjustments, the conservation measures can maintain their benefits for listed species and provide additional benefits for other species groups that will suffer impacts arising from the project, especially shorebirds and waterfowl. We offer specific suggestions about where these improvements can be made.
2. For cultivated lands that provide wildlife habitat, post-harvest management is an important consideration of habitat quality. Recommendations for post-harvest management should be included in any conservation measures that include wildlife-friendly agriculture. We have provide a number of references with more information on post-harvest management and have offered suggestions for where this information can be included.
3. There are a number of places where the conservation benefits of water management is incomplete. For example, the document does little to address the need for flooded fields for

migrating shorebirds (e.g., early spring and late July). The document also fails to address water supply vulnerability if climate change impacts water delivery to areas that support restored riparian vegetation. We suggest where this information can be added to the document.

4. The plan should have a stated goal of maintaining or improving water deliveries to refuges. Water operations should consider direct and indirect impacts on refuge water deliveries. Refuge water supplies should be enhanced if the project results in increased exports. Changes in timing or quantity of refuge water delivered as a result of operations should be identified (by refuge, when, to what extent) and fully mitigated.
5. In all restoration and protection activities, we encourage the authors to consider any possible impacts of climate change and identify actions that enhance the resilience of these systems to the impacts of climate change. We have suggested ways in which the authors could incorporate climate-smart conservation principles into the restoration recommendations.
6. Monitoring of shorebirds, waterfowl, and riparian songbirds should be included in the plan as a way to evaluate whether management is creating habitat that is used by birds and other wildlife. Despite the emphasis on effectiveness monitoring to guide adaptive management, there is very little monitoring of actual bird populations proposed in the DEIR. More clearly articulating how wildlife monitoring will be used in the adaptive management framework would improve the document.

The MBCP remains concerned about the many uncertainties —especially to refuge water supplies and to important habitat areas outside the Plan Area—and provisions for research and monitoring. The BDCP will undoubtedly have very significant environmental impacts for decades to come, and it represents an opportunity to improve operations and ecosystem sustainability in and around the Delta.

If you would like to discuss our comments further, please do not hesitate to contact us through the current MBCP Chair, Catherine Hickey, Point Blue Conservation Science, at (415) 868-0371 x 307, or email at chickey@pointblue.org.

Respectfully submitted,

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BDCP1671

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July 29, 2014

Supporting Technical Comments Prepared by the Migratory Bird Conservation Partnership (MBCP) to accompany the MBCCP comment letter regarding the Draft Bay-Delta Conservation Plan Environmental Impact Report

The MBCP's[1] begin with a discussion of overarching concerns and recommendations and then focus primarily on Chapter 3 (Conservation Strategies), Appendix 5.A.1 (Climate Change Implications for Natural Communities and Terrestrial Species), and Chapter 29 (Climate Change). Below are our detailed comments on the Draft Bay-Delta Conservation Plan Environmental Impact Report

I. THE DEIR SHOULD BE REVISED TO INCORPORATE RECOMMENDATIONS FROM THE CENTRAL VALLEY JOINT VENTURE AND THE DELTA INDEPENDENT SCIENCE BOARD.

A. The Central Valley Joint Venture's Recommendations Would Protect Wetlands, Water Supplies that Benefit Refuges and Wildlife, and Produce Better Adaptive Management Measures.

The MBCP recommends that the BDCP and subsequent implementation and adaptive management be based on the best available science and subject to stakeholder input and peer review, where possible. As written, the BDCP appears to rely on overly optimistic projections regarding the effectiveness of mitigation measures and outcomes from monitoring. Given the delicate ecology of the Delta and the potential for massive long term environmental impacts arising from the project, caution and fact-based decision making is necessary to ensure the success of the project.

Overall, the DEIR should be revised to ensure that BDCP activities (1) improve—not compromise—the condition of critical habitats in the Central Valley, (2) do not result in negative impacts to fish, wildlife, or their habitats, due to water transfers related to the BDCP, and (3) are designed to provide sustainable, predictable deliveries of water to all water users, including managers of wetlands that provide critical habitat for migratory birds.

The MBCP members are also members of the Central Valley Joint Venture (CVJV). As recommended by the CVJV in its letters of July 23, 2012 and May 24, 2013, the BDCP should improve—not compromise—efforts to conserve wildlife and habitat in and around the Delta. In its May 24,2013 letter, the CVJV recommended that "all Delta-related planning efforts, including BDCP...adopt a goal to contribute to the attainment of the acreage, water and bird population goals set forth by the Central Valley Joint Venture Implementation Plan." The July 23, 2012 and May 24, 2013 letters are attached hereto and incorporated into these comments.

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[1] The Migratory Bird Conservation Partnership is a collaborative effort between Audubon California, Point Blue Conservation Science, and The Nature Conservancy. For more information on the MBCP and its activities, please contact the MBCP Chairperson Catherine Hickey at chickey@pointblue.org.

Specifically, the MBCP restates the principles set forth in the July 23, 2012 letter:

- PRINCIPLE 1: *Avoid Detrimental Impacts to Wetland Water Supply*
- PRINCIPLE 2: *Mitigate for Impacts to Brackish and Freshwater Wetland-associated Birds and Bird Habitat.*
- PRINCIPLE 3: *Use Adaptive Management to Improve Mitigation Outcomes.*

Under each of these principles, the CVJV provides several specific actions that should be taken. While the DEIR addresses each of these concerns in turn, the MBCP is concerned with the DEIR's adequacy in assessing these impacts, proposing mitigation measures, and ensuring adequate monitoring and adaptive management.

B. The Delta Independent Science Board's Recommendations Would Improve the DEIR's Scientific Content, Adaptive Management Framework, and Overall Readability.

The MBCP has also reviewed the Delta Independent Science Board's report of May 15, 2014 ("DISB Report") and concurs with many of the concerns raised therein.[2] Among those that generally apply to the DEIR, the MBCP agrees that the DEIR would be improved if the authors revised the draft to do the following:

- include meaningful summaries for each chapter;
- provide a clear and concise comparison of water-conveyance alternatives;
- improve and describe the framework for adaptive management and establish clear performance indicators and trigger points for adaptive management;
- identify assumptions relied upon in each chapter; and
- acknowledge uncertainties in conclusions.

(*See* DISB Report, at 10)

The DISB's conclusions and recommendations concur with those provided by the Delta Science Program's Independent Review Panel in its review of BDCP Chapter 5 (Effects Analysis). Specifically, the Independent Panel's review found that Chapter 5 failed to:

- address critical uncertainties associated with presumed beneficial effects of tidal wetland restoration;
- clearly state critical assumptions underlying many proposed actions and consequences;
- clearly state how adaptive management will be implemented;
- present models with a range of possible scenarios;
- consider linkages and interactions;
- adequately analyze net effects; and
- acknowledge that habitat restoration is a lengthy process with uncertain results.

[2] Available at http://deltacouncil.ca.gov/sites/default/files/documents/files/Attachment-1-Final-BDCP-comments.pdf

(*See* DISB Report, at 10; *see also* Delta Science Board Program, Independent Review Panel Report Phase 3 (Review of Chapter 5 of the Draft BDCP))[3] The Independent Review Panel's criticisms could be applied to several sections of the DEIR, particularly a persistent failure to identify uncertainties and assumptions, analyze direct and indirect effects, and clearly layout an adaptive management framework.

II. CHAPTER 3: CONSERVATION STRATEGIES

A. Conservation Measure 1 (Water Facilities and Operations) Should Be Revised to Address Impacts to Refuge Water Supplies.

1. BDCP should benefit refuge water supplies.

Public wildlife refuges rely on the Central Valley Project and State Water Project for water supplies, and are therefore impacted by BDCP operations. If the system becomes more reliable, enabling more water to be exported as a result of conveyance improvements, then the public wildlife refuges south-of-Delta should benefit.

Water deliveries to these refuges are mandated under federal law under the Central Valley Project Improvement Act (CVPIA), yet remain unfulfilled.[4] Improvements to refuge water deliveries should be made by 1) taking advantage of the extended window for through-Delta transfers to enable CVPIA Level 4 supplies to be acquired north-of-Delta and transferred south-of-Delta; 2) providing assurances that pumping and conveyance capacity are available for refuge supplies; and 3) establishing refuges as a priority for delivery under system operations in any year type.

2. The DEIR should be revised to consider direct impacts to refuge water supplies.

The DEIR does not adequately contemplate water supply impacts arising from the BDCP operations on wildlife refuges. BDCP operations will affect the timing and quantity of deliveries across water years. These impacts should be identified, including the specifics about which refuges are impacted, when and to what extent. Timing of impacts is especially important, since migratory bird habitat needs vary across months, weeks and water years. Impacts should consider the type of habitat impacted, as well as the species. Any detrimental impacts should be fully mitigated.

3. The DEIR should be revised to consider indirect impacts to refuge water supplies.

Because the water system is intertwined, each water management decision under BDCP will have system-wide impacts. For example, if additional outflow is needed through the Delta and operations at

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[3] Available at http://deltacouncil.ca.gov/sites/default/files/documents/files/Delta-Science-Independent-Review-Panel-Report-PHASE-3-FINAL-SUBMISSION-03132014_0.pdf

[4] A major environmental accomplishment of the Central Valley Project Improvement Act (CVPIA) was the commitment to deliver to refuges and wildlife areas in the Central Valley a firm (Level 2) yield of 422,252 acre-feet, 37% of the annual water needs for existing wetlands. In addition, CVPIA mandated that an additional 133,264 acre-feet of so-called Level 4 water be acquired over a ten-year period commencing in 1992, thus ensuring that roughly half of refuge water needs would be met by the project. Between 1992 and 2009, legally mandated water supplies for the refuges fell short by more than 40,000 acre-feet from mandated Level 4 quantities; the current and future droughts create the risk that even less water is likely to be delivered for refuges and wildlife.

Oroville are altered to address this issue, there are likely impacts to Shasta operations that could impact refuge water deliveries. We ask that any water operation decisions include assessment of system-wide impacts and explicitly identify (which refuges, when and how) and address impacts to refuge water supplies.

B. Conservation Measure 3 (Natural Communities Protection and Restoration) Should Be Revised to Consider a Broader Range of Native Species and to Clarify Objectives for Acquired Lands.

In Conservation Measure 3 (CM-3), the document describes the acquisition of approximately 70,000 acres to protect and enhance areas of existing natural communities and covered species habitat. These areas would also be designed to provide connectivity to existing conservation lands inside and outside the Plan Area. This Conservation Measure is the system that would be used to achieve the habitat protection described in Section 3.3, the Biological Goals and Objectives. The information in Table 3.4.3-1 covers the acreages called for in many of the other Conservation Measures.

1. Conservation Measure 3 should include consideration of species of special concern and other species vulnerable to climate change.

CM-3 focuses on "covered species" with "other native species" rarely mentioned. There is no discussion of the California Department of Fish and Wildlife's California Bird Species of Special Concern,[5] the species and subspecies that are mostly likely to end up being "covered" (e.g., listed as threatened or endangered) species if no conservation actions are taken.

We also suggest that the list of species be expanded to include non-listed species such as those that are vulnerable to climate change. (*See, e.g.*, Gardali et al. 2012)[6] These species could be cross-walked with the covered species to show where conservation actions could benefit multiple species.

Among the many species that merit greater consideration, Tricolored Blackbird should be assessed in greater detail. In particular, siting and reserve design (discussed below) should propose an expansion of protected and restored acreage for this species. Currently, the document discusses protection of 50 acres for the species and fails to recommend restoration of any acreage to benefit Tricolored Blackbirds. Given this species is in steep decline under current conditions, the DEIR should improve its analysis of impacts to Tricolored Blackbird, and identify and recommend additional mitigation measures that are in alignment with the Conservation Plan for this species.[7] Moreover, given that the species is currently being considered for emergency listing under the California Endangered Species Act (CESA), management of this species will be mandatory within the Plan Area.[8]

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[5] Shuford and Gardali 2008, available a https://www.dfg.ca.gov/wildlife/nongame/ssc/birds.html

[6] Available at http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0029507

[7] Available at http://tricolor.ice.ucdavis.edu/node/579

[8] *See* California Fish & Game Commission, Agenda for August 6, 2014 meeting, Item 11: POSSIBLE ADOPTION OF EMERGENCY REGULATION TO ADD TRICOLORED BLACKBIRD (*Agelaius tricolor*) TO THE LIST OF ENDANGERED SPECIES (PURSUANT TO SECTION 2076.5, FISH AND GAME CODE), available at http://www.fgc.ca.gov/meetings/2014/aug/080614agd.pdf.

2. Goals for habitat protection and restoration should be better explained, describe management, and be connected with actual benefits for species rather than merely describing acreages.

Conservation Measure would be improved by providing the underlying reasoning or evidence supporting the determination of proposed acreages or restoration goals to benefit various species. Currently, a reviewer cannot confidently assess the adequacy of the conservation measure on these grounds.

In addition to land acquisition, it is essential for the EIR to set forth how wetland areas will be managed, as the value of managed wetlands to particular species can vary dramatically (e.g., water depths, height and percentage of vegetation, etc.). Obviously, the ability of this conservation measure to meet its goals will depend greatly on how certain wetland areas are managed over the life of the project.

3. Siting and reserve design should be clarified and include additional management practices and multispecies benefits, with the ultimate outcome based on quality habitat used by the target species.

Table 3.4.3-1 summarizes much of CM-3's siting and reserve design objectives. (See DEIR, at 3.4-76-88). While the MBCP supports the initial plan to protect 8,100 acres of managed wetlands, the section would be improved by considering areas outside of the Suisun Marsh, particularly areas that can support multiple taxa under a variety of climate change scenarios.

The MBCP supports restoration of at least 500 acres of habitat to specifically benefit roosting Sandhill cranes. However, we believe that there is room in the plan to include specific restoration actions for other waterbird groups and thereby increase capacity for them in the Delta. We encourage the inclusion of restoration actions that can benefit waterfowl, shorebirds, and long-legged waders.

The document proposes protecting 48,625 acres of cultivated lands. Of this, protection goals are given for total acreage and the quality of those acres for various covered species. For cultivated lands, we noted the following issues:

- **Lack of consistency.** It is unclear why the quality requirement is "moderate" or higher for some species (e.g., Swainson's Hawk, nonbreeding Tricolored Blackbird) but "high" or "very high" for other species (Greater Sandhill Crane); note that the table of habitat values for Swainson's Hawk (3.4.3-3) does not actually have a moderate category. Further, why should 80% of foraging habitat be of "very high" value for cranes but only 50% should be of "very high" value for Swainson's Hawks?
- **Management practices.** The document has various tables that list the relative value of various crops to particular species. Given just the crop names are listed this appears to assume that the value of a crop is the same regardless of what the post-harvest management practice is, which is not the case. We suggest adding information to this table on post-harvest practices and their relevant values.[9] Doing so will provide greater guidance and clarity on the benefits and trade-offs.

[9] Relevant studies regarding crop management on birds include:

- **Compatibility.** Although the protected acreage requirement for a particular species "may overlap with species-specific cultivated land requirements for other species," there appears to be no analysis of whether all of these acreage goals are compatible. For example, of the 48,625 acres of cultivated lands slated for protection, the Swainson's Hawk requires 43,325 acres, which leaves only 5300 acres for crops that are not of moderate or higher value for the hawks. But cranes are allotted 7300 acres of cultivated lands for foraging, for which 80% (5840 acres) must be of very high value (see Table 3.4.3-1). The two crops of very high value for cranes are corn and rice (Table 3.4.3-2), neither of which are of suitable value for Swainson's Hawks (Table 3.4.3-3). Hence the requirements for both of these species are more than is allocated for all species combined even assuming no other incompatibilities when looking at other species' requirements.
- **No net loss?** It is unclear as to whether under the proposed protection and restoration scenarios for various species if there would be a net gain in habitat for covered species, or if there still might be loss of overall habitat in the Delta Plan area. Moreover, it is unclear if this may vary between natural habitats and cultivated lands. It is important to explain this clearly in the document.

Overall, while acreage goals provide a good starting point, the outcomes must be based on measures of habitat quality. These measures should include habitat use by target species, including explicit metrics that capture different habitat needs of various migratory and resident birds, by season and location. The ultimate outcome should focus on meeting the needs of these species, rather than simply creating targeted acreage.

C. Conservation Measure 5 Should Expand Its Discussion of Restoration Opportunities and Discuss Overlap with other Restoration Opportunities.

Conservation Measures 5 (Seasonally Inundated Floodplain Restoration) describes the restoration of 10,000 acres of seasonally inundated floodplain. (*See* DEIR, at 3.4-145) This restoration could be accomplished by expanding floodway bypasses, setting back levees, grading restored floodplains, and removing rip-rap. The most promising opportunities are in the south Delta. Much of this area would overlap with the 5,000 acres of riparian vegetation to be restored under Conservation Measure 7.

- Shuford, W. D., M. E. Reiter, K. M. Strum, C. J. Gregory, M. M. Gilbert, and C. M. Hickey. 2013. The effects of crop treatments on migrating and wintering waterbirds at Staten Island, 2010–2012. Final Report to The Nature Conservancy, 190 Cohasset Road, Suite 177, Chico, CA 95926.
- Shuford, W. D., M. E. Reiter, K. M. Strum, M. M. Gilbert, C. M. Hickey, and G. H. Golet. The benefits of crops and field management practices to wintering waterbirds in the Delta. Submitted to *California Agriculture*.
- Sterling, J. 2011. Review of literature and information on the bird use of certain agricultural crops in California's Central Valley. Report to the Nature Conservancy.
- Strum, K. M., M. E. Reiter, C. A. Hartman, M. N. Iglecia, T. R.Kelsey, and C. M. Hickey. 2013. Winter management of California's rice fields to maximize waterbird habitat and minimize water use. Agriculture, Ecosystems, and the Environment 179:116–124.
- Taft, O. W., and C. S. Elphick. 2007. Waterbirds on working lands: Literature review and bibliography development. National Audubon Society, Inc., New York.

We concur with the need for inundated floodplain forest and we encourage the authors to recognize the opportunity to develop multiple-benefit floodplain projects (such as set-back levees and expanded bypasses) that can accomplish these restoration goals. More information on the multiple-benefit floodplain approach can be found here: http://www.multibenefitproject.org/.

D. Conservation Measure 7 Should Include Climate-smart Restoration Opportunities and an Improved Adaptive Management Framework.

Conservation Measure 7 describes the restoration of 5,000 acres of riparian forest and scrub. (DEIR, at 3.4-162) This area would overlap with the area restored for Tidal Natural Communities (Conservation Measure 4), Seasonally Inundated Floodplain Restoration (Conservation Measure 5), and Channel Margin Enhancement (Conservation Measure 6). Conservation Measure would be greatly improved by considering restoration opportunities that anticipate ecological changes arising from climate change and including improve adaptive management triggers, monitoring, and management measures.

1. Section 3.4.7.3.2 (Restoration Approaches) should consider climate-smart restoration opportunities.

The introductory paragraphs to 3.4.7.3.2 provide a suite of resources that will be used to inform the restoration designs. In addition to these sources, the MBCP encourages the authors to also consider how the restoration designs can be used to enhance resilience to climate change (e.g., climate-smart restoration). These concepts are relatively new, and are not covered carefully in the resources that are currently listed. A framework for climate-smart restoration can be found at http://www.pointblue.org/our-science-and-services/conservation-science/habitat-restoration/climate-smart-restorationtoolkit.

2. Section 3.4.7.4 (Adaptive Management and Monitoring) would be improved by including better requirements for monitoring, research, and triggers for additional management measures.

Section 3.4.7.4 addresses adaptive management and specifically calls for both compliance monitoring and effectiveness monitoring. (DEIR, at 3.4-171). Specifically, it states:

> Table 3.4.7-3 lists monitoring actions, metrics, success criteria, and schedules relevant to CM7, for incorporation into site-specific riparian restoration plans, as appropriate. The actual monitoring actions, success criteria, metrics, and timing will be based on the best available information at the time of implementation and may be adjusted or augmented over time through adaptive management.

(DER, at 3.4-171:4-8)

The Central Valley Joint Venture riparian songbird focal species should be added to this list.[10] These focal species were selected in order to monitor the biological response to restoration, especially when the target species (e.g., Yellow-billed Cuckoo and Least Bell's Vireo) may not respond in a timely manner simply because they are extremely rare.

[10] Available at http://www.centralvalleyjointventure.org/assets/pdf/CVJV_fnl.pdf

E. Conservation Measure 10 Should Revised to Discuss Benefits to Multiple Species and Improve the Proposed Adaptive Management Framework.

Conservation Measure 10 describes the restoration of 1,200 acres of nontidal freshwater wetlands and 500 acres of managed wetlands for Greater Sandhill Crane roosting habitat in the Greater Sandhill Crane Winter Use Area. The restored marsh would provide giant garter snake habitat, and support waterfowl habitat.

Conservation Measure 10 discusses habitat designed and managed primarily for giant garter snakes but also for other wildlife, including waterfowl and shorebirds, "to the extent that management for these species does not reduce habitat value for the giant garter snake." The MBCP strongly suggests that a table be provided that specifically lists the other species considered in this statement so benefits to them could be better understood.

Section 3.4.10.2.1 (Restoration Action) lacks adequate details to understand the benefits to cranes. (See DEIR, at 3.4-196)

F. Conservation Measure 11 Should Be Revised to Include Additional Management Measures to Benefit Multiple Species and Improve Its Adaptive Management Framework.

Conservation Measure 11 describes the preparation and implementation of management plans for the protected habitats and covered species and for monitoring and maintenance of these sites in perpetuity. (DEIR, at 3.4-202)

Section 3.4.11.2.1 (Enhancement and Management Principles) includes a good list of management principles. The MBCP encourages the plan authors to add "Prepare for climate change impacts" to this list. Doing so will help ensure that the management actions remain forward looking.
Section 3.4.11.2.4 (Aquatic and Emergent Wetland Natural Communities) should include language to improve flooded roost sites by incorporating the following actions:

- Flood earlier (mid-July) to maintain shallow water during the early part of fall migration when such habitat is very limited on the broader landscape. Work with mosquito districts to maintain shallow water but avoid mosquito problems, perhaps by pulse flooding and drawing down water periodically so it does not stay on too long; this also would reduce the likelihood of unfavorable vegetation growth.
- Provide shallow slope to sides to enhance edge conditions by a gradual increase in water depths to favor shorebird species using different depths; and
- Provide some unvegetated islands or internal levees for roosting.

Section 3.4.11.2.7 (Cultivated Lands) lacks adequate details regarding post-harvest management, which can greatly affect cultivated lands' value to different species or groups. The section should address whether lands will be flooded or left dry, deeply tilled vs lightly tilled (keeping grains near surface), etc. The section should also address the following:

- Timing and flooding for cranes and provide additional info on depth of flooding, which can affect compatibility for shorebirds (various depths from mudlfats to about 15 cm).[11] (DEIR, at 3.4-236)
- The DEIR should assess a chop-and-roll post-harvest practice on corn (used on Staten Island) prior to flooding. This knocks down remaining stubble, which reduces weed growth, retains soil moisture, puts crop residues in contact with the soil to aid in decomposition, and provides more open foraging opportunities for cranes, waterfowl, and shorebirds.[12]

The section on Managed Wetlands: Waterfowl and Shorebirds would be improved by further review of available scientific literature. (*See* DEIR, at 3.4.-239) The MBCP recommends that the plan authors review the materials cited here and revise the plan accordingly.[13]

- The section should also be further improved by including more specifics about management actions, including the following:
    - **Drawdowns**. In the spring, drawdowns should be staggered across various ponds to provide shallow water for shorebirds over a longer period (early March to early May). Mid-winter drawdowns should be conducted to provide additional shallow water and mudflat habitat for shorebirds, exposing invertebrate resources that previously were not available (such drawdowns and subsequent reflooding may also help with salt management). When feasible and where it will not promote excessive vegetation growth, flood up should start in July with staggered flood up through the time of greater flood up for waterfowl in September and October.
    - **Breeding shorebird habitat**. The plan should include specific management recommendations to promote successful shorebird breeding. These include grading ponds to be open and with gradual slopes for foraging in shallow water. Bare or sparsely vegetated islands (or internal levees) should also be provided for nesting.[14]

Section 3.4.11.3 (Adaptive Management and Monitoring) should be revised to improve the adaptive management framework and monitoring. As discussed further below, the section fails to identify triggers

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[11] *See* Ivey, G. L., B. D. Dugger, C. P. Herziger, M. L. Casazza, and J. P. Fleskes. 2011. Sandhill Crane use of agricultural lands in the Sacramento–San Joaquin Delta. Final Report to the California Bay-Delta Authority.

[12] *See* Shuford, W. D., M. E. Reiter, K. M. Strum, C. J. Gregory, M. M. Gilbert, and C. M. Hickey. 2013. The effects of crop treatments on migrating and wintering waterbirds at Staten Island, 2010–2012. Final Report to The Nature Conservancy, 190 Cohasset Road, Suite 177, Chico, CA 95926

[13] Additional studies include:

- Helmers, D. L. 1992. Shorebird management manual. Western Hemisphere Shorebird Reserve Network, Wetlands for the Americas, Manomet, MA.
- Hickey, C., W. D. Shuford, G. W. Page, and S. Warnock. 2003. The Southern Pacific Shorebird Conservation Plan: A strategy for supporting California's Central Valley and coastal shorebird populations, version 1.1. PRBO Conservation Science, 4990 Shoreline Hwy. 1, Stinson Beach, CA (available at http://www.prbo.org/cms/docs/wetlands/SPSCPlan_010904.pdf)
- Central Valley Joint Venture. 2006. Central Valley Joint Venture Implementation Plan – Conserving Bird Habitat. U.S. Fish and Wildlife Service, Sacramento (available at http://www.centralvalleyjointventure.org/assets/pdf/CVJV_fnl.pdf)

[14] *See* Engilis, A., Jr., and F. A. Reid. 1996. Challenges in wetland restoration of the western Great Basin. International Wader Studies 9:71–79 available at https://sora.unm.edu/sites/default/files/journals/iws/n009/p00071-p00079.pdf.

for adaptive management and does not require monitoring even of species for which recommendations are offered.

Table 3.4.11-1 (Effectiveness Monitoring) offers many recommendations for wetland and field management for waterfowl and shorebirds, but fails to recommend monitoring for these species groups. Monitoring is essential to evaluating whether proposed management occurs and whether it is effective in promoting shorebird and waterfowl use.

IV. CHAPTER 29 & APPENDIX 5: CLIMATE CHANGE AND THE BDCP

Appendix 5 describes how climate change is expected to alter the ecology of the Plan Area and provides background information for assessing additional impacts and other interactions arising from the project. Chapter 29 addresses how the BDCP alternatives would enhance the resiliency and adaptability to climate change.

The authors use resiliency and adaptability to describe the ability of the Delta to remain stable or flexibly change as the effects of climate change increase, in a manner that it would continue to provide suitable water supply and quality and support ecosystem conditions. While both sections are fairly comprehensive, they should be improved with the incorporation of information from additional studies.

A. Appendix 5.A.1 Should Be Revised and Improved with Additional Review of Available Scientific Studies.

Appendix 5 attempts to provide baseline information for how climate change will impact the Plan Area. The section discusses several significant changes, but it would be improved by acknowledging the wide range of uncertainties in how the Delta's systems, wildlife, and habitats may change with the changing climate. Recognizing these uncertainties is necessary to ensure that a more active approach to adaptive management—one that includes additional research and ongoing monitoring—is adopted.

Section 5.A.1.4.2 (Physiological Tolerances) provides only a brief mention of the response of riparian vegetation to increased CO_2 levels. (*See* DEIR, at 5.A.1-5:4) However, it is possible that many plant species might increase their water use efficiency with increasing CO_2, which would mean they may be able to adapt to drier future conditions.

Section 5.A.1.4.3 (Range Shifts) overly focuses on species moving to higher elevations or latitudes. (*See* EIR, at 5.A.1-5-6) Species range shifts in response to climate change are much more complicated. Species will move to where climate and other environmental conditions are suitable.[15] How and where these shifts will occur is one of the uncertainties that should be acknowledged in the DEIR.

Section 5.A.1.4.4 (Ecological Interactions) should discuss that history and models both suggest that species will form novel biological communities in the future. (*See* EIR, at 5.A.1-6) Because the

[15] Lenoir, J., Gégout, J. C., Guisan, A., Vittoz, P., Wohlgemuth, T., Zimmermann, N. E. and Svenning, J. C. (2010). Going against the flow: potential mechanisms for unexpected downslope range shifts in a warming climate.*Ecography*, *33*: 295-303

composition of these communities will be difficult to predict, changes in ecological interactions will also be difficult to predict.[16]

Section 5.1.1.4.5 Nonnative Invasive Species discusses invasive Spartina (*Spartina alterniflora*) as an example of the negative effects of invasive species, including potential impacts on Clapper Rail habitat. (See DEIR, at 5.A.1-7) However, previous studies have shown not demonstrated an obvious effect of invasive Spartina on Clapper Rail habitat quality.[17] Moreover, whether invasive Spartina inhibits marsh accretion is unknown.

Section 5.A.1.5 (Climate Change Considerations in Reserve Design) states that it will "[r]epresent a 'portfolio' of variant forms of a species or ecosystem so that, regardless of the climatic changes that occur, there will be areas they survive and provide a source for recovery." (DEIR, at 5.A.1-8). The MBCP approves of this as a conservation strategy, and we suggest that in addition to thinking that the most appropriate species that occur at a protected area in the future may depend on the future climate, so most appropriate location of protected areas may depend on the future climate.[18]

Section 5.A.1.6.1 (Tidal Perennial Aquatic) should be revised to include discussion of how physical structures such as dams and human alteration of hydrologic flows constitutes an additional and major contributor to the decline in tidal mudflats. [19] (*See* DEIR, at 5.A.1-10: 15-18)

Section 5.A1.6.2 (Tidal Brackish Emergent Wetland) implies that the resilience of tidal marsh habitat in brackish marshes is entirely dependent on plant productivity. (DEIR, at 5.A.1-11) Plant productivity is more important in brackish marshes than salt marshes but the amount of suspended sediment in the system is critical for marsh sustainability particularly at lower elevations.[20] This is important for Suisun Bay in particular because many of potential restoration sites in the bay are subsided and thus will be very

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[16] *See* Stralberg et al. 2009. Re-Shuffling of Species with Climate Disruption: A No-Analog Future for California Birds? available at http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0006825

[17] Spautz, H. and J. McBroom. 2006. California Clapper Rails in the San Francisco Estuary: Modeling habitat relationships at multiple scales to inform habitat restoration and eradication of non-native *Spartina.* Final Report, Olofson Environmental, Inc., to California State Coastal Conservancy, San Francisco Estuary Invasive Spartina Project. Available from http://www.spartina.org/project_documents/clapper_rails/CLRA_Habitat_Rept-2006_%20Final.pdf; see also Overton, CT, ML Casazza, JY Takekawa, DR Strong, M Holyoak. 2014. Tidal and seasonal effects on survival of the endangered California clapper rail: does invasive Spartina facilitate greater survival in a dynamic environment? Biological Invasions. doi: 10.1007/s10530-013-0634-5

[18] Veloz, S. D., Nur, N., Salas, L., Jongsomjit, D., Wood, J., Stralberg, D., & Ballard, G. (2013). Modeling climate change impacts on tidal marsh birds: Restoration and conservation planning in the face of uncertainty. *Ecosphere,4*(4), art49

[19] *See, e.g.* Wells, Peter G. 1999. Environmental Impact of Barriers on Rivers Entering the Bay of Fundy: Report of an ad hoc Environment Canada Working Group. Technical Report Series No. 334, Canadian Wildlife Service, Ottawa, ON. 43p., at 10, 11, available at http://www.bofep.org/Publications/barrier.pdf

[20] For more information on plant productivity, sediment accretion, and sustainability at Suisun Marsh, please see Moyle, Peter B., Manfree, A. and P.L. Fiedler, eds. Suisun Marsh: Ecological History and Possible Futures. University of California Press; 1 edition (March 26, 2014). 256p. at 88-93; *see also* Stralberg et al. 2011. Evaluating tidal marsh sustainability in the face of sea-level rise: a hybrid modeling approach applied to San Francisco Bay. Available at: http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0027388#pone-0027388-g010

sensitive to suspended concentration levels.[21] Upstream sediment contributions will play an important role for marsh sustainability in Suisun Bay. Conservation Measures 3 and 4 should be revised to specifically address the availability of sediment.

Section 5.A.1.6.4 Valley/Foothill Riparian should be revised to discuss one of the key threats to riparian communities in the region: changes in flow regimes due to alterations of flows by human infrastructure. (*See* DEIR, at 5.A.1-14-15) With climate change, there is likely to be an increased demand for water, consequently hindering the ability to manage for more naturalistic flow regimes.

B. Chapter 29 Should Be Revised to Consider Impacts Over a Longer Period of Time and to Increase Specificity of Anticipated Impacts and Potential Management Actions.

Chapter 29 evaluates impacts to resources up to 2025 and 2060. However, it is expected that changes to the climate will increase significantly after 2060.[22] Moreover, impacts from the BDCP will still be ongoing after that time. Therefore, the EIR should evaluate impacts beyond 2060 (i.e., up to 2100). Given that the DEIR's sea level rise projections reach out to 2100, the DEIR should consider other climate factors for which there are reasonable projections over the same period. Moreover, once again, this chapter implicitly acknowledges uncertainties related to how the BDCP will interact with climate change, but it should do so expressly, thereby identifying gaps in knowledge that warrant additional monitoring, research, and preparedness through adaptive management planning.

Section 29.5.1.3 (Climate Change Effects on the Plan Area) should discuss the impacts of sea level rise on water temperature. (*See* DEIR, at 29-13) When sea level rise was higher in the past, the San Francisco Bay was more ocean-like, with higher salinities and cooler water temperatures. As sea level increases, similar changes would likely be evident in Suisun Bay and upstream. The document discusses how the X2 salinity position will likely change with sea level rise, but should also include how temperature gradients will likely also change in the lower parts of the Delta.

Section 29.6 (Resiliency and Adaptation Analysis) fails to adequately specify how the alternatives may increase resiliency. (DEIR, at 29-16) The section should be revised to provide clear descriptions of how specific resources are vulnerable to climate change and then demonstrate how the alternatives reduce the vulnerability and result in increased resiliency.

The section's discussion of increased wetland biomass is vague and confusing. Specifically, the section states that "[i]Increased wetland plant biomass, including below ground production helps promote accretion and the ability of the marsh to keep pace with sea level rise." (DEIR, at 29-17) The section should be revised to explain how this statement relates to various plan alternatives and how they will result in increased wetland plant biomass. The section should also be expanded to discuss how water diversions may interact with sea level rise (increasing salinity, etc.) and whether changes in flood and drought frequency will affect wetland plant biomass. If these issues are covered elsewhere in the document, they should be referenced here.

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[21] *Id.*

[22] *See* http://www.climatechange2013.org/images/report/WG1AR5_SPM_FINAL.pdf

V. ADDITIONAL RECOMMENDATIONS

As discussed above, the MBCP has reviewed the Delta Independent Science Board's report of May 15, 2014 and shares several concerns discussed in the report. If the BDCP is to proceed—let alone succeed—it will require an even greater commitment from the State, buy-in from Delta residents and other stakeholders, and a long term dedication by all parties to the success of the project. The MBCP offers these additional recommendations:

1. For the BDCP to succeed, it will require greater coordination between agencies and with stakeholders, which will require additional funding and increased capacity for involved agencies.
2. BDCP science should be integrated with the Delta Science Program. Science efforts in the Delta should be clearly linked to scientific problems related to managing the Delta. Data collection, analysis and reporting should be rigorous, credible, and transparent.
3. Pilot restoration projects should be implemented immediately to allow for early testing, refinement, and adaptive management. The goal of these projects should focus on meeting habitat needs for target species, rather than simply meeting acreage goals.
4. Permits issued pursuant to the BDCP should include clear milestones, monitoring requirements, and adaptive management.

BDCP1671

CENTRAL VALLEY JOINT VENTURE

Conserving Bird Habitat in California's Central Valley

Conservation Organizations

Audubon California

California Waterfowl Association

Defenders of Wildlife

Ducks Unlimited, Inc.

PRBO Conservation Science

River Partners

The Nature Conservancy

Trust for Public Land

July 23, 2012

Dr. Jerry Meral, Deputy Secretary
California Natural Resources Agency
1416 9th St, Suite 1311
Sacramento, CA 95814

Dear Dr. Meral:

On behalf of the Central Valley Joint Venture (CVJV) Management Board, we are writing to clarify the habitat needs of migratory birds in the Sacramento-San Joaquin Delta to help insure they are adequately considered in the Bay Delta Conservation Plan (BDCP), the Delta Plan, and other associated planning efforts in the region.

The CVJV is a partnership of 21 public and private entities comprised of government agencies, science and conservation organizations, and one corporation. Our mission is to work collaboratively to protect, restore, and enhance habitats for birds, in accordance with conservation actions identified in the CVJV Implementation Plan[1] (Plan). The Plan provides a cohesive vision for bird conservation in the Central Valley within the context of the entire Pacific Flyway and in association with four international bird conservation initiatives. The Plan is based on the best available science and sets quantitative habitat and population objectives to meet the needs of migrant and resident birds.

We fully support wetland restoration in the Delta and urge that restoration planning take into account the needs of the entire ecosystem rather than focus on a particular species or community. Plans that influence the future of the Delta have the obligation to fully recognize, protect and where feasible enhance the migratory bird values of the region. The potential for restoring ecological conditions favorable for native fish species is clearly important, but should be additive to, rather than at the expense of, existing avian and other terrestrial values. The CVJV partners have accomplished, at great public and private expense, an incredible amount of wetland restoration that should be accounted for as assets in these planning efforts.

Background: As you know, the amount of all wetland types in California has been severely reduced and degraded over the last 200 years. California has lost more than 95% of its historic wetlands, largely due to urbanization, flood control and agriculture. As a result, many wetland-associated species

[1]CVJV 2006 Implementation Plan- http://www.centralvalleyjointventure.org/science

have declined from historic levels and are increasingly dependent on the last remaining wetlands. Despite these tremendous losses, California remains the most important wintering and migratory stopover area for waterfowl and shorebirds in the Pacific Flyway. In addition, many year-round resident bird species rely completely on our state's wetlands.

The importance of wetland habitat in California is widely recognized and "no net loss" policies have been established at the state and federal levels to promote conservation of existing wetlands and restoration of additional wetland acres. In 2009, the State Legislature passed the Delta Reform Act (SBX7 1) which, among other things, amended the Water Code to insure the Delta Plan included restoring habitat necessary to avoid a net loss of migratory bird habitat and, where feasible, increase migratory bird habitat to promote viable populations of migratory birds *(Water Code §85302).*

The CVJV has supported these policies, and our Plan provides a bird conservation blueprint by identifying specific goals and objectives for wetland, riparian and agricultural habitats. The CVJV has also promoted and helped implement non-traditional management solutions to fulfill the needs of waterbirds by working extensively with private wetland managers and agriculture. This is critical, because there is insufficient wetland habitat in public ownership to support current migratory bird populations. In addition to conventional restoration and protection, the CVJV also emphasizes active management and enhancement of existing wetlands and agriculture to maximize the benefits to waterbirds. Few wetlands with natural hydrology remain in the Central Valley due to reclamation and flood control projects. Most wetlands are intensively managed and artificially flooded during the winter as surrogate habitat to replace lost natural wetlands. Seasonal wetlands are flooded in fall to coincide with waterbird migration, and water depth is manipulated to attract target species. Water is drawn down in spring to expose the soil and stimulate growth of beneficial food plants. Prescriptive water control includes subsequent irrigation during the growing season to improve food production and availability for birds the following fall and winter. Enhancing agriculture for waterbirds involves applying water to certain crops to provide supplemental foraging habitat to meet the energetic needs not provided by the Central Valley's limited natural or managed wetlands.

The Plan defines specific habitat goals and objectives, by basin, for several avian groups deemed of ecological or economic value in the Central Valley. The basins approach provides a distributional component to the Plan strategy, which requires that all of the habitat needs not be located in one or few isolated (and therefore vulnerable) locations, but rather be spread throughout the length and breadth of the Central Valley. Three of these basins (Suisun, Delta, and Yolo) are within the BDCP planning area. Specific objectives for the three basins are included as an appendix to this letter.

Status: Habitat in the Delta region has become considerably more hospitable to avian species as a result of CVJV activities largely due to conservation efforts in the Yolo Basin (e.g., expansion and restoration at the Yolo Bypass Wildlife Area). However, funding and permit restrictions have limited our enhancement efforts in the Suisun Basin.

Recommendation: We respectfully recommend that all Delta-related planning efforts including BDCP and the work of the Delta Stewardship Council incorporate the following goal, principles and objectives:

> **GOAL**: Contribute to the attainment of the acreage, water, and bird population goals set forth by the Central Valley Joint Venture Implementation Plan.
>
> **PRINCIPLE 1: Avoid Detrimental Impacts to Wetland Water Supply.** Ensure that BDCP activities: 1) enhance, and do not directly or indirectly compromise the ability to

provide full Level 4 and Level 2 water deliveries to federal refuges, state wildlife areas and private wetlands identified in the Central Valley Project Improvement Act *(Public Law 102-575)* and aid in meeting this existing statutory obligation; and 2) do not negatively impact the water supplies of private and public wetlands, including agricultural wetlands, in the Sacramento and San Joaquin Valleys.

- Action 1.1: Within BDCP's NEPA/CEQA processes, analyze water transfer activities that are within the scope of BDCP specifically for potential adverse impacts to CVPIA refuge water supplies and ensure full mitigation for these impacts.

PRINCIPLE 2: Mitigate for Impacts to Brackish and Freshwater Wetland-associated Birds and Bird Habitat. BDCP actions that result in losses of brackish and freshwater wetlands (including seasonal, permanent, and managed wetlands, mud flats, and winter flooded corn and rice areas meeting CVJV Plan criteria) should be fully mitigated consistent with the Natural Communities Conservation Planning Act of 2003 *(Fish and Game Code 2800 et seq)*. Mitigation actions should:

- Action 2.1: Place mitigation wetlands within the Delta on site and in kind to the maximum extent possible but otherwise within the Central Valley.
- Action 2.2: Plan and construct mitigation wetlands near existing wetland complexes whenever possible[2].
- Action 2.3: Fund conservation easements for bird-compatible agriculture that contributes to meeting the CVJV goals.
- Action 2.4: Enhance existing wetlands and agriculture to improve their productivity and quality for birds.

PRINCIPLE 3: Use Adaptive Management to Improve Mitigation Outcomes. Implement a monitoring and assessment program at all wetland mitigation sites and at regional scales to assess the effectiveness of mitigation actions. Mitigation actions should include clear and measurable goals and objectives.

- Action 3.1: Establish an independent science advisory panel to assess the effectiveness of wetland mitigation actions. Include representation from the CVJV. This panel could be part of the Delta Stewardship Council's Independent Science Board.
- Action 3.2: Develop site level mitigation monitoring and assessment for shorebirds, waterfowl and their habitats using established monitoring protocols so that data generated are compatible with existing monitoring programs (e.g. Pacific Flyway Shorebird Survey[3], Mid-winter Waterfowl Survey).
- Action 3.3: Develop and/or support maintenance plans that contain performance standards to ensure long term sustainability of sites.
- Action 3.4: If mitigation outcomes are deemed by the advisory panel to be insufficient, make sure there is capacity to adapt the mitigation program to meet the objectives.

Through hard work and significant investment, conditions are better today for migratory birds in the Delta than they were twenty years ago. Yet, the CVJV has not fulfilled our wetland habitat conservation goals in the three Delta basins, and our partners continue to look for opportunities there. It is very evident that the physical, economic and political landscapes have changed considerably in the Central Valley since the CVJV began its work, and a reevaluation of migratory bird needs in light of these changes is paramount to improve conservation planning and

[2] Reiter et al. in prep. Local and Landscape Factors Influence Shorebird Use of Managed Wetlands.

[3] Pacific Flyway Shorebird Survey- http://data.prbo.org/apps/pfss/

delivery. This is especially true in the Delta region, where BDCP could have an immediate and lasting impact on the migratory bird resource. BDCP must include habitat restoration planning that considers the needs of all species and that emphasizes restoring high-quality habitat in the places that have the highest potential for success. Restoring 65,000 acres of tidal marsh, 10,000 acres of flood plain, and the enhancement of existing flood plains (e.g., the Yolo Bypass area), as proposed in the BDCP, could reduce habitat for certain species of migratory birds depending on the strategy and location of these efforts.

That said, a comprehensive and integrated BDCP has the potential to improve wetland and agriculture habitats important to birds, fish, and terrestrial wildlife. It must be thoroughly evaluated in regards to impacts on migratory birds and impacts avoided, reduced or mitigated to ensure consistency with the Delta Reform Act.

Our partner organizations have staff with considerable scientific expertise in avian and wetland ecology and are willing to provide input during the development of the BDCP and the evaluation of its effects. We look forward to engaging with your agency and others involved in Delta and Suisun planning to insure that ecosystem restoration includes all important habitat types and considers important terrestrial species such as migratory birds.

Sincerely,

Ellie Cohen
Management Board Chair

cc: Central Valley Joint Venture Management Board

Attachment: Avian Habitat Needs in the Delta. The habitat needs for birds and the conservation objectives designed to achieve those needs are found in the CVJV Implementation Plan. They are summarized below.

Suisun Basin - **32,232 acres of highly functioning seasonal wetlands**

The CVJV Implementation Plan identifies a number of means (described as "Objectives" in the Plan) designed to achieve the above requirement, as follows:

- *Wetland protection objectives* - There are no wetland protection objectives for this basin, as the entire 58,000-acre marsh (32,232 wetlands) was considered protected by the Suisun Marsh Protection Act of 1977 when the 2006 Plan was published.
- *Wetland restoration objectives* – There are no wetland restoration objectives, because existing managed wetlands were considered adequate to support desired waterfowl populations. However, reductions in wetland values as a result of conversion to tidal or other means would require an equal amount restored to managed wetlands to maintain migratory bird values.
- *Annual enhancement objective for existing wetlands* – 2,686 acres/year
- *Wetland water supply objectives*- 153,102 acre/feet/year

Yolo Basin - **11,558 acres of highly functioning seasonal wetlands**
11,000 acres of winter flooded (or otherwise enhanced) small grain agriculture

The CVJV Implementation Plan identifies a number of means (described as "Objectives" in the Plan) designed to achieve the above requirement, as follows:

- *Wetland protection objective* – 5,000 acres
- *Wetland restoration objective* – 3,000 acres
- *Annual enhancement objective for existing wetlands* - 963 acres/year
- *Riparian habitat restoration objective*- 675 acres
- *Wetland water supply objective* – 57,790 acre/feet/year

Delta Basin - **25,349 acres of highly functioning seasonal wetlands**
23,000 acres of winter flooded (or otherwise enhanced small grain

The CVJV Implementation Plan identifies a number of means (described as "Objectives" in the Plan) designed to achieve the above requirement, as follows:

- *Wetland protection objective* – 3,000 acres
- *Wetland restoration objective* - 19,000 acres
- *Annual enhancement objective for existing wetlands* - 529 acres/year
- *Riparian restoration objective* – 2,500 acres (Cosumnes and Mokelumne rivers)
- *Wetland water supply objectives* – 120,408 acre/feet/year

BDCP1671

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PRBO Conservation Science

River Partners

The Nature Conservancy

The Trust for Public Land

May 24, 2013

John Laird, Secretary
California Natural Resources Agency
1416 Ninth Street, 13th Floor
Sacramento, CA 95814

Dear Secretary Laird,

This letter is a follow-up to the July 23, 2012 letter we sent regarding the habitat needs of migratory birds in the Sacramento-San Joaquin Delta and Suisun Marsh as they are affected by the Bay Delta Conservation Plan (BDCP). We recommended that all Delta-related planning efforts, including BDCP and the work of the Delta Stewardship Council, adopt a goal to *Contribute to the attainment of the acreage, water and bird population goals set forth by the Central Valley Joint Venture Implementation Plan.* We provided several principles and actions to guide planning processes in achieving this goal.

In light of recent progress by the agencies and consultant teams involved in developing and evaluating BDCP operations and financing, we are sending this letter to request the agency take specific actions to abide by the *principles* we recommended previously.

> ***PRINCIPLE 1: Avoid Detrimental Impacts to Wetland Water Supply.***
> *Ensure that BDCP activities: 1) enhance, and do not directly or indirectly compromise the ability to provide full Level 4 and Level 2 water deliveries to federal refuges, state wildlife areas and private wetlands identified in the Central Valley Project Improvement Act (Public Law 102-575) and aid in meeting this existing statutory obligation;*

It is clear that actions resulting from implementation of BDCP could affect migratory bird habitat both in the Delta and beyond by affecting water supplies to thousands of acres in the Sacramento and San Joaquin Valleys, areas critical to achieving the goals set forth by the Central Valley Joint Venture. In our collective view, BDCP and related mitigation measures should seek to benefit water supplies to bird habitat both on protected refuges and on compatible agricultural lands both in the Delta and throughout the Central Valley.

Many different water sources supply public and private wetlands located south of the Delta, but many of these sources are north of the Delta. The range of potential options to convey these water supplies to protected wetlands is dramatically constrained by the limited ability to convey water across the Delta, particularly in certain times of year. BDCP should not compromise the ability to provide Level 2 and Incremental Level 4 water deliveries; rather, BDCP should go beyond to support and contribute to achieving CVPIA refuge water mandates. Although BDCP does not include enhancement of the ability to provide these levels of delivery as a goal, funding for enhancement would be appropriate to include in future bonds or other funding vehicles which also provide BDCP funding. Designating a budget source for the State's cost share obligation for Incremental Level 4 water acquisition and conveyance improvements, and then enhancing the budget through funding vehicles developed for BDCP would allow refuge water supply improvements to proceed more quickly and efficiently, significantly benefitting all CVPIA refuges.

> *and 2) do not negatively impact the water supplies of private and public wetlands, including agricultural wetlands, in the Sacramento and San Joaquin Valleys.*

BDCP should not negatively impact the water supplies of wetlands; to the contrary, BDCP should take a step further to sustain and enhance the predictability of water supplies to both public and private managed wetlands and to the thousands of irrigated agricultural areas in the Sacramento and San Joaquin Valleys, critical to achieving Central Valley Joint Venture goals. These areas provide critical waterfowl food resources in California, including winter flooded rice and other bird-friendly crops, as well as nesting and brooding habitat important for breeding waterfowl. Within the BDCP plan area, wetlands should be covered by the Plan's conservation strategy; thus, any impacts should not only be fully mitigated, but also "conserved" through the BDCP conservation measures. Impacts to wetlands outside of the BDCP plan area from BDCP activities should also be fully mitigated. Finally, conservation measures for BDCP and mitigation for BDCP activities should be carried out in accordance with Principle 1.

> *Action 1.1: Within BDCP's NEPA/CEQA processes, analyze water transfer activities that are within the scope of BDCP specifically for potential adverse impacts to CVPIA refuge water supplies and ensure full mitigation for these impacts.*

Existing state laws (WCS 1725, 1736 and 1810) require that water transfers not unreasonably affect fish and wildlife, which includes Giant garter snake, waterfowl and other birds that are dependent on wetlands and on agricultural tailwater that create wetland conditions. The Department of Fish and Wildlife typically recommends to the State Water Resources Control Board that any transfers which impact wetlands include mitigation for unreasonable impacts. While specific water transfers will not be authorized under the BDCP, the agencies, through the NEPA/CEQA process can and should identify the potential impacts to fish and wildlife from transfers, including potential impacts to refuge water supplies mandated by CVPIA, and identify the measures necessary to fully mitigate the environmental impacts. (Mitigation for loss of habitat-compatible agricultural crops is discussed in more detail below.) This will inform future bond acts and/or other BDCP funding measures in which funding from the state or the Potentially Regulated Entities could be included to pay for this mitigation.

> ***PRINCIPLE 2: Mitigate for Impacts to Brackish and Freshwater Wetland-associated Birds and Bird Habitat.***
> *BDCP actions that result in losses of brackish and freshwater wetlands (including seasonal, permanent, and managed wetlands, mud flats, and winter flooded corn and rice areas meeting CVJV Plan criteria) should be fully mitigated consistent with the Natural Communities Conservation Planning Act of 2003 (Fish and Game Code 2800 et seq). Mitigation actions should:*
>
> - *Action 2.1: Place mitigation wetlands within the Delta on site and in kind to the maximum extent possible but otherwise within the Central Valley.*

- *Action 2.2: Plan and construct mitigation wetlands near existing wetland complexes whenever possible.*
- *Action 2.3: Fund conservation easements for bird-compatible agriculture that contributes to meeting the CVJV goals.*
- *Action 2.4: Enhance existing wetlands and agriculture to improve their productivity and quality for birds.*

The BDCP conservation strategy and NEPA/CEQA mitigation should specifically provide for offsetting the loss of brackish, freshwater, and managed wetlands and associated uplands and their benefits to waterfowl and shorebirds.

In addition, the conservation strategy and NEPA/CEQA mitigation should provide for offsetting the loss of rice and other crops that support foraging and breeding habitat for birds covered by the BDCP (greater Sandhill crane, tricolored blackbird, western burrowing owl, and Swainson's hawk). Crop losses both within and outside of the Delta that could result from BDCP actions should be considered and mitigated. For example, a water transfer made possible by BDCP actions could result in the fallowing of rice fields that are now supporting habitat for migrating waterfowl, including BDCP-covered bird species. This potential loss of habitat should be offset through established mitigation mechanisms. In the case of a water transfer that results in fallowing of rice fields, the fallowing program should encourage with incentives or require that cover crops (e.g. vetch) be planted on such lands to address water and air quality concerns and provide wildlife habitat benefits such as waterfowl nesting cover. A mechanism could also be implemented that allows for some transferred water to remain in-basin and delivered to a managed wetland as a way to mitigate for lost habitat that would result from a water transfer.

Establishing funding sources for implementation of conservation and wetland mitigation measures should be prioritized. Funding sources could be from a combination of mitigation funds, general obligation bond acts, and new federal funds. Funding should be well in place before a BDCP is approved. Availability of these funds is necessary for the implementation of conservation measures and to allow implementation of wetland mitigation measures. Conservation measures cannot be unfunded mandates nor depend on already stressed funding streams.

BDCP should not compromise long-term state or federal agreements or easements that are now providing for the creation of waterfowl habitat. Potential impacts to such agreements or easements should be considered and fully mitigated. In furtherance of the BDCP conservation strategy, the plan should include funding for conservation easements that maintain waterfowl food resources on agricultural lands in the Central Valley and Delta, which will contribute toward meeting the CVJV goals.

PRINCIPLE 3: Use Adaptive Management to Improve Mitigation Outcomes.
Implement a monitoring and assessment program at all wetland mitigation sites and at regional scales to assess the effectiveness of mitigation actions. Mitigation actions should include clear and measurable goals and objectives.

- *Action 3.1: Establish an independent science advisory panel to assess the effectiveness of wetland mitigation actions. Include representation from the CVJV. This panel could be part of the Delta Stewardship Council's Independent Science Board.*
- *Action 3.2: Develop site level mitigation monitoring and assessment for shorebirds, waterfowl and their habitats using established monitoring protocols so that data generated are compatible with existing monitoring programs (e.g. Pacific Flyway Shorebird Survey, Mid-winter Waterfowl Survey).*

- *Action 3.3: Develop and/or support maintenance plans that contain performance standards to ensure long term sustainability of sites.*
- *Action 3.4: If mitigation outcomes are deemed by the advisory panel to be insufficient, make sure there is capacity to adapt the mitigation program to meet the objectives.*

The BDCP conservation strategy should require monitoring of all restoration sites and protected lands in the reserve system to ensure that they are meeting their intended functions, including providing shorebird and waterfowl habitat. Restoration plans and management plans for all reserve lands should include performance standards to ensure their long-term sustainability. Finally, periodic scientific reviews by independent panels should provide assessment of the monitoring results. If performance standards are not being met, management activities should be adjusted to meet them.

A comprehensive and integrated BDCP has the potential to improve wetland and agriculture habitats important to birds, fish, and terrestrial wildlife. It must be thoroughly evaluated in regards to impacts on migratory birds and impacts avoided, reduced or mitigated to ensure consistency with the Delta Reform Act. We encourage you to continue working closely with Ducks Unlimited, Audubon California, California Waterfowl Association, and other Joint Venture members to determine the potential benefits and impacts of BDCP on the present and future migratory bird habitats within the Delta, Suisun Marsh, and throughout the Central Valley.

The support of the organizations that make up the Central Valley Joint Venture can assist in obtaining the funds necessary to carry out our mutual goals as described in this letter. We look forward to working with you to successfully complete BDCP in a way which benefits the waterfowl and other wetland-dependent bird species of the Central Valley.

Sincerely,

Ellie Cohen
Management Board Chair

cc: Jerry Meral, Deputy Secretary, Natural Resources Agency
Chuck Bonham, Director, Department of Fish and Wildlife
Mark Cowin, Director, Department of Water Resources
CVJV Management Board