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October 26, 2021

Mr. Brian Lockwood
Manager, Pajaro Valley Water Management Agency
36 Brennan St.
Watsonville, CA 95076

Re: Sierra Club Comments—PVWMA Draft Adaptive Management Plan

Dear Mr. Lockwood,

Thank you for the work done to date on the Draft Adaptive Management Plan (DAMP) for the basin wetlands. The DAMP includes objectives, triggers and actions that will help to ensure that the adverse effects of the PVWMA irrigation project on biodiversity and biological productivity of the lake will be moderated by habitat preservation and management.

This letter highlights Sierra Club concerns regarding the current draft of the Adaptive Management Plan, its consistency with stipulated terms of the State water rights permit and implementation of a plan that will effectively preserve waterfowl habitat quality and other plant and wildlife resources of wetlands affected by water project operation. The Sierra Club representative on the Committee, Jerry Busch, reports to the Executive and Conservation committees on the progress and potential challenges of the AMP Committee. Observations are also contributed by other Sierra Club Executive Committee members who have attended AMPC meetings.

Woody vegetation control

One of the important functions of the DAMP will be to guide management of woody vegetation. Although willow growth could be detrimental to waterfowl dependent on open water, excessive measures for woody vegetation control could be equally harmful. Table 4-1, entitled "Summary of Proposed Management Objectives, Metrics, and Triggers," establishes an objective to "Sustain seasonal wetland and native vegetation," which would be met by initial disking or localized hand removal of woody vegetation, followed by monitoring of woody plants (location, estimated area, abundance, height) and future action to "retreat or revegetate as needed." This sensible approach reflects the essence of Adaptive Management: an initial management measure (disking or hand removal), with monitoring and follow-up actions as needed to sustain wetland vegetation.

These appropriate measures of Table 4-1 are contradicted by those of Table 2-2, "Summary Description of Anticipated Maintenance Activities" and Table 2-3, "Anticipated Changes to Inundation Periods and Land Cover at College Lake," which anticipate that disking or mowing would be implemented

every 1-2 years (Table 2-2) or annually (Table 2-3). Annual disking or mowing would eliminate emergent vegetation for waterfowl, not sustain it. Tables 2-2 and 2-3 are inconsistent with the management approach and many objectives and measures described in Table 4-1 and elsewhere in the DAMP. At minimum, both tables should include a note that they were prepared for the DEIR prior to the AMP Committee, water rights permit approval and other recent project developments and do not necessarily reflect the most up-to-date approaches. Table 2-2 should be updated to be consistent with Table 4-1. Table 2-3 should be deleted entirely (this table is inappropriate in the AMP because it is a non-adaptive and speculative exercise within a document committed to concrete outcomes based on active monitoring and management).

The DAMP includes additional areas of concern. As you know, the pending conditions of the PVWMA water rights permit, as stipulated by your agency, require the AMP to include the following:

- Systematic studies of fish, wildlife and vegetation
- Measures to preserve waterfowl habitat quality
- No diversion unless the rights holder is implementing the plan

Waterfowl Monitoring

The DAMP does not currently propose any detailed, systematic metrics to monitor waterfowl, other than to "monitor median daily abundance of waterfowl guilds during December–March." This entails counting waterfowl at intervals, then finding the median range or average number of birds counted per day. This approach would not necessarily reveal the effects of project operation on the lake, because the trends in waterfowl numbers there would be difficult to separate from general trends in waterfowl populations regionally and statewide. For example, waterfowl numbers at the lake may decline one year due to excessive runoff and muddy water, and increase in another year due to regional drought. Or populations may start out high in a dry year, then decrease as the season progresses—a fluctuation that could be overlooked by the sampling method unless enough counts were taken to establish daily averages for each month. The effect of project operation could be lost in the background "noise" of natural waterfowl population changes.

The Sierra Club recommends that, in addition to compiling average daily population counts, the AMP should monitor waterfowl numbers by field within the lake basin. Monitoring changes between fields controls for the influence of external factors. Field-based counts can be aggregated into basin-wide counts, and can also provide significant data about the response of waterfowl to changes in habitat quality between fields, including project operation and habitat management. For example, if emergent vegetation and seed production is wholly eliminated in several fields but improved in other fields, the data could indicate that management measures to maintain seed production should be implemented, even though overall waterfowl numbers remain constant. Field-specific data can also highlight the effects of changes in water level, rainfall patterns and changes in turbidity. The waterfowl monitoring has already been designed and set up as field-based, the fields are already diagramed and marked with buoys and other markers, and the cost of field-based study is similar to simple basin-wide monitoring.

Monitoring Wetland Vegetation

The Sierra Club supports the DAMP metric to monitor the acreage of seasonal wetlands. A decline in seasonal wetland area would be considered synonymous with a decline in waterfowl habitat quality,

because a reduction in food availability can adversely affect breeding success later on. However, it is also important to collect data about plant composition, cover, seed production and elevation distribution, in order to evaluate trends in marsh vegetation and habitat value to waterfowl. Also, a fine-grained approach is essential to monitor the habitat response to management actions such as disking, weeding, planting waterfowl food, or changes in drawdown date or water levels from year to year.

The metric methodologies submitted for the November meeting need to be sufficiently complete, with only minor adjustments, to receive the endorsement of the AMP committee. If the forthcoming vegetation monitoring metrics are not sufficiently well-developed, or not considered adequate, an additional meeting of the AMP could be reasonably required for AMPC approval.

Because habitat quality is a key component of monitoring waterfowl habitat utilization required by the Basin Management Plan EIR, the following action triggers should also be considered:

- Seed production of preferred waterfowl food plants – maintain at or above pre-project productivity.

- Waterfowl preferred food plant cover or occurrence – maintain at or above 2017–2022 cover or species frequency.

- Invertebrate species selected by waterfowl – no decrease in diversity or abundance.

Farming Consistent with Other Objectives

Although PV Water is committed to encouraging a level of farming in the upper contours (59–63-foot elevation band) of the lake basin, this does not need to conflict significantly with preserving waterfowl habitat quality. The EIR specified farming to occur at least one out of every five years, a level of farming consistent with maintaining open waterfowl habitat around the shoreline. The AMP management trigger, however, would require action whenever agricultural activity fell below the annual farming that occurred in 2014–2021. Because annual cultivation of the elevation band would be inconsistent with sustaining seasonal vegetation, the threshold should be scaled back to encourage farming one out of every five years.

Tribal Interests

As consistent with comments by the AMPC's tribal representative, the Cultural Resources objective could be expanded to include maintaining and fostering plants and wildlife utilized by indigenous people for food, shelter construction, industry, medicine or ceremony/spiritual practice, potentially including tribal harvesting and use. Protection of known cultural sites potentially affected by project construction and operation should be implemented.

Long-Term Workplan

To provide accountability and predictability, a workplan and budget should be prepared for the AMP, providing an annual budget for implementing monitoring, analysis and reporting. During baseline data phase, the budget should itemize the collection, analysis and reporting of metrics. During management action phase, an itemized workplan and budget must be prepared for implementing, evaluating and reporting the management action. This is essential to plan and guide work, allow budgeting by the water board and provide public accountability.

The absence of a budget and workplan, will result in the PVWMA Board of Directors providing piecemeal review of each expenditure on the AMP, which effectively denies the public the opportunity to review and comment on AMP expenditures.

Conclusion

The Draft AMP lays the groundwork for an effective adaptive management program. Modification of the woody vegetation management guidelines to provide internal consistency and highlight implementation of an adaptive management approach will ensure that the AMP meets the goal of sustaining seasonal vegetation for waterfowl habitat. A systematic approach to waterfowl monitoring is required by the stipulated terms of the water rights permit, and necessary to produce significant results regarding the impacts of project operation and habitat management actions. Vegetation monitoring should be field-based and include transects or quadrat-based ground sampling to reinforce the waterfowl monitoring, evaluate the efficacy of management actions and track changes in waterfowl habitat quality, as required by the stipulated terms. Seed production and invertebrate diversity—key components of waterfowl habitat quality—should be monitored to comply with the water rights terms. The farming triggers should be revised to render them consistent with sustaining seasonal vegetation and waterfowl habitat, by modifying the acceptable threshold for farming in the 59–63-foot elevation range to a minimum of once per five years, consistent with the project EIR. Tribal interests in cultural sites and resources should be honored.

To provide AMP project accountability and predictability, and to ensure adequate funding, an AMP implementation workplan and budget should be prepared and submitted to the AMPC for review and recommendations. Neither the public nor the PVWMA Board of Directors should be put in the position of attempting to monitor and provide oversight to an AMP program that is implemented on a piecemeal basis without full public disclosure. Such a process would not only be improper for public accountability, it would be cumbersome and inefficient for the agency itself.

Implementation of foregoing measures is necessary not only to comply with the stipulated terms of the water rights permit, but to ensure that the AMP process is effective and transparent. The AMP must effectively include measures to preserve waterfowl habitat quality. In doing so, the adaptive plan would not only support a wide range of wetland species, habitats and ecological relationships, but could provide a solid foundation and inspiration for public engagement, community science and celebration of this remarkable resource. The Sierra Club would enthusiastically support such a plan and work to ensure its success.

Respectfully, Micah Posner

Micah Posner
Chairperson
Sierra Club Executive Committee
Santa Cruz County Group