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Calero County Park Pond and Wetland Restoration Project—Year 6 (2022) Monitoring Report

Project # 3753-08

Prepared for:

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Prepared by:

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In collaboration with:
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Project Permits
USACE File No. 2012-00302S
Regional Water Quality Control Board CIWQS Place No. 824397 (bkw)
California Department of Fish and Wildlife (CDFW) Lake and Streambed Alteration Agreement No. 1600-2016-0140-R3

January 13, 2023

Table of Contents

Tables

Figures

Appendices

List of Preparers

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Section A. General Project Information

The Calero County Park Pond and Wetland Restoration Project (project) is a priority for the implementation of the Conservation Strategy of the Santa Clara Valley Habitat Plan (VHP) (ICF 2012). The Santa Clara Valley Habitat Agency (Habitat Agency) constructed the project in partnership with the Santa Clara County Parks and Recreation Department. The project was constructed to restore and establish pond and wetland habitats at two locations (the pond mitigation site and wetland mitigation site) in Calero County Park, located in the eastern foothills of the Santa Cruz Mountains in the Alamitos Creek watershed (Section E, Figures 1 and 2). The project is currently in the sixth year of the 5-year postconstruction monitoring and management period. Monitoring was extended into Year 6, past the end of the 5-year monitoring period set by the *Calero County Park Pond and Wetland Restoration Project Mitigation and Monitoring Plan* (MMP) (H. T. Harvey & Associates 2016a), because all final success criteria were not met in Year 5. Compensatory mitigation credits and project objectives are described in full in the MMP. The project's objectives are as follows:

Pond Mitigation Site—

- Restore breeding habitat for the California red-legged frog (*Rana draytonii*) and California tiger salamander (*Ambystoma californiense*) by deepening a 1,500 square foot portion of the pond, increasing seep water inflow, planting wetland vegetation, controlling aquatic predators, and excluding cattle from a portion of the pond. The deepened pond will also restore breeding habitat for common amphibians such as the Pacific tree frog (*Hyliola regilla* [formerly known as *Pseudacris sierra*]) and western toad (*Anaxyrus boreas*).
- Restore seasonal wetland and freshwater marsh habitats by excluding cattle from a portion of the pond and planting native wetland vegetation. These actions will restore multiple wetland functions, including sediment filtration, nutrient filtration, and erosion protection. In addition, this restoration will provide habitat for Mt. Hamilton thistle (*Cirsium fontinale* var. *campylon*), foraging and dispersal habitat for the California red-legged frog, and foraging habitat for seasonal wetland associated birds.
- Establish seasonal wetland habitat by converting upland habitat to wetlands to establish multiple wetland functions, including sediment filtration, nutrient filtration, erosion protection, provision of habitat for Mt. Hamilton thistle, breeding, foraging and dispersal habitat for the California red-legged frog, and foraging habitat for seasonal wetland associated birds.
- Establish functional basking habitat for the northwestern pond turtle (*Actinemys marmorata*) by installing anchored basking logs in the deepened open water portion of the pond.
- Improve climate change resiliency of pond habitat by increasing the water storage capacity of the pond and by increasing the springbox/seep inflow rate to the pond.
- Continue to provide water for cattle that graze the surrounding Calero County Park.

Wetland Mitigation Site—

- Restore seasonal wetland and freshwater marsh habitats by removing sediment, planting native wetland vegetation, and excluding cattle. These actions will restore multiple wetland functions, including sediment filtration and nutrient filtration, and will provide foraging and dispersal habitat for the California red-legged frog, as well as foraging habitat for seasonal wetland associated birds.
- Establish seasonal wetland habitat by converting upland habitat to wetlands to establish multiple wetland functions including sediment filtration, nutrient filtration, and erosion protection. In addition, the establishment of this habitat will provide foraging and dispersal habitat for the California red-legged frog, and foraging habitat for seasonal wetland associated birds.
- Improve climate change resiliency of wetland habitat by increasing the water storage capacity of the wetland.
- Continue to provide water for cattle that graze the surrounding Calero County Park.

Project construction commenced on September 14, 2016, and was completed on December 14, 2016. The *Calero County Park Pond and Wetland Restoration Project As-built Notification Report* (H. T. Harvey & Associates 2017a) provides detailed information about project construction.

This report presents the results of the Year 6 (2022) monitoring in relation to the ecological performance standards outlined in the project's MMP. Year 5 was set to be the final year of the planned short-term monitoring period. However, some of the final success criteria were not met in Year 5, so the monitoring period was extended into Year 6. Monitoring results will also inform management activities to direct maintenance and potential remedial measures to ensure that the project's objectives are fulfilled. In accordance with the requirements of the MMP, this report was prepared in the format of the U.S. Army Corps of Engineers (USACE) South Pacific Division Mitigation Monitoring Report Form (USACE 2014).

A.1 Project Name

Calero County Park Pond and Wetland Restoration Project

A.2 DA File Number(s)

The project permit numbers are as follows:

- USACE File No. 2012-00302S
- Regional Water Quality Control Board, California Integrated Water Quality System (CIWQS) Place No. 824397 (bkw) and CIWQS Regulatory Measure No. 406031
- California Department of Fish and Wildlife (CDFW) Lake and Streambed Alteration Agreement No. 1600-2016-0140-R3

- CDFW Natural Community Conservation Plan Permit No. 2835-2012-002-03
- U.S. Fish and Wildlife Service (USFWS) Federal Fish and Wildlife Permit No. TE94345A-0
- Santa Clara Valley Water District Encroachment Permit File No. 33407
- County of Santa Clara License Agreement dated 9/6/16

A.3 Project Type

Permittee responsible mitigation

A.4 Permittee, Bank, or In-Lieu Fee Sponsor Name and Work Phone Number

Edmund Sullivan, Santa Clara Valley Habitat Agency
408.779.7261

A.5 Permittee, Bank, or In-Lieu Fee Sponsor Mailing Address

Edmund Sullivan, Santa Clara Valley Habitat Agency
535 Alkire Avenue, Suite 100
Morgan Hill, CA 95037

A.6 Permittee, Bank, or In-Lieu Fee Sponsor E-Mail Address

edmund.sullivan@scv-habitatagency.org

A.7 Agent Name and Work Phone Number

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983 University Avenue, Building D
Los Gatos, CA 95032

A.9 Agent E-Mail Address

mbusnardo@harveyecology.com

Section B. Notice of Commencement/Completion of Compensatory Mitigation Project

B.1 Commencement

Y: ☒ N: ☐

Project construction commenced on September 14, 2016. The *Calero County Park Pond and Wetland Restoration Project As-built Notification Report* (H. T. Harvey & Associates 2017a) describes the project timeline in greater detail.

B.2 Completion

Y: ☒ N: ☐

Project construction was completed on December 14, 2016. The *Calero County Park Pond and Wetland Restoration Project As-built Notification Report* (H. T. Harvey & Associates 2017a) describes the project timeline in greater detail.

B.3 Financial Assurance Remains in Place

Y: ☒ N: ☐

B.4 Requesting Release of a Financial Assurance?

Y: ☐ N: ☒

B.5 Name of Contractor (If Any)

D-Line Constructors and their subcontractor Confluence Restoration constructed the project and Confluence Restoration is performing ongoing maintenance.

B.6 Phone Number of Contractor (If Any)

Ryan Yarbrough, Confluence Restoration
831.588.9738

Section C. Mitigation Monitoring Status

C.1 Final Monitoring Completed and Verification Requested?

Y: ☒ N: ☐

C.2 Date of Monitoring Reported

This monitoring report summarizes monitoring conducted during the calendar year 2022, which is Year 6 of the of the extended short-term (i.e., 5-year) postconstruction ecological monitoring period set forth in the MMP.

C.3 Monitoring Report Number

Monitoring report number 6. Monitoring reports were previously prepared in Years 1, 2, 3, 4 and 5 (H. T. Harvey & Associates 2017b, 2018, 2019a, 2020, and 2022, respectively).

C.4 Management and Maintenance Activities Completed

The following is a list of the management and maintenance activities completed during Year 6 (2022) along with dates that each activity was conducted:

- Controlled weeds including Harding grass (*Phalaris aquatic*), yellow sweet clover (*Melilotus officinalis*), and other nonnative grasses via mowing and whitetop (*Lepidium draba*), black mustard (*Brassica nigra*), Italian thistle (*Carduus pycnocephalus*), and bull thistle (*Cirsium vulgare*) via hand removal (March 3 and April 12)
- Bagged and removed black mustard, yellow star thistle (*Centuarea solstitialis*) bull thistle, stinkwort (*Dittrichia graveolens*), and Himalayan blackberry (*Rubus armeniacus*) (August 4 and, October 13)
- Cleared vegetation and hand-tilled soil around 22 blooming Mt. Hamilton thistle individuals at the pond site (June 10)
- Maintained infrastructure by clearing buildup in weirs, sediment from spring box and around spring box grate at the pond site (August 4 and October 13)
- Replaced rotted oak weirs with redwood weirs supplied by Santa Clara County Parks and Recreation Department at the pond site (April 12). Reinforced edges on middle log weir at the pond site (October 13)
- Installed basking log at wetland pool with wood found at the wetland site (April 12)

C.5 Adaptive Management Activities Completed

To encourage germination of Mt. Hamilton thistle, Confluence cleared thatch and loosened soil around flowering individuals on June 10, 2022, prior to seed set. An H. T. Harvey & Associates field biologist recorded the locations of individuals under which vegetation was removed on June 22, 2022, so that the effectiveness of this measure can be assessed in future years. See Section C.7.2.5 for further details.

C.6 Performance Standards

The project's MMP describes performance standards during the 5 years of short-term postconstruction ecological monitoring. Table 1 contains the final performance standards and an evaluation of whether Year 6 monitoring results met the performance standards. Section C.7 contains further discussion of the results relative to the performance standards.

C.7 Short Statement on Whether the Performance Standards Are Being Met (Monitoring Methods, Results and Discussion, and Management Recommendations)

Monitoring methods, results and discussion, and recommended management activities are provided below for each performance standard.

C.7.1 Methods

Monitoring methods are discussed below for each performance standard and are in accordance with the project's MMP.

C.7.1.1 Target Hydrologic Regime

Hydrologic monitoring at the pond and wetland mitigation sites was conducted by cbec eco-engineering (cbec) by continuously measuring water levels, direct rainfall, and pond seep inflows. In Year 6, monitoring and maintenance visits to the project site were made on March 23, July 14, and September 16 of 2022. Due to gage battery failure at the upper and lower wetland sites and the pond trough, data is missing for these gages between September 30, 2021 and November 24, 2021, and these gages were replaced with temporary gages on November 24, 2021. Confluence replaced rotted oak weirs near the spring box at the pond site with redwood weirs supplied by Santa Clara County Parks and Recreation Department. Additionally, boulders were added at the trail upslope of the spring box to stabilize erosion from concentrated runoff. In anticipation of 2023 monitoring, the rain gage was cleaned and recalibrated on September 16, 2022 and the remote monitoring subscription was renewed. Appendix B contains additional information on monitoring methods of the target hydrologic regime.

Table 1. Final Performance Standards and Year 6 Results for Pond and Wetland Mitigation Sites

Metric	Final Performance Standard	Goal Met in Year 6?	Year 6 Results
Target Hydrologic Regime	A portion of the pond mitigation site will be inundated by at least 2 feet of water through August 31, if average or above-average rainfall year. No quantifiable criteria apply for the wetland site.	NA	Year 2022 (Year 6) had below average precipitation and was classified as a "dry" year that followed two "very dry" years. The pond was drained in Year 5, which, in addition to the consumption of water by cattle, contributed to Year 6 not meeting the two-foot water depth target at the end of August 2022. Because Year 6 was a below average water year, the performance standard for target hydrologic regime does not apply. The hydroperiod success criterion was met in monitoring Years 1 and 3, the only normal (i.e., not dry) water years since monitoring began.
Sedimentation and Geomorphic Stability	The pond and wetland mitigation sites and springbox-seep water collection structures will demonstrate minimal sedimentation and geomorphic stability (includes cross-section surveys).	Yes	Minimal sedimentation and geomorphic changes occurred at the wetland and mitigation sites. Previously observed cracks along the grade transition in the lower wetland have remained stable. Logs that were installed in the channel upstream of the spring box in 2021 appear to be helping catch debris that would otherwise compromise the seep pipe and spring box. Overall, the pond and wetland mitigation sites continued to show minimal sedimentation from Year 1 and were geomorphically stable.
California Red-legged Frog/California Tiger Salamander/Northwestern pond turtle	At the pond mitigation site, successful breeding of California red-legged frog in at least one monitoring year; continued successful breeding of California tiger salamander; and continued occurrence of the northwestern pond turtle (criteria do not apply to wetland site).	No (red-legged frog) Yes (tiger salamander) Yes (northwestern pond turtle)	California red-legged frogs have not been observed during Years 1–5. The target hydrologic regime for California red-legged frog was not achieved in Year 6 due to the dry water year. California tiger salamander demonstrated successful breeding in Years 1-3, 5 and 6, but successful breeding was not observed in Year 4. Failure to observe California tiger salamander breeding in Year 4 is likely the result of delayed sampling timing due to Covid-19 restrictions. Alternatively, breeding may not have occurred in 2020 due to the very dry water year. Northwestern pond turtles continued to occur at the pond mitigation site in Years 1-6 including juveniles that were observed in Years 1, 2, 4, and 5.

Metric	Final Performance Standard	Goal Met in Year 6?	Year 6 Results
Aquatic Predator Presence/ Absence	Abundance of bullfrogs and Louisiana red swamp crayfish will be below baseline conditions at the pond mitigation site and minimal predator occurrence at the wetland mitigation site (no management is required at the wetland mitigation site). In Year 1 (baseline), 27 adult bullfrogs, hundreds of bullfrog larvae, and thousands of Louisiana red swamp crayfish were observed at the pond mitigation site.	Yes	The abundance of aquatic predators at the pond mitigation site in Year 6 was similar to or less than the baseline conditions set in Year 1. The pond dried out without draining during the summer, effectively controlling for aquatic predators without the need for additional action.
Mt. Hamilton Thistle Abundance	A stable or increasing population of Mt. Hamilton thistle at the pond mitigation site (criterion does not apply to the wetland site).	No	The spatial extent and percent cover of Mt. Hamilton thistle was similar in Year 6 to Year 1, and the count of flowering individuals was comparable in Year 6 to Year 2, the first year in which this datum was collected. Mt. Hamilton thistle abundance decreased between Year 1 and Year 6 from 111 individuals to 58 individuals, and has shown a decline in extent and number of individuals relative to the prior monitoring year in Years 4, 5, and 6. Based on these metrics the Mt. Hamilton thistle population is considered to be decreasing. However, this condition is likely temporary due primarily to drought, and secondarily to the time necessary in the absence of cattle grazing to observe substantial seedling regeneration as mature individuals senescence and open space for regeneration.
Wetland Vegetation Cover	70% in planting zones (separate and combined); less than 50% in open water pond habitat; at least three wetland species will be present.	Yes, except for percent vegetation cover at the pond and combined. However, wetland vegetation habitat objectives have been achieved.	The average percent cover of wetland vegetation was 44.6% at the pond mitigation site and 80.2% at the wetland mitigation site. Wetland vegetation percent cover increased at both the pond and wetland mitigation sites compared to Year 5, likely as a result of a slightly wetter water year and earlier wetland vegetation monitoring. 20% vegetation cover was observed in the open water portion of the pond mitigation site. More than three wetland species were present at each mitigation site.

Metric	Final Performance Standard	Goal Met in Year 6?	Year 6 Results
Invasive Plant Cover	Less than 5%	Yes	Invasive plant cover was less than 5% at each mitigation site and across the mitigation sites combined. Some small patches of and individual invasive plants were observed at the pond mitigation site.
Wetland Delineation			Year 6 wetland delineation identified:
	Pond Mitigation Site:		**Pond Mitigation Site:**
	Restored jurisdictional wetlands ≥ 0.27 ac	Yes	Restored jurisdictional wetlands = 0.27 ac
	Created jurisdictional wetlands ≥ 0.01	Yes	Created jurisdictional wetlands = 0.01 ac
	Wetland Mitigation Site:	Yes	**Wetland Mitigation Site:**
	Restored jurisdictional wetlands ≥ 0.10 ac		Restored jurisdictional wetlands = 0.10 ac
	Created jurisdictional wetlands ≥ 0.02 ac	Yes	Created jurisdictional wetlands = 0.02 ac
Water for Cattle	Sufficient water to support the same grazing intensity of the Reserve lands as the existing conditions.	Yes	Water was available year-round for cattle via the spring-fed trough at the pond mitigation site, while the tank and secondary trough below the pond were dry by mid-summer. However, due to drought conditions, the spring-fed trough combined with another spring located outside the mitigation site were insufficient to keep up with typical annual cattle stocking rate. In response to drought conditions in recent years, the cattle rancher coordinated with Santa Clara County Parks and Recreation Department to secure a municipal water source, and installed four new troughs and improved one old trough to supply with municipal water.

C.7.1.2 Sedimentation and Geomorphic Stability

cbec's hydrologists qualitatively observed sedimentation and geomorphic stability during monitoring and maintenance visits on March 23, July 14, and September 16 of 2022. Additional details on monitoring methods for sedimentation and geomorphic stability are provided in Appendix B.

C.7.1.3 California Red-Legged Frog/California Tiger Salamander/Northwestern Pond Turtle

H. T. Harvey & Associates' wildlife ecologists conducted surveys for special-status wildlife species at both the pond and wetland mitigation sites to evaluate the performance standards for the California red-legged frog, California tiger salamander, northwestern pond turtle, and aquatic predator abundance. Surveys were conducted in accordance with the methods described in the MMP, except that only one night survey for California red-legged frog was conducted, despite no observations of California red-legged frog during the first survey. The omission of the second survey was due to a scheduling error. The methods described in the MMP follow the most recent wildlife agency protocols (USFWS 2005, USFWS and California Department of Fish and Game 2003). In addition, Julie King of the Habitat Agency conducted a visual survey for California red-legged frog and California tiger salamander egg masses as well as northwestern pond turtle during a site visit on February 25, 2022, and Confluence Restoration observed northwestern pond turtles while conducting maintenance activities on January 27, 2022 (Ryan Yarbrough) and April 12, 2022 (Kevin Leopold). The survey type, survey date, observer, and level of effort (where applicable) are presented in Table 2 in the Results and Discussion Section, below.

C.7.1.4 Aquatic Predator Abundance

The abundance of aquatic predators encountered during each of the special-status wildlife surveys and egg mass surveys was recorded. Any captured nonnative animals were dispatched.

C.7.1.5 Mt. Hamilton Thistle Abundance

H. T. Harvey & Associates restoration ecologist Ryan Hegstad, conducted a survey for Mt. Hamilton thistle at both the pond and wetland mitigation sites on March 5, 2022. An additional survey for flowering individuals was conducted by restoration ecologist Kate Drake on May 19, 2022 during the blooming period for this species. The surveys were conducted in accordance with the methods described in the MMP and consisted of: (1) recording the total number of Mt. Hamilton thistle individuals; (2) counting the number of thistle individuals in flower at the time of monitoring (excluding individuals solely in bud); (3) mapping the spatial extent of the population using a Global Positioning System unit; (4) estimating the percent cover of Mt. Hamilton thistle within the area encompassed by the population using the quadrat sampling method (Bonham 1989); (5) qualitatively assessing the condition of Mt. Hamilton thistle individuals within the population; and (6) taking photographs to document onsite conditions.

C.7.1.6 Wetland Vegetation Percent Cover

H. T. Harvey & Associates' restoration ecologist Ryan Hegstad and field biologists Dana Delew and Julia Gaudio conducted wetland vegetation monitoring at the wetland and pond mitigation sites on March 29 and April 6, 2022, respectively. Percent cover of planted and naturally recruited vegetation was determined by species using the quadrat sampling method (Bonham 1989). Each quadrat was placed using a generalized random tessellation stratified survey design so that quadrat locations were randomly and evenly distributed across the area delineated as wetlands in 2021 at both the wetland and pond sites (Figures 3 and 4) (H. T. Harvey & Associates 2022). This approach was chosen instead of the transect method used in previous years to better represent conditions at the mitigation site as delineated in 2021. By contrast, the transects were established based on site conditions shortly after project construction in 2016. The number of quadrats sampled was verified to be sufficient by examining the variability of vegetative cover relative to the number of quadrats sampled (Kershaw 1973) (Appendix A). Cover was estimated by species to the nearest whole percent. Average percent cover of vegetation was also recorded in the open water habitat at the pond mitigation site to determine if the vegetation cover exceeded the performance standard for open water. All species in quadrats were identified using the Jepson manual (Baldwin et al. 2012). Wetland species were defined as those having a wetland indicator status of obligate (OBL), facultative wetland (FACW), or facultative (FAC) based on the *National Wetland Plant List v3.5 Species Detail Tool* (USACE 2020), regardless of whether they were native or nonnative. The average percent wetland vegetation cover and number of wetland species observed at the pond and wetland mitigation sites were evaluated separately and collectively.

C.7.1.7 Invasive Plant Cover

H. T. Harvey & Associates field biologist Julia Gaudio conducted a focused visual survey for invasive plant species at the pond and wetland mitigation sites on April 14, 2022. As in previous monitoring years, plant species were considered invasive if they were rated as highly invasive by California Invasive Plant Council (Cal-IPC) or if they had a moderate Cal-IPC rating and were deemed by a qualified restoration ecologist to adversely affect habitat quality (Cal-IPC 2022). Per the MMP, the overall cover of invasive plant populations was visually estimated for the pond and wetland mitigation sites separately and collectively.

C.7.1.8 Wetland Delineation

The project's MMP requires that a wetland delineation be conducted at the end of Year 5 post-restoration to determine whether a minimum of 0.27 acres at the pond mitigation site and 0.10 acres at the wetland mitigation site of USACE/RWQCB jurisdictional pond, seasonal wetland, and freshwater marsh habitat (all habitat types combined) has been restored (H. T. Harvey & Associates 2016a). Additionally, the MMP requires the creation/establishment of a minimum of 0.01 acres of wetland habitat at the pond mitigation site and 0.02 acres of wetland habitat at the wetland mitigation site. A portion of the wetland mitigation site (0.02 acres of wetland habitat) is set aside for use as off-site mitigation for the McKean project (H. T. Harvey & Associates 2019b).

On May 20 and June 2, 2021, H. T. Harvey & Associates restoration ecologists, Kate Drake and Zachery Gizicki conducted a formal wetland delineation at the pond and wetland mitigation sites (P1–P4 and W1–W4, Figures

5 and 6) to determine the acreage of jurisdictional habitats. The wetland delineation followed the guidelines of the *Corps of Engineers Wetlands Delineation Manual* (USACE Wetland Delineation Manual) (Environmental Training Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (Arid West regional supplement) (USACE 2008). These methods are discussed in detail below.

On April 14, 2022, Zachery Gizicki returned to the pond and wetland mitigation sites to collect additional data points (P5, P6, and W5, Figures 5 and 6).

USACE Jurisdictional Wetland Determination—H. T. Harvey & Associates restoration ecologists reviewed United States Geological Survey topographical maps, aerial photos, Natural Resource Conservation Service (NRCS) soil mapping (NRCS 2022), regional climate information (PRISM Climate Group 2021), and National Wetland Inventory (NWI) maps of the mitigation site before conducting fieldwork for the delineation (NWI 2021). On May 20, 2021, we examined vegetation, soils, and hydrology of the pond mitigation site and the immediately surrounding areas. On June 2, 2021, we examined vegetation, soils, and hydrology of the wetland mitigation site and the immediately surrounding areas. We examined the mitigation sites for topographic features, drainages, alterations to site hydrology, and areas of significant recent disturbance. A determination was then made as to whether normal environmental conditions were present at the time of the field surveys. The delineation followed the guidelines outlined in Section D "Routine Determination Method" and Section F "Atypical Situations" of the USACE Wetland Delineation Manual as well as the updated forms, vegetation sampling methods, and hydric soil and hydrology indicators in the Arid West regional supplement (USACE 2008). Based on this process, it was determined in 2021 that 4 sample sites were needed to represent typical conditions in each area: two sample sites in the pond mitigation site (Figure 5, P1 and P4) with a corresponding sample site for each point in the adjacent, upslope area (Figure 5, P2 and P3), and two sample sites in the wetland mitigation site (Figure 6, W1 and W3) with a corresponding sample site for each point in the adjacent, upslope area (Figure 6, W2 and W4).

In 2022, it was determined that additional sample points would be useful to better characterize the wetland boundary in the study area, in light of the very dry conditions in recent years (2020–2022). Two additional sample points (Figure 5, P5 and P6) were collected at the pond mitigation site to determine if the wetland boundary had really changed since 2016 or if drought conditions were creating temporarily marginal vegetation and hydrology indicators in the outer seasonal wetland margins. One additional sample point (Figure 6, W5) was collected at the wetland mitigation site to similarly investigate wetland boundaries near a downed log.

Vegetation—H. T. Harvey & Associates observed plants at each of the sample sites using the plot sizes defined for each stratum in the Arid West Regional Supplement. We then identified observed plants to species using *The Jepson Manual* (Baldwin et al. 2012), compiled a list of species for each sample site, and visually estimated percent cover of each plant species following guidance provided in the Arid West Regional Supplement. We obtained the wetland indicator status for all identified species from the National Wetland Plant List for the Arid West using the *National Wetland Plant List v3.5 Species Detail Tool* (USACE 2020). The regional wetland indicator status defines plants based on their estimated probability of the species occurring in wetlands or not in wetlands

in the particular region. We used the collected data to identify dominant species and determine which of the sample sites supported wetland vegetation as described in the Arid West regional supplement (USACE 2008).

Soils—At each sample point, the top 16–18 inches of the soil profile were examined for hydric soil indicators by assessing soil color and texture in each distinct horizon. Diagnostic features of hydric soils include the numerous indicators defined and described by the National Technical Committee for Hydric Soils. These include the presence of organic soils (A1), histic epipedons (A2), depleted matrix (F3), redox depressions (F8), redox dark surface (F6), and mottling indicated by the presence of gleyed or bright spots of colors (in the former case, blue grays; in the latter case, orange red, or red brown) within the soil horizons observed, among other features (USACE 2008). All soil colors indicated in this report were taken under clear, sunny skies using moistened soil samples. The NRCS Custom Soil Resource Report was consulted to determine which soil types have been mapped on the mitigation project site (NRCS 2022).

Hydrology—Each of the sample sites were examined for positive field indicators (primary and secondary) of wetland hydrology following the guidance provided in the Arid West Regional Supplement. Examples of such indicators include visual observation of inundation (A1) and/or soil saturation (A3), watermarks (B1), drift lines (B3), water-borne sediment deposits (B2), water-stained leaves (B9), and drainage patterns within wetlands (B10) (USACE 2008). Hydrology observations made during routine site visits between October 2017 and October 2021 as well as hydrologic monitoring conducted by cbec contributed to our understanding of site hydrology. Water level information from a water level logger mounted by cbec in a gage in the wetland site was used to confirm hydrology observations. A detailed report of cbec's hydrologic monitoring is provided in Appendix B.

Wetland Mitigation Area Acreage Determination—In 2021, H. T. Harvey & Associates restoration ecologists mapped the jurisdictional wetlands within the vicinity of the pond and wetland mitigation sites with a Trimble Geographic Positioning System (GPS), based on the wetland delineation survey described above. In the office, using ArcGIS 10, we added outlines indicating wetlands that were designated for the McKean Offsite Wetland Mitigation Project (H. T. Harvey & Associates 2019b). The remaining areas mapped as wetlands were identified as constituting the acreage of jurisdictional wetland at the Calero pond and wetland mitigation sites shown in Figures 5 and 6.

In 2022, following the collection of additional data at sample points P5, P6, and W5, and review of the 2016 wetland delineation, jurisdictional wetland boundaries were remapped.

C.7.1.9 Water for Cattle

Water availability for cattle was determined on the basis of observations of water infrastructure and conversations with Clayton Koopman, the cattle rancher at the site.

C.7.1.10 Photodocumentation

Photodocumentation was conducted during vegetation monitoring on March 29 and April 14, 2022, from permanent locations identified in the *Calero County Park Pond and Wetland Restoration Project As-built Notification*

Report (H. T. Harvey & Associates 2017a). Mt. Hamilton thistle photodocumentation was conducted on May 6, 2022, from the locations established in the Year 1 monitoring report (H. T. Harvey & Associates 2017b). Additional photographs were taken throughout Year 6 to record observations and events that may affect the success of mitigation. Photographs are provided in Section D and the locations of the photodocumentation points are shown on Figures 3 and 4 in Section E.

C.7.2 Results and Discussion

Monitoring results are provided below for each performance standard. These results are also summarized above in Table 1.

C.7.2.1 Target Hydrologic Regime

Pond Mitigation Site—The hydrologic regime performance standard applies only to the pond mitigation site and calls for a depth of inundation of at least 2 feet through August 31 of each monitoring year that exhibits average or above average precipitation. This standard is intended to achieve the target hydrologic regime that supports high quality breeding habitat for the California red-legged frog and California tiger salamander. Water Year 2022 (Year 6) had below average precipitation and was classified as a "dry" year that followed two "very dry" years in Year 4 and Year 5 (Appendix B). Because Year 6 was a below average water year, the performance standard for target hydrologic regime does not apply. There have been only two normal water years since monitoring began, in monitoring Years 1 and 3, in which the target hydrologic regime was met.

The pond site maintained maximum capacity from the end of December 2021 to the end of January 2022, reaching a water level of 508.85 ft (NAVD), which is the maximum capacity of the pond, on December 30, 2021. See Appendix B Figure 2 for graph showing pond depth. This peak elevation followed maximum precipitation levels and seep flows during these months. The seep flow was directed to the pond the entire year, with high rates of cattle consumption during the spring months. Pond trough water surface elevation fluctuated more in summer months, when 75% of the cattle were removed and other water sources were introduced for them. Overall, water levels were lower in the pond than previous years, suggesting that the pond did not fully recover from the two prior drought years and the draining in Year 5. This declining trend is also seen in the upper wetland water surface elevation and seep inflow. Appendix B provides additional discussion of monitoring results for the target hydrologic regime.

Wetland Mitigation Site—Although there are no performance standards for hydrologic regime at the wetland mitigation site, water levels were monitored to inform management and track wetland habitat establishment. As Year 6 was a dry year that followed two very dry years in Year 4 and 5, the upper wetland pond was unable to maintain the capacity observed in previous years. The constructed portion of the lower wetlands was dry by late April 2022. Appendix B provides additional discussion of monitoring results for the target hydrologic regime.

C.7.2.2 Sedimentation and Geomorphic Stability

Minimal geomorphic changes were observed during Year 6 monitoring. Previously observed cracks along the grade transition in the lower wetland have remained stable. A section of the north end of the berm fence line remains unimbedded from the soil and has loosened since the previous year. Logs that were installed in the channel upstream of the spring box in 2021 appear to be helping catch debris that would otherwise compromise the seep pipe and spring box. However, some buildup of sedimentation was noted at the springbox and pond outlet structure in early 2022.

Overall, these results suggest that the pond and wetland mitigation sites are geomorphically stable and have had minimal sedimentation since Year 1. Appendix B provides additional details.

C.7.2.3 California Red-Legged Frog/California Tiger Salamander/Northwestern Pond Turtle

California Red-Legged Frog—No California red-legged frogs or egg masses were observed in either the pond or wetland mitigation sites during Year 6 monitoring (Table 2). There have been no documented observations of the California red-legged frog at the pond or wetland mitigation sites in Years 1–6. The closest known occurrence of the California red-legged frog at the time of project construction was approximately 1.4 miles south of the pond in Cherry Creek (H. T. Harvey & Associates 2016a). The Habitat Agency will continue annual monitoring for California red-legged frog after the end of the short-term monitoring period, as part of the project's Long Term Monitoring Plan.

California Tiger Salamander—California tiger salamander larvae were observed during the California tiger salamander larval surveys in the pond mitigation site in Year 6 (Table 2). California tiger salamander larvae were also observed in Years 1–3 and Year 5, but not in Year 4. A lack of observed breeding in Year 4 may have been caused by either the very dry year inhibiting breeding or the timing of surveys. In Year 4, the second larval survey was delayed unto late in the year due to Covid-19 protocols, and California tiger salamander larvae may have metamorphosed and dispersed out of the wetland and pond sites by the time the survey was conducted. Thus, the lack of larval California tiger salamander larvae in Year 4 does not conclusively indicate a lack of their presence in Year 4.

Northwestern Pond Turtle—The pond mitigation site continued to provide suitable northwestern pond turtle habitat. Northwestern pond turtles were observed at the pond mitigation during early season monitoring events (Table 2).

Wildlife results are further detailed in Table 2.

Comparison to Performance Standards—The MMP performance standards call for successful breeding of California red-legged frog at the pond mitigation site. The target hydrologic regime to support California red-legged frog breeding was not achieved at the pond mitigation site in Year 6 due to the dry water year (although it was met in the only two normal water years since monitoring began; see section C.7.2.1), and no California

red-legged frogs were observed in Year 6. Furthermore, California red-legged frogs were not observed during Years 1–5. Therefore, the California red-legged frog performance standard has not been met.

Additionally, the MMP performance standards call for the continued successful breeding of California tiger salamander at the pond mitigation site and continued occurrence of the northwestern pond turtle at the pond mitigation site. While the performance standard of continued successful breeding of California tiger salamander was not met in Year 4, possibly due to a mismatch in monitoring timing and California tiger salamander dispersal caused by Covid-19 protocols, California tiger salamander larvae were observed in Years 1-3,Year 5, and Year 6. Therefore, the California tiger salamander performance standard was met. In addition, northwestern pond turtles were observed in Years 1-6 and therefore the northwestern pond turtle performance standard was also met.

C.7.2.4 Aquatic Predator Abundance

One bullfrog was observed at the wetland mitigation site during visual encounter surveys for special-status species (See Table 2). However, no larval bullfrogs were observed during dipnet and seine surveys and no Louisiana red swamp crayfish were observed. Predator abundance was therefore lower than baseline conditions. In addition, due to the dry water year, the mitigation pond was completely dry by June 22, 2022, which effectively controlled for aquatic predators. Therefore, this performance standard was met.

Comparison to Performance Standards—Aquatic predator performance standards at the pond mitigation site are based on the baseline of Year 1 survey results. Year 6 aquatic predator abundance must be below the Year 1 (baseline) survey results to meet the performance standard. The Year 1 survey results found a baseline of 27 adult bullfrogs, hundreds of bullfrog larvae, and thousands of Louisiana red swamp crayfish at the pond mitigation site. The abundance of aquatic predators at the pond mitigation site in Year 6 was much less than what was observed in Year 1 (1 bullfrog was observed, and no Louisiana red swamp crayfish were observed). Therefore, Year 6 aquatic predator abundance met the performance standard.

C.7.2.5 Mt. Hamilton Thistle Abundance

A summary of the results of Mt. Hamilton thistle abundance monitoring in Years 1-6 is presented in Table 3. In Year 6, the population abundance declined relative to Year 5 to 58 individuals and abundance has declined annually from Year 4-6. Other thistle population metrics in Year 6 were comparable to Years 1 and 2 (which serve as a baseline), including area occupied, percent cover, and number of flowering individuals. For example, in Year-6 twenty-two individuals were flowering and others were in bud which is comparable to Year 2 (for first year of available data) and greater than Year 3. Overall health and vigor of individuals in the population was good. Many large mature plants were present, as well as 8 seedlings and 6 juveniles. No Mt. Hamilton thistle was observed at the wetland mitigation site. Photodocumentation of the Mt. Hamilton thistle population is included in Section D.

Table 2. Wildlife and Aquatic Predator Surveys—Level of Effort and Results

Date	Survey Type	Observer	Pond Mitigation Site	Wetland Mitigation Site
January 27, 2022	Visual wildlife survey	Ryan Yarborough (Confluence)	Results: 6-8 northwestern pond turtles observed basking and floating in pond, two on each of the exposed logs	Results: Golden eagle observed trying to prey on hawk and failing
February 25, 2022	California red-legged frog and California tiger salamander egg mass survey	Julie King	Results: 4 northwestern pond turtles observed; no California red-legged frog or California tiger salamander egg masses were observed	Results: no California red-legged frog or California tiger salamander egg masses were observed
April 12, 2022	Visual wildlife survey	Kevin Leopold (Confluence)	Results: NA	Results: 2 northwestern pond turtles
April 18. 2022	California red-legged frog and California tiger salamander seine survey	Steve Carpenter, Dani Christensen, and Julia Gaudio	Results: 50 tree frog larvae and 1 adult tree frog, hundreds of California newt larvae; no California red-legged frog or California tiger salamander were observed	Results: hundreds of California newt larvae; no California red-legged frog or California tiger salamander were observed
May 4, 2022	California red-legged frog and California tiger salamander seine survey	Steve Carpenter and Julia Gaudio	Results: 11 California tiger salamander larvae; no California red-legged frog were observed	Results: no California red-legged frog or tiger salamander were observed
June 3, 2022	Nocturnal visual encounter survey	Steve Carpenter and Kate Drake	Results: No monitoring conducted due to pond being dry	Results: 1 bullfrog and 20 tree frog tadpoles were observed

Table 3. Mt. Hamilton Thistle Abundance

Monitoring Year	Count	Survey Dates	Count of Flowering Individuals	Area Occupied by Population (acre)	Percent Cover	Water Year (WY) Type
1	111	May16th, July 14th, and August 8th, 2017	No data	0.03	19.5	Wet
2	123	May 14th, 2018	23	0.03	24.3	Very Dry
3	125	June 3rd, 2019	9	0.04	32.7	Wet
4	96	May 13th, 2020	29	0.05	37.0	Very Dry
5	69	May 20th, 2021	42	0.03	23.5	Very Dry
6	58	March 5th and May 19th, 2022	22	0.03	19.4	Dry

Fluctuations in plant population abundance, extent, and percent cover are typical in naturally occurring populations, and the decline in the Mt. Hamilton thistle population abundance between Years 3 and 6 is not expected to continue over the long-term. In the absence of cattle grazing, individual thistles have grown to relatively large stature. Intraspecific competition between large mature Mt. Hamilton thistle individuals as well as well-below average rainfall in the past three years likely led to the decrease in the Mt. Hamilton thistle population abundance. However, the surviving individuals remained in good health, many individuals were reproductive, and seedlings were present within the population. The presence of flowering individuals and seedlings foreshadows the potential for future seedling establishment to replace older individuals that have died and made space for future seedling establishment. In addition, the overall area occupied by the population and approximate percent cover within that extent were comparable to observations in Year 1.

On May 19, 2022, Janell Hillman conducted a site visit with Julie King of the Habitat Agency and H. T. Harvey & Associates restoration ecologist Kate Drake to provide her input on the status of the Mt. Hamilton thistle population at the site. Janell Hillman is a senior biologist and plant ecologist of the Santa Clara Valley Water District with expertise in Mt. Hamilton thistle. She observed that the decline in abundance may be attributable to the drought conditions, or to the absence of cattle grazing, resulting in an increase in intraspecific competition with surrounding vegetation. However, she also observed that cattle, if reintroduced to flash graze, may trample or indiscriminately graze on the Mt. Hamilton thistle individuals. At her recommendation thatch and herbaceous vegetation from around the base of flowering individuals was cleared on June 10, 2022. This action was chosen to increase likelihood of successful reproduction (via increasing seed-soil contact), since seeds of this species are typically deposited directly under or nearby the flowering individuals, due to the drooping growth habit and relatively heavy seeds. An H. T. Harvey & Associates field biologist recorded the locations of individuals under which vegetation was removed on June 22, 2022, so that the effectiveness of this measure can be assessed in future years.

Additionally, the hydrology of the portion of the seep wetland where the Mt. Hamilton thistle population is located is supported by inflow that is collected in a springbox and conveyed over the Almaden-Calero Canal in a steel pipe; maintenance of this water source is critical to supporting this population of Mt. Hamilton thistle. The Habitat Agency has consistently maintained this water source throughout all monitoring years. However, in monitoring Years 4 and 5, water was diverted from this seep later in the year to dry out the pond sediments and thereby control aestivating Louisiana red swamp crayfish; this diversion could have increased drought stress on the thistle population. The Habitat Agency will continue to maintain the springbox and steel pipe and does not plan to divert the water source in future monitoring years.

Comparison to Performance Standards—The MMP calls for a stable or increasing population of Mt. Hamilton thistle at the pond mitigation site. Compared to Year 1, the Mt. Hamilton thistle percent thistle cover within the population footprint remained similar to Year 1 (Year 1=19.5%; Year 6=19.4%), and the surface area remained identical (Year 1=0.03 acres; Year 6=0.03 acres). However, Mt. Hamilton abundance decreased since Year 1 (Year 1=111 individuals; Year 6=58 individuals), and has declined each year in monitoring Years 4, 5, and 6 (Table 3). This can likely be explained by a possible reduction in seed germination due to three consecutive years with well-below average precipitation (see Section C.7.2.1). Based on the Year 6 monitoring

metrics the Mt. Hamilton thistle population is slightly in decline, and merits further maintenance and monitoring, as described above.

C.7.2.6 Wetland Vegetation Percent Cover

The average percent cover of wetland vegetation was 44.6% at the pond mitigation site, 80.2% at the wetland mitigation site, and 59.7% for the pond and wetland mitigation sites combined. The observed wetland vegetation cover increased at both the pond mitigation site and the wetland mitigation site from Year 5 to Year 6, likely as a result of slightly wetter year than in Years 4 and 5 (Table 4; Appendix B). No vegetation was observed in the open water at the pond mitigation site. Both sites exhibited high plant species richness; 18 wetland species were observed at the pond mitigation site, 14 wetland species were observed at the wetland mitigation site, and 21 wetland species were observed in total across the pond and wetland mitigation sites during quadrat sampling (Table 4).

Table 4. Wetland Vegetation Percent Cover and Number of Wetland Species

Year	Site	Wetland Vegetation Cover	Wetland Vegetation Cover Performance Standard	Number of Wetland Species[1]	Wetland Species Number Performance Standard
1	Pond mitigation site	34.9%	15%	18	3
	Wetland mitigation site	57.0%	15%	17	3
2	Pond mitigation site	60.9%	25%	19	3
	Wetland mitigation site	72.1%	25%	19	3
3	Pond mitigation site	45.2%	40%	21	3
	Wetland mitigation site	75.8%	40%	19	3
4	Pond mitigation site	60.2%	60%	24	3
	Wetland mitigation site	75.0%	60%	17	3
5	Pond mitigation site	39.8%	70%	21	3
	Wetland mitigation site	56.6%	70%	17	3
6	Pond mitigation site	44.6%	70%	18	3
	Wetland mitigation site	80.2%	70%	14	3

[1] Wetland indicator status based on the *National Wetland Plant List v3.5 Species Detail Tool* (USACE 2020).

Upland species cover was low and wetland species were the dominant vegetation cover at the pond and wetland mitigation sites. Creeping spike rush (*Eleocharis macrostachya*, OBL) provided the most wetland cover at the pond mitigation site (18.4%) and rabbitsfoot grass (*Polypogon monspeliensis*, FACW) provided the most wetland cover at the wetland mitigation site (14.6%). Complete vegetation monitoring results for each site, including species accumulation curves, are provided in Appendix A.

Comparison to Performance Standards—Wetland cover met the final wetland vegetation percent cover performance standard of 70% at the wetland mitigation site, but failed to meet this performance standard at the pond mitigation site alone and when combined (Table 4). In addition, the wetland mitigation site met the performance standard of exhibiting an increasing temporal trend of wetland vegetation cover between Years 1 and 6. However, wetland vegetation cover at the pond mitigation site did not meet this performance standard

(Table 4). Twenty percent vegetation cover was observed in the open water portion of the pond mitigation site, consisting entirely of mannagrass (*Torreyochloa pallida* var. *pauciflora*). Therefore, the open water portion of the pond mitigation site met the final performance standard of vegetation cover of less than 50%. In addition, the number of wetland species observed at the pond and wetland mitigation sites achieved the final performance standard of having at least 3 wetland species present at each site (Table 4).

In summary, the wetland mitigation site met all the final performance standards for the project, while the pond mitigation site exhibited a lower percent cover of wetland vegetation outside of the open water area than the final performance standard across Years 1-6 of monitoring. Specifically, the percent cover ranged from 34.9% in Year 1 to 60.9% in Year 4, with an average cover of 47.6%, versus the final performance criterion of 70%. In addition, wetland vegetation cover at the pond mitigation site did not exhibit an increasing trend across the 6 years of monitoring, although it did not exhibit a decreasing trend either, instead remaining approximately level (Appendix A, Figure A-5).

The results of our monitoring data combined with field observations indicate that wetland vegetation cover at the pond is closely linked to the hydrologic conditions at the pond, which are very sensitive to intra- and interannual variations in rainfall. Typically, we have observed the pond filling with water relatively quickly during the rainy season and then declining slowly over the course of the spring. As a result, a large portion of the wetland area is under water for the early part of the growing season. This appears to result in lower vegetation cover overall, due to the seasonal wetland being fully inundated during the early part of the growing season, effectively shortening the growing season. Overall, it appears that the wetland vegetation cover at the pond mitigation site is likely to remain in the range observed during the monitoring period (average of 47.6%), although this cover may be higher in ideal water years. This cover is lower than the target wetland vegetation cover of 70%.

Despite the average wetland vegetation cover being below the final performance standard, it is our ecological opinion that the restoration objectives outlined in the MMP for the pond mitigation site have been achieved. Habitat goals related to restoration of seasonal wetland habitat at the pond mitigation site included improvement of water quality, provision of erosion protection, provision of habitat for Mt. Hamilton thistle, provision of breeding, foraging, and dispersal habitat for the California red-legged frog, and provision foraging habitat for seasonal wetland associated birds (H. T. Harvey & Associates 2016a). Based on the results of the wetland delineation conducted in Years 5 and 6, seasonal wetland habitat has been created, which satisfies most of these requirements. In addition, a diversity of wetland species have been observed in all monitoring years at this site (Table 4). Finally, the conditions at the pond mitigation site appear to be appropriate to support both California red-legged frog and California tiger salamander. Optimal breeding habitat for California tiger salamanders typically consists of seasonal ponds (drying in mid-summer) with relatively turbid water but little to no emergent vegetation. California red-legged frogs typically require deeper ponds that hold water at least through the summer (drying before the onset of autumn rains) or are perennial to breed. These ponds typically contain a moderate amount of emergent vegetation, which provides attachment sites for egg masses and concealment for adult and juvenile frogs, but are open in the deeper portions of the pond. Ponds that benefit both species have longer hydroperiods to allow successful metamorphosis of California red-legged frogs, but

less emergent vegetation (within a range of 10-35%), which though not optimal for California red-legged frogs is more preferred by California tiger salamanders. It has been suggested that this percentage range of emergent vegetation is needed for egg mass attachment and concealment for frogs but also reduces the number of aquatic predatory insects that might prey upon salamander larvae (Ford et al. 2013). The conditions created in the seasonal wetland at the pond mitigation site reflect these recommended conditions. In addition, California tiger salamander larvae have been observed in the pond in 5 out of 6 monitoring years. Based on these results, although the performance standard in the MMP has not been met, the objectives of the MMP have been accomplished with respect to the restored seasonal wetland cover at the pond mitigation site.

C.7.2.7 Invasive Plant Cover

Invasive plant cover was low at the pond and wetland mitigation sites during Year 6. Black mustard (Cal-IPC rating "moderate"), yellow star-thistle (Cal-IPC rating "moderate"), whitetop (Cal-IPC rating "moderate"), Italian thistle (Cal-IPC rating "moderate"), and Harding grass (Cal-IPC rating "moderate") were observed in low abundance at the pond mitigation site during the focused visual survey on April 6, 2022 (Figure 3). The overall cover of these populations was visually estimated to be below the 5% cover performance standard for both the pond and wetland mitigation sites (Table 5). The majority of these species were present at the site prior to construction and were targeted during management and maintenance of nonnative plant species during Year 5 (see Section C.4).

Table 5. Invasive Plant Cover

Site	Focused Visual Survey Cover Estimate[1,2]	Invasive Plant Cover Performance Standard[1]
Pond mitigation site	<5%	<5%
Wetland mitigation site	<5%	<5%
Combined	<5%	<5%

[1] Species that were rated as highly invasive by California Invasive Plant Council (Cal-IPC) or species rated as moderately invasive and were deemed by a qualified restoration ecologist to adversely affect habitat quality were defined as invasive (Cal-IPC 2022).

[2] The overall cover of invasive plant populations was visually estimated during the focused visual survey and mapped in accordance with the MMP.

Comparison to Performance Standards—The cover of invasive plant species met the performance standard of less than the 5% total cover at the pond mitigation site and the wetland mitigation site (Table 5).

C.7.2.8 Wetland Delineation

The project's MMP requires that a wetland delineation be conducted at the end of Year 5 post-restoration to determine whether the minimum target acreages of restored and created wetlands were attained. For a full report of the results of the Year 5 delineation, please refer to the Year 5 monitoring report (H. T. Harvey & Associates 2022). As described in Section C.7.1.8, additional sample points were collected in Year 6, which resulted in a modified delineation result. Table 6 provides a comparison of the Year 6 revised wetland delineation results relative to the MMP's acreage targets. Figures 5 and 6 show the wetland delineation mapping results for the pond and wetland, respectively.

Table 6. Comparison of Year 6 Surface Area of Restored and Created Wetlands to MMP Success Criteria

	Pond Mitigation Site		Wetland Mitigation Site	
Credit Type	Success Criterion (acres)	Year 6 Delineation (acres)	Success Criterion (acres)	Year 6 Delineation (acres)
Wetland Restoration	≥0.27	0.27	≥0.10	0.10
Wetland Creation	≥0.01	0.01	≥0.02[1]	0.02

[1] 0.02 acres of wetland creation was set aside for the San Jose Water Company's McKean Tank project (H. T. Harvey & Associates 2019b).

The Year 6 revised wetland delineation determined that the restored wetland acreage met the requirements of the regulatory permits at both the pond and wetland mitigation sites.

Prior to H. T. Harvey & Associates Year 6 delineation survey, Year 5 survey data were reviewed together with datasheets from the 2016 wetland delineation survey. It was determined that the soils data collected in Year 5 reflects the existing wetland conditions observed in 2016, and that the smaller wetland delineation boundary that was collected in Year 5, based largely on the change in wetland vegetation, was incorrect due to the naturally problematic conditions resulting from the drought conditions. Specifically, climate conditions in the study area include a 30-year average of approximately 22.5 inches of annual precipitation, and an average temperature range from 47ºF to 72ºF (PRISM Climate Group 2022). Relative to the 30-year climate normal, the study area experienced below-average precipitation during the 2021/2022 wet season prior to the supplemental delineation data collection on April 14, 2022. From May 2021 through May 2022, the region received 16.49 inches of precipitation, or approximately 73.3% of the 30-year average (PRISM Climate Group 2022). The 2020/2021 wet season during which the Year 5 delineation was conducted was also unusually dry; see the Year 5 annual monitoring report for more details (H. T. Harvey & Associates 2022). According to USACE's Antecedent Precipitation Tool, conditions at the time of the Year 5 and the Year 6 delineations constituted "extreme drought" and "severe drought" respectively. Therefore, normal climate conditions were not present during either delineation or in the rain years leading up to those delineations.

Three additional data points were added to confirm that the wetland conditions observed in the 2016 delineation continued to be present outside of the naturally problematic conditions. The lighter colors and complete absence of hydric soil indicators at P6 relative to the presence of dark, low chroma soils meeting the F6 Redox Dark Surface indicator at P3 and P4 confirmed the problematic conditions for hydrophytic vegetation, and the wetland boundary was then remapped to incorporate additional wetland area. Similarly, the collection of additional data at sample point W5 showed the presence of wetland vegetation that had previously been obscured by the presence of a downed log. Revised wetland maps are provided in Figures 5 and 6.

Wetland determination data forms documenting our observations of vegetation, soils, and hydrology specific to the sampling points shown in Figures 5 and 6 are provided in Appendix C. Note that wetland delineation form for sample point P3 has been corrected relative to Year 5 to indicate the presence of hydric soils, and all datasheets collected in Year 5 have been corrected to reflect the naturally problematic hydrology and sometimes problematic annual vegetation community along the wetland margins due to drought conditions.

C.7.2.9 Water for Cattle

Water was available year-round for cattle via the spring-fed trough at the pond mitigation site, while the tank and secondary trough below the pond were dry by mid-summer. However, due to drought conditions, the spring-fed trough combined with another spring located outside the mitigation site were insufficient to keep up with typical annual cattle stocking rate. In response to drought conditions in recent years, the cattle rancher coordinated with Santa Clara County Parks and Recreation Department to secure a municipal water source, and installed four new troughs and improved one old trough to supply with municipal water. The water trough that is filled by overflow from the wetland was dry all year.

C.7.3 Photodocumentation

Photographs from established photodocumentation points and additional locations taken throughout Year 5 monitoring are provided in Section D. Photodocumentation points are shown on Figures 3 and 4 in Section E.

C.7.4 Recommended Management Activities

Management recommendations for ongoing maintenance after cessation of annual monitoring are provided below for relevant performance standards.

C.7.4.1 Target Hydrologic Regime and Sedimentation and Geomorphic Stability

cbec and H. T. Harvey & Associates prepared the following management recommendations for the target hydrologic regime and sedimentation/geomorphic stability:

- Sediment should continue to be removed from the springbox during and after the rainy season to optimize seep flow to the pond mitigation site.
- Debris and sediment should continue to be removed from the constructed log jams located just upstream of the springbox. While sedimentation rates are low at the log jams, we recommend annual cleanout work to ensure maximum spring water input to the pond.
- Accumulated silt should continue to be cleaned out of the seep troughs each fall. While sedimentation rates are low at the seep troughs, we recommend annual cleanout work to ensure maximum spring water input to the pond.
- Measures should be taken to reduce human impacts on the side slopes of the pond when soils are saturated. Disturbance may compromise the bentonite pond liner, which could result in increased permeability in the pond bed and potentially lower water levels. Pond maintenance and management personnel should be educated on the design of the pond liner and, if possible, should wear mud shoes (e.g., mudders available through Forestry Suppliers) or use plywood walking platforms when entering the pond to reduce impacts on the pond liner and side slopes. Personnel should continue to use the designated access location on the south side of the pond to limit impacts on the pond liner and side slopes.

In addition to the recommendations provided above, cbec and H. T. Harvey & Associates identified the following future considerations for target hydrologic regime and sedimentation and geomorphic stability:

- Erosion of the Santa Clara County Parks and Recreation Department roadway/trail (upslope from the springbox) caused deposition throughout the drainage all the way downslope to the springbox during water year 2019. Although large deposition was not observed during water year 2022, conditions of the trail/roadway do not appear to have been improved in 2022. Continuing to clean out the trail gravel from upstream of the springbox is advised.
- The abundance and extent of ground squirrel burrows should continue to be monitored along the berm at the pond mitigation site to confirm that berm integrity is not compromised. Monitoring should include more rigorous accounting of burrow presence and condition from year to year.
- Monitor gage battery life during downloads and expect to replace all gages every 5 years. The gages can have varying lifespans, but all gages should be replaced at the first sign of malfunction from a single gage to prevent data loss.

C.7.4.2 Aquatic Predator Abundance

Over 5 years of monitoring, populations of invasive aquatic predators at the pond site (bullfrog and Louisiana red swamp crayfish) have remained approximately stable or decreased slightly due to drought conditions (see Section C.7.2.4). However, in Year 6, neither bullfrog egg masses nor bullfrog larvae were detected during any surveys and only one post metamorphic bullfrog was observed in the wetland (Table 2). Also, Louisiana red swamp crayfish were not observed in the pond. We believe the absence of crayfish and bullfrogs in the pond was due to a combination of the ongoing predator control measures and the pond naturally drying in the summer. However, the pond site is an open system that is adjacent to the Almaden-Calero Canal to Calero Reservoir and is at the upstream end of a tributary to Alamitos Creek, which likely act as sources for invasive aquatic predators (particularly bullfrogs) that can disperse short distances overland to the pond. Thus, these populations will likely be replenished from outside, adjacent sources in future years. Any effort to create a barrier between the mitigation site and these sources to prevent overland dispersal by these invasive aquatic predators would likely also become a barrier to dispersal for California red-legged frogs. Therefore, H. T. Harvey & Associates recommends ongoing maintenance to maintain populations of invasive aquatic predators at low enough levels that allow them to co-occur with California red-legged frog and California tiger salamander. This includes controlling the population of adult bullfrogs prior to their start of breeding in May-June via bullfrog removal and dispatching (e.g. gigging). It also includes considering active management of water levels, if this does not impact the Mt. Hamilton thistle, to dry out the pond during each year that invasive aquatic predators are observed.

C.7.4.3 Mt. Hamilton Thistle Abundance

H. T. Harvey & Associates recommends that nonnative plant species, such as Himalayan blackberry, continue to be removed from the seep wetland area of the pond mitigation site to reduce competition between nonnative vegetation and the Mt. Hamilton thistle. The springbox and steel pipe that convey seep inflow should continue

to be maintained and should not be diverted in future years. In addition, H. T. Harvey & Associates recommends continued monitoring of the population to assess its continued health and recovery from the drought conditions. Monitoring should be designed to assess the effectiveness of thatch-clearing under flowering individuals (see section C.5), and this method should continue to be implemented if it is shown to be effective. Future monitoring could be accomplished as a component of long-term management.

C.7.4.4 Invasive Plant Cover

It is H. T. Harvey & Associates opinion that this site has met the mitigation performance standards for habitat restoration and creation. Therefore, we recommend that the Habitat Agency commence invasive species management in accordance with the sites Long Term Management Plan (LTMP) (H. T. Harvey & Associates 2016b). We recommend that the following invasive plant species be added to the species identified in the LTMP for monitoring and control: whitetop, stinkwort, bull thistle, and purple star-thistle.

C.7.4.5 Water for Cattle

With the installation of a municipal water source at the park, water for cattle is now sufficient at the site and likely to continue to be so. Therefore, we have no maintenance recommendations for water for cattle at this time.

C.8 Conclusions and Adaptive Management Activities Proposed

The majority of the final performance standards have been met at the wetland and pond mitigation sites. Invasive plant species remained at low densities and below 5% across the pond and wetland mitigation sites. In addition, the performance standard for wetland mitigation cover was met at the wetland mitigation site. The revised wetland delineation that reflects the drought conditions of the past three years further demonstrates that the wetland acreage performance standards have been met. Water was available year-round for cattle via the spring-fed trough at the pond mitigation site at an insufficient rate for cattle stocking. This was due to drought conditions, and water was supplemented with a municipal water source established in by the cattle rancher in collaboration with Santa Clara County Parks and Recreation Department to ensure a stable water source in future years. The pond and wetland mitigation sites continued to show minimal sedimentation from Year 1 and are geomorphically stable.

All applicable wildlife performance standards were achieved, with the exception of the California red-legged frog standard which calls for documented successful breeding in at least one monitoring year. Although California tiger salamander breeding was not observed in Year 4, it was observed in Years 1-3, 5, and 6. Their absence in Year 4 may have been due to delayed survey timing because of COVID-19 site access restrictions and/or drought conditions (see Section C.7.2.3). Year 6, like Years 4 and 5, was a very dry and below average water year. Therefore, the target hydraulic regime for California red-legged frog performance standard did not apply to Year 6.

The following final performance standards were not met in Year 6:

(1) wetland vegetation cover at the pond was below 70%; consequently, the combined percent cover of wetland vegetation at the pond and wetland mitigation sites combined was also below 70%;

(2) California red-legged frogs have not been observed breeding in any monitoring years; and

(3) the Mt. Hamilton thistle population has steadily declined in abundance since Year 4, although all other population metrics have remained stabled compared to Years 1 and 2 (baseline).

Although wetland vegetation cover at the pond did not meet the performance standard, the objectives for restoration of seasonal wetland outlined in the project's MMP have been achieved. Specifically, the target acreage of seasonal wetland that supports a diversity of native wetland species has been established and restored by protection from cattle grazing. In addition, the percent cover of wetland vegetation is sufficient to support the target conditions for California tiger salamander and California red-legged frog use of the pond. Therefore, the mitigation sites appear to be performing as intended.

The pond hydroperiod during average rainfall years has met the criterion to support red-legged frog reproduction and aquatic predator abundances are less than baseline conditions. Therefore, the absence of California red-legged frog may reflect the distance of the site from extant occurrences and failure of dispersants from those locations to have found this pond. No individuals of this species have been recorded within 1.4 miles of the site (H. T. Harvey & Associates 2016a). In time, dispersing California red-legged frogs from other populations are likely to eventually find and colonize the pond, due to the presence of appropriate conditions for this species.

The decline in abundance of Mt. Hamilton thistle is likely attributable to the drought conditions and/or to the project's exclusion of cattle grazing. It may also simply be part of the natural expansion and contraction of the plant community. At the recommendation of Janell Hillman, thatch and herbaceous vegetation from around the base of flowering individuals was cleared on June 10, 2022, to increase the likelihood of successful reproduction.

Based on the results of Year 6 annual mitigation monitoring, H. T. Harvey & Associates recommends that annual monitoring at the Calero pond and wetland mitigation site be considered complete. Ongoing monitoring and reporting of the Mt. Hamilton thistle population will continue to occur and be reported on under the site's LTMP (see below). We request that the regulatory agencies provide written concurrence that annual monitoring at the Calero mitigation site can cease.

We further recommend that the mitigation site proceed to being managed and monitored under the methods defined in the project's LTMP. LTMP monitoring will include ongoing monitoring for California red-legged frog. H. T. Harvey & Associates additionally recommends that aquatic predators (particularly bullfrogs) continue to be actively controlled on an annual basis during the LTMP phase.

Section D. Photodocumentation

Photo 1. Year 1 Conditions at Photo Point 1a during Vegetation Monitoring at the Wetland Mitigation Site (August 8, 2017)

Photo 2. Year 6 Conditions at Photo Point 1a during Vegetation Monitoring at the Wetland Mitigation Site (March 29, 2022)

Photo 3. Year 1 Conditions at Photo Point 1b during Vegetation Monitoring at the Wetland Mitigation Site (August 8, 2017)

Photo 4. Year 6 Conditions Looking East from Photo Point 1b during Vegetation Monitoring at the Wetland Mitigation Site (March 29, 2022)

Photo 5. Year 1 Conditions at Photo Point 2 during Vegetation Monitoring at the Wetland Mitigation Site (August 8, 2017)

Photo 6. Year 6 Conditions at Photo Point 2 during Vegetation Monitoring at the Wetland Mitigation Site (March 29, 2022)

Photo 7. Year 1 Conditions at Photo Point 3 during Vegetation Monitoring at the Wetland Mitigation Site (August 8, 2017)

Photo 8. Year 6 Conditions at Photo Point 3 during Vegetation Monitoring at the Wetland Mitigation Site (March 29, 2022)

Photo 9. Year 1 Conditions at Photo Point 4 during Vegetation Monitoring at the Wetland Mitigation Site (August 8, 2017)

Photo 10. Year 6 Conditions at Photo Point 4 during Vegetation Monitoring at the Wetland Mitigation Site (March 29, 2022)

Photo 11. Year 1 Conditions at Photo Point 5 during Vegetation Monitoring at the Wetland Mitigation Site (August 8, 2017)

Photo 12. Year 6 Conditions at Photo Point 5 during Vegetation Monitoring at the Wetland Mitigation Site (March 29, 2022)

Photo 13. Year 1 Conditions at Photo Point 6 during Mt. Hamilton Thistle Abundance Monitoring at the Pond Mitigation Site (August 8, 2017)

Photo 14. Year 6 Conditions at Photo Point 6 during Mt. Hamilton Thistle Abundance Monitoring at the Pond Mitigation Site (April 6, 2022)

Photo 15. Year 1 Conditions at Photo Point 7a during Vegetation Monitoring at the Pond Mitigation Site (August 8, 2017)

Photo 16. Year 6 Conditions at Photo Point 7a during Vegetation Monitoring at the Pond Mitigation Site (April 6, 2022)

Photo 17. Year 1 Conditions at Photo Point 7b during Vegetation Monitoring, Showing the Wetland Establishment Area at the Pond Mitigation Site (August 8, 2017)

Photo 18. Year 6 Conditions at Photo Point 7b during Vegetation Monitoring, Showing the Wetland Establishment Area at the Pond Mitigation Site (April 6, 2022)

Photo 19. Year 1 Conditions at Photo Point 7c during Vegetation Monitoring at the Pond Mitigation Site (August 8, 2017)

Photo 20. Year 6 Conditions at Photo Point 7c during Vegetation Monitoring at the Pond Mitigation Site (April 6, 2022)

Photo 21. Year 1 Conditions at Photo Point 8 during Vegetation Monitoring at the Pond Mitigation Site (August 8, 2017)

Photo 22. Year 6 Conditions at Photo Point 8 during Vegetation Monitoring at the Pond Mitigation Site (April 6, 2022)

Photo 23. Year 1 Conditions at Photo Point 9 during Vegetation Monitoring at the Pond Mitigation Site (August 8, 2017)

Photo 24. Year 6 Conditions at Photo Point 9 during Vegetation Monitoring at the Pond Mitigation Site (April 6, 2022)

Photo 25. Year 1 Conditions at Photo Point 10 during Vegetation Monitoring at the Pond Mitigation Site (August 8, 2017)

Photo 26. Year 6 Conditions at Photo Point 10 during Vegetation Monitoring at the Pond Mitigation Site (April 6, 2022)

Photo 27. Year 1 Conditions at Photo Point 11 during Vegetation Monitoring, Where the Hillside Seep Collection Ditch was Enhanced in the Seep Collection Area (August 8, 2017)

Photo 28. Year 6 Conditions at Photo Point 11 during Vegetation Monitoring, Where the Hillside Seep Collection Ditch was Enhanced in the Seep Collection Area (April 6, 2022)

Photo 29. Year 1 Conditions at Photo Point 12 during Vegetation Monitoring, Where the Hillside Seep Collection Ditch was Enhanced in the Seep Collection Area (August 8, 2017)

Photo 30. Year 6 Conditions at Photo Point 12 during Vegetation Monitoring, Where the Hillside Seep Collection Ditch was Enhanced in the Seep Collection Area (April 6, 2022)

Photo 31. Year 1 Conditions at Photo Point 13 during Vegetation Monitoring, at an Existing Seep in the Seep Collection Area That Wasn't Disturbed during Construction (August 8, 2017)

Photo 32. Year 6 Conditions at Photo Point 13 during Vegetation Monitoring, at an Existing Seep in the Seep Collection Area That Wasn't Disturbed during Construction (April 6, 2022)

Photo 33. Year 1 Conditions at Photo Point 14 during Vegetation Monitoring, Where Debris Jams Were Installed in the Seep Collection Area (August 8, 2017)

Photo 34. Year 6 Conditions at Photo Point 14 during Vegetation Monitoring, Where Debris Jams Were Installed in the Seep Collection Area (April 6, 2022)

Photo 35. Year 1 Conditions at Photo Point 15 during Vegetation Monitoring, with a Log Debris Jam Installed in the Seep Collection Area (August 8, 2017)

Photo 36. Year 6 Conditions at Photo Point 15 during Vegetation Monitoring, with a Log Debris Jam Installed in the Seep Collection Area (April 6, 2022)

Photo 37. Year 1 Conditions at Photo Point 16 during Vegetation Monitoring, at an Existing Seep in the Seep Collection Area That Wasn't Disturbed during Construction (August 8, 2017)

Photo 38. Year 6 Conditions at Photo Point 16 during Vegetation Monitoring, at an Existing Seep in the Seep Collection Area That Wasn't Disturbed during Construction (April 6, 2022)

Photo 39. Year 1 Conditions at Photo Point 17 during Mt. Hamilton Thistle Abundance Monitoring at the Pond Mitigation Site (August 8, 2017)

Photo 40. Year 6 Conditions at Photo Point 17 during Mt. Hamilton Thistle Abundance Monitoring at the Pond Mitigation Site (April 6, 2022)

Photo 41. Year 1 Conditions at Photo Point 18 during Mt. Hamilton Thistle Abundance Monitoring at the Pond Mitigation Site (August 8, 2017)
Note: Flowering Mt. Hamilton thistle individuals

Photo 42. Year 6 Conditions at Photo Point 18 during Mt. Hamilton Thistle Abundance Monitoring at the Pond Mitigation Site (April 6, 2022)

Section E. Maps

Figures 1–6 are included below.

N:\Projects3700\3753-02\08\Reports\Fig 1 Vicinity Map Pond and Wetland Mitigation Sites.mxd agibson

H. T. HARVEY & ASSOCIATES
Ecological Consultants

Figure 1. Pond and Wetland Mitigation Sites Vicinity Map

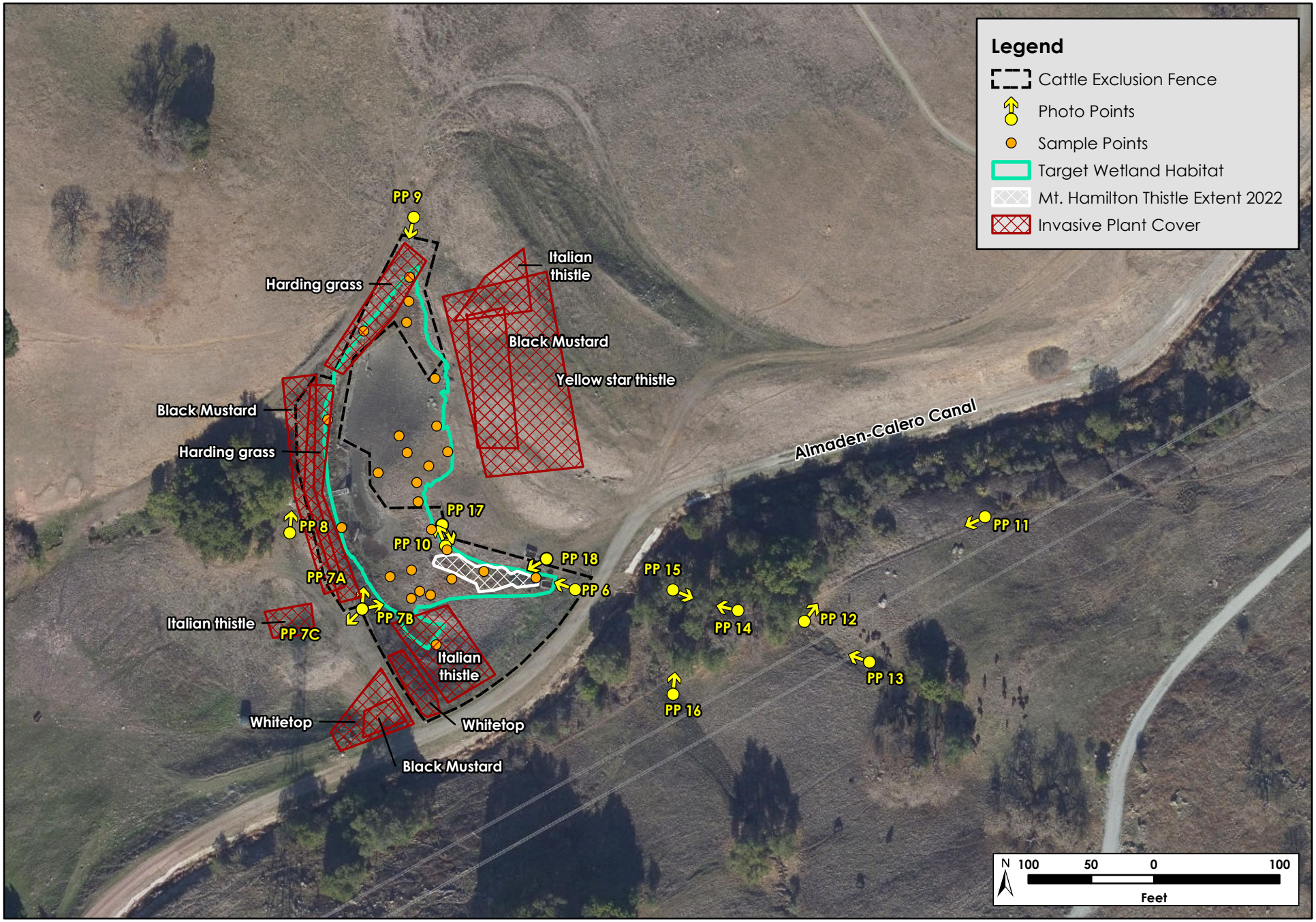
Calero County Park Pond and Wetland Restoration Project
Year 6 Monitoring Report (3753-08)
December 2022

N:\Projects3700\3753-02\08\Reports\Fig 2 USGS Topography Map.mxd agibson

H. T. HARVEY & ASSOCIATES
Ecological Consultants

Figure 2. U.S. Geological Survey Topography Map

Calero County Park Pond and Wetland Restoration Project
Year 6 Monitoring Report (3753-08)
December 2022



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Ecological Consultants

Figure 3. Pond Mitigation Site
Calero County Park Pond and Wetland Restoration Project
Year 6 Monitoring Report (3753-08)
December 2022

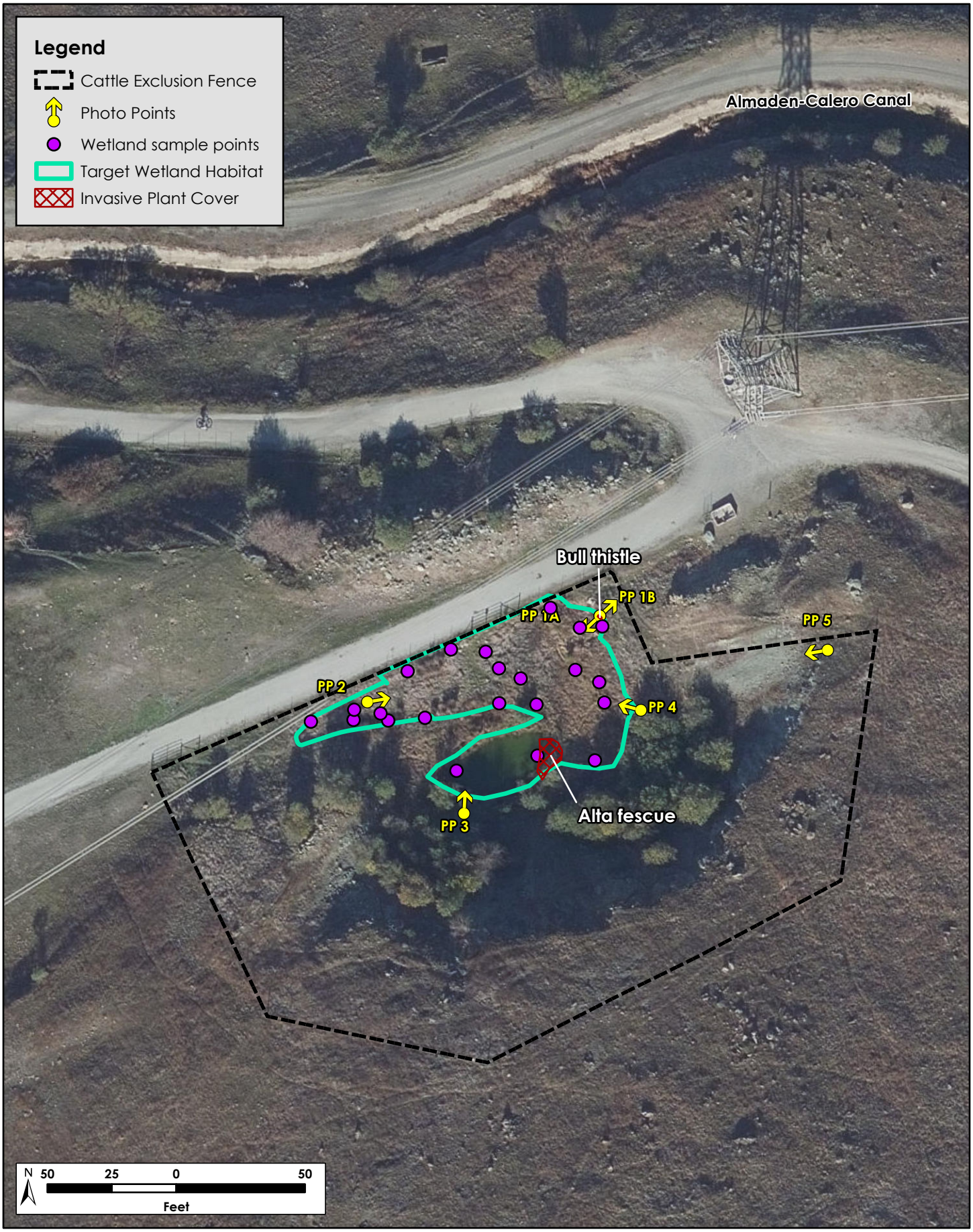

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Figure 4. Wetland Mitigation Site
Calero County Park Pond and Wetland Restoration Project
Year 6 Monitoring Report (3753-08)
December 2022

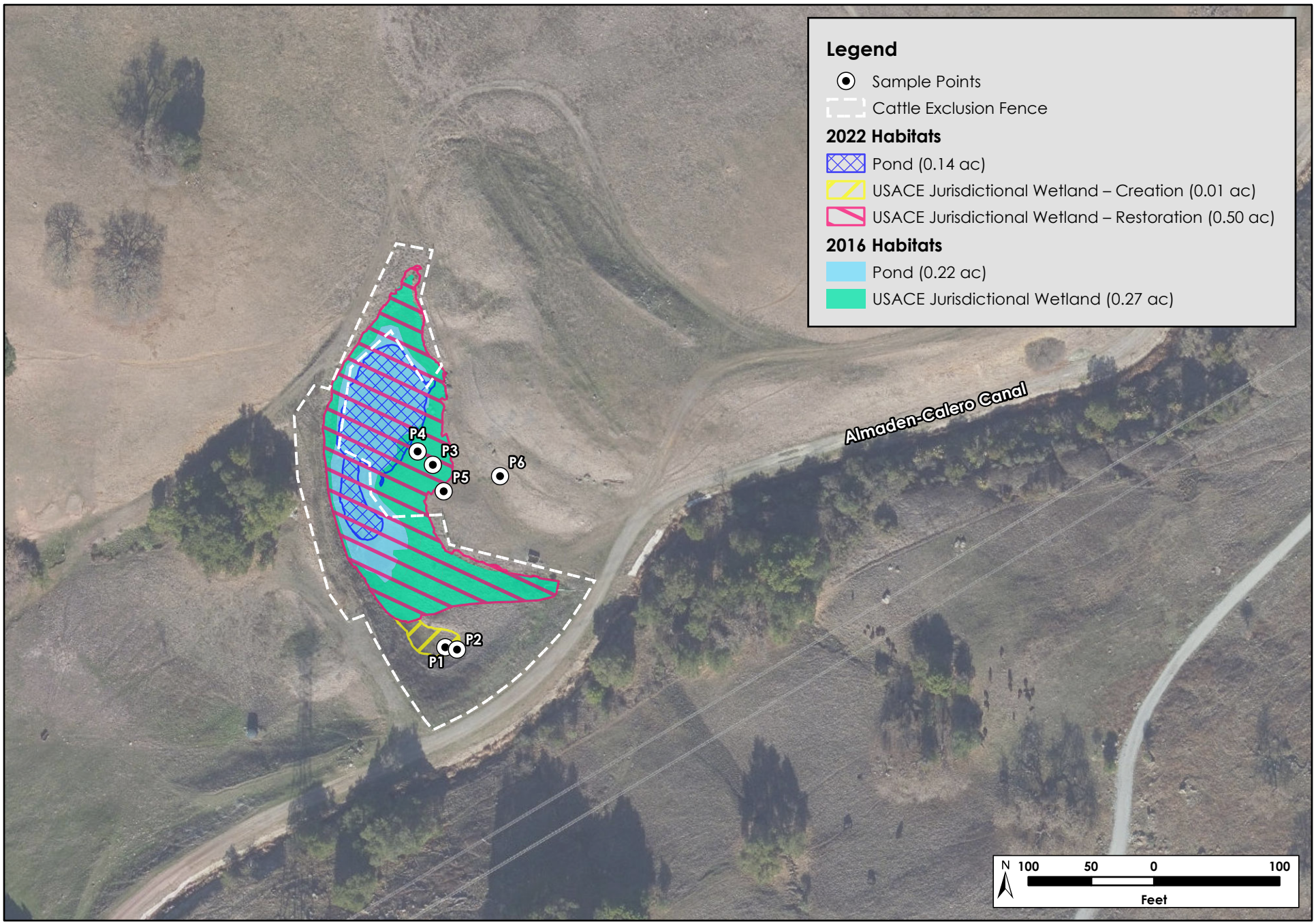

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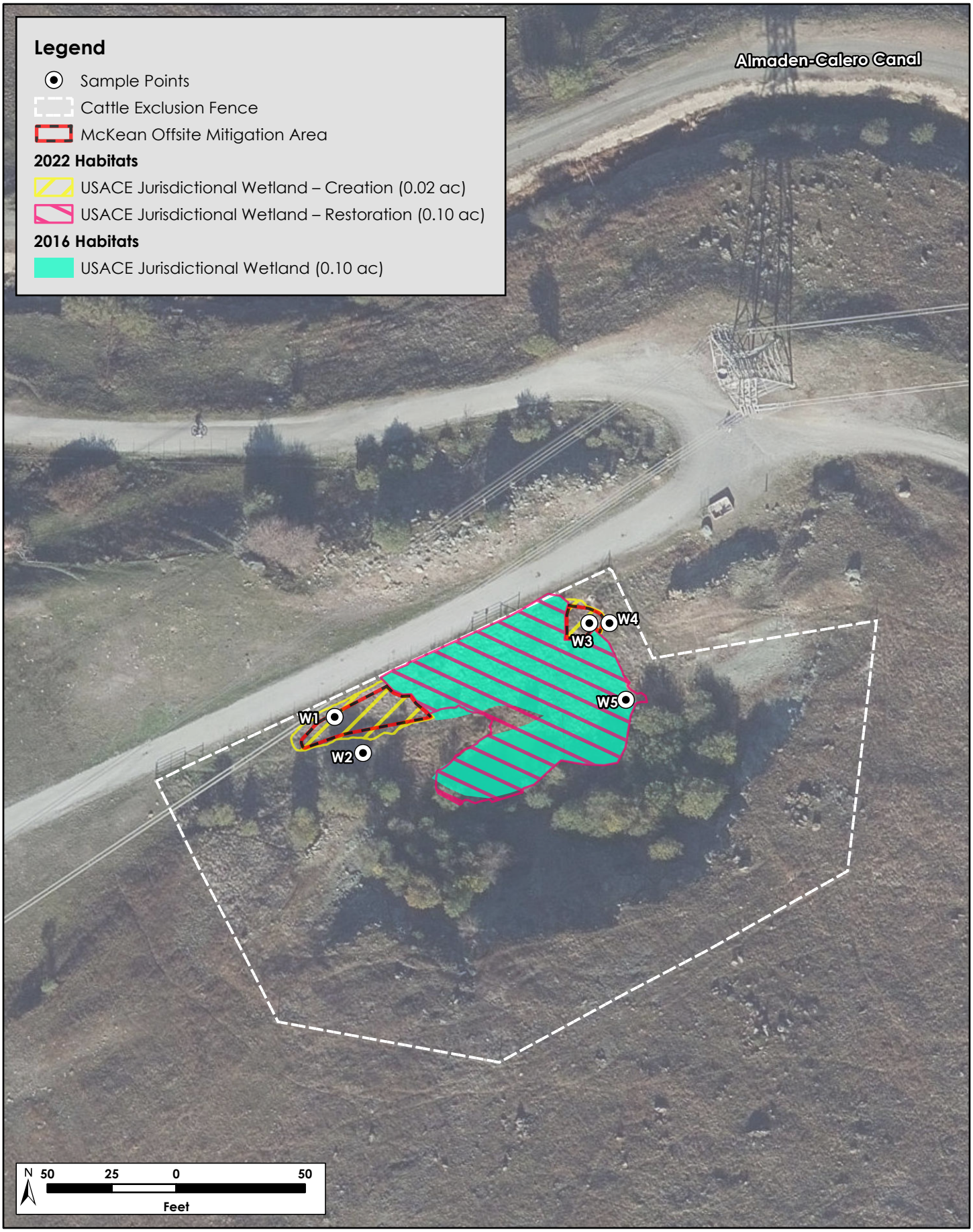
Figure 5. Year 6 Wetland Delineation Results - Pond

Calero County Park Pond and Wetland Restoration Project
Year 6 Monitoring Report (3753-08)
December 2022



H. T. HARVEY & ASSOCIATES
Ecological Consultants

Figure 6. Year 6 Wetland Delineation Results - Wetland
Calero County Park Pond and Wetland Restoration Project
Year 6 Monitoring Report (3753-08)
December 2022

Section F. References

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Appendix A. Wetland Vegetation Monitoring Results

Plant Species Observed by Wetland Vegetation Monitoring Site

Scientific Name	Common Name	Native Status	Wetland Indicator Status[1]	Average Percent Cover	
				Pond	Wetland
Acmispon americanus	Spanish Clover	Native	UPL	0.4	-
Brassica nigra	Black mustard	Nonnative	UPL	0.1	-
Bromus diandrus	Rigput brome	Nonnative	UPL	0.4	-
Bromus hordeaceus	Soft brome	Nonnative	FACU	1.5	<0.1
Carduus pycnocephalus	Italian thistle	Nonnative	UPL	0.5	-
Carex barbarae	Santa barbara sedge	Native	FAC	-	0.7
Carex praegracilis	Clustered field sedge	Native	FACW	0.5	-
Carex serratodens	Two-tooth sedge	Native	FACW	1.8	0.6
Cirsium fontinale var. campylon	Mt. Hamilton thistle	Native	OBL	0.1	-
Croton setiger	Turkey-mullein	Native	UPL	0.4	-
Cynodon dactylon	Bermuda grass	Nonnative	FACU	10.0	-
Eleocharis macrostachya	Creeping spike rush	Native	OBL	18.4	39.4
Epilobium brachycarpum	Annual fireweed	Native	FAC	0.4	-
Epilobium ciliatum	Fringed willowherb	Native	FACW	1.1	-
Erythranthe guttata	Seep monkey flower	Native	OBL	0.2	3.1
Festuca arundinace	Alta fescue	Nonnative	FACU	3.2	5.2
Festuca perennis	Italian rye grass	Nonnative	FAC	5.9	0.2
Frangula californica	California coffeeberry	Native	UPL	-	0.1
Geranium dissectum	Cutleaf geranium	Nonnative	UPL	0.2	-
Hordeum murinum	Foxtail barley	Nonnative	FACU	2.2	-
Juncus effusus	Bog rush	Native	FACW	5.0	2.9
Juncus patens	Common rush	Native	FACW	0.7	4.7
Juncus xiphioides	Iris leaved rush	Native	OBL	0.2	12.0
Lysimachia arvensis	Scarlet pimpernel	Nonnative	FAC	-	0.6
Lythrum hyssopifolia	Hyssop loosestrife	Nonnative	OBL	0.3	-
Melilotus indicus	Annual yellow sweetclover	Nonnative	FACU	0.9	-
Persicaria hydropiperoides	Water pepper	Native	OBL	0.1	-
Phalaris aquatica	Harding grass	Nonnative	FACU	1.5	-
Polypogon monspeliensis	Rabbitsfoot grass	Nonnative	FACW	3.3	14.6
Ranunculus aquatilis	White water-crowfoot	Native	OBL	0.2	-
Rumex pulcher	Fiddle dock	Nonnative	FAC	4.7	0.7
Schoenoplectus acutus	Hardstem bulrush	Native	OBL	-	0.1
Scirpus microcarpus	Panicled bulrush	Native	OBL	-	0.3

Scientific Name	Common Name	Native Status	Wetland Indicator Status[1]	Average Percent Cover	
				Pond	Wetland
Sonchus asper	Spiny sowthistle	Nonnative	FAC	0.4	-
Stipa pulchra	Purple needle grass	Native	UPL	0.3	-
Trifolium hirtum	Rose clover	Nonnative	UPL	0.1	-
Veronica anagallis-aquatica	Water speedwell	Nonnative	OBL	-	<0.1

[1] Wetland indicator status based on the *National Wetland Plant List v3.5 Species Detail Tool* (USACE 2020).

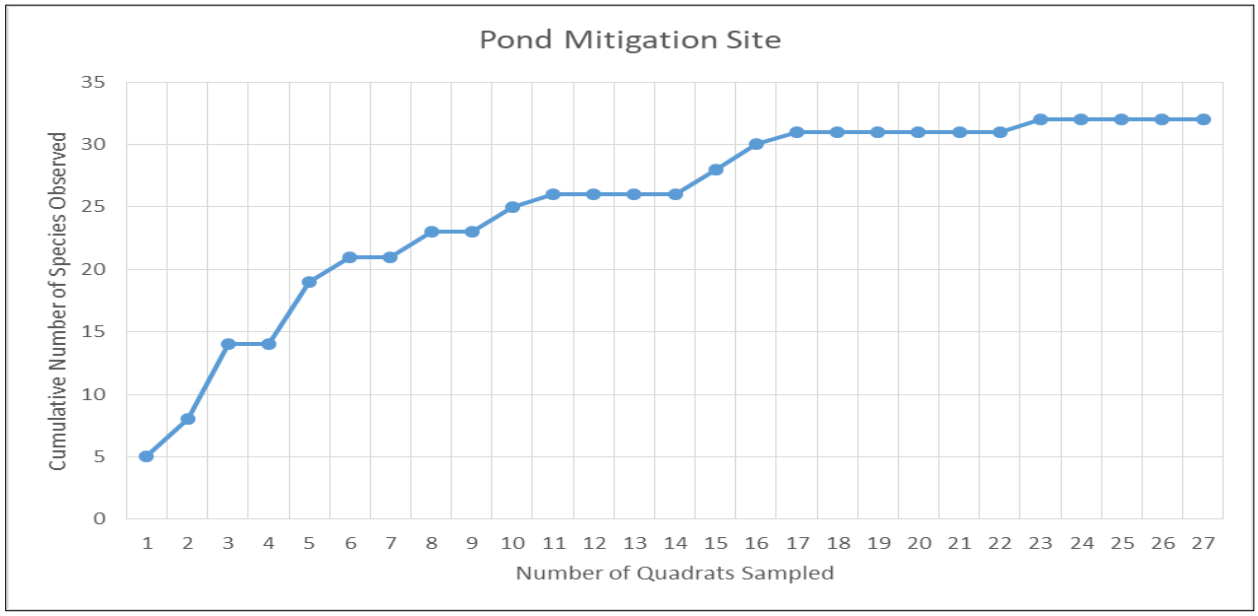

Figure A-1. Species Accumulation Curve for the Pond Mitigation Site in Year 6

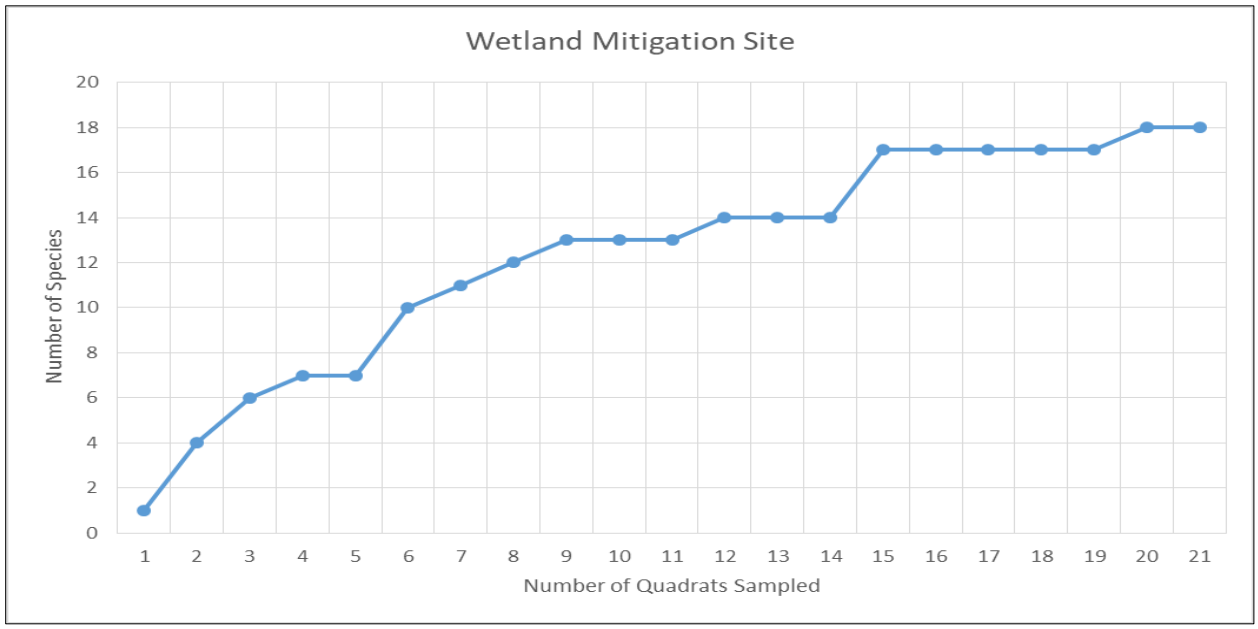

Figure A-2. Species Accumulation Curve for the Wetland Mitigation Site in Year 6

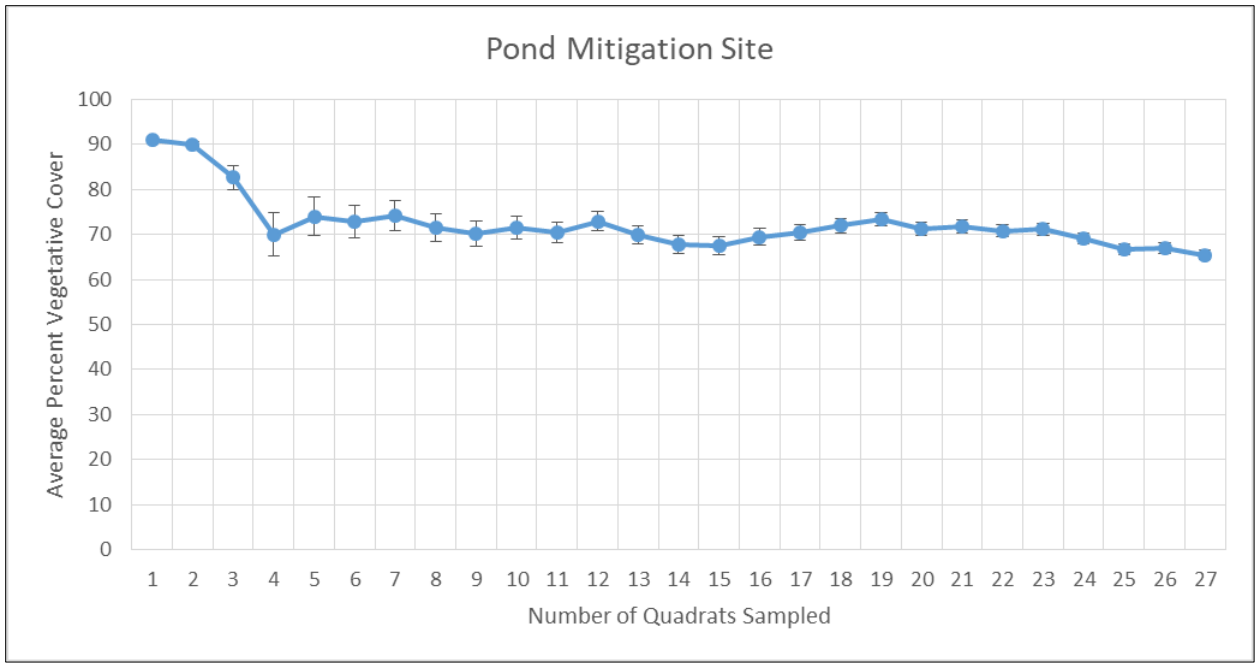

Figure A-3. Average Cover (± Standard Error of the Mean) as a Function of the Number of Quadrats Sampled at the Pond Mitigation Site in Year 6

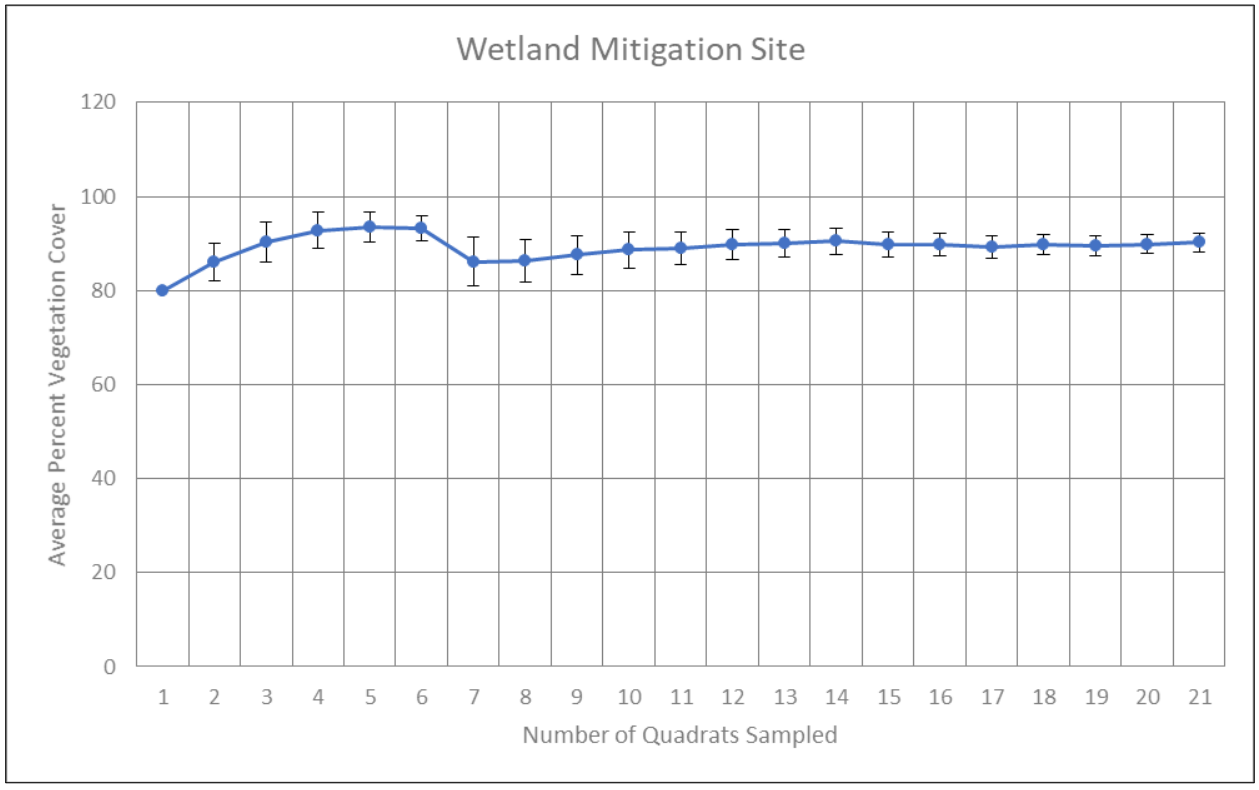

Figure A-4. Average Cover (± Standard Error of the Mean) as a Function of the Number of Quadrats Sampled at the Wetland Mitigation Site in Year 6

Sampling intensity was determined to be sufficient for the pond and wetland mitigation sites by verifying that the average cover values were stable relative to the number of samples collected (Kershaw 1973). We concluded that the sampling effort was representative of the site and sufficient based on the stable average cover and low level of standard error in our results.

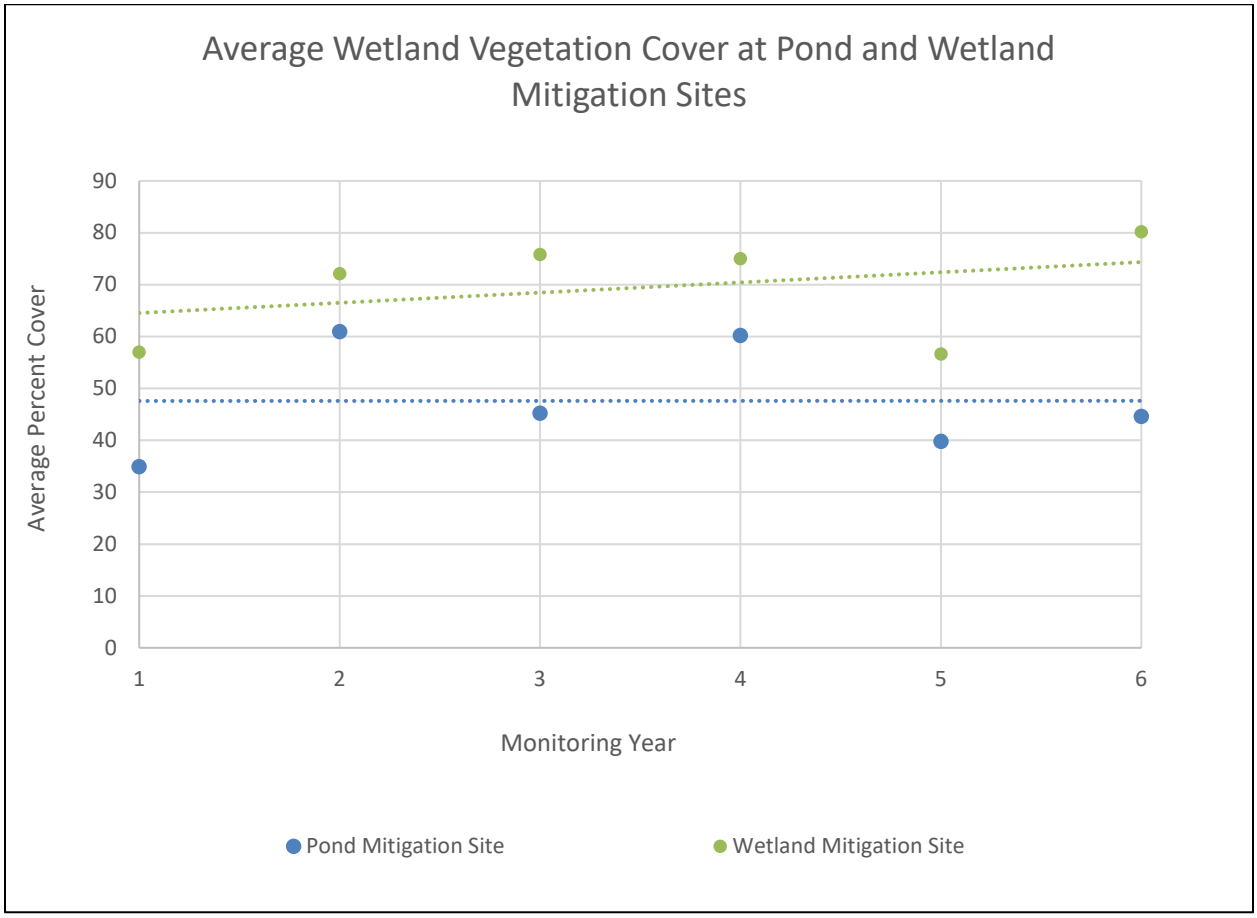

Figure A-5. Average Percent Cover of Wetland Vegetation at Pond and Wetland Mitigation Sites During Monitoring Years 1-6 and Trendlines

Appendix B. Year 5 Hydrologic Monitoring Report

cbec eco engineering

Hydrology | Hydraulics | Geomorphology | Design | Field Services

TECHNICAL MEMORANDUM

Date:	November 30, 2022
To:	Kate Drake, Max Busnardo (H. T. Harvey)
From:	Anna Hamilton, Chris Campbell, Sam Diaz
Project:	15-1030-5 – Calero Mitigation Site Monitoring
Subject:	Year 6 Monitoring Report (DRAFT)

1 INTRODUCTION

To support H. T. Harvey during the long-term and maintenance monitoring of the Calero County Park Pond and Wetland Restoration Project, cbec eco-engineering (cbec) provided ongoing hydrologic monitoring at the pond and wetland mitigation sites. This technical memorandum documents monitoring efforts through Year 6.

2 LONG-TERM MONITORING

cbec continuously measured pond and wetland water levels, direct rainfall, and pond seep inflows to monitor the hydrologic regime at the pond and wetland mitigation sites. Figure 1 shows the location of the gages and monitoring transects.

The hydrologic regime at both sites was monitored with the goal of observing water levels and inflows to understand if the hydrologic performance standards were being met. Those standards are: (1) at least two feet of water in the pond through August 31 in years with average to above average precipitation to support California red-legged frog and California tiger salamander breeding; and (2) minimal sedimentation at both mitigation sites documented through observational sedimentation and geomorphic stability monitoring (i.e., no repeat topographic cross section surveys).

2.1 HYDROLOGIC REGIME

To monitor the hydrologic regime, water level loggers were installed at four locations: pond outlet structure (including a barometer); pond seep trough; wetland weir; and upper wetland. Additionally, a weather station installed at the top of the pond outlet structure recorded air temperature, relative humidity, and direct rainfall using a tipping bucket. Monitoring equipment were originally installed on

January 27, 2017 and all of the equipment at the pond outlet structure was replaced on December 23, 2020 to include telemetry for remote monitoring. In anticipation of Year 7 monitoring, the rain gage was recalibrated on September 16, 2022 and the remote monitoring subscription was renewed.

2.1.1 INFLOW TO POND SITE

A rating curve was previously established to define the relationship between seep trough water levels and seep trough outflow to the pond. This rating curve was used to estimate seep contributions to the pond throughout each monitoring year. Additional flow measurements have been collected to verify the rating curve.

Table 1. Seep inflow rating curve

Height (ft)*	WSE (ft)	Time (sec)	V (ml)	Rate (cfs)	Notes
0.6	518.70	15	0	0.0000	just below bottom of outlet
0.58	518.72	15	125	0.0003	
0.55**	518.75	15	700	0.0022	near bottom of outlet
0.53	518.77	15	2150	0.005	
0.5	518.80	15	3725	0.009	~middle of outlet
0.48	518.82	15	4750	0.011	
0.46	518.84	15	6700	0.016	just below top of outlet
0.44	518.86	15	9325	0.022	above top of outlet
0.35	518.95	15	12000	0.028	lip of trough

*measured from top of stilling well pipe

**average of three measurements

2.1.2 PRECIPITATION

To understand local water year (WY) conditions, precipitation data near Gilroy was tabulated for a continuous 63-year period of record for WYs 1958 through 2021 and scaled to the project site. Table 2 includes the most current data since WY 2010 and a comparison to local precipitation measured at the pond in WYs 2017, 2018, 2019, 2020, 2021, and 2022. In Year 1 (i.e., WY 2017), precipitation was above normal and classified as a wet WY type. In Year 2, (i.e., WY 2018), precipitation was well below normal and classified as a very dry WY type and was the second driest of the previous 8 WYs, behind WY 2014. In Year 3, (i.e., WY 2019), precipitation was above normal and classified as a wet WY type; it was the wettest year since monitoring began post-construction. In Year 4 (i.e., WY 2020), the precipitation was classified as very dry and was the driest year of the last 30 years. This record was then broken in Year 5 (i.e. WY2021), which was again categorized as very dry with only 6.44 in of rain at the Gilroy gage. In Year 6 (i.e., WY2022), the precipitation was categorized as dry with 12.81 in of rain reported at the Gilroy gage.

Table 2. Annual precipitation totals by water year

Water Year	Gilroy COOP (inch)[1]	Gilroy Scaled (inch)[2]	Project Rain Gage (in)	Water Year Type[3]
2010	25.60	30.32	---	Wet
2011	22.08	26.15	---	Normal
2012	11.25	13.32	---	Dry
2013	14.69	17.40	---	Normal
2014	9.16	10.85	---	Very Dry
2015	14.69	17.40	---	Normal[8]
2016	17.96	21.27	---	Normal
2017	22.24	26.34	13.52[4]	Wet
2018	9.41	11.14	8.53[5]	Very Dry
2019	23.41[6]	27.72	29.67[7]	Wet
2020	8.21	9.72	NA[9]	Very Dry
2021	6.44[10]	7.63	7.77	Very Dry
2022	12.81	15.17	15.28	Dry
30-Minimum	6.44	7.63	7.77	
30-Maximum	34.23	40.54	29.67	
30-Average	18.36	21.69	14.95	

Notes:
[1] Gilroy COOP (043417-4) precipitation for WYs 1958 through 2021 (i.e., 64 years)
[2] Gilroy precipitation scaled to project site based on PRISM (OSC, 2012) 30-year rainfall normal using a scaling factor of 1.1842
[3] WY type (very wet, wet, normal (average), dry, very dry) designated based on reasonable exceedance probabilities (<0.10, ≥0.10, ≥0.33, ≥0.67, ≥0.90)
[4] Precipitation for WY 2017 is under reported as project rain gage was installed on 1/27/2017
[5] Project rain gage failed on 5/26/2018 and was not fixed until 11/7/2018; rain gage was recalibrated upon redeployment
[6] Rainfall data was missing for the Gilroy COOP gage for the months of November, December, March, April, and May for WY 2019. To estimate the missing data, monthly values for prior years (2008 to 2018) were correlated to San Jose COOP (047821).
[7] Rainfall data was under reported as project rain gage failed 3/22/2019 and not fixed until 11/26/2019
[8] By addition of WY 2020 data, the WY type for WY 2015 was reclassified as this WY is within 0.01 inches of being classified as Dry.
[9] Project rain gage fully failed and data was not recoverable.
[10] Gilroy recorded an erroneous precipitation depth for the month of September. The value was confirmed erroneous by nearby gages and removed from the analysis.

2.1.3 FIELD VISITS AND INSTRUMENT MODIFICATIONS

The following field modifications have been made to the gages in previous monitoring years and are reflected in the data. In mid-July of WY 2017 (likely 7/17/2017), the water level logger cabling snapped in

the upper wetland, sinking the water level logger to the bottom. Water levels were adjusted with a -0.05 ft offset to reflect the logger elevation change in mid-July. All water level gages were restrung with stainless steel wire on October 5, 2017. This caused a second datum shift in the upper wetland gage of +0.22 ft, which was confirmed by a manual measurement at the time of download and measured water levels were adjusted accordingly.

In Year 3, monitoring and maintenance visits were made on March 22, July 30, November 1, and November 26 of 2019. During the July 30, 2019 monitoring visit, the pond water level logger cap broke during recovery, where it fell down the conduit and was stuck in several inches of sediment. The pond gage was not recovered until November 26, 2019 whereby it was verified that the pond gage was stuck in several inches of sediment. However, no datum correction was needed in the water level data. Due to the sedimentation in the stilling well, the slotted PVC well casing was replaced with new casing, wrapped in filter fabric to reduce sedimentation within the stilling well, and the pond gage was restrung on November 26, 2019. Further, the pond gage was exposed to moisture, which created artificial noise in the output, which was filtered by applying a moving average. Finally, a housing screen for the pond outlet valve and a staff plate were installed on the outlet structure by Confluence Restoration on November 12, 2019.

In Year 4, visits to monitor and maintain the project site were made on April 14 and October 9 of 2020. No further issues or corrections with the surface water gages were noted this year; however, the weather station that houses the rain and temperature gages failed. The data for these gages were lost upon attempts to recover the data due to issues with the microstation electronic board.

In Year 5, visits to monitor and maintain the project site were made on March 15, May 11, and September 30 of 2021. To address concerns from the prior year (cbec 2020), changes were made to the pond outlet structure gage and the wetland weir gage. On December 23, 2020, all the gages at the pond outlet structure were replaced with a telemetered weather station. The new weather station monitors pond water surface elevation and climatic conditions (i.e., precipitation and relative humidity). Additionally, the wetland weir gage was set approximately 1.5 ft below the previous gage elevation on January 12, 2021. This was to capture the surface and subsurface water levels during wetland drawdown.

In Year 6, monitoring and maintenance visits to the project site were made on March 23, July 14, and September 16 of 2022. Due to gage battery failure at the upper and lower wetland sites and the pond trough, data is missing for these gages between September 30, 2021 and November 24, 2021. These gages were subsequently replaced with temporary gages on November 24, 2021. During the July 14 field visit, it was noted that the logs near the spring box were replaced. Additionally, boulders were added at the trail upslope of the spring box to stabilize erosion from concentrated runoff. In anticipation of 2023 monitoring, the rain gage was cleaned and recalibrated on September 16, 2022 and the remote monitoring subscription was renewed.

2.1.4 POND MITIGATION SITE

During Year 1 (cbec, 2017), the pond maintained maximum capacity of 508.5 ft from January through early May when above normal (i.e., wet WY) precipitation and seep flows were contributing to the pond (Figure 2). The pond water levels drew down at a consistent rate starting in mid-May through mid-September,

which correlates to the dry season when the seep inflow decreases. By September 19, 2017, the pond was emptied to manage for invasive species (crayfish and bullfrogs).

In Year 2, water levels in the pond reached the maximum capacity at the end of March and steadily drew down thereafter, but at an increased rate beginning in June due to the rancher pumping from the seep trough. Pond water levels fell below the two-foot depth target early on July 12, 2018, and eventually became dry on August 26, 2018. The combination of a very dry WY and the rancher pumping from the water trough likely contributed to the pond drying out earlier than the success criteria.

In Year 3, the pond maintained maximum capacity from January through mid-April when above normal (i.e., wet WY) precipitation and seep flows were contributing to the pond (Figure 2). The pond water levels drew down at a consistent rate starting in early May through early September, which correlates to the dry season when the seep inflow decreases. On September 9, 2019, seep flow was completely diverted away from the pond to the water storage tank, which caused a slightly sharper drop in water level. Then, on October 30, 2019, the pond was emptied to manage for invasive species (crayfish and bullfrogs).

In Year 4, the pond never reached maximum capacity, but the maximum water level was observed on April 7, 2020 at 506.9 ft (Figure 2). This peak occurred at the only time of the year when the seep flow sustained maximum estimated flows. However, this is lowest peak water level since the start of monitoring due to recording the lowest annual rainfall depth in the past 30 years. Draw down of the pond started on a similar trajectory to that of Year 2, but again, the draw down rate increased with cattle access to the water trough. The seep flow was diverted on November 3, 2020 to control for invasive aquatic predators (i.e., crayfish), and restored on December 9, 2020. The pond completely dried out on July 26, 2020.

In Year 5, the pond site reached a maximum water level of 508.1 ft on January 30, 2021, which is below the full capacity elevation of 508.5 ft (Figure 2). The peak elevation was in response to the only major precipitation event of the year and receded without interruption until going dry on May 15, 2021. The seep flow remained directed toward the pond the entire year, but most of the water was likely intercepted by cattle drinking at the trough. The pond trough gage shows that the elevation fluctuations induced by cattle watering habits began as access to the pond diminished and the waterline receded out of their reach beyond the fenced-off section. This was the most notable period of cattle consumption of seep flows since the project construction. The data after May 11, 2021 in Year 5 was corrected to address a time zone mismatch when barometrically correcting the water level data.

In Year 6, the pond site maintained maximum capacity between the end of December 2021 and the end of January 2022. The pond reached a maximum water level of 508.85 ft on December 30, 2021. The peak elevation was in response to maximum precipitation levels and seep flows between the end of December 2021 and early January 2022 (Figure 2). The seep flow remained directed to the pond the entire year, but the water was intercepted by cattle drinking in the trough throughout the year, especially during the

spring months (Figure 2)[1]. The pond trough WSE began to fluctuate more in the summer months when 75% of the cattle were removed, and other water sources were introduced for the cattle to consume. Water levels were generally lower in the pond than previous years, indicating the pond did not fully recover after the draining of the pond in combination with the two prior drought years. This is supported by a similar decline in the upper wetland WSE as well as the seep inflow (Figure 2).

Regarding hydrologic performance standards, the pond exceeded a target water depth of at least two feet (i.e., 4.8 feet) through the end of August in Year 1. In Year 2, the water depth fell below the hydrologic performance standard. The pond did not fill to capacity and did not meet the two-foot water depth target for the end of August. As shown by Figure 2, there was an increase in the draw down rate of the pond water level at the beginning of June that corresponds to the period of time that the rancher started pumping from the water trough to water cattle. In addition to this increase in draw down rate, the fact that Year 2 was a very dry WY or well below normal (average) conditions largely contributed to not meeting the two-foot water depth target at the end of August. Year 3 did meet the hydrologic performance standard (i.e., 2.49 ft on August 31, 2019). As shown by Figure 2, there was an increase in the draw down rate of the pond water level at the end of June that corresponds to the period of time that the rancher started pumping from the water trough to water cattle. Years 4 and 5 did not meet the hydrologic performance standards because they were all very dry WYs or well below normal (average) conditions. This is due to both water years having the lowest recorded rainfall total in the last 30 years. Year 6 was also a dry year and did not meet the hydrologic performance standard. The pond was drained in the previous year, which in addition to being preceded by two very dry years, contributed to Year 6 not meeting the two-foot water depth target at the end of August. There was also additional stress in Year 6 from the consumption of water by the cattle seen in Figure 2.

2.1.5 WETLAND MITIGATION SITE

During Year 1 at the wetland site (Figure 3), the lower wetland was at maximum capacity through May and water levels decreased thereafter as seep inflow and rainfall decreased in the dry season. Water levels were below the outlet sill invert elevation, and no water was diverted from the lower wetland to the cattle trough from June 2017 for the remainder of Year 1.

In Year 2, the lower wetland water levels remained low and were responsive to two small rainfall events occurring in January and March/April. It should be noted that the lower wetland gage was reading dry for most of Year 2 (i.e., water levels below the gage). Despite the gage reading dry, moist soil conditions were still observed in portions of the lower wetland during dry season visits on October 3, 2018 and November 7, 2018. The moist conditions were in part created by flows over the upper wetland berm to the lower wetland. Even with the upper wetland water levels being consistently elevated throughout the first two years, the flows over the upper wetland berm were likely reduced in Year 2 due to the drier conditions,

[1] Personal communication via email with the farmer confirmed that "the existing water sources would not have been adequate to support a full stocking rate for the summer. [The farmer] removed 75% of the cattle for the summer as forage was short due to drought conditions. Additionally, [the farmer] tapped into the municipal water supply and installed 4 new concrete water troughs as well as improving an old trough with a new concrete trough. As such, the water supply is very reliable now with the upgrades and municipal water source."

and coupled with well below normal precipitation, the lower wetland was significantly drier than Year 1. It should be noted that seep flow downslope of the lower wetland has been repeatedly observed (including the 10/3/2018 field visit) on the exposed hillside on approach to the Almaden-Calero Canal. It is hypothesized that the inflow to the lower wetland during these drier conditions is being conveyed subsurface.

Observations from Year 3 revealed that the upper wetland pond generally maintained full capacity for the entire year. On October 16, 2018, the pond was drained for predator control but quickly refilled over the course of a month due to seep inflow. The lower wetland gage read dry outside of the time period between January 6, 2019 to April 9, 2019. However, moist soil conditions were still observed downstream of the pond spill over toward the weir on field visits as late as November 1, 2019. Also, seep flows that surface on the hillside approach to the Almaden-Calero Canal were still being observed.

In Year 4, the upper wetland pond remained above the berm spill over elevation until June 28, 2020, where it dropped below the berm elevation for the first time since monitoring started. However, the water level only dropped below the berm by no more than ~0.03 ft (Figure 3). The earthen outlet of the pond was still heavily saturated, which indicates water was likely still seeping into the adjacent lower wetland area. The constructed portion of the lower wetland was again reading dry for most of the year, with wet stints in December and April. Regardless, other areas of the lower wetland remained saturated without standing water as late as the field visit on October 9, 2020, despite the very dry water year conditions.

In Year 5, the upper wetland pond remained at or above the elevation of the spill over berm until June 11, 2021, when it was drained for control of invasive aquatic predators (i.e. bullfrogs) (Figure 3). The draining of the upper wetland pond can also be seen in the wetland weir gage record by the spike in water surface elevation on June 11, 2021. Because the year has been exceptionally dry, the upper wetland pond refilled slower than the previous drain in Year 3. The time to an equilibrium water level increased from approximately 1 month to approximately 3 months. Additionally, the resetting of the lower wetland weir gage captured more data on the hydroregime of the lower wetland. The data revealed that the lower wetland generally held groundwater at an elevation of 559.6 ft, which is approximately 0.3 ft below the ground elevation. This water level held until the lack of rain let the water table fall below the gage elevation of 558.5 ft on April 9, 2021. It is uncertain how previous years would have looked given the historically dry conditions in Year 5. While the lower wetland went dry in early April, there was still inundation near the outlet of the upper wetland pond as late as the field visit in May of 2021. This further demonstrates the potential for groundwater pathways to bypass the lower wetland from the upper pond during the dry season as hypothesized in Year 2 (cbec 2018).

In Year 6, the upper wetland pond remained below the elevation of the spill over berm until December 26, 2021 where it rose above the spill berm elevation, and then fell back down below the spill over berm elevation for the remainder of the water year (Figure 3). Because Year 6 was a dry year preceded by two very dry years in Year 4 and 5, the upper wetland pond was unable to maintain capacity seen in previous years. Lack of rain allowed the water table at the lower wetland weir to remain below the gage elevation of 558.5 ft until December 4, 2021 when precipitation levels were high enough to bring the water table back above the gage elevation. The lower wetland generally held groundwater at an elevation of 559.4

until May 2021 when the lack of precipitation allowed the water table to fall below the gage elevation again on April 26, 2022.

2.2 SEDIMENTATION AND GEOMORPHIC STABILITY

In Year 1, cbec surveyed a total of 8 transects (i.e., six for the pond site and two for the wetland site) and compared these to the as-built surfaces to monitor sedimentation at both sites (Figures 4 to 7). The pond transects generally showed little to no change between the as-built survey and current conditions. The western side of the pond site outlet berm experienced slumping but was repaired prior to the survey (Figure 4). Additionally, a portion of the eastern part of the berm north of the outlet slumped (Figure 5). This section was left "as is" because it was assessed that vegetation would naturally stabilize this section. The wetland transects generally showed elevations 0.4 ft (4.8 inches) below as-built elevations, which were likely attributed to both cow and human disturbances within the wetland site and potential settlement of soils that were minimally compacted during construction.

In Year 2, cbec did not resurvey the 8 transects per the monitoring plan schedule. Rather, general observations are provided. At the pond, after it had dried out, potential sedimentation was observed at the lowest point of the pond adjacent to the gated culvert at the base of the outlet structure. The pond bed was approximately 0.7 feet above the invert of the gate. A sample hole showed that there was approximately 0.8 feet of soil on top of the bentonite layer. Considering that the bottom of the pond was designed to have 0.5 feet of soil placed over the bentonite, there has been approximately 0.1 feet of sedimentation accompanied by potential swelling of the bentonite. Given that this was the first year that cattle were allowed at the pond, the sedimentation in the deepest portions of the pond may be due to increased suspended sediment generated by the cattle at water's edge. Sedimentation will be confirmed in the Year 3 transect surveys.

In Year 3, cbec resurveyed the 8 transects from Year 1 (Figures 4 to 7). An effort to maintain the same stationing was made to accurately compare from year to year. Cross sections showed good agreement between Year 1 and Year 3. As observed in Year 2, the pond site did see minor sedimentation. Sedimentation up to 1.5 ft occurred on Alignment B (Figure 4) and was localized to the pond outlet structure, likely sourced from cattle and human activity in the wet, unvegetated portions of the pond. Additionally, there was minor slumping on Alignment B – North (Figure 5) in 2017; however, the slumping has since been stabilized by the emergence of vegetation on the slope. Alignment D (Figure 6) was changed since the as-built survey. The upper wetland site was generally unchanged but did see some sedimentation in the ponded portion (~0.6 ft compared to as-built survey).

In Year 4, cbec did not resurvey the 8 transects per the monitoring plan schedule. Similar to Year 2, general observations were made in regard to the geomorphic stability of the project. Sedimentation continued to gather in lowest sections of the pond near the outlet structure. Given the approximately 0.7 ft of sedimentation that was observed in Year 2 and the maximum of 1.5 ft that was observed in Year 3, there had been little to no appreciable sedimentation in Year 4 (cbec 2020). Contribution of sediment from cattle grazing likely continued and maintenance of the outlet structure also caused a small, localized pile

of sediment (cbec 2020) in Year 4. Areas that previously experienced slumping remained unchanged. No sources or evidence of sedimentation were noted in the pond of the upper wetland. Banks on the lower basin of the upper wetland were cracking due to the clay's expansion and contraction. This is an expected characteristic of the clay and has continued to be monitored for signs of slumping.

In Year 5, cbec resurveyed the 8 transects from Years 1 and 3 (Figures 4 to 7). Similar to previous years, the same points and stationing were maintained to produce comparable datasets. While the cross section comparisons generally show little to no geomorphic changes from WY 2019 to WY 2021, the top of bank of the lowest section of the pond site was particularly vulnerable to cattle trampling this year. The top of bank of the lower section of the pond was lowered by an additional 0.8 ft on Alignment A (Figure 4), 0.4 ft on Alignment B – North (Figure 5), and 0.3 ft on Alignment C (Figure 6) compared to the 2019 survey. The top of bank of the lower pond section on Alignments B and C also coincides with the deepest extent to which cattle have access to the pond for watering. Given the low amount of rainfall this year, cattle were likely in this area at a higher density and for a longer portion of the wet season. Additionally, the excessively dry soil this year likely performed worse at the grade breaks on all three alignments because this is also the interface of the native soil and the bentonite layer, which is prone to cracking in these dry conditions. The sedimentation from these cattle-induced changes appear to be a localized rebalancing of the soil resulting in a flattening of the lower pond slope. As a result of the reduction of anchoring sediment or shallow embedment depth, one "T" post supporting the cattle exclusion fence was no longer imbedded in the soil (Figure 8). These changes are localized and do not significantly affect the storage and surface area characteristics of the lower pond, and they are expected considering the frequency that cattle pressure these areas. Additionally in wetter conditions, this helps generate the turbid conditions that CTS need for cover. Alignment B also shows deviation on the dry side of the outlet levee; however, this is due to a difference in survey point location as the RTK could no longer locate satellites under the expansion of the tree canopy. Finally, no changes were noted on Alignments E and F (Figures 7).

During the September 2021 field visit, cbec also observed soil cracks at the top of bank in the lower wetland (Figure 9). While surveying the alignments at the wetland site, representative cross sections of the crack were also surveyed. This revealed that the cracks were no deeper than 0.5 ft deep, which corresponds to the depth of native soil filled on top of the bentonite layer used to seal the lower wetland at the transition back to existing grade. Therefore, it was assessed that the cracks are an aesthetic issue that does not compromise the ability of the lower wetland to hold water.

In Year 6, cbec did not resurvey the eight transects per the monitoring plan schedule. Rather, general observations are provided. Cracks along the grade transition in the lower wetland have remained stable. Sedimentation at the springbox was cleared in August and October. A portion of the north end of the berm fence line remains unimbedded in the soil and has worsened since the previous year (Figure 8). The crest of the berm has ground squirrel burrows (Figure 10) that should be addressed as their length and depth below the crest are unknown and present potential piping of water through the berm that could trigger berm failure (Van Vuren et. al., 2014). New logs were installed in the channel upstream of the spring box after the field visit in March 2021 (Figure 11). The logs are helping catch debris that would otherwise flow into the seep pipe and springbox.

Overall, these results demonstrate that the pond and wetland mitigation sites continued to show minimal sedimentation since Year 1 and are geomorphically stable.

3 MAINTENANCE MONITORING

On a quarterly basis, cbec conducted qualitative observations and photo documentation of site conditions. In Year 1, maintenance items included repairing the slumped western slope of the pond berm north of the outlet culvert and increasing the weir elevation of the pond outlet structure to match the design; both repairs were observed to be in good condition in Year 2. Also, in Year 1, a portion of the pond bank slope slumped just north of the pond outlet structure on Alignment B – North with the decision to leave as-is; it appears to be revegetating.

Based on observations from Year 1 through Year 6, cbec suggests the following annual maintenance and monitoring considerations:

- Annual maintenance:
    - Clean debris from logjams before rainy season and check that flow is not undermining the logs. Repair if necessary.
    - Clean out the spring box and uphill seep channels to optimize seep flow to the pond.
    - Clean out the pond troughs once a year in the Fall to reduce accumulated silt.
    - Minimize human impacts to pond side slopes and bentonite liner during invasive species removal while pond soils are saturated.
- Monitoring considerations:
    - Erosion of the roadway / trail upslope from the springbox caused deposition throughout the drainage all the way downslope to the springbox during WY 2019 and has continued in smaller amounts through WY 2022. Continuing to clean out the trail gravel from the site upstream of the springbox would be advised.
    - The constructed portion of the lower wetland has only been heavily saturated along its length in the "wet" Years 1 and 3. Consider redirecting the upper wetland spill-over location to the northwest corner of the upper wetland so the water has a longer flow path through the lower wetland to enhance the hydroregime and vegetation response for drier years. Given that Years 4, 5, and 6 were very dry conditions, this consideration should be re-evaluated after 2023 inundation and vegetation response.
    - Ground squirrel burrowing activities should continue to be monitored along the pond berm and lower wetland slopes, especially in drier WYs when pond water levels are lower, to confirm that hydrologic integrity is not being compromised. Monitoring should include more rigorous accounting of burrow presence and condition from year to year.
    - Tighten the barbed wire fence at the pond by anchoring taller "T" posts with spades deeper and reconnecting the barb wire, which should better resist upward tension and cattle pressure.

- If possible, and desirable to accomplish habitat management goals, when draining the upper wetland pond in dry years, refill the pond with the water that was pumped out to rapidly restore its hydrologic conditions. Consider pumping into a portable water bladder.
- Monitor gage battery life during downloads and expect to replace all gages every 5 years. The gages can have varying lifespans, but all gages should be replaced at the first sign of malfunction from a single gage to prevent data loss.

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Appendix C. Wetland Delineation Forms

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Calero County Park Pond/Wetland Restoration City/County: San Jose/Santa Clara Sampling Date: 5/20/2021

Applicant/Owner: Santa Clara Valley Habitat Agency State: CA Sampling Point: P1

Investigator(s): Kate Drake, Zachery Gizicki Section, Township, Range: NA

Landform (hillslope, terrace, etc.): pond edge Local relief (concave, convex, none): Concave Slope (%): 2:1

Subregion (LRR): C-15 Lat: 37°11'16.09"N Long: 121°48'37.43"W Datum:

Soil Map Unit Name: Alumrock-Zeppelin complex, 9 to 15 percent slopes NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:

Drought year. Recently restored wetland (Year 5).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: ____)			
1. Juncus effusus	15	Yes	FACW
2. Festuca perennis	48	Yes	FAC
3. Sonchus asper	10	No	FAC
4. Rumex crispus	5	No	FAC
5. Bromus hordeaceus	2	No	FACU
6. Polypogon monspeliensis	4	No	FACW
7. Carex serratodens	1	No	FACW
8. Hemezonia congesta	10	No	UPL
	100 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum ____ % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	63	x 3 =	189
FACU species	4	x 4 =	16
UPL species	13	x 5 =	65
Column Totals:	100 (A)		310 (B)

Prevalence Index = B/A = 3.1

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

Herb stratum continued: Hordeum murinum (2%; FACU), Bromus madritensis (2%; UPL), Carduus pycnocephalus (1%; UPL)

SOIL

Sampling Point: P1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12"	10YR 2/1	98	10YR 5/6	2	C	M	clay loam	gravelly/dry
12-18"	10YR 3/2	93	10YR 7/6	2	C	M	clay loam	gravelly/dry
			10YR 7/2	5	D	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ **No** _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ✓ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ✓ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Previous observations of ponding would indicate saturation to this point during wet season.
Crayfish remains ~ 70' away
Water mark at pond
Soil cracking ~25' toward center of pond

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Calero County Park Pond/Wetland Restoration City/County: San Jose/Santa Clara Sampling Date: 5/20/2021

Applicant/Owner: Santa Clara Valley Habitat Agency State: CA Sampling Point: P2

Investigator(s): Kate Drake, Zachery Gizicki Section, Township, Range: NA

Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): Concave Slope (%): 30

Subregion (LRR): C-15 Lat: 37°11'16.07"N Long: 121°48'37.32"W Datum:

Soil Map Unit Name: Alumrock-Zeppelin complex, 9 to 15 percent slopes NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks:

Drought year. Recently restored wetland (Year 5).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 10' radius)			
1. Bromus madritensis	20	Yes	UPL
2. Festuca perennis	50	Yes	FAC
3. Bromus diandrus	6	No	UPL
4. Sonchus asper	4	No	FAC
5. Bromus hordeaceus	4	No	FACU
6. Avena fatua	2	No	UPL
7. Epilobium brachycarpum	1	No	FAC
8. Hemezonia congesta	2	No	UPL
	98 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum ____ % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	3	x 2 =	6
FAC species	57	x 3 =	171
FACU species	6	x 4 =	24
UPL species	32	x 5 =	160
Column Totals:	98 (A)		355 (B)

Prevalence Index = B/A = 3.62

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

Herb stratum continued: Hordeum murinum (2%; FACU), Rumex crispus (2%; FAC), Carduus pycnocephalus (1%; UPL), Juncus effusus (3%; FACW), Geranium dissectum (1%; UPL)
Ground squirrel burrows 4' from sample point

SOIL

Sampling Point: P2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18"	10YR 2/1	96	2.5Y 6/3	4	C	M	clay loam	very gravelly in upper 5"

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Ground squirrel burrows in plot

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Calero County Park Pond/Wetland Restoration City/County: San Jose/Santa Clara Sampling Date: 5/20/2021

Applicant/Owner: Santa Clara Valley Habitat Agency State: CA Sampling Point: P3

Investigator(s): Kate Drake, Zachery Gizicki Section, Township, Range: NA

Landform (hillslope, terrace, etc.): gentle slope at pond edge Local relief (concave, convex, none): Concave Slope (%): 3

Subregion (LRR): C-15 Lat: 37°11'17.52"N Long: 121°48'37.53"W Datum:

Soil Map Unit Name: Alumrock-Zeppelin complex, 9 to 15 percent slopes NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ✓, Soil ____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks:

Drought year. Recently restored wetland (Year 5).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 10' radius)			
1. Hordeum murinum	50	Yes	FACU
2. Festuca perennis	60	Yes	FAC
3. Juncus effusus	7	No	FACW
4. Phalaris aquatica	3	No	FACU
5.			
6.			
7.			
8.			
	120 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum ____ % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	7	x 2 =	12
FAC species	60	x 3 =	180
FACU species	53	x 4 =	212
UPL species	0	x 5 =	0
Column Totals:	120 (A)		406 (B)

Prevalence Index = B/A = 3.4

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

Area grazed by cattle. Drought year after several drought years - we assume vegetation community would be hydrophytic in a normal rain year with higher cover of FAC and FACW species.

SOIL

Sampling Point: P3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18"	10YR 2/1	98	10YR 6/6	2	C	M	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ **No** _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ **No** ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Adjacent waterline below this sample point topographically. Indicators of active hydrology in this seasonal wetland likely masked due to drought. Was delineated with three parameters in 2016.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Calero County Park Pond/Wetland Restoration City/County: San Jose/Santa Clara Sampling Date: 5/20/2021

Applicant/Owner: Santa Clara Valley Habitat Agency State: CA Sampling Point: P4

Investigator(s): Kate Drake, Zachery Gizicki Section, Township, Range: NA

Landform (hillslope, terrace, etc.): gentle slope at pond edge Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR): C-15 Lat: 37°11'17.52"N Long: 121°48'37.53"W Datum:

Soil Map Unit Name: Alumrock-Zeppelin complex, 9 to 15 percent slopes NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:

Drought year. Recently restored wetland (Year 5).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 6' radius)			
1. Hordeum murinum	30	Yes	FACU
2. Festuca perennis	20	Yes	FAC
3. Juncus effusus	40	Yes	FACW
4. Phalaris aquatica	2	No	FACU
5. Polypogon monspeliensis	6	No	FACW
6. Lythrum hyssopifolium	1	No	OBL
7.			
8.			
	99 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum ____ % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	1	x 1 =	1
FACW species	46	x 2 =	92
FAC species	20	x 3 =	60
FACU species	32	x 4 =	128
UPL species	0	x 5 =	0
Column Totals:	99 (A)		281 (B)

Prevalence Index = B/A = 2.84

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

Area grazed by cattle

SOIL

Sampling Point: P4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18"	10YR 2/1	98	10YR 5/8	2	C	M	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ **No** _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ✓ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ✓ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Water marks on nearby rocks and fence post

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Calero County Park Pond/Wetland Restoration City/County: San Jose/Santa Clara Sampling Date: 4/14/2022

Applicant/Owner: Santa Clara Valley Habitat Agency State: CA Sampling Point: P5

Investigator(s): Zachery Gizicki Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 2

Subregion (LRR): C-15 Lat: 37.188151°N Long: 121.810410°W Datum: WSG84

Soil Map Unit Name: Alumrock-Zeppelin complex, 9 to 15 percent slopes NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation ✓, Soil _____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

Drought year. Recently restored wetland (Year 6).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5 ft)			
1. Festuca perennis	50	Yes	FAC
2. Bromus hordeaceus	3	No	FACU
3. Hordeum murinum	40	Yes	FACU
4. Phalaris aquatica	5	No	FACU
5. Avena fatua	1	No	UPL
6. Bromus diandrus	1	No	UPL
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 1 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	50	x 3 =	150
FACU species	48	x 4 =	192
UPL species	2	x 5 =	10
Column Totals:	100 (A)		352 (B)

Prevalence Index = B/A = 3.52

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

Severe drought year following several drought years. Upland grassland vegetation has taken the opportunity to colonize the margins of the previously delineation wetland, leading to scores just under a hydrophytic vegetation community. Assume would be hydrophytic vegetation in a year with normal rainfall.

SOIL

Sampling Point: P5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-19"	10YR 2/1	100					silty clay	fine roots 0-5"

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

Just outside margin of previously delineated (2016) wetland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Calero County Park Pond/Wetland Restoration City/County: San Jose/Santa Clara Sampling Date: 4/14/2022

Applicant/Owner: Santa Clara Valley Habitat Agency State: CA Sampling Point: P6

Investigator(s): Zachery Gizicki Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 40

Subregion (LRR): C-15 Lat: 37.188174°N Long: 121.810242°W Datum: WSG84

Soil Map Unit Name: Alumrock-Zeppelin complex, 9 to 15 percent slopes NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

Drought year. Recently restored wetland (Year 6).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5 ft)			
1. Festuca perennis	15	Yes	FAC
2. Bromus hordeaceus	15	Yes	FACU
3. Hordeum murinum	15	Yes	FACU
4. Erodium botrys	4	No	FACU
5. Avena fatua	1	No	UPL
6. Brassica nigra	3	No	UPL
7. Centaurea solstitialis	1	No	UPL
8. Caduus pycnocephalus	1		UPL
	55 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 45 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 0	x 2 = 0
FAC species 15	x 3 = 45
FACU species 34	x 4 = 136
UPL species 6	x 5 = 30
Column Totals: 55 (A)	211 (B)

Prevalence Index = B/A = 3.84

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

SOIL

Sampling Point: P6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12"	10YR 4/1	100					sandy cla	very rocky - lots of gravels

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

Very rocky soil, distinctly lighter and more upland in character than the wetland soils at the toe of slope.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Calero County Park Pond/Wetland Restoration City/County: San Jose/Santa Clara Sampling Date: 5/20/2021

Applicant/Owner: Santa Clara Valley Habitat Agency State: CA Sampling Point: W1

Investigator(s): Kate Drake, Zachery Gizicki Section, Township, Range: NA

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR): C-15 Lat: 37°11'20.64"N Long: 121°48'23.64"W Datum: WSG84

Soil Map Unit Name: Montara-Santerhill Complex, 15 to 30% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✓ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil ✓, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓ No _____	
Wetland Hydrology Present?	Yes ✓ No _____	

Remarks:

Drought year. Recently restored wetland (Year 5).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 6' radius)			
1. Polypogon monspeliensis	60	Yes	FACW
2. Festuca perennis	15	No	FAC
3. Eleocharis macrostachya	5	No	OBL
4. Juncus patens	10	No	FACW
5. Bromus hordeaceus	1	No	FACU
6.			
7.			
8.			
	91 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	70	x 2 =	140
FAC species	15	x 3 =	45
FACU species	1	x 4 =	4
UPL species	0	x 5 =	0
Column Totals:	91 (A)		194 (B)

Prevalence Index = B/A = 2.13

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: W1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14"	10YR 2/1	98	10YR 5/8	2	C	M	clay loam	very gravelly

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Bentonite clay

Depth (inches): 14

Hydric Soil Present? Yes ✓ No ___

Remarks:

Hit installed bentonite clay layer at 14" - did not want to puncture bentonite layer

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ✓ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ___

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

In a depressional area

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Calero County Park Pond/Wetland Restoration City/County: San Jose/Santa Clara Sampling Date: 6/2/2021

Applicant/Owner: Santa Clara Valley Habitat Agency State: CA Sampling Point: W2

Investigator(s): Kate Drake, Zachery Gizicki Section, Township, Range: NA

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): Concave Slope (%): 3

Subregion (LRR): C-15 Lat: 37.189024 Long: -121.806518 Datum: WSG84

Soil Map Unit Name: Montara-Santerhill Complex, 15 to 30% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✓ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

Drought year. Recently restored wetland (Year 5).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. Festuca myuros	40	Yes	FACU
2. Festuca perennis	3	No	FAC
3. Bromus hordeaceus	30	Yes	FACU
4. Sisyrinchium bellum	8	No	FACW
5. Juncus effusus	4	No	FACW
6. Epilobium ciliatum	2	No	FACW
7. Rumex crispus	1	No	FAC
8. Elymus triticoides	1	No	FAC
	94 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	1	x 1 =	1
FACW species	14	x 2 =	28
FAC species	5	x 3 =	15
FACU species	71	x 4 =	284
UPL species	3	x 5 =	15
Column Totals:	94 (A)		343 (B)

Prevalence Index = B/A = 3.65

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

Herb stratum continued: Leptosiphon liniflorus (1%; UPL), Eschscholzia californica (1%; UPL), Acmispon americanus (1%; UPL), Carex obnupta (1%; OBL), Hordeum murinum (1%; FACU)
Sample point placed outside of wetland depression

SOIL

Sampling Point: W2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-18"	2.5Y 3/2	100					loamy sa	very rocky/gravelly - serpentenit
								OM 0-2"

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

Hit installed bentonite clay layer at 14" - did not want to puncture bentonite layer

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Some minimal cracking but due to slump vs hydrology.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Calero County Park Pond/Wetland Restoration City/County: San Jose/Santa Clara Sampling Date: 6/2/2021

Applicant/Owner: Santa Clara Valley Habitat Agency State: CA Sampling Point: W3

Investigator(s): Kate Drake, Zachery Gizicki Section, Township, Range: NA

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope (%): 0-4%

Subregion (LRR): C-15 Lat: 37.189159 Long: -121.806214 Datum: WSG84

Soil Map Unit Name: Montara-Santerhill Complex, 15 to 30% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✓ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:

Drought year. Recently restored wetland (Year 5).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. Eleocharis macrostachya	50	Yes	OBL
2. Festuca perennis	2	No	FAC
3. Sparganium eurycarpum	12	No	OBL
4. Sisyrinchium bellum	10	No	FACW
5. Juncus effusus	2	No	FACW
6. Carex barbarae	12	No	FAC
7. Leptosiphon liniflorus	1	No	UPL
8.			
	89 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	62	x 1 =	62
FACW species	12	x 2 =	24
FAC species	14	x 3 =	42
FACU species	0	x 4 =	0
UPL species	1	x 5 =	5
Column Totals:	89 (A)		133 (B)

Prevalence Index = B/A = 1.49

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: W3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16"	10YR 2/1	98	10YR 6/2	2	D	M	clay loam	roots/OM = more moisture in u

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Bentonite clay

Depth (inches): 16

Hydric Soil Present? Yes ✓ No ___

Remarks:

Hit installed bentonite clay layer at 16" - did not want to puncture bentonite layer.
Rocky soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ✓ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ✓ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ___

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Topographic depression

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Calero County Park Pond/Wetland Restoration City/County: San Jose/Santa Clara Sampling Date: 6/2/2021

Applicant/Owner: Santa Clara Valley Habitat Agency State: CA Sampling Point: W4

Investigator(s): Kate Drake, Zachery Gizicki Section, Township, Range: NA

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 2

Subregion (LRR): C-15 Lat: 37.189159 Long: -121.806187 Datum: WSG84

Soil Map Unit Name: Montara-Santerhill Complex, 15 to 30% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✓ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

Drought year. Recently restored wetland (Year 5).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 30' radius)			
1. Baccharis pilularis	10	Yes	UPL
2. Frangula californica	2	No	UPL
3.			
4.			
5.			
	12 = Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. Eriogonum nudum	15	Yes	UPL
2. Festuca perennis	2	No	FAC
3. Bromus hordeaceus	20	Yes	FACU
4. Sisyrinchium bellum	8	No	FACW
5. Juncus effusus	4	No	FACW
6. Festuca myuros	15	Yes	FACU
7. Leptosiphon liniflorus	1	No	UPL
8. Eschscholzia californica	2		UPL
	80 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	12	x 2 =	24
FAC species	2	x 3 =	6
FACU species	39	x 4 =	156
UPL species	34	x 5 =	170
Column Totals:	92 (A)		361 (B)

Prevalence Index = B/A = 3.92

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

Herb stratum continued: Phalaris aquatica (3%; FACU), Acmispon americanus (3%; UPL), Hordeum murinum (1%; FACU), Eleocharis macrostachya (5%; OBL), Avena fatua (1%; UPL)

SOIL

Sampling Point: W4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16"	2.5Y 3/2	100					sandy loa	very rocky/gravel serpentine

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Calero County Park Pond/Wetland Restoration City/County: San Jose/Santa Clara Sampling Date: 4/14/2022

Applicant/Owner: Santa Clara Valley Habitat Agency State: CA Sampling Point: W5

Investigator(s): Zachery Gizicki Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Foot of hillslope Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): C-15 Lat: 37.189082°N Long: 121.806179°W Datum: WSG84

Soil Map Unit Name: Alumrock-Zeppelin complex, 9 to 15 percent slopes NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:

Drought year. Recently restored wetland (Year 6). Sample point beneath large dead tree branch. Hydric soils assumed from hydrophytic vegetation and hydrology.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 5 ft)			
1. Frangula californica	20	Yes	UPL
2.			
3.			
4.			
5.			
	20 = Total Cover		
Herb Stratum (Plot size: 5 ft)			
1. Carex serratodens	5	No	FACW
2. Carex praegracilis	40	Yes	FACW
3. Eleocharis macrostachya	4	No	OBL
4. Erythrante guttata	2	No	OBL
5.			
6.			
7.			
8.			
	51 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 49 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	6	x 1 =	6
FACW species	45	x 2 =	90
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	20	x 5 =	100
Column Totals:	71 (A)		196 (B)

Prevalence Index = B/A = 2.76

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: W5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ **No** _____

Remarks:

Hydric soils assumed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ✓ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ✓ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

In a topographic depression