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Projects and Facility Operations Committee
Pajaro Valley Water Management Agency
36 Brennan St.
Watsonville, CA 95076

June 9, 2026

RE: Comments on Adaptive Management Plan 2024 Annual Report

Honorable Committee:

The Sierra Club has reviewed the Annual Report for WY2024, Pre-Operations, and we are submitting these comments in anticipation of your preparation of an annual report for WY2025. The position of the Sierra Club is that the waterfowl studies, plant studies, and results summary presented by the 2024 Annual Report all failed to comply with the Adaptive Management Plan (AMP) adopted by the PV Water Board of Directors in 2022.

As your Committee is aware, no withdrawals are allowed from College Lake unless The Pajaro Valley Water Management Agency is implementing an Adaptive Management Plan (AMP) for waterfowl and wetland vegetation management that includes systematic studies of fish, wildlife and vegetation, along with measures to preserve waterfowl habitat quality. The AMP establishes requirements for plant and waterfowl studies, evaluation of study results, and thresholds for management recommendations.

> *Right holder shall prepare an adaptive management plan for waterfowl management and multi-species mitigation for College Lake in consultation with the State Water Board, California Department of Fish and Wildlife, and National Marine Fisheries Services, as required by mitigation measure BIO-2i.1 in the Mitigation and Monitoring and Reporting Plan adopted by the Pajaro Valley Water Management Agency Board of Directors for its 2014 Basin Management Plan Update (Resolution 2014-05). The plan shall include systematic studies of fish, wildlife, and vegetation. The plan shall also include measures to preserve waterfowl habitat quality. No diversion is authorized under this permit unless right holder is implementing the approved plan. - DWR Water Rights Application A032881.*

Following is a critique of the 2024 Annual Report approved by your body, submitted in the hope that this year's report does not suffer from the same issues.

Waterfowl Study

The study methods more or less complied with the AMP requirements although there were instances where only one observer was conducting the survey, which is inevitably going to produce reduced counts and/or counting errors in an area as large as College Lake when hundreds of birds are moving around the lake. The results and analysis failed to meet AMP requirements in the following respects:

1. The report provides only cumulative totals for the entire lake. The AMP requires counts also to be provided for each field.
2. The waterfowl report uses a January–April window in 2024 and provides only one December count in 2023. The AMP metric requires **December–March (Table 4-1)** surveys**.** December surveys contribute to generating statistically significant data over a full season; without them, it is more difficult to detect a change in response to operation of the weir and extended water impoundment due to reduced statistical power and elimination of normal curve "tail", particularly if previous years contain December data
3. Tables 1 and 2 are mislabeled as daily mean values. They simply represent daily values of total observed waterfowl with the two respective guilds.

Vegetation Study

1. AMP Table 4-1 states that if the range of seasonal wetland vegetation is less than the 2017-2022 range of vegetation acreage, management actions are triggered. The aerial photo analysis erroneously considers only the range of seasonal wetlands and omits the range of seasonal wetland *vegetation*, thus failing to implement the AMP.

   The transect data indicates that, when farmed transects are excluded, seasonal wetland vegetation declined in all four fields and that the total vegetated area is below the 2017-22 range. The report also indicates that there is no foliar cover in the 51- to 54-foot elevation range critical to produce waterfowl food (see report conclusion).

   The Vegetation Study must provide an aerial photo analysis of the extent of seasonal wetland vegetation and state whether the 2024 extent of seasonal wetland vegetation is below the 2022-23 range of seasonal wetland vegetation for each field. (Note: the requirement for field-by-field comparison is established by footnote c of Table 4-1, which states that critical values will not be adjusted for multiple comparisons – meaning that foliar cover declines in individual fields can trigger the threshold, even if such declines would be otherwise masked by cumulative comparisons.) If thresholds are reached in any field, then table 3-1 in the annual report needs to be expanded to include management recommendations following reduction in seasonal vegetation.

2. Assuming the **Vegetation** action threshold is triggered by reduced seasonal vegetation, the AMP requires the plant study to evaluate potential relationships of change in vegetation to hydrology (e.g., duration of inundation) and operations and maintenance activities, particularly inundation period and vegetation management (Table 4-1). This was not provided.

The required evaluation of vegetation changes response to maintenance activities is particularly important, as the Annual Report Sect. 3.1.2 recommends “routine mowing and disking” as a “proactive maintenance measure” to “discourage establishment of woody riparian vegetation.” **The Annual Report must evaluate the potential adverse effect of this proposed maintenance activity on the productivity of waterfowl food plants.** The AMP provides numerous measures to minimize the adverse effects of vegetation maintenance on waterfowl food production, **none of which were included in the annual report,** to wit:

a. Modify timing or techniques of vegetation management, including consideration of alternatives to mechanical and chemical treatments (e.g., grazing, controlled burns.
b. Monitor treated areas and retreat or revegetate as needed.
c. Reassess practices for limiting introduction and spread of invasive plants, and revise as appropriate.

3. Vegetation Report failed to provide a quantified analysis of trends in vegetation quality. In all three fields where vegetation quality has been tracked since 2022, the quality of waterfowl food plants has declined – in some fields significantly. Quality has also declined for all but one waterfowl food plants by species. Although waterfowl food plant quality is not a separate AMP metric, the AMP's Waterfowl row of Table 4-1 lists, a management action when the waterfowl abundance trigger is exceeded (see waterfowl survey), "evaluate College Lake monitoring data, regional data, and other information sources (including technical experts) to identify potential causes of low abundance." Food-plant quality would potentially correlate to waterfowl density as both dabbling and diving ducks forage on seeds and vegetable matter, both of which rely on plant quality.

4. The Vegetation Report relies on approximated observations of water surface elevation for discussions of WSE effects. For example, the report states that "At the time of the 2024 field surveys, the water level in the lake basin was estimated to be around 51 to 55 feet above mean sea level” (Appendix D, p. 4). The appendix goes on to state (p. 18) that "A review of recent aerial imagery (EO Browser 2024; Google Earth Pro 2024) and in-field observations revealed extended inundation in the Project area ….” All discussions of the effect of the extent and duration of inundation should use daily numeric WSE data available from PV Water coupled with the precise, LiDAR-generated contour maps developed by cbec. The College Lake US Weir Stage Hydrograph Figure 14 does not cover plant monitoring dates in fall. It would get better coverage if it covered 11/1 through 10/30.

5. Transects 1a, 2d, 4a, 4e, 5a, and 5e were not accessible for the study. These transects are at lower elevations where the adverse impacts of extended inundation on food plants are potentially most severe. The omission of most of the transects below 54’ critically undermines the credibility of

the vegetation data, and the reduction of the statistical power (degrees of freedom) of the study by 25%, significantly reducing the study's sensitivity to changes in food plant cover and quality. This underscores the critical necessity of providing an aerial photo analysis of the extent of seasonal wetland vegetation vs. bare earth or farmed wetlands. **The reservoir should be emptied as early as possible each year, to allow time for emergent vegetation to germinate, mature and set seed, and be measured**.

6. The plant survey was conducted late in October (10/24/2024) after October rains had already contributed to raising water surface levels in the lakebed. Rain events frequently occur by mid-October, often heavy enough to raise water surface elevations. Surveys should be conducted by October 1 each year unless a delay is necessary to complete emptying the reservoir and weather forecasts do not predict rain. **For future studies it is critical that the reservoir be emptied down to ditch levels absolutely no later than October 1 to enable vegetation surveys.** This should be noted in the plant survey recommendations and general summary report.

7. The elevation provided for transect 5e does not appear to be accurate, as this transect is perched on a levee that adds several feet to its elevation and was accessible for evaluation in October (i.e. not inundated). Please confirm the elevation of this transect and correct the study data sheets and elevation band summaries as needed.

8. The plant study was initiated in 2022, so the current report should reference previous years of data. The WY2024 report should discuss observed trends in quantitative terms to comply with the AMP (Table 4-1, Footnote c); if not possible, then explain, adjust methods as needed and discuss in at least qualitative terms.

Executive Summary and Results Discussion

<u>Seasonal Wetland Vegetation</u>

The Executive Summary and Results Discussion (Sect. 2.2) both conflate the terms "seasonal wetlands" and "seasonal wetland vegetation." The Results Discussion states that in 2024, "monitoring at College Lake indicates an increase in seasonal wetland acreage," but it provides no discussion of either wetland vegetation or waterfowl foodplant cover, and no analysis of trends or causal relationships regarding the extent of seasonal wetland *vegetation*. This fails to implement the AMP requirement to evaluate the

Seasonal wetland vegetation— acreage. **The AMP is not implemented unless the annual report evaluates the aerial extent of seasonal wetland vegetation, excluding areas of bare earth.**

The transect data suggests a decline in the area of seasonal vegetation outside of farmed wetlands, which would trigger management actions. If such decline is confirmed, the AMP requires the annual report to "Evaluate potential relationships of change in vegetation to hydrology (e.g., duration of inundation) and operations and maintenance activities, particularly inundation period and vegetation management."

To evaluate plants in relation to extent and duration of inundation, the College Lake US Weir Stage Hydrograph Figure 14 would need to state the water surface elevation during plant survey dates in fall, and provide water surface elevations during the food plant growing season prior to the waterfowl counts. Figure 14 needs to be expanded to include the prior year's water surface elevations and extend at least through the plant survey dates. Alternatively, PV Water could generate a separate hydrograph with this information for inclusion in the annual survey results discussion.

Woody Vegetation Control

The annual report recommends removing invasive vegetation and woody vegetation (Sect. 3.1.1) and proposes routine mowing and disking to "discourage" woody vegetation (Sect. 3.1.2) throughout the entire lake basin without limitation, relying only on annual variation in "hydrologic conditions" and "project operations" to restrict this maintenance. The routine disking recommendation does not even require woody vegetation to be present or detected anywhere in the lake basin outside Field 0. **This management action could eliminate all waterfowl food plants and decimate waterfowl populations. It fails to consider any mitigating alternatives, violates the College Lake FEIR and multiple sections of the AMP, and is 100% unacceptable.**

Neither the College Lake FEIR nor AMP Table 4-1 allow prophylactic willow control. The AMP provides a threshold for management of "Woody riparian acreage (1 location) > 0.1 acres in area with >0.5% cover of seedlings of woody riparian plants and > 3 inches in height." Absent that threshold, willow control at any given site is not triggered. Once the threshold is reached, a measure to control woody riparian plants is provided, also requiring impact mediation through measures including a) *Monitor treated areas and retreat **or revegetate as needed**,* and b) *Implement and evaluate seeding treatments to restore cover of waterfowl food plants or to enhance abundance or diversity of native species, particularly for revegetation following treatment of naturalized invasive plants*. These were put in place to meet the AMP objective mandated by the water rights permit requirement, to "preserve waterfowl habitat quality in the proposed water storage area."

The annual report does not preserve waterfowl habitat quality unless adequate monitoring and adaptive management actions are implemented. FEIR mitigation measure BIO-2i,1 requires management to "include habitat replacement and revegetation, protection during ground-disturbing activities, performance standards, maintenance criteria, and monitoring requirements for temporary and permanent impacts consistent with mitigation." The agency is *required* to evaluate the effect of hydrology, seasonal vegetation management and other factors on willow recruitment and to adopt practices that control woody vegetation without decimating waterfowl food. More than 90 percent of the

waterfowl food plants detected by the Vegetation Study in 2024 were found above the 57' contour, as was all of the willow recruitment. Unrestricted "proactive" disking above the 57' contour without limits on timing or rotation could remove up to 115 acres of seasonal vegetation, potentially reducing waterfowl food cover to zero. At minimum, it would decimate native smartweed (*Persicaria lapathifolia)*, which is a cool temperature, early Spring germinator.

The waterfowl food plant composition found in College Lake is virtually identical to that of Central Valley refuges where a maintenance interval of 3-5 years is used to control willows and to maintain waterfowl food production. Usually the presence of dense, high quality emergent vegetation is sufficient. For College Lake, the interval of high rainfall / high turbidity years associated with atmospheric river events affecting the Central Coast may be sufficient to control willows primarily through inundation – disking may be necessary only when high rainfall years do not occur regularly. Also, disking should be avoided in very dry, early drawdown years when smartweed and other waterfowl food plants have the greatest opportunity to establish thick cover that can inhibit willow growth without disking.

The Vegetation Report also revealed that willow infestations were virtually absent (found only in small patches by existing riparian habitat) in fields 1 and 2, where dense seasonal vegetation shades and outcompetes first-year willow seedlings. Maintaining vigorous food-plant cover suppresses willow recruitment without any mechanical action, and should be the first option to control woody vegetation while maintaining waterfowl food plant production.

Section 3.1.2 must be revised to evaluate hydrologic factors and willow ecology to recommend a prescription for woody vegetation control that considers inundation timing, timing and methods of woody vegetation removal, reseeding desired vegetation, irrigating, disking and other management measures to maintain waterfowl food plants and seasonal vegetation cover. Additionally, the AMP requires monitoring and ongoing revision to ensure that the AMP objectives to sustain seasonal wetland vegetation and to preserve waterfowl habitat quality are met.

Failure to properly implement these AMP objectives would provide cause for terminating the agency's water right. Substantive, unmitigated declines in emergent vegetation and habitat quality would also violate the mitigation measures established by the FEIR and its Mitigation and Monitoring Program resulting in unmitigated, potentially significant impacts.

<u>Floating Water Primrose</u>

In the Annual Summary *Response to Monitoring Triggers,* Table 3-1 recommends specific management actions to control floating water primrose (*Ludwigia peploides*):

> *Implement invasive plant control measures. Recommended methods are to use an excavator to scrape off the top 10-20cm of soil and then dispose of the material offsite. Once removed, sediment collected onsite from an uninfected area should be added to match surround surface elevations.*

However, *Invasive and Woody Plant Removal Methods* (Section 3.1.1) omits the step of replacing removed sediments to match the level of surrounding soil. **Please revise the method to include**

replacement of removed soils. Maintenance of soil topography and cover, without pooling, is critical to maintaining waterfowl food plants following removal of water primrose.

Proposed AMP Revisions

The annual report states that because seasonal wetland vegetation was previously mapped only in 2019 and 2023, "the monitoring trigger therefore needs to be adjusted to allow comparison with existing data" rather than follow the original AMP requirement to consider the range of acreage from 2017 through 2022. The AR recommends instead using the acreage range based solely on 2019, which happens to coincide with the least extent of seasonal vegetation.

The report's reasoning is false. Aerial photography is available for the date range originally specified. Such availability is precisely the reason the metric was inserted. Inclusion of years 2020-22 would broaden the vegetation acreage baseline by 50 acres (approximately 37%). **The revision is improper and should be rescinded**.

An appropriate revision would be to modify "range" of waterfowl abundance for the baseline period to "normal range." For example, dabbling duck numbers crashed in WY 2016-17, an extremely high water, high turbidity year, with atmospheric wind and rain events that washed surface algae and invertebrates out of the lake and rendered seasonal vegetation and seeds unavailable to dabbling ducks. Inclusion of this outlier year drops the lower end of the range of waterfowl abundance so low as to render the metric meaningless for evaluating trends in waterfowl numbers. Obviously, this was not the intention. It is recommended that the metric be revised to read, "Annual median of daily abundance below normal range of pre-Project (2015–2021) medians.

This reflects the same logic proposed by the annual report in not recommending a management action despite low diving ducks numbers that met the abundance trigger – 2023 was an outlier year when diving duck numbers were unusually low, possibly because of high sedimentation and turbidity caused by rain events and breaching of the Corralitos Creek levee.

Conclusion

The WY2024 Annual Report contains numerous areas of disagreement with the agency's adopted AMP, FEIR and water rights permit, several of which – in particular, the failure to measure seasonal wetland vegetation, the proposed exclusive use of the 2019 base year to measure the extent of wetland vegetation, and proposed unrestricted annual disking – represent a failure to implement the AMP and potential grounds for the Department of Water Resources to suspend withdrawals.

The waterfowl management threshold must be based on normal population values. If extreme outlier years are included in the baseline range, the waterfowl metric becomes meaningless.

The Sierra Club looks forward to working with your Committee to address these issues, produce a compliant Annual Report for 2025 and forward, and to implement a true multi-purpose project that benefits wildlife as well as providing water, and honors the AMP's commitment to sustaining seasonal wetland vegetation and preserving waterfowl habitat quality.

Yours Sincerely,

Michael Guth
Chair, Executive Committee
Santa Cruz Group, Ventana Chapter, Sierra Club