2025 ANNUAL REPORT
WETLAND VEGETATION AND WILDLIFE MONITORING

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Prepared for:
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Terracon

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FINAL 2025 ANNUAL REPORT
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SACRAMENTO DISTRICT
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SACRAMENTO, CA 95814-2922

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ACRONYMS AND ABBREVIATIONS

C	Celsius
CCG	Contra Costa goldfields
cm	centimeter(s)
CTS	California tiger salamander
DQO	Data Quality Objective
FAC	Facultative Plant
FACU	Facultative Upland Plant
FACW	Facultative Wetland Plant
fairy shrimp	California fairy shrimp
FNU	Formazin Nephelometric Units
ft^2	square feet
Harris	Harris Environmental Group Inc.
Harris-Terracon	Harris Environmental Group Inc. and Terracon Consultants Inc. Team
HLA	Harding Lawson and Associates
HMP	Habitat Management Plan
m	meter(s)
MEC	Munitions and Explosives of Concern
mg/L	milligram per liter
NCEI	National Centers for Environmental Information
NL	Not Listed
NOAA	National Oceanic and Atmospheric Administration
NS	Not surveyed
NWS	Monterey National Weather Service

NWSFO	National Weather Service Forecast Office
OBL	Obligate Wetland Plant
PBO	Programmatic Biological Opinion
RACs	rank abundance curves
RTK	real-time kinematic
SVL	snout-vent length
sp.	species
Terracon	Terracon Consultants Inc. (formerly Burleson Consulting Inc.)
UPL	Obligate Upland Plant
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
UXO	Unexploded Ordnance
Wetland Plan	Wetland Monitoring and Restoration Plan for Munitions and Contaminated Soil Remediation
%	percent

1 INTRODUCTION

The United States Army Corps of Engineers (USACE) contracted Harris Environmental Group Inc. (Harris). and subcontractor Terracon Consultants, Inc. (Terracon) to conduct wetland monitoring at former Fort Ord, Monterey County, California (see Figure 1-1). Wetland monitoring includes three types of monitoring: hydrologic, wildlife, and vegetation. These monitoring activities are centered around vernal pools on former Fort Ord.

The Harris-Terracon team monitored hydrologic and water quality conditions, wetland wildlife, and wetland vegetation. Hydrologic monitoring parameters include area of inundation, pH, turbidity, temperature, dissolved oxygen and photo point documentation. Wetland wildlife monitoring includes surveys for aquatic invertebrates and protocol-level California tiger salamander (*Ambystoma californiense*; CTS) surveys. Wetland vegetation surveys include species identification, vegetative stratum evaluation, vegetative strata mapping, transect sampling and documentation of Contra Costa goldfields (*Lasthenia conjugens*; CCG). These monitoring requirements are documented in the *Installation-wide Multispecies Habitat Management Plan* (HMP), the *Programmatic Biological Opinion for Cleanup and Property Transfer Actions Conducted at the Former Fort Ord, Monterey County, California* (PBO); and the *Wetland Monitoring and Restoration Plan for Munitions and Contaminated Soil Remedial Activities at Former Fort Ord* (Wetland Plan) (USACE, 1997; USFWS, 2017; Burleson, 2006).

This report presents the results of 2025 monitoring within reference vernal pools 5, 101 East (East), and 997; and remediated vernal pools 21 and 76 (see Figure 1-2 and Figure 1-3). Populations of CCG were mapped and evaluated at Pond 997. Invertebrate and protocol-level CTS wetland sampling surveys were completed for Ponds 5, 101 East (East), 997, 21, and 76 during the 2024-2025 water year.

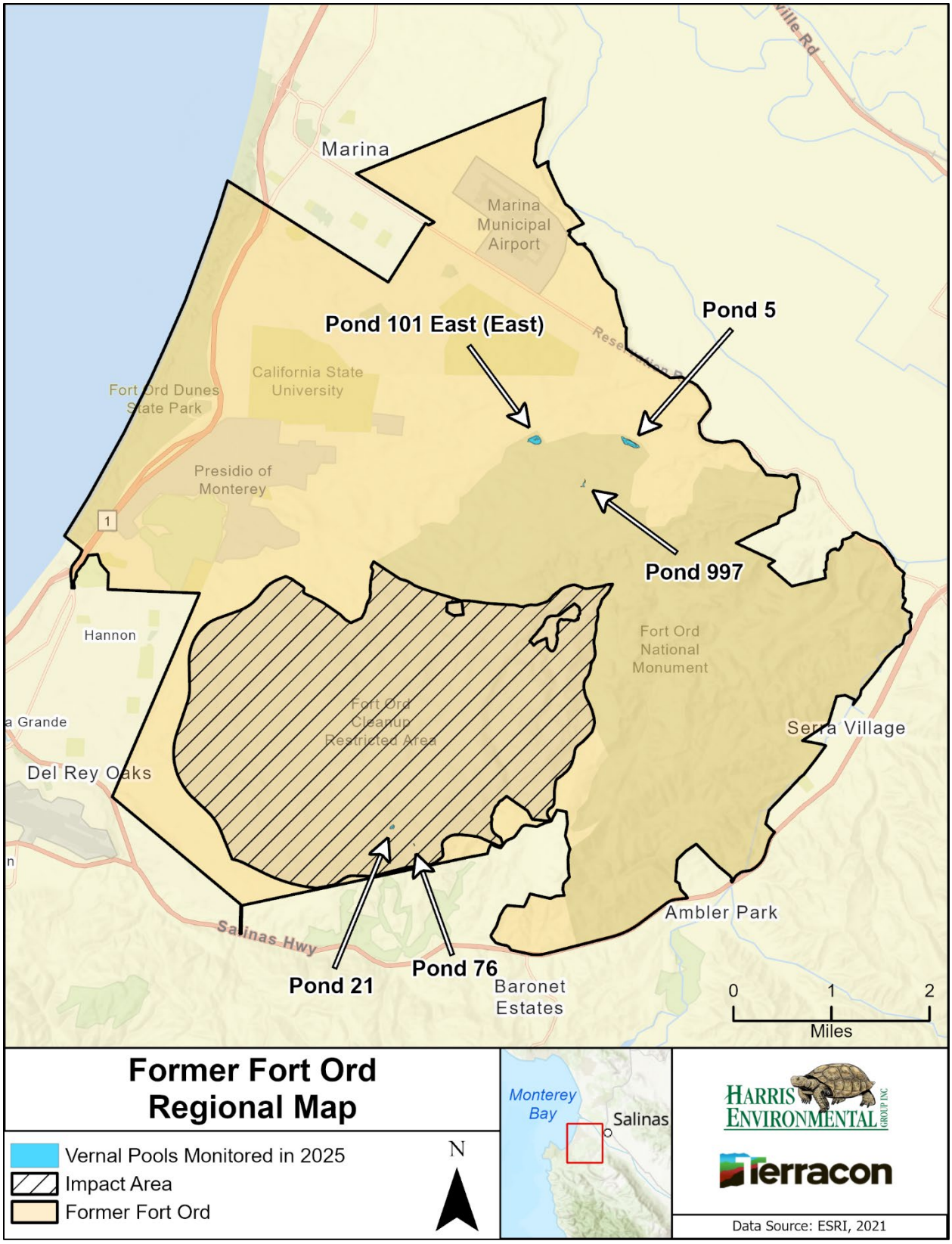

Figure 1-1. Location map of vernal pools on former Fort Ord monitored in 2025.

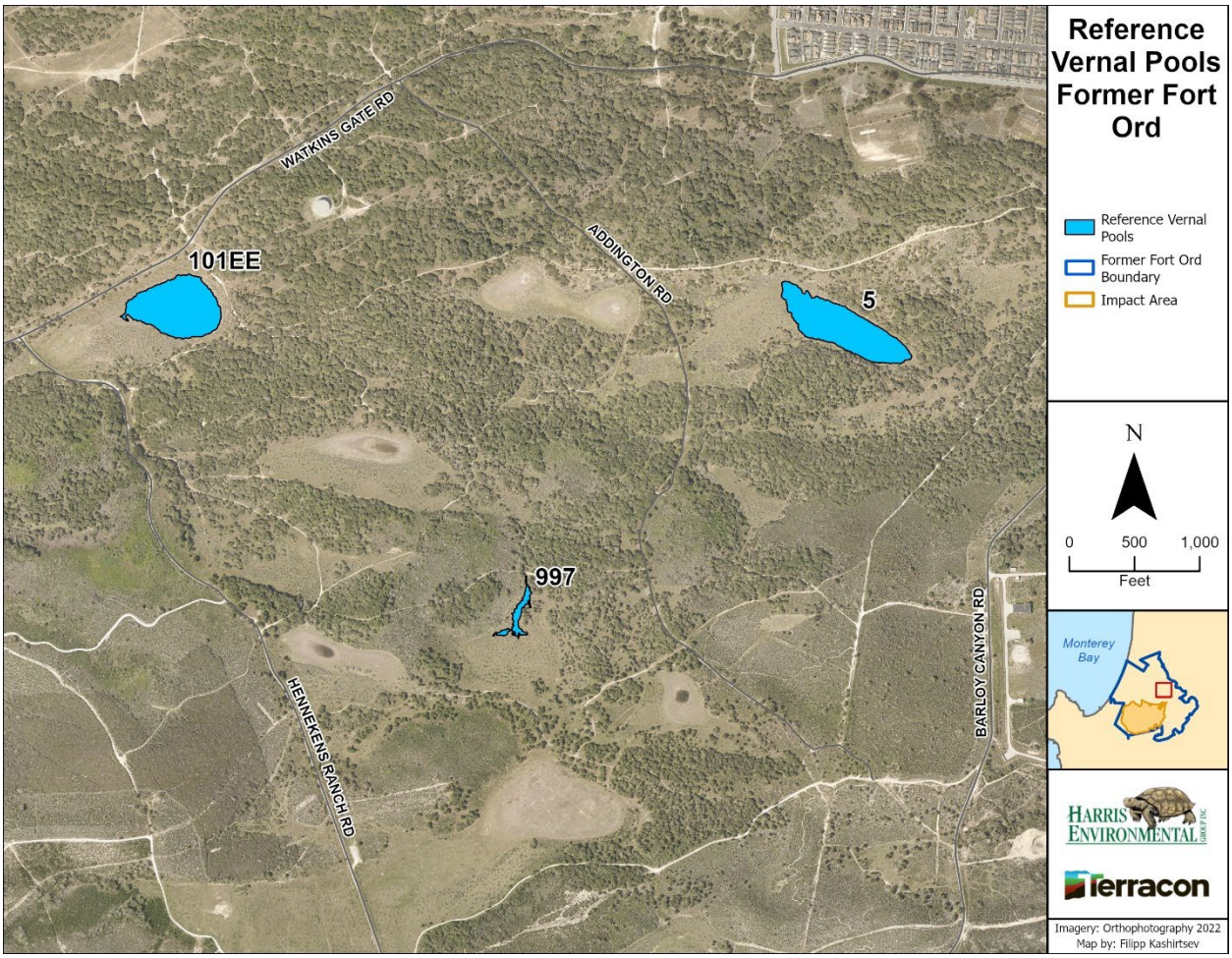

Figure 1-2. Location map of Reference Ponds 5, 101 East (East), and 997.

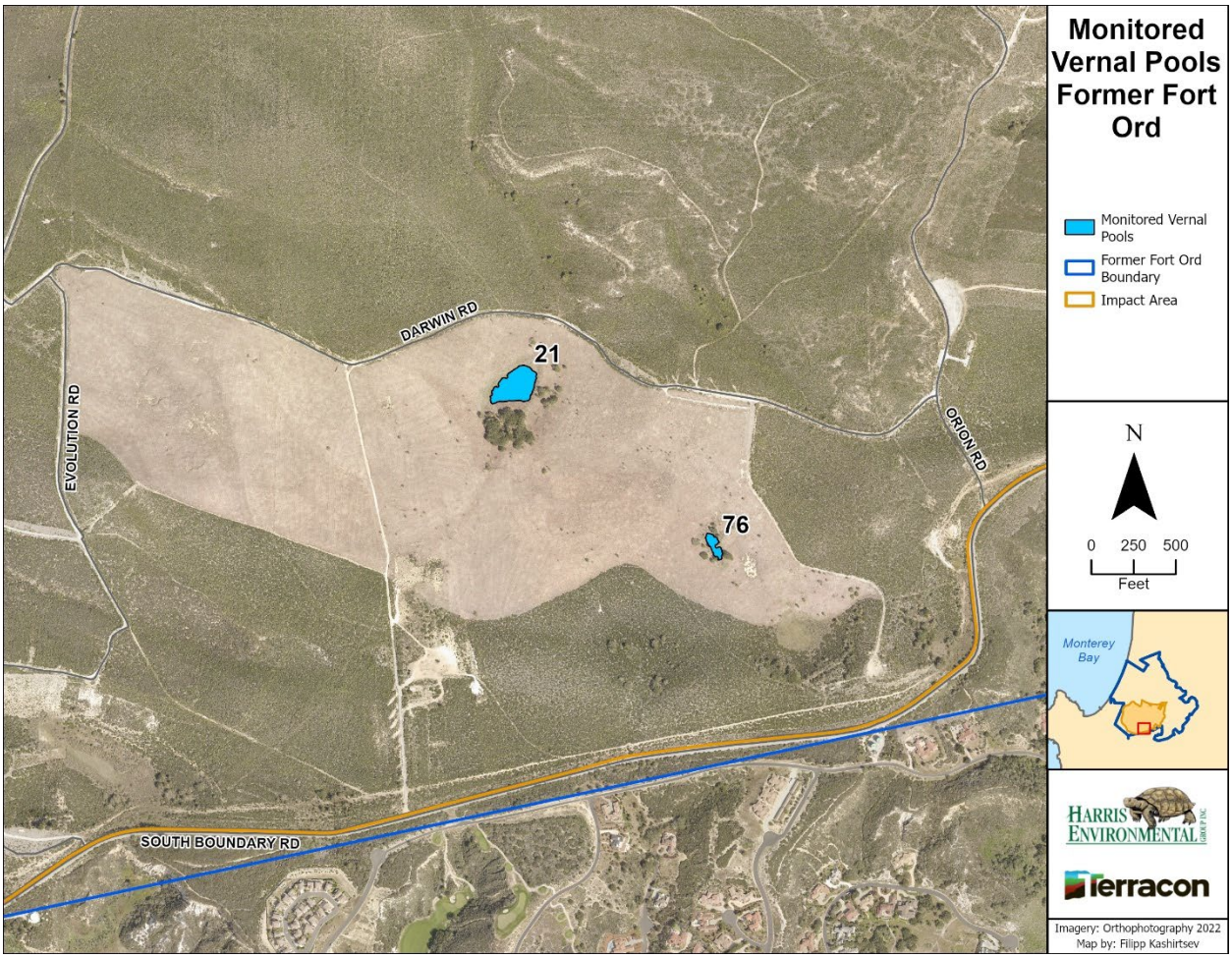

Figure 1-3. Location map of monitored Ponds 21 and 76.

During the 2024-2025 water year, the National Centers for Environmental Information of the National Oceanic and Atmospheric Administration (NCEI NOAA) meteorological tower located at the Monterey Peninsula Regional Airport recorded cumulative precipitation 11.6 centimeters (cm) less than the 30-year normal (NCEI NOAA, 2024-2025; see Figure 1-4). After a nearly entirely dry October, rainfall was within 1 cm of normal through November and December but then dropped off to more than 7 cm less than normal in January. This was followed by slightly above-normal precipitation in February and March, then less than normal precipitation through August. By September, there was a slight spike in rainfall that brought the typically dry month slightly above average (see Figure 1-5). Overall, total cumulative precipitation was 25% less than normal in 2024-2025.

The Monterey Peninsula Regional Airport meteorological tower (NCEI, NOAA) is located approximately two miles southwest of Site 39 on former Fort Ord. Nearly all 2024-2025 values in this report are from the Monterey Peninsula Regional Airport tower; however there were nine days of temperature data missing in November and May. Data from the nearby Monterey National Weather Service (NWS) tower was used to supplement this data. The NWS tower is located approximately 0.4 miles west-northwest from the NCEI tower.

The National Weather Service Forecast Office (NWSFO) determines normal rainfall based on a 30-year average. Since the 2021 annual report, normal rainfall was updated resulting in some water years being recategorized based on their relationship to normal. The normal dataset used for comparison in this report is from the NWSFO tower and is defined as the mean precipitation from years 1991-2020. Water years are categorized as normal if cumulative precipitation was within one inch of the NWSFO normal. The two water years that were recategorized were 1998-1999 and 1999-2000, which changed from below normal to normal.

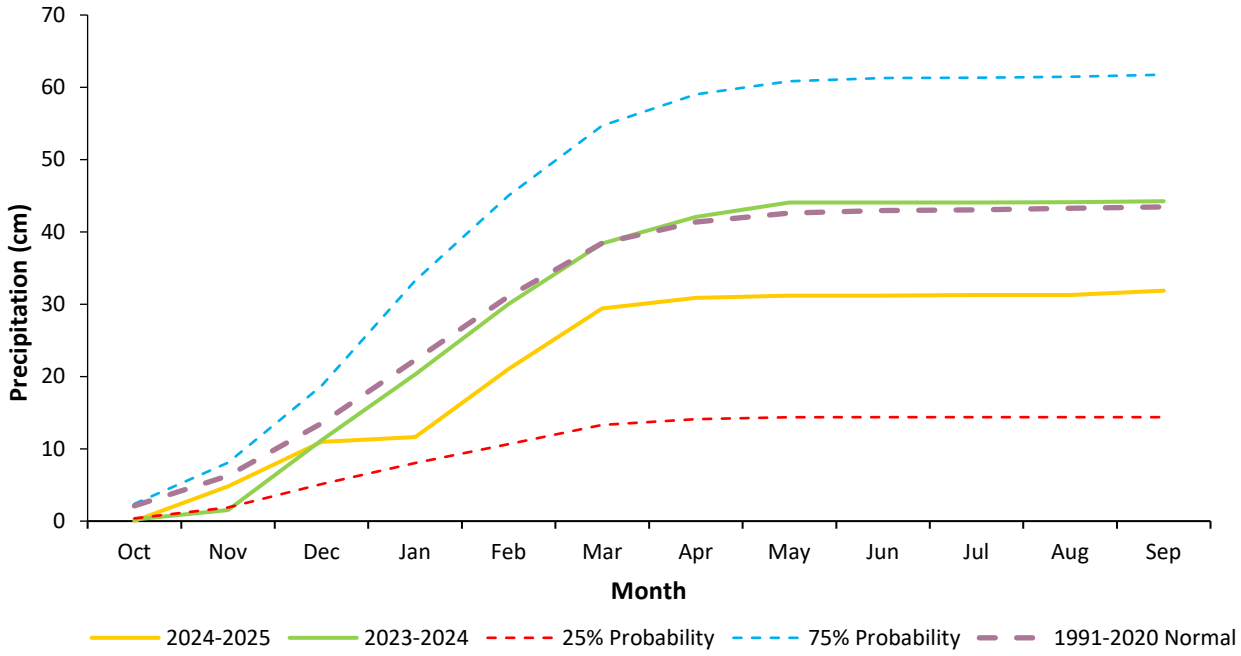

Figure 1-4. Cumulative monthly precipitation for the 2024-2025 water year compared to the 30-Year normal (mean 1991-2020), the 2023-2024 water year, and the 25%* and 75%* probabilities (NCEI NOAA, 2024-2025).

* The 25% probability indicates that there is a 25% chance that the actual precipitation will fall below that amount; and the 75% probability indicates that there is a 75% chance that the actual precipitation will fall below that amount.

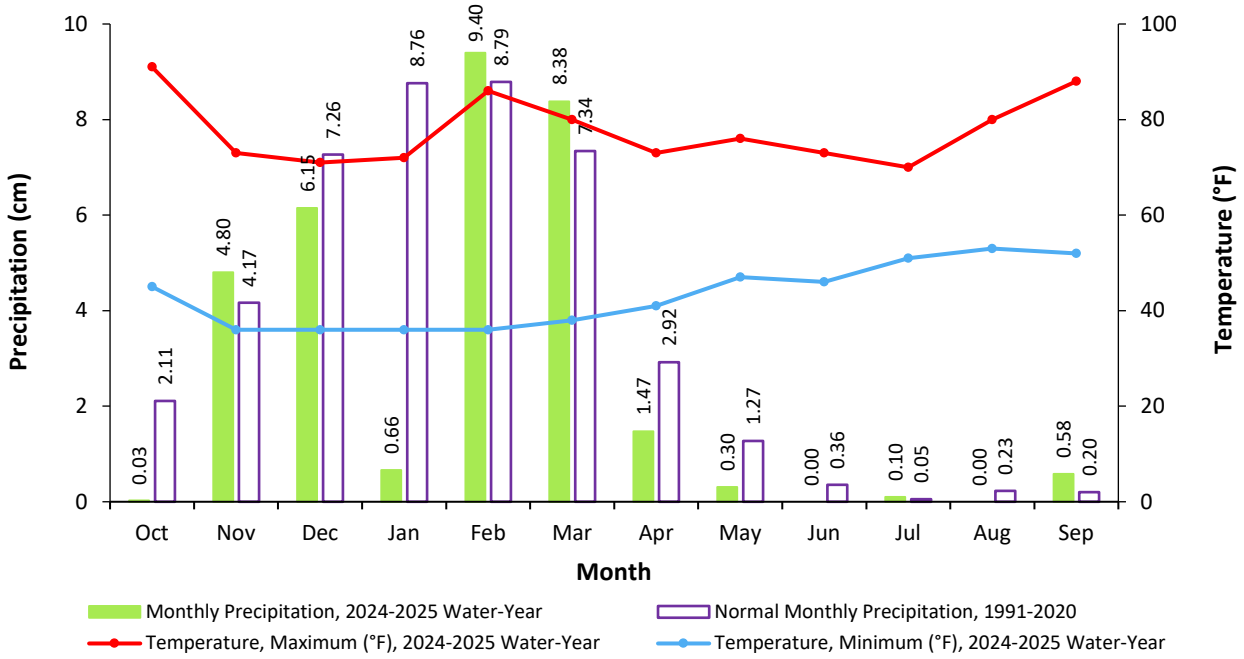

Figure 1-5. Monthly precipitation, maximum and minimum temperatures for the 2024-2025 water year and normal monthly precipitation (NCEI NOAA, 2024-2025).

The goal of hydrologic, wildlife, and wetland vegetation monitoring efforts is to evaluate vernal pools potentially affected by remediation activities against success criteria identified in the HMP, PBO, and Wetland Plan (USACE, 1997; USFWS, 2017; Burleson, 2006). The Wetland Plan outlines the Data Quality Objectives (DQO) used to evaluate success criteria for this report. The DQOs focus on vernal pool depth, inundation, vegetation, water quality, and wildlife. The PBO outlines success criteria specifically for CTS and CCG. Reestablishment of these species will be considered successful if, at the end of monitoring, wetland function, wildlife usage, wetland plant cover, diversity and dominance, and CCG abundance are directly comparable to the conditions before remediation. Monitoring results guide decision-making to evaluate if and when corrective actions are necessary and to provide insight into potential mitigation or evaluation of monitoring methodologies. The objectives of monitoring were to document the ability of vernal pools to support CTS and California fairy shrimp (*Linderiella occidentalis*; fairy shrimp), understand hydrologic function and water quality conditions, document baseline conditions, and provide data for follow-up comparison. Table 1-1 presents the status of vernal pools monitored in 2025 at former Fort Ord.

Table 1-1. 2025 monitoring status of vernal pools on former Fort Ord.

Vernal Pool	Monitoring Status
Pond 21	Year 3 Post-Mastication and Post-Subsurface Munitions Remediation
Pond 76	Year 3 Post-Mastication, Year 2 Post-Subsurface Munitions Remediation
Pond 5	Reference
Pond 101 East (East)	Reference
Pond 997	Reference

2 METHODS

Sampling methods for wetland vegetation monitoring and wetland wildlife surveys were consistent with the PBO and Wetland Plan (USFWS, 2017; Burleson, 2006).

Vernal pools must be monitored for baseline condition prior to any remedial activities such as prescribed burns, mastication, excavation, or artificial draining. As described in the PBO, the Army will conduct two years of pre-activity larval CTS sampling, to the extent possible, in the vernal pools where more than 50% of the watershed is affected by prescribed burns; thus, vernal pools may be monitored multiple years for baseline (USFWS, 2017).

Vernal pools are then monitored following any remedial activity for three to five years depending on the type of disturbance. Post-burn monitoring occurs in vernal pools if more than 50% of the watershed of a vernal pool is affected and is conducted annually for the first three years following a burn (USFWS, 2017). Although not specifically indicated in the PBO, the Army applies the same standard to vernal pools where more than 50% of the watershed was masticated, but no mastication of vegetation occurred within the inundation area. If vegetation is mowed within the inundation area, the vernal pool is monitored for vegetation in the first, third, and fifth years, following mastication (Burleson, 2006). Vernal pools where subsurface munitions remediation activities disturbed less than 10 ft^2 and were shallower than four feet deep are monitored in the first, third, and fifth years, following remediation, whereas vernal pools with greater and/or deeper disturbance are monitored annually for five years following remediation (Burleson 2006). In cases of vernal pools where more than one type of remedial activity occurred, the most stringent monitoring frequency is followed. Three reference vernal pools that were not remediated are also monitored for comparison on an annual basis.

Ponds 21 and 76 were investigated for geophysical anomalies that potentially represented munitions and explosives of concern (MEC) items in 2022 and 2023, respectively. They had subsurface munitions remediation less than the 10 ft^2 threshold (KEMRON, 2023). Ponds 5, 101 East (East), and 997 were monitored as reference vernal pools.

2.1 Hydrologic Monitoring

Biologists measured pH, turbidity, temperature, dissolved oxygen, vernal pool depth and inundated area. Care was taken to not cloud the water upon approach to the water quality measurement location. Biologists waited about one minute before taking measurements in order to allow the water to return to undisturbed conditions. The probe was moved slowly in a circular stirring motion during the dissolved oxygen measurement in order to keep flow over the sensor. Dissolved oxygen was measured after recording the turbidity measurement to prevent the agitation from clouding the water. Water quality data were collected using a Hanna Instrument 9829 Multi-parameter Meter. The meter was calibrated prior to each data collection event (see Appendix A). Data were collected monthly between December and May, with January having no data collection due to lack of rainfall. Data collection for water quality ceased at the end of June or when vernal pools became completely dry, whichever came first. Water quality parameters were not surveyed (NS) when depth was insufficient. Depth and perimeter were measured until ponds were dry. These sampling methods are consistent with the PBO and Wetland Plan (Burleson, 2006). The staff gauge is located at the deepest point of the vernal pool. Water quality measurements were taken at the staff gauge, at mid-depth of the vernal pool unless otherwise noted. Mid-depth was dependent on the depth of the vernal pool during the time of monitoring.

The inundated surface area was mapped with a Juniper Systems Geode GNS3S Receiver with sub-foot accuracy using RTK (real-time kinematic) corrections. The perimeters of the vernal pools were mapped in their entirety, unless physically impossible due to safety risks. The perimeter only included ponded areas that had surface hydrologic connectivity to the ponded area at the staff gauge. Peripheral ponding was observed and documented but was not mapped. Areas were calculated from the resultant shapefiles using ArcGIS Pro (Esri, 2025b). Vernal pool depths were recorded from staff gauges placed in the deepest point of each pool, or in some cases peripheral ponds when other hydrologic parameters were measured at them. Photographs of each vernal pool were taken at established photo points.

2.2 Wildlife Monitoring

Following the HMP, PBO, and Wetland Plan, biologists conduct wetland wildlife surveys for CTS and fairy shrimp to assess impacts from remediation activities (USACE, 1997; USFWS, 2017; Burleson, 2006). Wildlife surveys are scheduled in March through May for CTS and February through May for fairy shrimp. The criterion used to identify suitable fairy shrimp habitat requires that a vernal pool retain an average of 10 cm of water for at least 18 consecutive days through May. However, even short-duration standing water may support fairy shrimp survival due to their dynamic life history in highly variable vernal pool systems. Because the survey objective is to determine presence/absence, the biologist retains discretion on survey timing and conditions, provided that CTS eggs are avoided. The criterion used to identify suitable CTS breeding habitat requires that a vernal pool retain an average depth of at least 25 cm from the first rain event through March (Burleson, 2006). Neither the criterion for CTS, nor the criterion for fairy shrimp were met at any pond in 2025, although fairy shrimp were still detected in two reference vernal pools.

Nets, boots, and other equipment were scrubbed with 10% diluted bleach solution and completely dried between monitoring different vernal pools and at the end of each day to reduce the possibility of spreading disease. Cleaning was conducted away from wetland wildlife resources, in bins and tubs set up on disturbed or developed roads to reduce contamination.

2.2.1 California Tiger Salamander

Survey methods for CTS followed the *Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander* (USFWS and California Department of Fish and Game, 2003) with modifications to maintain consistency of the data as described in the Wetland Plan. Some exceptions were made as needed: wetland wildlife sampling continued after initial detection and dip nets were used exclusively. Additional wetland wildlife sampling may be completed to provide additional insight into vernal pool function.

If CTS larvae had been collected, biologists would have used long-handled, fine-meshed (1/8th inch (3.2mm)), D-shaped dipnets to allow biologists to record individual metrics and derive an approximate CTS count for each vernal pool. All sites were sampled using dipnets to minimize wetland habitat disturbance as well as to maintain safety due to potential presence of unexploded ordnance (UXO). This methodology was chosen to allow direct comparison to past results. Depending on the extent of wetland habitat, two to six biologists sample each site. Biologists collected samples from each vernal pool until the habitat was adequately represented.

During years when CTS are found, biologists measure and record the total length and snout-vent length (SVL) of a subset of 30 individual CTS larvae collected. When the total number of CTS collected is less than 30, all individuals were measured. In instances where CTS are too small to determine SVL only,

total length is recorded. While no CTS were found this year, all other amphibian species encountered were identified and the total numbers recorded (see Appendix D Table D-1).

2.2.2 California Fairy Shrimp

Wetland wildlife sampling for fairy shrimp and other aquatic invertebrates was conducted using a fine-meshed dip net (1/16 inch (.16 cm)) and followed the *Interim Survey Guidelines to Permittees for Recovery Permits Under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods* (USFWS and California Department of Fish and Game, 1996). Representative portions of the bottom, edges, and vertical water column of each vernal pool were sampled. When fairy shrimp were present, the abundance was estimated after collecting 5-20 swipes throughout the vernal pool. The number of swipes relates to the size and complexity of the vernal pool and was consistent with the range of frequencies outlined in protocols from previous reports. More swipes occur at larger and/or more complex vernal pools than at small vernal pools. Following dip netting, the number of collected fairy shrimp were totaled and the abundance was reported as follows (see Appendix D Tables D-2 – D-3):

- Low abundance: 1 to 10 individuals;
- Moderate abundance: 11 to 100 individuals;
- High abundance: 101 to 300 individuals; and
- Very high abundance: greater than 300 individuals.

2.3 Vegetation Monitoring

Wetland vegetation surveys involve a variety of activities, including plant species identification, vegetative stratum evaluation, vegetative strata mapping, and transect sampling. Plant lists were created for each vernal pool concurrently with vegetative strata mapping and collection of transect and quadrat data. These data were collected between April 29 and May 8, 2025, after the vernal pools dried and the vegetation was sufficiently identifiable (see Appendices B, C, G, H, and I). Biologists visually assessed the historical vernal pool basins and identified homogeneous vegetative strata.

Vernal pool basins are defined by the hydrogeomorphic basin feature and vegetative communities that are distinct from the surrounding upland areas. Because the basins vary from year to year and from wet to dry weather cycles over decades, the center portions of the basins typically support wetland vegetation associations, whereas outer portions at the highest elevations may not. The basin may vary from year to year from a combination of factors that include the amount of precipitation and timing, the duration of inundation, decaying vegetation from the previous season, sediment load, soil chemistry, and other stochastic processes. For some vernal pools, these variables only minimally impact the vernal pool basin and for others, it can expand, contract, and change dramatically. The basin boundary is identifiable in the field because the hydrologic regime often precludes the presence of mature stands of upland tree and shrub communities within the basin boundaries. For vernal pools located within grasslands, basin boundaries are typically defined by a change from mesic grasses to monotypic stands of upland grasses.

For this report, vegetative strata refer to the different homogenous vegetative communities that are distributed around the vernal pools in a zonate pattern. These are characteristically concentric circles similar to a bullseye. Open water typically recedes towards the center through the dry season. Differing depths and duration of inundation result in suites of plant species which are organized into discernable zones. These can be readily differentiated and mapped. During the visual assessment, biologists

recorded the percent of submergent, emergent, and floating vegetative cover within the inundated areas when present. Inundated areas were characterized by the presence of standing water with wetland vegetation, whereas open water areas were characterized by standing water without vegetation. An upland stratum is characterized by upland species but is only mapped when it is within the vernal pool and therefore surrounded by wetland species, such as mima mounds. The upland transition on the periphery of the vernal pool is not mapped.

Strata were differentiated based on dominant species and overall species composition. The team used a stratified random quadrat method to collect data within each accessible stratum (Barbour *et al.*, 1980). When strata were inundated, vegetation was too dense or tall to enter, or in areas with safety concern due to potential MEC presence, visual cover data were estimated to define strata. In vernal pools that have been monitored using the same methodology in previous years, the transect locations were repeated when the strata were defined by the same dominant species and the transect locations were representative of the species composition for those strata. Otherwise, biologists placed a new transect in the most homogenous representative area for each accessible stratum. These were mapped using ArcGIS® Field Maps® along with a Juniper Systems Geode GNS3S Receiver with sub-foot accuracy using RTK (real-time kinematic) corrections (Esri, 2025a). Transects were 5 meters (m) or 10 m in length depending on stratum size. Biologists used a random number table to determine placement of a 0.25 m^2 quadrat along each transect. The quadrat was placed a minimum of three times for every 5 m of transect. Biologists recorded the absolute percent cover by plant species, thatch, and bare ground (see Appendix B). Species percent cover was averaged for each stratum of the sampled vernal pools (see Appendix C). Biologists mapped strata the same day as quadrat sampling using ArcGIS® Field Maps® and calculated absolute percent cover of the strata using ArcGIS Pro® (Esri, 2025b). In addition, photo points were taken to show the extent of each vernal pool for comparison with previous years (See Appendix E).

In addition to species identification on transects, a species list was recorded for each vernal pool basin. Most species were identified in the field using *The Plants of Monterey County, an Illustrated Field Key; Second Edition* (Matthews and Mitchell, 2015) and *The Jepson Manual: Vascular Plants of California, Second Edition* (Baldwin *et al.*, 2012). Plants were categorized as native, non-native, or unidentified (see Appendix G Tables G-1 – G-6. Additional categorization of the plants occurred to identify them as one of the following: obligate wetland (OBL), facultative wetland (FACW), facultative (FAC), facultative upland (FACU), obligate upland (UPL), or not listed (NL) (see Appendix G Tables G-7 – G-12) (Lichvar *et al.*, 2016). When species could not be identified in the field, samples were collected from the vernal pool (not from the quadrats) and identified in the office.

Contra Costa goldfields were mapped by creating polygons using ArcGIS® Field Maps® (Esri, 2025b). Absolute cover for CCG was visually estimated, as a percentage.

2.4 Evaluation for Data Quality Objectives and Success Criteria

Data quality objectives (DQO) and performance standards outlined in the Wetland Plan were used to measure successful wetland function following MEC and soil remediation activities (Burleson, 2006). DQOs can be summarized as follows:

- DQO 1: depth – average of 25 cm through March for CTS and average of at least 10 cm through May for fairy shrimp;
- DQO 2: inundation – consistent with baseline and similar to reference vernal pool trends;
- DQO 3: vegetation – similar hydrophytic vegetation as reference control wetlands;

- DQO 4: water quality – adequate for the presence of CTS and/or fairy shrimp; and
- DQO 5: wildlife – consistent with baseline and similar to reference control wetland trends.

Hydrologic conditions and inundation areas were assessed using DQO 1 and DQO 2. Hydrologic survey results were analyzed to evaluate if the vernal pool held a sufficient depth of water appropriate for CTS and fairy shrimp for the duration of the breeding season. Suitable CTS habitat was defined as a vernal pool that retains an average depth of at least 25 cm from the first rain event through March (Burleson, 2006). Suitable fairy shrimp habitat was defined as a vernal pool that retains an average depth of 10 cm for 18 consecutive days through May. Hydrologic results were compared to previous surveys and reference vernal pools to better understand if the vernal pool followed trends in inundation and function similar to the baseline and reference vernal pools. Water quality results were evaluated in a similar manner; however, the primary measure of adequate water quality was measured by the presence or absence of wildlife in DQO 4. Observed water quality parameters in vernal pools were variable. This is common due to the complex mechanisms contributing to water quality, such as air temperature, plant respiration rates, microbial community structure, and soil chemistry.

Plant cover and species diversity were assessed using DQO 3. Species diversity was assessed by examining species richness and species abundance. Wetland vegetation monitoring results were analyzed to identify whether the vernal pool was similar to baseline and reference vernal pools and if wetland function was consistent through time. The disturbed vernal pool should have the following characteristics by the end of the last year of monitoring:

- A number of native wetland species present in the vernal pool comparable to the number present in the vernal pool before MEC and contaminated soils removal or in control wetlands, and
- A relative dominance of native wetland species in the vernal pool comparable to the relative dominance in the vernal pool before MEC and contaminated soil removal or in control wetlands.

Wildlife usage was assessed using DQO 1, DQO 4, and DQO 5. The vernal pool was considered successful if the post-remediation wildlife usage was similar to pre-disturbance usage. The Wetland Plan indicates that a vernal pool which supported CTS and fairy shrimp prior to remediation activities should continue to support those species following such activities (Burleson, 2006). The presence or absence of wildlife was taken into consideration with regards to sufficient depth and inundation, described in DQO 1, as well as whether water quality was adequate to support wetland species, described in DQO 4.

In addition to the Wetland Plan, the PBO outlines the following success criteria specifically for CTS and CCG and were assessed in conjunction with the DQOs (USFWS, 2017). Species reestablishment will be considered successful if, at the end of monitoring, each of the following is directly comparable to the conditions before the start of work:

1. Wetland function, as measured by the parameters of hydrologic conditions (inundation area and depth, pH, temperature, dissolved oxygen levels);
2. Wildlife usage, specifically CTS larval presence;
3. Plant cover and wetland plant species diversity and dominance; and
4. CCG abundance.

Historical data for cumulative precipitation, physical characteristics, water quality, wetland vegetation, and wildlife presence or absence for all reference and post-remediation vernal pools were summarized by vernal pool. Vernal pool inundations were mapped and compared to the inundations in previous years at remediated and reference vernal pools. A historic outline of inundation and water quality compared to the precipitation year is provided in Appendix F with text and tables. Wetland vegetation was compared across years and to reference vernal pools based on the stratum, absolute percent vegetative cover, species richness, native plant species richness, relative percent native species cover, wetland plant species richness, relative percent wetland plant cover, and species composition (see Appendices G and H). Wildlife was evaluated using the presences or absences of CTS and fairy shrimp.

Rank-abundance curves (RACs) were generated to illustrate species composition and relative species abundance at the vernal pools. The species rank was plotted on the x-axis and the proportional abundance on the y-axis, with species identified using their species code. The RACs show the distribution of the species, relative abundance, species evenness, and species richness. They can characterize the species composition further than the community metrics such as the Shannon-Wiener diversity index or the species evenness index (Calow, 1999). We created rank abundance curves using the rank abundance function in the Biodiversity R package (Kindt, 2019). For RACs with species codes and individual years, the y-axis was put into log-10 scale and for the RACs with all years on one plot, the x-axis and y-axis were both in log-10 scale (see Appendix I).

3 RESULTS

Hydrologic surveys were conducted once per month from December 2024 through May 2025 at reference ponds 5, 101 East (East), 997, and post-remediated ponds 21 and 76. Measurable ponding was observed in reference ponds 5, 101 East (East), 997, and remediated pond 21. Remediated pond 76 remained dry during the 2024-2025 water year.

Vernal pool hydrologic conditions were characteristic of a below-normal precipitation year. Gradual filling occurred following a series of winter rain events with the majority of the precipitation and consequent inundation occurring February through March (NOAA, 2024-2025). Drying began in March and April. Of the four vernal pools that held water in 2025, two dried by April (Ponds 997 and 21), and the other two dried by May (Ponds 5 and 101 East (East)).

The minimum depth requirement for wildlife surveys was 10 cm and was based on the success criterion for fairy shrimp outlined in the Wetland Plan (Burleson, 2006). Ponds 21 and 76 hydrologic survey results indicated that CTS and fairy shrimp wildlife monitoring minimum depth requirements were not met in 2025. Although Ponds 5, 21, 101 East (East), and 997 did not meet the 18 consecutive days of 10 cm depth through May requirement, they still had sufficient depth to support fairy shrimp survival.

Vegetation monitoring was conducted at Ponds 5, 101 East (East), 997, 21, and 76. Across all monitored vernal pools, the mean number of native plant species was 19 and non-native species was 15 (see Table 3-1). Of these species, a mean of 20 were wetland species, either obligate (OBL), facultative wetland (FACW), or facultative (FAC) (see Table 3-2). In addition to vegetative strata mapping and transect surveys, the population of CCG was surveyed at Pond 997.

Table 3-1. Vegetation species richness of native and non-native species observed on transects at vernal pools monitored in 2025.

Vernal Pool	Monitoring Status	Native	Non-Native
Pond 5	Reference	14	12
Pond 101 East (East)	Reference	19	15
Pond 997	Reference	22	17
Mean (Reference)	-	**18**	**15**
21	Year 3 Post-Mastication and Post-Subsurface Munitions Remediation	27	11
76	Year 3 Post-Mastication, Year 2 Post-Subsurface Munitions Remediation	15	11
Mean (Remediated)	-	**21**	**11**
Mean (All)	-	**19**	**13**

Table 3-2. Vegetation species richness of obligate and facultative wetland species observed on transects at vernal pools monitored in 2025.

Vernal Pool	Monitoring Status	OBL	FACW	FAC	Wetland Species
Pond 5	Reference	4	9	5	18
Pond 101 East (East)	Reference	4	9	6	19
Pond 997	Reference	11	9	5	25
Mean (Reference)*	-	**6**	**9**	**5**	**21**
21	Year 3 Post-Mastication and Post-Subsurface Munitions Remediation	9	10	5	24
76	Year 3 Post-Mastication, Year 2 Post-Subsurface Munitions Remediation	5	5	4	14
Mean (Remediated)*	-	**7**	**8**	**5**	**19**
Mean (All)*	-	**7**	**8**	**5**	**20**

* = Some mean results were rounded to the nearest whole number.

Wetland wildlife monitoring was conducted at Ponds 5, 101 East (East), 997, 21, and 76 (see Appendix D Tables D-1 – D-3). Early fairy shrimp surveys took place at Ponds 5 and 101 East (East) because sufficient depth was present for fairy shrimp survival. Fairy shrimp surveys were then conducted in conjunction with CTS surveys for all vernal pools monitored where depth was adequate for both species. Overall, fairy shrimp were present in two of the five vernal pools monitored in 2025 (see Table 3-3).

For CTS surveys, vernal pools were sampled up to two times in March and April. Ponds 997, 21, and 76 dried completely during the sampling period and were not sampled during all events. California tiger salamanders were not present in any vernal pool during the 2024-2025 monitoring period.

Table 3-3. California tiger salamander and fairy shrimp detections at vernal pools in 2025.

Vernal Pool	Monitoring Status	CTS Detected	Fairy Shrimp Detected
Pond 5	Reference	No	Yes
Pond 101 East (East)	Reference	No	Yes
Pond 997	Reference	No	No
Pond 21	Year 3 Post-Mastication and Post-Subsurface Munitions Remediation	No	No
Pond 76	Year 3 Post-Mastication, Year 2 Post-Subsurface Munitions Remediation	No	No

3.1 Pond 5

Pond 5 is a reference vernal pool that was monitored as a control for comparison to the remediated vernal pools. In 2025, Pond 5 was monitored for hydrology, wildlife, and vegetation.

3.1.1 Hydrologic Monitoring

Pond 5 was monitored for hydrology four times and depth alone was checked four times. Monitoring was initiated in December after a winter rain event to evaluate the effects of the precipitation on pond depth. Subsequent monitoring events included measurements for depth and the full suite of hydrologic parameters. The pond was dry by the May monitoring event (see Figure 3-1 and Table 3-4).

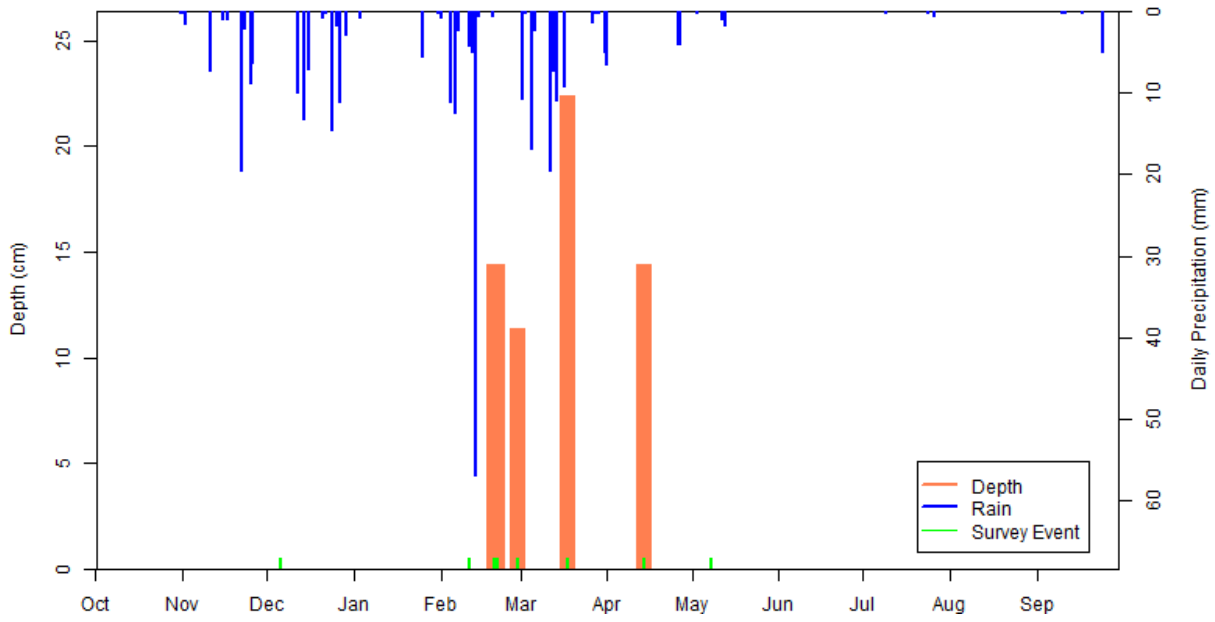

Figure 3-1. Pond 5 (Reference) depth and precipitation on former Fort Ord, 2025.

Table 3-4. Pond 5 (Reference) hydrologic monitoring results.

Date	Inundated Surface Area (acres)	Max Depth (cm)	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (FNU)	pH
2024-12-06	0	0	NS	NS	NS	NS
2025-02-11	0	0	NS	NS	NS	NS
2025-02-20^	1.0409	14	NS	NS	NS	NS
2025-02-21	NS	14	0.02	13.74	10.5	6.84
2025-02-28	NS	11	3.13	15.2	NS	NS
2025-03-18	2.5161	22	9.13	14.58	7.5	7.56
2025-04-14	0.9589	14	1.22	18.39	21.6	6.8
2025-05-08	0	0	NS	NS	NS	NS

NS = Not Surveyed
^Peripheral inundation present

3.1.2 Wildlife Monitoring

Two biologists surveyed Pond 5 for fairy shrimp on February 28, March 18, and April 14, 2025; while CTS were surveyed during the March and April events. Fairy shrimp were present at the February and March monitoring events, while no CTS were present at any survey event. Table 3-5 and Table 3-6 provide results of the CTS and fairy shrimp surveys in 2025. Invertebrate results for 2025 are provided in Appendix D (see Table D-2).

Table 3-5. Pond 5 (Reference) CTS monitoring results.

Vernal Pool	Sampling Date	# of Larvae Obs.	# of Larvae Measured	Total Length of Larvae (mm)			Snout-Vent Length of Larvae (mm)			Survey Hours
				Mean	Range	Mode	Mean	Range	Mode	
5	3/18/2025	0	-	-	-	-	-	-	-	12 min
	4/14/2025	0	-	-	-	-	-	-	-	1 hr 6 min

Table 3-6. Pond 5 (Reference) fairy shrimp monitoring results.

Sampling Date	Abundance (# Individuals)
2/28/2025	Very High Abundance (300+)
3/18/2025	Moderate Abundance (40)
4/14/2025	Not Detected

3.1.3 Vegetation Monitoring

Vegetation monitoring was completed at Pond 5 on May 8, 2025. These monitoring data represent reference conditions. Pond 5 held water starting in mid-February and was dry by the time vegetation surveys were completed. Biologists identified four vegetative strata at the vernal pool (see Table 3-7 and Figure 3-2). Stratum 1 and its respective transect were repeated from 2016 and 2018-2024. Stratum 2 was repeated from 2016-2023 and Stratum 3 was repeated from 2016-2024. Stratum 8 was repeated from 2021-2022. Transects 2 and 3 were moved to more representative locations, whereas Transect 8 was repeated from the 2021 location.

Table 3-7. Pond 5 (Reference) vegetative strata percentage within the vernal pool basin boundary.

Stratum	Percentage
1	26.1%
2	31.5%
3	19.4%
8	23.0%

Figure 3-2. Pond 5 (Reference) vegetation strata and transects on former Fort Ord, 2025.

Sixty-two plant species were observed within the vernal pool basin boundary. Of these species, 40 were native and 22 were non-native. Twelve species were OBL wetland plants, 22 were FACW or FAC, 11 were FACU or UPL, and 17 were not listed. Appendix C provides the species cover results for each stratum. Appendix G identifies the number of native, non-native, and unidentified species within each stratum as well as the number of species within each wetland indicator category for each stratum. Table 3-8 provides a summary of the dominant species cover results for each stratum.

Table 3-8. Pond 5 (Reference) dominant species by stratum results.

Stratum	Transect Length (m)	Dominant Species	
		Common Name	Absolute Cover on Transect (%)
1	10	pale spikerush	41.5
2	10	pale spikerush Pacific bent grass	33.8 4.0
3	10	rabbitfoot grass pale spikerush	36.5 6.8
8	10	rabbitfoot grass weedy cudweed	16.8 7.2

Pond 101 East (East)

Pond 101 East (East) is a reference vernal pool that was monitored as a control for comparison to the remediated vernal pools. In 2025, Pond 101 East (East) was monitored for hydrology, wildlife, and vegetation.

3.1.4 Hydrologic Monitoring

Pond 101 East (East) was monitored for hydrology three times and depth alone was checked five times. One of the hydrologic monitoring events only included depth, dissolved oxygen, and temperature measurements. Monitoring was initiated in December after a winter rain event to evaluate the effects of the precipitation on pond depth. The pond dried by the May monitoring event (see Figure 3-3 and Table 3-9).

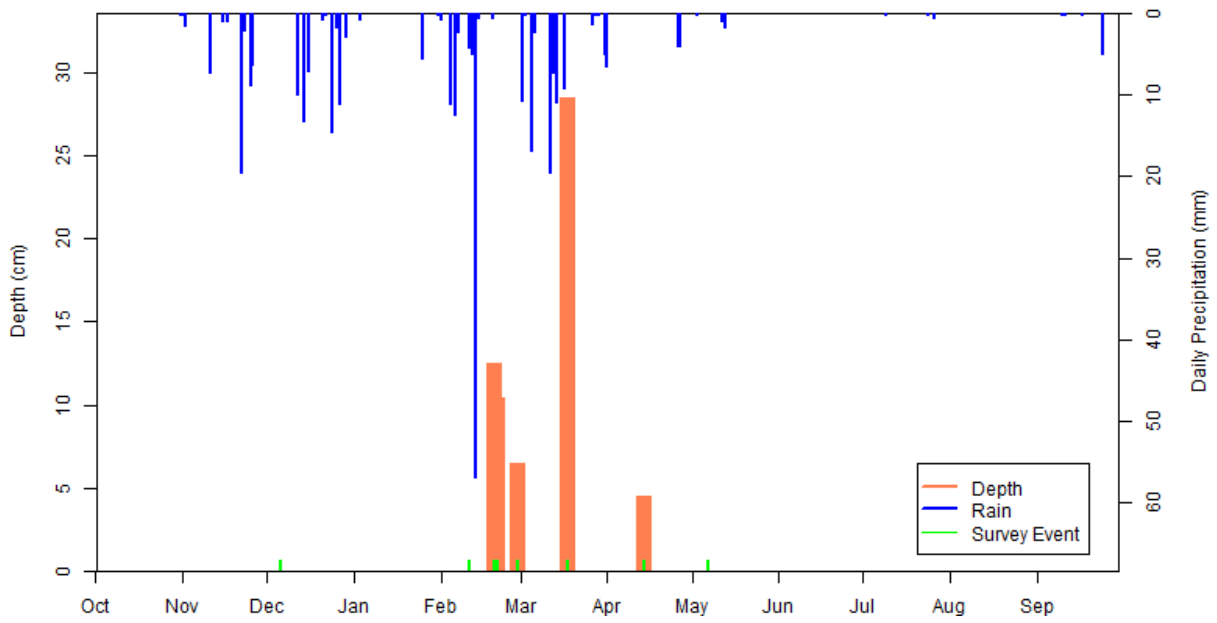

Figure 3-3. Pond 101 East (East) (Reference) depth and precipitation on former Fort Ord, 2025.

Table 3-9. Pond 101 East (East) (Reference) hydrologic monitoring results.

Date	Inundated Surface Area (acres)	Max Depth (cm)	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (FNU)	pH
2024-12-06	0	0	NS	NS	NS	NS
2025-02-11	0	0	NS	NS	NS	NS
2025-02-20	0.0551	12	NS	NS	NS	NS
2025-02-21	NS	10	1.52	12.54	13.9	6.89
2025-02-28*	NS	6	5.03	17	NS	NS
2025-03-18	0.7477	28	8.22	15.53	57.6	7.47
2025-04-14^	0.0019	4	NS	NS	NS	NS
2025-05-07	0	0	NS	NS	NS	NS

NS = Not Surveyed
*Probe laid horizontally in water column during measurement due to low depth
^Peripheral inundation present

3.1.5 Wildlife Monitoring

Pond 101 East (East) was surveyed for fairy shrimp on February 28, and both CTS/fairy shrimp on March 18, 2025. Fairy shrimp were present at both survey events while no CTS were present during the March survey event. Table 3-12 and Table 3-13 provide results of the CTS and fairy shrimp surveys in 2025. Invertebrate results for 2025 are provided in Appendix D (see Table D-2).

Table 3-10. Pond 101 East (East) (Reference) CTS monitoring results.

Vernal Pool	Sampling Date	# of Larvae Obs.	# of Larvae Measured	Total Length of Larvae (mm)			Snout-Vent Length of Larvae (mm)			Survey Hours
				Mean*	Range	Mode	Mean	Range	Mode	
101 East (East)	3/18/2025	0	-	-	-	-	-	-	-	5 min

Table 3-11. Pond 101 East (East) (Reference) fairy shrimp monitoring results.

Sampling Date	Abundance (# Individuals)
2/28/2025	Moderate (100)
3/18/2025	Low (2)

3.1.6 Vegetation Monitoring

Vegetation monitoring was completed at Pond 101 East (East) on May 7, 2025. These monitoring data represent reference conditions. Pond 101 East (East) was inundated by mid-February and was dry by the May monitoring event. Biologists identified four strata at the vernal pool (see Table 3-12 and Figure 3-4). Stratum 2 was repeated from 2016, 2018-2020, and 2024. Stratum 3 was repeated from 2016, 2021, 2022, and 2024. Stratum 5 was repeated from 2017-2023. Stratum 9 was repeated from 2022 and 2024. Transect 2 was moved because it fell outside the stratum and additionally was reduced in length to accommodate the decreased stratum size this year. Transects 3, 5, and 9 were all moved to more representative locations.

Table 3-12. Pond 101 East (East) (Reference) vegetative strata percentage within the vernal pool basin boundary.

Stratum	Percentage
2	1.5%
3	47.1%
5	49.3%
9	2.1%

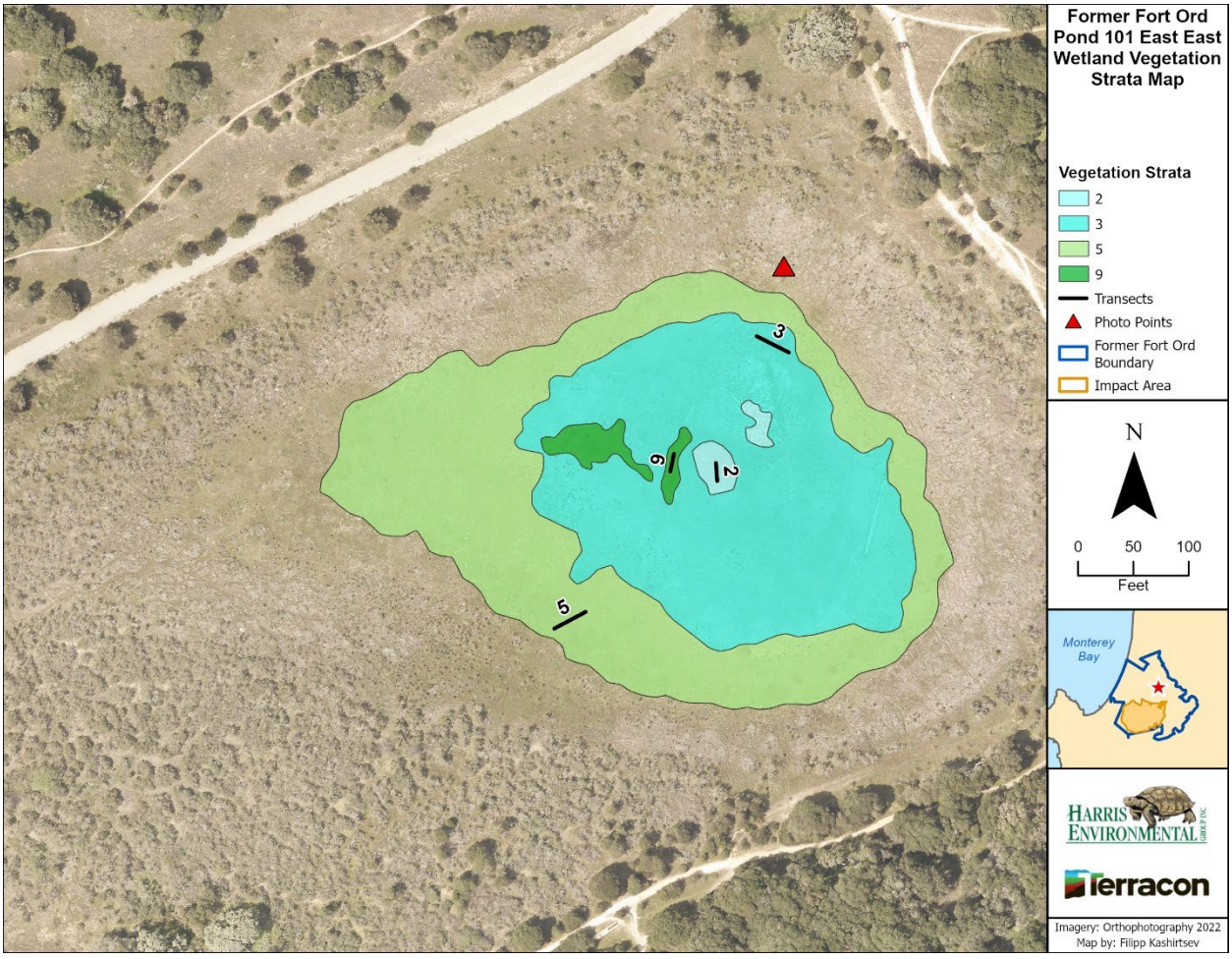

Figure 3-4. Pond 101 East (East) (Reference) vegetation strata and transects on former Fort Ord, 2025.

Sixty-nine plant species were observed within the vernal pool basin boundary. Of these species, 42 were native and 27 were non-native. Nine species were OBL wetland plants, 26 were FACW or FAC, 13 were FACU or UPL, and 20 were not listed. Appendix C provides the species cover results for each stratum. Appendix G identifies the number of native, non-native, and unidentified species within each stratum as well as the number of species within each wetland indicator category for each stratum. Table 3-13 provides a summary of the dominant species cover results for each stratum.

Table 3-13. Pond 101 East (East) (Reference) dominant species by stratum results.

Stratum	Transect Length (m)	Dominant Species	
		Common Name	Absolute Cover on Transect (%)
2	5	pale spikerush	44.3
3	10	rabbitfoot grass Pacific bent grass pale spikerush	43.0 23.5 9.2
5	10	Pacific bent grass small head clover rabbitfoot grass	19.0 7.5 6.3
9	5	Pacific foxtail smooth goldfields Pacific bent grass alkali mallow	23.0 21.0 13.3 11.7

3.2 Pond 997

Pond 997 is a reference vernal pool that was monitored as a control for comparison to the remediated vernal pools. In 2025, Pond 997 was monitored for hydrology, wildlife, and vegetation.

3.2.1 Hydrologic Monitoring

Pond 997 was monitored for hydrology one time and depth alone was checked four times. Monitoring was initiated in December after a winter rain event to evaluate the effects of the precipitation on pond depth. The pond dried by the April monitoring event (see Figure 3-5 and Table 3-14).

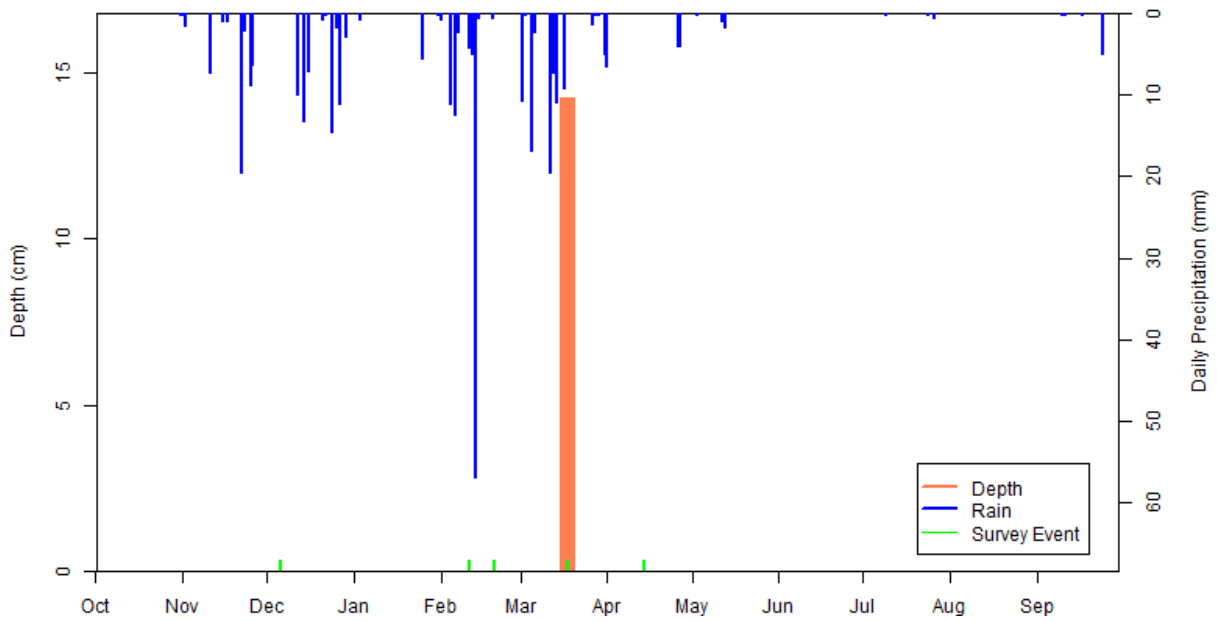

Figure 3-5. Pond 997 (Reference) depth and precipitation on former Fort Ord, 2025.,

Table 3-14. Pond 997 (Reference) hydrologic monitoring results.

Date	Inundated Surface Area (acres)	Max Depth (cm)	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (FNU)	pH
2024-12-06	0	0	NS	NS	NS	NS
2025-02-11	0	0	NS	NS	NS	NS
2025-02-20	0	0	NS	NS	NS	NS
2025-03-18^	0.0901	14	7.05	18.94	277	7.5
2025-04-14	0	0	NS	NS	NS	NS

NS = Not Surveyed
^Peripheral inundation present

3.2.2 Wildlife Monitoring

Pond 997 was surveyed for CTS and fairy shrimp on March 18, 2025 (see Table 3-15). No CTS or fairy shrimp were present at the March survey. No surveys were conducted in April or thereafter because the pool was dry by that time. Table 3-15 and Table 3-16 provide results of the CTS and fairy shrimp surveys in 2025. Invertebrate results for 2025 are provided in Appendix D (see Table D-2).

Table 3-15. Pond 997 (Reference) CTS monitoring results.

Vernal Pool	Sampling Date	# of Larvae Obs.	# of Larvae Measured	Total Length of Larvae (mm)			Snout-Vent Length of Larvae (mm)			Survey Hours
				Mean	Range	Mode	Mean	Range	Mode	
997	3/18/2025	0	-	-	-	-	-	-	-	5 min

Table 3-16. Pond 997 (Reference) fairy shrimp monitoring results.

Sampling Date	Abundance (# Individuals)
3/18/2025	Not Detected

3.2.3 Vegetation Monitoring

Vegetation monitoring was completed at Pond 997 on April 29, 2025. These monitoring data represent reference conditions. Pond 997 was inundated by mid-March and dried by the monitoring event. Biologists identified three strata at the vernal pool (see Table 3-17 and Figure 3-6). Strata 1, 2, and 3 were repeated from 2017-2024. Transect 1 was relocated to avoid the expanded CCG population in Stratum 2. Transect 3 was relocated because the transect fell outside of the stratum. Figure 3-7 illustrates the extent and density of the CCG population at Pond 997.

Table 3-17. Pond 997 (Reference) vegetative strata percentage within the vernal pool basin boundary.

Stratum	Percentage
1	19.5%
2 (CCG)	9.5%
3	68.2%
Upland	2.8%

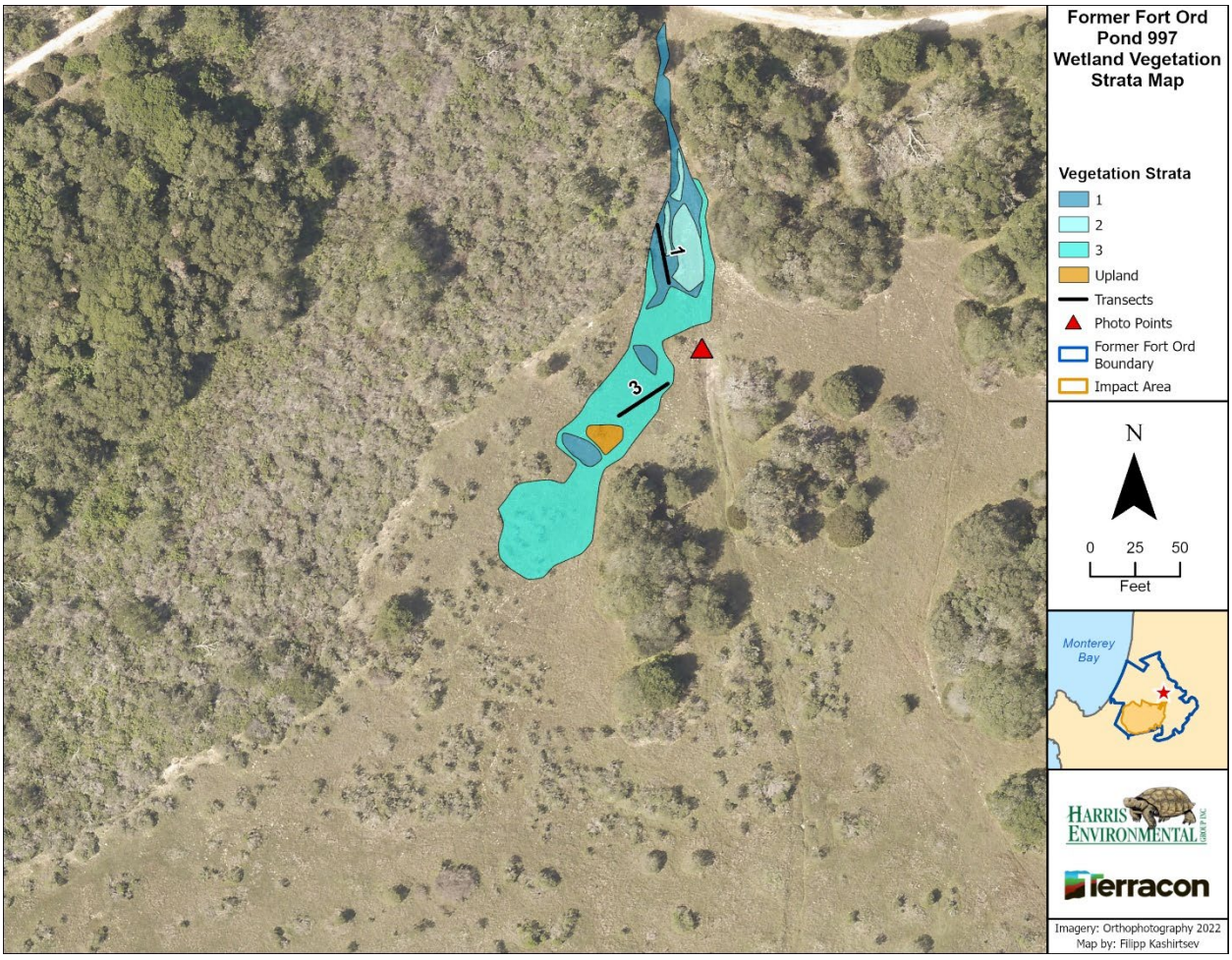

Figure 3-6. Pond 997 (Reference) vegetation strata and transects on former Fort Ord, 2025.

Sixty-two plant species were observed within the vernal pool basin boundary. Of these species, 37 were native, 24 were non-native, and one was unidentified. Nine species were OBL wetland plants, 21 were FACW or FAC, 11 were FACU or UPL, and 21 were not listed. Appendix C provides the species cover results for each stratum. Appendix G identifies the number of native, non-native, and unidentified species within each stratum as well as the number of species within each wetland indicator category for each stratum. Table 3-18 provides a summary of the dominant species cover results for each stratum.

Table 3-18. Pond 997 (Reference) dominant species by stratum results.

Stratum	Transect Length (m)	Dominant Species	
		Common Name	Absolute Cover on Transect (%)
1	10	Hickman's popcornflower coyote thistle	30.7 8.2
2	N/A	Contra Costa goldfields	N/A
3	10	rattlesnake grass California oat grass	14.7 7.3

3.2.3.1 *Contra Costa Goldfields*

Contra Costa goldfields at Pond 997 were mapped on April 29, 2025; they occupied 0.018 acres, with a density range of between 5% and 30% cover. No transects were placed in Stratum 2 to avoid disturbing the population. Figure 3-7 illustrates the extent of the CCG population at Pond 997.

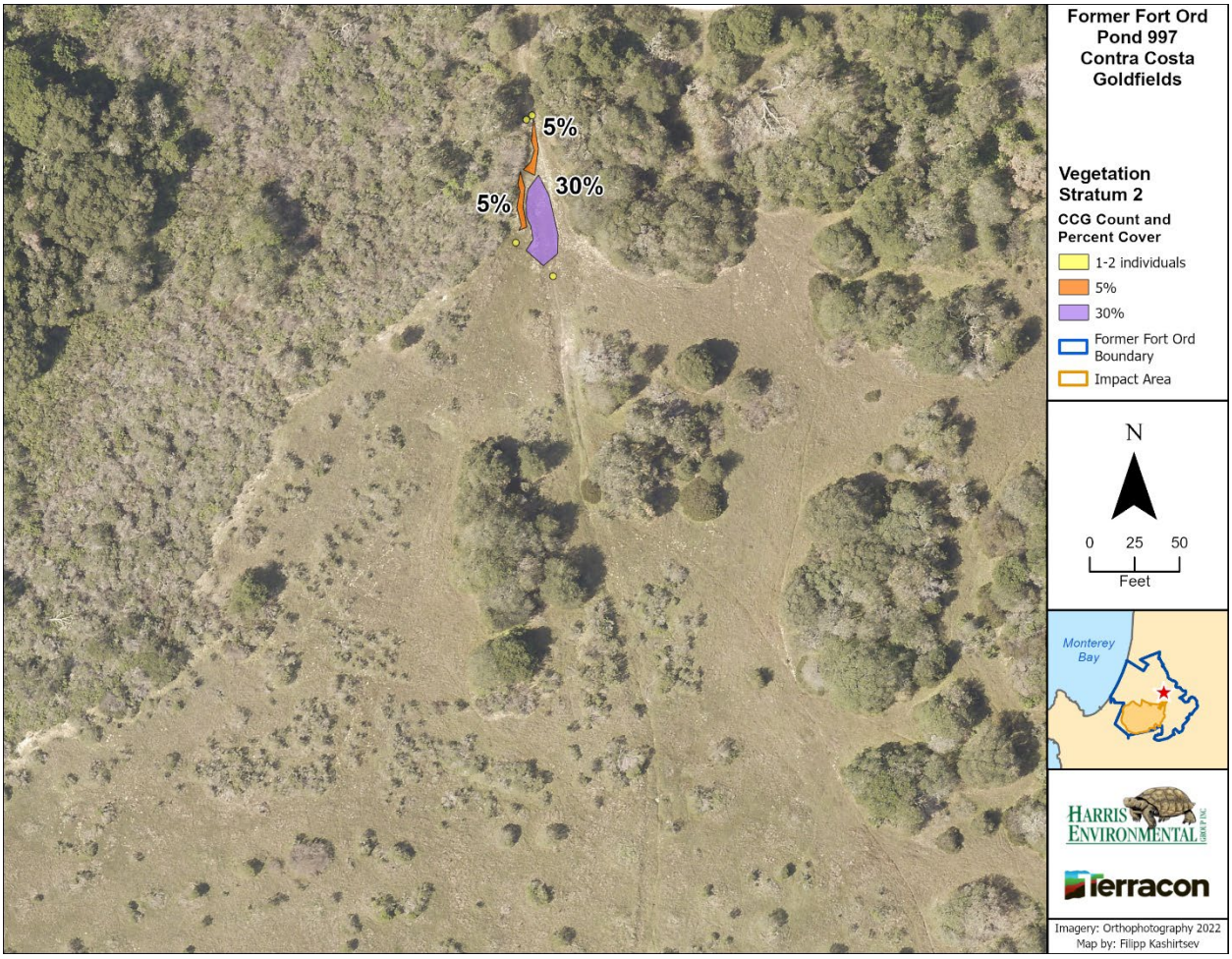

Figure 3-7. Contra Costa goldfields populations at Pond 997 (Reference), 2025.

3.3 Pond 21

Pond 21 was in Year 3 of monitoring for post-mastication and post-subsurface munitions remediation in 2025. Pond 21 was monitored for hydrology, wildlife, and vegetation.

3.3.1 Hydrologic Monitoring

Pond 21 was monitored once for hydrology and four times for depth alone. Monitoring was initiated in December after a winter rain event to evaluate the effects of the precipitation on pond depth. The pond dried by the April monitoring event (see Figure 3-8 and Table 3-19).

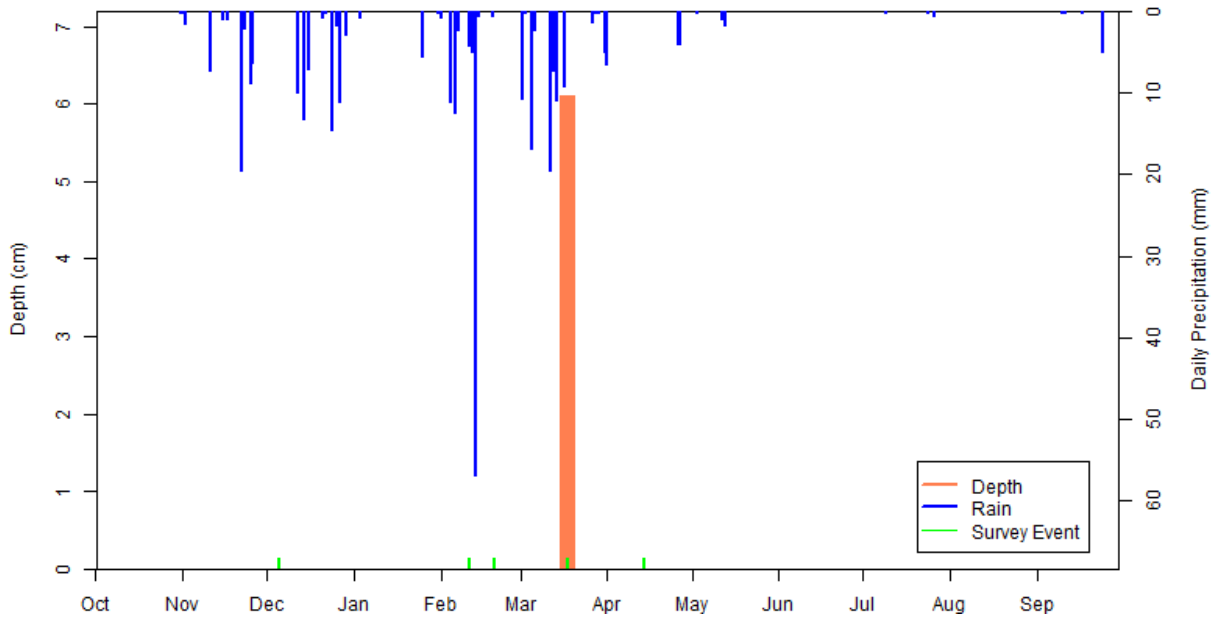

Figure 3-8. Pond 21 (Year 3 Post-Mastication and Post-Subsurface Munitions Remediation) depth and precipitation on former Fort Ord, 2025.

Table 3-19. Pond 21 (Year 3 Post-Mastication and Post-Subsurface Munitions Remediation) hydrologic monitoring results.

Date	Inundated Surface Area (acres)	Max Depth (cm)	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (FNU)	pH
2024-12-05	0	0	NS	NS	NS	NS
2025-02-11	0	0	NS	NS	NS	NS
2025-02-20^	0	0	NS	NS	NS	NS
2025-03-18*	0.6411	6	7.27	19.55	129	7.26
2025-04-14	0	0	NS	NS	NS	NS

NS = Not Surveyed
^Peripheral inundation present
*Probe laid horizontally in water column during measurement due to low depth

3.3.2 Wildlife Monitoring

Pond 21 was surveyed for fairy shrimp on March 18, 2025. No fairy shrimp were detected. No surveys were completed in April because the vernal pool had dried by that time. Table 3-20 provides results of the fairy shrimp surveys conducted in 2025. Invertebrate results for 2025 are provided in Appendix D (see Table D-2).

Table 3-20. Pond 21 (Year 3 Post-Mastication and Post-Subsurface Munitions Remediation) fairy shrimp monitoring results.

Sampling Date	Abundance (# Individuals)
3/18/2025	Not Detected

3.3.3 Vegetation Monitoring

Vegetation monitoring was completed at Pond 21 on May 6, 2025. These monitoring data represent Year 3 post-mastication and post-subsurface munitions remediation conditions. Pond 21 was briefly inundated in mid-March and dried by mid-April. Biologists identified four strata at the vernal pool (see Table 3-21 and Figure 3-9). Stratum 1 was repeated from 2019, 2023, and 2024. Stratum 3 was repeated from 2023 and 2024. Stratum 4 was repeated from 2024. Stratum 5 and its respective transect were newly created in 2025. Transect 1 was repeated from 2019 and 2023, whereas transects 3 and 4 were relocated because they fell outside of the respective strata.

Table 3-21. Pond 21 (Year 3 Post-Mastication and Post-Subsurface Munitions Remediation) vegetative strata percentage within the vernal pool basin boundary.

Stratum	Percentage
1	45.4%
3	1.5%
4	2.0%
5	48.1%
Upland	3.0%

Figure 3-9. Pond 21 (Year 3 Post-Mastication and Post-Subsurface Munitions Remediation) vegetation strata and transects on former Fort Ord, 2025.

Sixty-five species were observed within the vernal pool basin boundary. Of these species, 47 were native and 18 were non-native. Nine species were OBL wetland plants, 26 were FACW or FAC, 9 were FACU or UPL, and 21 were not listed. Appendix C provides the species cover results for each stratum. Appendix G identifies the number of native, non-native, and unidentified species within each stratum, as well as the number of species within each wetland indicator category for each stratum. Table 3-22 provides a summary of the dominant species cover results for each stratum.

Table 3-22. Pond 21 (Year 3 Post-Mastication and Post-Subsurface Munitions Remediation) dominant species by stratum results.

Stratum	Transect Length (m)	Dominant Species	
		Common Name	Absolute Cover on Transect (%)
1	10	smooth goldfields coyote thistle	26.2 22.2
3	5	whiteroot	40.7
4	5	brown-headed rush	46.3
5	10	cut-leaved geranium coyote thistle rabbitfoot grass	13.7 11.2 8.3

3.4 Pond 76

Pond 76 was monitored for Year 3 post-mastication and Year 2 post-subsurface munitions remediation in 2025. Pond 76 was monitored for hydrology, wildlife, and vegetation.

3.4.1 Hydrologic Monitoring

Pond 76 was not monitored for hydrology because it remained dry. It was checked for depth and inundation five times. Monitoring was initiated in December after a winter rain event to evaluate the effects of the precipitation on pond depth. (see Figure 3-10 and Table 3-23).

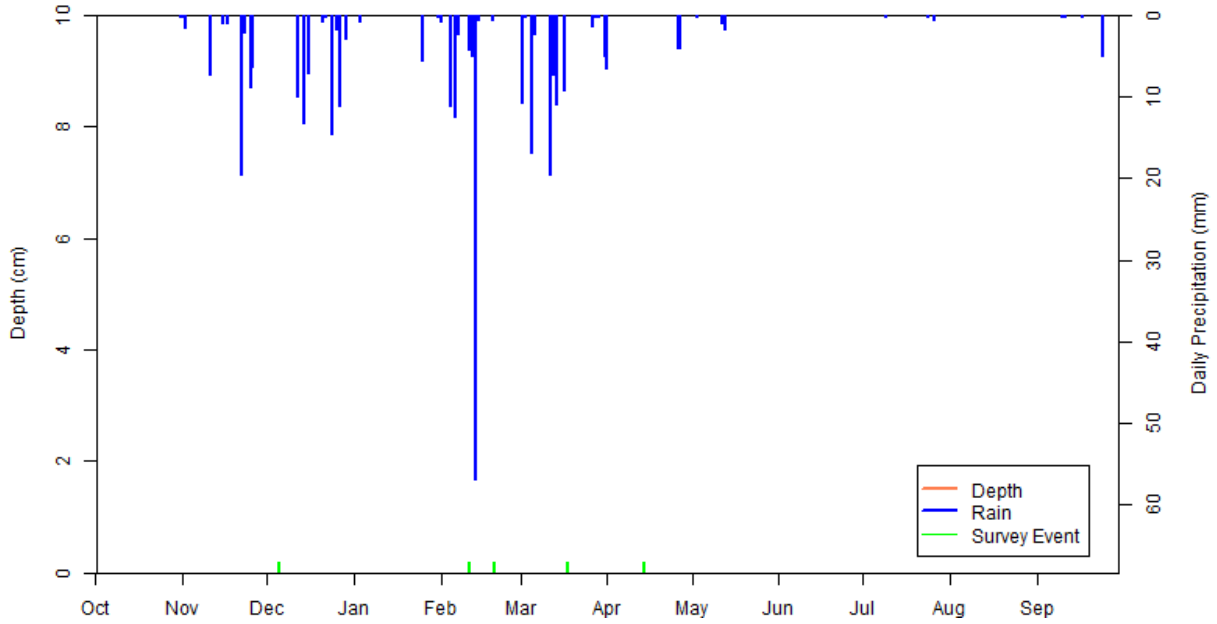

Figure 3-10. Pond 76 (Year 3 Post-Mastication, Year 2 Post-Subsurface Munitions Remediation) depth and precipitation on former Fort Ord, 2025.

Table 3-23. Pond 76 (Year 3 Post-Mastication, Year 2 Post-Subsurface Munitions Remediation) hydrologic monitoring results.

Date	Inundated Surface Area (acres)	Max Depth (cm)	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (FNU)	pH
2024-12-05	0	0	NS	NS	NS	NS
2025-02-11	0	0	NS	NS	NS	NS
2025-02-20	0	0	NS	NS	NS	NS
2025-03-18	0	0	NS	NS	NS	NS
2025-04-14	0	0	NS	NS	NS	NS

NS = Not Surveyed

3.4.2 Wildlife Monitoring

Wildlife surveys were not conducted at Pond 76 because the vernal pool did not have sufficient depth to trigger surveys.

3.4.3 Vegetation Monitoring

Vegetation monitoring was completed at Pond 76 on May 1, 2025. These monitoring data represent Year 3 post-mastication and Year 2 post-excavation conditions. Pond 76 remained dry throughout the 2024-2025 water year. Biologists identified three strata at the vernal pool (see Table 3-24 and Figure 3-11). Strata 1 and 3 were repeated from 2023 and 2024, whereas Stratum 4 and its respective transect were newly created in 2025. Transects 1 and 3 were both relocated because the transects fell outside of the respective strata. In addition, Transect 1 was shortened to 5 m while Transect 3 was lengthened to 10 m to better represent the change in strata area from the previous year.

Table 3-24. Pond 76 (Year 3 Post-Mastication, Year 2 Post-Subsurface Munitions Remediation) vegetative strata percentage within the vernal pool basin boundary.

Stratum	Percentage
1	9%
3	81%
4	10%

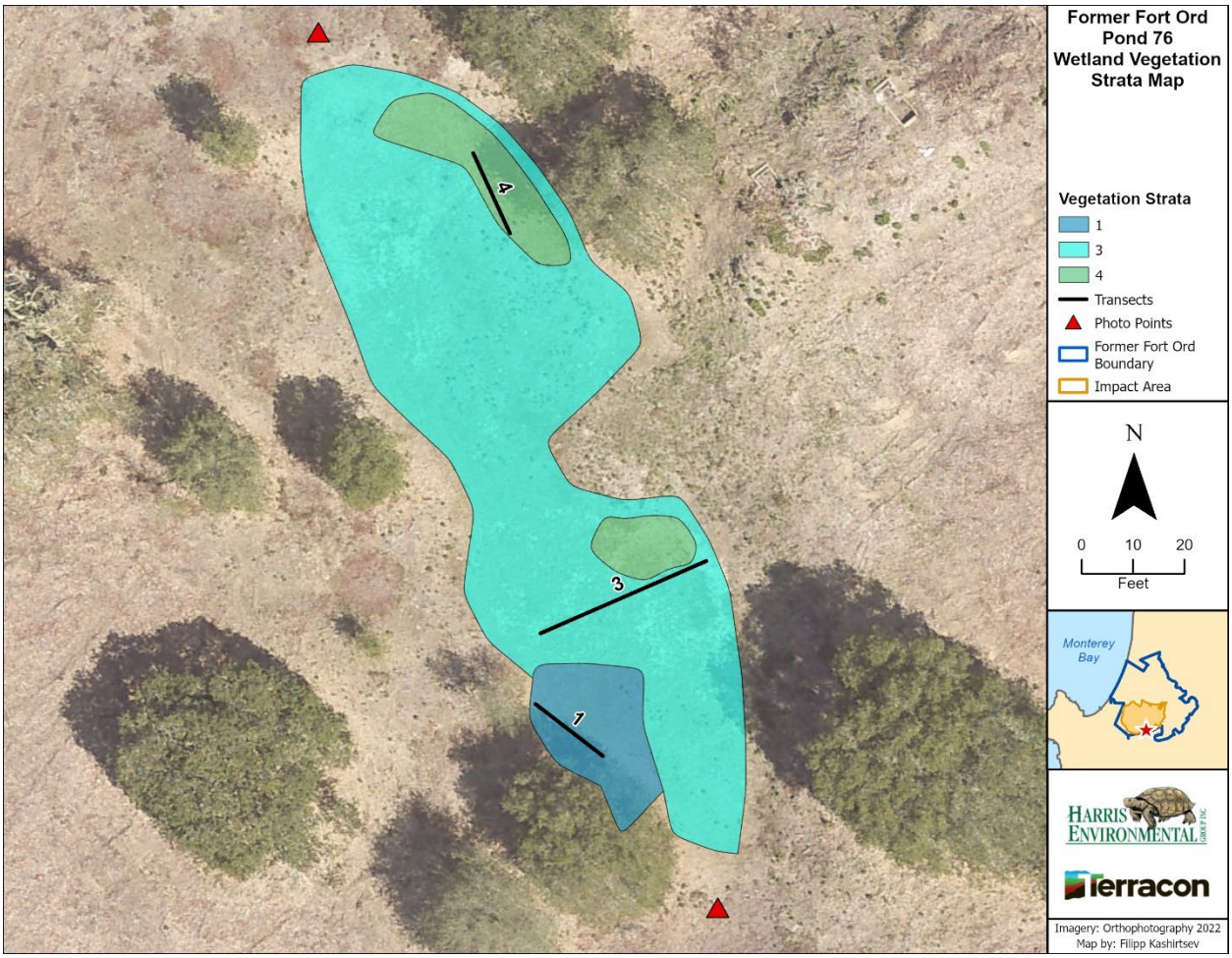

Figure 3-11. Pond 76 (Year 3 Post-Mastication, Year 2 Post-Subsurface Munitions Remediation) vegetation strata and transects on former Fort Ord, 2025.

Forty-nine species were observed within the vernal pool basin boundary. Of these species, 31 were native and 18 were non-native. Seven species were OBL wetland plants, 18 were FACW or FAC, 11 were FACU or UPL, and 13 were not listed. Appendix C provides the species cover results for each stratum. Appendix G identifies the number of native, non-native, and unidentified species within each stratum, as well as the number of species within each wetland indicator category for each stratum. Table 3-25 provides a summary of the dominant species cover results for each stratum.

Table 3-25. Pond 76 (Year 3 Post-Mastication, Year 2 Post-Subsurface Munitions Remediation) dominant species by stratum results.

Stratum	Transect Length (m)	Dominant Species	
		Common Name	Absolute Cover on Transect (%)
1	5	needle spikerush coyote thistle brown-headed rush	30.0 11.0 8.3
3	10	coyote thistle rabbitfoot grass	25.0 23.7
4	5	rabbitfoot grass annual hair grass coyote thistle	20.0 18.7 13.3

4 DISCUSSION

Data quality objectives (DQO) and performance standards outlined in the Wetland Plan were used to measure successful wetland function following MEC activities (Burleson, 2006). Evaluation for the DQOs was included in the Methods Section 2.4. DQOs for wetland function are summarized below:

- DQO 1: depth – average of 25 cm through March for CTS and at least 10 cm through May for fairy shrimp;
- DQO 2: inundation – consistent with baseline and similar to reference vernal pool trends;
- DQO 3: vegetation – similar hydrophytic vegetation as reference control wetlands;
- DQO 4: water quality – adequate for the presence of CTS and/or fairy shrimp; and
- DQO 5: wildlife – consistent with baseline and similar to reference control wetland trends.

4.1 Historical Data

Depth of vernal pools, the area, and the temporal length of inundation largely depend on the amount and frequency of precipitation, and the geomorphic features such as slope, extent of the vernal pool basin, size of its watershed, the underlying soil types and their geologic sources. The vernal pools on former Fort Ord vary greatly based on the vernal pool basin size and shape. Figure 4-1 compares the historical depth vs inundation area across all vernal pools monitored in the 2024-2025 water year.

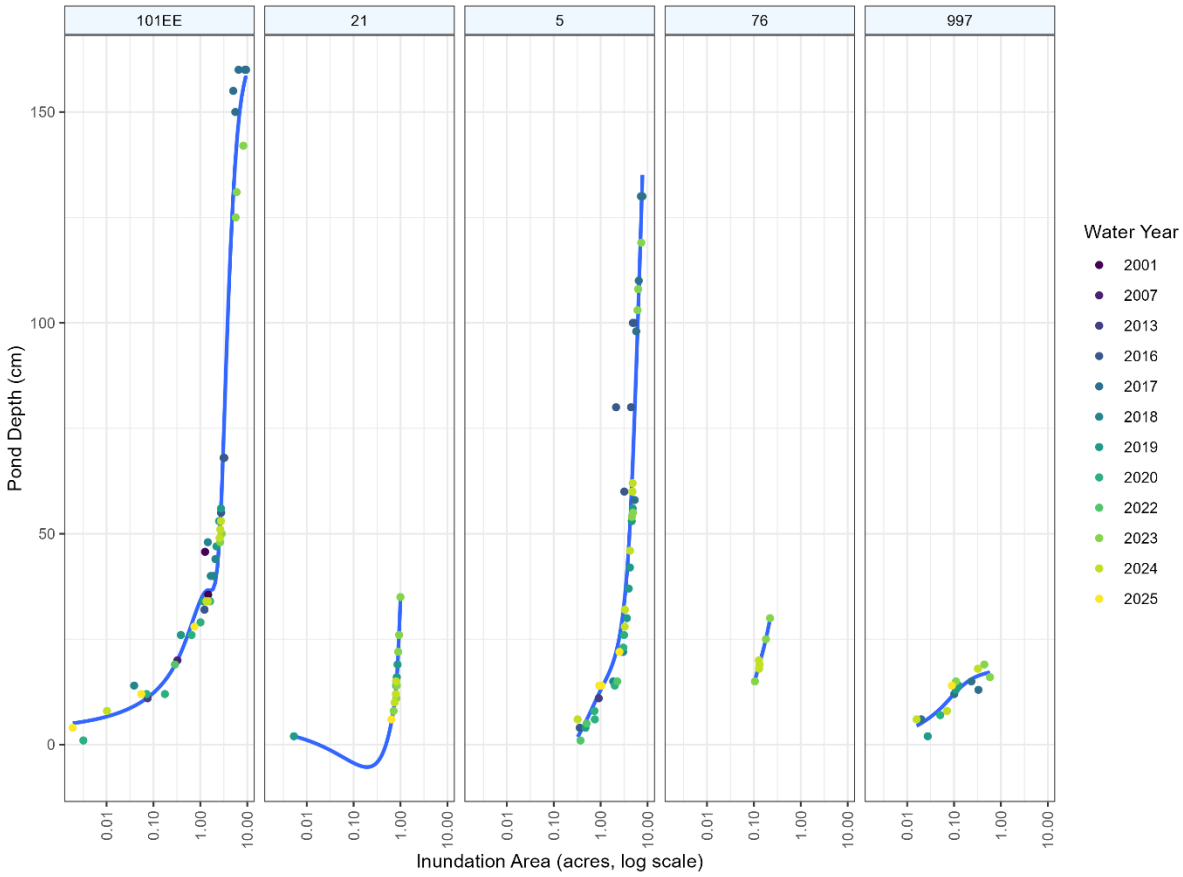

Figure 4-1. Plot of historical depth vs inundation area data going back to the 2000-2001 (2001) water year for all ponds surveyed in 2024-2025 (2025).

Following initial inundation, vernal pools with large and shallow basins tend to increase rapidly in inundation area with relatively small corresponding increases in depth. Once the inundation area in these vernal pools reaches the edge of the basin, there is a steep increase in depth with only modest increases in inundation area. Ponds 5 and 101 East (East) are good examples of large and shallow vernal pools. On the opposite end of the spectrum there are vernal pools that have small and steep basins. These vernal pools increase rapidly in depth following initial inundation as is demonstrated by Pond 997 (see Figure 4-1). Thus, assessments of wetland DQOs must be made in the context of combinations of basin extent (large vs small) and basin slope (shallow vs steep) as the main drivers of vernal pool hydroperiods in any given precipitation pattern.

Since water quality parameters can be variable, their assessment was conducted for each vernal pool by comparing them to their historic values, reference vernal pools, and other vernal pools with an objective of spotting any anomalous trends. Single measurements of water quality parameters that were out of range were noted, but occasional discrepancies are to be expected due to a variety of variables noted above.

During the 2025 water year, all water quality parameters generally fell within or near historical ranges. The pH values remained within historic or expected ranges (see Figure 4-2). Water temperature measurements were within historical ranges (see Figure 4-3). Turbidity values were mostly within historical ranges (see Figure 4-4); however, Ponds 21 and 997 each had one measurement above their historical range. Dissolved oxygen values were mostly within historical ranges (see Figure 4-5); however, Pond 5 had two low readings, and Pond 101EE had one low reading.

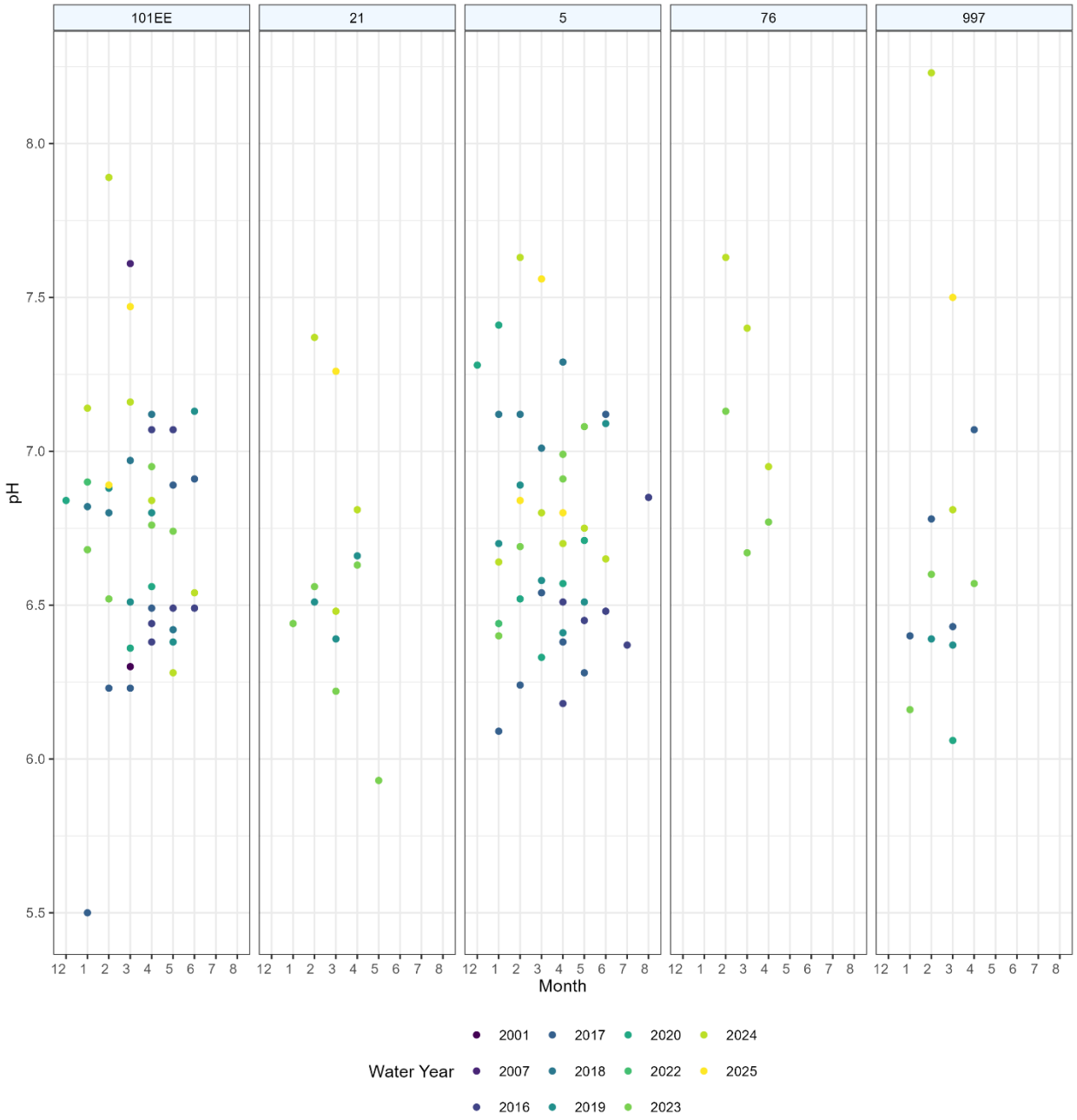

Figure 4-2. Plot of historical pH values going back to the 2000-2001 (2001) water year for reference and remediated ponds surveyed in 2024-2025 (2025). No water quality measurements were conducted at Pond 76 in 2025 because it remained dry.

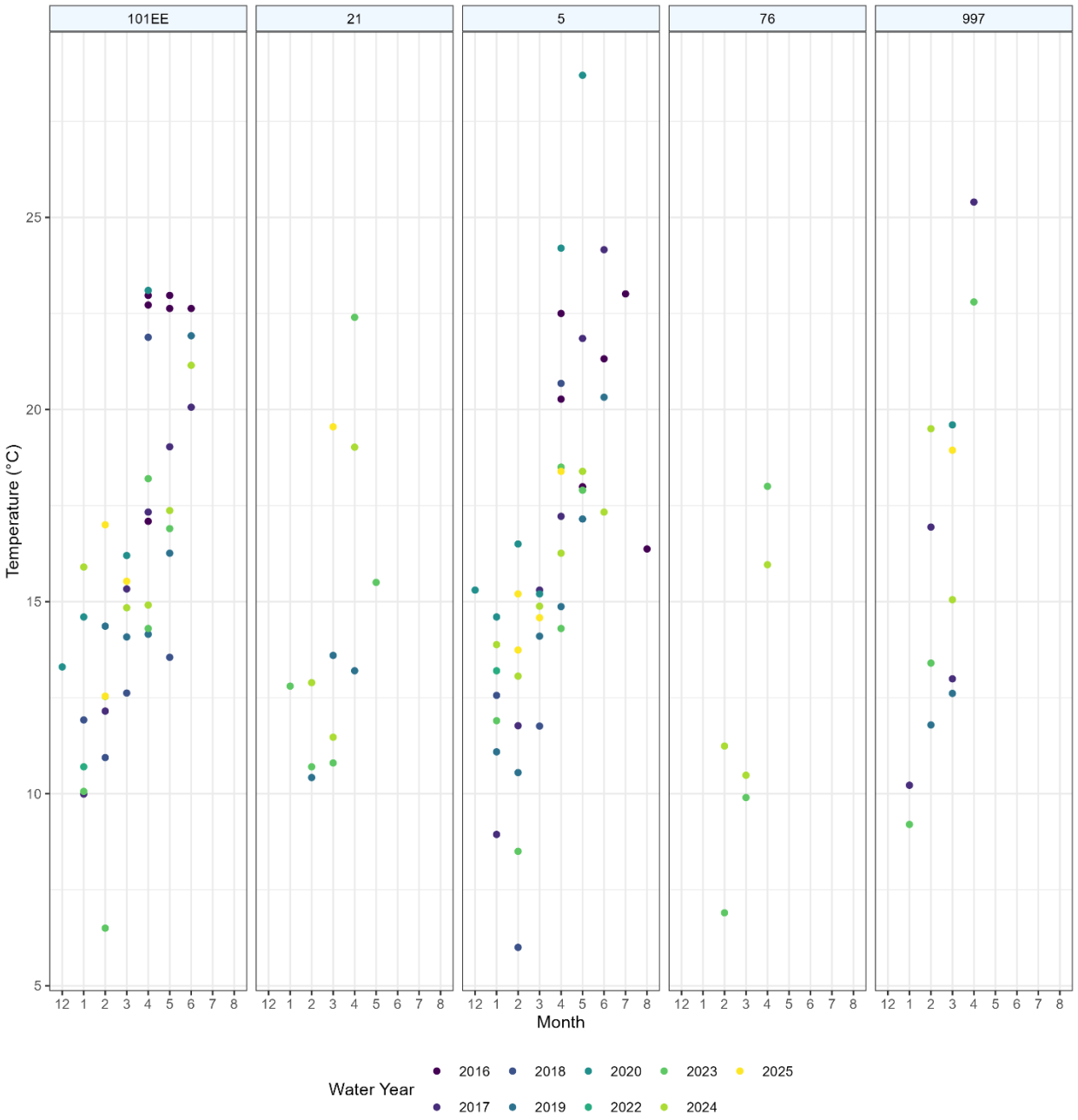

Figure 4-3. Plot of historical temperature values going back to the 2015-2016 (2016) water year for reference and remediated ponds surveyed in 2024-2025 (2025). No water quality measurements were conducted at Pond 76 in 2025 because it remained dry.

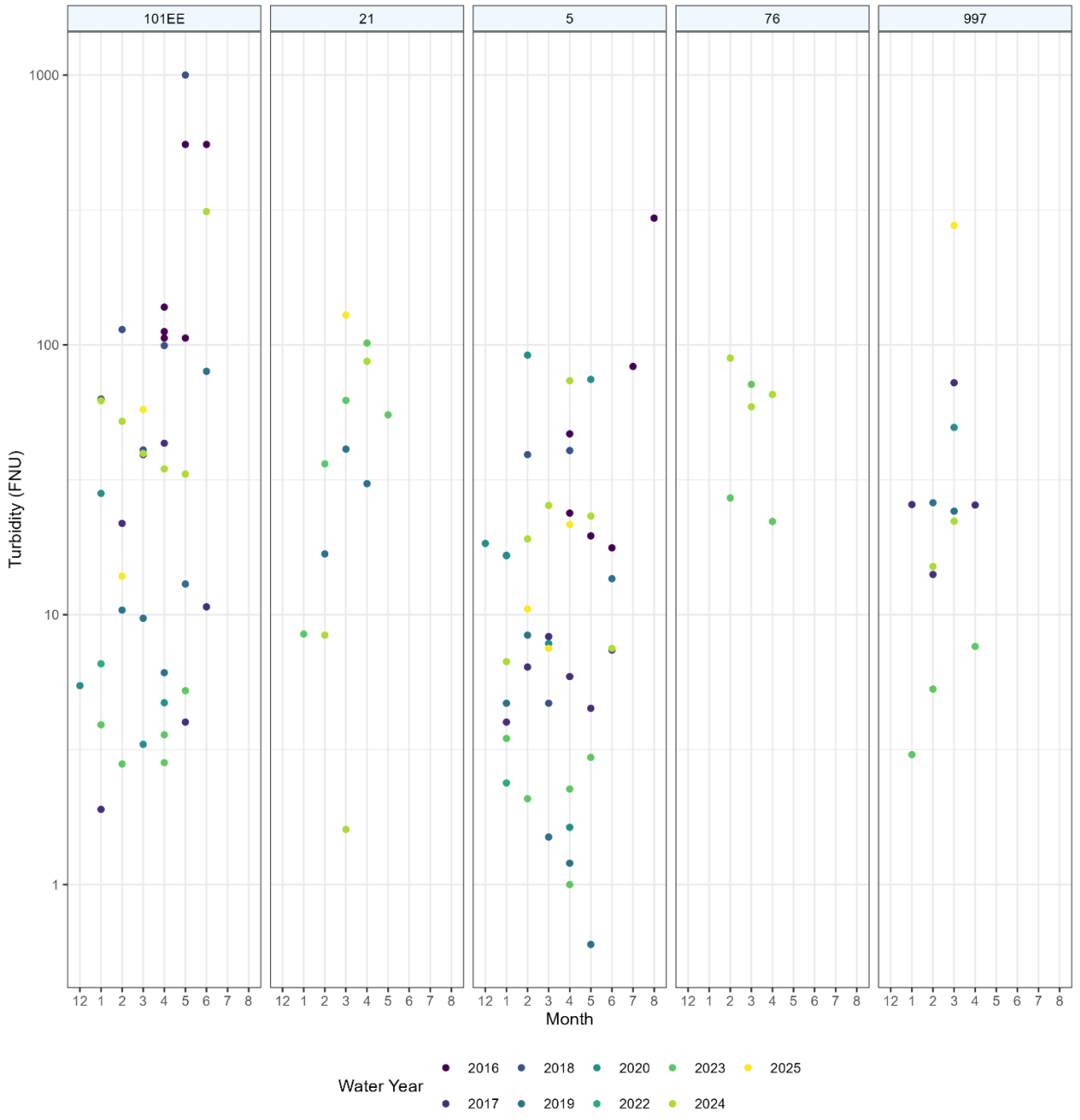

Figure 4-4. Plot of historical turbidity values going back to the 2015-2016 (2016) water year for reference and remediated ponds surveyed in 2024-2025 (2025). No water quality measurements were conducted at Pond 76 in 2025 because it remained dry.

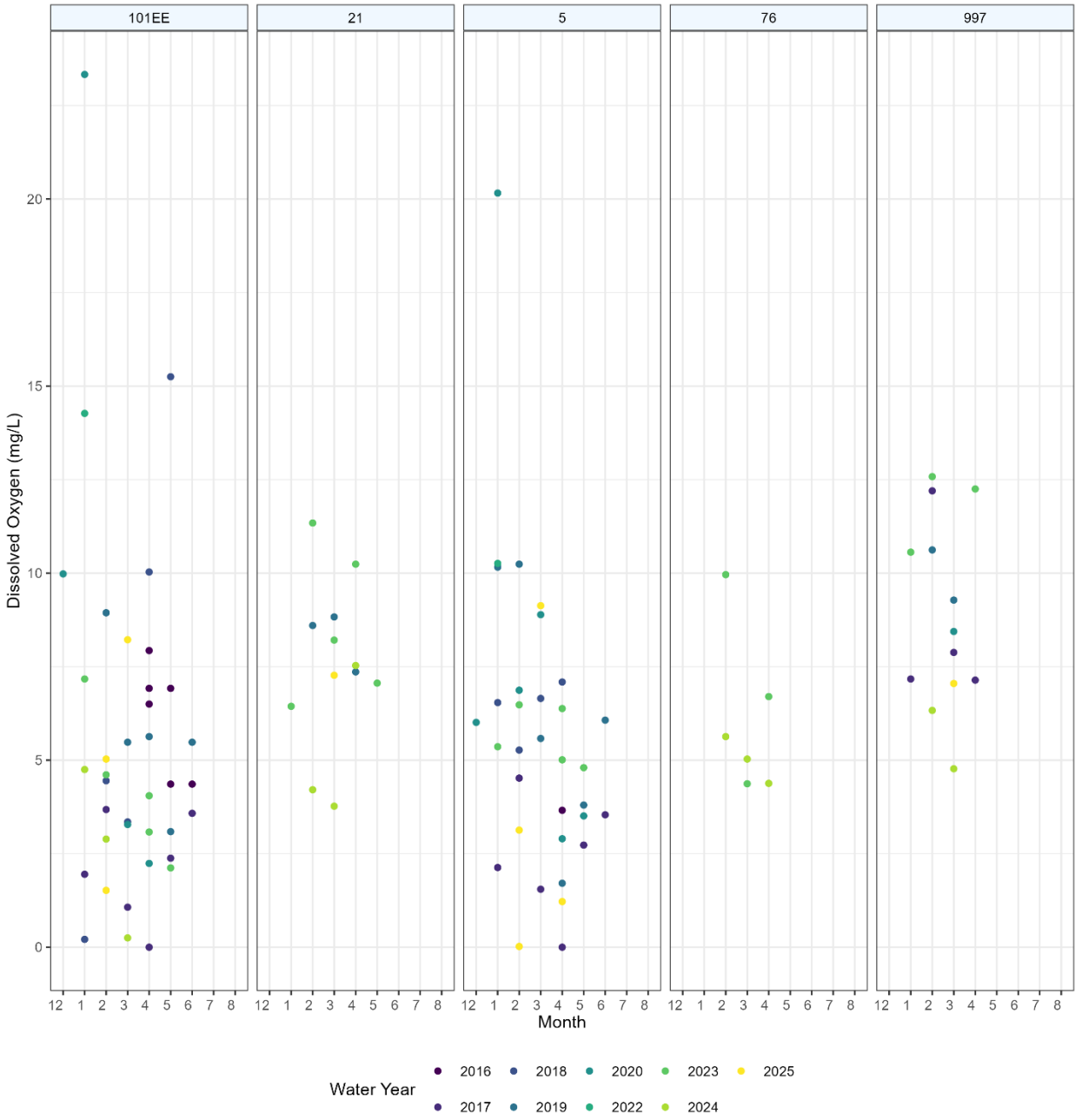

Figure 4-5. Plot of historical dissolved oxygen values going back to the 2015-2016 (2016) water year for reference and remediated ponds surveyed in 2024-2025 (2025). No water quality measurements were conducted at Pond 76 in 2025 because it remained dry.

4.2 Pond 5 – Reference

Pond 5 has been monitored for 17 years as a reference vernal pool. Table 4-1 summarizes the years in which monitoring occurred and surveys were conducted. The cumulative precipitation graph shows precipitation for years in which hydrologic monitoring was conducted at Pond 5 (see Figure 4-6). Above-normal water years were 1994-1995, 2015-2016, 2016-2017, 2018-2019, and 2022-2023. All other monitoring years, including this year, 2024-2025, were conducted either in a normal or below-normal water year, drought year, or consecutive drought year.

Table 4-1. Pond 5 (Reference) summary of historical surveys for hydrology, vegetation, and wildlife.

Survey	Water Year																
	1993-1994	1994-1995	1995-1996	2006-2007	2009-2010	2012-2013	2013-2014	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025
Hydrology	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●
Wildlife	●	●	●	●	●			●	●	●	●	●			●	●	●
Vegetation	●	●	●	●				●	●	●	●	●	●	●	●	●	●

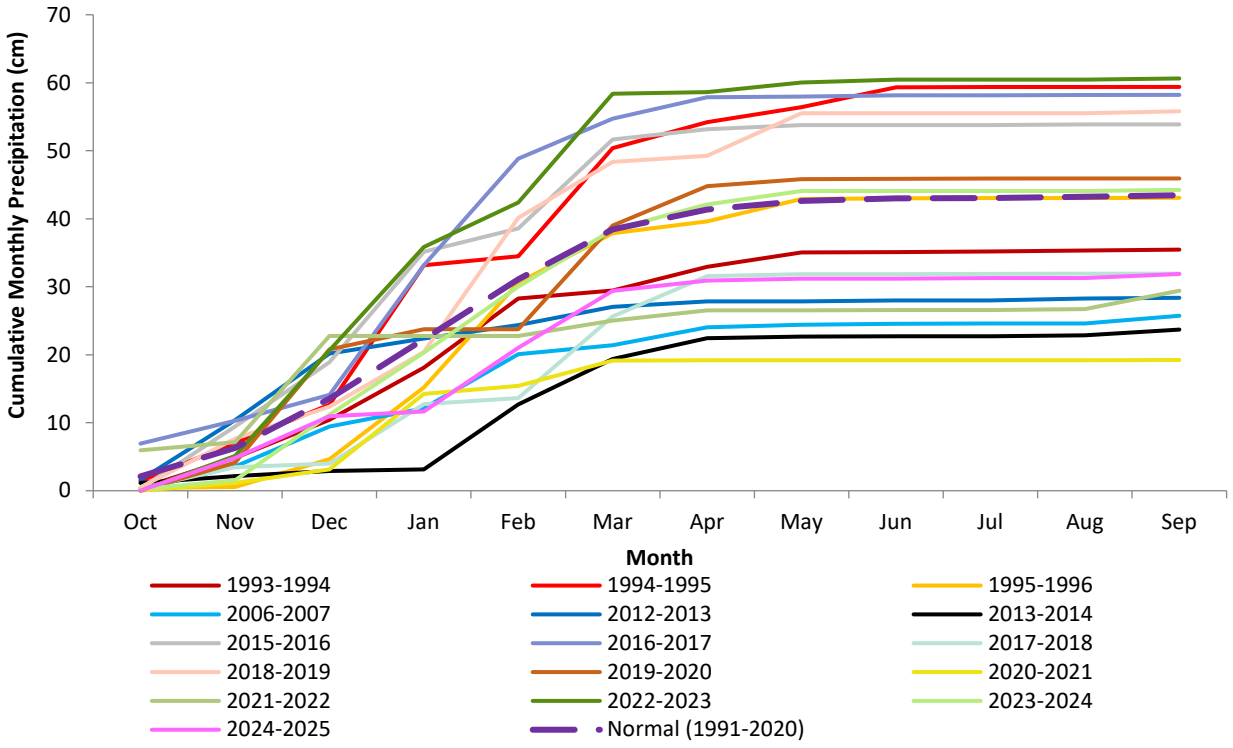

Figure 4-6. Cumulative monthly precipitation for years that hydrologic monitoring occurred at Pond 5 (Reference) compared to the 30-year normal (mean 1991-2020) (NCEI NOAA, 2024-2025).

4.2.1 Hydrologic Monitoring

Depth and inundation have been monitored at Pond 5 for 17 years (see Figure 4-7). Pond 5 has varied extensively in depth and inundation from year to year, remaining completely dry during the 2013-2014 consecutive drought year, while reaching a maximum depth of 130 cm and a maximum inundation of 7.8 acres during the 2016-2017 consecutive above-normal water year (see Figure 4-8). For the 2024-2025 water year, Pond 5 reached a maximum depth of 22 cm and a maximum inundation area of 2.52 acres (see Table 3-4). Historical and 2024-2025 water year values of inundation extent, depth, and water quality measurements are presented in Figure 4-8**,** Figure 4-9**,** and Figure 4-10**.**

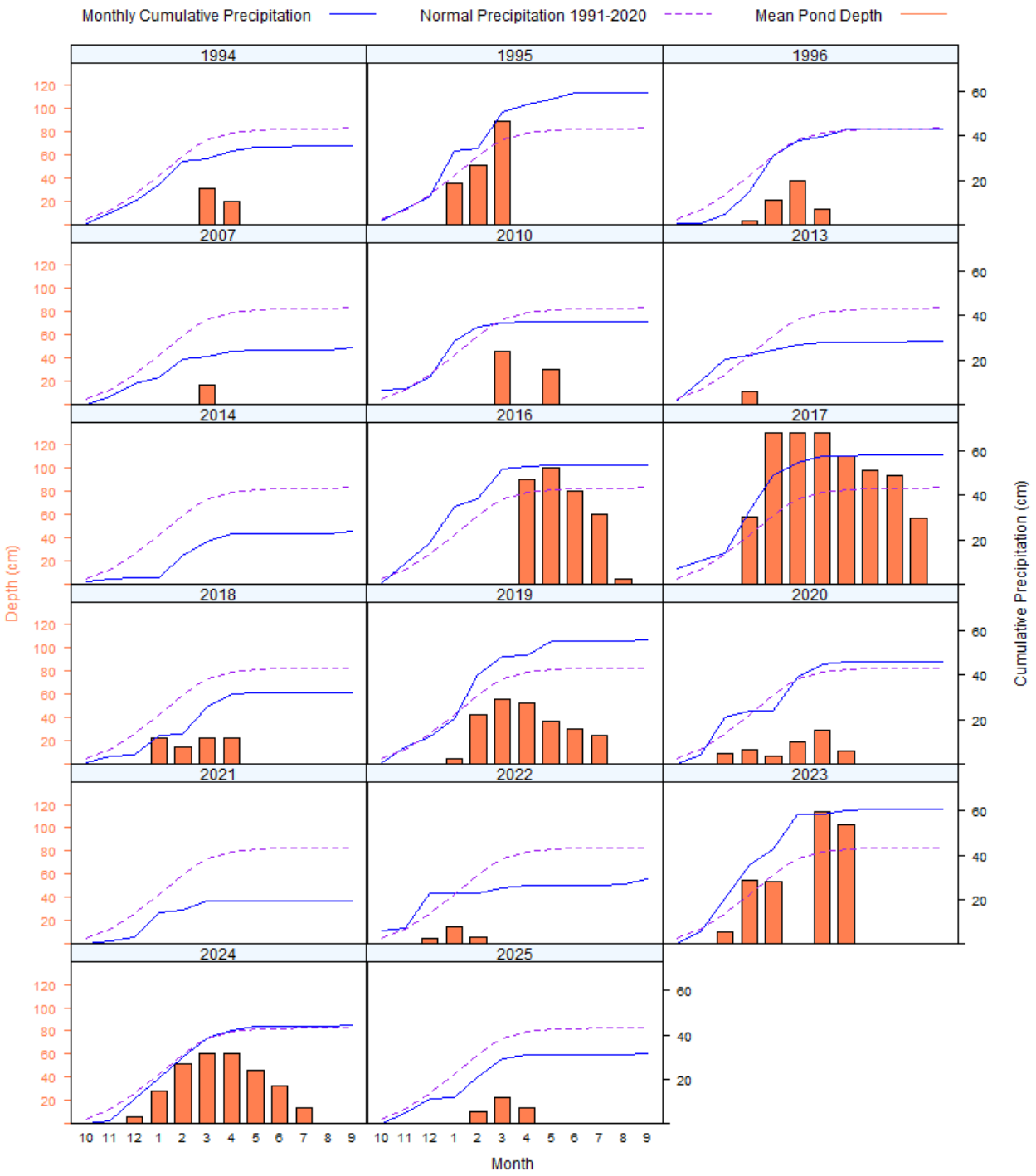

Figure 4-7. Cumulative monthly precipitation for years that hydrologic monitoring occurred at Pond 5 (Reference) compared to the 30-Year normal (mean 1991-2020) (NOAA, 2024-2025).

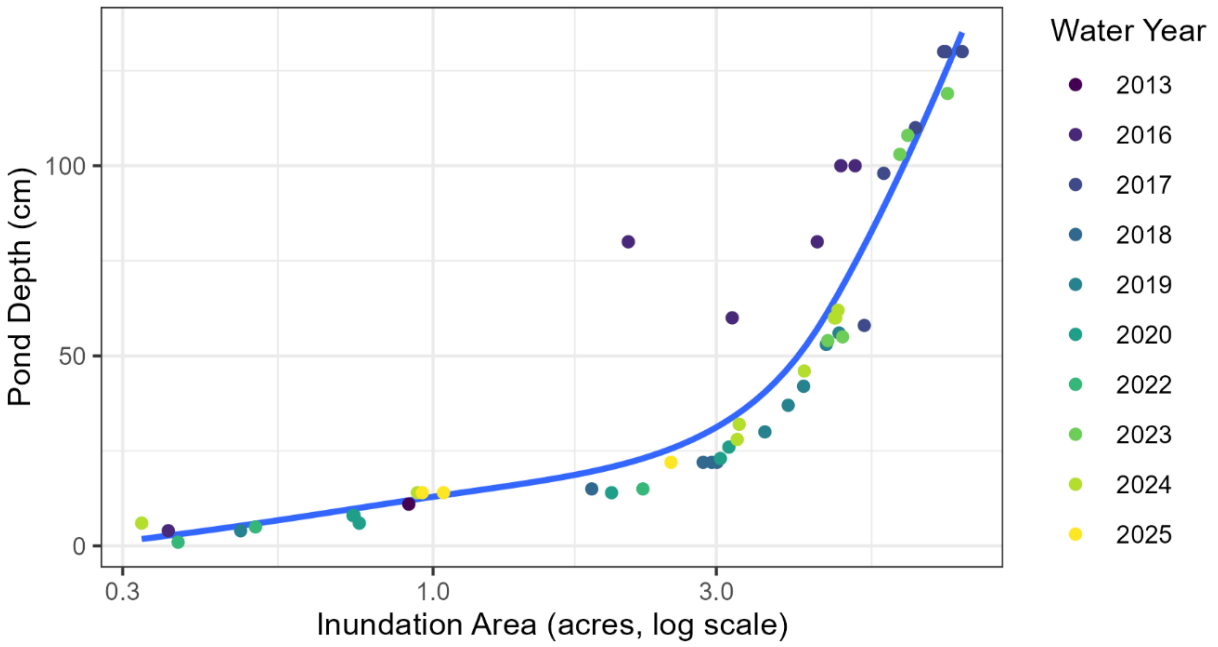

Figure 4-8. Pond 5 (Reference) plot of depth vs. inundation area since the 2015-2016 water year.

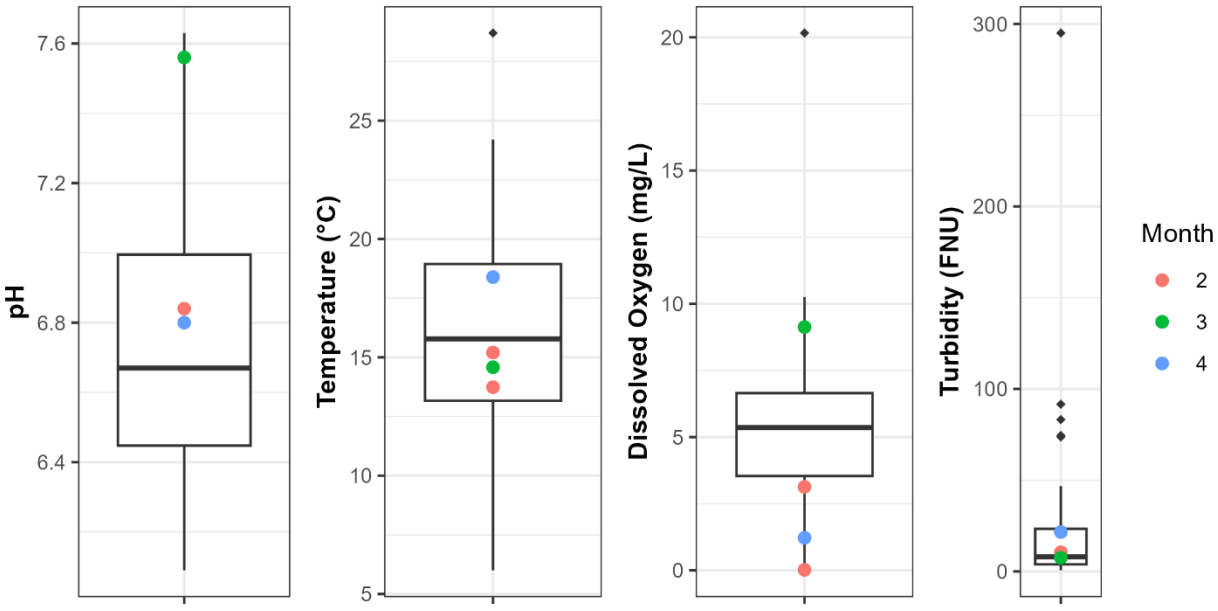

Figure 4-9. Pond 5 (Reference) historical and 2025 water quality measurements for pH, Temperature (C), Dissolved Oxygen (mg/L) and Turbidity (FNU). The line in the middle of the box represents the median, and the lower and upper ends of the box are the 25% and 75% quartiles of historical values respectively. The upper and lower whiskers represent largest and smallest values within 1.5 times above and below the size of the hinge, which is the 75% minus 25% quartiles, respectively. Black diamonds represent values from previous years that fall outside of the 25% and 75% quartiles. Colored dots represent 2024-2025 water year values.

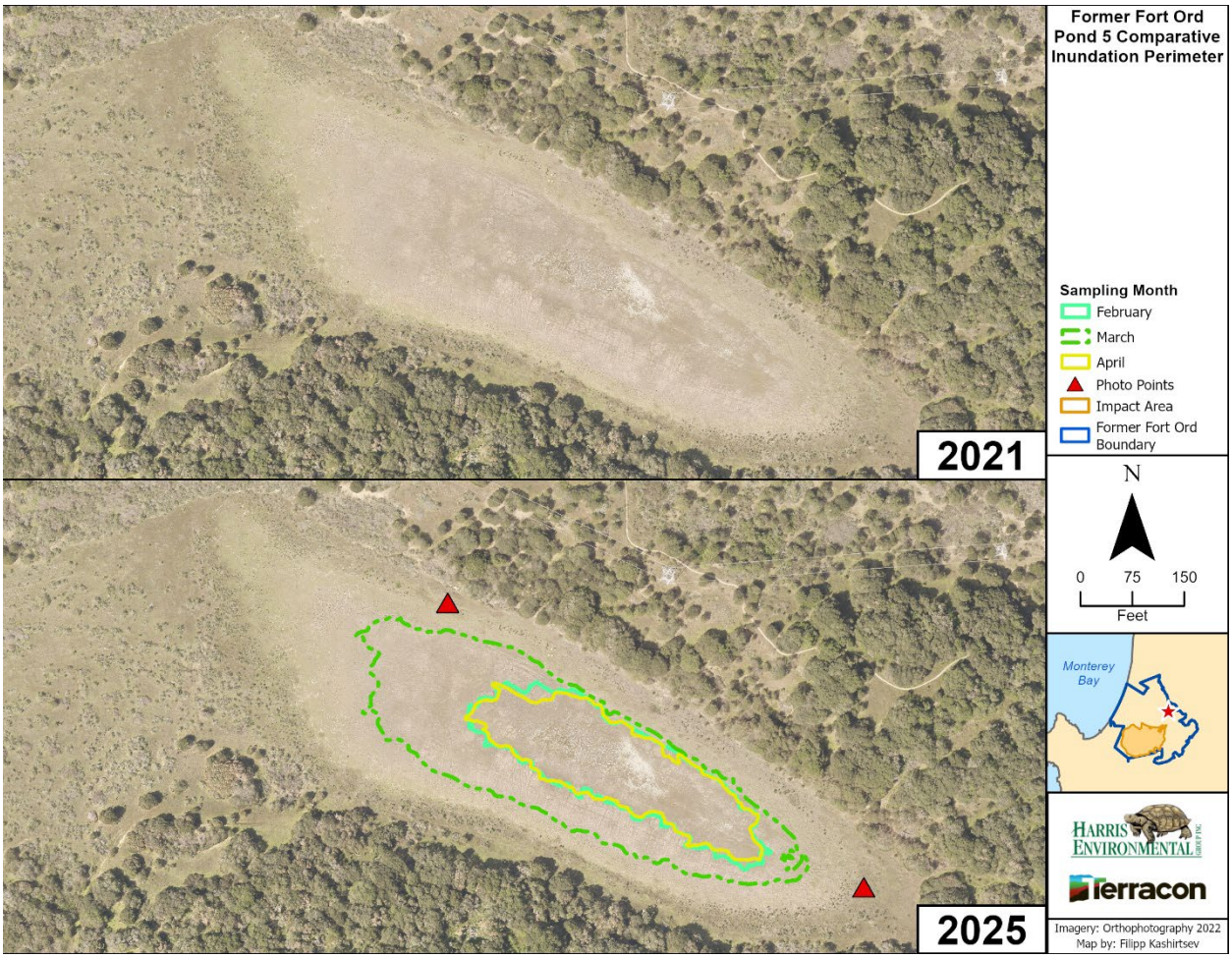

Figure 4-10. Pond 5 (Reference) inundation areas in 2021 and 2025 (both years had below normal precipitation following two years of normal or above normal precipitation).

4.2.1.1 *Data Quality Objective 1 (Water Depth)*

Pond 5 did not meet the required average depths of 25 cm from the first rain event through March for CTS. However, it held a mean of 15 cm of water for over 18 consecutive days, sufficient to support fairy shrimp survival.

4.2.1.2 *Data Quality Objective 2 (Inundation)*

Pond 5 was inundated February through April with an inundation range of 0.96-2.52 acres and a mean of 1.51 acres. The vernal pool was dry by May 8th, 2025.

4.2.1.3 *Performance Standard: Hydrologic Conditions and Inundation Area*

Pond 5 did not sustain suitable habitat for CTS, but it did for fairy shrimp in the 2024-2025 water year. Pond 5 is a reference vernal pool and was not required to meet the performance standards. Instead, the vernal pool was used as a control for comparison to the remediated vernal pools.

4.2.2 Wildlife Monitoring

Wildlife data were collected at Pond 5 in 1994-1996, 2007, 2010, 2016-2020, and 2023-2025 (Jones and Stokes, 1996; Shaw, 2008, 2011; Burleson and DD&A, 2017; Burleson, 2018, 2019, 2020; Terracon, 2021; Harris-Terracon, 2024, 2025). Fairy shrimp were present in 1995, 2019 and 2025. California tiger salamander larvae were observed in 1995, 2010, 2016, 2017, 2019, 2023, and 2024. Table 4-2 shows historical wildlife monitoring results.

Table 4-2. Pond 5 (Reference) historical wildlife monitoring results.

Sampling Year	CTS Larvae Abundance (# Individuals)	Fairy Shrimp Abundance (# Individuals)
1994	Not detected	Not detected
1995	Abundant	Very low – Moderate
1996	Not detected	Not detected
2007	Not detected	Not detected
2010	Few - Common	Not detected
2016	Common - Abundant (101, 75, 100)	Not detected
2017	Common (12, 18, 16)	Not detected
2018	Not detected	Not detected
2019	Common - Abundant (0, 165, 46)	Low (3)
2020	Not detected	Not detected
2023	Common (1, 44)	Not detected
2024	Common (6, 33, 3)	Not detected
2025	Not detected	Moderate – Very High (300+, 40)

Red = below normal precipitation; Green = normal precipitation; Blue = above normal precipitation

4.2.2.1 *Data Quality Objective 1 (Water Depth)*

Pond 5 did not provide suitable depth for CTS but did for fairy shrimp as discussed in Section 4.2.1.1.

4.2.2.2 *Data Quality Objective 4 (Water Quality)*

Pond 5 water quality parameters were suitable to support wildlife in 2025. Compared to other vernal pools and previous Pond 5 data, water quality values were within historical ranges, with one exception: a single elevated pH measurement (see Figure 4-9). pH ranged from 7.56 in March to 6.80 in April, with a mean of 7.07. Temperatures ranged from 13.74°C in February to 18.39°C in April, with a mean of 15.48°C. Dissolved oxygen ranged from 0.02 mg/L in February to 9.13 mg/L in March with a mean of 3.38 mg/L. The turbidity ranged from 7.5 FNU (Formazin Nephelometric Units) in March to 21.6 FNU in April, with a mean of 13.2 FNU (see Table 3-4).

4.2.2.3 *Data Quality Objective 5 (Wildlife)*

California tiger salamanders were not present in 2025 at Pond 5. They were additionally not detected in 1994, 1996, 2007, 2018, or 2020; but were detected in 1995, 2010, 2016, 2017, 2019, 2023, and 2024. The variation in CTS presence may be associated with rainfall patterns and the resultant vernal pool habitat. Presence was generally observed in above-normal water years, with the exception of 2010, which was a below-normal water year.

Fairy shrimp were detected in 2025, which is only consistent with two previous years of monitoring, 1995 and 2019, in which they were found in very low to moderate numbers. Fairy shrimp were not detected at Pond 5 in 1994, 1996, 2007, 2010, 2016-2018, 2020, 2023, and 2024. Fairy shrimp detections typically occur in the early stages of vernal pool inundation. Similar to CTS, fairy shrimp detection appears to be associated with above-normal water years, although detection is more unpredictable given their dynamic lifecycle.

4.2.2.4 *Performance Standard: Wildlife Usage*

Pond 5 is a reference vernal pool and was not required to meet the performance standards. The vernal pool is used as a control for comparison to the remediated vernal pools.

4.2.3 Vegetation Monitoring

Vegetation data were collected at Pond 5 in 2007 and 2016-2025 (Shaw, 2008; Burleson and DD&A, 2017; Burleson, 2018, 2019, and 2020; Terracon, 2021, 2022, 2023; Harris-Terracon, 2024, 2025). Data from 1994, 1995, and 1996 only represent dominant species and are not included in the following analyses because the data were collected using a different methodology than was used in subsequent years (Jones and Stokes, 1996). In 2007, data were collected in three zones using a 1.0 m^2 quadrat placed at three locations within each zone, and data for all strata were combined for the entire pool to allow for comparison to other years. In years 2016-2025, data were collected using methodologies described in the Methods section of this report. Data from 2016 and 2025 were compared stratum-to-stratum as well as visually in Figure 4-11.

Table 4-3. Pond 5 (Reference) vegetative strata percentage within the vernal pool basin boundary.

Stratum	Percentage	
	2016	2025
1	26%	26.1%
2	32%	31.5%
3	38%	19.4%
4	4%	N/A
8	N/A	23.0%

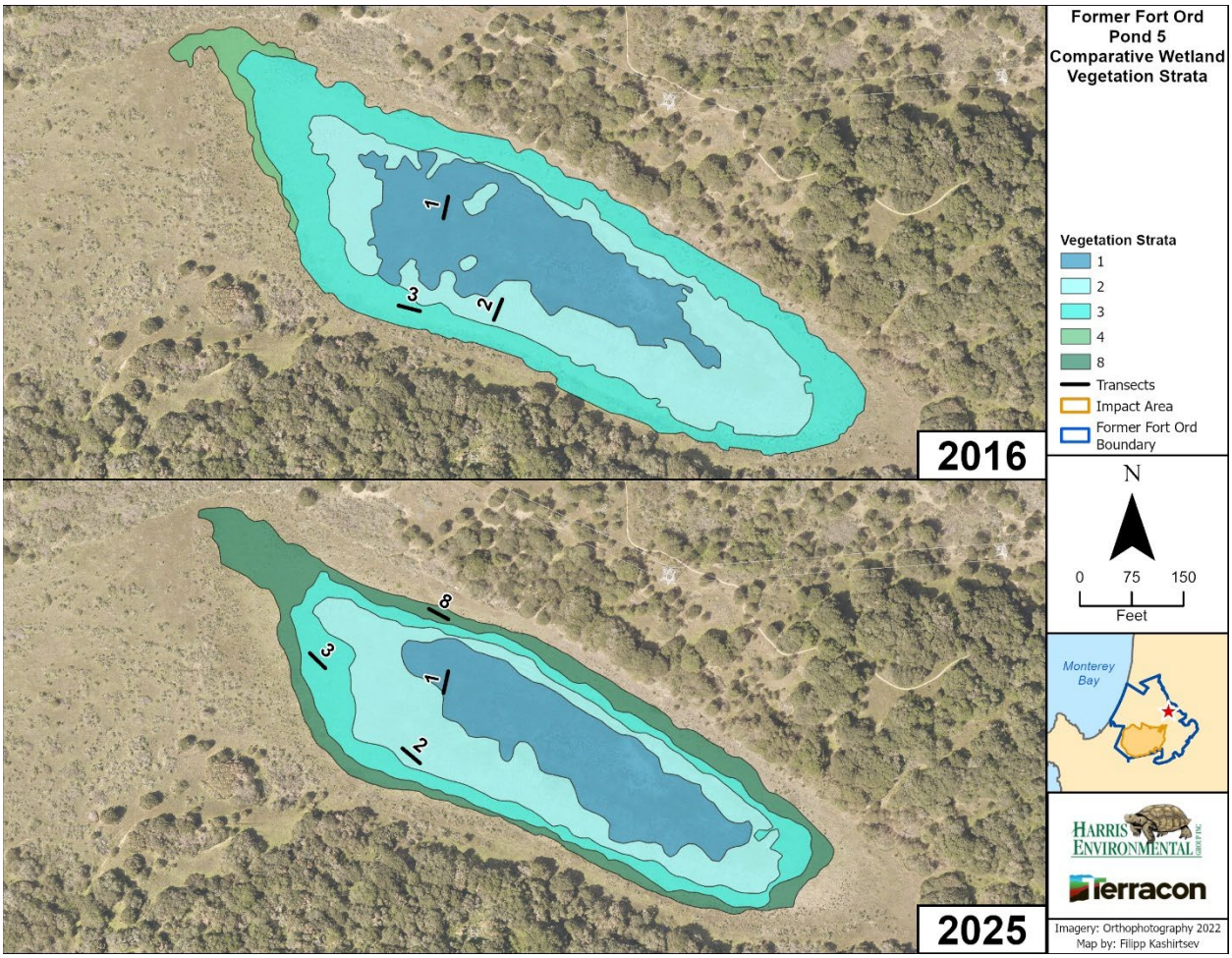

Figure 4-11. Pond 5 (Reference) vegetation strata and transects for 2016 and 2025.

The absolute percent vegetative cover observed in 2025 was less than the last two previous recorded years and most like 2020 (see Table 4-4). Vegetative cover ranged from 36.3% in 2007 to 80.0% in 2024, whereas thatch/bare ground ranged from 20.0% in 2024 to 63.7% in 2007.

Table 4-4. Pond 5 (Reference) absolute percent cover.

Year	Vegetative Cover	Thatch/Bare Ground
2007	36.3%	63.7%
2016	75.1%	25.2%
2017	60.5%	40.4%
2018	54.6%	45.5%
2019	76.0%	24.0%
2020	47.6%	52.4%
2021	39.3%	60.7%
2022	41.2%	58.8%
2023	74.5%	25.5%
2024	80.0%	20.0%
2025	48.2%	51.8%

Species richness on transects and for the overall basin has fluctuated between 2007 and 2025 with the highest richness observed on transects in 2018 and for the overall basin in 2019. Species richness on transects was 4, 7, 29, 41, 35, 23, 31, 29, 24, 24, and 26 species in 2007, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, and 2025, respectively; whereas overall basin species richness was 26, 40, 73, 88, 94, 69, 70, 76, 68, 60, and 62 species, respectively (see Table 4-5, and Appendix G Table G-1). The species richness is represented on the RACs as the length of the curve and number of species along the curve (see Figure 4-12 and Figure 4-13).

Species composition at Pond 5 varied between monitoring years. This variability of species composition is illustrated on the RACs as the species codes shift along the curve and losses and gains occur from year to year. Despite overall composition variability, the dominant species in the vernal pool was pale spikerush (*Eleocharis macrostachya*) in every monitoring year except in 2017 in which salt grass (*Distichlis spicata*) became dominant, and in 2021, when Baltic rush (*Juncus balticus*) was slightly more abundant than pale spikerush. Salt grass was generally a close subdominant to pale spikerush in most monitoring years, except in 2025, when non-native rabbitfoot grass (*Polypogon monspeliensis*) became the second most-dominant species. Additionally, non-native Pacific bent-grass (*Agrostis avenacea*) became the third most dominant species in 2025, a shift from a generally native-dominant composition in previous years. A complete comparison of species composition observed during the surveys at Pond 5 in 2007 and 2016-2025 can be found in Appendix H. Figure 4-15 shows a subset of this comparison for species observed with a 2% absolute cover or greater.

The evenness from each year is represented by the slope of the RACs. The evenness is fairly similar from year to year with richness uniformly distributed along the entire curve with a slightly higher concentration or plateau of species toward the tail end. This plateau illustrates that there are a high number of species with low abundance. As explained in Verberk (2011), “Structurally complex systems, such as a fen [or vernal pool] system are species rich and have a more even community abundance pattern, possibly owing to a fine partitioning of available niches”. When comparing year to year, a more even distribution of the top species occurs in 2017, 2018, and 2021, and 2022 at Pond 5 (see Figure 4-14, and Appendix I). Whereas 2016, 2019, 2020, and 2023-2025 have steeper slopes and higher abundance of the dominant species at the top of the curves.

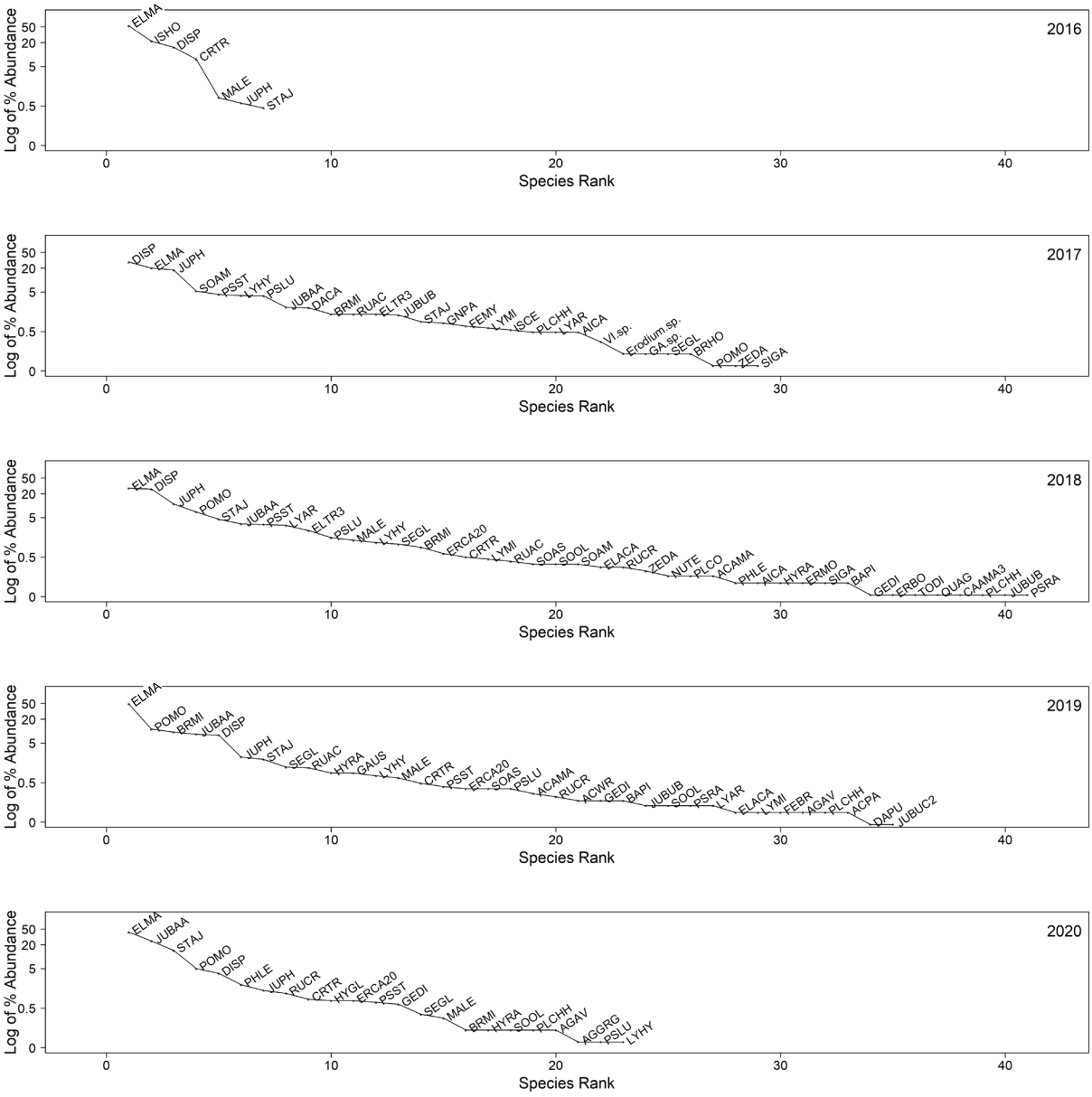

Figure 4-12. Rank abundance curves at Pond 5 (Reference) in 2016-2020. Note that the y-axis is in log-10 scale.

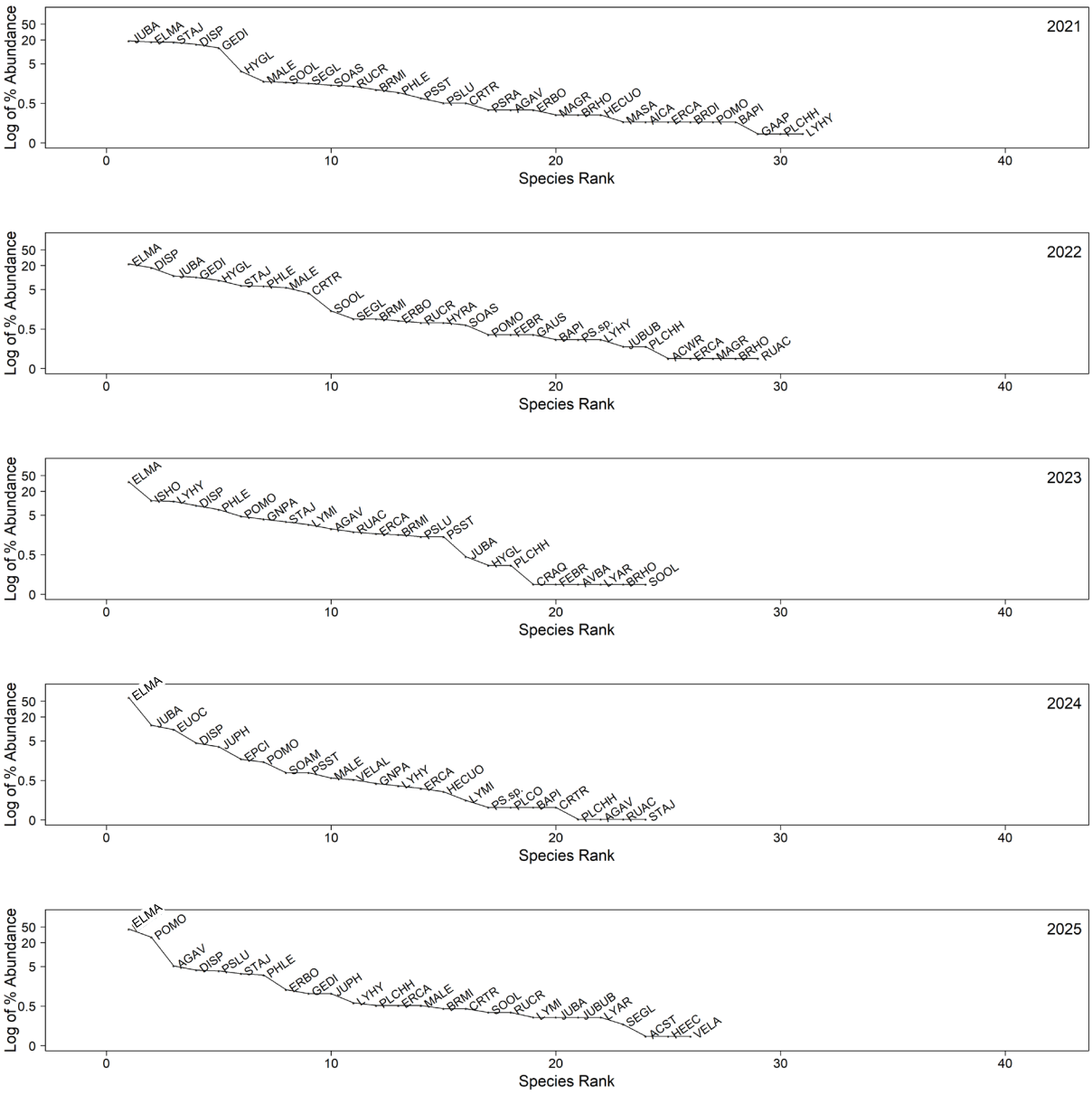

Figure 4-13. Rank abundance curves at Pond 5 (Reference) in 2020-2025. Note that the y-axis is in log-10 scale.

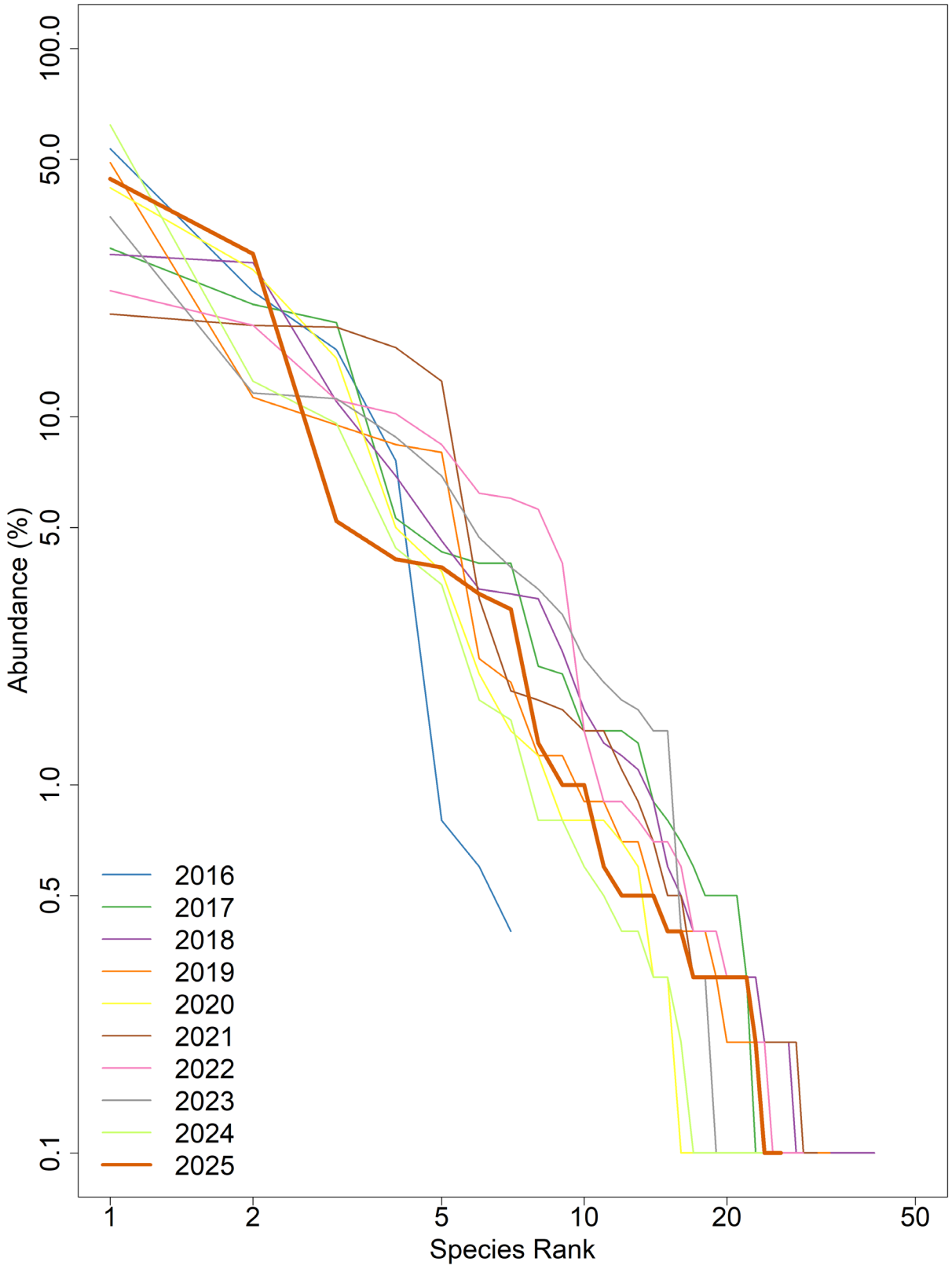

Figure 4-14. Rank abundance curves at Pond 5 (Reference) in 2016-2025. Note that both the x-axis and y-axis are in log-10 scale.

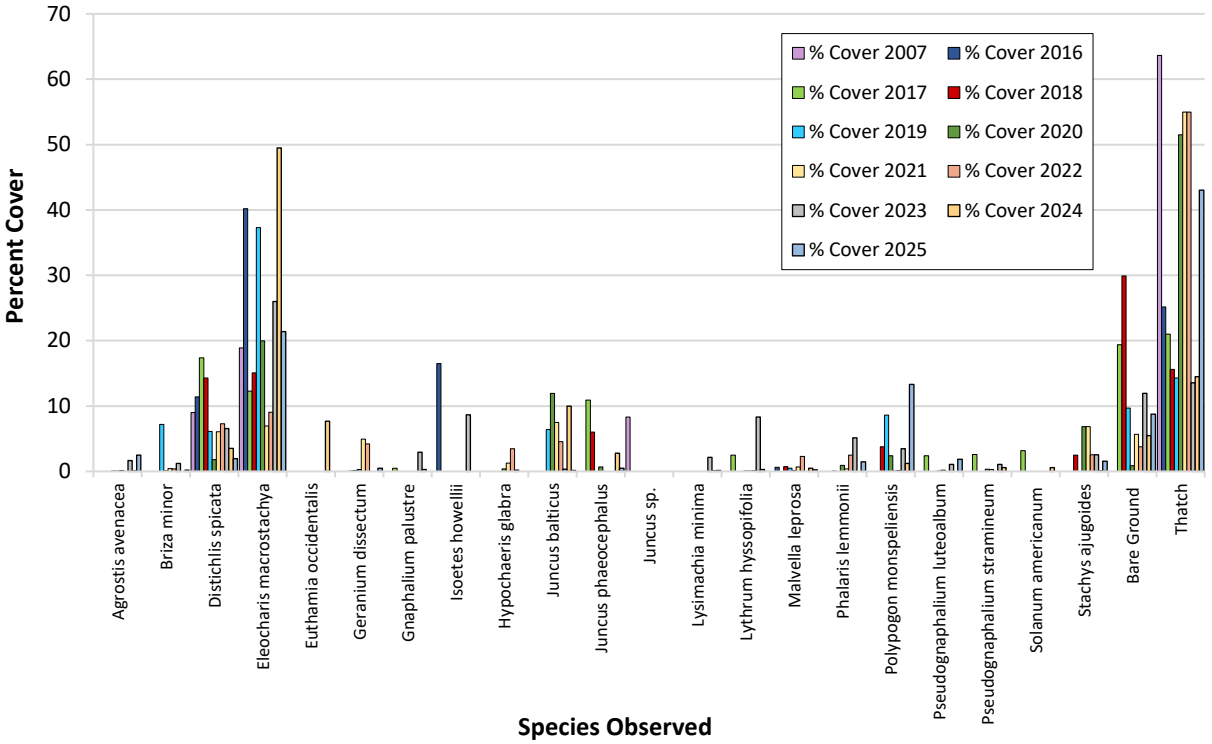

Figure 4-15. Percent cover of dominant species at Pond 5 (Reference).

Native and non-native species richness on Pond 5 transects varied through time, with the highest overall richness recorded in 2018. Native richness in 2025 was the same as in 2022, while non-native richness was the same as in 2023 (see Table 4-5). The relative percent cover of native species varied through time, with the highest native cover observed in 2016 at 100.0% and the lowest value observed this year at 58.7%. Values for native relative percent cover in 2025 were 14.9% less than the lowest value in 2019 (see Table 4-6).

Table 4-5. Pond 5 (Reference) native and non-native species richness.

Year	Native	Non-Native	Unidentified	Total
2007	2	1	1	**4**
2016	7	0	0	**7**
2017	15	11	3	**29**
2018	25	16	0	**41**
2019	21	14	0	**35**
2020	12	11	0	**23**
2021	16	15	0	**31**
2022	14	14	1	**29**
2023	12	12	0	**24**
2024	18	5	1	**24**
2025	14	12	0	**26**

Table 4-6. Pond 5 (Reference) relative percent cover of native and non-native plants.

Year	Native	Non-Native	Unidentified
2007	76.9%	0.3%	22.9%
2016	100.0%	0.0%	0.0%
2017	86.6%	12.9%	0.6%
2018	83.3%	16.7%	0.0%
2019	73.6%	26.4%	0.0%
2020	91.3%	8.7%	0.0%
2021	75.0%	25.0%	0.0%
2022	73.9%	25.9%	0.3%
2023	76.3%	23.7%	0.0%
2024	97.9%	2.0%	0.1%
2025	58.7%	41.3%	0.0%

Wetland species richness on Pond 5 transects increased through time until 2018, decreased in years 2019-2022, then increased again from 2023-2025. The non-wetland species richness was more variable, with the highest value recorded in 2018 (see Table 4-7). By 2025, wetland species richness increased by two species from the two previous years while non-wetland species remained the same as the two previous years. The relative percent cover of wetland species in 2025 decreased by 7% from the previous year, while non-wetland species cover increased by 1% from the previous year (see Table 4-8).

Table 4-7. Pond 5 (Reference) wetland and non-wetland species richness.

Year	Wetland				Non-Wetland			Not Listed
	OBL	FACW	FAC	Total	FACU	UPL	Total	
2007	1	1	0	**2**	1	0	**1**	1
2016	3	3	0	**6**	1	0	**1**	0
2017	5	8	5	**18**	5	0	**5**	6
2018	5	11	7	**23**	8	1	**9**	9
2019	5	9	4	**18**	5	1	**6**	11
2020	4	7	3	**14**	3	1	**4**	5
2021	4	6	3	**13**	7	1	**8**	10
2022	4	6	2	**12**	7	1	**8**	9
2023	6	7	3	**16**	3	1	**4**	4
2024	4	9	3	**16**	4	0	**4**	4
2025	4	9	5	**18**	3	1	**4**	4

Table 4-8. Pond 5 (Reference) relative percent cover of wetland and non-wetland species.*

Year	Wetland				Non-Wetland			Not Listed
	OBL	FACW	FAC	Total	FACU	UPL	Total	
2007	52.1%	24.8%	0.0%	**76.9%**	0.3%	0.0%	**0.3%**	22.9%
2016	75.9%	23.3%	0.0%	**99.2%**	0.8%	0.0%	**0.8%**	0.0%
2017	26.3%	55.3%	9.6%	**91.2%**	8.0%	0.0%	**8.0%**	0.8%
2018	33.7%	50.5%	10.2%	**94.4%**	3.3%	0.3%	**3.6%**	2.0%
2019	51.9%	31.0%	10.3%	**93.1%**	3.4%	0.1%	**3.6%**	3.3%
2020	56.5%	38.1%	2.0%	**96.7%**	1.2%	0.1%	**1.3%**	2.0%
2021	35.3%	36.5%	3.1%	**75.0%**	4.2%	1.7%	**5.9%**	19.1%
2022	28.7%	39.4%	1.6%	**69.6%**	8.0%	1.4%	**9.4%**	20.9%
2023	61.4%	29.0%	3.1%	**93.6%**	3.7%	0.1%	**3.8%**	2.7%
2024	62.4%	33.9%	1.4%	**97.8%**	1.7%	0.0%	**1.7%**	0.5%
2025	48.7%	40.9%	1.2%	**90.8%**	2.3%	0.3%	**2.7%**	6.5%

* = Percentages were rounded to the nearest tenth and therefore may not add up to 100%

4.2.3.1 *Data Quality Objective 3 (Vegetation)*

Observable changes in hydrophytic vegetation between surveys were largely associated with precipitation fluctuations. This is expected given the dynamic nature of vernal pools and the close relationship between the hydroperiod and wetland vegetation composition. As a reference vernal pool, Pond 5 is used for comparison to remediated vernal pools.

4.2.3.2 *Performance Standard: Plant Cover and Species Diversity*

Pond 5 is a reference vernal pool and not required to meet performance standards. The vernal pool provides a control for comparison to the remediated vernal pools.

4.2.4 Conclusion

Pond 5 is used for comparison to remediated vernal pools (see Table 4-9).

Table 4-9. Success at Pond 5 (Reference) based on performance standards and applicable Data Quality Objectives.

Performance Standard	Applicable DQO	Success
Hydrologic Conditions & Inundation Area	DQO 1	Suitable for Comparison
	DQO 2	Suitable for Comparison
Plant Cover & Species Diversity	DQO 3	Suitable for Comparison
Wildlife Usage	DQO 1	Suitable for Comparison
	DQO 4	Suitable for Comparison
	DQO 5	Suitable for Comparison

4.3 Pond 101 East (East) – Reference

Pond 101 East (East) was monitored for 17 years as a reference vernal pool. Table 4-10 summarizes the years that monitoring occurred and surveys were conducted. The cumulative precipitation graph shows precipitation for years in which hydrologic monitoring was conducted at Pond 101 East (East) (see Figure 4-16). Above-normal water years were 2015-2016, 2016-2017, 2018-2019, and 2022-2023. All other monitoring, including 2024-2025, was conducted either in a normal or below-normal water year, drought year, or consecutive drought year.

Table 4-10. Pond 101 East (East) (Reference) summary of historical surveys for hydrology, vegetation, and wildlife.

Survey	Water Year																
	1991-1992	2000-2001	2006-2007	2009-2010	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025
Hydrology		●	●		●	●	●	●	●	●	●	●	●	●	●	●	●
Wildlife	●	●	●	●				●	●	●	●	●			●	●	●
Vegetation								●	●	●	●	●	●	●	●	●	●

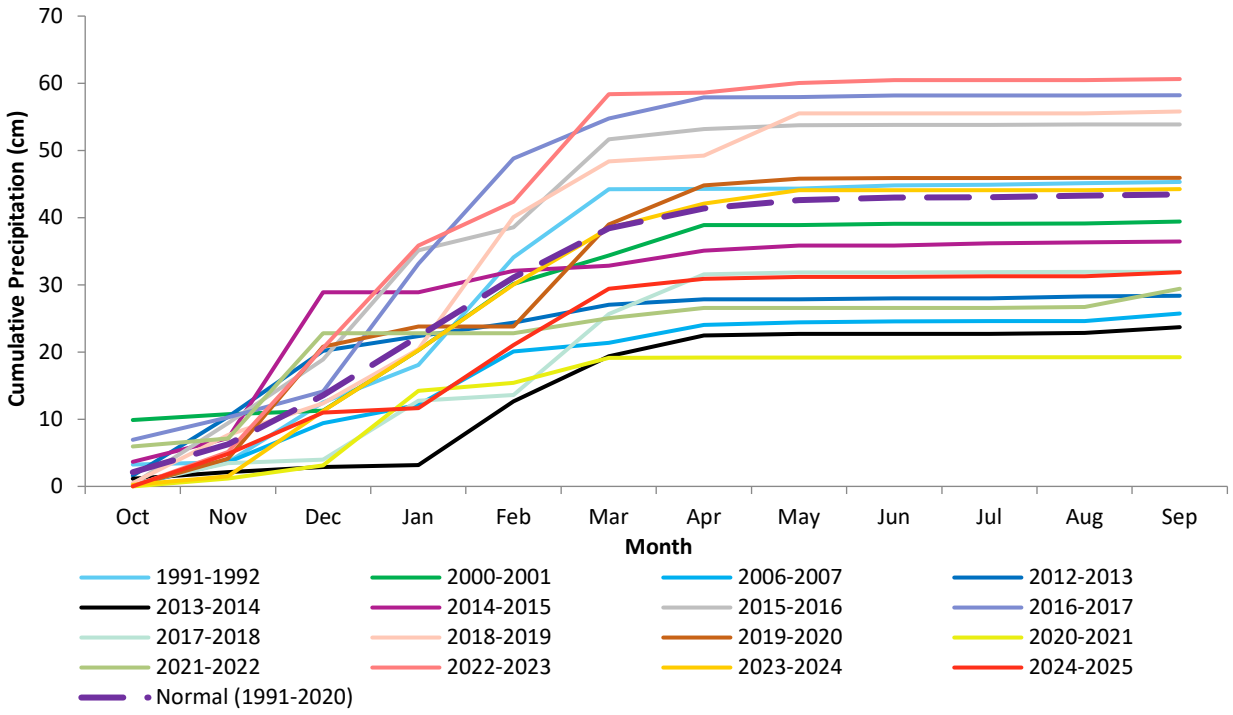

Figure 4-16. Cumulative monthly precipitation for years that hydrologic monitoring occurred at Pond 101 East (East) (Reference) compared to the 30-year normal (mean 1991-2020) (NCEI NOAA, 2024-2025).

4.3.1 Hydrologic Monitoring

Historically, Pond 101 East (East) varied in depth and inundation, remaining completely dry during the 2014-2015 consecutive drought year, while reaching a maximum depth of 160 cm and a maximum inundation of 9.38 acres during the 2016-2017 consecutive above-normal water year (see Figure 4-17). Pond 101 East (East) reached a maximum depth of 28 cm and a maximum inundation area of 0.75 acres in the 2025 water year. Historical and 2025 water year values of inundation extent, depth, and water quality measurements are presented in Figure 4-18, Figure 4-19, and Figure 4-20.

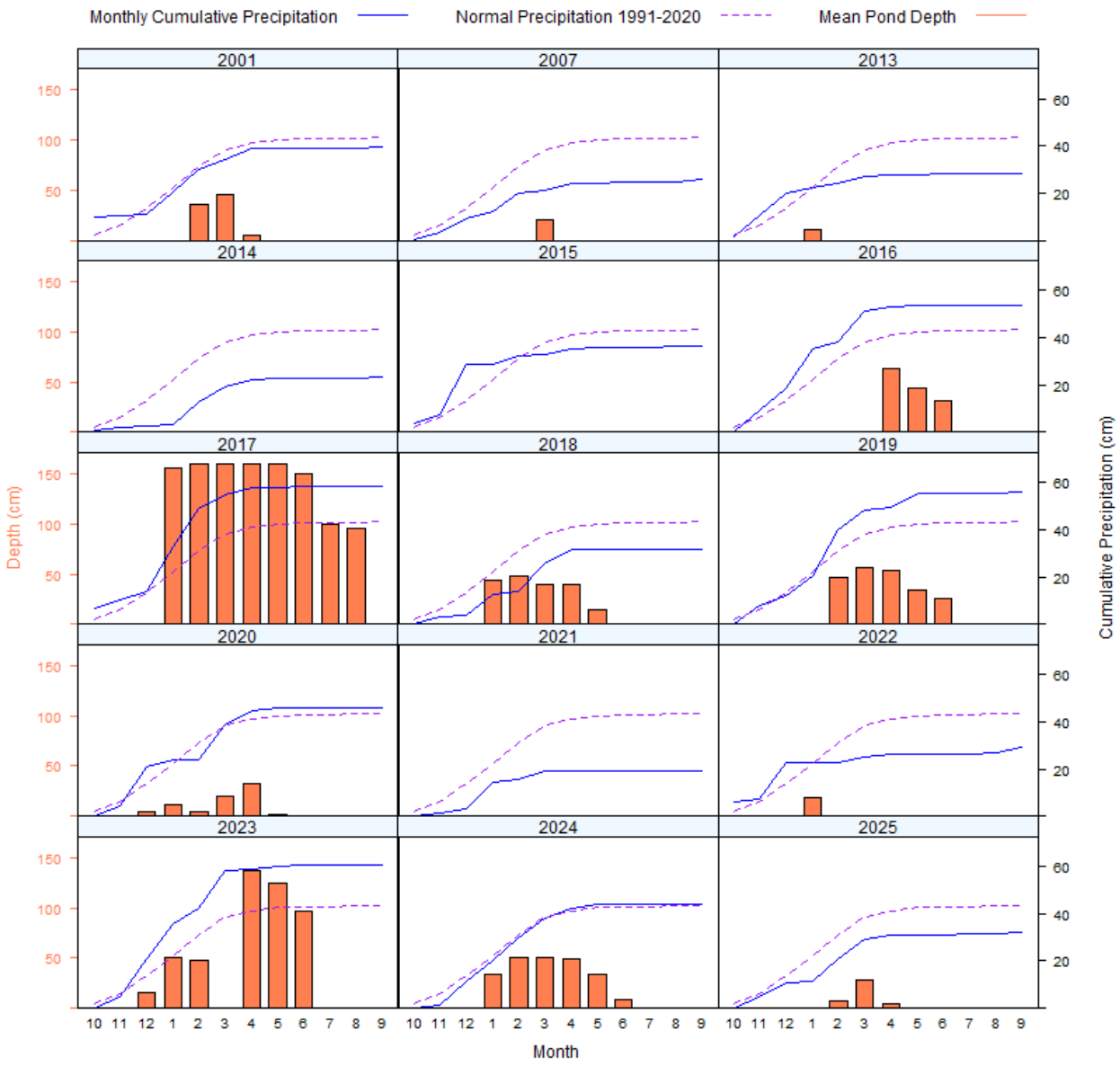

Figure 4-17. Cumulative monthly precipitation for years that hydrologic monitoring occurred at Pond 101 East (East) (Reference) compared to the 30-year normal (mean 1991-2020) (NOAA, 2024-2025).

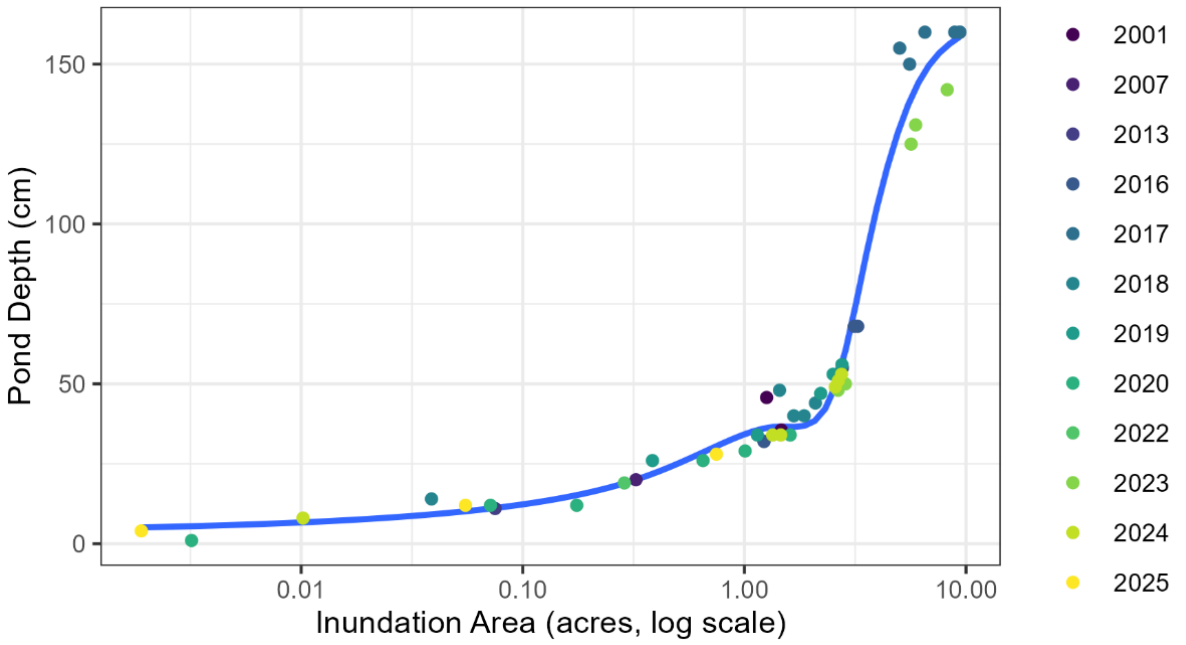

Figure 4-18. Pond 101 East (East) (Reference) plot of depth vs inundation area since 2001.

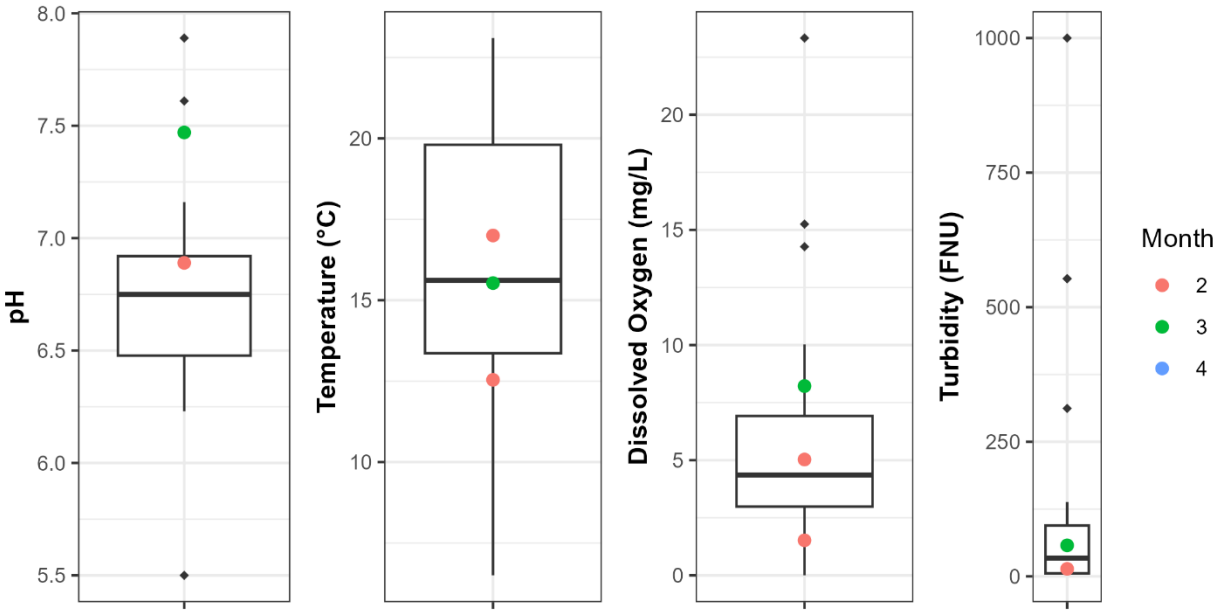

Figure 4-19. Pond 101 East (East) (Reference) historical and 2025 water quality measurements for pH, Temperature (C), Dissolved Oxygen (mg/L), and Turbidity (FNU). The line in the middle of the box represents the median, and the lower and upper ends of the box are the 25% and 75% quartiles of historical values respectively. The upper and lower whiskers represent largest and smallest values within 1.5 times above and below the size of the hinge, which is the 75% minus 25% quartiles, respectively. Black diamonds represent values from previous years that fall outside of the 25% and 75% quartiles. Colored dots represent 2024-2025 (2025) water year values.

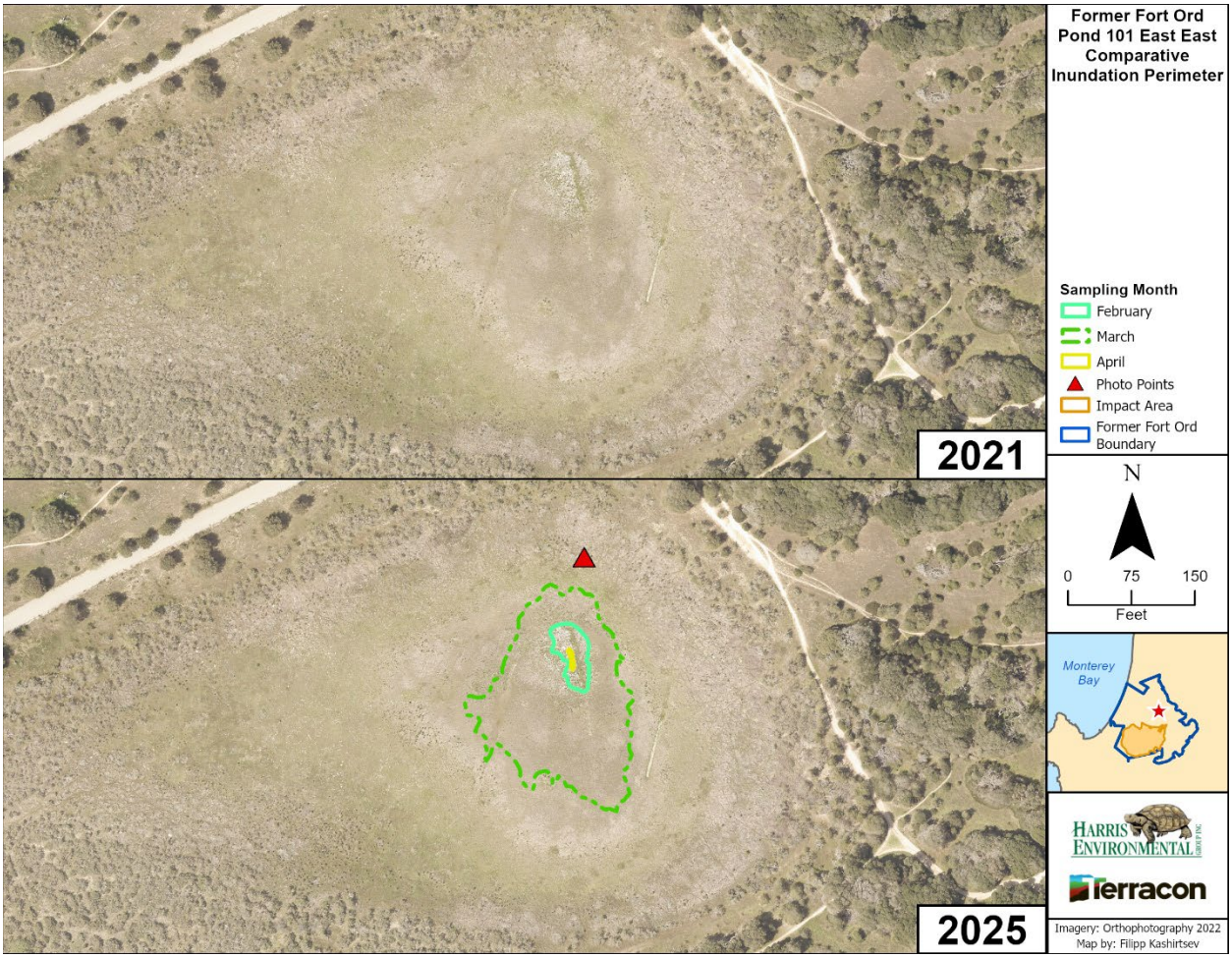

Figure 4-20. Pond 101 East (East) (Reference) inundation areas in 2021 and 2025 (both years had below normal precipitation following two years of normal or above normal precipitation.

4.3.1.1 *Data Quality Objective 1 (Water Depth)*

Pond 101 East (East) did not meet the required average depths of 25 cm from the first rain event through March for CTS, nor did it meet the 10 cm for 18 consecutive days through May requirement for fairy shrimp. However, it held a mean of 12 cm of water for over 18 consecutive days, sufficient to support fairy shrimp survival.

4.3.1.2 *Data Quality Objective 2 (Inundation Area)*

Pond 101 East (East) was inundated from February through April with an inundation range of 0.002-0.75 acres and a mean of 0.04 acres. The vernal pool was dry by the May 2025 monitoring event.

4.3.1.3 *Performance Standard: Hydrologic Conditions and Inundation Area*

Pond 101 East (East) did not provide suitable habitat for CTS, but did for fairy shrimp in the 2025 water year. Pond 101 East (East) is a reference vernal pool and was not required to meet the performance standards. Instead, the vernal pool was used as a control for comparison to the remediated vernal pools.

4.3.2 Wildlife Monitoring

Wildlife data were collected at Pond 101 East (East) in 1992, 2001, 2007, 2010, 2016-2020, and 2023-2025 (Jones and Stokes, 1992; Harding ESE, 2002; Shaw, 2008; Shaw, 2011; Burleson and DD&A, 2017; Burleson, 2018, 2019, 2020; Terracon, 2021; Harris-Terracon, 2024, 2025). California tiger salamander larvae were observed in 1992, 2010, 2016-2019, 2023, and 2024. Fairy shrimp were present in 2001, 2019, 2020, and 2025. Table 4-11 shows historical wildlife monitoring results.

Table 4-11. Pond 101 East (East) (Reference) historical wildlife monitoring results.

Sampling Year	CTS Larvae Abundance (# Individuals)	Fairy Shrimp Abundance (# Individuals)
1992	Present*	Not detected*
2001	Not detected*	Moderate (100, 12)
2007	Not detected	Not detected
2010	Common*	Not detected*
2016	Common – Abundant (>101, 101, 67)	Not detected
2017	Common (36, 70, 5)	Not detected
2018	Few (2)	Not detected
2019	Common – Abundant (38, 212, 225)	Moderate (32)
2020	Not detected	Moderate (15)
2023	Common (1, 29)	Not detected
2024	Common – Abundant (180, 82, 93)	Not detected
2025	Not detected	Low – Moderate (100, 2)

*Data do not differentiate between 101 East (East), 101 East (West), and 101 West. They are identified collectively as Pond 101.
Red = below normal precipitation; Green = normal precipitation; Blue = above normal precipitation

4.3.2.1 *Data Quality Objective 1 (Water Depth)*

Pond 101 East (East) did not provide suitable depth for CTS and fairy shrimp as discussed in Section 4.3.1.1. However, it held a mean of 12 cm of water for over 18 consecutive days, sufficient to support fairy shrimp survival.

4.3.2.2 *Data Quality Objective 4 (Water Quality)*

Pond 101 East (East) water quality parameters were suitable to support wildlife. Compared to other vernal pools and previous Pond 101 East (East) data, water quality parameters at Pond 101 East (East) were within historical ranges in 2025, with the exception of a single high pH measurement. The pH ranged from 7.47 in May to 6.89 in February with a mean of 7.18. Temperature ranged from 12.54°C in February to 17.0°C later the same month, with a mean of 15.02°C. Dissolved oxygen ranged from 1.52 mg/L in February to 8.22 mg/L in March with a mean of 4.92 mg/L. Turbidity ranged from 13.9 FNU in February to 57.6 FNU in March with a mean of 35.75 FNU (see Table 3-9).

4.3.2.3 *Data Quality Objective 5 (Wildlife)*

California tiger salamanders were not detected in 2025, nor were they found in 2001, 2007, and 2020. They were present in 1992, 2010, 2016-2019, 2023, and 2024. The lack of CTS this year may have been associated with below-normal precipitation; however, CTS were present in below-normal water years 2010 and 2018, possibly due to longer hydroperiod.

Fairy shrimp were detected in 2025 in low to moderate numbers, which was consistent with three previous monitoring years, including 2001, 2019, and 2020. Fairy shrimp were not detected in 1992,

2007, 2010, 2016-2018, 2023, or 2024. It was possible that survey event timing from the previous two monitoring years prevented detections since previous fairy shrimp detections were generally made in February and March, as they were this year in 2025, while surveys during years with no detections occurred later between March and May. The exception to this was in 2020, when detections occurred during the March through May surveys, suggesting that detection is likely associated with the timing of precipitation and resultant ponding, rather than specific months.

4.3.3 Vegetation Monitoring

Vegetation data were collected at Pond 101 East (East) in 2016-2025 (Burleson and DD&A, 2017; Burleson, 2018, 2019, 2020; Terracon, 2021, 2022, 2023; Harris-Terracon, 2024, 2025). Data were collected using the methodology described in the Methods section of this report. Data from 2016 and 2025 were compared stratum-to-stratum in Table 4-12 as well as visually in Figure 4-21.

Table 4-12. Pond 101 East (East) (Reference) vegetative strata percentage within the vernal pool basin boundary.

Stratum	Percentage	
	2016	2025
1	0.4%	N/A
2	48%	1.5%
3	44%	47.1%
4	8%	N/A
5	N/A	49.3%
9	N/A	2.1%

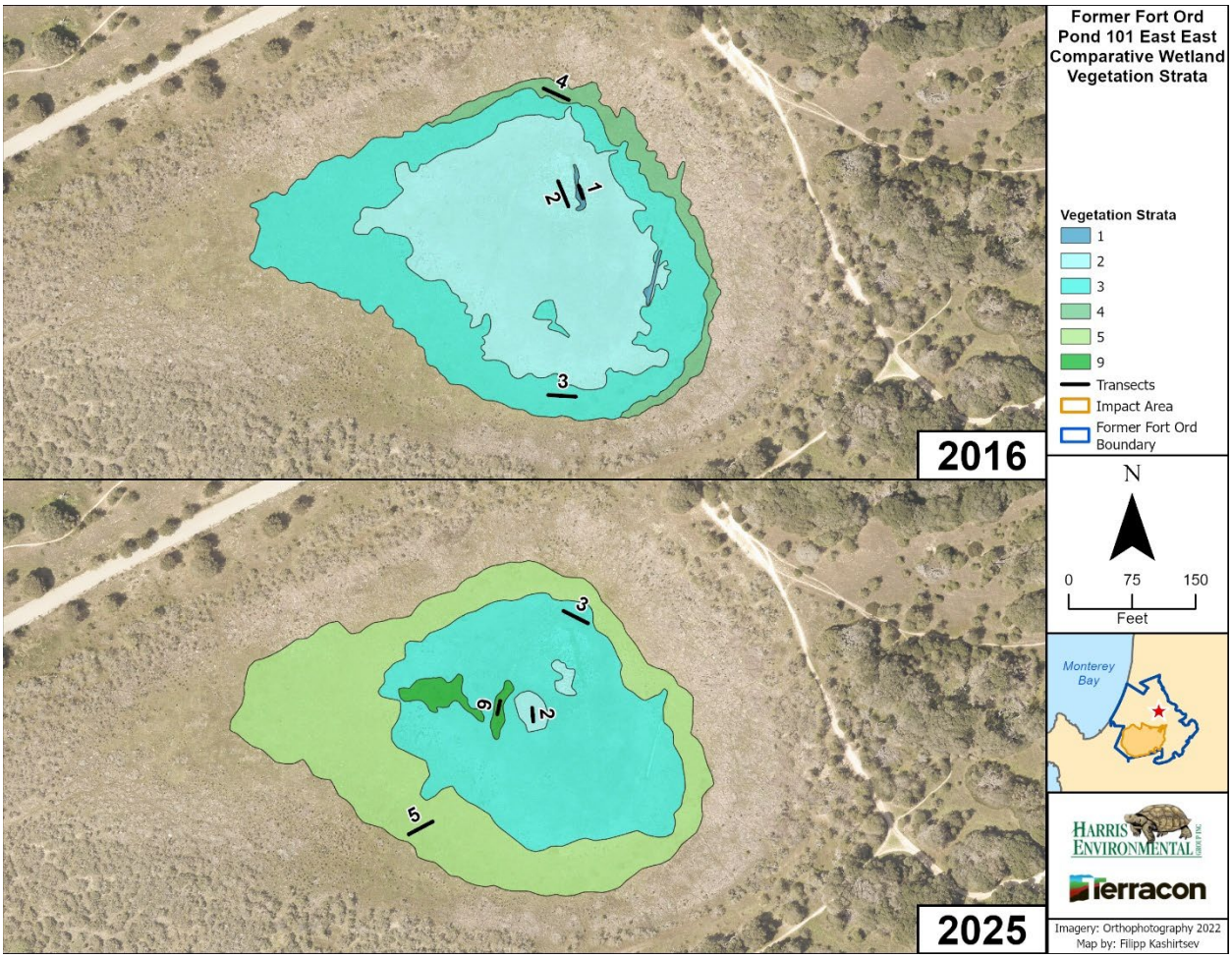

Figure 4-21. Pond 101 East (East) (Reference) vegetation strata and transects for 2016 and 2025.

The absolute percent vegetative cover observed at Pond 101 East (East) in 2025 was 1.3% greater than the median (70.0%) of all vegetative cover values since 2016 and was most similar to 2019 (see Table 4-13). Vegetative cover in previous years ranged from 38.5% in 2021 to 84.6% in 2017, whereas thatch/bare ground ranged from 16.6% in 2017 to 61.6% in 2021.

Table 4-13. Pond 101 East (East) (Reference) absolute percent cover.

Year	Vegetative Cover	Thatch/Bare Ground
2016	60.7%	41.0%
2017	84.6%	16.6%
2018	68.7%	32.6%
2019	72.6%	28.6%
2020	63.4%	36.6%
2021	38.5%	61.6%
2022	55.5%	44.5%
2023	82.6%	17.4%
2024	76.8%	23.2%
2025	71.3%	28.7%

Species richness on transects varied over time with the highest richness observed in 2020 and the lowest richness observed in 2023. For the overall basin, the species richness fluctuated between 2016 and 2025 with the highest richness observed in 2018. Species richness on transects was 18, 18, 32, 37, 43, 21, 38, 16, 28, and 34 species in 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, and 2025, respectively; whereas overall basin species richness was 37, 59, 89, 84, 86, 68, 72, 56, 65, and 69 species, respectively (see Table 4-14 and Appendix G Table G-2). The species richness is represented on the RACs as the length of the curve and number of species along the curve (see Figure 4-22 and Figure 4-23).

Species composition and dominant species at Pond 101 East (East) varied between monitoring years. This variability of species composition is illustrated on the RACs as the species codes shift along the curve and losses and gains occur from year to year. The dominant species shift is shown through the changes in the species at the top of the curve. Pale spikerush (*Eleocharis macrostachya*) and Baltic rush (*Juncus balticus*) were the dominant species in 2016 and 2020; Baltic rush, sheep sorrel (*Rumex acetosella*), and purple cudweed (*Gnaphalium palustre*) were the dominant species in 2017; pale spikerush, common toadrush (*Juncus bufonius* var. *bufonius*) and alkali mallow (*Malvella leprosa*) were dominant in 2018; pale spikerush, sheep sorrel, and Baltic rush were dominant in 2019; and alkali mallow, Baltic rush, and cut-leaved geranium (*Geranium dissectum*) were dominant in 2021. The dominant species in 2022 were similar to the previous year, except pale spikerush, rather than Baltic rush was most dominant. In 2023, the dominant species shifted to non-native Pacific bentgrass (*Agrostis avenacea*) with native purple cudweed as a subdominant. In 2024, the dominant species was again pale spikerush, with rabbitfoot grass (*Polypogon monspeliensis*), Baltic rush, Pacific bentgrass, and sheep sorrel as important subdominants. This year, in 2025, the two most dominant species were both non-native species, rabbitfoot grass and Pacific bentgrass, with Pale spikerush as the most abundant subdominant. A complete comparison of species composition observed during the surveys at Pond 101 East (East) from 2016-2025 can be found in Appendix H. Figure 4-25 shows a subset of this comparison for species observed with a 2% cover or greater.

The evenness from each year is represented by the slope of the RACs. The evenness is fairly similar from year to year with richness uniformly distributed along the entire curve and a slightly higher concentration or plateau of species toward the tail end. This plateau illustrates that there are a high number of species with low abundance. As explained in Verberk (2011), “Structurally complex systems, such as a fen [or vernal pool] system are species rich and have a more even community abundance pattern, possibly owing to a fine partitioning of available niches”. When comparing year to year, a more even distribution of the top species occurs in 2018, 2020, 2021, 2022, 2023, and 2025 at Pond 101 East (East) (see Figure 4-24, and Appendix I). Whereas 2016, 2017, 2019, and 2024 have a steeper slope and higher abundance of the dominant species at the top of the curve.

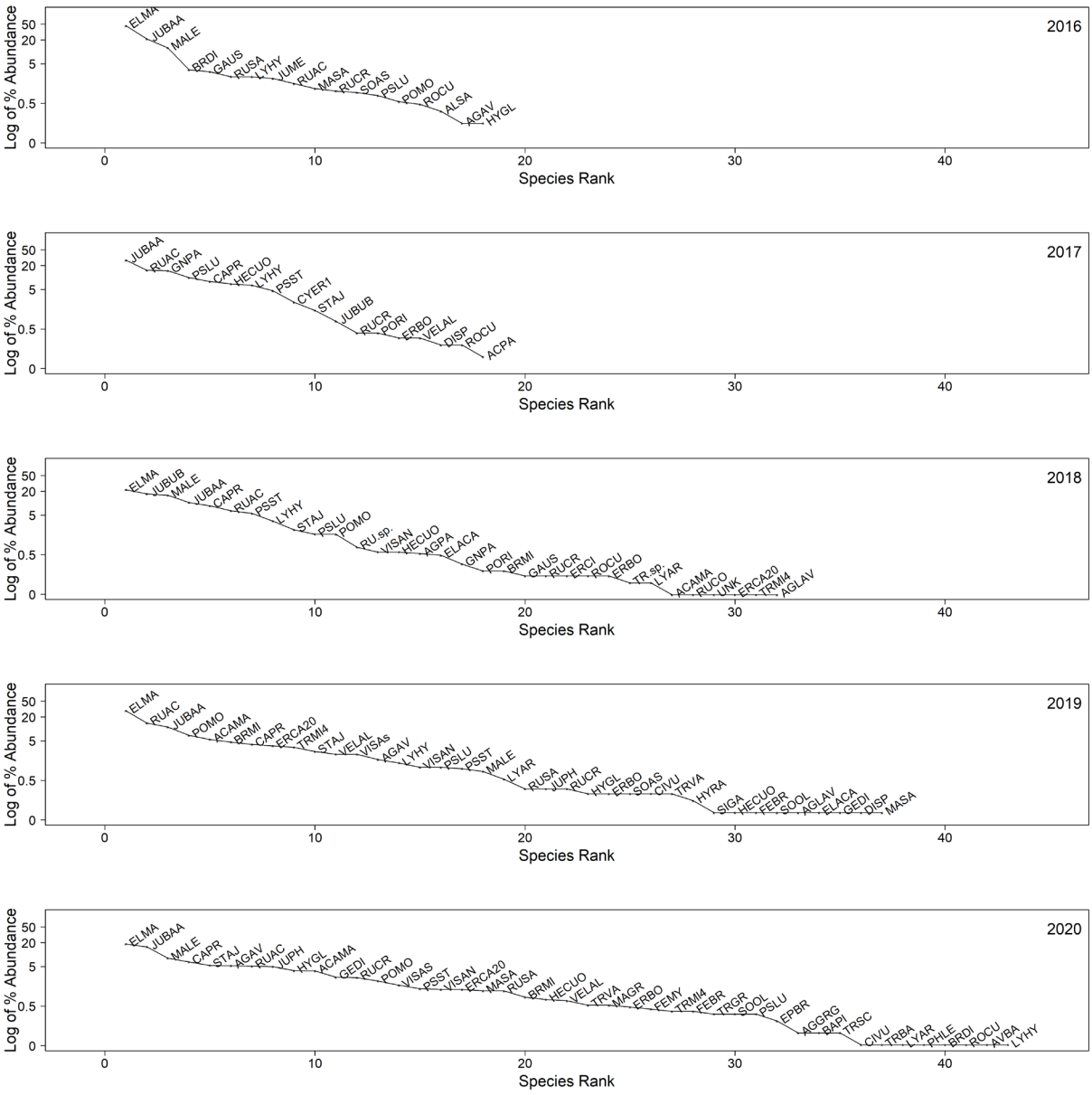

Figure 4-22. Rank abundance curves at Pond 101 East (East) (Reference) in 2016-2020. Note that the y-axis is in log-10 scale.

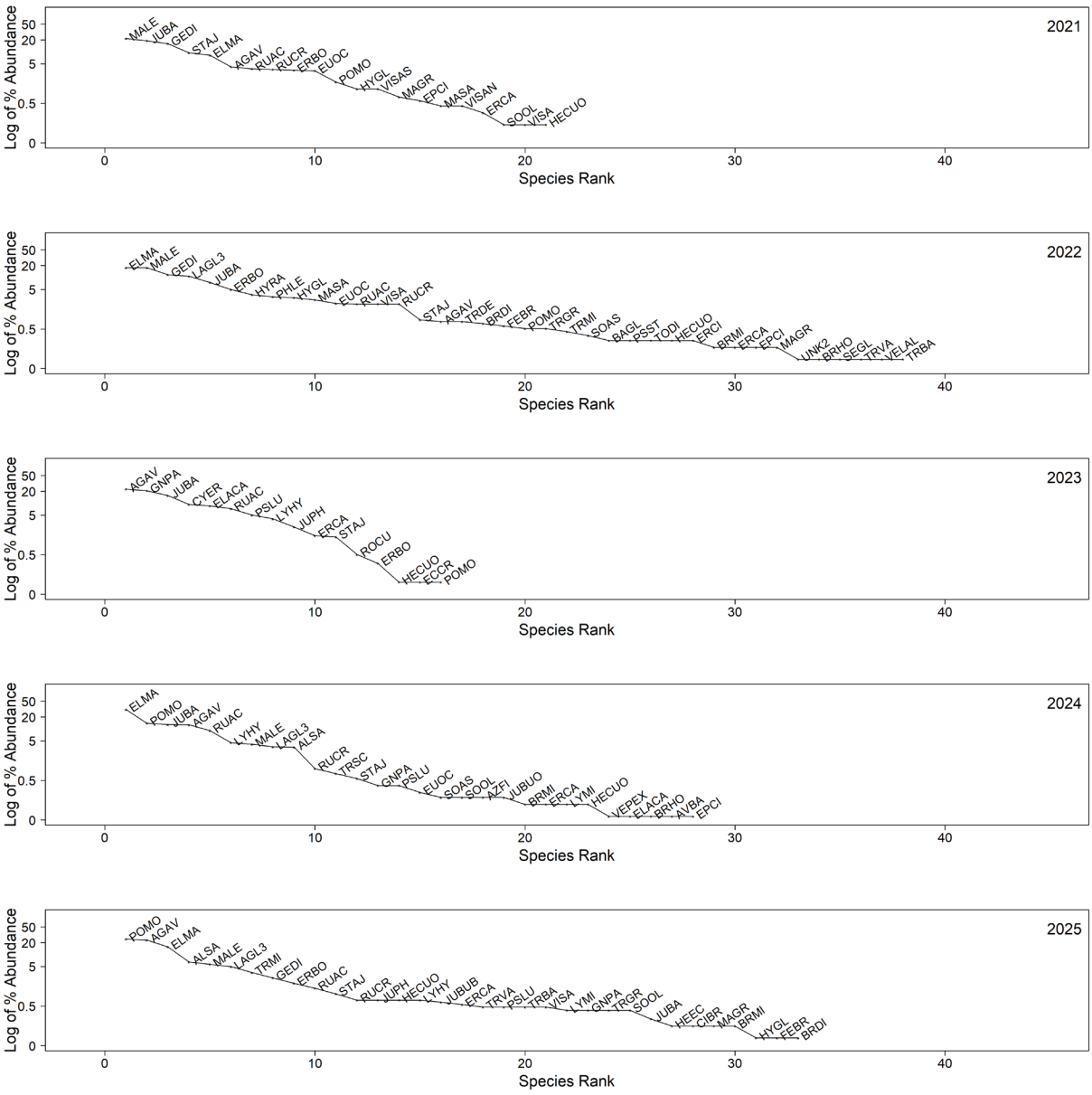

Figure 4-23. Rank abundance curves at Pond 101 East (East) (Reference) in 2021-2025. Note that the y-axis is in log-10 scale.

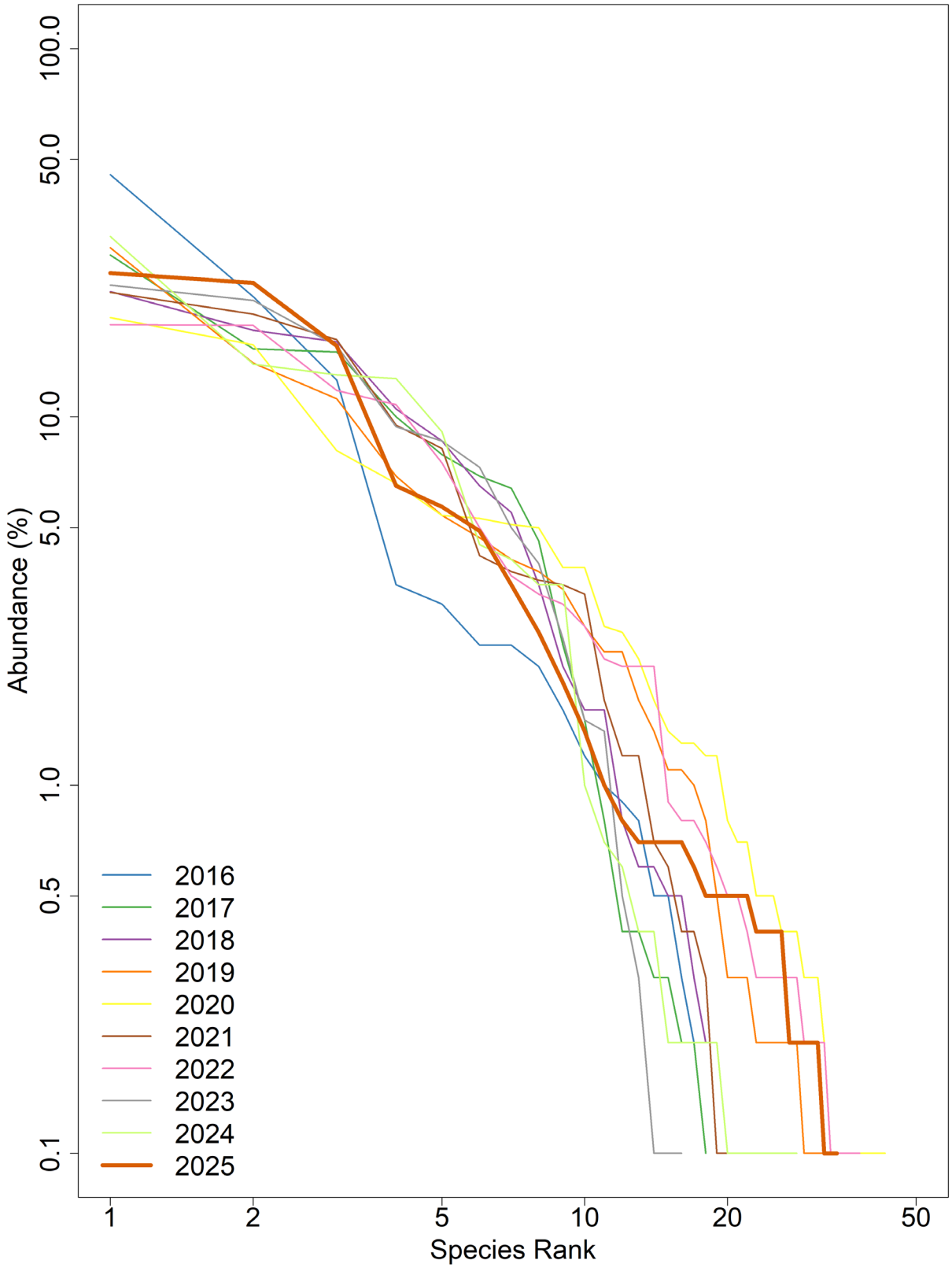

Figure 4-24. Rank abundance curves at Pond 101 East (East) (Reference) in 2016-2025. Note that the x-axis and the y-axis are in log-10 scale.

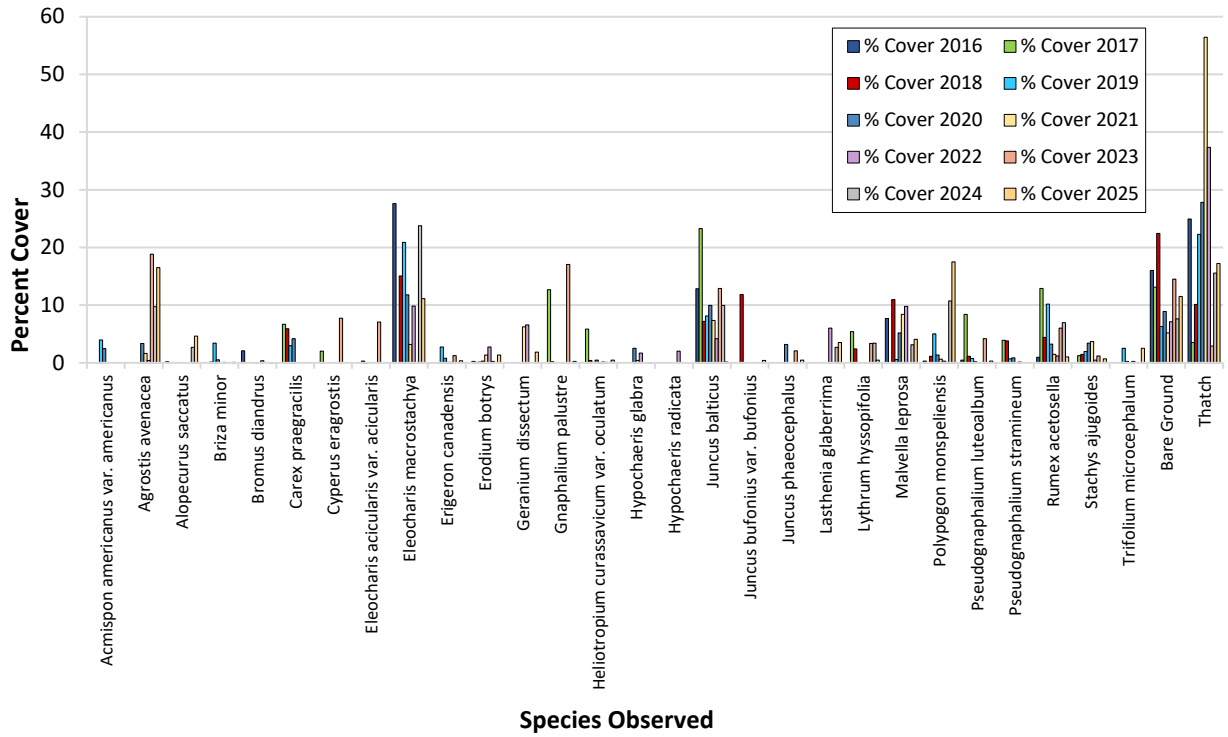

Figure 4-25. Percent cover of dominant species at Pond 101 East (East) (Reference).

Native species richness on Pond 101 East (East) varied through time, with the highest native richness recorded in 2020 and the lowest recorded in 2016 and 2023 (see Table 4-14). The relative percent cover of native species varied until 2020, after which native cover declined every year to the lowest value observed in 2025 at 43.2% (see Table 4-15).

Table 4-14. Pond 101 East (East) (Reference) native and non-native species richness.

Year	Native	Non-Native	Unidentified	Total
2016	9	9	0	**18**
2017	13	5	0	**18**
2018	18	11	3	**32**
2019	18	19	0	**37**
2020	24	19	0	**43**
2021	10	11	0	**21**
2022	21	16	1	**38**
2023	9	7	0	**16**
2024	17	11	0	**28**
2025	19	15	0	**34**

Table 4-15. Pond 101 East (East) (Reference) relative percent cover of native and non-native plants.

Year	Native	Non-Native	Unidentified
2016	88.9%	11.1%	0.0%
2017	67.7%	32.3%	0.0%
2018	84.4%	14.7%	0.9%
2019	64.7%	35.3%	0.0%
2020	72.2%	27.8%	0.0%
2021	64.1%	35.9%	0.0%
2022	66.4%	33.5%	0.1%
2023	60.3%	39.7%	0.0%
2024	57.8%	42.2%	0.0%
2025	43.2%	56.8%	0.0%

Wetland species richness in Pond 101 East (East) transects increased between 2016 and 2020, decreased to the lowest recorded value in 2021, then fluctuated within the range of previous values between 2022 and 2025 (see Table 4-16). Likewise, non-wetland species richness on transects generally increased from 2016 to 2019, then generally decreased from 2020 to 2025. The wetland richness values in 2025 were identical to the previous 2024 monitoring year, but the numbers of obligate species decreased and facultative species increased. Wetland species cover fluctuated, rising initially from 2016 to 2017, decreasing overall from 2018 to 2021, then increasing again from 2022 to 2024 (see Table 4-17). Non-wetland species cover varied between surveys until peaking in 2021 and 2022 to the highest recorded value, then sharply dropping to the lowest recorded value in 2023. By 2025, both wetland and non-wetland cover decreased from the previous year but the cover of not listed species increased.

Table 4-16. Pond 101 East (East) (Reference) wetland and non-wetland species richness.

Year	Wetland				Non-Wetland			Not Listed
	OBL	FACW	FAC	Total	FACU	UPL	Total	
2016	3	6	1	**10**	3	0	**3**	5
2017	3	8	3	**14**	2	0	**2**	2
2018	5	9	5	**19**	4	2	**6**	7
2019	4	8	7	**19**	7	3	**10**	8
2020	5	8	7	**20**	6	3	**9**	14
2021	2	4	1	**7**	4	4	**8**	6
2022	4	6	8	**18**	7	1	**8**	12
2023	4	6	1	**11**	3	0	**3**	2
2024	7	10	2	**19**	5	1	**6**	3
2025	4	9	6	**19**	4	2	**6**	9

Table 4-17. Pond 101 East (East) (Reference) relative percent cover of wetland and non-wetland species.*

Year	Wetland				Non-Wetland			Not Listed
	OBL	FACW	FAC	Total	FACU	UPL	Total	
2016	48.4%	27.3%	1.0%	**76.7%**	15.1%	0.0%	**15.1%**	8.2%
2017	8.1%	64.0%	5.3%	**77.4%**	15.6%	0.0%	**15.6%**	7.0%
2018	28.2%	40.2%	6.0%	**74.4%**	22.6%	1.1%	**23.7%**	1.8%
2019	32.9%	24.0%	12.5%	**69.4%**	19.4%	3.4%	**22.9%**	7.7%
2020	24.2%	31.1%	6.5%	**61.7%**	15.5%	3.3%	**18.8%**	19.5%
2021	17.7%	24.7%	3.6%	**46.0%**	29.3%	1.9%	**31.2%**	22.8%
2022	29.7%	13.8%	4.2%	**47.7%**	29.1%	2.1%	**31.2%**	21.1%
2023	14.5%	53.4%	0.1%	**68.0%**	9.1%	0.0%	**9.1%**	22.9%
2024	40.5%	31.8%	1.1%	**73.4%**	13.5%	0.2%	**13.7%**	12.9%
2025	22.2%	34.3%	5.8%	**62.3%**	9.5%	0.9%	**10.4%**	27.4%

* = Percentages were rounded to the nearest tenth and therefore may not add up to 100%

4.3.3.1 *Data Quality Objective 3 (Vegetation)*

Observable changes in hydrophytic vegetation between surveys were largely associated with precipitation fluctuations. This is expected given the dynamic nature of vernal pools and the close relationship between the hydroperiod and wetland vegetation composition. As a reference vernal pool, Pond 101 East (East) is used for comparison to remediated vernal pools.

4.3.3.2 *Performance Standard: Plant Cover and Species Diversity*

Pond 101 East (East) is a reference vernal pool and not required to meet performance standards. The vernal pool provides a control for comparison to the remediated vernal pools.

4.3.3.3 *Performance Standard: Plant Cover and Species Diversity*

Pond 101 East (East) is a reference vernal pool and not required to meet performance standards. The vernal pool provides a control for comparison to the remediated vernal pools.

4.3.4 Conclusion

Pond 101 East (East) is used for comparison to remediated vernal pools (see Table 4-18).

Table 4-18. Success at Pond 101 East (East) (Reference) based on performance standards and applicable Data Quality Objectives.

Performance Standard	Applicable DQO	Success
Hydrologic Conditions & Inundation Area	DQO 1	Suitable for Comparison
	DQO 2	Suitable for Comparison
Plant Cover & Species Diversity	DQO 3	Suitable for Comparison
Wildlife Usage	DQO 1	Suitable for Comparison
	DQO 4	Suitable for Comparison
	DQO 5	Suitable for Comparison

4.4 Pond 997 – Reference

Pond 997 was monitored for nine years as a reference vernal pool, although approximately 13% of vegetation within the Pond 997 watershed was masticated in 2017. Table 4-19 summarizes the years that monitoring occurred and surveys were conducted. The cumulative precipitation graph shows precipitation for years in which hydrologic monitoring was conducted at Pond 997 (see Figure 4-26). The 2016-2017, 2018-2019, and 2022-2023 water years were above-normal; whereas the 2019-2020 and 2023-2024 water years were similar to the cumulative normal. All other monitoring, including 2024-2025, was conducted either in a below-normal water year, drought year, or consecutive drought year.

Table 4-19. Pond 997 (Reference) summary of historical surveys for hydrology, vegetation, and wildlife.

Survey	Water Year								
	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025
Hydrology	●	●	●	●	●	●	●	●	●
Wildlife	●		●					●	●
Vegetation	●	●	●	●	●	●	●	●	●

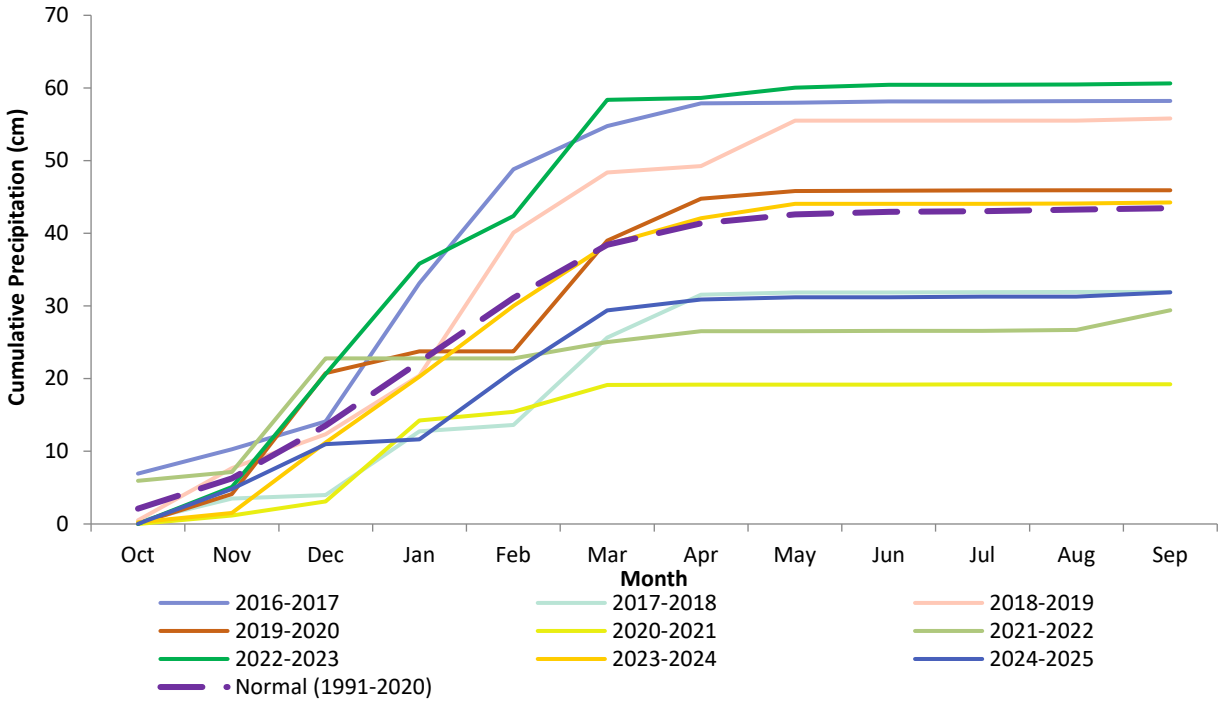

Figure 4-26. Cumulative monthly precipitation for years that hydrologic monitoring occurred at Pond 997 (Reference) compared to the 30-year normal (mean 1991-2020) (NCEI NOAA, 2024-2025).

4.4.1 Hydrologic Monitoring

Pond 997 is situated within a small and shallow basin in the northern part of the Fort Ord National Monument. Although approximately 13% of vegetation within the Pond 997 watershed was masticated in 2017, Pond 997 was monitored for nine years as a reference vernal pool (see Figure 4-27). Pond 997 reached a maximum depth of 14 cm and a maximum inundation area of 0.09 acres in the 2025 water year. Historical and 2024-2025 values of inundation extent, depth, and water quality measurements are presented in Figure 4-28, Figure 4-29, and Figure 4-30.

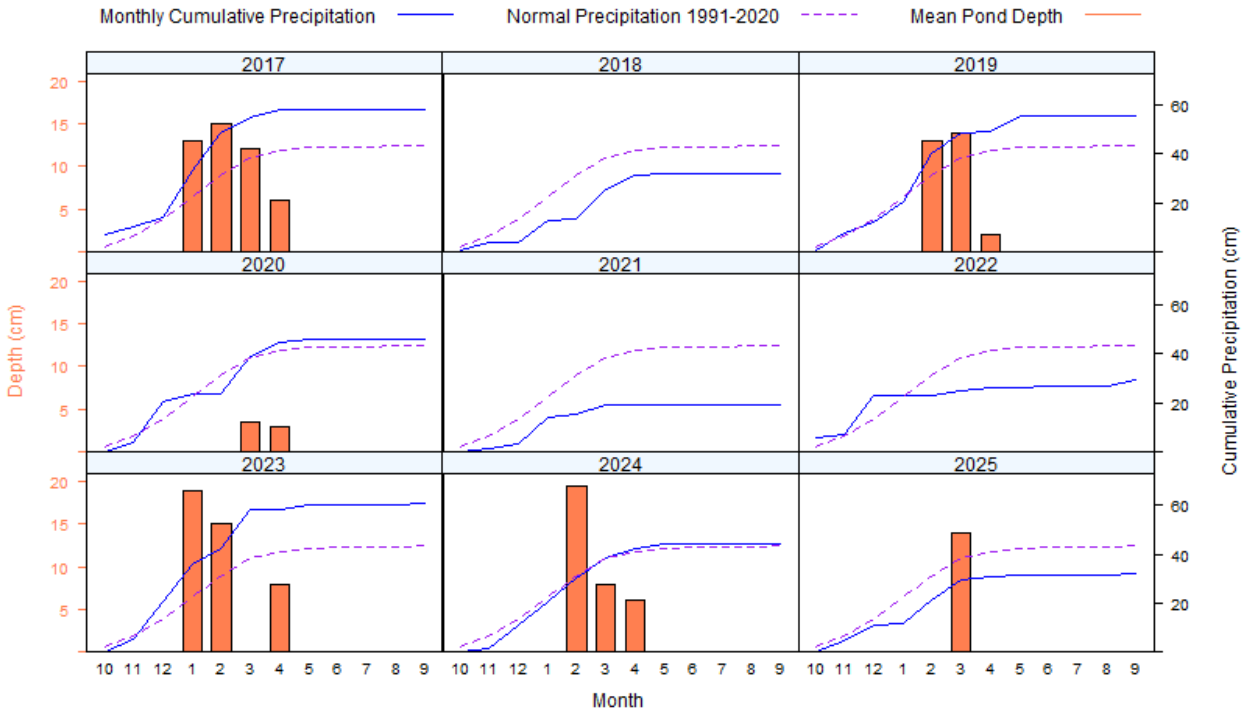

Figure 4-27. Cumulative monthly precipitation for years that hydrologic monitoring occurred at Pond 997 (Reference) compared to the 30-year normal (mean 1991-2020) (NOAA, 2024-2025).

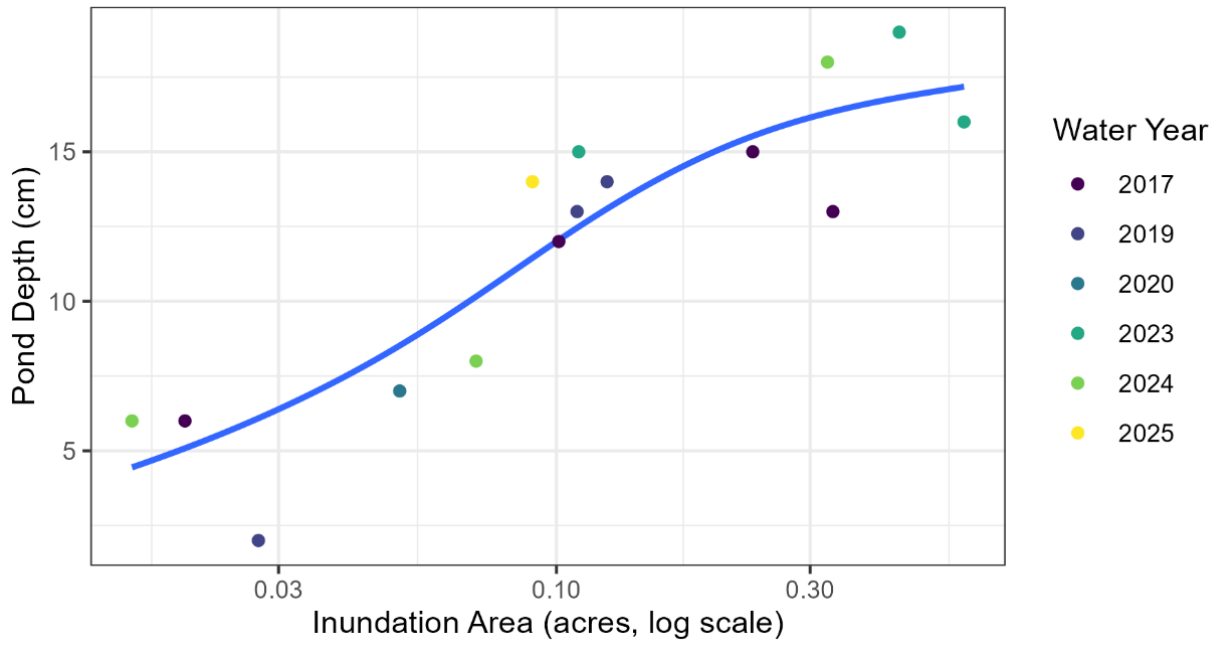

Figure 4-28. Pond 997 (Reference) plot of depth vs inundation area since the 2016-2017 (2017) water year.

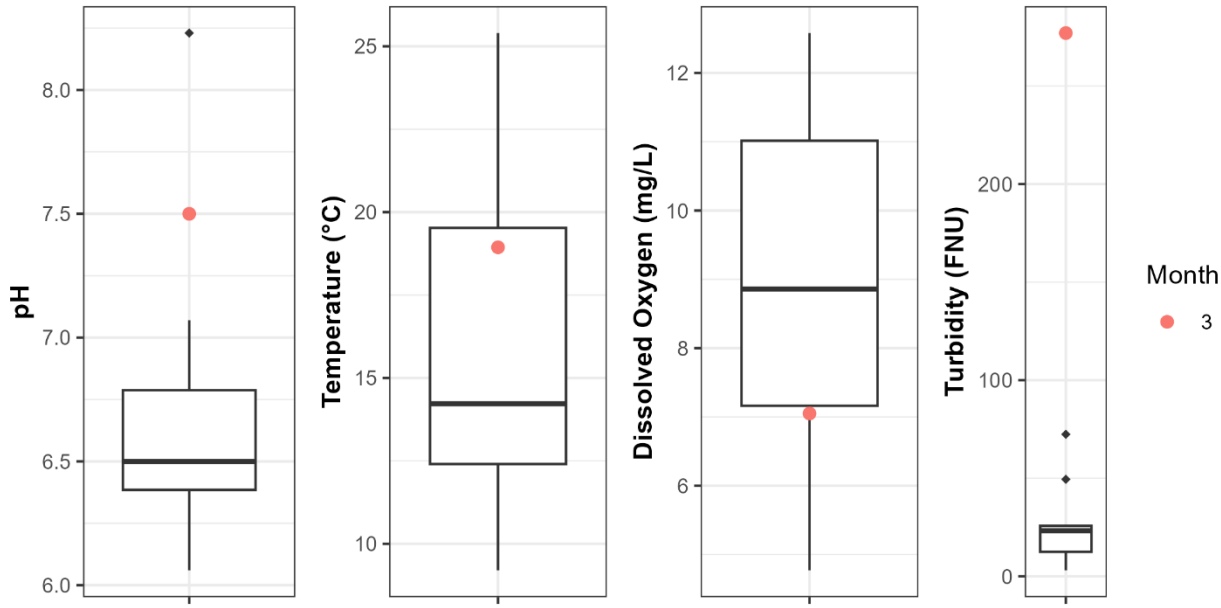

Figure 4-29. Pond 997 (Reference) historical and 2025 water quality measurements for pH, temperature (C), dissolved oxygen (mg/L), and turbidity (FNU). The line in the middle of the box represents the median, and the lower and upper ends of the box are the 25% and 75% quartiles of historical values respectively. The upper and lower whiskers represent largest and smallest values within 1.5 times above and below the size of the hinge, which is the 75% minus 25% quartiles, respectively. Black diamonds represent values from previous years that fall outside of the 25% and 75% quartiles. Colored dots represent 2025 water year values.

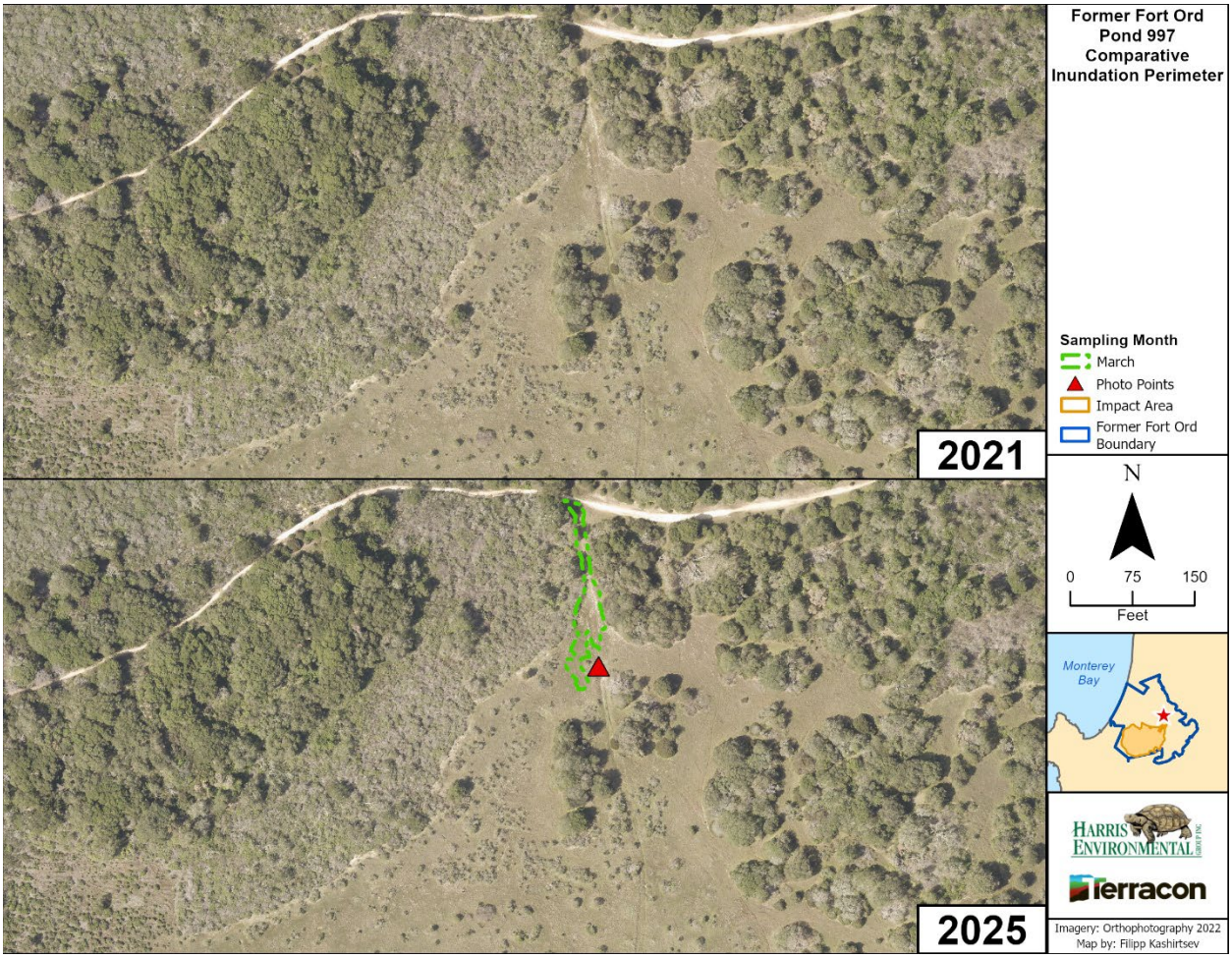

Figure 4-30. Pond 997 (Reference) inundation areas in 2021 and 2025 (both years had below normal precipitation following two years of normal or above normal precipitation).

4.4.1.1 *Data Quality Objective 1 (Water Depth)*

Pond 997 did not meet the required average depths of 25 cm from the first rain event through March for CTS, nor did it meet the 10 cm for 18 consecutive days through May requirement for fairy shrimp.

4.4.1.2 *Data Quality Objective 2 (Inundation Area)*

Pond 997 was inundated only during the month of March. It had an inundation area of 0.09 acres.

4.4.1.3 *Performance Standard: Hydrologic Conditions and Inundation Area*

Pond 997 did not sustain suitable habitat for CTS and fairy shrimp in the 2024-2025 water year. Pond 997 is a reference vernal pool and was not required to meet the performance standards. Instead, the vernal pool was used as a control for comparison to the remediated vernal pools.

4.4.2 Wildlife Monitoring

Wildlife data were collected at Pond 997 in 2017, 2019, 2024, and 2025 (Burleson, 2018, 2020; Harris-Terracon, 2024, 2025). California tiger salamanders and fairy shrimp were not detected in 2025. The

vernal pool did not hold sufficient depth for surveys to be completed in 2018, and 2020-2023. Table 4-20 shows historical wildlife monitoring results.

Table 4-20. Pond 997 (Reference) historical wildlife monitoring results.

Sampling Year	CTS Larvae Abundance (# Individuals)	Fairy Shrimp Abundance (# Individuals)
2017	Not detected	Not detected
2019	Not detected	Not detected
2024	Not detected	Not detected
2025	Not detected	Not detected

Red = below normal precipitation; Green = normal precipitation; Blue = above normal precipitation

4.4.2.1 *Data Quality Objective 1 (Water Depth)*

Pond 997 did not provide suitable depth for CTS and fairy shrimp as discussed in Section 4.4.1.1.

4.4.2.2 *Data Quality Objective 4 (Water Quality)*

Pond 997 water quality parameters in 2025 were suitable to support wildlife. Compared to other vernal pools and previous Pond 997 data, temperature and dissolved oxygen were within normal ranges, while pH and turbidity measured higher than historical ranges. The pH measurement was 7.5 in March. The water temperature was 18.94°C in March. The dissolved oxygen measurement was 7.05 mg/L in March. The turbidity measurement was 227 FNU in March, a historically turbid month for this vernal pool (see Figure 4-4 and Table 3-14).

4.4.2.3 *Data Quality Objective 5 (Wildlife)*

Pond 997 did not provide suitable depth for CTS at the time of the wildlife surveys in 2017, 2019, 2024 or 2025, however depth was adequate for fairy shrimp in 2024. Neither CTS nor fairy shrimp were detected in any monitoring year.

4.4.3 Vegetation Monitoring

Vegetation data were collected at Pond 997 from 2017-2025 (Burleson, 2018, 2019, 2020; Terracon, 2021, 2022, 2023; Harris-Terracon, 2024, 2025). Data were collected using the methodology described in the Methods section of this report. Data from 2017 and 2025 were compared stratum-to-stratum in Table 4-21 as well as visually in Figure 4-31. Pond 997 also supports a CCG population located in stratum 2. The population was mapped and a visual estimate of percent cover was recorded in 2025 to compare to past years (see Figure 4-36 in Section 4.4.3.1).

Table 4-21. Pond 997 (Reference) vegetative strata percentage within the vernal pool basin boundary.

Stratum	Percentage	
	2017	2025
1	3%	19.5%
2 (CCG)	2%	9.5%
3	89%	68.2%
4	2%	N/A
Upland	4%	2.8%

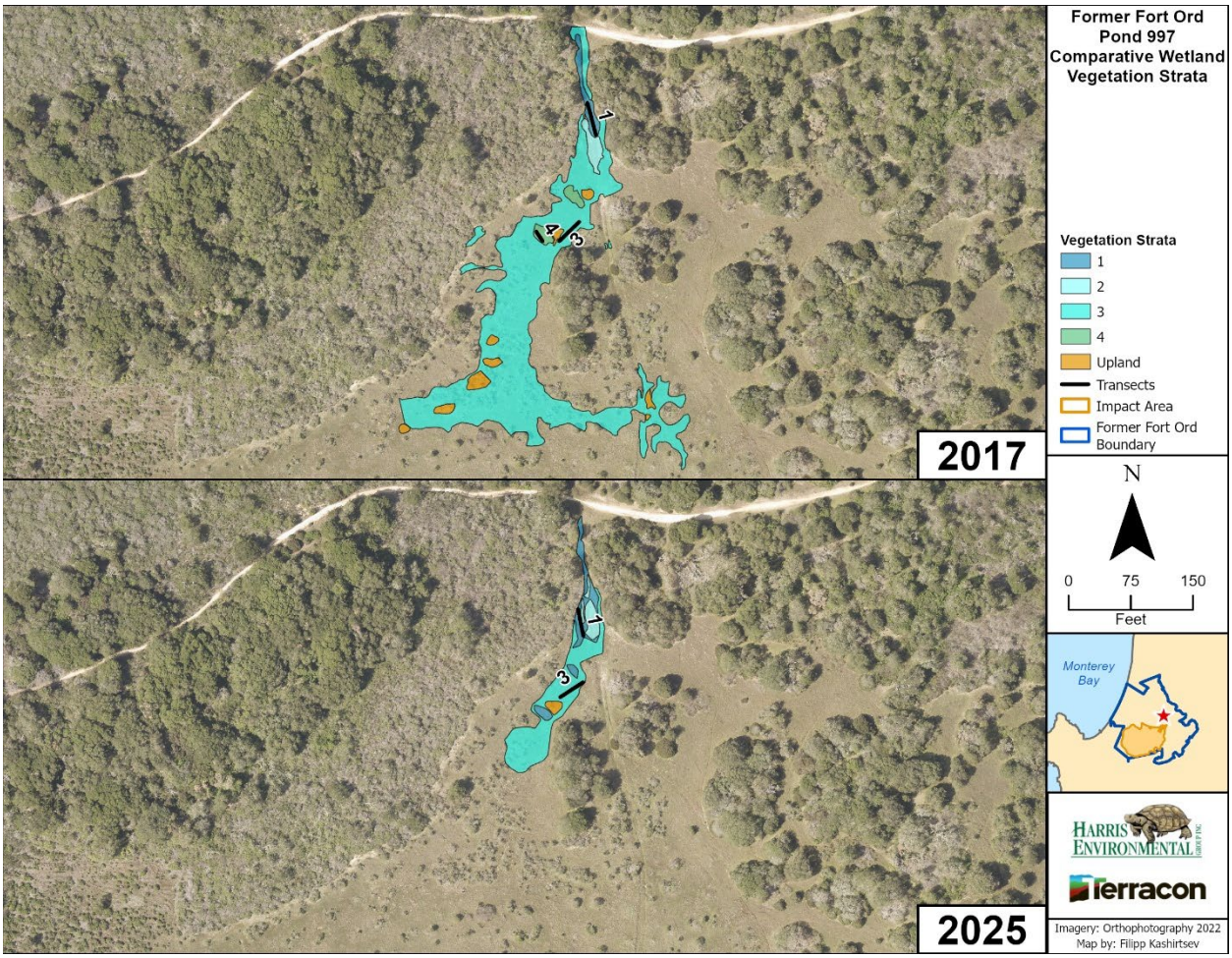

Figure 4-31. Pond 997 (Reference) vegetation strata and transects for 2017 and 2025.

The absolute percent vegetative cover at Pond 997 varied through the monitoring years (see Table 4-22). Vegetative cover ranged from 44.7% in 2018 to 83.5% in 2023, whereas thatch/bare ground ranged from 16.7% in 2023 to 55.4% in 2018.

Table 4-22. Pond 997 (Reference) absolute percent cover.

Year	Vegetative Cover	Thatch/Bare Ground
2017	57.3%	43.7%
2018	44.7%	55.4%
2019	73.3%	28.6%
2020	70.2%	29.8%
2021	45.1%	55.0%
2022	46.9%	53.1%
2023	83.5%	16.7%
2024	66.7%	33.3%
2025	68.0%	32.0%

Species richness on transects varied over time, ranging from 27 in 2017 and 2021 to 48 in 2019. Species richness in the overall basin also varied over time. In 2025, the value increased from the previous year on transects, but decreased for the entire basin. Species richness on transects was 27, 45, 48, 42, 27, 35, 28, 37, and 39 species in 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, and 2025, respectively; whereas overall basin species richness was 65, 87, 82, 82, 59, 76, 49, 66, and 62 species, respectively (see Table 4-23 and Appendix G Table G-3). The species richness is represented on the RACs as the length of the curve and number of species along the curve (see Figure 4-32 and Figure 4-33).

Species composition at Pond 997 varied between monitoring years. This variability of species composition is illustrated on the RACs as the species codes shift along the curve and losses and gains occur from year to year. Despite overall composition variability, the dominant species in the vernal pool were fairly consistent. Coyote thistle (*Eryngium montereyense*) and brown-headed rush (*Juncus phaeocephalus*) were the dominant species from 2018-2020, while coyote thistle and California oatgrass (*Danthonia californica*), were dominant in 2017 and 2021. Rattlesnake grass (*Briza maxima*) was an additional dominant species in 2021. Long-beaked filaree (*Erodium botrys*) and smooth cat's-ear (*Hypochaeris glabra*) became more dominant than coyote thistle in 2022. In 2023, dominant species included more wetland species than in the previous two years with grass poly (*Lythrum hyssopifolia*), and Howell's quillwort (*Isöetes howellii*) becoming subdominant to rattlesnake grass. The trend towards more wetland species continued in 2024, as brown-headed rush became the most dominant, followed closely by California oatgrass, long-beaked filaree, Hickman's popcorn flower (*Plagiobothrys chorisianus* var. *hickmanii*), and rabbitfoot grass (*Polypogon monspeliensis*). By 2025, Hickman's popcorn flower became the most dominant species, with rattlesnake grass as the most abundant subdominant. A complete comparison of species composition observed during the surveys at Pond 997 in 2017-2024 can be found in Appendix H. Figure 4-35 shows a subset of the observed species with 2% cover or greater.

The evenness from each year is represented by the slope of the RACs. The evenness is fairly similar from year to year with richness distributed along the entire curve. As explained in Verberk (2011), "Structurally complex systems, such as a fen [or vernal pool] system are species rich and have a more even community abundance pattern, possibly owing to a fine partitioning of available niches." When comparing year to year, a more even distribution of the top species occurs in 2017, 2019, 2020, 2023, and 2024 at Pond 997 (see Figure 4-34, and Appendix I). A steeper distribution of the dominant species however, as shown by a steeper slope, occurs in 2018, 2021, 2022, and 2025.

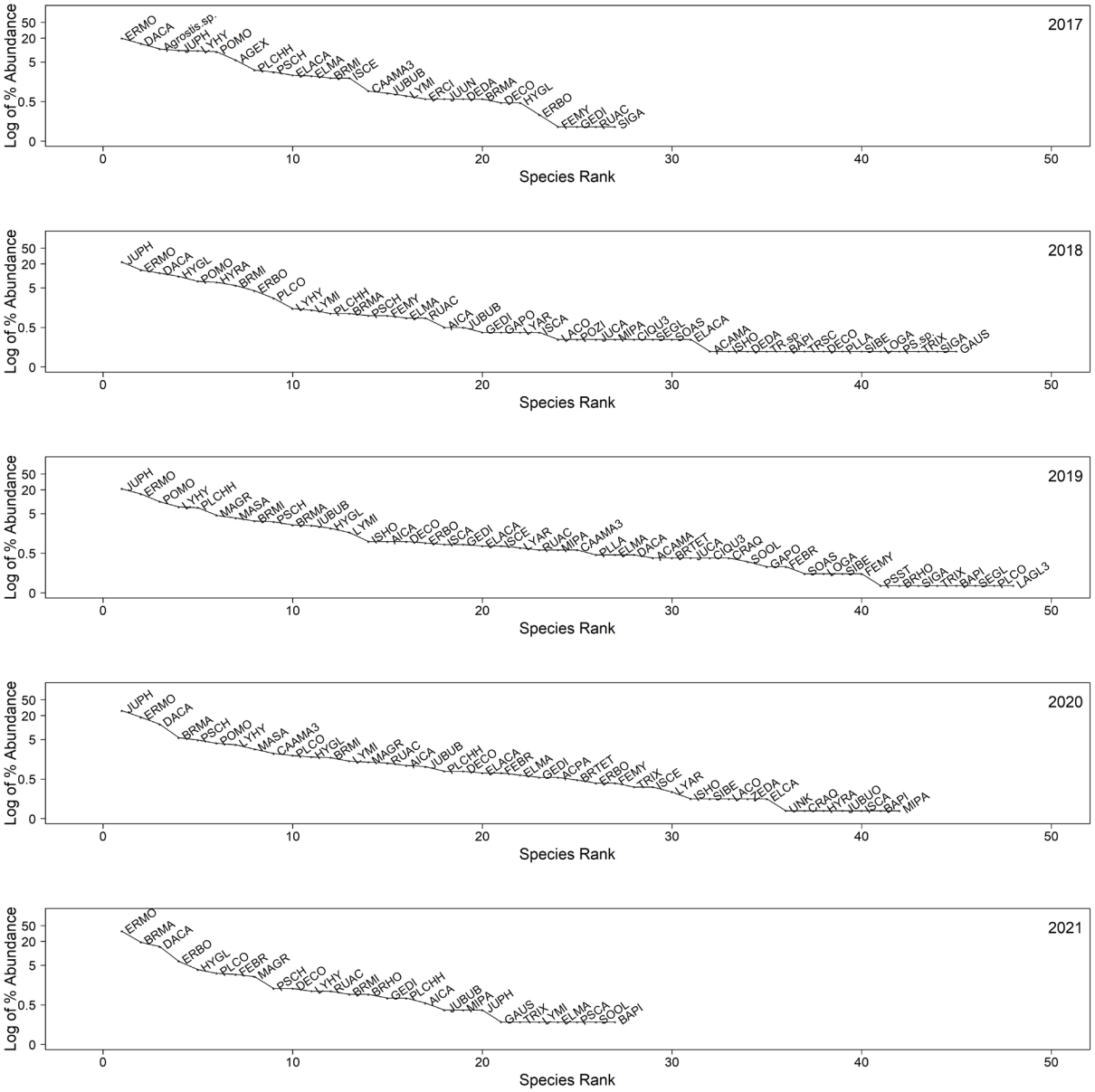

Figure 4-32. Rank abundance curves at Pond 997 (Reference) in 2017-2021. Note that the y-axis is in log-10 scale.

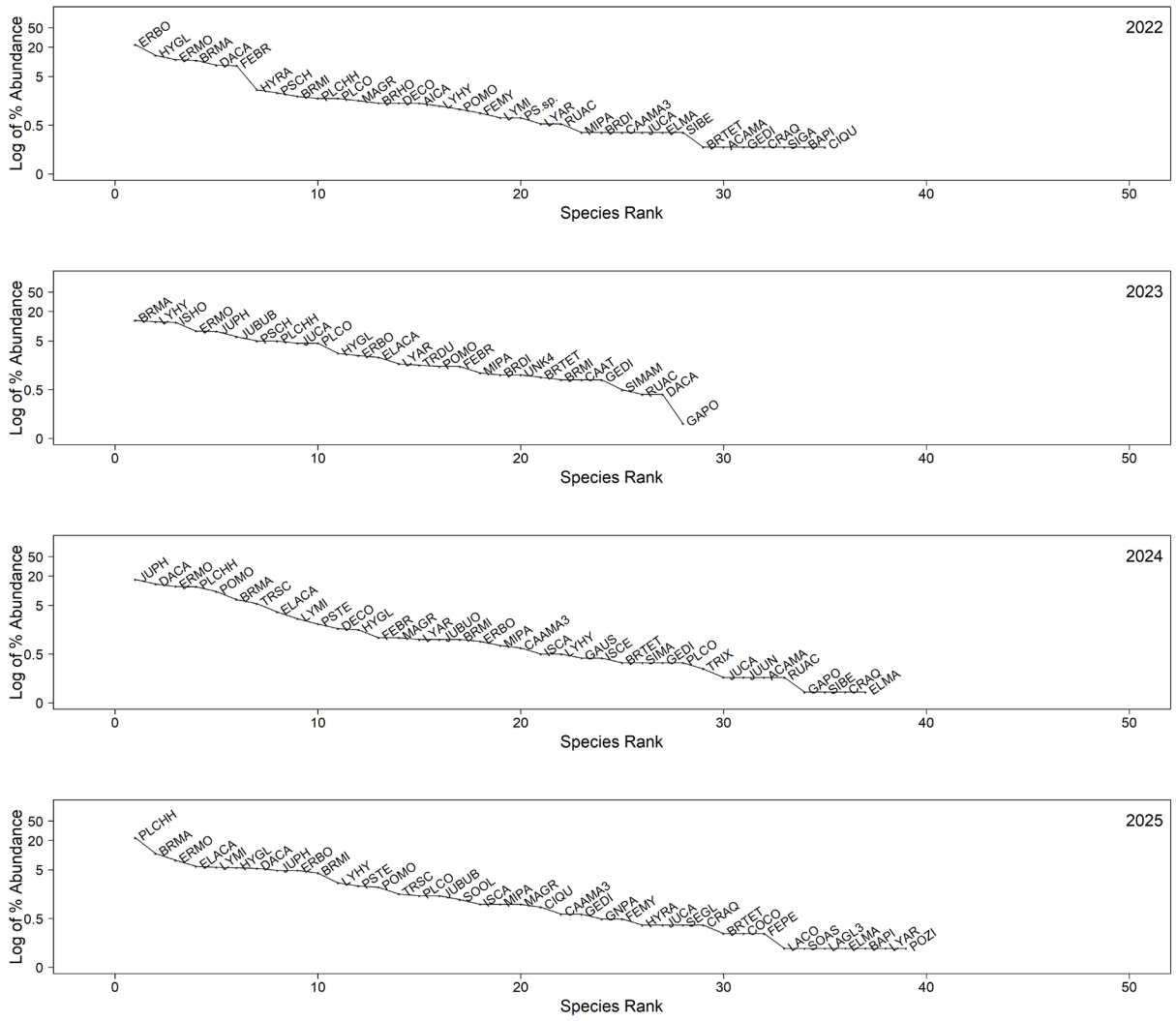

Figure 4-33. Rank abundance curves at Pond 997 (Reference) from 2022-2025. Note that the y-axis is in log-10 scale.

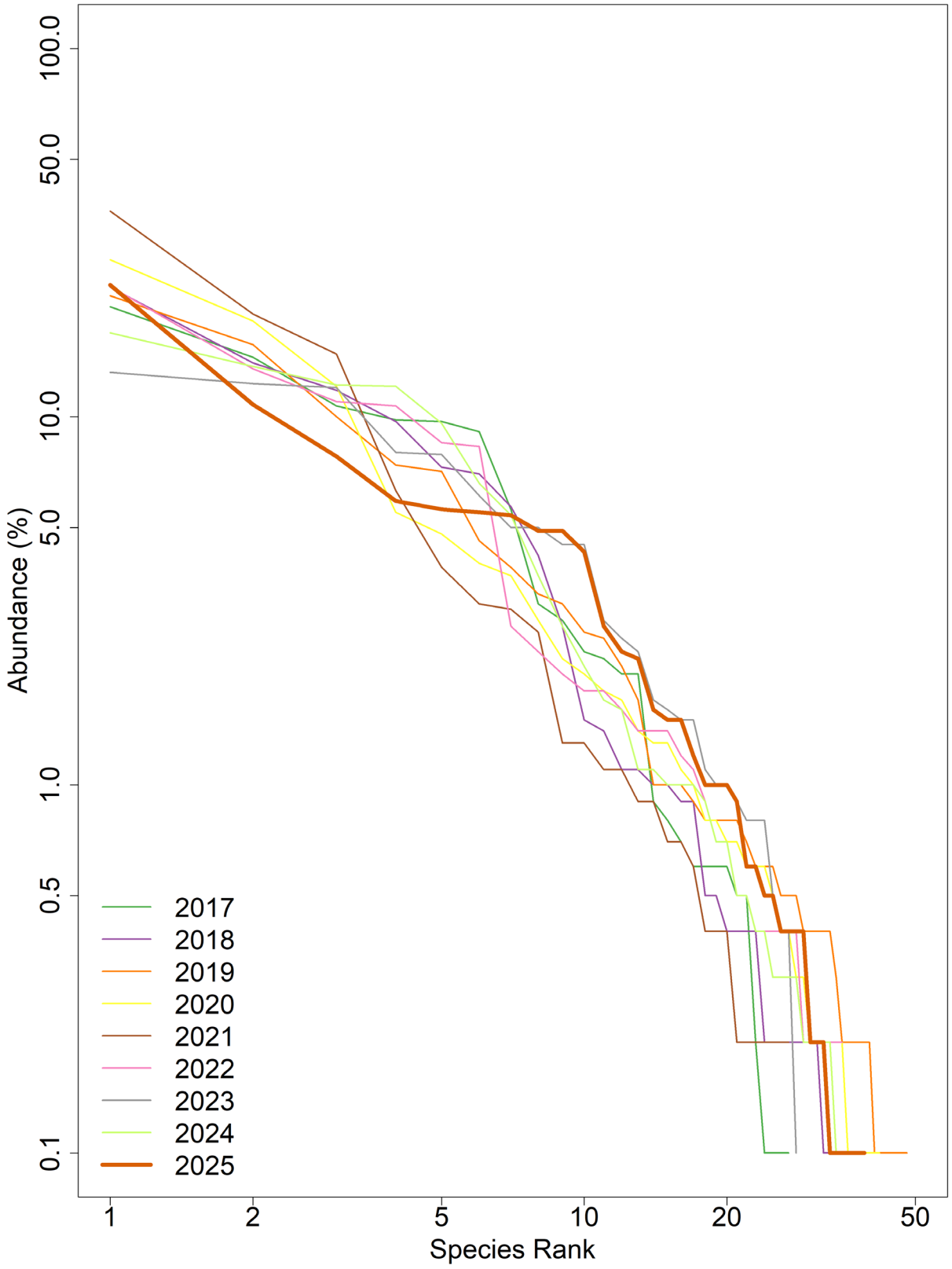

Figure 4-34. Rank abundance curves at Pond 997 (Reference) in 2017-2025. Note that the x-axis and y-axis are in log-10 scale.

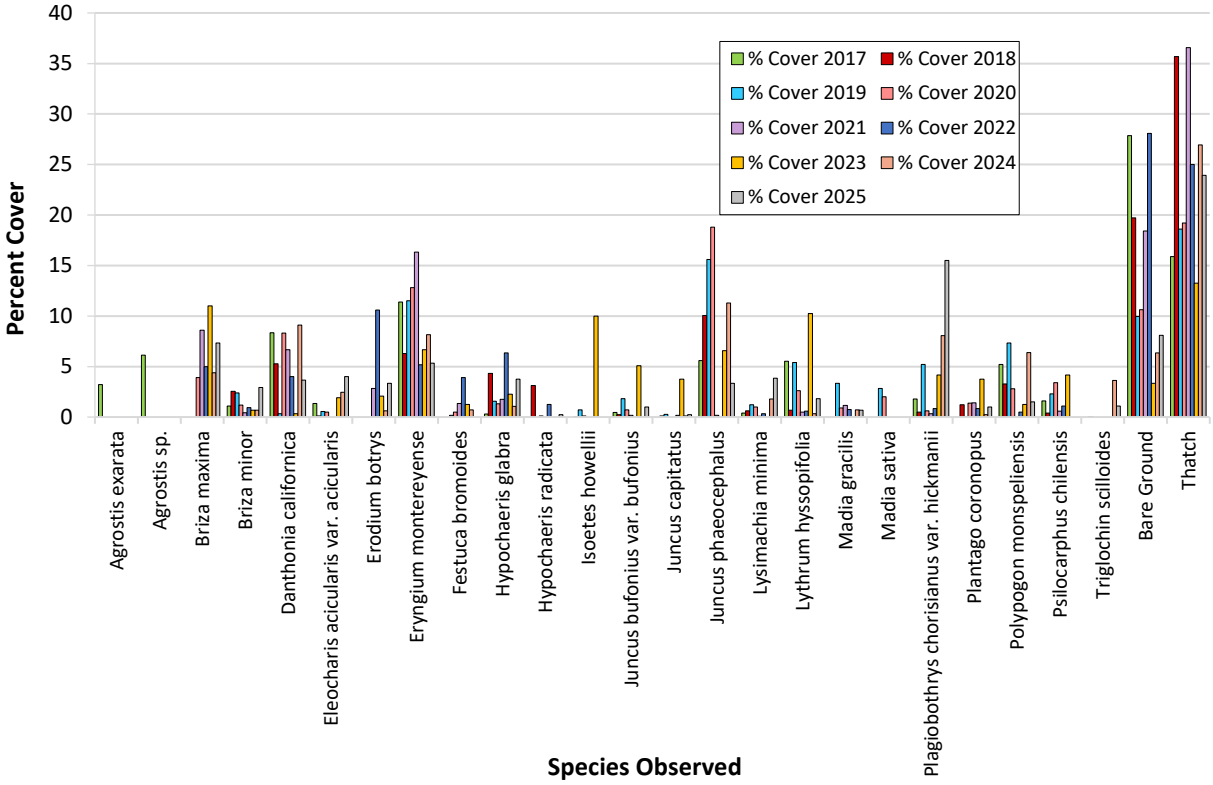

Figure 4-35. Percent cover of dominant species at Pond 997 (Reference).

Native and non-native species richness on Pond 997 transects varied through time, with the highest native richness recorded in 2019 and 2020 and the highest non-native richness also occurring in 2019 (see Table 4-23). Native relative percent cover has fluctuated from year to year to the highest amount in 2024 and lowest in 2022 (see Table 4-24). In 2025, both native richness and cover were the median values of all previously recorded transect values.

Table 4-23. Pond 997 (Reference) native and non-native species richness.

Year	Native	Non-Native	Unidentified	Total
2017	15	11	1	**27**
2018	24	19	2	**45**
2019	27	21	0	**48**
2020	27	14	1	**42**
2021	15	12	0	**27**
2022	16	18	1	**35**
2023	13	14	1	**28**
2024	24	13	0	**37**
2025	22	17	0	**39**

Table 4-24. Pond 997 (Reference) relative percent cover of native and non-native plants.

Year	Native	Non-Native	Unidentified
2017	66.3%	23.0%	10.7%
2018	56.3%	43.5%	0.2%
2019	68.5%	31.5%	0.0%
2020	76.3%	23.6%	0.1%
2021	59.1%	40.9%	0.0%
2022	29.7%	69.6%	0.7%
2023	50.0%	49.0%	1.0%
2024	76.4%	23.6%	0.0%
2025	64.0%	36.0%	0.0%

Wetland and non-wetland species richness on Pond 997 transects varied over time. By 2025, wetland richness was the highest recorded on transects, while non-wetland species fell within the range of previous values (see Table 4-25). The relative percent cover of wetland and non-wetland species fluctuated between 2017 and 2025, with the lowest recorded value of wetland cover observed in 2022 and the highest in 2017 (see Table 4-26).

Table 4-25. Pond 997 (Reference) wetland and non-wetland species richness.

Year	Wetland				Non-Wetland			Not Listed
	OBL	FACW	FAC	Total	FACU	UPL	Total	
2017	5	10	2	**17**	3	0	**3**	7
2018	8	10	5	**23**	8	0	**8**	14
2019	9	9	6	**24**	8	1	**9**	15
2020	9	10	5	**24**	5	0	**5**	13
2021	3	5	4	**12**	4	1	**5**	10
2022	4	7	4	**15**	7	0	**7**	13
2023	4	6	4	**14**	4	0	**4**	10
2024	9	8	5	**22**	3	0	**3**	12
2025	11	9	5	**25**	5	1	**6**	8

Table 4-26. Pond 997 (Reference) relative percent cover of wetland and non-wetland species.*

Year	Wetland				Non-Wetland			Not Listed
	OBL	FACW	FAC	Total	FACU	UPL	Total	
2017	19.3%	50.7%	16.5%	**86.5%**	0.5%	0.0%	**0.5%**	13.0%
2018	4.6%	47.5%	20.7%	**72.8%**	14.2%	0.0%	**14.2%**	13.0%
2019	18.7%	55.4%	4.6%	**78.8%**	3.8%	0.3%	**4.1%**	17.1%
2020	6.7%	59.0%	16.1%	**81.7%**	3.2%	0.0%	**3.2%**	15.0%
2021	2.0%	38.4%	19.0%	**59.5%**	8.9%	0.2%	**9.1%**	31.4%
2022	3.6%	16.0%	12.8%	**32.3%**	29.8%	0.0%	**29.8%**	37.8%
2023	31.5%	28.9%	7.4%	**67.9%**	9.0%	0.0%	**9.0%**	23.2%
2024	24.8%	43.3%	16.2%	**84.3%**	1.2%	0.0%	**1.2%**	14.4%
2025	37.3%	24.1%	11.5%	**72.9%**	6.3%	1.2%	**7.5%**	19.6%

* = Percentages were rounded to the nearest tenth and therefore may not add up to 100%

4.4.3.1 *Contra Costa Goldfields*

Populations and cover estimates of CCG have been collected from 2017-2025, whereas only its presence was noted in wetland reports from previous years (Burleson, 2018, 2019, and 2020; Terracon, 2021, 2022, 2023; Harris-Terracon, 2024, 2025). The area of CCG at Pond 997 has varied slightly from 2017 to 2025 (see Table 4-27 and Figure 4-36). The lowest total area recorded was 0.005 acres in 2021, and the highest was 0.02 acres in 2017, 2020, 2022, 2024, and 2025. The density also fluctuated from 10% cover in 2017, 2020 and 2021, to as much as 35% in 2019. In 2022, cover was 20%, and in 2023-2025, cover was 30%. The CCG population was in a similar location in all survey years, however in 2025, there were two additional populations outside of the primary area, along with three separate points. Changes in population size can be attributed to natural fluctuation as no remediation has occurred at Pond 997 apart from mastication of a small portion of its watershed in 2017.

Table 4-27. Pond 997 (Reference) Contra Costa goldfields estimated cover.

Year	Area (acres)	Density (% cover)
2017	0.02	10%
2018	0.01	25%
2019	0.01	35%
2020	0.02	10%
2021	0.005	10%
2022	0.02	20%
2023	0.01	30%
2024	0.02	30%
2025	0.02	5%-30%

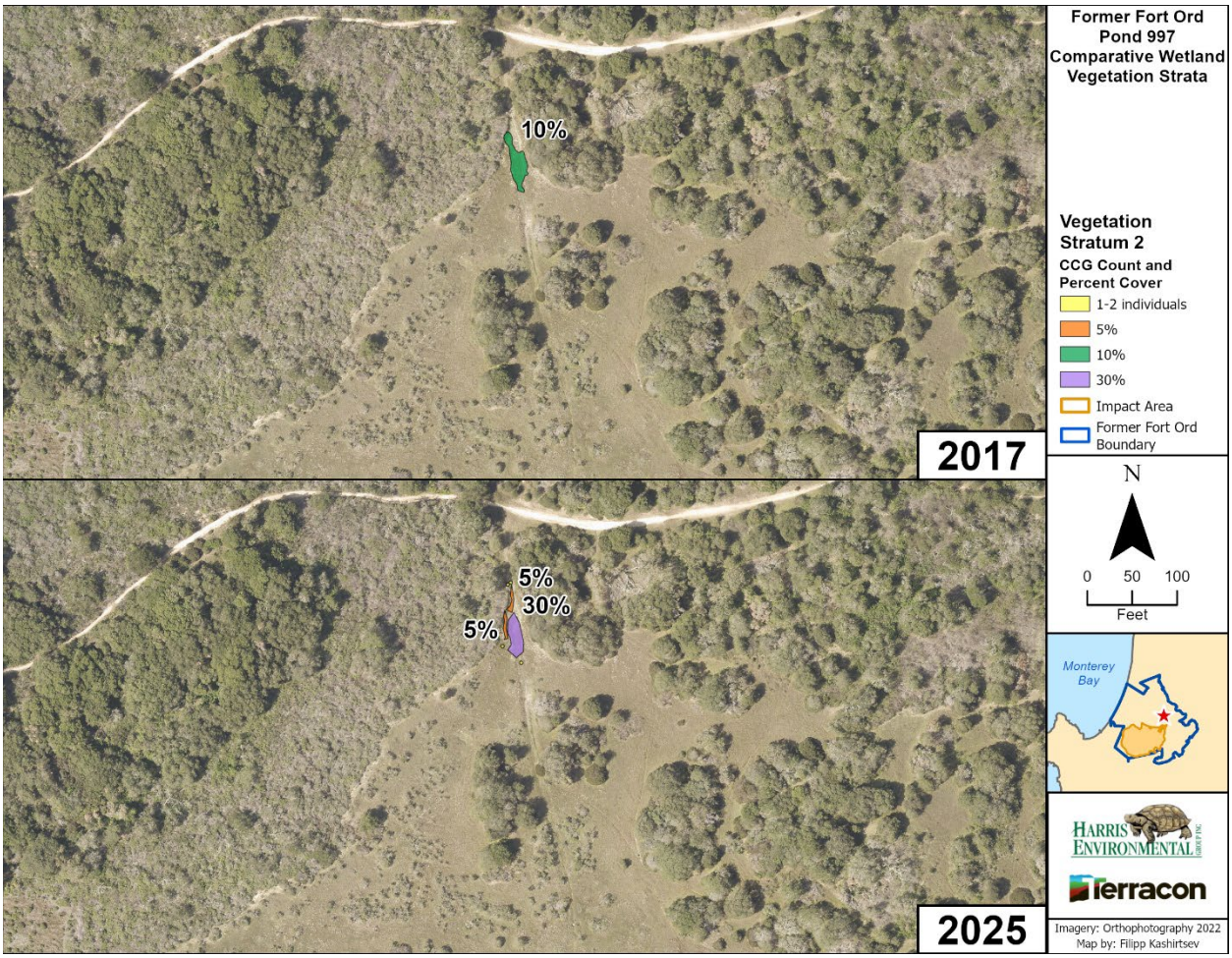

Figure 4-36. Contra Costa goldfields populations at Pond 997 (Reference) in 2017 and 2025.

4.4.3.2 *Data Quality Objective 3 (Vegetation)*

Observable changes in hydrophytic vegetation between surveys were largely associated with precipitation fluctuations. This is expected given the dynamic nature of vernal pools and the close relationship between the hydroperiod and wetland vegetation composition. As a reference vernal pool, Pond 997 was used for comparison to remediated vernal pools.

4.4.3.3 *Performance Standard: Plant Cover and Species Diversity*

Pond 997 is a reference vernal pool and not required to meet performance standards. The vernal pool provides a control for comparison to the remediated vernal pools.

4.4.4 Conclusion

Pond 997 is used for comparison to remediated vernal pools (see Table 4-28).

Table 4-28. Success at Pond 997 (Reference) based on performance standards and applicable Data Quality Objectives.

Performance Standard	Applicable DQO	Success
Hydrologic Conditions & Inundation Area	DQO 1	Suitable for Comparison
	DQO 2	Suitable for Comparison
Plant Cover & Species Diversity	DQO 3	Suitable for Comparison
Wildlife Usage	DQO 1	Suitable for Comparison
	DQO 4	Suitable for Comparison
	DQO 5	Suitable for Comparison

4.5 Pond 21—Year 3

Pond 21 was monitored in 2025 as a Year 3 post-mastication and post-subsurface munitions remediation vernal pool. Pond 21 was monitored for baseline conditions in 1992, 1999, 2009, and 2019, after which vegetation within its watershed was masticated in late 2021 to prepare Unit 5 for surface munitions removal. In the fall of 2022, subsurface munitions remediation occurred within the basin of Pond 21, resulting in five excavations ranging in depth from 1 inch to 22 inches, and a total disturbed area of less than 5 ft^2 (KEMRON, 2023). Table 4-29 summarizes the years that monitoring occurred and surveys were conducted. The cumulative precipitation graph shows precipitation for years in which hydrologic monitoring was conducted at Pond 21 (see Figure 4-37). The 2008-2009 water year was below normal, whereas water years 2018-2019 and 2022-2023 were above normal. In 1991-1992, 1998-1999, and 2023-2024, the water years were similar to the cumulative normal water year. The 2024-2025 water year is the first recorded monitoring year with below-normal precipitation for Pond 21.

Table 4-29. Pond 21 (Year 3 Post-Mastication and Post-Subsurface Munitions Remediation) summary of historic surveys for hydrology, vegetation, and wildlife.

Survey	Water Year						
	1991-1992	1998-1999	2008-2009	2018-2019	2022-2023	2023-2024	2024-2025
Hydrology	●	●		●	●	●	●
Wildlife	●	●	●	●	●	●	●
Vegetation		●		●	●	●	●

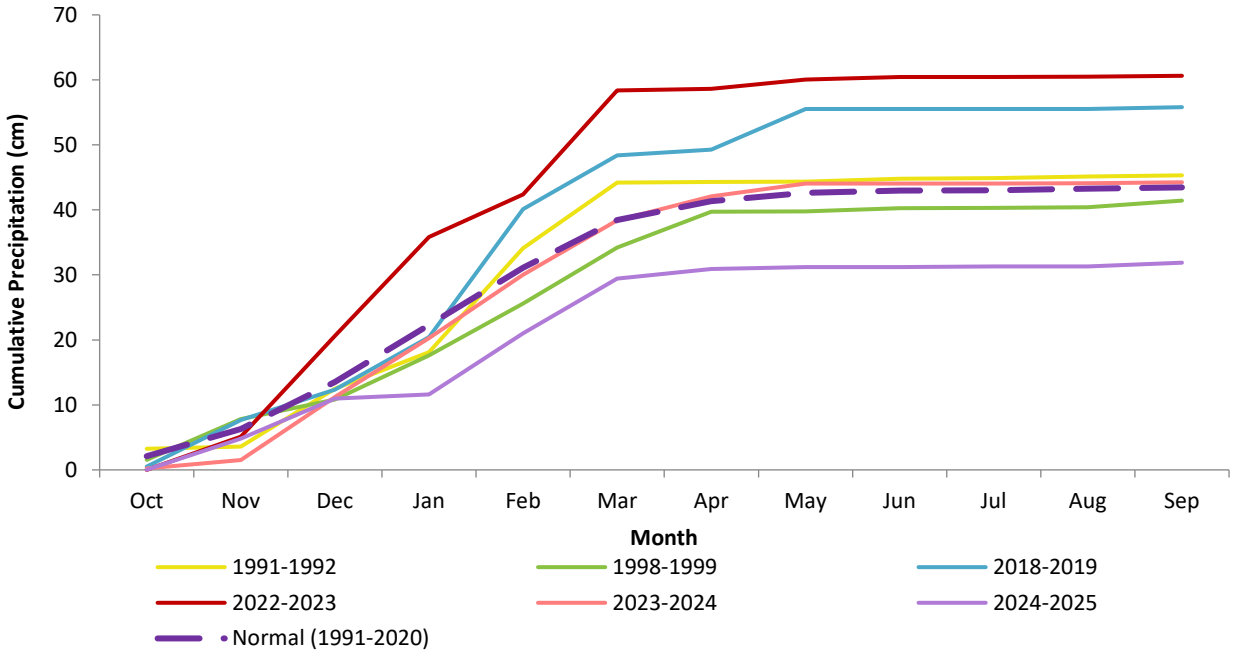

Figure 4-37. Cumulative monthly precipitation for years that hydrologic monitoring occurred at Pond 21 (Year 3 Post-Mastication and Post-Subsurface Munitions Remediation) compared to the 30-year normal (mean 1991-2020) (NCEI NOAA, 2024-2025).

4.5.1 Hydrologic Monitoring

Pond 21 is situated within a basin with a medium steep profile in the southern part of the Fort Ord National Monument, inside the Impact Area. Pond 21 is most similar to reference Pond 101 East (East), although it has a smaller basin. Historically, Pond 21 reached a maximum depth of 35.5 cm in the 1999 water year but inundation area was not measured that year. In 2025, Pond 21 reached a depth of 6 cm and an inundation of 0.64 acres (see Figure 4-38 and Figure 4-39). Pond 21 inundation extent, depth, and water quality measurements are presented in Figure 4-39, Figure 4-40, and Figure 4-41. During the eight years of monitoring of Pond 21 the cumulative precipitation was the highest in 2023, which resulted in the longest hydroperiod on record for that vernal pool.

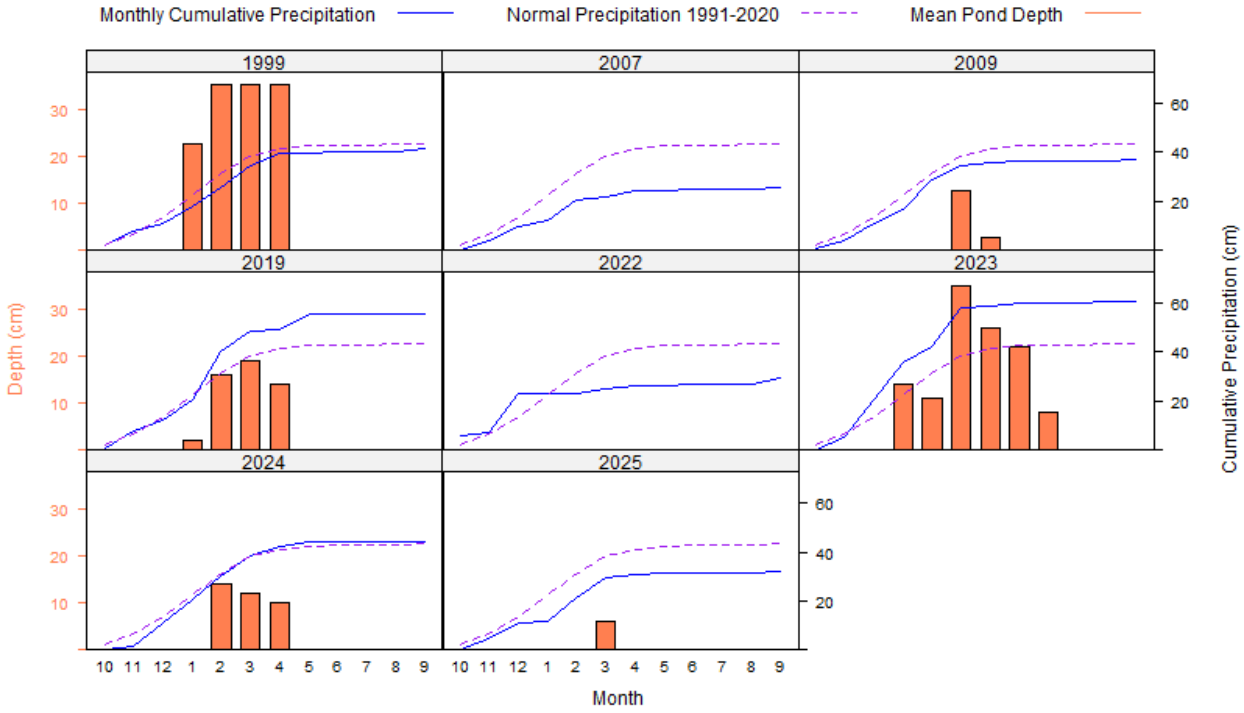

Figure 4-38. Cumulative monthly precipitation for years that hydrologic monitoring occurred at Pond 21 (Year 3 Post-Mastication and Post-Subsurface Munitions Remediation) compared to the 30-year normal (mean 1991-2020) (NOAA, 2024-2025).

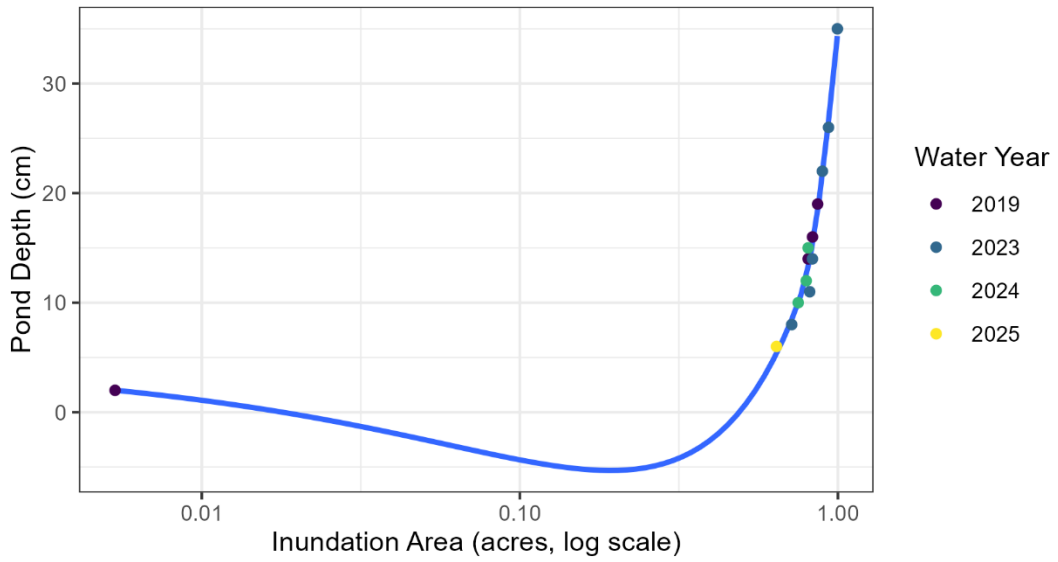

Figure 4-39. Pond 21 (Year 3 Post-Mastication and Post-Subsurface Munitions Remediation) plot of depth vs inundation area since 2019.

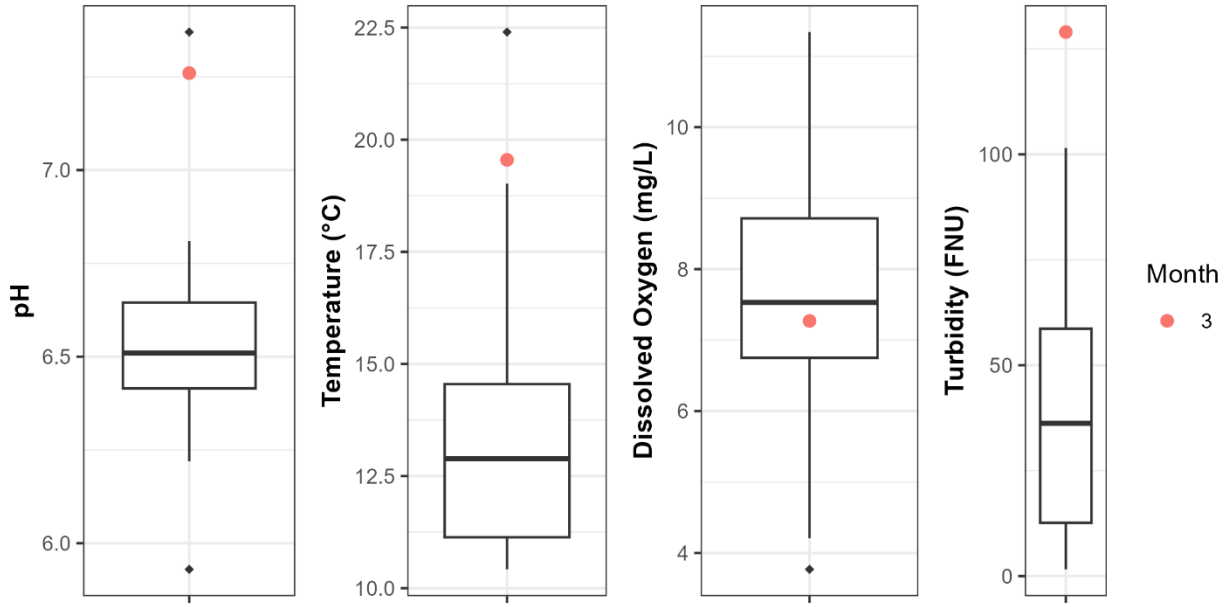

Figure 4-40. Pond 21 (Year 3 Post-Mastication and Post-Subsurface Munitions Remediation) historical and 2025 water quality measurements for pH, temperature (C), dissolved oxygen (mg/L), and turbidity (FNU). The line in the middle of the box represents the median, and the lower and upper ends of the box are the 25% and 75% quartiles of historical values respectively. The upper and lower whiskers represent largest and smallest values within 1.5 times above and below the size of the hinge, which is the 75% minus 25% quartiles, respectively. Black diamonds represent values from previous years that fall outside of the 25% and 75% quartiles. Colored dots represent 2024-2025 water year values.

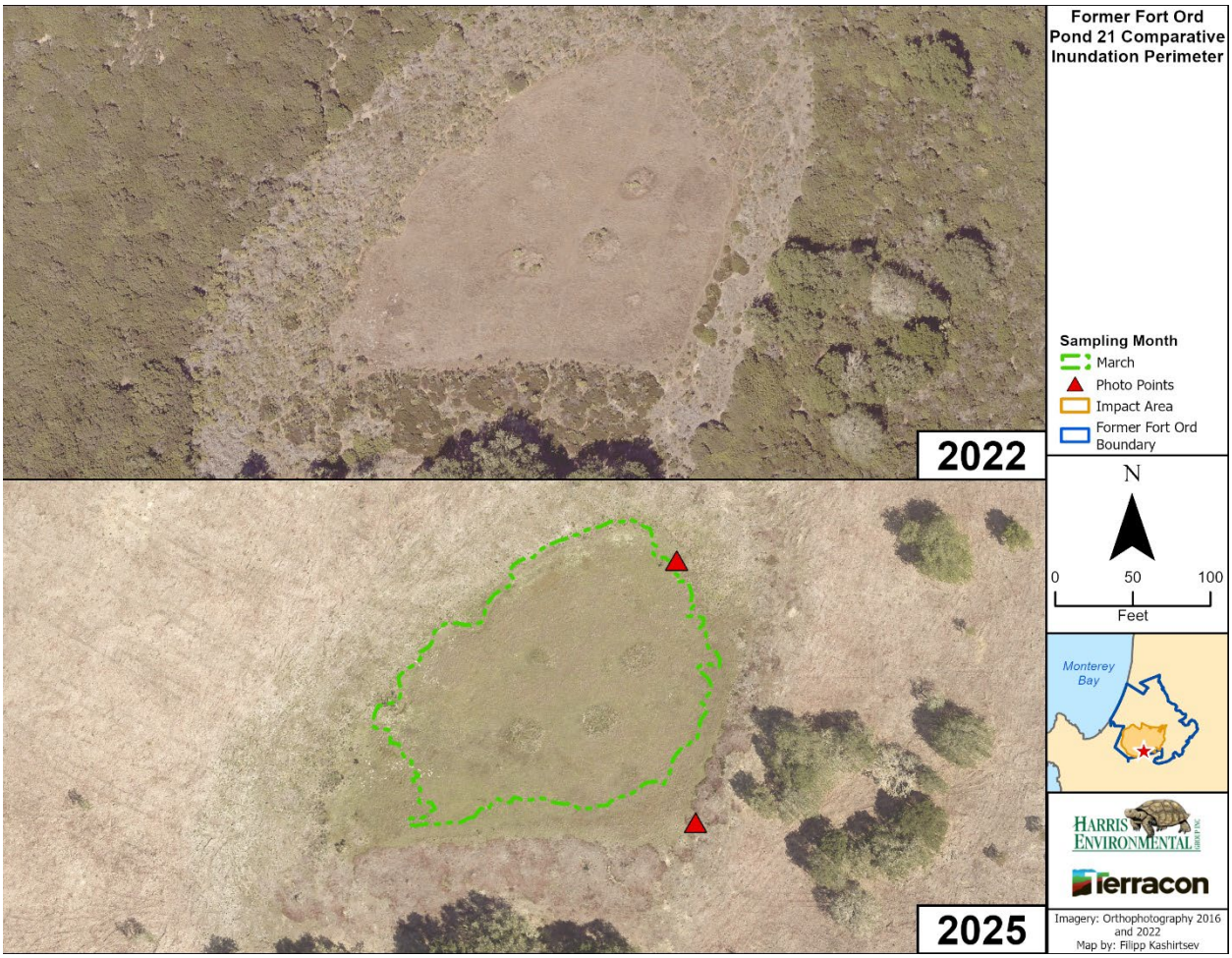

Figure 4-41. Pond 21 (Year 3 Post-Mastication and Post-Subsurface Munitions Remediation) inundation areas in 2022 and 2025 (both years had below normal precipitation).

4.5.1.1 *Data Quality Objective 1 (Water Depth)*

Pond 21 did not meet the required average depths of 25 cm from the first rain event through March for CTS, nor did it meet the 10 cm for 18 consecutive days through May requirement for fairy shrimp.

4.5.1.2 *Data Quality Objective 2 (Inundation Area)*

Pond 21 held water during the month of March and therefore met the inundation area requirement. It had an inundation area of 0.64 acres.

4.5.1.3 *Performance Standard: Hydrologic Conditions and Inundation Area*

Pond 21, a post-mastication and post-subsurface munitions remediation vernal pool, was partially on track for this performance standard for Year 3 in 2025. Pond 21 did not satisfy DQO 1, indicating that it did not sustain suitable habitat for CTS or fairy shrimp. Pond 21 did however have inundation that was consistent with Pond 101 East (East) during a below normal water year and therefore, DQO 2 is on track.

4.5.2 Wildlife Monitoring

Wildlife data were collected at Pond 21 in 1992, 1999, 2009, 2019, 2023, 2024, and 2025 (USACE, 1992; HLA, 1999; Shaw, 2010; Burleson, 2020; Harris-Terracon, 2024, 2025). California tiger salamander larvae

were observed in 2019 and 2023, but not in 2024 or 2025. Fairy shrimp were not detected at Pond 21 in any monitoring year. Table 4-30 shows historical wildlife monitoring results.

Table 4-30. Pond 21 (Year 3 Post-Mastication and Post-Subsurface Munitions Remediation) historical wildlife monitoring results.

Sampling Year	CTS Larvae Abundance (# Individuals)	Fairy Shrimp Abundance (# Individuals)
1992*	Not detected	Not detected
1999*	Not detected	Not detected
2009*	Not detected	Not detected
2019*	Few (4)	Not detected
2023	Few (1, 8)	Not detected
2024	Not detected	Not detected
2025	N/A†	Not detected

Red = below normal precipitation; Green = normal precipitation; Blue = above normal precipitation
*baseline year
†Not applicable; CTS surveys were not conducted due to insufficient depth.

4.5.2.1 *Data Quality Objective 1 (Water Depth)*

Pond 21 did not provide suitable depth for CTS or fairy shrimp as discussed in Section 4.5.1.1.

4.5.2.2 *Data Quality Objective 4 (Water Quality)*

Pond 21 water quality parameters in 2025 were suitable to support wildlife. Compared to other vernal pools and previous Pond 21 data, the water quality data were slightly above normal ranges, except for dissolved oxygen. The pH measurement was 7.26 in March. The water temperature was 19.55°C in March. The dissolved oxygen measurement was 7.27 mg/L in March. The turbidity measurement was 129 FNU in March (see Table 3-19).

4.5.2.3 *Data Quality Objective 5 (Wildlife)*

California tiger salamanders were not monitored in 2025 due to insufficient vernal pool depth.

Fairy shrimp were not detected in 2025, which was consistent with baseline monitoring, but not with reference pond 101 East (East), the most similar reference vernal pool to Pond 21.

4.5.2.4 *Performance Standard: Wildlife Usage*

Pond 21, a post-mastication vernal pool, is partially on track to meet the wildlife usage performance standard in Year 3. DQO 1 was not met because Pond 21 did not provide suitable depth for CTS and fairy shrimp. DQO 4 was met because Pond 21 provided suitable water quality conditions for wildlife, although depths were slightly below normal. DQO 5 was partially on track because neither CTS nor fairy shrimp were detected in 2025. Compared to reference vernal pools, results were consistent for CTS, but not for fairy shrimp, which were detected at Ponds 5 and 101 East (East). Compared to the 2019 baseline, Pond 21 wildlife results were consistent for fairy shrimp, but not for CTS.

4.5.3 Vegetation Monitoring

Vegetation data were collected at Pond 21 in 1999, 2019, and 2023-2025. In 1999, data were collected along one transect with a length of 316 ft. Quadrats were placed at 10-ft intervals, alternating from right to left along the transect. Because 1999 data were collected differently than in 2019, strata were

combined across the vernal pool to allow for comparison. In 2019 and 2023-2025, data were collected using the methodology described in the Methods section of this report (HLA, 1999; Burleson, 2020; Harris-Terracon, 2024, 2025). Data from 2019 and 2025 were compared stratum-to-stratum in Table 4-31 as well as visually in Figure 4-42.

Table 4-31. Pond 21 (Year 3 Post-Mastication and Post-Subsurface Munitions Remediation) vegetative strata percentage within the vernal pool basin boundary.

Stratum	Percentage	
	2019	2025
1	27%	45.4%
2	71%	N/A
3	N/A	1.5%
4	N/A	2.0%
Upland	2%	3.0%

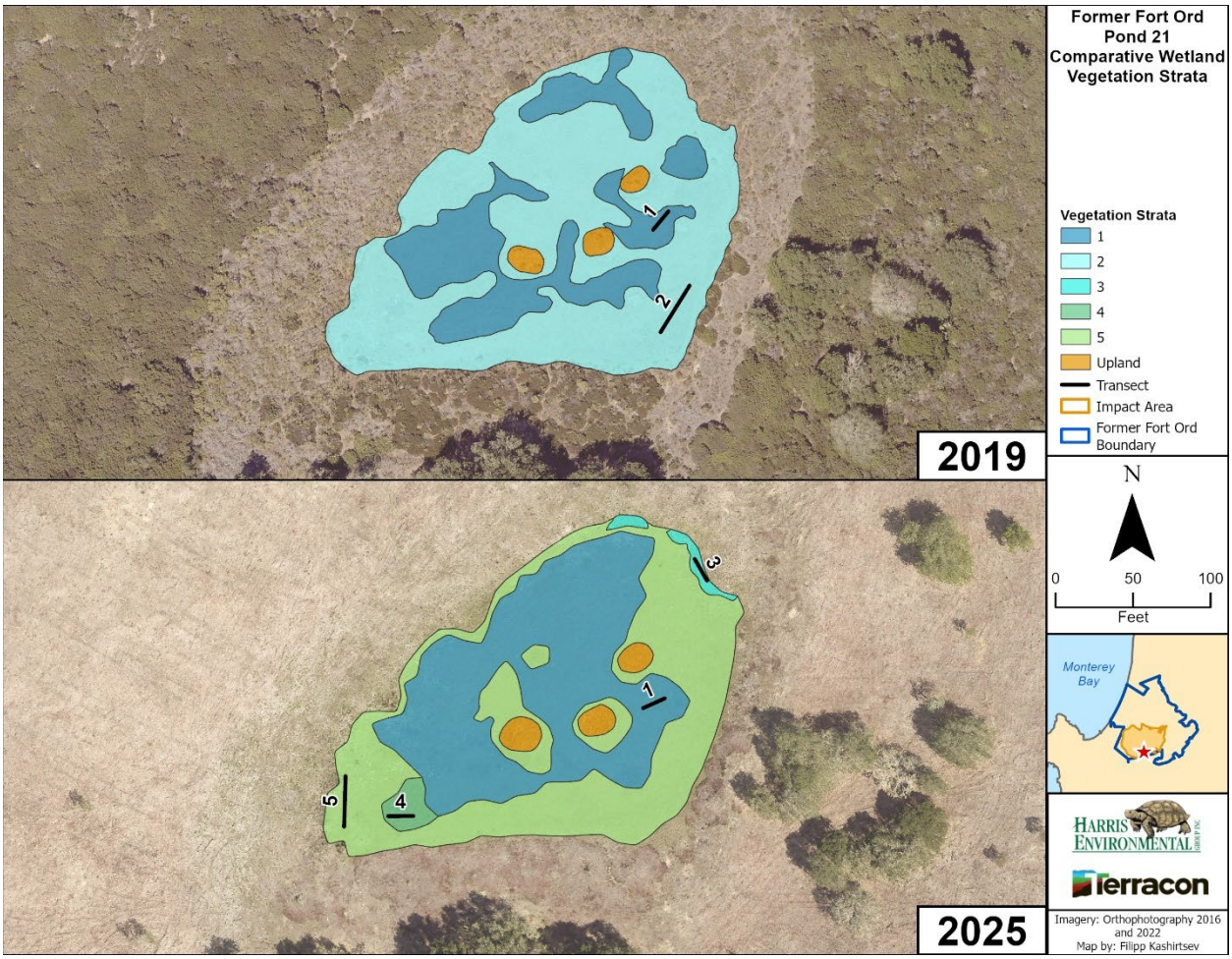

Figure 4-42. Pond 21 (Year 3 Post-Mastication and Post-Subsurface Munitions Remediation) vegetation strata and transects for 2019 and 2025.

The absolute percent cover for both vegetation and thatch/bare ground at Pond 21 were within the range of baseline values in 2025 (see Table 4-32). When compared to reference vernal pools the absolute percent vegetative cover and thatch/bare ground cover were within the range of values and most similar to Pond 997 (see Table 4-33).

Table 4-32. Pond 21 (Year 3 Post-Mastication and Post-Subsurface Munitions Remediation) absolute percent cover.

Year	Vegetative Cover	Thatch/Bare Ground
1999*	18.6%	81.6%
2019*	73.6%	26.3%
2023	82.0%	18.0%
2024	73.7%	26.3%
2025	63.3%	36.7%

*baseline year

Table 4-33. Pond 21 (Year 3 Post-Mastication and Post-Subsurface Munitions Remediation) and reference vernal pool absolute percent cover in 2025.

Vernal Pool	Vegetative Cover	Thatch/Bare Ground
5	48.2%	51.8%
101 East (East)	71.3%	28.7%
997	68.0%	32.0%
21	**63.3%**	**36.7%**

Species richness in 2025 was greater than the baseline values both on transects and also for the whole basin. Species richness on transects was 22, 22, 19, 32, and 38 in 1999, 2019, 2023, 2024, and 2025 respectively; whereas overall basin species richness was 59, 47, 75, and 65 species in 2019, 2023, 2024, and 2025 respectively, and not recorded in 1999 (see Table 4-34 and Appendix B Table B-4). Pond 21 species richness was within the range of reference values, both for transects and the entire basin (see Table 4-35, and Appendix G Table G-4). The species richness is represented on the RACs as the length of the curve and number of species along the curve (see Figure 4-43 and Figure 4-44).

Species composition at Pond 21 varied somewhat between the monitoring years, though the dominant species remained similar after 2019. This species composition is illustrated on the RACs as the species codes shift along the curve and losses and gains occur from year to year. The most dominant species in the 1999 baseline year was common toad rush (*Juncus bufonius* var. *bufonius*; not pictured in the RAC data due to different methodology employed that year). By the 2019 baseline year, the dominant species were brown-headed rush (*Juncus phaeocephalus*) and coyote thistle (*Eryngium montereyense*), both of which remained the dominant species in 2023. Other important species in all monitoring years were pale spikerush (*Eleocharis macrostachya*) and Hickman's popcorn flower (*Plagiobothrys chorisianus* var. *hickmanii*), however by 2023, rabbitfoot grass (*Polypogon monspeliensis*) and white root (*Carex barbarae*) became subdominant, marking a shift from the baseline years. This species composition remained in place in 2024 and 2025, only coyote thistle was more dominant than brown-headed rush in both years. The species composition in 2025 also showed an increase in dominance of drier species that would normally have been outcompeted by more obligate wetland species in years with more precipitation, such as cut-leaved geranium (*Geranium dissectum*) and brome fescue (*Festuca bromoides*). A complete comparison of species composition observed at Pond 21 in 1999, 2019, 2023,

2024, and 2025 can be found in Appendix H. Figure 4-45 shows a subset of this comparison for species observed with 2% cover or greater.

The evenness from each year is represented by the slope of the RACs. The evenness differs between the 2019 baseline year and 2025. While both 2019 and 2025 show a fairly even overall slope, the 2019 RAC has a much higher abundance of the dominant plants compared to the rest of the species composition for that year. The 2025 RAC, by contrast, has a very even slope throughout the entire curve, showing that the most dominant species are only slightly more abundant than the other species (see Figure 4-44 and Appendix I). When comparing the RAC curve of Pond 21 in 2025 to reference vernal pools, it is most similar to Pond 101 East (East) which has a similar overall shape, with a flatter slope at the top of the curve.

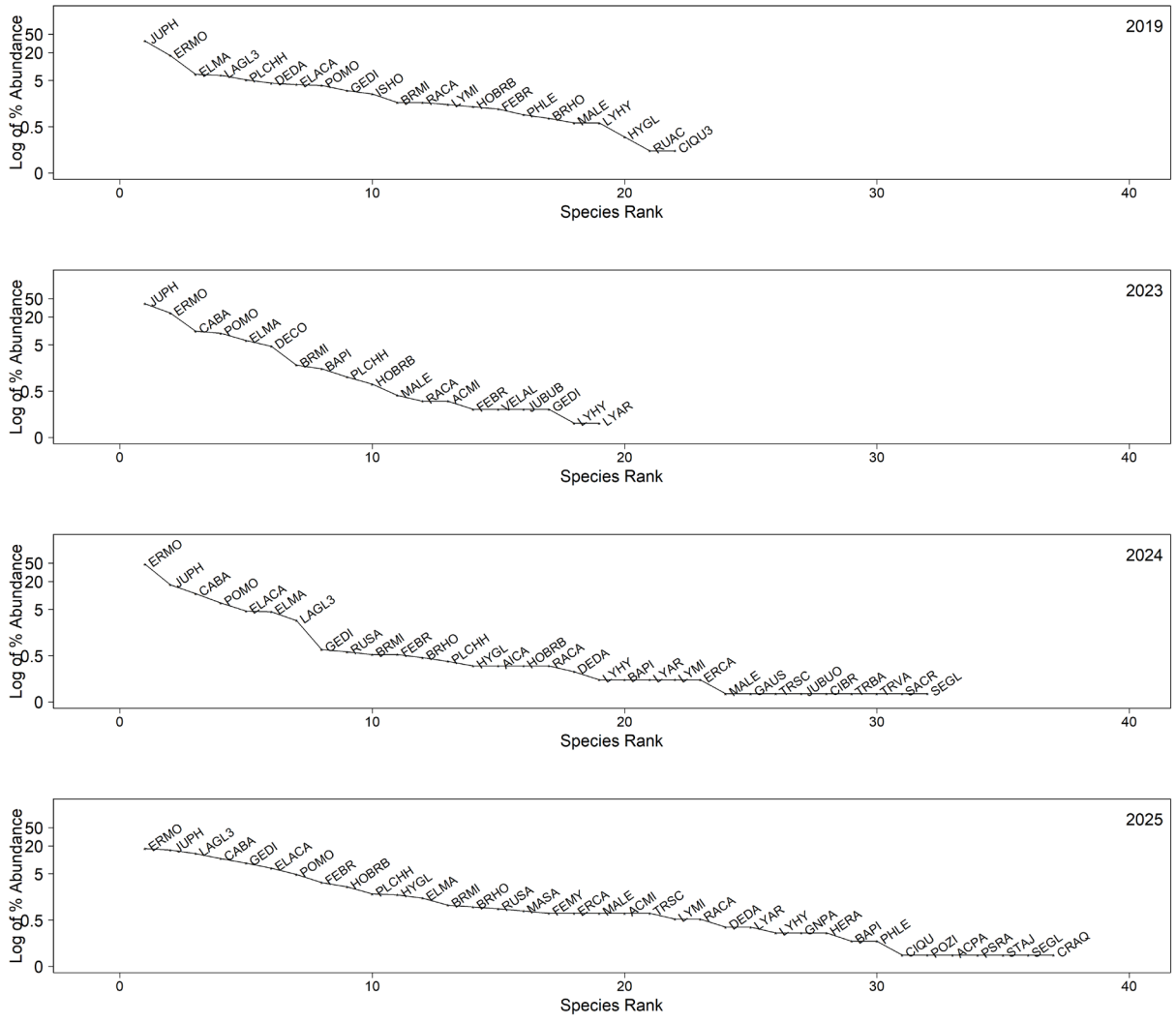

Figure 4-43. Rank abundance curves at Pond 21 (Year 3 Post-Mastication and Post-Subsurface Munitions Remediation) in 2019 and 2023-2025. Note that the y-axis is in log-10 scale.

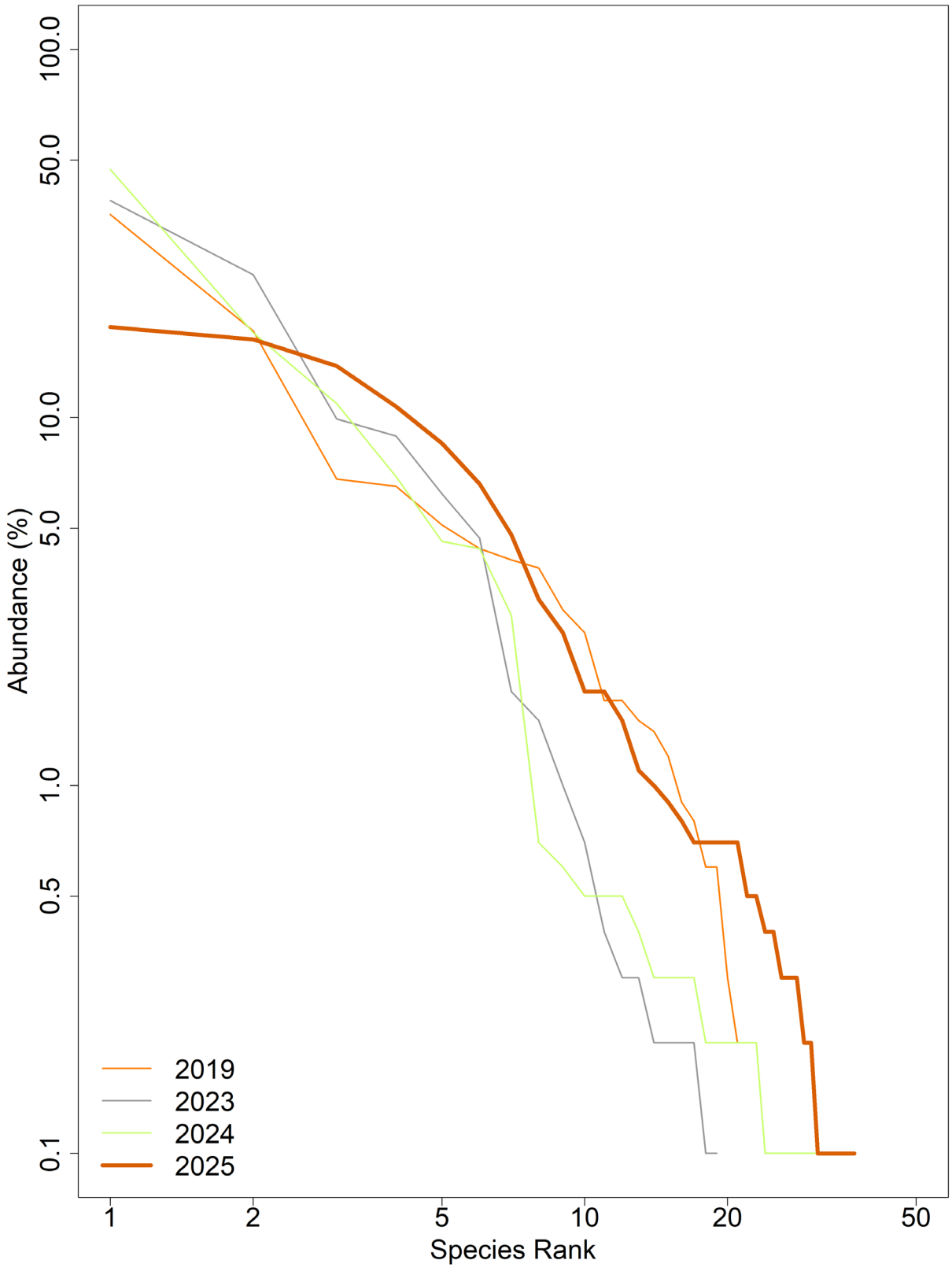

Figure 4-44. Rank abundance curves at Pond 21 (Year 3 Post-Mastication and Post-Subsurface Munitions Remediation) in 2019 and 2023-2025. Note that the x-axis and y-axis are in log-10 scale.

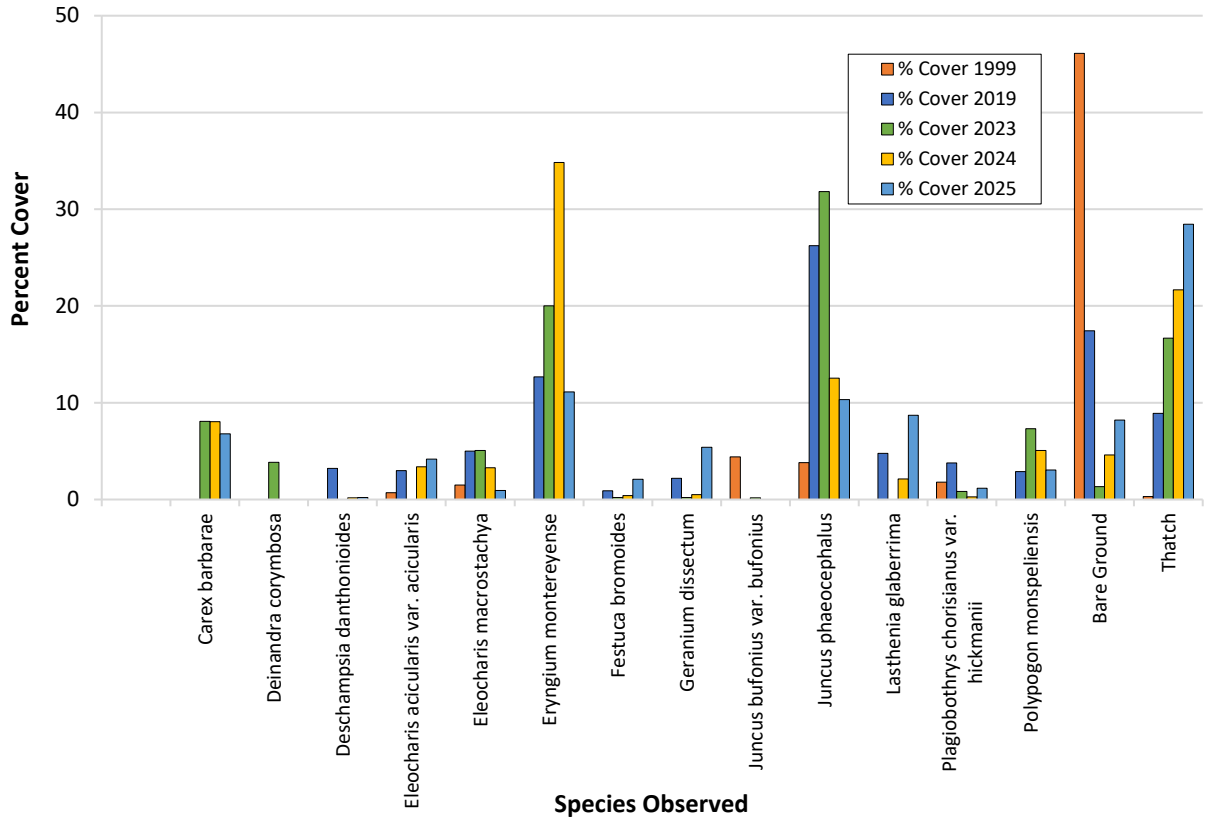

Figure 4-45. Percent cover of dominant species at Pond 21 (Year 3 Post-Mastication and Post-Subsurface Munitions Remediation).

Native and non-native species richness on Pond 21 transects were greater in 2025 than both the baseline years and reference vernal pools (see Table 4-34 and Table 4-35). The relative percent cover of native species was less than baseline values while greater than the range of reference vernal pools (see Table 4-36). Conversely, non-native species were greater than baseline values while less than reference values (see Table 4-37).

Table 4-34. Pond 21 (Year 3 Post-Mastication and Post-Subsurface Munitions Remediation) native and non-native species richness.

Year	Native	Non-Native	Unidentified	Total
1999*	17	5	0	**22**
2019*	14	8	0	**22**
2023	13	6	0	**19**
2024	22	10	0	**32**
2025	27	11	0	**38**

*baseline year

Table 4-35. Pond 21 (Year 3 Post-Mastication and Post-Subsurface Munitions Remediation) and reference vernal pool native and non-native species richness in 2025.

Vernal Pool	Native	Non-Native	Unidentified	Total
5	14	12	0	26
101 East (East)	19	15	0	34
997	22	17	0	39
21	**27**	**11**	**0**	**38**

Table 4-36. Pond 21 (Year 3 Post-Mastication and Post-Subsurface Munitions Remediation) relative percent cover of native and non-native plants.

Year	Native	Non-Native	Unidentified
1999*	95.9%	4.1%	0.0%
2019*	88.4%	11.6%	0.0%
2023	88.6%	11.4%	0.0%
2024	90.0%	10.0%	0.0%
2025	78.2%	21.8%	0.0%

*baseline year

Table 4-37. Pond 21 (Year 3 Post-Mastication and Post-Subsurface Munitions Remediation) and reference vernal pool relative percent cover of native and non-native plants in 2025.

Vernal Pool	Native	Non-Native	Unidentified
5	58.7%	41.3%	0.0%
101 East (East)	43.2%	56.8%	0.0%
997	64.0%	36.0%	0.0%
21	**78.2%**	**21.8%**	**0.0%**

Wetland and non-wetland richness on Pond 21 transects were greater in 2025 than in baseline (see Table 4-38). Compared to reference vernal pools, wetland and non-wetland species richness fell within the range of values (Table 4-39). The relative percent cover of wetland species was less than in baseline years, whereas non-wetland cover fell within the range of baseline values (see Table 4-40). When compared to reference vernal pools, the relative percent cover of wetland and non-wetland species fell within the range of values (see Table 4-41).

Table 4-38. Pond 21 (Year 3 Post-Mastication and Post-Subsurface Munitions Remediation) wetland and non-wetland species richness.

Year	Wetland				Non-Wetland			Not Listed
	OBL	FACW	FAC	Total	FACU	UPL	Total	
1999*	7	5	5	**17**	2	0	**2**	3
2019*	6	8	2	**16**	3	0	**3**	3
2023	3	5	5	**13**	2	0	**2**	4
2024	6	9	5	**20**	4	0	**4**	8
2025	9	10	5	**24**	6	0	**6**	8

*baseline year

Table 4-39. Pond 21 (Year 3 Post-Mastication and Post-Subsurface Munitions Remediation) and reference vernal pool wetland and non-wetland species richness in 2025.

Vernal Pool	Wetland				Non-Wetland			Not Listed
	OBL	FACW	FAC	Total	FACU	UPL	Total	
5	4	9	5	18	3	1	4	4
101 East (East)	4	9	6	19	4	2	6	9
997	11	9	5	25	5	1	6	8
21	**9**	**10**	**5**	**24**	**6**	**0**	**6**	**8**

Table 4-40. Pond 21 (Year 3 Post-Mastication and Post-Subsurface Munitions Remediation) relative percent cover of wetland and non-wetland species.ᵗ

Year	Wetland				Non-Wetland			Not Listed
	OBL	FACW	FAC	Total	FACU	UPL	Total	
1999*	38.1%	50.5%	5.0%	93.7%	4.7%	0.0%	4.7%	1.6%
2019*	25.6%	65.0%	3.3%	94.0%	1.5%	0.0%	1.5%	4.5%
2023	7.3%	73.1%	12.3%	92.7%	0.7%	0.0%	0.7%	6.6%
2024	12.5%	72.6%	12.0%	97.1%	1.0%	0.0%	1.0%	2.0%
2025	**24.9%**	**43.6%**	**12.9%**	**81.4%**	**3.9%**	**0.0%**	**3.9%**	**14.7%**

*baseline year

ᵗ = Percentages were rounded to the nearest tenth and therefore may not appear to be 100%

Table 4-41. Pond 21 (Year 3 Post-Mastication and Post-Subsurface Munitions Remediation) and reference vernal pool relative percent cover of wetland and non-wetland species in 2025.

Vernal Pool	Wetland				Non-Wetland			Not Listed
	OBL	FACW	FAC	Total	FACU	UPL	Total	
5	48.7%	40.9%	1.2%	90.8%	2.3%	0.3%	2.7%	6.5%
101 East (East)	22.2%	34.3%	5.8%	62.3%	9.5%	0.9%	10.4%	27.4%
997	37.3%	24.1%	11.5%	72.9%	6.3%	1.2%	7.5%	19.6%
21	**24.9%**	**43.6%**	**12.9%**	**81.4%**	**3.9%**	**0.0%**	**3.9%**	**14.7%**

4.5.3.1 *Data Quality Objective 3 (Vegetation)*

Observable changes in hydrophytic vegetation between surveys were largely associated with precipitation fluctuations. This is expected given the dynamic nature of vernal pools and the close relationship between the hydroperiod and wetland vegetation composition (Bauder, 2000). This year precipitation was below normal. The dry conditions favored wetland facultative species.

Vegetative cover in Pond 21 was dominated by native and wetland plant species during Year 3 post-mastication and post-subsurface munitions remediation monitoring in 2025. Pond 21 wetland vegetation results were generally within range of either baseline and/or reference vernal pools with a few exceptions. Non-native species richness and cover were both greater than baseline results but less than the range of reference vernal pools. There was also less native species cover than baseline results,

but greater native cover than reference. The final exception was that native species richness in 2025 was greater than both the baseline results and the reference vernal pools. These results are not concerning, as high native species richness values support a well-functioning vernal pool ecosystem.

4.5.3.2 *Performance Standard: Plant Cover and Species Diversity*

Pond 21, a post-mastication and post-subsurface munitions remediation vernal pool, is on track to meet the performance standard for Year 3. The species composition, richness, and native and wetland species relative abundances were within range of the reference vernal pool conditions or differed in a favorable trajectory for native and wetland species.

4.5.4 Conclusion

Pond 21, a post-mastication and post-subsurface munitions remediation vernal pool, was in Year 3 of monitoring in 2025. Pond 21 is on track to meet the plant cover and species diversity performance standards but was partially on track to meet hydrologic conditions and wildlife usage (see Table 4-42). This is due to the vernal pool lacking adequate depth for CTS and having no detections of CTS, which is inconsistent with 2019 baseline but consistent with reference ponds. Pond 21 will continue to be monitored in the future.

Table 4-42. Success at Pond 21 (Year 3 Post-Mastication and Post-Subsurface Munitions Remediation) based on performance standards and applicable Data Quality Objectives.

Performance Standard	Applicable DQO	Success
Hydrologic Conditions & Inundation area	DQO 1	Not on track
	DQO 2	On track
Plant Cover & Species Diversity	DQO 3	On track
Wildlife Usage	DQO 1	Not on track
	DQO 4	On track
	DQO 5	Partially on track

4.6 Pond 76 –Year 3 and Year 2

Pond 76 was monitored in 2025 as a Year 3 post-mastication and Year 2 post-subsurface munitions remediation vernal pool. Pond 76 was not monitored for baseline conditions as mastication began in the area prior to its recognition as a vernal pool basin. Subsurface anomaly investigations were completed at the end of 2023. Table 4-43 summarizes the years that monitoring occurred and surveys were conducted. The cumulative precipitation graph shows precipitation for years in which hydrologic monitoring was conducted at Pond 76 (see Figure 4-46). The 2024-2025 water year was less than the cumulative normal.

Table 4-43. Pond 76 (Year 3 Post-Mastication and Year 2 Post-Subsurface Munitions Remediation) summary of historic surveys for hydrology, vegetation, and wildlife.

Survey	Water Year		
	2022-2023	2023-2024	2024-2025
Hydrology	●	●	●
Wildlife	●	●	●
Vegetation	●	●	●

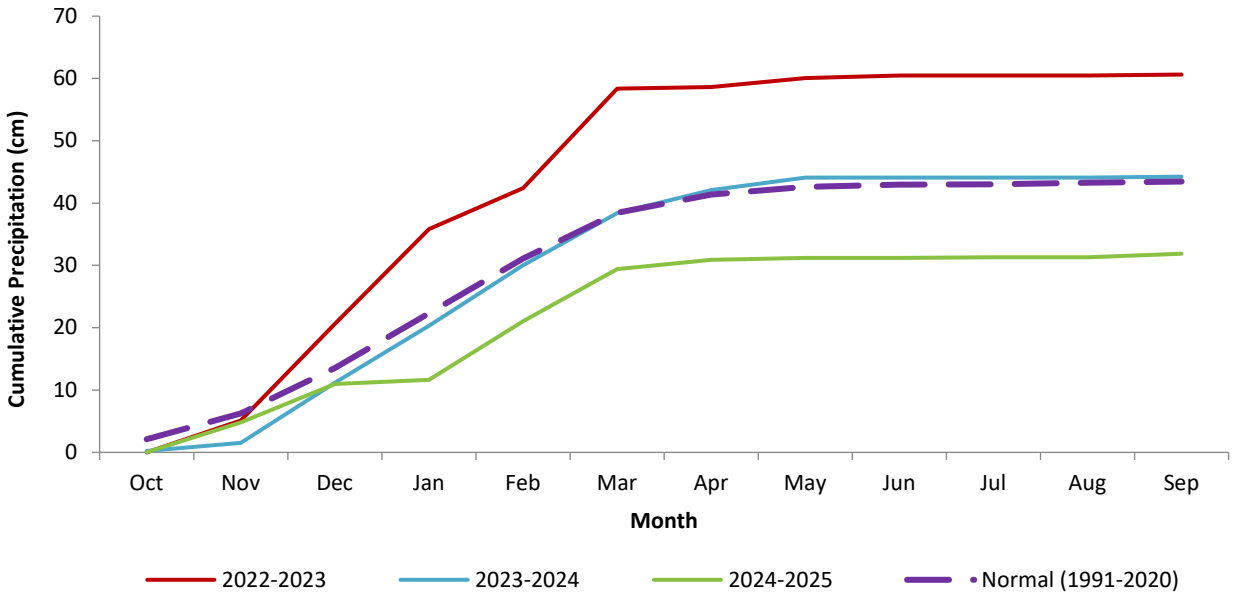

Figure 4-46. Cumulative monthly precipitation for years that hydrologic monitoring occurred at Pond 76 (Year 3 Post-Mastication and Year 2 Post-Subsurface Munitions Remediation) compared to the 30-year normal (mean 1991-2020) (NCEI NOAA, 2024-2025).

4.6.1 Hydrologic Monitoring

Pond 76 is located in a small, shallow basin in the southern Fort Ord National Monument. In 2023, vernal pool depth was estimated due to the absence of a staff gauge, which was available for measurements in 2024. Due to limited data, hydrologic conditions and DQO assessments for Pond 76 can only be compared to reference vernal pools, with Pond 997 being the most analogous due to its size and depth. Pond 76 remained dry during the 2025 water year. Inundation extent, depth, and water quality data are illustrated in Figure 4-47, Figure 4-48, Figure 4-49, and Figure 4-50.

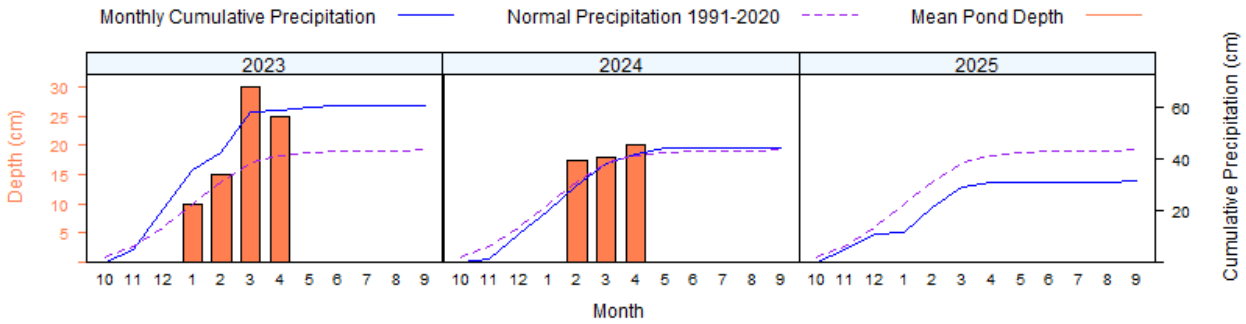

Figure 4-47. Cumulative monthly precipitation for years that hydrologic monitoring occurred at Pond 76 (Year 3 Post-Mastication and Year 2 Post-Subsurface Munitions Remediation) compared to the 30-year normal (mean 1991-2020) (NOAA, 2024-2025).

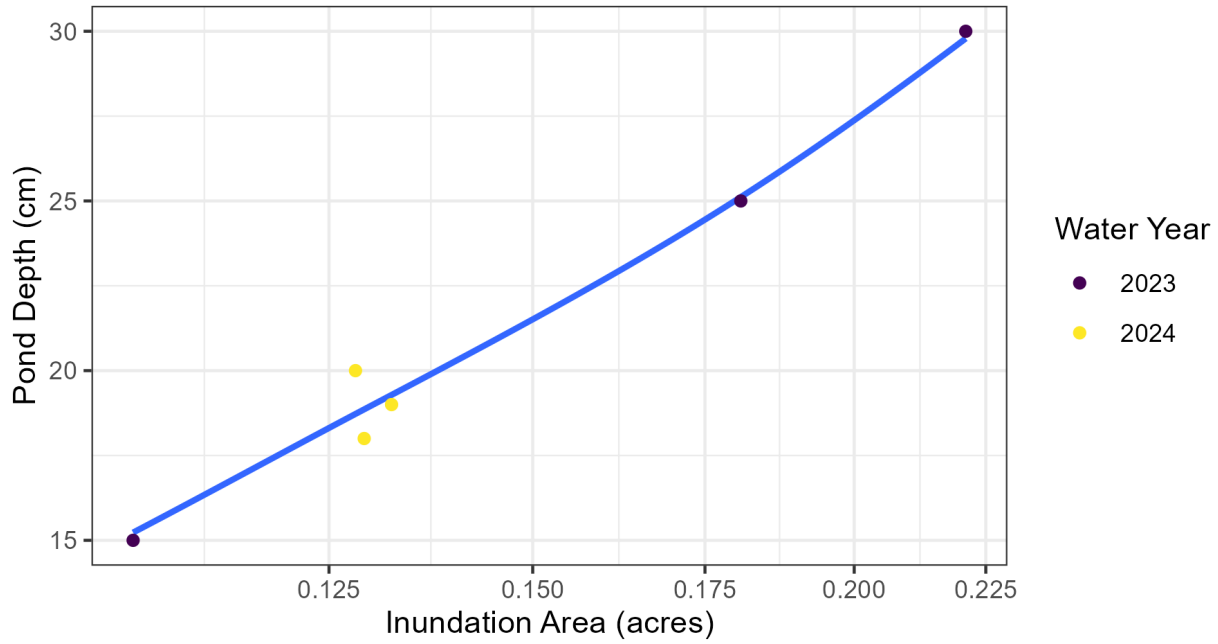

Figure 4-48. Pond 76 (Year 3 Post-Mastication and Year 2 Post-Subsurface Munitions Remediation) plot of depth vs. inundation area since the 2022-2023 (2023) water year. Pond 76 remained dry during the 2025 water year, therefore there is no 2025 data point.

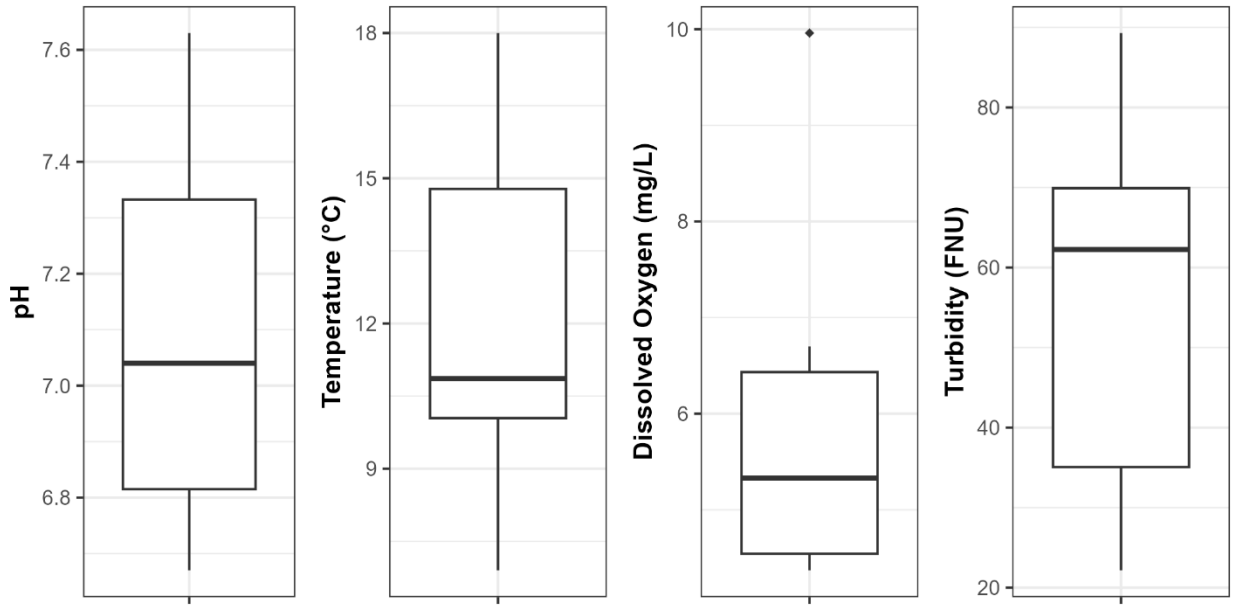

Figure 4-49. Pond 76 (Year 3 Post-Mastication and Year 2 Post-Subsurface Munitions Remediation) historical water quality measurements for pH, temperature (C), dissolved oxygen (mg/L), and turbidity (FNU). The line in the middle of the box represents the median, and the lower and upper ends of the box are the 25% and 75% quartiles of historical values respectively. The upper and lower whiskers represent largest and smallest values within 1.5 times above and below the size of the hinge, which is the 75% minus 25% quartiles, respectively. Black diamonds represent values from previous years that fall outside of the 25% and 75% quartiles. Pond 76 remained dry during the 2024-2025 water year, therefore there are no data points to represent this year's values.

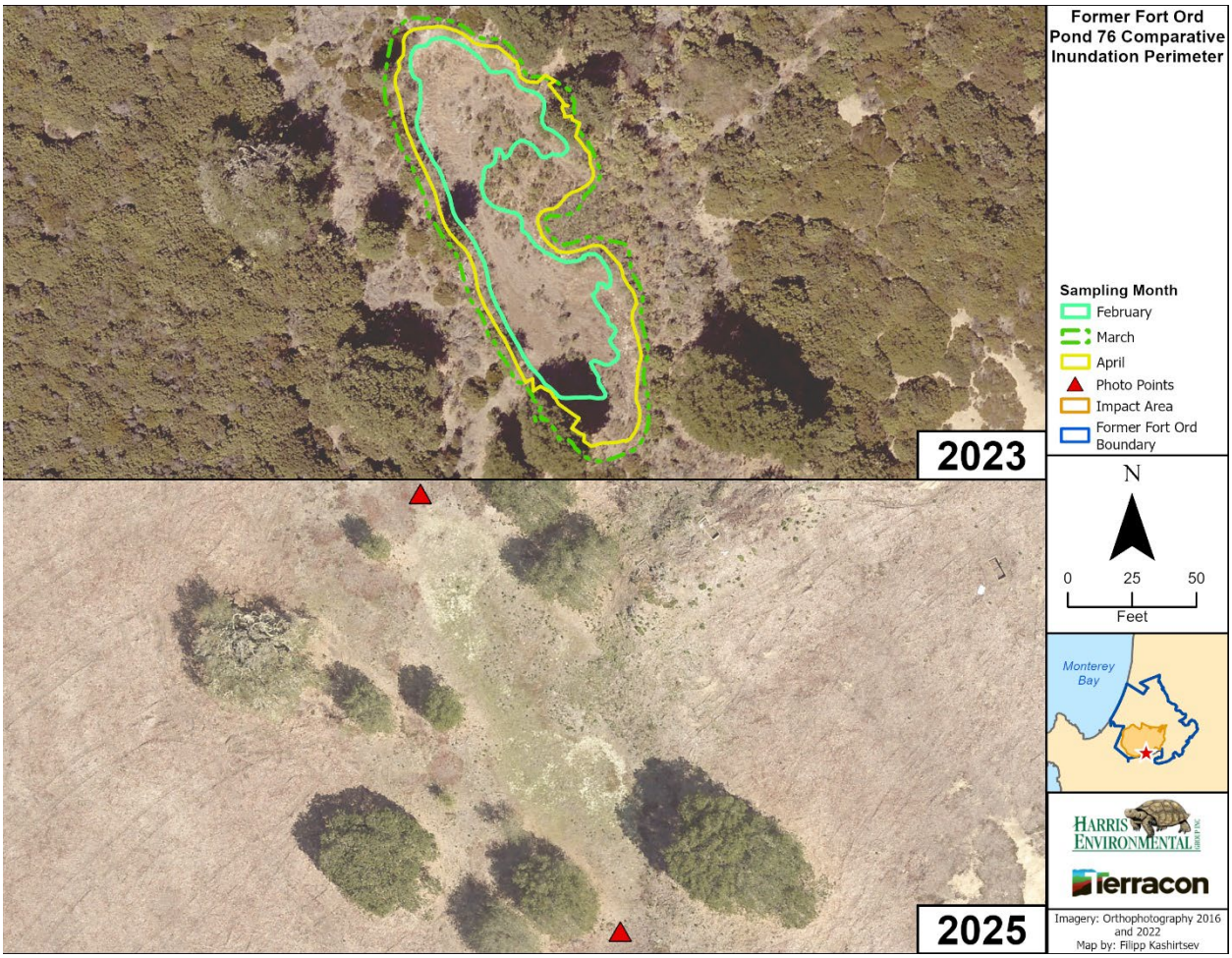

Figure 4-50. Pond 76 (Year 3 Post-Mastication and Year 2 Post-Subsurface Munitions Remediation) inundation areas in 2023 and 2025. Pond 76 remained dry in 2025 and therefore does not have an inundation area.

4.6.1.1 *Data Quality Objective 1 (Water Depth)*

Pond 76 did not meet the required average depths of 25 cm from the first rain event through March for CTS, nor did it meet the 10 cm for 18 consecutive days through May requirement for fairy shrimp.

4.6.1.2 *Data Quality Objective 2 (Inundation Area)*

Pond 76 remained dry during the 2024-2025 water year.

4.6.1.3 *Performance Standard: Hydrologic Conditions and Inundation Area*

Pond 76, a post-mastication vernal pool, was not on track for this performance standard for Year 2 and 3 in 2025. Pond 76 did not satisfy DQO 1, indicating that it did not sustain suitable habitat for CTS or fairy shrimp. Pond 76 additionally remained dry during the below normal 2024-2025 water year, which was inconsistent with the inundation of reference Pond 997, and it was therefore not on track to meet DQO 2.

4.6.2 Wildlife Monitoring

Wildlife data were collected at Pond 76 in 2023 and 2024 (Harris-Terracon, 2024, 2025). California tiger salamanders were not detected either year. Fairy shrimp were not surveyed in 2023 (Year 1) as there were logistical issues precluding survey efforts, but in 2024, Pond 76 was the only vernal pool in which fairy shrimp were detected that year. Pond 76 did not hold sufficient depth for surveys to be completed in 2025. Therefore, DQO 5 and the applicable wildlife usage performance standard cannot be assessed. Table 4-44 shows historic wildlife monitoring results.

Table 4-44. Pond 76 (Year 3 Post-Mastication and Year 2 Post-Subsurface Munitions Remediation) historical wildlife monitoring results.

Sampling Year	CTS Larvae Abundance (# Individuals)	Fairy Shrimp Abundance (# Individuals)
2023	Not detected	N/A*
2024	Not detected	Moderate (13)

Red = below normal precipitation; Green = normal precipitation; Blue = above normal precipitation
*Aquatic invertebrates/fairy shrimp not surveyed in 2023.

4.6.2.1 *Data Quality Objective 1 (Water Depth)*

Pond 76 did not provide suitable depth for CTS or fairy shrimp as discussed in Section 4.6.1.1.

4.6.2.2 *Data Quality Objective 4 (Water Quality)*

Pond 76 remained dry in 2025; therefore, no water quality data were collected. This condition reflects the below-normal precipitation for the water year (see Table 3-23).

4.6.3 Vegetation Monitoring

Vegetation data were collected at Pond 76 in 2023-2025 using the methodology described in the Methods section of this report (Harris-Terracon, 2024, 2025). Data from 2023 and 2025 were compared stratum-to-stratum in Table 4-45 as well as visually in Figure 4-51.

Table 4-45. Pond 76 (Year 3 Post-Mastication and Year 2 Post-Subsurface Munitions Remediation) vegetative strata percentage within the vernal pool basin boundary.

Stratum	Percentage	
	2023	2025
1	34%	9%
2	32%	N/A
3	34%	81%
4	N/A	10%

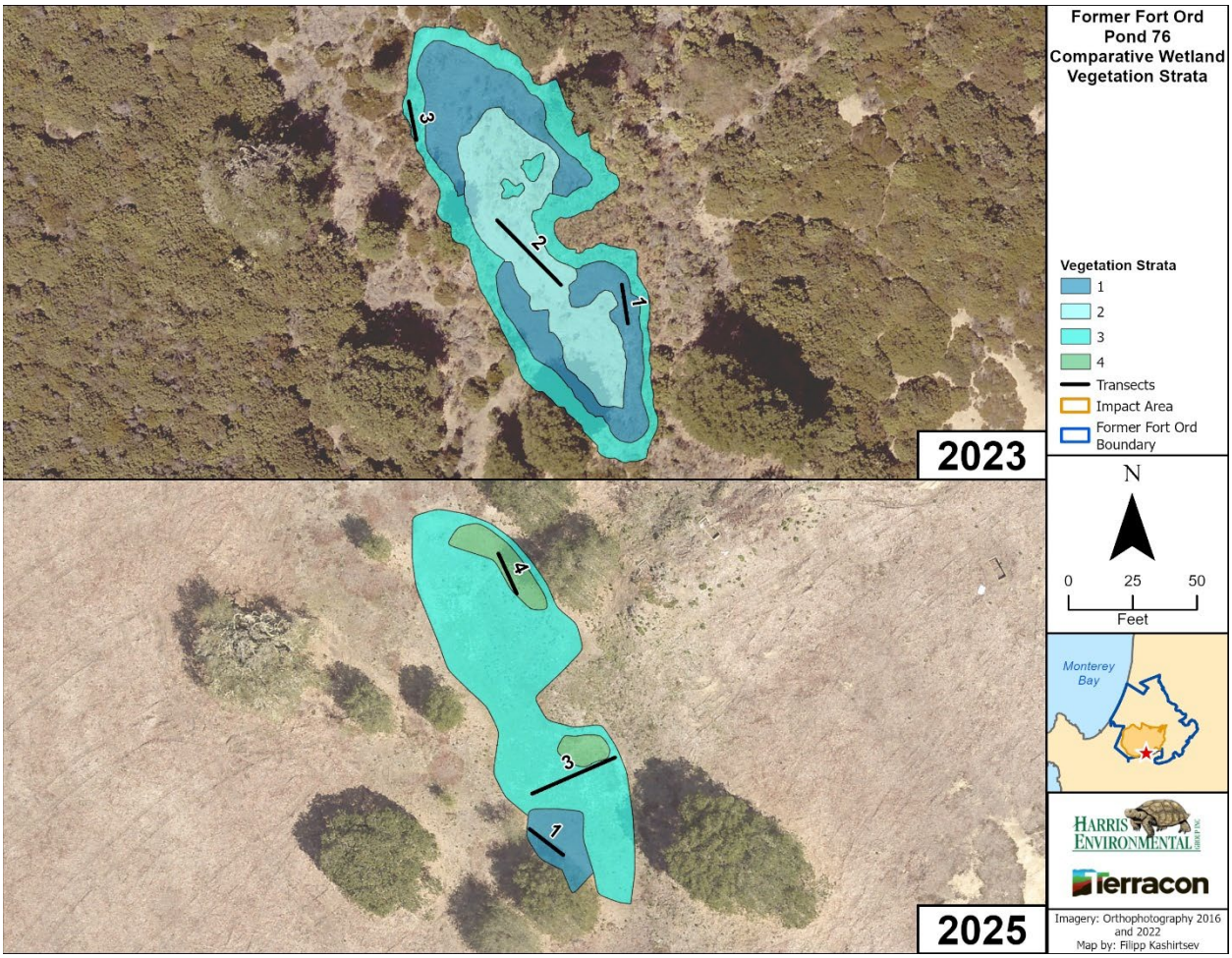

Figure 4-51. Pond 76 (Year 3 Post-Mastication and Year 2 Post-Subsurface Munitions Remediation) vegetation strata and transects for 2023 and 2025.

Absolute percent vegetative cover for Pond 76 was 61.2%, 71.6%, and 70.6% in 2023, 2024, and 2025 respectively (see Table 4-46). Pond 76 vegetative cover and thatch/bare ground were within the range of values observed at the reference vernal pools (see Table 4-47).

Table 4-46. Pond 76 (Year 3 Post-Mastication and Year 2 Post-Subsurface Munitions Remediation) absolute percent cover.

Vernal Pool	Vegetative Cover	Thatch/Bare Ground
2023	61.2%	38.8%
2024	71.6%	28.4%
2025	70.6%	29.4%

Table 4-47. Pond 76 (Year 3 Post-Mastication and Year 2 Post-Subsurface Munitions Remediation) and reference vernal pool absolute percent cover in 2025.

Vernal Pool	Vegetative Cover	Thatch/Bare Ground
5	48.2%	51.8%
101 East (East)	71.3%	28.7%
997	68.0%	32.0%
76	**70.6%**	**29.4%**

Species richness on transects was 24, 16, and 26 species in 2023, 2024, and 2025, respectively, whereas overall basin species richness was 33, 41, and 49 species in 2023, 2024, and 2025, respectively (see Table 4-48 and Appendix B Table B-5). Pond 76 species richness was less than the range of values observed at the reference vernal pools for the overall basin, and within the range of reference values on transects in 2025 (see Table 4-49 and Appendix G Table G-5). The species richness is represented on the RACs as the length of the curve and number of species along the curve (see Figure 4-52).

Species composition at Pond 76 is illustrated on the RACs as the species codes shift along the curve and losses and gains occur from year to year. The most dominant species were brown-headed rush (*Juncus phaeocephalus*) and needle spikerush *(Eleocharis acicularis* var. *acicularis*) in 2023, with coyote thistle (*Eryngium montereyense*) as the most abundant subdominant. Results made a slight shift in 2024 and 2025, when coyote thistle and rabbitfoot grass (*Polypogon monspeliensis*) became the most dominant species. The entire species composition observed at Pond 76 can be found in Appendix H. Figure 4-54 shows a subset of this composition for species observed with 2% cover or greater.

The evenness in 2025 is represented by the slope of the RAC. When comparing vegetation in Pond 76 in 2025 to reference vernal pools, it is most similar to Pond 101 East (East) which has a similar overall shape, including a flat top at the beginning of the curve. The long, flat start of the RAC conveys multiple dominant species within the basin flora, and the long, convex tail conveys high evenness among the remaining species (see Figure 4-53 and Appendix I). As explained in Verberk (2011), “Structurally complex systems, such as a fen [or vernal pool] system are species rich and have a more even community abundance pattern, possibly owing to a fine partitioning of available niches”.

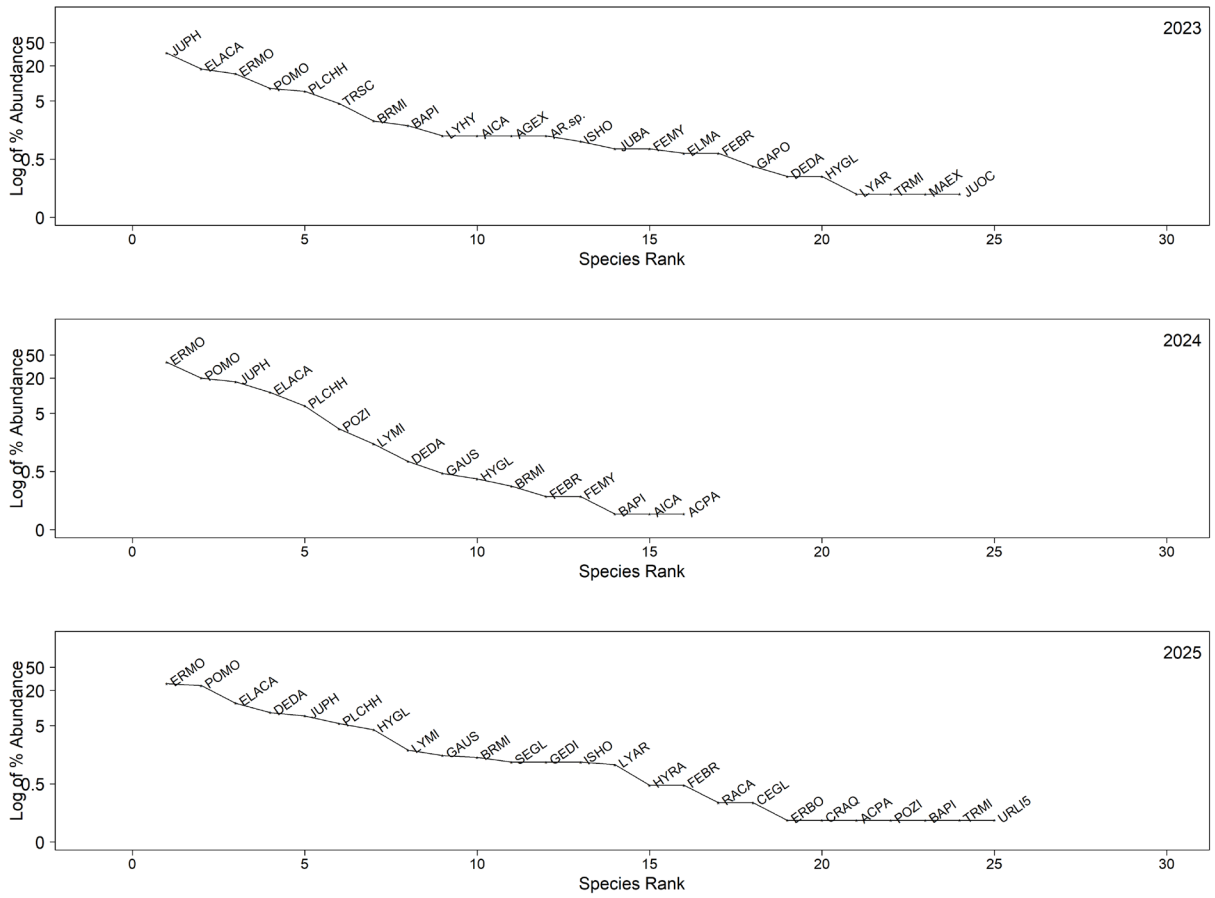

Figure 4-52. Rank abundance curves at Pond 76 (Year 3 Post-Mastication and Year 2 Post-Subsurface Munitions Remediation) in 2023, 2024, and 2025. Note that the y-axis is in log-10 scale.*

*Eryngium armatum (ERAR12) changed to Eryngium montereyense (ERMO) in 2024

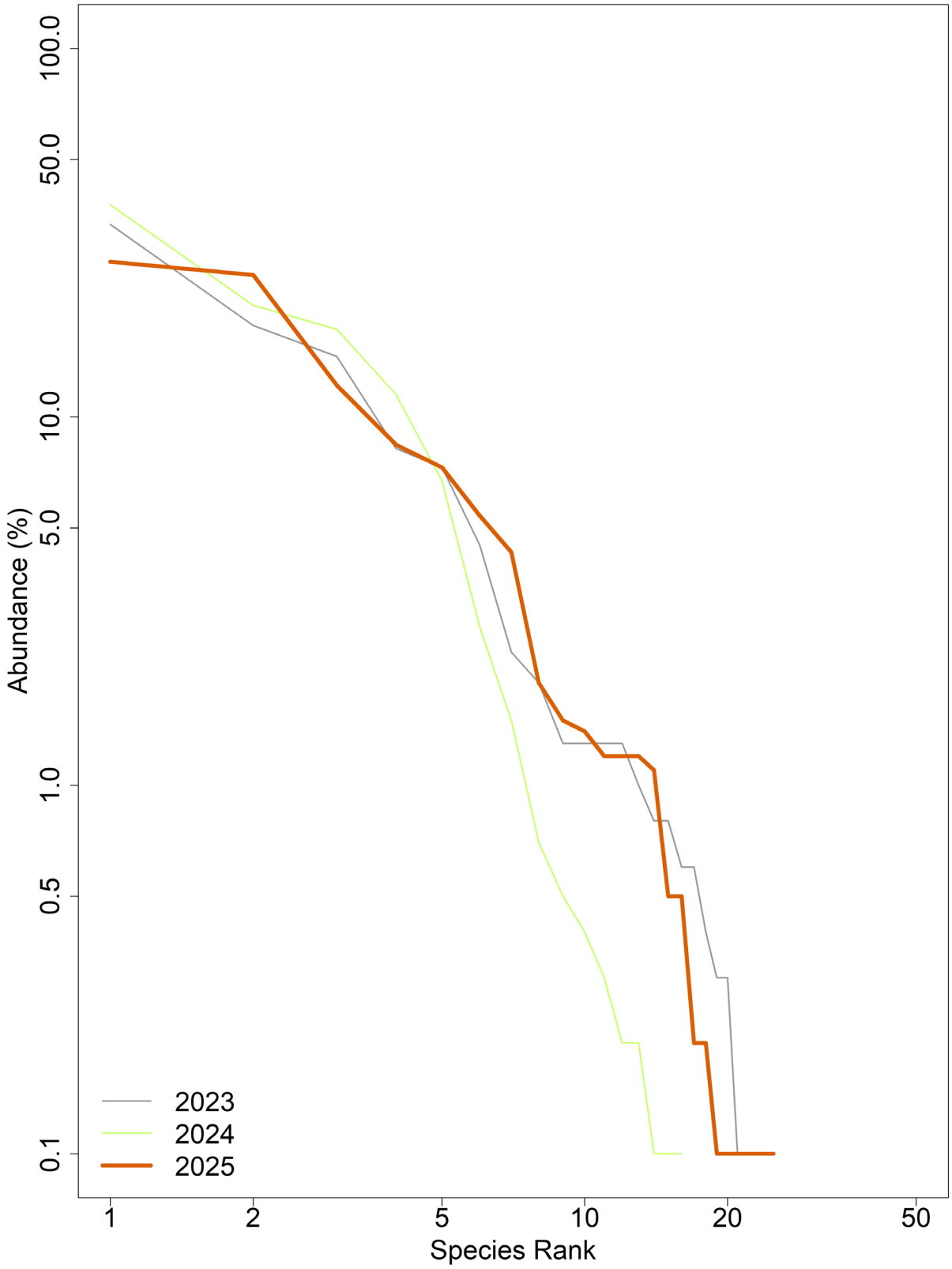

Figure 4-53. Rank abundance curves at Pond 76 (Year 3 Post-Mastication and Year 2 Post-Subsurface Munitions Remediation) in 2023-2025. Note that the y-axis is in log-10 scale.

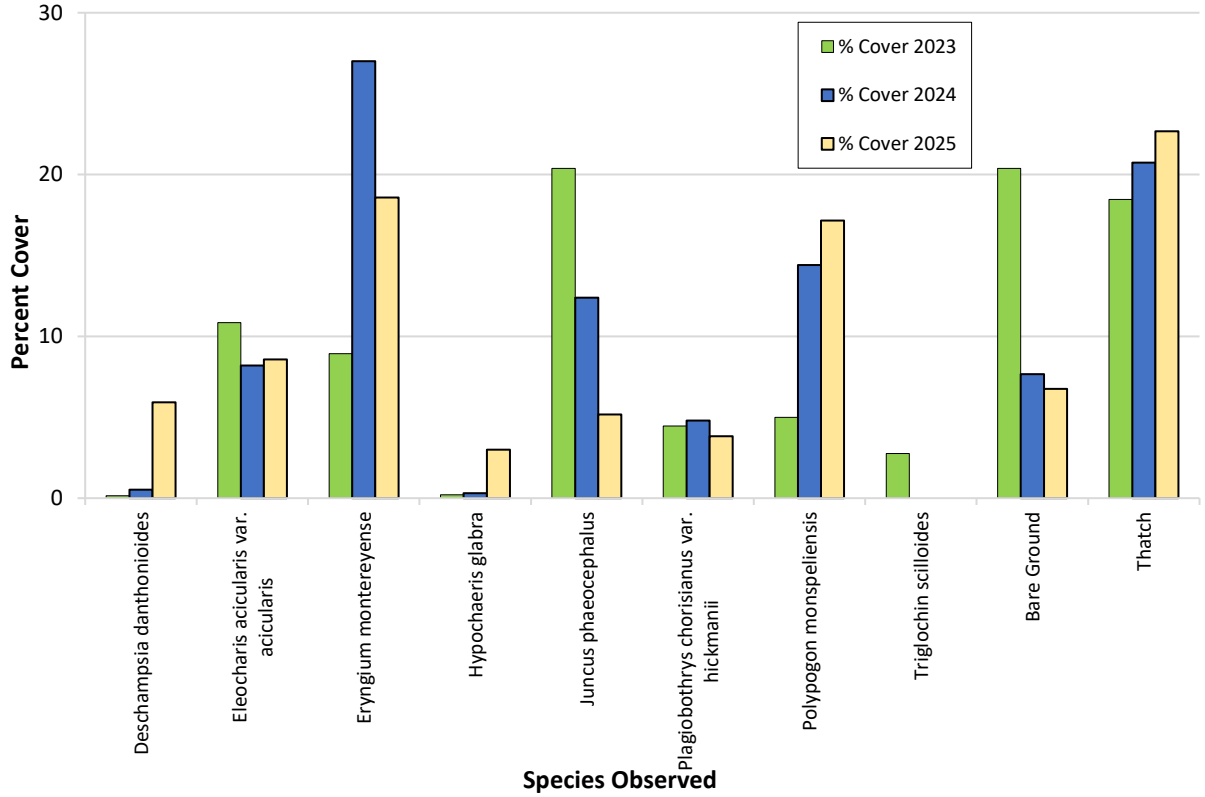

Figure 4-54. Percent cover of dominant species at Pond 76 (Year 3 Post-Mastication and Year 2 Post-Subsurface Munitions Remediation).

Pond 76 had a greater number of native species than non-native species in all three monitoring years, although non-native richness in 2025 was higher than the previous two years (see Table 4-48). The native richness was within the range of reference vernal pools while non-native richness was less than reference vernal pools (see Table 4-49). The relative percent cover of native species was greater than the relative percent cover of non-native species, although non-native cover increased annually from 2023-2025, likely due to a steady decrease in precipitation and resulting lack of inundation in 2025 (see Table 4-50). Pond 76 native relative percent cover was greater than the range of reference vernal pools, while non-native cover was less than reference (see Table 4-51).

Table 4-48. Pond 76 (Year 3 Post-Mastication and Year 2 Post-Subsurface Munitions Remediation) native and non-native species richness.

Vernal Pool	Native	Non-Native	Unidentified	Total
2023	16*	8	0	**24**
2024	10	6	0	**16**
2025	15	11	0	**26**

*The values for 2023 richness have changed. *Arctostaphylos* sp. was incorrectly labeled as Unidentified. While it was not identified to species, there are no non-native *Arctostaphylos* on Fort Ord, so it is more accurate to categorize it as a native plant.

Table 4-49. Pond 76 (Year 3 Post-Mastication and Year 2 Post-Subsurface Munitions Remediation) and reference vernal pool native and non-native species richness in 2025.

Vernal Pool	Native	Non-Native	Unidentified	Total
5	14	12	0	26
101 East (East)	19	15	0	34
997	22	17	0	39
76	**15**	**11**	**0**	**26**

Table 4-50. Pond 76 (Year 3 Post-Mastication and Year 2 Post-Subsurface Munitions Remediation) relative percent cover of native and non-native plants.

Vernal Pool	Native	Non-Native	Unidentified
2023	85.3%*	14.7%	0.0%
2024	78.8%	21.2%	0.0%
2025	65.2%	34.8%	0.0%

*The values for 2023 richness have changed. *Arctostaphylos* sp. was incorrectly labeled as Unidentified. While it was not identified to species, there are no non-native *Arctostaphylos* on Fort Ord, so it is more accurate to label it as a native plant.

Table 4-51. Pond 76 (Year 3 Post-Mastication and Year 2 Post-Subsurface Munitions Remediation) and reference vernal pool relative percent cover of native and non-native plants in 2025.

Vernal Pool	Native	Non-Native	Unidentified
5	58.7%	41.3%	0.0%
101 East (East)	43.2%	56.8%	0.0%
997	64.0%	36.0%	0.0%
76	**65.2%**	**34.8%**	**0.0%**

The wetland species richness in Pond 76 varied between the three monitoring years, with a shift towards drier plants in 2025 (see Table 4-52). Non-wetland species in 2025 doubled from the previous two years. Pond 76 was similar to the reference vernal pools with more wetland than non-wetland species, although the wetland richness at Pond 76 was less than the range of values observed at the reference vernal pools (see Table 4-53). Non-wetland species richness fell within the range of reference values. The relative percent cover of wetland species at Pond 76 was less than the previous monitoring years, while within the range of values observed at the reference vernal pools (see Table 4-54 and Table 4-55). Non-wetland cover in 2025 was less than in 2023 (Year 1), but slightly greater than 2024 (Year 2). Non-wetland cover was less than the range of reference values.

Table 4-52. Pond 76 (Year 3 Post-Mastication and Year 2 Post-Subsurface Munitions Remediation) wetland and non-wetland species richness.

Vernal Pool	Wetland				Non-Wetland			Not Listed
	OBL	FACW	FAC	Total	FACU	UPL	Total	
2023	6	7	3	16	2	0	2	6
2024	3	5	1	9	2	0	2	5
2025	5	5	4	14	4	0	4	8

Table 4-53. Pond 76 (Year 3 Post-Mastication and Year 2 Post-Subsurface Munitions Remediation) and reference vernal pool wetland and non-wetland species richness in 2025.

Vernal Pool	Wetland				Non-Wetland			Not Listed
	OBL	FACW	FAC	Total	FACU	UPL	Total	
5	4	9	5	18	3	1	4	4
101 East (East)	4	9	6	19	4	2	6	9
997	11	9	5	25	5	1	6	8
76	**5**	**5**	**4**	**14**	**4**	**0**	**4**	**8**

Table 4-54. Pond 76 (Year 3 Post-Mastication and Year 2 Post-Subsurface Munitions Remediation) relative percent cover of wetland and non-wetland species.

Vernal Pool	Wetland				Non-Wetland			Not Listed
	OBL	FACW	FAC	Total	FACU	UPL	Total	
2023	32.5%	58.5%	2.5%	**93.5%**	2.0%	0.0%	**2.0%**	4.5%
2024	20.9%	77.4%	0.3%	**98.5%**	0.3%	0.0%	**0.3%**	1.2%
2025	19.0%	68.2%	2.8%	**90.1%**	0.9%	0.0%	**0.9%**	9.0%

Table 4-55. Pond 76 (Year 3 Post-Mastication and Year 2 Post-Subsurface Munitions Remediation) and reference vernal pool relative percent cover of wetland and non-wetland species in 2025.

Vernal Pool	Wetland				Non-Wetland			Not Listed
	OBL	FACW	FAC	Total	FACU	UPL	Total	
5	48.7%	40.9%	1.2%	90.8%	2.3%	0.3%	2.7%	6.5%
101 East (East)	22.2%	34.3%	5.8%	62.3%	9.5%	0.9%	10.4%	27.4%
997	37.3%	24.1%	11.5%	72.9%	6.3%	1.2%	7.5%	19.6%
76	**19.0%**	**68.2%**	**2.8%**	**90.1%**	**0.9%**	**0.0%**	**0.9%**	**9.0%**

4.6.3.1 *Data Quality Objective 3 (Vegetation)*

Vegetative cover in Pond 76 was dominated by native and wetland plant species during Year 3 post-mastication and Year 2 post-subsurface munitions remediation monitoring in 2025. While there are no baseline data available for comparison, 2025 Year 2 post-subsurface munitions remediation results can be compared to 2023 Year 1 post-mastication results, so long as careful consideration of treatment comparisons and environmental influences are taken into account. When compared to 2023 (Year 1), Pond 76 had less native and greater non-native cover, however when compared to reference results, the opposite was the case. Also notable were the results for wetland richness and non-wetland cover, which were both less than 2023 (Year 1) and the range of reference vernal pool values. Wetland cover, non-wetland richness, and native species richness all fell within the range of 2023 (Year 1) and reference values.

As is the case in normal to above normal precipitation years, a below-normal year has its own set of sometimes contrasting results. Drier years, like 2025 tend to shift the species composition to more facultative and upland plants, leaving greater amounts of thatch where obligate wetland species had been in wetter years. Additionally, non-native species fill the niche that wetland natives had previously

dominated. From 2023-2025, non-native cover and non-wetland richness steadily increased at Pond 76, however this appeared to be consistent with reference vernal pool results, which also displayed effects of a below-normal precipitation year. The only negative result this year was that wetland richness was less than both 2023 (Year 1) and reference vernal pool results. Due to its small footprint however, it is not surprising that richness would be less than the larger reference ponds which overall have greater depth and area for potential plant diversity. An additional shift this year was that non-wetland cover was less than both 2023 (Year 1) results and the reference vernal pools. This result is not concerning, however, as the shift towards lower non-wetland cover supports a well-functioning vernal pool ecosystem.

4.6.3.2 *Performance Standard: Plant Cover and Species Diversity*

Pond 76, a post-mastication and post-subsurface munitions remediation vernal pool, was on track to meet the performance standard for Year 2 and 3 in 2025. The species composition, although trending towards drier and non-native plants, was comparable to reference vernal pools in this below-normal water year.

4.6.4 Conclusion

Pond 76, a post-mastication vernal pool, was in Year 3 of monitoring for post-mastication and Year 2 of monitoring for post-excavation in 2025. Pond 76 was on track to meet the plant cover and species diversity performance standards but was not on track to meet hydrologic conditions and wildlife usage (see Table 4-56). This is due to the vernal pool lacking adequate depth for CTS and fairy shrimp. Pond 76 will continue to be monitored in the future.

Table 4-56. Success at Pond 76 (Year 3 Post-Mastication and Year 2 Post-Subsurface Munitions Remediation) based on performance standards and applicable Data Quality Objectives.

Performance Standard	Applicable DQO	Success
Hydrologic Conditions & Inundation Area	DQO 1	Not on track
	DQO 2	Not on track
Plant Cover & Species Diversity	DQO 3	On track
Wildlife Usage	DQO 1	Not on track
	DQO 4*	N/A*
	DQO 5*	N/A*

*Not applicable; wildlife surveys were not conducted due to insufficient depth

5 CONCLUSION

The 2024-2025 water year came out of a volatile five-year weather period, beginning with the lowest recorded rainfall in 2020-2021, a second year of drought in 2021-2022, a third year of above-average water year in 2022-2023, a fourth year of normal water levels in 2023-2024, and then back to below-normal conditions in 2024-2025. These highly variable results have led to shifts in both wildlife and vegetation composition at the vernal pools.

Remediated Pond 76 was not on track to meet the hydrologic and inundation standard; however, Pond 21 was partially on track, meeting DQO 2 for inundation. Both vernal pools are historically shallow vernal pools that, like Pond 997, did not provide adequate depth for CTS or fairy shrimp, and therefore neither met DQO 1. However, fairy shrimp were found at the other reference vernal pools, Ponds 5 and 101 East (East) in moderate to high numbers, which was the first year they had been detected at these locations since 2019 for Pond 5 and 2020 for Pond 101 East (East). The late timing of the wildlife surveys (April) during the 2023 and 2024 water years may have contributed to the lack of fairy shrimp found in these survey years. Fairy shrimp are typically found earlier in the season in February and March, although there have been notable exceptions, including in 2020 at Pond 101 East (East), when they were found during the March through May surveys. Additionally, they were found at Pond 76 in 2024, which despite the late survey times and the small size of the vernal pool, was the only location in which they were found last year. These outlier results suggest that detection is likely associated with the timing of precipitation and resultant ponding, rather than specific months.

Vernal pools are dynamic ecosystems, and to analyze their vegetative condition, RACs were utilized to assess species distribution, relative abundance, species evenness, and richness. Comparison plots for all monitoring years from 2015 to 2025 reveal significant annual variations in species richness, shifts in species composition, and changes in the distribution and relative abundance of species (see Appendix I). While some pools exhibit consistent dominant species year after year, others reflect notable variations.

Throughout the years, species evenness remained relatively low and consistent. This trend may be attributed to the high species richness observed in these vernal pools as well as the specific sampling methodologies employed. This is supported by a study of subalpine meadow communities with the same sampling scale as data collected at Ford Ord vernal pools. The researchers found a consistent negative correlation between species richness and evenness in these communities along the successional gradient at the sampling scale of 0.5 m x 0.5 m quadrats along transect lines (Hui Zhang, 2012). In addition to low evenness, richness was uniformly distributed along the entire curve with a slightly higher concentration or plateau of species toward the tail end. This plateau represents the species that are likely contributing around 1% and only found once along the transect.

When evaluating the performance of the remediated vernal pools against reference and baseline data, both Ponds 21 and 76 were on track to meet the vegetation performance standard (see Table 5-1). At Pond 21, native species richness was greater than both baseline and reference results. Pond 21 shared a few similar results with Pond 76 in 2025: both vernal pools had greater non-native richness and cover than baseline*, but compared to reference vernal pools, both non-native richness and cover were less. Additionally, at Pond 76 there was less native species abundance than baseline, but greater native cover than reference. Overall, both remediated vernal pools predominantly supported wetland and native species, with relative percent cover significantly dominated by wetland species.

*Although not a true baseline, the Mastication-only year in 2023 for Pond 76 can be compared to post-subsurface munitions remediation conditions.

Ponds 21 and 76 will continue to be monitored for hydrology, wetland vegetation and wildlife usage.

Table 5-1. 2025 remediated vernal pools and performance standards status.

Vernal Pool	Monitoring Status	Hydrology		Wetland Vegetation	Wildlife		
		DQO 1 (depth)	DQO 2 (inundation)	DQO 3 (richness and cover)	DQO 1 (depth)	DQO 4 (water quality)	DQO 5 (wildlife presence)
Pond 21	Year 2 Post-Mastication and Post-Subsurface Munitions Remediation	Not On Track	On track	On track	Not On Track	On track	Partial
Pond 76*	Year 3 Post-Mastication & Year 2 Post-Subsurface Munitions Remediation	Not On Track	Not On Track	On track	Not On Track	Cannot Assess	Cannot Assess

*Only evaluated against reference vernal pools and/or year 1; no baseline data

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APPENDIX A

Water Quality Results and Inundation Area for Vernal Pools by Month

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Table A-1. Hydrology results for December monitoring.

Pond	Monitoring Status	Date	Inundated Surface Area (acres)	Max Depth (cm)	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (FNU)	pH
21	Year 3	2024-12-05	0	0	-	-	-	-
76	Year 3, Year 2	2024-12-05	0	0	-	-	-	-
101EE	Reference	2024-12-06	0	0	-	-	-	-
5	Reference	2024-12-06	0	0	-	-	-	-
997	Reference	2024-12-06	0	0	-	-	-	-

NS = Not Surveyed

Table A-2 Hydrology results for February monitoring.

Pond	Monitoring Status	Date	Inundated Surface Area (acres)	Max Depth (cm)	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (FNU)	pH
21	Year 3	2025-02-11	0	0	-	-	-	-
76	Year 3, Year 2	2025-02-11	0	0	-	-	-	-
101EE	Reference	2025-02-11	0	0	-	-	-	-
5	Reference	2025-02-11	0	0	-	-	-	-
997	Reference	2025-02-11	0	0	-	-	-	-
5	Reference	2025-02-20	1.0409	14	NS	NS	NS	NS
101EE	Reference	2025-02-20	0.0551	12	NS	NS	NS	NS
76	Year 3, Year 2	2025-02-20	0	0	-	-	-	-
21	Year 3	2025-02-20	0	0	-	-	-	-
997	Reference	2025-02-20	0	0	-	-	-	-
101EE	Reference	2025-02-21	NS	10	1.52	12.54	13.9	6.89
5	Reference	2025-02-21	NS	14	0.02	13.74	10.5	6.84
101EE	Reference	2025-02-28	NS	6	5.03	17	NS	NS
5	Reference	2025-02-28	NS	11	3.13	15.2	NS	NS

NS = Not Surveyed

Table A-3. Hydrology results for March monitoring.

Pond	Monitoring Status	Date	Inundated Surface Area (acres)	Max Depth (cm)	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (FNU)	pH
21	Year 3	2025-03-18	0.6411	6	7.27	19.55	129	7.26
997	Reference	2025-03-18	0.0901	14	7.05	18.94	277	7.5
5	Reference	2025-03-18	2.5161	22	9.13	14.58	7.5	7.56
101EE	Reference	2025-03-18	0.7477	28	8.22	15.53	57.6	7.47
76	Year 3, Year 2	2025-03-18	0	0	-	-	-	-

Table A-4. Hydrology results for April monitoring.

Pond	Monitoring Status	Date	Inundated Surface Area (acres)	Max Depth (cm)	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (FNU)	pH
5	Reference	2025-04-14	0.9589	14	1.22	18.39	21.6	6.8
101EE	Reference	2025-04-14	0.0019	4	NS	NS	NS	NS
76	Year 3, Year 2	2025-04-14	0	0	-	-	-	-
21	Year 3	2025-04-14	0	0	-	-	-	-
997	Reference	2025-04-14	0	0	-	-	-	-

NS = Not Surveyed

Table A-5. Hydrology results for May monitoring.

Pond	Monitoring Status	Date	Inundated Surface Area (acres)	Max Depth (cm)	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (FNU)	pH
101EE	Reference	2025-05-07	0	0	-	-	-	-
5	Reference	2025-05-08	0	0	-	-	-	-

APPENDIX B

Vegetation Transect Data

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Table B-1. Pond 5 (Reference) wetland vegetation transect data by stratum.

POND 5			
Date	5/8/2025		
Surveying Personnel	EP, BB		
Vegetation Type	**% Cover**	**Species**	**Notes**
Emergent Vegetation			
Floating Vegetation			
Submerged Vegetation			
Open Water			
Notes			
Pond 5 held water starting in mid February and was dry by the time vegetation surveys were completed on 5/8/25. Stratum 1 and its respective transect were repeated from 2016 and 2018-2024. Stratum 2 was repeated from 2016-2023 and Stratum 3 was repeated from 2016-2024. Stratum 8 was repeated from 2021-2022. Transects 2 and 3 were moved to more representative locations, whereas Transect 8 was repeated from the 2021 location.			

Transect #	Transect Length	Relative %Cover of Wetland	Quadrat #1 @ - m		Quadrat #2 @ - m		Quadrat #3 @ - m		Quadrat #4 @ - m		Quadrat #5 @ - m		Quadrat #6 @ - m	
			Species	**%**	**Species**	**%**	**Species**	**%**	**Species**	**%**	**Species**	**%**	**Species**	**%**
1	**10m**	**26.1%**	ELMA	41	ELMA	43	ELMA	40	ELMA	43	ELMA	39	ELMA	43
			BG	9	MALE	1	AGAV	1	BG	14	LYHY	1	AGAV	1
			TH	50	BG	11	BG	15	TH	43	BG	23	BG	11
					TH	45	TH	44			TH	37	TH	45
			TOTAL	**100**	**TOTAL**	**100**	**TOTAL**	**100**	**TOTAL**	**100**	**TOTAL**	**100**	**TOTAL**	**100**

Transect #	Transect Length	Relative %Cover of Wetland	Quadrat #1 @ - m		Quadrat #2 @ - m		Quadrat #3 @ - m		Quadrat #4 @ - m		Quadrat #5 @ - m		Quadrat #6 @ - m	
			Species	**%**	**Species**	**%**	**Species**	**%**	**Species**	**%**	**Species**	**%**	**Species**	**%**
2	**10m**	**31.5%**	ELMA	35	ELMA	40	ELMA	30	ELMA	34	ELMA	38	ELMA	26
			AGAV	1	PHLE	1	PHLE	2	AGAV	3	AGAV	6	PHLE	5
			PHLE	2	DISP	4	DISP	2	DISP	3	DISP	2	AGAV	10
			DISP	4	AGAV	1	AGAV	3	CRTR	1	MALE	1	DISP	1
			CRTR	1	MALE	1	CRTR	1	MALE	1	BG	4	MALE	1
			MALE	1	CRTR	1	BG	7	PHLE	1	TH	49	CRTR	1
			BG	11	BG	6	TH	55	BG	5			BG	6
			TH	45	TH	46			TH	52			TH	50
			TOTAL	**100**	**TOTAL**	**100**	**TOTAL**	**100**	**TOTAL**	**100**	**TOTAL**	**100**	**TOTAL**	**100**

Transect #	Transect Length	Relative %Cover of Wetland	Quadrat #1 @ - m		Quadrat #2 @ - m		Quadrat #3 @ - m		Quadrat #4 @ - m		Quadrat #5 @ - m		Quadrat #6 @ - m	
			Species	%	Species	%	Species	%	Species	%	Species	%	Species	%
3	10m	19.4%	POMO	31	POMO	39	POMO	40	POMO	30	POMO	50	POMO	29
			ELMA	14	ELMA	7	ELMA	9	ELMA	5	ELMA	5	GEDI	1
			PHLE	2	PHLE	1	PHLE	3	PHLE	1	DISP	5	ELMA	1
			STAJ	2	STAJ	8	STAJ	3	GEDI	2	PHLE	1	PLCHH	3
			GEDI	2	JUPH	1	GEDI	1	PLCHH	2	GEDI	4	STAJ	2
			DISP	1	DISP	1	RUCR	1	ACST	1	STAJ	1	PHLE	2
			BRMI	1	BG	4	DISP	1	LYHY	1	PLCHH	1	DISP	13
			BG	3	TH	39	JUPH	1	STAJ	1	JUPH	1	LYHY	1
			TH	44			BG	3	SOOL	1	AGAV	5	PSLU	1
							TH	38	DISP	3	BG	4	AGAV	6
									PSLU	1	TH	23	SEGL	1
									RUCR	1			JUPH	1
									AGAV	8			BG	10
									JUPH	2			TH	29
									BG	11				
									TH	30				
			TOTAL	100	TOTAL	100	TOTAL	100	TOTAL	100	TOTAL	100	TOTAL	100

Transect #	Transect Length	Relative %Cover of Wetland	Quadrat #1 @ - m		Quadrat #2 @ - m		Quadrat #3 @ - m		Quadrat #4 @ - m		Quadrat #5 @ - m		Quadrat #6 @ - m	
			Species	%	Species	%	Species	%	Species	%	Species	%	Species	%
8	10m	23.0%	PSLU	8	POMO	19	POMO	13	POMO	15	POMO	21	POMO	13
			AGAV	2	PSLU	11	AGAV	6	PSLU	14	PSLU	7	PSLU	2
			ERBO	8	ELMA	4	STAJ	5	STAJ	5	PHLE	5	LYAR	3
			PHLE	1	ERBO	4	PSLU	1	JUPH	1	ELMA	7	PHLE	4
			POMO	20	AGAV	5	ERCA	1	ERBO	2	BRMI	1	RUCR	1
			LYHY	1	ERCA	1	ERBO	1	PHLE	2	AGAV	2	ERCA	1
			ERCA	1	STAJ	3	VELA	1	ELMA	2	JUPH	1	ELMA	4
			DISP	1	PHLE	1	SOOL	1	ERCA	1	STAJ	7	JUBA	1
			BRMI	1	GEDI	1	PHLE	1	DISP	3	SOOL	1	SOOL	1
			GEDI	1	HEEC	1	ELMA	2	JUBA	1	ERCA	1	JUBUB	1
			STAJ	1	JUPH	2	JUBA	1	BG	3	LYHY	1	LYMI	1
			JUBUB	1	LYHY	1	JUPH	1	TH	51	DISP	1	BRMI	1
			JUPH	1	DISP	1	LYHY	1			JUBUB	1	DISP	1
			ELMA	1	LYMI	1	RUCR	1			BG	7	BG	11
			BG	16	BRMI	1	LYMI	1			TH	37	TH	55
			TH	36	BG	8	SEGL	1						
					TH	36	BG	8						
							TH	54						
			TOTAL	100	TOTAL	100	TOTAL	100	TOTAL	100	TOTAL	100	TOTAL	100

Pond 5 2025 Species List					
Species Name	**Common Name**	**Species Code**	**Species Name**	**Common Name**	**Species Code**
Achillea millefolium	common yarrow	ACMI	*Lupinus bicolor*	miniature lupine	LUBI
Acmispon strigosus	strigose lotus	ACST	*Lysimachia arvensis*	scarlet pimpernel	LYAR
Agrostis avenacea	Pacific bent grass	AGAV	*Lysimachia minima*	chaffweed	LYMI
Aira caryophyllea	silvery hair-grass	AICA	*Lythrum hyssopifolia*	grass poly	LYHY
Baccharis pilularis	coyote brush	BAPI	*Madia sativa*	coast tarweed	MASA
Briza minor	annual quaking grass	BRMI	*Malvella leprosa*	alkali mallow	MALE
Bromus diandrus	ripgut grass	BRDI	*Nuttallanthus texanus*	blue toadflax	NUTE
Bromus hordeaceus	soft chess	BRHO	*Phalaris lemmonii*	Lemmon's canary grass	PHLE
Calandrinia menziesii	redmaids	CAME	*Plagiobothrys chorisianus* var. *hickmanii*	Hickman's popcornflower	PLCHH
Callitriche heterophylla var. *bolanderi*	Bolander's water starwort	CAHEB	*Plantago coronopus*	cut-leaved plantain	PLCO
Cirsium brevistylum	Indian thistle	CIBR	*Polypogon monspeliensis*	rabbitfoot grass	POMO
Cirsium vulgare	bull thistle	CIVU	*Pseudognaphalium luteoalbum*	weedy cudweed	PSLU
Cotula coronopifolia	brass buttons	COCO	*Pseudognaphalium ramosissimum*	pink everlasting	PSRA
Crassula aquatica	aquatic pygmy-weed	CRAQ	*Pseudognaphalium stramineum*	cottonbatting plant	PSST
Cressa truxillensis	spreading alkaliweed	CRTR	*Ranunculus aquatilis*	white water buttercup	RAAQ
Distichlis spicata	salt grass	DISP	*Rorippa curvisiliqua*	western yellowcress	ROCU
Eleocharis acicularis var. *acicularis*	needle spikerush	ELACA	*Rumex acetosella*	sheep sorrel	RUAC
Eleocharis macrostachya	pale spikerush	ELMA	*Rumex crispus*	curly dock	RUCR
Erigeron canadensis	horseweed	ERCA	*Senecio glomeratus*	cutleaf burnweed	SEGL
Erodium botrys	long-beaked filaree	ERBO	*Sonchus asper*	prickly sow thistle	SOAS
Euthamia occidentalis	western goldenrod	EUOC	*Sonchus oleraceus*	common sow thistle	SOOL
Festuca bromoides	brome fescue	FEBR	*Stachys ajugoides*	bugle hedge nettle	STAJ
Galium aparine	goose grass	GAAP	*Trifolium barbigerum*	bearded clover	TRBA
Gamochaeta ustulata	purple cudweed	GAUS	*Trifolium depauperatum* var. *amplectens*	pale sack clover	TRDEA
Geranium dissectum	cut-leaved geranium	GEDI	*Trifolium depauperatum* var. *truncatum*	dwarf sack clover	TRDES
Heliotropium curassavicum var. *oculatum*	Chinese pusley	HECUO	*Trifolium dichotomum*	branched indian clover	TRDI6
Helminthotheca echioides	bristly oxtongue	HEEC	*Trifolium microcephalum*	small head clover	TRMI
Hypochaeris glabra	smooth cat's-ear	HYGL	*Triglochin scilloides*	flowering quillwort	TRSC
Isoetes howellii	Howell's quillwort	ISHO	*Verbena lasiostachys* var. *lasiostachys*	western vervain	VELAL
Juncus balticus	Baltic rush	JUBA	**Groundcover Codes**		
Juncus bufonius var. *bufonius*	common toad rush	JUBUB	BG	Bare Ground	
Juncus phaeocephalus	brown-headed rush	JUPH	TH	Thatch/Duff	
Laennecia coulteri	Coulter's horseweed	LACO13	AL	Algae	

Table B-2. Pond 101 East (East) (Reference) wetland vegetation transect data by stratum.

POND 101 East (East)			
Date	5/7/2025		
Surveying Personnel	EP, BB		
Vegetation Type	**% Cover**	**Species**	**Notes**
Emergent Vegetation			
Floating Vegetation			
Submerged Vegetation			
Open Water			
Notes			
Pond 101 East (East) was inundated by mid February and was dry by the time vegetative surveys occurred on 5/7/25. Stratum 2 was repeated from 2016, 2018-2020, and 2024. Stratum 3 was repeated from 2016, 2021, 2022, and 2024. Stratum 5 was repeated from 2017-2023. Stratum 9 was repeated from 2022 and 2024. Transect 2 was moved because it fell outside the stratum and additionally was reduced in length to accomodate the decreased stratum size this year. Transects 3, 5, and 9 were all moved to more representative locations.			

Transect #	Transect Length	Relative %Cover of Wetland	Quadrat #1 @ - m		Quadrat #2 @ - m		Quadrat #3 @ - m	
			Species	**%**	**Species**	**%**	**Species**	**%**
2	**5m**	**1.5%**	ELMA	45	ELMA	45	ELMA	43
			POMO	1	POMO	1	POMO	5
			MALE	2	MALE	3	MALE	1
			TH	52	BG	2	AGAV	2
					TH	49	BG	2
							TH	47
			TOTAL	**100**	**TOTAL**	**100**	**TOTAL**	**100**

Transect #	Transect Length	Relative %Cover of Wetland	Quadrat #1 @ - m		Quadrat #2 @ - m		Quadrat #3 @ - m		Quadrat #4 @ - m		Quadrat #5 @ - m		Quadrat #6 @ - m	
			Species	**%**	**Species**	**%**	**Species**	**%**	**Species**	**%**	**Species**	**%**	**Species**	**%**
3	**10m**	**47.1%**	POMO	35	POMO	51	POMO	40	POMO	54	POMO	42	POMO	36
			AGAV	28	AGAV	17	AGAV	30	AGAV	10	AGAV	36	AGAV	20
			ELMA	10	ELMA	13	ELMA	7	ELMA	11	ELMA	7	ELMA	7
			MALE	13	MALE	3	MALE	4	MALE	6	MALE	3	MALE	3
			GEDI	1	ALSA	2	ALSA	1	ALSA	6	ALSA	1	ALSA	4
			BG	3	BRDI	1	CIBR	1	BG	2	CIBR	1	LYHY	1
			TH	10	BG	1	BG	1	TH	11	TH	10	BG	16
					TH	12	TH	16					TH	13
			TOTAL	**100**	**TOTAL**	**100**	**TOTAL**	**100**	**TOTAL**	**100**	**TOTAL**	**100**	**TOTAL**	**100**

Transect #	Transect Length	Relative %Cover of Wetland	Quadrat #1 @ - m		Quadrat #2 @ - m		Quadrat #3 @ - m		Quadrat #4 @ - m		Quadrat #5 @ - m		Quadrat #6 @ - m	
			Species	%	Species	%	Species	%	Species	%	Species	%	Species	%
5	10m	49.3%	HECUO	9	AGAV	19	AGAV	17	AGAV	7	AGAV	27	AGAV	24
			RUCR	2	ERBO	6	POMO	6	POMO	11	VISA	3	POMO	3
			STAJ	7	JUPH	2	JUPH	2	GEDI	5	JUBA	1	TRMI	17
			AGAV	20	TRMI	1	SOOL	1	TRMI	17	RUAC	4	TRGR	1
			JUPH	1	ERCA	2	RUAC	3	TRGR	2	GEDI	6	TRBA	1
			JUBA	1	GEDI	8	ERBO	2	LYHY	1	SOOL	1	TRDEA	1
			PSLU	2	PSLU	2	STAJ	2	RUAC	6	TRMI	5	GEDI	6
			ERBO	2	STAJ	2	TRVA	3	BRMI	1	ERBO	1	RUAC	4
			VISA	1	RUCR	3	TRMI	4	ERBO	7	POMO	4	ERBO	6
			GEDI	1	BRMI	1	TRBA	1	JUPH	2	ERCA	1	ERCA	1
			JUBUB	1	GNPA	1	TRGR	2	JUBUB	1	STAJ	1	SOOL	1
			LYMI	1	LYMI	1	JUBUB	3	TRVA	1	JUPH	1	GNPA	1
			ERCA	1	JUBUB	1	ERCA	1	TRBA	2	TRBA	1	JUBUB	1
			GNPA	1	SOOL	1	VISA	1	LYMI	1	GNPA	1	JUPH	1
			TRMI	1	TRBA	1	LYHY	1	PSLU	1	LYHY	1	JUBA	1
			LYHY	1	MAGR	1	PSLU	1	STAJ	1	JUBUB	1	LYHY	1
			POMO	12	RUAC	1	GNPA	1	MAGR	1	TRVA	1	TRVA	1
			BG	22	HYGL	1	GEDI	6	ERCA	1	TRDEA	1	BG	17
			TH	14	VISA	1	BG	40	BG	26	RUCR	1	TH	12
					POMO	2	TH	3	TH	6	ELMA	1		
					LYHY	1					BG	30		
					BG	16					TH	7		
					TH	26								
			TOTAL	100	TOTAL	100	TOTAL	100	TOTAL	100	TOTAL	100	TOTAL	100

Transect #	Transect Length	Relative %Cover of Wetland	Quadrat #1 @ - m		Quadrat #2 @ - m		Quadrat #3 @ - m	
			Species	%	Species	%	Species	%
9	5m	2.1%	ALSA	38	ALSA	18	LAGL3	37
			ELMA	6	LAGL3	18	ALSA	13
			POMO	8	TRDEA	7	ELMA	2
			MALE	9	MALE	15	MALE	11
			LAGL3	8	RUCR	3	AGAV	14
			HEEC	1	ELMA	3	LYMI	1
			AGAV	12	SOOL	1	LYHY	1
			TRDEA	1	POMO	3	POMO	1
			BG	6	AGAV	14	BG	15
			TH	11	LYMI	1	TH	5
					HEEC	1		
					LYHY	1		
					FEBR	1		
					BG	8		
					TH	6		
			TOTAL	100	TOTAL	100	TOTAL	100

Pond 101 East (East) 2025 Species List

Species Name	Common Name	Species Code	Species Name	Common Name	Species Code
Acmispon americanus var. *americanus*	Spanish lotus	ACAMA	*Madia gracilis*	gumweed	MAGR
Acmispon parviflorus	hill lotus	ACPA	*Madia sativa*	coast tarweed	MASA
Agrostis avenacea	Pacific bent grass	AGAV	*Malvella leprosa*	alkali mallow	MALE
Agrostis exarata	spike bent grass	AGEX	*Phacelia malvifolia* var. *malvifolia*	stinging phacelia	PHMAM
Aira caryophyllea	silvery hair-grass	AICA	*Phalaris lemmonii*	Lemmon's canary grass	PHLE
Alopecurus saccatus	Pacific foxtail	ALSA	*Plagiobothrys chorisianus* var. *hickmanii*	Hickman's popcornflower	PLCHH
Briza minor	annual quaking grass	BRMI	*Polypogon monspeliensis*	rabbitfoot grass	POMO
Bromus diandrus	ripgut grass	BRDI	*Potentilla rivalis*	brook cinquefoil	PORI
Bromus hordeaceus	soft chess	BRHO	*Pseudognaphalium luteoalbum*	weedy cudweed	PSLU
Cirsium brevistylum	Indian thistle	CIBR	*Pseudognaphalium stramineum*	cottonbatting plant	PSST
Cirsium vulgare	bull thistle	CIVU	*Ranunculus aquatllis*	white water buttercup	RAAQ
Eleocharis acicularis var. *acicularis*	needle spikerush	ELACA	*Rorippa curvisiliqua*	western yellowcress	ROCU
Eleocharis macrostachya	pale spikerush	ELMA	*Rumex acetosella*	sheep sorrel	RUAC
Epilobium ciliatum	fringed willowherb	EPCI	*Rumex crispus*	curly dock	RUCR
Erigeron canadensis	horseweed	ERCA	*Rumex salicifolius*	willow dock	RUSA
Erodium botrys	long-beaked filaree	ERBO	*Senecio glomeratus*	cutleaf burnweed	SEGL
Erodium cicutarium	redstem filaree	ERCI	*Sonchus asper*	prickly sow thistle	SOAS
Euthamia occidentalis	western goldenrod	EUOC	*Sonchus oleraceus*	common sow thistle	SOOL
Festuca bromoides	brome fescue	FEBR	*Stachys ajugoides*	bugle hedge nettle	STAJ
Festuca perennis	Italian rye grass	FEPE	*Stachys bullata*	California hedge nettle	STBU
Galium aparine	goose grass	GAAP	*Trifolium angustifolium*	narrow-leaved clover	TRAN
Gamochaeta ustulata	purple cudweed	GAUS	*Trifolium barbigerum*	bearded clover	TRBA
Geranium dissectum	cut-leaved geranium	GEDI	*Trifolium campestre*	hop clover	TRCA5
Gnaphalium palustre	lowland cudweed	GNPA	*Trifolium depauperatum*	sack clover	TRDE
Heliotropium curassavicum var. *oculatum*	Chinese pusley	HECUO	*Trifolium depauperatum* var. *amplectens*	pale sack clover	TRDEA
Helminthotheca echioides	bristly oxtongue	HEEC	*Trifolium gracilentum*	pin point clover	TRGR
Hordeum brachyantherum	meadow barley	HOBR	*Trifolium microcephalum*	small head clover	TRMI
Hypochaeris glabra	smooth cat's-ear	HYGL	*Trifolium variegatum*	variegated clover	TRVA
Hypochaeris radicata	rough cat's-ear	HYRA	*Triglochin scilloides*	flowering quillwort	TRSC
Juncus balticus	Baltic rush	JUBA	*Verbena lasiostachys* var. *lasiostachys*	western vervain	VELAL
Juncus bufonius var. *bufonius*	common toad rush	JUBUB	*Vicia sativa* ssp. *nigra*	common vetch	VISAN
Juncus phaeocephalus	brown-headed rush	JUPH	*Vicia sativa* ssp. *sativa*	spring vetch	VISAS
Lasthenia glaberrima	smooth goldfields	LAGL3	Groundcover Codes		
Lupinus bicolor	miniature lupine	LUBI	BG	Bare Ground	
Lysimachia arvensis	scarlet pimpernel	LYAR	TH	Thatch/Duff	
Lysimachia minima	chaffweed	LYMI	AL	Algae	
Lythrum hyssopifolia	grass poly	LYHY			

Table B-3. Pond 997 (Reference) wetland vegetation transect data by stratum.

POND 997			
Date	4/29/2025		
Surveying Personnel	EP, BB		
Vegetation Type	**% Cover**	**Species**	**Notes**
Emergent Vegetation			
Floating Vegetation			
Submerged Vegetation			
Open Water			

Pond 997 was inundated by mid March and dried the following month at the time vegetative surveys occurred. Strata 1, 2, and 3 were repeated from 2017-2024. Transect 1 was relocated to avoid the expanded Contra Costa goldfields (*Lasthenia conjugens*) population. Since Stratum 2 was the goldfields stratum, no transect was placed. Stratum 3 was relocated because the transect fell outside of the stratum.

Transect #	Transect Length	Relative %Cover of Wetland	Quadrat #1 @ - m		Quadrat #2 @ - m		Quadrat #3 @ - m		Quadrat #4 @ - m		Quadrat #5 @ - m		Quadrat #6 @ - m	
			Species	**%**	**Species**	**%**	**Species**	**%**	**Species**	**%**	**Species**	**%**	**Species**	**%**
1	**10m**	**19.5%**	PLCHH	27	PLCHH	32	PLCHH	39	PLCHH	33	PLCHH	28	PLCHH	25
			JUPH	6	JUPH	3	JUPH	3	JUPH	9	HYRA	1	LYMI	7
			ERMO	13	LYMI	7	LYHY	6	LYHY	4	CIQU	1	CIQU	1
			BRMI	4	ERMO	6	LYMI	5	PSTE	9	COCO	1	BRMI	4
			ERBO	3	ERBO	2	ELACA	5	POMO	5	ERMO	9	SOOL	3
			LYMI	6	BRMI	4	CIQU	2	SOAS	1	LYMI	9	POMO	8
			SOOL	1	SOOL	1	ERMO	4	ELACA	5	POZI	1	ERMO	9
			ISCA	1	FEPE	1	ISCA	1	BRMI	2	SOOL	1	LYHY	2
			ELACA	2	CIQU	1	BRMI	6	CIQU	2	GEDI	1	JUPH	4
			CAAMA3	1	MIPA	1	GEDI	1	SOOL	2	PSTE	5	PSTE	3
			MIPA	1	CAAMA3	1	ERBO	1	LYMI	2	ELACA	2	ELACA	4
			HYGL	1	ELACA	2	LAGL3	1	ERMO	8	JUBUB	1	ERBO	1
			TRSC	2	LYHY	1	PSTE	1	JUBUB	1	JUCA	1	HYGL	1
			FEPE	1	HYGL	2	LYAR	1	PLCO	1	BRMI	1	JUBUB	1
			GEDI	1	TRSC	2	JUBUB	1	BG	4	LYHY	3	BRTET	1
			CRAQ	1	GEDI	1	SOOL	1	TH	12	LACO	1	TRSC	1
			BG	10	ISCA	1	HYGL	1			ERBO	1	BG	10
			TH	19	BG	11	TRSC	1			POMO	5	TH	15
					TH	21	BG	15			CRAQ	1		
							TH	5			TRSC	1		
											BG	12		
											TH	14		
			TOTAL	**100**	**TOTAL**	**100**	**TOTAL**	**100**	**TOTAL**	**100**	**TOTAL**	**100**	**TOTAL**	**100**

Transect #	Transect Length	Relative %Cover of Wetland	Quadrat #1 @ - m		Quadrat #2 @ - m		Quadrat #3 @ - m		Quadrat #4 @ - m		Quadrat #5 @ - m		Quadrat #6 @ - m	
			Species	%	Species	%	Species	%	Species	%	Species	%	Species	%
3	10m		JUPH	8	BRMA	13	BRMA	14	BRMA	12	BRMA	13	BRMA	16
			BRMA	20	PLCO	6	PLCHH	1	DACA	20	MIPA	3	HYGL	12
			BRMI	2	DACA	3	JUPH	2	ERBO	9	DACA	7	DACA	8
			PLCO	4	ELACA	17	MIPA	1	BRMI	3	ERBO	5	JUPH	3
			MIPA	2	JUCA	1	ERBO	7	TRSC	1	LYMI	2	BRMI	4
			JUCA	1	ISCA	1	DACA	6	MAGR	2	ERMO	2	ERBO	3
			LYMI	2	HYRA	1	BRMI	1	ELACA	2	ELACA	4	LYHY	1
			PSTE	1	HYGL	3	HYGL	10	LYMI	1	HYGL	7	LYMI	2
			JUBUB	3	SOOL	1	ERMO	4	HYGL	6	JUPH	1	JUBUB	1
			ERBO	3	ERBO	5	FEMY	1	GNPA	1	GEDI	1	ISCA	1
			HYGL	2	LYMI	2	GNPA	1	LYHY	1	BRMI	1	ELMA	1
			COCO	1	ERMO	4	LYHY	1	JUBUB	1	LYHY	1	MAGR	1
			TRSC	3	BRMI	3	LYMI	1	ISCA	1	JUBUB	1	HYRA	1
			ERMO	5	TRSC	2	ELACA	3	CAAMA3	1	ISCA	1	ELACA	1
			FEMY	2	MAGR	1	MAGR	4	SEGL	1	PLCO	1	BG	4
			ELACA	1	JUPH	1	ISCA	1	FEMY	1	BAPI	1	TH	41
			PLCHH	1	CAAMA3	1	JUBUB	1	BG	2	SEGL	1		
			CRAQ	1	LYHY	1	SEGL	1	TH	35	GNPA	1		
			LYHY	1	JUBUB	1	BG	3			BRTET	1		
			CAAMA3	1	BG	5	TH	37			BG	11		
			GNPA	1	TH	28					TH	35		
			TH	25										
			BG	10										
			TOTAL	**100**	**TOTAL**	**100**	**TOTAL**	**100**	**TOTAL**	**100**	**TOTAL**	**100**	**TOTAL**	**100**

Pond 997 2025 Species List					
Species Name	**Common Name**	**Species Code**	**Species Name**	**Common Name**	**Species Code**
Acmispon americanus var. *americanus*	Spanish lotus	ACAMA	*Juncus uncialis*	inch-high rush	JUUN
Acmispon parviflorus	hill lotus	ACPA	*Lasthenia conjugens*	Contra Costa goldfields	LACO
Aira caryophyllea	silvery hair-grass	AICA	*Lysimachia arvensis*	scarlet pimpernel	LYAR
Avena barbata	slender wild oat	AVBA	*Lysimachia minima*	chaffweed	LYMI
Baccharis pilularis	coyote brush	BAPI	*Lythrum hyssopifolia*	grass poly	LYHY
Briza maxima	rattlesnake grass	BRMA	*Madia exigua*	small tarweed	MAEX
Briza minor	annual quaking grass	BRMI	*Madia gracilis*	gumweed	MAGR
Brodiaea terrestris ssp. *terrestris*	dwarf brodiaea	BRTET	*Microseris paludosa*	marsh microseris	MIPA
Bromus hordeaceus	soft chess	BRHO	*Plagiobothrys chorisianus* var. *hickmanii*	Hickman's popcornflower	PLCHH
Castilleja ambigua ssp. *ambigua*	Johnny-Nip	CAAMA3	*Plantago coronopus*	cut-leaved plantain	PLCO
Cicendia quadrangularis	timwort	CIQU	*Plantago lanceolata*	English plantain	PLLA
Cotula coronopifolia	brass buttons	COCO	*Pogogyne zizyphoroides*	Sacramento mesa mint	POZI
Crassula aquatica	aquatic pygmy-weed	CRAQ	*Polypogon monspeliensis*	rabbitfoot grass	POMO
Danthonia californica	California oat grass	DACA	*Pseudognaphalium californicum*	California everlasting	PSCA
Deinandra corymbosa	coastal tarweed	DECO	*Pseudognaphalium ramosissimum*	pink everlasting	PSRA
Eleocharis acicularis var. *acicularis*	needle spikerush	ELACA	*Pseudognaphalium* sp.	cudweed	PS sp.
Eleocharis macrostachya	pale spikerush	ELMA	*Psilocarphus tenellus*	slender woolly-marbles	PSTE
Erodium botrys	long-beaked filaree	ERBO	*Rumex acetosella*	sheep sorrel	RUAC
Eryngium montereyense	coyote thistle	ERMO	*Senecio glomeratus*	cutleaf burnweed	SEGL
Festuca bromoides	brome fescue	FEBR	*Sidalcea malviflora* ssp. *malviflora*	checkerbloom	SIMAM
Festuca myuros	rattail sixweeks grass	FEMY	*Silene gallica*	small-flower catchfly	SIGA
Festuca perennis	Italian rye grass	FEPE	*Sisyrinchium bellum*	western blue-eyed grass	SIBE
Galium aparine	goose grass	GAAP	*Sonchus asper*	prickly sow thistle	SOAS
Gamochaeta ustulata	purple cudweed	GAUS	*Sonchus oleraceus*	common sow thistle	SOOL
Geranium dissectum	cut-leaved geranium	GEDI	*Spiranthes romanzoffiana*	hooded lady's tresses	SPRO
Gnaphalium palustre	lowland cudweed	GNPA	*Taraxia ovata*	sun cups	TAOV
Horkelia cuneata var. *cuneata*	wedge-leaved horkelia	HOCUC	*Toxicodendron diversilobum*	poison oak	TODI
Hypochaeris glabra	smooth cat's-ear	HYGL	*Trifolium barbigerum*	bearded clover	TRBA
Hypochaeris radicata	rough cat's-ear	HYRA	*Triteleia ixioides*	coast pretty face	TRIX
Isolepis carinata	keeled bulrush	ISCA	Groundcover Codes		
Juncus bufonius var. *bufonius*	common toad rush	JUBUB	BG	Bare Ground	
Juncus capitatus	dwarf rush	JUCA	TH	Thatch/Duff	
Juncus phaeocephalus	brown-headed rush	JUPH	AL	Algae	

Table B-4. Pond 21 (Year 3 Post-Mastification and Post-Subsurface Munitions Remediation) wetland vegetation transect data by stratum.

POND 21			
Date	5/6/2025		
Surveying Personnel	EP, BB		
Vegetation Type	**% Cover**	**Species**	**Notes**
Emergent Vegetation			
Floating Vegetation			
Submerged Vegetation			
Open Water			
Pond 21 was briefly inundated in mid March and dried by the middle of April. Stratum 1 was repeated from 2019, 2023, and 2024. Stratum 3 was repeated from 2023 and 2024. Stratum 4 was repeated from 2024. Stratum 5 and its respective transect were newly created in 2025. Transect 1 was repeated from 2019 and 2023, whereas transects 3 and 4 were relocated because they fell outside of the respective strata.			

Transect #	Transect Length	Relative %Cover of Wetland	Quadrat #1 @ - m		Quadrat #2 @ - m		Quadrat #3 @ - m		Quadrat #4 @ - m		Quadrat #5 @ - m		Quadrat #6 @ - m	
			Species	**%**	**Species**	**%**	**Species**	**%**	**Species**	**%**	**Species**	**%**	**Species**	**%**
1	**10m**	**45.4%**	ERMO	20	ERMO	21	ERMO	10	ERMO	11	ERMO	25	ERMO	46
			HOBRB	7	LAGL3	39	LAGL3	37	LAGL3	15	LAGL3	31	LAGL3	10
			ELACA	20	ELACA	6	HOBRB	6	TRSC	1	MALE	2	CIQU	1
			LAGL3	25	HOBRB	4	ELACA	12	RACA	2	JUPH	2	POMO	2
			JUPH	4	BRMI	1	MALE	2	MALE	1	RACA	2	GEDI	1
			RACA	1	JUPH	5	PLCHH	1	JUPH	12	PLCHH	1	JUPH	1
			GEDI	2	ELMA	3	GEDI	2	GEDI	1	GEDI	1	PLCHH	1
			ELMA	2	MALE	1	JUPH	4	LYHY	1	ELACA	3	MALE	1
			MALE	1	DEDA	1	ELMA	2	BRMI	1	LYHY	1	LYMI	1
			PLCHH	1	FEBR	1	BG	3	DEDA	1	POMO	2	ELACA	2
			DEDA	1	RACA	1	TH	21	PLCHH	2	ELMA	1	ELMA	1
			BG	4	PLCHH	1			ACMI	1	TRSC	1	LYHY	1
			TH	12	BG	4			LYMI	1	DEDA	1	FEBR	1
					TH	12			ELMA	1	HYGL	1	BG	10
									ELACA	4	GNPA	1	TH	21
									GNPA	1	BG	9		
									POMO	1	TH	16		
									BG	17				
									TH	26				
			TOTAL	**100**	**TOTAL**	**100**	**TOTAL**	**100**	**TOTAL**	**100**	**TOTAL**	**100**	**TOTAL**	**100**

Transect #	Transect Length	Relative %Cover of Wetland	Quadrat #1 @ - m		Quadrat #2 @ - m		Quadrat #3 @ - m	
			Species	**%**	**Species**	**%**	**Species**	**%**
3	**5m**	**1.5%**	CABA	40	CABA	40	CABA	42
			ELMA	1	GEDI	3	ACMI	7
			FEMY	2	ERCA	4	LYAR	1
			BG	9	HERA	1	FEMY	1
			TH	48	FEMY	5	ERCA	1
					BRMI	1	PSRA	1
					LYAR	1	BG	4
					BG	4	TH	43
					TH	41		
			TOTAL	**100**	**TOTAL**	**100**	**TOTAL**	**100**

Transect #	Transect Length	Relative %Cover of Wetland	Quadrat #1 @ - m		Quadrat #2 @ - m		Quadrat #3 @ - m	
			Species	%	Species	%	Species	%
4	5m	2.0%	JUPH	47	JUPH	50	JUPH	42
			RUSA	5	GEDI	3	RUSA	5
			GEDI	2	BRMI	1	BG	3
			ELACA	1	ELACA	1	TH	50
			BG	2	BG	1		
			TH	43	TH	44		
			TOTAL	100	TOTAL	100	TOTAL	100

Transect #	Transect Length	Relative %Cover of Wetland	Quadrat #1 @ - m		Quadrat #2 @ - m		Quadrat #3 @ - m		Quadrat #4 @ - m		Quadrat #5 @ - m		Quadrat #6 @ - m	
			Species	%	Species	%	Species	%	Species	%	Species	%	Species	%
5	10m	48.1%	ERMO	12	ERMO	12	ERMO	12	ERMO	7	ERMO	21	ERMO	3
			GEDI	14	BRHO	8	HOBRB	7	HYGL	2	HYGL	8	MASA	9
			BRMI	5	GEDI	14	GEDI	11	PLCHH	3	GEDI	12	FEBR	19
			FEBR	9	STAJ	1	FEBR	3	HOBRB	2	PLCHH	4	GEDI	12
			PLCHH	1	PLCHH	2	ELACA	3	GEDI	19	JUPH	5	PLCHH	2
			HYGL	7	ELMA	2	HYGL	1	LYMI	1	HOBRB	1	BRMI	1
			ELACA	2	HYGL	1	PLCHH	2	JUPH	6	POMO	11	JUPH	2
			POMO	15	ELACA	5	JUPH	3	SEGL	1	TRSC	2	POMO	14
			JUPH	1	ERCA	1	SEVU	1	CRAQ	1	FEBR	1	HOBRB	2
			ACPA	1	JUPH	2	LYMI	1	ELMA	2	LYMI	1	BRHO	3
			ELMA	1	HERA	2	POMO	7	ELACA	6	ELACA	6	POZI	1
			LYAR	1	POMO	2	TRSC	1	PHLE	1	ERCA	1	ELACA	4
			LYMI	1	BRMI	2	ELMA	1	GNPA	1	BG	10	BAPI	1
			BG	1	HOBRB	1	BAPI	1	TRSC	3	TH	17	BG	18
			TH	29	FEBR	1	PHLE	1	FEBR	2			TH	9
					BG	9	LYAR	1	POMO	1				
					TH	35	BG	33	ERCA	1				
							TH	11	BG	7				
									TH	34				
			TOTAL	100	TOTAL	100	TOTAL	100	TOTAL	100	TOTAL	100	TOTAL	100

Pond 21 2025 Species List					
Species Name	**Common Name**	**Species Code**	**Species Name**	**Common Name**	**Species Code**
Achillea millefolium	common yarrow	ACMI	*Juncus phaeocephalus*	brown-headed rush	JUPH
Acmispon americanus var. *americanus*	Spanish lotus	ACAMA	*Lasthenia glaberrima*	smooth goldfields	LAGL3
Acmispon parviflorus	hill lotus	ACPA	*Lysimachia arvensis*	scarlet pimpernel	LYAR
Aira caryophyllea	silvery hair-grass	AICA	*Lysimachia minima*	chaffweed	LYMI
Avena barbata	slender wild oat	AVBA	*Lythrum hyssopifolia*	grass poly	LYHY
Baccharis pilularis	coyote brush	BAPI	*Madia gracilis*	gumweed	MAGR
Briza minor	annual quaking grass	BRMI	*Malvella leprosa*	alkali mallow	MALE
Bromus diandrus	ripgut grass	BRDI	*Phalaris lemmonii*	Lemmon's canary grass	PHLE
Bromus hordeaceus	soft chess	BRHO	*Plagiobothrys chorisianus* var. *hickmanii*	Hickman's popcornflower	PLCHH
Carduus pycnocephalus	Italian thistle	CAPY	*Pogogyne zizyphoroides*	Sacramento mesa mint	POZI
Carex barbarae	whiteroot	CABA	*Polypogon monspeliensis*	rabbitfoot grass	POMO
Carex pachystachya	chamisso sedge	CAPA	*Pseudognaphalium luteoalbum*	weedy cudweed	PSLU
Cicendia quadrangularis	timwort	CIQU	*Pseudognaphalium ramosissimum*	pink everlasting	PSRA
Cirsium brevistylum	Indian thistle	CIBR	*Pseudognaphalium stramineum*	cottonbatting plant	PSST
Crassula aquatica	aquatic pygmy-weed	CRAQ	*Quercus agrifolia*	coast live oak	QUAG
Danthonia californica	California oat grass	DACA	*Rumex salicifolius*	willow dock	RUSA
Deinandra corymbosa	coastal tarweed	DECO	*Senecio glomeratus*	cutleaf burnweed	SEGL
Deschampsia danthonioides	annual hair grass	DEDA	*Senecio vulgaris*	common groundsel	SEVU
Eleocharis acicularis var. *acicularis*	needle spikerush	ELACA	*Sisyrinchium bellum*	western blue-eyed grass	SIBE
Eleocharis macrostachya	pale spikerush	ELMA	*Sonchus oleraceus*	common sow thistle	SOOL
Erigeron canadensis	horseweed	ERCA	*Stachys ajugoides*	bugle hedge nettle	STAJ
Eryngium montereyense	coyote thistle	ERMO	*Trifolium barbigerum*	bearded clover	TRBA
Festuca bromoides	brome fescue	FEBR	*Trifolium depauperatum*	sack clover	TRDE
Festuca myuros	rattail sixweeks grass	FEMY	*Trifolium dichotomum*	branched indian clover	TRDI6
Gamochaeta ustulata	purple cudweed	GAUS	*Trifolium microcephalum*	small head clover	TRMI
Geranium dissectum	cut-leaved geranium	GEDI	*Trifolium microdon*	thimble clover	TRMI5
Gnaphalium palustre	lowland cudweed	GNPA	*Trifolium variegatum*	variegated clover	TRVA
Heliotropium curassavicum var. *oculatum*	Chinese pusley	HECUO	*Triglochin scilloides*	flowering quillwort	TRSC
Heterocodon rariflorum	western pearlflower	HERA	*Uropappus lindleyi*	silver puffs	URLI5
Heterotheca grandiflora	telegraph weed	HEGR	*Verbena lasiostachys* var. *lasiostachys*	western vervain	VELAL
Hordeum brachyantherum ssp. *brachyantherum*	meadow barley	HOBRB	**Groundcover Codes**		
Hypochaeris glabra	smooth cat's-ear	HYGL	BG	Bare Ground	
Hypochaeris radicata	rough cat's-ear	HYRA	TH	Thatch/Duff	
Juncus occidentalis	western rush	JUOC	AL	Algae	
Juncus patens	spreading rush	JUPA			

Table B-5. Pond 76 (Year 3 Post-Mastification and Year 2 Post-Subsurface Munitions Remediation) wetland vegetation transect data by stratum.

POND 76			
Date	5/1/2025		
Surveying Personnel	EP, BB		
Vegetation Type	**% Cover**	**Species**	**Notes**
Emergent Vegetation			
Floating Vegetation			
Submerged Vegetation			
Open Water			
Notes			
Pond 76 remained dry throughout the 2024-2025 water year. Strata 1 and 3 were repeated from 2023 and 2024, whereas Stratum 4 and its respective transect were newly created in 2025. Transects 1 and 3 were both relocated because the transects fell outside of the respective strata. In addition, Transect 1 was shortened to 5m while Transect 3 was lengthened to 10m to better represent the change in strata area from the previous year.			

Transect #	Transect Length	Relative %Cover of Wetland	Quadrat #1 @ - m		Quadrat #2 @ - m		Quadrat #3 @ - m	
			Species	%	Species	%	Species	%
1	5m	9%	ELACA	35	ELACA	38	JUPH	25
			ERMO	10	ERMO	3	ELACA	17
			GAUS	2	GAUS	2	ERMO	20
			SEGL	2	CEGL	1	PLCHH	1
			HYGL	1	SEGL	1	SEGL	1
			POMO	1	FEBR	1	DEDA	1
			DEDA	1	HYGL	1	SEVU	1
			ISHO	2	POMO	3	CRAQ	1
			BG	2	ISHO	1	ISHO	1
			TH	44	BG	2	BRMI	1
					TH	47	FEBR	1
							BG	5
							TH	25
			TOTAL	**100**	**TOTAL**	**100**	**TOTAL**	**100**

Transect #	Transect Length	Relative %Cover of Wetland	Quadrat #1 @ - m		Quadrat #2 @ - m		Quadrat #3 @ - m		Quadrat #4 @ - m		Quadrat #5 @ - m		Quadrat #6 @ - m	
			Species	%	Species	%	Species	%	Species	%	Species	%	Species	%
3	10m	81%	POMO	20	POMO	25	ERMO	38	POMO	28	POMO	25	POMO	20
			ERMO	37	ERMO	36	POMO	24	ERMO	25	ERMO	10	ERMO	4
			JUPH	3	JUPH	9	JUPH	3	JUPH	2	JUPH	6	PLCHH	8
			HYGL	3	PLCHH	5	DEDA	2	GEDI	1	PLCHH	4	JUPH	4
			PLCHH	4	BRMI	2	PLCHH	8	DEDA	3	BRMI	1	DEDA	4
			GEDI	1	HYGL	2	LYMI	3	PLCHH	3	LYMI	2	LYAR	6
			BRMI	1	ELACA	2	BRMI	1	HYGL	2	HYGL	2	FEBR	1
			DEDA	2	LYMI	1	HYRA	3	BRMI	1	GAUS	1	RACA	2
			ELACA	4	SEGL	1	ISHO	1	LYMI	1	SEGL	1	BRMI	1
			GAUS	1	GAUS	1	GAUS	1	FEBR	1	HYRA	1	LYMI	2
			BG	2	BG	4	SEGL	1	ERBO	1	LYAR	1	SEGL	1
			TH	22	TH	12	HYGL	2	GAUS	1	ISHO	1	HYGL	19
							ACPA	1	BAPI	1	DEDA	2	ELACA	4
							BG	4	ELACA	2	ELACA	1	GAUS	2
							TH	8	BG	8	BG	28	GEDI	1
									TH	20	TH	14	ISHO	2
													POZI	1
													BG	7
													TH	11
			TOTAL	100	TOTAL	100	TOTAL	100	TOTAL	100	TOTAL	100	TOTAL	100

Transect #	Transect Length	Relative %Cover of Wetland	Quadrat #1 @ - m		Quadrat #2 @ - m		Quadrat #3 @ - m	
			Species	%	Species	%	Species	%
4	5m	10%	DEDA	13	DEDA	18	DEDA	25
			POMO	26	POMO	19	POMO	15
			JUPH	3	JUPH	3	PLCHH	6
			ERMO	11	ERMO	20	ERMO	9
			BRMI	3	PLCHH	5	HYGL	2
			SEGL	1	HYGL	2	LYAR	1
			LYAR	1	LYMI	4	GEDI	3
			GEDI	2	GEDI	2	JUPH	4
			PLCHH	2	ISHO	1	LYMI	2
			LYMI	1	BRMI	1	GAUS	1
			URLI5	1	GAUS	1	SEGL	1
			CEGL	1	TRMI	1	ISHO	1
			BG	5	BG	4	BG	10
			TH	30	TH	19	TH	20
			TOTAL	100	TOTAL	100	TOTAL	100

Pond 76 2025 Species List					
Species Name	**Common Name**	**Species Code**	**Species Name**	**Common Name**	**Species Code**
Acmispon parviflorus	hill lotus	ACPA	*Juncus occidentalis*	western rush	JUOC
Aira caryophyllea	silvery hair-grass	AICA	*Juncus phaeocephalus*	brown-headed rush	JUPH
Baccharis pilularis	coyote brush	BAPI	*Lysimachia arvensis*	scarlet pimpernel	LYAR
Briza minor	annual quaking grass	BRMI	*Lysimachia minima*	chaffweed	LYMI
Bromus hordeaceus	soft chess	BRHO	*Plagiobothrys chorisianus* var. *hickmanii*	Hickman's popcornflower	PLCHH
Cerastium glomeratum	sticky mouse-ear chickweed	CEGL	*Pogogyne zizyphoroides*	Sacramento mesa mint	POZI
Cirsium brevistylum	Indian thistle	CIBR	*Polypogon monspeliensis*	rabbitfoot grass	POMO
Crassula aquatica	aquatic pygmy-weed	CRAQ	*Pseudognaphalium luteoalbum*	weedy cudweed	PSLU
Danthonia californica	California oat grass	DACA	*Psilocarphus chilensis*	round woolly-marbles	PSCH
Deschampsia danthonioides	annual hair grass	DEDA	*Quercus agrifolia*	coast live oak	QUAG
Drymocallis glandulosa var. *wrangelliana*	sticky cinquefoil	DRGLW	*Ranunculus californicus*	California buttercup	RACA
Eleocharis acicularis var. *acicularis*	needle spikerush	ELACA	*Rumex salicifolius*	willow dock	RUSA
Eleocharis macrostachya	pale spikerush	ELMA	*Sanicula* sp.	sanicle	SAN sp.
Elymus glaucus	blue wild-rye	ELGL	*Senecio glomeratus*	cutleaf burnweed	SEGL
Erigeron canadensis	horseweed	ERCA	*Senecio vulgaris*	common groundsel	SEVU
Erodium botrys	long-beaked filaree	ERBO	*Sisyrinchium bellum*	western blue-eyed grass	SIBE
Erodium cicutarium	redstem filaree	ERCI	*Sonchus asper*	prickly sow thistle	SOAS
Eryngium montereyense	coyote thistle	ERMO	*Sonchus oleraceus*	common sow thistle	SOOL
Festuca bromoides	brome fescue	FEBR	*Trifolium microcephalum*	small head clover	TRMI
Festuca myuros	rattail sixweeks grass	FEMY	*Trifolium microdon*	thimble clover	TRMI5
Gamochaeta ustulata	purple cudweed	GAUS	*Triglochin scilloides*	flowering quillwort	TRSC
Geranium dissectum	cut-leaved geranium	GEDI	*Uropappus lindleyi*	silver puffs	URLI5
Gnaphalium palustre	lowland cudweed	GNPA	**Groundcover Codes**		
Hypochaeris glabra	smooth cat's-ear	HYGL	BG	Bare Ground	
Hypochaeris radicata	rough cat's-ear	HYRA	TH	Thatch/Duff	
Isoetes howellii	Howell's quillwort	ISHO	AL	Algae	
Juncus balticus	Baltic rush	JUBA			

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APPENDIX C

Stratum Cover by Vernal Pool

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Table C-1. Pond 5 (Reference) wetland vegetation cover by stratum.

POND 5				
Stratum	**Relative % Cover of Wetland**	**Species Code**	**Species Common Name**	**% Cover**
1	**26.1%**	AGAV	Pacific bent grass	0.3
		ELMA	pale spikerush	41.5
		LYHY	grass poly	0.2
		MALE	alkali mallow	0.2
		TH	Thatch	44.0
		BG	Bare Ground	13.8
		TOTAL		**100.0**
Stratum	**Relative % Cover of Wetland**	**Species Code**	**Species Common Name**	**% Cover**
2	**31.5%**	AGAV	Pacific bent grass	4.0
		CRTR	spreading alkaliweed	0.8
		DISP	salt grass	2.7
		ELMA	pale spikerush	33.8
		MALE	alkali mallow	0.8
		PHLE	Lemmon's canary grass	1.8
		TH	Thatch	49.5
		BG	Bare Ground	6.5
		TOTAL		**100.0**
Stratum	**Relative % Cover of Wetland**	**Species Code**	**Species Common Name**	**% Cover**
3	**19.4%**	ACST	strigose lotus	0.2
		AGAV	Pacific bent grass	3.2
		BRMI	annual quaking grass	0.2
		DISP	salt grass	4.0
		ELMA	pale spikerush	6.8
		GEDI	cut-leaved geranium	1.7
		JUPH	brown-headed rush	1.0
		LYHY	grass poly	0.3
		PHLE	Lemmon's canary grass	1.7
		PLCHH	Hickman's popcornflower	1.0
		POMO	rabbitfoot grass	36.5
		PSLU	weedy cudweed	0.3
		RUCR	curly dock	0.3
		SEGL	cutleaf burnweed	0.2
		SOOL	common sow thistle	0.2
		STAJ	bugle hedge nettle	2.8
		TH	Thatch	33.8
		BG	Bare Ground	5.8
		TOTAL		**100.0**

Table C-1 (continued). Pond 5 (Reference) wetland vegetation cover by stratum.

POND 5				
Stratum	**Relative % Cover of Wetland**	**Species Code**	**Species Common Name**	**% Cover**
8	**23.0%**	AGAV	Pacific bent grass	2.5
		BRMI	annual quaking grass	0.7
		DISP	salt grass	1.2
		ELMA	pale spikerush	3.3
		ERBO	long-beaked filaree	2.5
		ERCA	horseweed	1.0
		GEDI	cut-leaved geranium	0.3
		HEEC	bristly oxtongue	0.2
		JUBA	Baltic rush	0.5
		JUBUB	common toad rush	0.5
		JUPH	brown-headed rush	1.0
		LYAR	scarlet pimpernel	0.5
		LYHY	grass poly	0.7
		LYMI	chaffweed	0.5
		PHLE	Lemmon's canary grass	2.3
		POMO	rabbitfoot grass	16.8
		PSLU	weedy cudweed	7.2
		RUCR	curly dock	0.3
		SEGL	cutleaf burnweed	0.2
		SOOL	common sow thistle	0.5
		STAJ	bugle hedge nettle	3.5
		VELA	western vervain	0.2
		TH	Thatch	44.8
		BG	Bare Ground	8.8
		TOTAL		**100.0**

Table C-2. Pond 101 East (East) (Reference) wetland vegetation cover by stratum.

POND 101 East (East)				
Stratum	**Relative % Cover of Wetland**	**Species Code**	**Species Common Name**	**% Cover**
2	**1.5%**	AGAV	Pacific bent grass	0.7
		ELMA	pale spikerush	44.3
		MALE	alkali mallow	2.0
		POMO	rabbitfoot grass	2.3
		TH	Thatch	49.3
		BG	Bare Ground	1.3
		TOTAL		**100.0**
Stratum	**Relative % Cover of Wetland**	**Species Code**	**Species Common Name**	**% Cover**
3	**47.1%**	AGAV	Pacific bent grass	23.5
		ALSA	Pacific foxtail	2.3
		BRDI	ripgut grass	0.2
		CIBR	Indian thistle	0.3
		ELMA	pale spikerush	9.2
		GEDI	cut-leaved geranium	0.2
		LYHY	grass poly	0.2
		MALE	alkali mallow	5.3
		POMO	rabbitfoot grass	43.0
		TH	Thatch	12.0
		BG	Bare Ground	3.8
		TOTAL		**100.0**

Table C-2 (continued). Pond 101 East (East) (Reference) wetland vegetation cover by stratum.

POND 101 East (East)				
Stratum	**Relative % Cover of Wetland**	**Species Code**	**Species Common Name**	**% Cover**
5	**49.3%**	AGAV	Pacific bent grass	19.0
		BRMI	annual quaking grass	0.3
		ELMA	pale spikerush	0.2
		ERBO	long-beaked filaree	4.0
		ERCA	horseweed	1.2
		GEDI	cut-leaved geranium	5.3
		GNPA	lowland cudweed	0.8
		HECUO	Chinese pusley	1.5
		HYGL	smooth cat's-ear	0.2
		JUBA	Baltic rush	0.5
		JUBUB	common toad rush	1.3
		JUPH	brown-headed rush	1.5
		LYHY	grass poly	1.0
		LYMI	chaffweed	0.5
		MAGR	gumweed	0.3
		POMO	rabbitfoot grass	6.3
		PSLU	weedy cudweed	1.0
		RUAC	sheep sorrel	3.0
		RUCR	curly dock	1.0
		SOOL	common sow thistle	0.7
		STAJ	bugle hedge nettle	2.2
		TRBA	bearded clover	1.0
		TRDEA	pale sack clover	0.3
		TRGR	pin point clover	0.8
		TRMI	small head clover	7.5
		TRVA	variegated clover	1.0
		VISA	spring vetch	1.0
		TH	Thatch	11.3
		BG	Bare Ground	25.2
		TOTAL		**100.0**

Table C-2 (continued). Pond 101 East (East) (Reference) wetland vegetation cover by stratum.

POND 101 East (East)				
Stratum	**Relative % Cover of Wetland**	**Species Code**	**Species Common Name**	**% Cover**
9	**2.1%**	AGAV	Pacific bent grass	13.3
		ALSA	Pacific foxtail	23.0
		ELMA	pale spikerush	3.7
		FEBR	brome fescue	0.3
		HEEC	bristly oxtongue	0.7
		LAGL3	smooth goldfields	21.0
		LYHY	grass poly	0.7
		LYMI	chaffweed	0.7
		MALE	alkali mallow	11.7
		POMO	rabbitfoot grass	4.0
		RUCR	curly dock	1.0
		SOOL	common sow thistle	0.3
		TRDEA	pale sack clover	2.7
		TH	Thatch	7.3
		BG	Bare Ground	9.7
		TOTAL		**100.0**

Table C-3. Pond 997 (Reference) wetland vegetation cover by stratum.

POND 997				
Stratum	**Relative % Cover of Wetland**	**Species Code**	**Species Common Name**	**% Cover**
1	**19.5%**	BRMI	annual quaking grass	3.5
		BRTET	dwarf brodiaea	0.2
		CAAMA3	Johnny-Nip	0.3
		CIQU	timwort	1.2
		COCO	brass buttons	0.2
		CRAQ	aquatic pygmy-weed	0.3
		ELACA	needle spikerush	3.3
		ERBO	long-beaked filaree	1.3
		ERMO	coyote thistle	8.2
		FEPE	Italian rye grass	0.3
		GEDI	cut-leaved geranium	0.7
		HYGL	Thatch	0.8
		HYRA	Bare Ground	0.2
		ISCA	keeled bulrush	0.5
		JUBUB	common toad rush	0.7
		JUCA	dwarf rush	0.2
		JUPH	brown-headed rush	4.2
		LACO	Contra Costa goldfields	0.2
		LAGL3	smooth goldfields	0.2
		LYAR	scarlet pimpernel	0.2
		LYHY	grass poly	2.7
		LYMI	chaffweed	6.0
		MIPA	marsh microseris	0.3
		PLCHH	Hickman's popcornflower	30.7
		PLCO	cut-leaved plantain	0.2
		POMO	rabbitfoot grass	3.0
		POZI	Sacramento mesa mint	0.2
		PSTE	slender woolly-marbles	3.0
		SOAS	prickly sow thistle	0.2
		SOOL	common sow thistle	1.5
		TRSC	flowering quillwort	1.2
		BG	Bare Ground	10.3
		TH	Thatch	14.3
		TOTAL		**100.0**
2 (CCG)	**9.5%**	-	-	-

Table C-3 (continued). Pond 997 (Reference) wetland vegetation cover by stratum.

POND 997				
Stratum	**Relative % Cover of Wetland**	**Species Code**	**Species Common Name**	**% Cover**
3	**68.2%**	BAPI	coyote brush	0.2
		BRMA	rattlesnake grass	14.7
		BRMI	annual quaking grass	2.3
		BRTET	dwarf brodiaea	0.2
		CAAMA3	Johnny-Nip	0.5
		COCO	brass buttons	0.2
		CRAQ	aquatic pygmy-weed	0.2
		DACA	California oat grass	7.3
		ELACA	needle spikerush	4.7
		ELMA	pale spikerush	0.2
		ERBO	long-beaked filaree	5.3
		ERMO	coyote thistle	2.5
		FEMY	rattail sixweeks grass	0.7
		GEDI	cut-leaved geranium	0.2
		GNPA	lowland cudweed	0.7
		HYGL	smooth cat's-ear	6.7
		HYRA	rough cat's-ear	0.3
		ISCA	keeled bulrush	0.8
		JUBUB	common toad rush	1.3
		JUCA	dwarf rush	0.3
		JUPH	brown-headed rush	2.5
		LYHY	grass poly	1.0
		LYMI	chaffweed	1.7
		MAGR	gumweed	1.3
		MIPA	marsh microseris	1.0
		PLCHH	Hickman's popcornflower	0.3
		PLCO	cut-leaved plantain	1.8
		PSTE	slender woolly-marbles	0.2
		SEGL	cutleaf burnweed	0.5
		SOOL	common sow thistle	0.2
		TRSC	flowering quillwort	1.0
		BG	Bare Ground	5.8
		TH	Thatch	33.5
		TOTAL		**100.0**
Upland	**2.8%**	-	-	-

Table C-4. Pond 21 (Year 3 Post-Mastication and Post-Subsurface Munitions Remediation) wetland vegetation cover by stratum.

POND 21				
Stratum	**Relative % Cover of Wetland**	**Species Code**	**Species Common Name**	**% Cover**
1	**45.4%**	ACMI	common yarrow	0.2
		BRMI	annual quaking grass	0.3
		CIQU	timwort	0.2
		DEDA	annual hair grass	0.7
		ELACA	needle spikerush	7.8
		ELMA	pale spikerush	1.7
		ERMO	coyote thistle	22.2
		FEBR	brome fescue	0.3
		GEDI	cut-leaved geranium	1.2
		GNPA	lowland cudweed	0.3
		HOBRB	meadow barley	2.8
		HYGL	smooth cat's-ear	0.2
		JUPH	brown-headed rush	4.7
		LAGL3	smooth goldfields	26.2
		LYHY	grass poly	0.5
		LYMI	chaffweed	0.3
		MALE	alkali mallow	1.3
		PLCHH	Hickman's popcornflower	1.2
		POMO	rabbitfoot grass	0.8
		RACA	California buttercup	1.0
		TRSC	flowering quillwort	0.3
		TH	Thatch	18.0
		BG	Bare Ground	7.8
		TOTAL		**100.0**
Stratum	**Relative % Cover of Wetland**	**Species Code**	**Species Common Name**	**% Cover**
3	**1.5%**	ACMI	common yarrow	2.3
		BRMI	annual quaking grass	0.3
		CABA	whiteroot	40.7
		ELMA	pale spikerush	0.3
		ERCA	horseweed	1.7
		FEMY	rattail sixweeks grass	2.7
		GEDI	cut-leaved geranium	1.0
		HERA	western pearlflower	0.3
		LYAR	scarlet pimpernel	0.7
		PSRA	pink everlasting	0.3
		TH	Thatch	44.0
		BG	Bare Ground	5.7
		TOTAL		**100.0**

Table C-4 (continued). Pond 21 (Year 3 Post-Mastication and Post-Subsurface Munitions Remediation) wetland vegetation cover by stratum.

POND 21				
Stratum	**Relative % Cover of Wetland**	**Species Code**	**Species Common Name**	**% Cover**
4	**2.0%**	BRMI	annual quaking grass	0.3
		ELACA	needle spikerush	0.7
		GEDI	cut-leaved geranium	1.7
		JUPH	brown-headed rush	46.3
		RUSA	willow dock	3.3
		TH	Thatch	45.7
		BG	Bare Ground	2.0
		TOTAL		**100.0**
Stratum	**Relative % Cover of Wetland**	**Species Code**	**Species Common Name**	**% Cover**
5	**48.1%**	ACPA	hill lotus	0.2
		BAPI	coyote brush	0.3
		BRHO	soft chess	1.8
		BRMI	annual quaking grass	1.3
		CRAQ	aquatic pygmy-weed	0.2
		ELACA	needle spikerush	4.3
		ELMA	pale spikerush	1.0
		ERCA	horseweed	0.5
		ERMO	coyote thistle	11.2
		FEBR	brome fescue	5.8
		GEDI	cut-leaved geranium	13.7
		GNPA	lowland cudweed	0.2
		HERA	western pearlflower	0.3
		HOBRB	meadow barley	2.2
		HYGL	smooth cat's-ear	3.2
		JUPH	brown-headed rush	3.2
		LYAR	scarlet pimpernel	0.3
		LYMI	chaffweed	0.7
		MASA	coast tarweed	1.5
		PHLE	Lemmon's canary grass	0.3
		PLCHH	Hickman's popcornflower	2.3
		POMO	rabbitfoot grass	8.3
		POZI	Sacramento mesa mint	0.2
		SEGL	cutleaf burnweed	0.2
		SEVU	common groundsel	0.2
		STAJ	bugle hedge nettle	0.2
		TRSC	flowering quillwort	1.0
		TH	Thatch	22.5
		BG	Bare Ground	13.0
		TOTAL		**100.0**
Upland	**3.0%**	-	-	-

Table C-5. Pond 76 (Year 3 Post-Mastication and Year 2 Post-Subsurface Munitions Remediation) wetland vegetation cover by stratum.

POND 76				
Stratum	**Relative % Cover of Wetland**	**Species Code**	**Species Common Name**	**% Cover**
1	**9%**	BRMI	annual quaking grass	0.3
		CEGL	sticky mouse-ear chickweed	0.3
		CRAQ	aquatic pygmy-weed	0.3
		DEDA	annual hair grass	0.7
		ELACA	needle spikerush	30.0
		ERMO	coyote thistle	11.0
		FEBR	brome fescue	0.7
		GAUS	purple cudweed	1.3
		HYGL	smooth cat's-ear	0.7
		ISHO	Howell's quillwort	1.3
		JUPH	brown-headed rush	8.3
		PLCHH	Hickman's popcornflower	0.3
		POMO	rabbitfoot grass	1.3
		SEGL	cutleaf burnweed	1.3
		SEVU	common groundsel	0.3
		TH	Thatch	38.7
		BG	Bare Ground	3.0
		TOTAL		**100.0**

Table C-5 (continued). Pond 76 (Year 3 Post-Mastication and Year 2 Post-Subsurface Munitions Remediation) wetland vegetation cover by stratum.

POND 76				
Stratum	**Relative % Cover of Wetland**	**Species Code**	**Species Common Name**	**% Cover**
3	**81%**	ACPA	hill lotus	0.2
		BAPI	coyote brush	0.2
		BRMI	annual quaking grass	1.2
		DEDA	annual hair grass	2.2
		ELACA	needle spikerush	2.2
		ERBO	long-beaked filaree	0.2
		ERMO	coyote thistle	25.0
		FEBR	brome fescue	0.3
		GAUS	purple cudweed	1.2
		GEDI	cut-leaved geranium	0.5
		HYGL	smooth cat's-ear	5.0
		HYRA	rough cat's-ear	0.7
		ISHO	Howell's quillwort	0.7
		JUPH	brown-headed rush	4.5
		LYAR	scarlet pimpernel	1.2
		LYMI	chaffweed	1.5
		PLCHH	Hickman's popcornflower	5.3
		POMO	rabbitfoot grass	23.7
		POZI	Sacramento mesa mint	0.2
		RACA	California buttercup	0.3
		SEGL	cutleaf burnweed	0.7
		TH	Thatch	14.5
		BG	Bare Ground	8.8
		TOTAL		**100.0**

Table C-5 (continued). Pond 76 (Year 3 Post-Mastication and Year 2 Post-Subsurface Munitions Remediation) wetland vegetation cover by stratum.

POND 76				
Stratum	**Relative % Cover of Wetland**	**Species Code**	**Species Common Name**	**% Cover**
4	**10%**	BRMI	annual quaking grass	1.3
		CEGL	sticky mouse-ear chickweed	0.3
		DEDA	annual hair grass	18.7
		ERMO	coyote thistle	13.3
		GAUS	purple cudweed	0.7
		GEDI	cut-leaved geranium	2.3
		HYGL	smooth cat's-ear	1.3
		ISHO	Howell's quillwort	0.7
		JUPH	brown-headed rush	3.3
		LYAR	scarlet pimpernel	0.7
		LYMI	chaffweed	2.3
		PLCHH	Hickman's popcornflower	4.3
		POMO	rabbitfoot grass	20.0
		SEGL	cutleaf burnweed	0.7
		TRMI	small head clover	0.3
		URLI5	silver puffs	0.3
		TH	Thatch	23.0
		BG	Bare Ground	6.3
		TOTAL		**100.0**

APPENDIX D

CTS and Aquatic Invertebrate Data from Aquatic Surveys at Vernal Pools Monitored in 2025

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Table D-1. CTS aquatic survey results for vernal pools monitored in 2025.

Vernal Pool	Sampling Date	# of Larvae Observed	# of Larvae Measured	Total Length of Larvae (mm)			Snout-Vent Length of Larvae (mm)			Survey Hours
				Mean*	Range	Mode	Mean*	Range	Mode	
5	3/18/2025	0	0	-	-	-	-	-	-	12 min
	4/14/2025	0	0	-	-	-	-	-	-	1 hr 6 min
101 East (East)	3/18/2025	0	0	-	-	-	-	-	-	5 min
997	3/18/2025	0	0	-	-	-	-	-	-	5 min

Table D-2. Aquatic invertebrates observed during aquatic surveys at vernal pools monitored in 2025.

Vernal Pool	Aquatic Invertebrate																
	CA Fairy Shrimp (Order Anostraca)	Clam Shrimp (Order Conchostraca)	Water Flea (Order Cladocera)	Seed Shrimp (Order Ostracoda)	Copepods (Order Eucopepoda)	Scuds (Order Amphipoda)	Mayfly Larvae (Order Ephemeroptera)	Dragonfly Larvae (Sub-order Anisoptera)	Damselfly Larvae (Sub-order Zygoptera)	Backswimmer (Family Notonectidae)	Waterboatmen (Family Corixidae)	Predaceous Diving Beetle (Family Dytiscidae)	Giant Water Bug (Family Belostomatidae)	Water Scorpion (Family Nepidae)	Mosquito Larvae (Family Culicidae)	Water Scavenger Beetle (Family Hydrophilidae)	Dipteran Larvae (Order Diptera)	Snail (Class Gastropoda)
5	●	●	●	●	●	-	●	●	●	-	●	●	-	-	●	●	●	●
101 East (East)	●	-	●	●	●	-	●	-	-	-	-	●	-	-	●	●	●	●
997	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	●	-
21	-	-	-	●	●	-	-	-	-	-	-	-	-	-	-	-	●	-

Table D-3. Fairy Shrimp aquatic survey results for vernal pools monitored in 2025.

Vernal Pool	Sampling Date	Abundance (# of Individuals)
5	2/28/2025, 3/18/2025, 4/14/2025	Very High (300+), Moderate (40), Not Detected
101 East (East)	2/28/2025, 3/18/2025	Moderate (100), Low (2)
997	3/18/2025	Not Detected
21	3/18/2025	Not Detected

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APPENDIX E

Site Photos

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Figure E-1. Pond 5 (Reference): vegetation photo point (S) on 5/8/2025.

Figure E-2. Pond 5 (Reference): vegetation photo point (W) on 5/8/2025.

Figure E-3. Pond 101 East (East) (Reference): vegetation photo point on 5/7/2025.

Figure E-4. Pond 997 (Reference): vegetation photo point on 4/29/2025.

Figure E-5. Pond 21 (Year 3 Post-Mastication and Post-Subsurface Munitions Remediation): vegetation photo point (NE) on 5/6/2025.

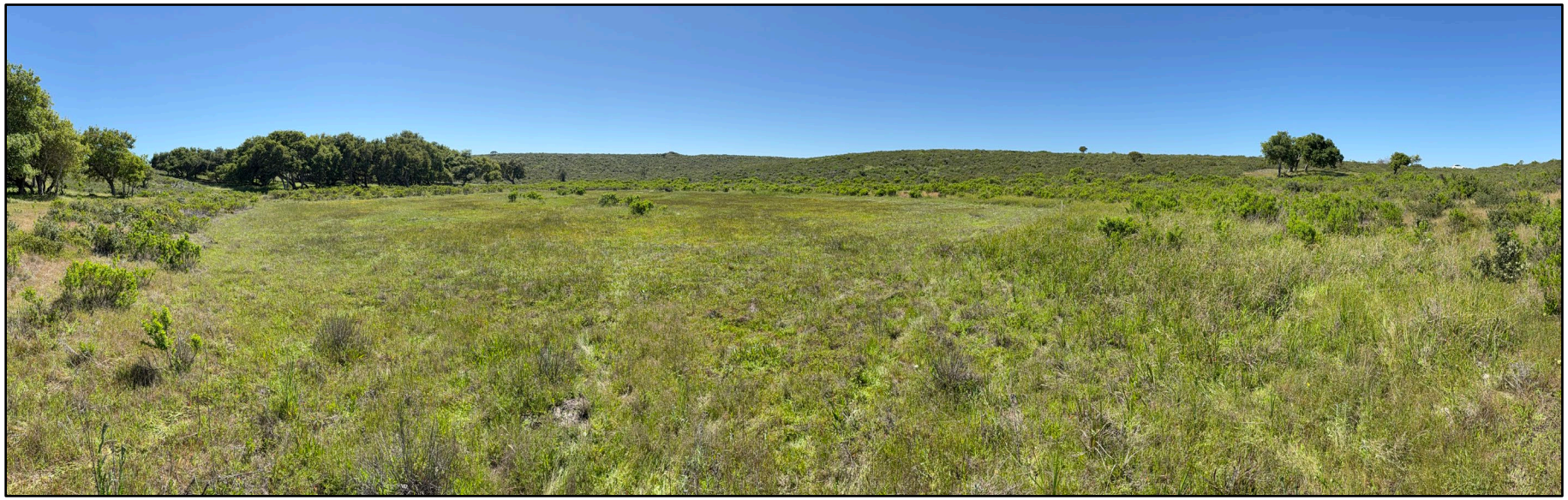

Figure E-6. Pond 21 (Year 3 Post-Mastication and Post-Subsurface Munitions Remediation): vegetation photo point (SW) on 5/6/2025.

Figure E-7. Pond 76 (Year 3 Post-Mastication, Year 2 Post-Subsurface Munitions Remediation): vegetation photo point on 5/1/2025.

APPENDIX F

Historic Hydrology Monitoring Results for Reference and Remediated Vernal Pools

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Table F-1. Pond 5 (Reference) historical hydrology results on former Fort Ord 1994 – 2025.

Water Year	Date	pH	Temperature (C)	Dissolved Oxygen (mg/L)	Turbidity (FNU)	Max Depth (cm)	Inundated Surface Area (acres)
1994	1994-03-29	NS	16.67	NS	NS	30.48	2.755
	1994-04-13	8.6	20	NS	NS	20.32	NS
1995	1995-01-11	NS	15.55	NS	NS	27.94	0.172
	1995-01-26	NS	13.88	NS	NS	43.18	0.517
	1995-02-10	NS	15	NS	NS	50.80	0.459
	1995-02-24	NS	13.33	NS	NS	50.80	0.517
	1995-03-10	NS	NS	NS	NS	76.20	1.72
	1995-03-24	NS	22.22	NS	NS	102.00	6.887
1996	1996-01-03	-	-	-	-	0.00	0
	1996-01-18	NS	12.2	NS	NS	5.08	0
	1996-01-30	NS	13.33	NS	NS	5.08	0.014
	1996-02-14	NS	17.78	NS	NS	15.00	0.41
	1996-02-29	NS	13.33	NS	NS	28.00	0.5
	1996-03-14	NS	17.78	NS	NS	38.00	NS
	1996-03-28	NS	20	NS	NS	38.00	1.03
	1996-04-11	6.92	22.22	NS	NS	15.00	1.03
	1996-04-25	NS	24.44	NS	NS	12.00	186
	1996-05-09	-	-	-	-	0.00	0
2007	2006-12-01	-	-	-	-	0.00	-
	2007-01-23	-	-	-	-	0.00	-
	2007-03-06	7.2	NS	NS	NS	17.00	NS
2010	2010-03-11	NS	NS	NS	NS	45.72	NS
	2010-05-25	NS	NS	NS	NS	30.48	NS
2013	2012-11-26	-	-	-	-	0.00	0
	2012-12-19	-	-	-	-	0.00	0.01
	2013-01-22	NS	NS	NS	NS	11.00	0.91
	2013-02-25	-	-	-	-	0.00	0.02
	2013-03-15	-	-	-	-	0.00	0
	2013-04-12	-	-	-	-	0.00	0
	2013-05-10	-	-	-	-	0.00	0

Table F-1 (continued). Pond 5 (Reference) historical hydrology results on former Fort Ord 1994 – 2025.

Water Year	Date	pH	Temperature (C)	Dissolved Oxygen (mg/L)	Turbidity (FNU)	Max Depth (cm)	Inundated Surface Area (acres)
2014	2013-12-11	-	-	-	-	0.00	0
	2014-02-18	-	-	-	-	0.00	0
	2014-03-17	-	-	-	-	0.00	0
	2014-04-07	-	-	-	-	0.00	0
	2014-05-06	-	-	-	-	0.00	0
	2014-06-03	-	-	-	-	0.00	0
2016	2016-04-05	6.18	22.5	3.66	46.8	80.00	2.132
	2016-04-19	6.51	20.27	NS	23.8	100.00	5.139
	2016-05-09	6.45	17.99	NS	19.6	100.00	4.862
	2016-06-08	6.48	21.32	NS	17.7	80.00	4.437
	2016-07-07	6.37	23.01	NS	83.2	60.00	3.19
	2016-08-10	6.85	16.37	NS	295	4.00	0.358
	2016-09-12	-	-	-	-	0.00	0
2017	2017-01-25	6.09	8.94	2.13	4	58.00	5.3242
	2017-02-27	6.24	11.77	4.52	6.4	130.00	7.784
	2017-03-23	6.54	15.3	1.55	8.3	130.00	7.3
	2017-04-20	6.38	17.22	0	5.9	130.00	7.243
	2017-05-25	6.28	21.85	2.73	4.5	110.00	6.493
	2017-06-20	7.12	24.16	3.54	7.4	98.00	5.742
	2017-07-28	NS	NS	NS	NS	94.00	NS
	2017-08-16	NS	NS	NS	NS	57.00	NS
2018	2018-01-15	7.12	12.56	6.54	16.6	22.00	2.9466
	2018-02-23	7.12	6	5.27	39.2	15.00	1.85
	2018-03-21	7.01	11.76	6.65	4.7	22.00	3.0072
	2018-04-18	7.29	20.68	7.09	40.6	22.00	2.85
	2018-05-22	-	-	-	-	0.00	0

Table F-1 (continued). Pond 5 (Reference) historical hydrology results on former Fort Ord 1994 – 2025.

Water Year	Date	pH	Temperature (C)	Dissolved Oxygen (mg/L)	Turbidity (FNU)	Max Depth (cm)	Inundated Surface Area (acres)
2019	2018-12-12	-	-	-	-	0.00	0
	2019-01-14	6.7	11.09	10.16	4.7	4.00	0.474
	2019-02-13	6.89	10.55	10.24	8.4	42.00	4.208
	2019-03-07	6.58	14.1	5.58	1.5	56.00	4.828
	2019-04-04	6.41	14.87	1.71	1.2	53.00	4.5947
	2019-05-09	6.51	17.15	3.8	0.6	37.00	3.9636
	2019-06-06	7.09	20.32	6.07	13.6	30.00	3.6211
	2019-07-09	NS	NS	NS	NS	25.00	NS
	2019-08-13	-	-	-	-	0.00	0
2020	2019-12-04	NS	NS	NS	NS	9.00	NS
	2019-12-20	7.28	15.3	6.01	18.37	8.00	0.7359
	2020-01-08	NS	NS	NS	NS	11.00	NS
	2020-01-30	7.41	14.6	20.16	16.54	14.00	1.9979
	2020-02-21	NS	NS	NS	NS	8.00	NS
	2020-02-27	6.52	16.5	6.87	91.61	6.00	0.751
	2020-03-17	NS	NS	NS	NS	15.00	NS
	2020-03-27	6.33	15.2	8.89	7.82	23.00	3.0472
	2020-04-15	NS	NS	NS	NS	33.00	NS
	2020-04-28	6.57	24.2	2.9	1.63	26.00	3.1494
	2020-05-18	NS	NS	NS	NS	15.00	NS
	2020-05-26	6.71	28.7	3.51	74.48	8.00	0.7328
	2020-06-10	-	-	-	-	0.00	0
2021	2021-01-07	-	-	-	-	0.00	0
	2021-02-01	-	-	-	-	0.00	0
	2021-03-29	-	-	-	-	0.00	0
2022	2021-10-28	-	-	-	-	0.00	0
	2021-12-17	NS	NS	NS	NS	5.00	0.5021
	2022-01-14	6.44	13.2	10.26	2.38	15.00	2.2563
	2022-02-01	NS	NS	NS	NS	10.00	NS
	2022-02-17	NS	NS	NS	NS	1.00	0.3719
	2022-03-02	-	-	-	-	0.00	-
	2022-03-22	-	-	-	-	0.00	-
	2022-03-30	-	-	-	-	0.00	-

Table F-1 (continued). Pond 5 (Reference) historical hydrology results on former Fort Ord 1994 – 2025.

Water Year	Date	pH	Temperature (C)	Dissolved Oxygen (mg/L)	Turbidity (FNU)	Max Depth (cm)	Inundated Surface Area (acres)
2023	2022-12-12	NS	NS	NS	NS	10.00	NS
	2023-01-18	6.4	11.9	5.36	3.48	55.00	4.8949
	2023-02-17	6.69	8.5	6.48	2.08	54.00	4.6222
	2023-04-05	6.91	14.3	6.38	2.26	119.00	7.3529
	2023-04-27	6.99	18.5	5.01	1	108.00	6.3024
	2023-05-11	7.08	17.9	4.8	2.96	103.00	6.1122
2024	2023-12-15	NS	NS	NS	NS	6.00	0.3229
	2024-01-23	6.64	13.88	NS	6.7	28.00	3.2522
	2024-02-05	NS	NS	NS	NS	42.00	NS
	2024-02-21	7.63	13.06	NS	19.1	62.00	4.8078
	2024-03-12	6.8	14.88	NS	25.4	60.00	4.7666
	2024-04-17	6.7	16.26	NS	73.7	60.00	4.7398
	2024-05-17	6.75	18.39	NS	23.2	46.00	4.2191
	2024-06-14	6.65	17.33	NS	7.5	32.00	3.2776
	2024-07-12	NS	NS	NS	NS	14.00	0.9407
	2024-08-02	-	-	-	-	0.00	0
2025	2024-12-06	-	-	-	-	0.00	0
	2025-02-11	-	-	-	-	0.00	0
	2025-02-20	NS	NS	NS	NS	14.00	1.0409
	2025-02-21	6.84	13.74	0.02	10.5	14.00	NS
	2025-02-28	NS	15.2	3.13	NS	11.00	NS
	2025-03-18	7.56	14.58	9.13	7.5	22.00	2.5161
	2025-04-14	6.8	18.39	1.22	21.6	14.00	0.9589
	2025-05-08	-	-	-	-	0.00	0

NS = Not Surveyed

Pond 5 was monitored 17 years between 1994 and 2025. Pond 5 is a reference vernal pool and no remediation has occurred. The historic data and precipitation are summarized below:

- 1994 (Jones & Stokes, 1996)
  - In a precipitation year below normal, Pond 5 held water during both monitoring events in March and April with a maximum recorded inundation of 2.75 acres. The temperatures were within a normal range.
  - Yearly cumulative precipitation 13.96 inches
  - Data collected only in March and April
  - Inundated during both monitoring events
  - Recorded inundation maximum 2.75 acres in March
  - Depth range 20-31 cm, mean 26
  - temperature 17°-20° C, mean 18.5° C
- 1995 (Jones & Stokes, 1996)
  - In a water-year that was above normal, Pond 5 was inundated by January monitoring and stayed inundated through March. Pond 5 inundation area was large compared to other monitored years and filled to 6.89 acres with a maximum depth of 102 cm. The temperature fluctuated greatly, which can be expected.
  - Yearly cumulative precipitation 23.38 inches
  - Data collected January-March, six monitoring events
  - Inundated during all monitoring events
  - Inundation range 0.17-6.89 acres, mean 1.72 acres
  - Depth range 28->100 cm, mean 58 cm
  - temperature range 13°-22° C, mean 16° C
- 1996 (Jones & Stokes, 1996)
  - In a water-year that was approximately normal, ponding occurred from January-May. The maximum depth was much lower than the previous year but similar to the 1994 water-year.
  - Yearly cumulative precipitation 16.96 inches
  - Data collected January-May, ten monitoring events
  - Inundated mid-January to early-May
  - No inundation area recorded
  - Depth range 5-38 cm, mean 20 cm
  - No water quality data collected
- 2007 (Shaw, 2008)
  - In a below normal rain year, Pond 5 was inundated to 1.58 acres. The pH at Pond 5 was neutral and the turbidity was relatively low.
  - Yearly cumulative precipitation 10.13 inches
  - Data collected December-March, three monitoring events
  - Some inundation in March, which comprised an area of 1.58 acres
  - Depth 17 cm
  - One water quality sample 7.20 pH, 5.1 FNU turbidity
- 2010 (Shaw, 2011)
  - DD&A conducted wildlife surveys in March and May. Only depth records were taken but data was not reported.
  - Below normal rain year
  - Yearly cumulative precipitation 14.6 inches
  - Maximum recorded depth was 46 cm

Pond 5 (Reference) Monitoring (continued).

- 2013 (Tetra Tech, 2014)
  - In a drought year with below normal precipitation, Pond 5 was only inundated in December and January and was a fraction of the size with a maximum inundation of 0.91 acres.
  - Drought year with yearly cumulative precipitation of 11.17 inches
  - Data collected November-May, seven monitoring events
  - Inundated in December and January
  - Inundation range 0.01-0.91 acres, mean 0.46 acres
  - Depth 11 cm, only one depth recorded
  - No water quality data collected
- 2014 (Tetra Tech, 2015)
  - In a consecutive drought year Pond 5 did not fill.
  - Consecutive drought year with yearly cumulative precipitation 9.33 inches
  - Data collected December-June, six monitoring events
- 2016 (Burleson, 2017)
  - In a consecutive drought with precipitation above normal, Pond 5 was inundated from the first recorded monitoring in April through August. The maximum inundation area was 5.33 acres. Water quality was within normal ranges. Neutral to slightly acidic pH values were observed. Temperature was higher on average than some of the other large vernal pools, however, Pond 5 was often monitored in the late afternoon.
    Dissolved oxygen had a large range. Turbidity was low on average with a few high readings at the end of the season. It is likely that Pond 5 was inundated earlier in the water-year and maximum inundation was most likely not captured. It should be noted that data collection did not start with the first storm or inundation.
  - Consecutive drought year with yearly cumulative precipitation 21.21 inches
  - Data collected April-September, seven monitoring events
  - Inundated April through August
  - Inundation range 0.36-5.33 acres, mean 3.89 acres
  - Depth range 4-100 cm, mean 74 cm
  - pH range 6.37-6.85, mean 6.51
  - temperature range 16.4°-25.1° C, mean 20.7° C
  - dissolved oxygen range 0.34-7.30 mg/L, mean 4.65 mg/L
  - turbidity range 17.7-295.0 FNU, mean 83.8 FNU

Pond 5 (Reference) Monitoring (continued).

- 2017 (Burleson, 2018)
  - After the end of a Historical drought with precipitation above normal, Pond 5 was inundated from the first recorded monitoring in January through September (Pond 5 did not 0 by last recorded monitoring in September). The maximum inundation area was 7.78 acres. Water quality was within normal ranges. Neutral to slightly acidic pH values were observed. Temperature was within normal averages for Fort Ord, with a few high readings in the middle of the season. Dissolved oxygen had a small range, with moderate levels. Turbidity was low on average.
  - Yearly cumulative precipitation 22.92 inches
  - Data collected January - September, nine monitoring events
  - Inundated January through September (pond did not 0 at last reading in September)
  - Inundation range 5.32-7.78 acres, mean 6.65 acres
  - Depth range 45-~130 cm, mean 95 cm
  - pH range 6.09-7.12, mean 6.44
  - temperature range 8.9°-24.2° C, mean 16.5° C
  - dissolved oxygen range 0.00-4.52 mg/L, mean 2.41 mg/L
  - turbidity range 4.0-8.3 FNU, mean 6.1 FNU
- 2018 (Burleson, 2019)
  - In a below normal water-year, Pond 5 was inundated from the first recorded monitoring in January through April. The maximum inundation area was 3.01 acres. Water quality was within normal ranges. Neutral to slightly acidic pH values were observed. Temperature was within normal averages for Fort Ord. Dissolved oxygen had a small range, with moderate levels. Turbidity was low on average.
  - Yearly cumulative precipitation 12.57 inches
  - Data collected November - May, six monitoring events
  - Inundated November through April
  - Inundation range 1.85-3.01 acres, mean 2.66 acres
  - Depth range 15-22 cm, mean 20 cm
  - pH range 7.01-7.29, mean 7.14
  - temperature range 6.00°-20.68° C, mean 12.75° C
  - dissolved oxygen range 5.27-7.09 mg/L, mean 6.39mg/L
  - turbidity range 4.7-40.6 FNU, mean 25.3 FNU
- 2019 (Burleson, 2020)
  - In an above normal water-year, Pond 5 was inundated from the first recorded monitoring in January through July. The maximum inundation area was 4.83 acres. Water quality was within normal ranges. Neutral to slightly acidic pH values were observed. Temperature was within normal averages for Fort Ord. Dissolved oxygen had a small range, with moderate levels. Turbidity was low on average.
  - Yearly cumulative precipitation 21.97 inches
  - Data collected January - August, eight monitoring events
  - Inundated January through July
  - Inundation range 0.47-4.83 acres, mean 3.61 acres
  - Depth range 4-56 cm, mean 35 cm
  - pH range 6.41-7.09, mean 6.70
  - temperature range 10.55°-20.32° C, mean 14.68° C
  - dissolved oxygen range 1.71-10.24 mg/L, mean 6.26 mg/L
  - turbidity range 0.6-13.6 FNU, mean 5.0 FNU

Pond 5 (Reference) Monitoring (continued).

- 2020 (Chenega, 2021)
  - In a close to normal water year, Pond 5 was inundated from the first recorded monitoring in December through May. The maximum inundation area was 3.15 acres. Water quality was generally within historical ranges. Slightly acidic to slightly alkaline pH values were observed. Temperature was within normal averages for Fort Ord. Dissolved oxygen in January was highest on record, but otherwise within historical range. Turbidity values were somewhat elevated in February and May, but not outside of historical range.
  - Yearly cumulative precipitation 18.08 inches
  - Data collected December - June, 13 monitoring events
  - Inundated December through May
  - Inundation range 0-3.15 acres, mean 1.49 acres
  - Depth range 0-33 cm, mean 13.6 cm
  - pH range 6.33-7.41, mean 6.80
  - temperature range 14.6°-28.7° C, mean 19.08° C
  - dissolved oxygen range 2.9-20.16 mg/L, mean 8.06 mg/L
  - turbidity range 1.63-91.61 FNU, mean 35.08 FNU
- 2021 (Chenega, 2022)
  - In a year of lowest cumulative precipitation of 7.57 inches in last 30 years, Pond 5 did not fill
  - Data collected Jan-March, three monitoring events
- 2022 (Chenega, 2023)
  - In consecutive below normal water year, Pond 5 was briefly inundated from mid- December to beginning of March
  - Yearly cumulative precipitation of 11.69 inches
  - Data collected October - March, 8 monitoring events
  - Inundated December through March
  - Inundation range 0-2.26 acres, mean 0.63 acres
  - Depth range 0-15 cm, mean 5.17 cm
  - pH single reading of 6.44
  - temperature single reading of 13.2° C
  - dissolved oxygen single reading of 10.26 mg/L
  - turbidity single reading of 2.38 FNU
- 2023 (Chenega, 2024)
  - In a well above normal water-year, Pond 5 was inundated from the first recorded monitoring in December through the last monitoring event in May, when it still held water. The maximum inundation area was 6.3 acres. Water quality was within normal ranges. Slightly acidic to slightly basic pH values were observed. Temperature was within normal averages for Fort Ord. Dissolved oxygen had a small range, with moderate levels. Turbidity was low.
  - Yearly cumulative precipitation 27.22 inches (from Oct 1st to June 30th)
  - Data collected December - May, six monitoring events
  - Inundated December through June, when the last monitoring event occurred
  - Inundation range 4.62-7.35 acres, mean 5.86 acres
  - Depth range 10-119 cm, mean 75 cm
  - pH range 6.40-7.08, mean 6.81
  - temperature range 8.5°-18.5° C, mean 14.22° C
  - dissolved oxygen range 4.8-6.48 mg/L, mean 5.61 mg/L
  - turbidity range 1-3.48 FNU, mean 2.36 FNU

Pond 5 (Reference) Monitoring (continued).

- 2024 (Harris, 2024)
  - In a normal water year, Pond 5 was inundated from the first recorded monitoring in December through July. The maximum inundation was area was 4.8 acres. Water quality was within normal ranges. Slightly acidic to slightly basic pH values were observed. Temperature was within normal averages for Fort Ord. Turbidity was low. Dissolved oxygen measurements for Pond 5 were omitted due to improper deployment of the dissolved oxygen probe.
  - Inundated December through July, last monitoring event in August
  - Inundation range 0.3-4.8 acres, mean 3.2 acres
  - Depth range 6-62 cm, mean 38.5 cm
  - pH range 6.6-7.6, mean 6.8
  - Temperature range 13°-18.4° C, mean 15.6° C
  - Turbidity range 6.7-73.7 FNU, mean 25.9 FNU
- 2025 (Harris, 2025)
  - In a below-normal water year, Pond 5 was inundated from late February through April. The maximum inundation was area was 2.5 acres. Water quality was within normal ranges. Slightly basic pH values were observed. Temperature was within normal averages for Fort Ord. Turbidity was within normal averages. Dissolved oxygen measurements were slightly high to slightly low.
  - Inundated February through April, last monitoring event in May
  - Inundation range 1.0-2.5 acres, mean 1.5 acres
  - Depth range 11-22 cm, mean 15 cm
  - pH range 6.8-7.6, mean 7.1
  - Temperature range 13.7°-18.4° C, mean 15.5° C
  - Turbidity range 7.5-21.6 FNU, mean 13.2 FNU

F-2. Pond 101EE (Reference) historical hydrology results on former Fort Ord 2001 – 2025.

Water Year	Date	pH	Temperature (C)	Dissolved Oxygen (mg/L)	Turbidity (FNU)	Max Depth (cm)	Inundated Surface Area (acres)
2001	2001-02-12	NS	NS	NS	NS	35.56	1.467
	2001-03-26	6.3	NS	NS	NS	45.72	1.26
	2001-04-18	6.81	NS	NS	NS	5.08	NS
	2001-05-23	-	-	-	-	0.00	0
	2001-06-01	-	-	-	-	0.00	0
2007	2007-01-23	-	-	-	-	0.00	0
	2007-03-06	7.61	NS	NS	NS	20.00	0.324
2013	2012-11-26	-	-	-	-	0.00	0
	2012-12-19	-	-	-	-	0.00	0
	2013-01-22	NS	NS	NS	NS	11.00	0.075
	2013-02-25	-	-	-	-	0.00	0
	2013-03-15	-	-	-	-	0.00	0
	2013-04-12	-	-	-	-	0.00	-
	2013-05-10	-	-	-	-	0.00	-
2014	2013-12-11	-	-	-	-	0.00	0
	2014-02-18	-	-	-	-	0.00	0
	2014-03-17	-	-	-	-	0.00	0
	2014-04-07	-	-	-	-	0.00	0
	2014-05-06	-	-	-	-	0.00	0
	2014-06-03	-	-	-	-	0.00	0
2015	2015-03-18	-	-	-	-	0.00	0
	2015-04-16	-	-	-	-	0.00	0
	2015-05-28	-	-	-	-	0.00	0
2016	2016-04-05	6.44	17.09	7.93	138	68.00	3.244
	2016-04-18	6.38	22.72	6.5	112	68.00	3.132
	2016-04-21	7.07	22.97	6.92	106	55.00	2.765
	2016-05-09	7.07	22.97	6.92	106	55.00	2.765
	2016-05-10	6.49	22.63	4.36	553	32.00	1.226
	2016-06-08	6.49	22.63	4.36	553	32.00	1.226
	2016-07-07	-	-	-	-	0.00	0

F-2 (continued). Pond 101EE (Reference) historical hydrology results on former Fort Ord 2001 – 2025.

Water Year	Date	pH	Temperature (C)	Dissolved Oxygen (mg/L)	Turbidity (FNU)	Max Depth (cm)	Inundated Surface Area (acres)
017	2017-01-24	5.5	9.99	1.95	1.9	155.00	5.02
	2017-02-27	6.23	12.15	3.68	21.8	160.00	9.37
	2017-03-20	6.23	15.33	1.07	39.2	160.00	8.89
	2017-04-20	6.49	17.33	0	43.2	160.00	9.38
	2017-05-25	6.89	19.03	2.38	4	160.00	6.523
	2017-06-21	6.91	20.06	3.58	10.7	150.00	5.566
	2017-07-27	NS	NS	NS	NS	100.00	NS
	2017-08-16	NS	NS	NS	NS	95.00	NS
2018	2018-01-19	6.82	11.92	0.21	63	44.00	2.0915
	2018-02-23	6.8	10.94	4.45	114	48.00	1.4411
	2018-03-21	6.97	12.62	3.35	40.8	40.00	1.8605
	2018-04-17	7.12	21.88	10.03	99.4	40.00	1.6709
	2018-05-22	6.42	13.55	15.25	1000	14.00	0.0387
	2018-06-19	-	-	-	-	0.00	0
2019	2018-12-12	-	-	-	-	0.00	0
	2019-01-14	-	-	-	-	0.00	0
	2019-02-14	6.88	14.36	8.94	10.4	47.00	2.2104
	2019-03-07	6.51	14.08	5.48	9.7	56.00	2.7552
	2019-04-04	6.8	14.15	5.63	6.1	53.00	2.5143
	2019-05-09	6.38	16.26	3.09	13	34.00	1.144
	2019-06-06	7.13	21.92	5.48	79.8	26.00	0.3847
	2019-07-09	-	-	-	-	0.00	0

F-2 (continued). Pond 101EE (Reference) historical hydrology results on former Fort Ord 2001 – 2025.

Water Year	Date	pH	Temperature (C)	Dissolved Oxygen (mg/L)	Turbidity (FNU)	Max Depth (cm)	Inundated Surface Area (acres)
2020	2019-12-04	NS	NS	NS	NS	13.00	NS
	2019-12-13	-	-	-	-	0.00	0
	2019-12-20	-	-	-	-	0.00	0
	2019-12-23	-	-	-	-	0.00	0
	2019-12-31	6.84	13.3	9.98	5.46	12.00	0.0715
	2020-01-06	NS	NS	NS	NS	11.00	NS
	2020-01-30	6.68	14.6	23.33	28.16	12.00	0.1752
	2020-02-19	NS	NS	NS	NS	8.00	NS
	2020-02-27	NS	NS	NS	NS	1.00	0.0032
	2020-03-11	-	-	-	-	0.00	0
	2020-03-20	NS	NS	NS	NS	26.00	0.6504
	2020-03-30	6.36	16.2	3.28	3.31	34.00	1.6103
	2020-04-17	NS	NS	NS	NS	37.00	NS
	2020-04-28	6.56	23.1	2.24	4.72	29.00	1.0074
	2020-05-19	NS	NS	NS	NS	4.00	NS
	2020-05-26	-	-	-	-	0.00	0
2021	2021-01-07	-	-	-	-	0.00	0
	2021-02-01	-	-	-	-	0.00	0
	2021-02-12	-	-	-	-	0.00	0
	2021-03-29	-	-	-	-	0.00	0
2022	2021-10-28	-	-	-	-	0.00	0
	2021-12-15	-	-	-	-	0.00	-
	2022-01-14	6.9	10.7	14.27	6.58	19.00	0.2873
	2022-02-01	NS	NS	NS	NS	2.00	NS
	2022-02-17	-	-	-	-	0.00	-
	2022-03-02	-	-	-	-	0.00	-
2023	2022-12-12	NS	NS	NS	NS	16.00	NS
	2023-01-18	6.68	10.06	7.17	3.91	50.00	2.8555
	2023-02-17	6.52	6.5	4.61	2.8	48.00	2.6451
	2023-04-05	6.76	14.3	4.05	2.83	142.00	8.2233
	2023-04-27	6.95	18.2	3.08	3.59	131.00	5.9252
	2023-05-11	6.74	16.9	2.12	5.23	125.00	5.6507
	2023-06-16	NS	NS	NS	NS	97.00	NS

F-2 (continued). Pond 101EE (Reference) historical hydrology results on former Fort Ord 2001 – 2025.

Water Year	Date	pH	Temperature (C)	Dissolved Oxygen (mg/L)	Turbidity (FNU)	Max Depth (cm)	Inundated Surface Area (acres)
2024	2023-12-15	-	-	-	-	0.00	0
	2024-01-23	7.14	15.9	4.75	62.1	34.00	1.4594
	2024-02-05	NS	NS	NS	NS	47.00	NS
	2024-02-21	7.89	12.53	2.89	52.1	53.00	2.7432
	2024-03-12	7.16	14.84	0.25	39.6	51.00	2.6543
	2024-04-17	6.84	14.91	NS	34.7	49.00	2.571
	2024-05-17	6.28	17.37	NS	33.2	34.00	1.341
	2024-06-14	6.54	21.15	NS	312	8.00	0.0102
	2024-07-12	-	-	-	-	0.00	0
2025	2024-12-06	-	-	-	-	0.00	0
	2025-02-11	-	-	-	-	0.00	0
	2025-02-20	NS	NS	NS	NS	12.00	0.0551
	2025-02-21	6.89	12.54	1.52	13.9	10.00	NS
	2025-02-28	NS	17	5.03	NS	6.00	NS
	2025-03-18	7.47	15.53	8.22	57.6	28.00	0.7477
	2025-04-14	NS	NS	NS	NS	4.00	0.0019
	2025-05-07	-	-	-	-	0.00	0

NS = Not Surveyed

Pond 101 East (East) was monitored 15 years between 2001 and 2025. Pond 101 East (East) is a reference vernal pool and no remediation has occurred. The historic data and precipitation are summarized below:

- 2001 (Harding ESE, 2002)
  - In a year with early storms followed by below normal precipitation, Pond 101 East (East) was recorded as inundated from February through May with a maximum inundation of 1.47 acres. The water quality results indicate a slightly acidic to neutral pH.
  - Early storms with cumulative precipitation below normal (15.52 inches)
  - Data collected in January-May, five monitoring events
  - Inundated for all monitoring events
  - Inundation range 0.24-1.61 acres, mean 0.92 acres
  - Depth range 2-18 cm, mean 11.3 cm
  - Water quality data was collected twice, pH 6.3-6.81, mean 6.56
- 2007 (Shaw, 2008)
  - In a below normal water-year, Pond 101 East (East) was inundated only in the month of March. The water quality results indicated a slightly alkaline pH.
  - Cumulative precipitation was below normal (10.13 inches)
  - Data collected from December-June, 6 monitoring events
  - Inundated only in March to 0.32 acres and 20 cm depth
  - Inundation area was not recorded
  - pH 7.61
- 2013 (Tetra Tech, 2014)
  - In a 0 consecutive drought year with below normal cumulative precipitation, Pond 101 East (East) is thought to have held water briefly in January. It is unconfirmed if the brief inundation was at Pond 101 East (West) or 101 East (East) since the data were documented under Pond 101 East, with no further signification of East or West.
  - Consecutive drought year with cumulative precipitation below normal (11.17 inches)
  - Data collected November-May, seven monitoring events
  - Inundated in January, 0.08 acres
  - Depth 11 cm in January
  - No water quality data collected
- 2014 (Tetra Tech, 2015)
  - In a 0 consecutive drought year with below normal cumulative precipitation, Pond 101 East (East) did not hold water the entire year.
  - Consecutive drought year with cumulative precipitation below normal (9.33 inches)
  - Data collected December-June, six monitoring events
  - 0 in all monitoring events
  - No water quality data collected
- 2015 (Burleson, 2016)
  - In a 0 consecutive drought year with below normal cumulative precipitation, Pond 101 East (East) did not hold water.
  - Consecutive drought year with early storms above normal and cumulative precipitation slightly below normal (14.35 inches)
  - Data collected March to May, three monitoring events
  - 0 in all monitoring events
  - No water quality data collected

Pond 101 East (East) (Reference) Monitoring (continued).

- 2016 (Burleson, 2017)
  - In a consecutive drought year with cumulative precipitation above normal, Pond 101 East (East) held water from April-June. Water quality results indicated a slightly acidic to neutral pH, normal temperatures, moderate to high dissolved oxygen and moderate turbidity. It should be noted that data collection did not start with the first storms or inundation. Maximum inundation could have been missed.
  - Drought year with cumulative precipitation above normal (21.21 inches)
  - Data collected April-July, five monitoring events
  - Inundated from April-June
  - Inundation range 1.23-3.24 acres, mean 2.59 acres
  - Depth range 32-68 cm, mean 56 cm
  - pH range 6.38-7.07, mean 6.60
  - temperature range 17.1°-23.0° C, mean 21.4° C
  - dissolved oxygen range 4.36-7.93 mg/L, mean 6.43 mg/L
  - turbidity range 106-553 FNU, mean 227 FNU
- 2017 (Burleson, 2018)
  - After the end of a Historical drought with precipitation above normal, Pond 101 East (East) was inundated from the first recorded monitoring in January through September (Pond 101EE did not 0 at last recorded monitoring in September). The maximum inundation area was 9.374 acres (101EE was connected to 101EW). Water quality was within normal ranges. Slightly acidic pH values were observed. Temperature was within normal averages for Fort Ord. Dissolved oxygen had a small
  - range, with moderate levels. Turbidity had a large range, with moderate levels.
  - Yearly cumulative precipitation 22.92 inches
  - Data collected January - September, nine monitoring events
  - Inundated January through September (pond did not 0 by last recorded monitoring in September)
  - Inundation range 5.02-9.40 acres, mean 7.46 acres (pond was connected to 101 East (West) for range and mean values)
  - Depth range 77-~160 cm, mean 135 cm
  - pH range 5.5-6.91, mean 6.38
  - temperature range 10.0°-20.1° C, mean 15.7° C
  - dissolved oxygen range 0.0-3.68 mg/L, mean 2.11 mg/L
  - turbidity range 1.9-43.2 FNU, mean 20.13 FNU
- 2018 (Burleson, 2019)
  - In a below normal water-year, Pond 101 East (East) was inundated from the first recorded monitoring in January through May. The maximum inundation area was 2.09 acres. Water quality was within normal ranges. Neutral to slightly acidic pH values were observed. Temperature was within normal averages for Fort Ord. Dissolved oxygen had a large range. Turbidity had a large range, with an out-of-range reading in May.
  - Yearly cumulative precipitation 12.57 inches
  - Data collected November - June, seven monitoring events
  - Inundated January through May
  - Inundation range 0.04-2.09 acres, mean 1.42 acres
  - Depth range 14-48 cm, mean 38 cm
  - pH range 6.42-7.12, mean 6.83
  - temperature range 10.94°-21.88° C, mean 14.18° C
  - dissolved oxygen range 0.21-15.25 mg/L, mean 6.66 mg/L
  - turbidity range 40.8-1000 FNU, mean 263.44 FNU

Pond 101 East (East) (Reference) Monitoring (continued).

- 2019 (Burleson, 2020)
  - In an above normal water-year, Pond 101 East (East) was inundated from the second recorded monitoring in February through June. The maximum inundation area was 2.76 acres. Water quality was within normal ranges. Neutral to slightly acidic pH values were observed. Temperature was within normal averages for Fort Ord. Dissolved oxygen had a small range with moderate levels. Turbidity had a large range with moderate levels.
  - Yearly cumulative precipitation 21.97 inches
  - Data collected January - July, seven monitoring events
  - Inundated February through June
  - Inundation range 0.38-2.76 acres, mean 1.80 acres
  - Depth range 26-56 cm, mean 43 cm
  - pH range 6.38-7.13, mean 6.74
  - temperature range 14.08°-21.92° C, mean 16.15° C
  - dissolved oxygen range 3.09-8.94 mg/L, mean 5.72 mg/L
  - turbidity range 6.1-79.8 FNU, mean 23.8 FNU
- 2020 (Chenega, 2021)
  - In a close to normal water year, Pond 101 East (East) was inundated intermittently from the first recorded monitoring in December through May. The maximum inundation area was 1.61 acres. Water quality was generally within historical ranges. Slightly acidic pH values were observed. Temperature was within normal averages for Fort Ord. Dissolved oxygen in January was highest on record, but otherwise within the historical range.
    Turbidity values were within the historical range.
  - Yearly cumulative precipitation 18.08 inches
  - Data collected December - May, 15 monitoring events
  - Inundated intermittently from December through May, dried out three times
  - Inundation range 0-1.61 acres, mean 0.32 acres
  - Depth range 0-37 cm, mean 11.69 cm
  - pH range 6.33-6.87, mean 6.61
  - temperature range 13.3°-23.1° C, mean 16.8° C
  - dissolved oxygen range 2.24-23.33 mg/L, mean 9.707 mg/L
  - turbidity range 3.31-28.16 FNU, mean 10.11 FNU
- 2021 (Chenega, 2022)
  - In a year of lowest cumulative precipitation of 7.57 inches in last 30 years, Pond 101 East (East) did not fill
  - Data collected Jan-March, four monitoring events
- 2022 (Chenega, 2023)
  - In consecutive below normal water year, Pond 101 East (East) was briefly inundated from mid-December to beginning of March
  - Yearly cumulative precipitation of 11.69 inches
  - Data collected October - March, 6 monitoring events
  - Inundated January through February
  - Inundation range 0-0.29 acres, mean 0.1 acres
  - Depth range 0-19 cm, mean 5.25 cm
  - pH single reading of 6.9
  - temperature single reading of 10.7° C
  - dissolved oxygen single reading of 14.27 mg/L
  - turbidity single reading of 6.58 FNU

Pond 101 East (East) (Reference) Monitoring (continued).

- 2023 (Chenega, 2024)
  - In a well above normal water-year, Pond 101 East (East) was inundated from the first recorded monitoring in December through the last monitoring event in June, when it still held water. The maximum inundation area was 8.22 acres, when it was hydrologically connected to Pond 101 East (West). Water quality was within normal ranges. Neutral to slightly acidic pH values were observed. Temperature was within normal averages for Fort Ord. Dissolved oxygen had a narrow range with moderate levels. Turbidity values stayed low during monitoring events.
  - Yearly cumulative precipitation 27.22 inches (from Oct 1st to June 30th)
  - Data collected December - June, seven monitoring events
  - Inundated December through June, when the last monitoring event occurred
  - Inundation range 2.64-8.22 acres, mean 5.06 acres
  - Depth range 16-142 cm, mean 87 cm
  - pH range 6.52-6.95, mean 6.73
  - temperature range 6.5°-18.2° C, mean 13.19° C
  - dissolved oxygen range 2.12-7.17 mg/L, mean 4.21 mg/L
  - turbidity range 2.8 – 5.23 FNU, mean 3.67 FNU
- 2024 (Harris, 2024)
  - In a normal water year, Pond 101EE was inundated from the second recorded monitoring in January through June. The maximum inundation was area was 2.7 acres. Water quality was within normal ranges. Slightly acidic to slightly basic pH values were observed. Temperature was within normal averages for Fort Ord. Turbidity was moderate. Dissolved oxygen measurements of 0.0 mg/L for Pond 101EE were omitted due to improper deployment of the dissolved oxygen probe.
  - Inundated December through June, last monitoring event in July
  - Inundation range 0.01-2.7 acres, mean 1.8 acres
  - Depth range 8-53 cm, mean 39.4 cm
  - Dissolved oxygen range 0.3-4.8 mg/L DO, mean 2.6 mg/L DO
  - pH range 6.3-7.9, mean 7.0
  - Temperature range 12.5°-21.2° C, mean 16.1° C
  - Turbidity range 33.2-312 FNU, mean 89.0 FNU
- 2025 (Harris, 2025)
  - In a below-normal water year, Pond 101EE was inundated from the third recorded monitoring in February through April. The maximum inundation was area was 0.7 acres. Water quality was within normal ranges. Slightly basic pH values were observed. Temperature was within normal averages for Fort Ord. Turbidity was moderate. Dissolved oxygen measurements were within normal ranges.
  - Inundated February through April, last monitoring event in May
  - Inundation range 0.001-0.7 acres, mean 0.3 acres
  - Depth range 4-28 cm, mean 12 cm
  - Dissolved oxygen range 1.5-8.2 mg/L DO, mean 4.9 mg/L DO
  - pH range 7.2-7.5, mean 7.2
  - Temperature range 12.5°-17° C, mean 15° C
  - Turbidity range 13.9-57.6 FNU, mean 35.8 FNU

F-3. Pond 997 (Reference) historical hydrology results on former Fort Ord 2017 – 2025.

Water Year	Date	pH	Temperature (C)	Dissolved Oxygen (mg/L)	Turbidity (FNU)	Max Depth (cm)	Inundated Surface Area (acres)
2017	2017-01-25	6.4	10.22	7.17	25.6	13	0.3311
	2017-02-27	6.78	16.94	12.2	14.1	15	0.234
	2017-03-23	6.43	12.99	7.88	72.4	12	0.101
	2017-04-19	7.07	25.4	7.14	25.5	6	0.02
	2017-05-24	-	-	-	-	0	0
2018	2018-01-19	-	-	-	-	0	0
	2018-02-23	-	-	-	-	0	0
	2018-03-20	-	-	-	-	0	0
	2018-04-18	-	-	-	-	0	0
2019	2018-12-12	-	-	-	-	0	0
	2019-01-14	-	-	-	-	0	0
	2019-02-13	6.39	11.79	10.62	26	13	0.1093
	2019-03-05	6.37	12.61	9.28	24.2	14	0.1245
	2019-04-09	NS	NS	NS	NS	2	0.0275
	2019-05-09	-	-	-	-	0	0
	2019-07-09	-	-	-	-	0	0
2020	2019-12-04	-	-	-	-	0	0
	2019-12-20	-	-	-	-	0	0
	2019-12-23	-	-	-	-	0	0
	2020-01-06	-	-	-	-	0	0
	2020-01-30	-	-	-	-	0	0
	2020-03-20	-	-	-	-	0	0
	2020-03-27	6.06	19.6	8.44	49.45	7	0.0507
	2020-04-17	NS	NS	NS	NS	6	NS
	2020-04-28	-	-	-	-	0	0
2021	2021-01-07	-	-	-	-	0	0
	2021-02-01	-	-	-	-	0	0
	2021-03-29	-	-	-	-	0	0
	2021-04-05	-	-	-	-	0	0
2022	2021-10-28	-	-	-	-	0	0
	2021-12-17	-	-	-	-	0	0
	2022-03-02	-	-	-	-	0	-

F-3 (continued). Pond 997 (Reference) historical hydrology results on former Fort Ord 2017 – 2025.

Water Year	Date	pH	Temperature (C)	Dissolved Oxygen (mg/L)	Turbidity (FNU)	Max Depth (cm)	Inundated Surface Area (acres)
2023	2022-12-12	-	-	-	-	0	0
	2023-01-20	6.16	9.2	10.56	3.03	19	0.4414
	2023-02-17	6.6	13.4	12.58	5.3	15	0.1101
	2023-04-05	6.57	22.8	12.25	7.63	16	0.5843
	2023-04-27	-	-	-	-	0	0
2024	2023-12-15	-	-	-	-	0	0
	2024-01-23	-	-	-	-	0	0
	2024-02-05	NS	NS	NS	NS	21	NS
	2024-02-21	8.23	19.5	6.33	15.1	18	0.3235
	2024-03-12	6.81	15.05	4.77	22.2	8	0.0706
	2024-04-17	NS	NS	NS	NS	6	0.0159
	2024-05-17	-	-	-	-	0	0
2025	2024-12-06	-	-	-	-	0	0
	2025-02-11	-	-	-	-	0	0
	2025-02-20	-	-	-	-	0	0
	2025-03-18	7.5	18.94	7.05	277	14	0.0901
	2025-04-14	-	-	-	-	0	0

NS = Not Surveyed

Pond 997 was monitored nine years between 2017 and 2025. Pond 997 is a reference vernal pool and no remediation has occurred. The historic data and precipitation are summarized below:

- 2017 (Burleson, 2018)
  - After the end of a Historical drought with precipitation above normal, Pond 997 was inundated from the first recorded monitoring in January through April. The maximum inundation area was 0.33 acres. Water quality was within normal ranges. Slightly acidic pH values were observed. Temperature was within normal averages for Fort Ord.
    Dissolved oxygen had a small range, with moderate levels. Turbidity had a large range, with moderate levels.
  - Yearly cumulative precipitation 22.92 inches
  - Data collected January - May, five monitoring events
  - Inundated January through April
  - Inundation range 0.02-0.33 acres, mean 0.17 acres
  - Depth range 6-15 cm, mean 12 cm
  - pH range 6.40-7.07, mean 6.67
  - temperature range 10.2°-25.4° C, mean 16.4° C
  - dissolved oxygen range 7.14-12.20 mg/L, mean 8.60 mg/L
  - turbidity range 14.1-72.4 FNU, mean 34.4 FNU
- 2018 (Burleson, 2019)
  - In a below normal water-year, Pond 997 did not hold water.
  - Yearly cumulative precipitation 12.57 inches
  - Data collected January - April, four monitoring events
  - 0 in all monitoring events
  - No water quality data collected
- 2019 (Burleson, 2020)
  - In an above normal water-year, Pond 997 was inundated from the second recorded monitoring in February through April. The maximum inundation area was 0.12 acres. Water quality was within normal ranges. Water quality data were collected in February and March. Slightly acidic pH values were observed. Temperature was within normal averages for Fort Ord. Dissolved oxygen had a small range, with moderate levels.
    Turbidity had a small range, with moderate levels.
  - Yearly cumulative precipitation 21.97 inches
  - Data collected January through May, five monitoring events
  - Inundated February through April
  - Inundation range 0.03-0.12 acres, mean 0.09 acres
  - Depth range 2-14 cm, mean 10 cm
  - pH range 6.37-6.39, mean 6.38
  - temperature range 11.79°-12.61° C, mean 12.20° C
  - dissolved oxygen range 9.28-10.62 mg/L, mean 9.95 mg/L
  - turbidity range 24.2-26.0 FNU, mean 25.1 FNU

Pond 997 (Reference) Monitoring (continued).

- 2020 (Chenega, 2021)
  - In a close to normal water year, Pond 997 was inundated from late March through mid- April. The maximum inundation area was 0.05 acres. Water quality was measured only once but it was within Historical ranges. Slightly acidic pH value was observed.
  - Yearly cumulative precipitation 18.08 inches
  - Data collected December - April, nine monitoring events
  - Inundated from late March through mid-April
  - Inundation range 0-05 acres, mean 0.05 acres
  - Depth range 0-7 cm, mean 1.44 cm
  - pH value of 6.06
  - temperature value of 19.6
  - dissolved oxygen value of 8.44
  - turbidity value of 49.45
- 2021 (Chenega, 2022)
  - In a year of lowest cumulative precipitation of 7.57 inches in last 30 years, Pond 997 did not fill
  - Data collected Jan-April, four monitoring events
  - 2022 (Chenega, 2023)
  - In consecutive below normal water year, Pond 997 did not fill
  - Yearly cumulative precipitation of 11.69 inches
  - Data collected October - March, 3 monitoring events
- 2023
  - In a well above normal water-year, Pond 997 was inundated from the second recorded monitoring event in January to April. The maximum inundation area was 0.58 acres.
    Water quality was within normal ranges. Water quality data were collected in January, February and March. Slightly acidic pH values were observed. Temperature was within normal averages for Fort Ord. Dissolved oxygen had a small range, with moderate levels. Turbidity had a small range, with low levels.
  - Yearly cumulative precipitation 27.22 inches (from Oct 1st to June 30th)
  - Data collected December through April, five monitoring events
  - Inundated January to April
  - Inundation range 0.11-0.58 acres, mean 0.38 acres
  - Depth range 15-19 cm, mean 16.67 cm
  - pH range 6.16-6.57, mean 6.44
  - temperature range 9.2°-22.8° C, mean 15.13° C
  - dissolved oxygen range 10.56-12.58 mg/L, mean 11.8 mg/L
  - turbidity range 3.03-7.63 FNU, mean 5.32 FNU
- 2024 (Harris, 2024)
  - In a normal water year, Pond 997 was inundated from the third recorded monitoring in February through April. The maximum inundation was area was 0.3 acres. Water quality was within normal ranges. Slightly acidic to slightly basic pH values were observed. Temperature was within normal averages for Fort Ord. Turbidity was low.
  - Inundated February through April, last monitoring event in May
  - Inundation range 0.02-0.3 acres, mean 0.14 acres
  - Depth range 6-21 cm, mean 13.3 cm
  - Dissolved oxygen range 4.8-6.3 mg/L DO, mean 5.6 mg/L DO
  - pH range 6.8-8.2, mean 7.5
  - Temperature range 15°-19.5° C, mean 17.3° C
  - Turbidity range 15.1-22.2 FNU, mean 18.7 FNU

Pond 997 (Reference) Monitoring (continued).

- 2025 (Harris, 2025)
  - In a below-normal water year, Pond 997 was inundated only during the fourth recorded monitoring in March. The inundation area was 0.09 acres. Water quality was mostly within normal ranges. Slightly basic pH values were observed. Temperature was within normal averages for Fort Ord. Turbidity was high.
  - Inundated only in March, last monitoring event in April
  - Inundation of 0.09 acres
  - Depth of 14 cm
  - Dissolved oxygen value of 7.1 mg/L DO
  - pH value of 7.5
  - Temperature value of 18.9° C
  - Turbidity value of 277 FNU

Table F-4. Pond 21 (Year 3 Post-Mastication and Post-Subsurface Munitions Remediation) historical hydrology results on former Fort Ord 1999 – 2025.

Water Year	Date	pH	Temperature (C)	Dissolved Oxygen (mg/L)	Turbidity (FNU)	Max Depth (cm)	Inundated Surface Area (acres)
1999	1999-01-12	6.8	NS	NS	NS	22.86	0.29
	1999-02-16	NS	NS	NS	NS	35.56	NS
	1999-03-25	5.7	NS	NS	NS	35.56	NS
	1999-04-20	8.15	NS	NS	NS	35.56	NS
2007	2006-12-01	-	-	-	-	0.00	-
	2007-01-23	-	-	-	-	0.00	-
	2007-03-06	-	-	-	-	0.00	-
2009	2009-03-12	NS	NS	NS	NS	12.70	NS
	2009-04-02	NS	NS	NS	NS	5.08	NS
	2009-04-22	-	-	-	-	0.00	-
2019	2018-12-12	-	-	-	-	0.00	0
	2019-01-17	NS	NS	NS	NS	2.00	0.0053
	2019-02-12	6.51	10.42	8.6	16.8	16.00	0.8319
	2019-03-05	6.39	13.6	8.83	41.1	19.00	0.8634
	2019-04-02	6.66	13.2	7.36	30.6	14.00	0.806
	2019-05-06	-	-	-	-	0.00	0
	2019-07-09	-	-	-	-	0.00	0
2022	2022-01-12	-	-	-	-	0.00	0
2023	2022-12-14	-	-	-	-	0.00	0
	2023-01-12	6.44	12.8	6.44	8.48	14.00	0.8313
	2023-02-15	6.56	10.7	11.34	36.23	11.00	0.8153
	2023-03-30	6.22	10.8	8.21	62.26	35.00	0.9961
	2023-04-28	6.63	22.4	10.24	101.53	26.00	0.9342
	2023-05-12	5.93	15.5	7.06	55.06	22.00	0.8935
	2023-06-09	NS	NS	NS	NS	8.00	0.7156
2024	2023-12-19	-	-	-	-	0.00	0
	2024-01-23	-	-	-	-	0.00	0
	2024-02-05	NS	NS	NS	NS	13.00	NS
	2024-02-21	7.37	12.89	4.21	8.4	15.00	0.806
	2024-03-13	6.48	11.47	3.77	1.6	12.00	0.795
	2024-04-18	6.81	19.02	7.53	86.9	10.00	0.7502
	2024-05-16	-	-	-	-	0.00	0

Table F-4 (continued). Pond 21 (Year 3 Post-Mastication and Post-Subsurface Munitions Remediation) historical hydrology results on former Fort Ord 1999 – 2025.

Water Year	Date	pH	Temperature (C)	Dissolved Oxygen (mg/L)	Turbidity (FNU)	Max Depth (cm)	Inundated Surface Area (acres)
2025	2024-12-05	-	-	-	-	0.00	0
	2025-02-11	-	-	-	-	0.00	0
	2025-02-20	-	-	-	-	0.00	0
	2025-03-18	7.26	19.55	7.27	129	6.00	0.6411
	2025-04-14	-	-	-	-	0.00	0

NS = Not Surveyed

Pond 21 was monitored eight years between 1999 and 2025. The historic data and precipitation are summarized below:

- 1992 (Jones & Stokes, 1992)
  - In a year with near-normal precipitation, Pond 21 was surveyed once in March 1992. It should be noted that data collection did not start with the first storms or inundation.
  - Yearly cumulative precipitation near-normal (17.84 inches)
  - Data collected March, one monitoring event
  - Inundated March
  - Depth 20 cm
  - temperature 15˚C
  - pH, turbidity, and dissolved oxygen data were not collected
- 1999 (HLA, 1999)
  - In a year with near-normal precipitation following an El Niño year, Pond 21 held water from January-April. The maximum inundation area was 0.94 acres. Water quality was within normal ranges. Slightly basic to slightly acidic pH values were observed. Turbidity had a small range, with moderate levels. Temperature and dissolved oxygen were not measured.
  - Yearly cumulative precipitation near-normal (16.31 inches)
  - Data collected January-April, four monitoring events
  - Inundated January through April
  - Inundation range 0.29-0.94 acres, mean 0.63 acres
  - Depth range 23-36 cm, mean 32 cm
  - pH range 5.7-8.15, mean 6.88
  - turbidity range 5-24 NTU, mean 11 NTU
  - temperature and dissolved oxygen data were not collected
- 2007 (Shaw, 2008)
  - In a below-normal rain year, Pond 21 did not hold water.
  - Yearly cumulative precipitation 10.13 inches
  - Data collected December to June, six monitoring events
  - Dry in all monitoring events
  - No water quality data collected
- 2019 (Burleson, 2020)
  - In an above-normal water-year, Pond 21 was inundated from the first recorded monitoring in January through April. The maximum inundation area was 0.86 acres. Water quality was within normal ranges. Slightly acidic pH values were observed.
    Temperature was within normal averages for Fort Ord. Dissolved oxygen had a small range. Turbidity had a small range, with moderate levels.
  - Yearly cumulative precipitation 21.97 inches
  - Data collected January - May, six monitoring events
  - Inundated January through April
  - Inundation range 0.01-0.86 acres, mean 0.63 acres
  - Depth range 2-19 cm, mean 13 cm
  - pH range 6.39-6.66, mean 6.52
  - temperature range 10.42°-13.60° C, mean 12.41° C
  - dissolved oxygen range 7.36-8.83 mg/L, mean 8.26 mg/L
  - turbidity range 16.8-41.1 FNU, mean 29.5 FNU
- 2022 (unreported data)
  - In a consecutive drought year, Pond 21 was surveyed once opportunistically in January.
    There was no noticeable ponding, but the soil near the staff gauge was wet.
  - Yearly cumulative precipitation of 11.69 inches

Pond 21 (Year 3 Post-Mastication and Post-Subsurface Munitions Remediation) Monitoring (continued).

- 2023
  - In a well above-normal water-year, Pond 21 was inundated from the second monitoring event in January through May. The maximum inundation area was 1 acre. Water quality was within normal ranges. Acidic pH values were observed. Temperature was within normal averages for Fort Ord. Dissolved oxygen had a narrow range. Turbidity had a moderate range, with moderate levels.
- 2024 (Harris, 2024)
  - In a normal water year, Pond 21 was inundated from the third recorded monitoring in February through April. The maximum inundation was area was 0.8 acres. Water quality was within normal ranges. Slightly acidic to slightly basic pH values were observed. Temperature was within normal averages for Fort Ord. Turbidity was low.
  - Inundated February through April, last monitoring event in May
  - Inundation range 0.75-0.81 acres, mean 0.78 acres
  - Depth range 10-15 cm, mean 12.5 cm
  - Dissolved oxygen range 4.2-7.5 mg/L DO, mean 5.2 mg/L DO
  - pH range 6.8-7.4, mean 6.9
  - Temperature range 11.5°-19.0° C, mean 14.5° C
  - Turbidity range 1.6-86.9 FNU, mean 32.3 FNU
- 2025 (Harris, 2025)
  - In a below-normal water year, Pond 21 was inundated only during the fourth recorded monitoring in March. The inundation area was 0.6 acres. Water quality was mostly within normal ranges. Slightly basic pH values were observed. Temperature was slightly above normal averages for Fort Ord. Turbidity was high.
  - Inundated only in March, last monitoring event in April
  - Inundation of 0.6 acres
  - Depth of 6 cm
  - Dissolved oxygen value of 7.3 mg/L DO
  - pH value of 7.3
  - Temperature value of 19.6° C
  - Turbidity value of 129 FNU

F-5. Pond 76 (Year 3 Post-Mastication and Year 2 Post-Subsurface Munitions Remediation) historical hydrology results on Former Fort Ord 2023 – 2025.

Water Year	Date	pH	Temperature (C)	Dissolved Oxygen (mg/L)	Turbidity (FNU)	Max Depth (cm)	Inundated Surface Area (acres)
2023	2023-01-12	5.95	12.2	7.51	86.45	10	NS
	2023-02-15	7.13	6.9	9.96	27.09	15	0.1049
	2023-03-30	6.67	9.9	4.37	71.39	30	0.221
	2023-04-28	6.77	18	6.7	22.16	25	0.1807
	2023-06-09	-	-	-	-	0	0
2024	2023-12-19	-	-	-	-	0	0
	2024-01-23	-	-	-	-	0	0
	2024-02-05	NS	NS	NS	NS	16	NS
	2024-02-21	7.63	11.24	5.63	89.3	19	0.1322
	2024-03-13	7.4	10.48	5.03	59	18	0.129
	2024-04-18	6.95	15.96	4.38	65.5	20	0.128
	2024-05-16	-	-	-	-	0	0
2025	2024-12-05	-	-	-	-	0	0
	2025-02-11	-	-	-	-	0	0
	2025-02-20	-	-	-	-	0	0
	2025-03-18	-	-	-	-	0	0
	2025-04-14	-	-	-	-	0	0

NS = Not Surveyed

Pond 76 was monitored three years between 2023 and 2025 (Year 3 post-mastication and Year 2 post-subsurface munitions remediation; baseline data unavailable). The historic data and precipitation are summarized below:

- 2023 (USACE/Chenega, 2023)
  - In a well above-normal water-year, Pond 76 was inundated from the first monitoring event in January through April. The maximum inundation area was 0.221 acre. Water quality was within normal ranges. Acidic pH values were observed. Temperature was within normal averages for Fort Ord. Dissolved oxygen had a narrow range. Turbidity had a moderate range, with moderate levels.
  - Inundated January through April, last monitoring event in June
  - Inundation range 0.105-0.221 acres, mean 0.169 acres
  - Depth range 15-30 cm, mean 20 cm
  - Dissolved oxygen range 4.4-10 mg/L DO, mean 7.1 mg/L DO
  - pH range 5.95-7.13, mean 6.63
  - Temperature range 6.9°-18° C, mean 11.75° C
  - Turbidity range 22.16-86.45 FNU, mean 51.77 FNU
- 2024 (Harris, 2024)
  - In a normal water year, Pond 76 was inundated from the third recorded monitoring in February through April. The maximum inundation was area was 0.13 acres. Water quality was within normal ranges. Neutral to slightly basic pH values were observed. Temperature was within normal averages for Fort Ord. Turbidity was moderate.
  - Inundated February through April, last monitoring event in May
  - Inundation range 0.128-0.132 acres, mean 0.13 acres
  - Depth range 16-20 cm, mean 18.3 cm
  - Dissolved oxygen range 4.4-5.6 mg/L DO, mean 5 mg/L DO
  - pH range 6.95-7.63, mean 7.3
  - Temperature range 10.5°-16° C, mean 12.6° C
  - Turbidity range 59-89.3 FNU, mean 71.3 FNU
- 2025 (Harris, 2025)
  - In a below-normal rain year, Pond 76 did not hold water.
  - Yearly cumulative precipitation 12.55 inches
  - Data collected December to April, five monitoring events
  - Dry in all monitoring events
  - No water quality data collected

APPENDIX G

Vegetation Species Richness of Native and Non-Native Species and Wetland Indicator Category by Vernal Pool

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Table G-1. Pond 5 (Reference) vegetation species richness of native and non-native species by stratum.

Pond 5			
Stratum	**Native**	**Non-Native**	**Unidentified**
1	2	2	0
2	5	1	0
3	7	9	0
8	10	12	0
Basin Total	40	22	0

Table G-2. Pond 101 East (East) (Reference) vegetation species richness of native and non-native species by stratum.

Pond 101 East (East)			
Stratum	**Native**	**Non-Native**	**Unidentified**
2	2	2	0
3	4	5	0
5	15	12	0
9	6	7	0
Basin Total	42	27	0

Table G-3. Pond 997 (Reference) vegetation species richness of native and non-native species by stratum.

Pond 997			
Stratum	**Native**	**Non-Native**	**Unidentified**
1	17	14	0
3	18	13	0
Basin Total	37	24	1

Table G-4. Pond 21 (Year 3 Post-Mastication and Post-Subsurface Munitions Remediation) vegetation species richness of native and non-native species by stratum.

Pond 21			
Stratum	**Native**	**Non-Native**	**Unidentified**
1	15	6	0
3	6	4	0
4	3	2	0
5	18	9	0
Basin Total	47	18	0

Table G-5. Pond 76 (Year 3 Post-Mastication and Year 2 Post-Subsurface Munitions Remediation) vegetation species richness of native and non-native species by stratum.

Pond 76			
Stratum	**Native**	**Non-Native**	**Unidentified**
1	8	7	0
3	12	9	0
4	9	7	0
Basin Total	31	18	0

Table G-6. Vegetation species richness of native and non-native species within entire vernal pool basin at vernal pools monitored in 2025.

Pond	Native	Non-Native	Unidentified	Total
5	40	22	0	62
101 East (East)	42	27	0	69
997	37	24	1	62
21	47	18	0	65
76	31	18	0	49

Table G-7. Pond 5 (Reference) number of wetland plants by indicator category by stratum.

Pond 5						
Stratum	**OBL**	**FACW**	**FAC**	**FACU**	**UPL**	**NL**
1	2	0	0	1	0	1
2	1	3	0	1	0	1
3	4	5	2	0	1	4
8	3	8	5	2	1	3
Basin Total	12	11	11	10	1	17

Table G-8. Pond 101 East (East) (Reference) number of wetland plants by indicator category by stratum.

Pond 101 East (East)						
Stratum	**OBL**	**FACW**	**FAC**	**FACU**	**UPL**	**NL**
2	1	1	0	1	0	1
3	2	2	0	1	0	4
5	3	8	5	3	2	6
9	3	3	3	1	1	2
Basin Total	9	16	11	10	3	20

Table G-9. Pond 997 (Reference) number of wetland plants by indicator category by stratum.

Pond 997						
Stratum	**OBL**	**FACW**	**FAC**	**FACU**	**UPL**	**NL**
1	10	8	4	4	1	4
3	9	6	3	4	1	8
Basin Total	9	14	7	10	1	21

Table G-10. Pond 21 (Year 3 Post-Mastication and Post-Subsurface Munitions Remediation) number of wetland plants by indicator category by stratum.

Pond 21						
Stratum	**OBL**	**FACW**	**FAC**	**FACU**	**UPL**	**NL**
1	6	8	2	2	0	3
3	1	0	4	3	0	2
4	1	2	1	0	0	1
5	7	7	3	3	0	7
Basin Total	9	15	11	8	1	21

Table G-11. Pond 76 (Year 3 Post-Mastication and Year 2 Post-Subsurface Munitions Remediation) number of wetland plants by indicator category by stratum.

Pond 76						
Stratum	**OBL**	**FACW**	**FAC**	**FACU**	**UPL**	**NL**
1	4	4	1	2	0	4
3	4	5	3	2	0	7
4	2	5	3	1	0	5
Basin Total	7	12	6	10	1	13

Table G-12. Wetland plants by indicator category within entire vernal pool basin at vernal pools monitored in 2025.

Number of Wetland Plants Observed at Vernal Pools Monitored in 2025							
Pond	**OBL**	**FACW**	**FAC**	**FACU**	**UPL**	**NL**	**Total**
5	12	11	11	10	1	17	62
101 East (East)	9	16	11	10	3	20	69
997	9	14	7	10	1	21	62
21	9	15	11	8	1	21	65
76	7	12	6	10	1	13	49

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APPENDIX H

Species Composition of Follow-Up Wetland Vegetation Monitoring by Vernal Pool

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Table H-1. Comparison table of percent cover by wetland plant species on transects for 2007, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, and 2025 at Pond 5 (Reference).

Species	Common Name	Species Code	% Cover											Native vs. Non-Native	Wetland Indicator Status
			2007	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025		
Acmispon strigosus	strigose lotus	ACST											0.04	Native	NL
Acmispon americanus var. *americanus*	Spanish lotus	ACAMA				0.1	0.2							Native	NL
Acmispon parviflorus	hill lotus	ACPA					0.1							Native	NL
Acmispon wrangelianus	Chilean trefoil	ACWR					0.1			0.04				Native	NL
Agoseris grandiflora	large-flowered agoseris	AGGR						0.03						Native	NL
Agrostis avenacea	Pacific bent grass	AGAV					0.1	0.07	0.13		1.67	0.04	2.50	Non-Native	NL
Aira caryophyllea	silvery hair-grass	AICA			0.3	0.1			0.07					Non-Native	FACU
Avena barbata	slender wild oat	AVBA									0.07			Non-Native	NL
Baccharis pilularis	coyote brush	BAPI				0.1	0.1		0.07	0.11		0.08		Native	NL
Briza minor	annual quaking grass	BRMI			0.8	0.5	7.2	0.07	0.43	0.37	1.20		0.21	Non-Native	FAC
Bromus diandrus	ripgut grass	BRDI							0.07					Non-Native	NL
Bromus hordeaceus	soft chess	BRHO			0.1				0.10	0.04	0.07			Non-Native	FACU
Castilleja ambigua ssp. *ambigua*	Johnny-Nip	CAAMA3				0.03								Native	FACW
Crassula aquatica	aquatic pygmy-weed	CRAQ									0.07			Native	OBL
Cressa truxillensis	spreading alkaliweed	CRTR		5.7		0.3	0.4	0.40	0.20	1.67		0.08	0.21	Native	FACW
Danthonia californica	California oat grass	DACA			1.2									Native	FAC
Daucus pusillus	rattlesnake weed	DAPU					0.03							Native	NL
Distichlis spicata	salt grass	DISP	9.0	11.4	17.4	14.3	6.1	1.80	6.07	7.30	6.53	3.54	1.96	Native	FACW
Eleocharis acicularis var. *acicularis*	needle spikerush	ELACA				0.2	0.1							Native	OBL
Eleocharis macrostachya	pale spikerush	ELMA	18.9	40.2	12.3	15.1	37.3	19.97	6.97	9.07	26.00	49.54	21.38	Native	OBL
Elymus triticoides	beardless wild rye	ELTR3			0.8	1.3								Native	FAC
Epilobium ciliatum	fringed willowherb	EPCI										1.38		Native	FACW
Erigeron canadensis	horseweed	ERCA				0.3	0.3	0.37	0.07	0.04	1.27	0.25	0.25	Native	FACU
Erodium botrys	long-beaked filaree	ERBO	0.1			0.03			0.13	0.33			0.63	Non-Native	FACU
Erodium sp.	filaree	ER sp.			0.1									-	NL
Eryngium armatum	coyote thistle	ERAR12				0.1								Native	FACW
Euthamia occidentalis	western goldenrod	EUOC										7.71		Native	FACW
Festuca bromoides	brome fescue	FEBR					0.1			0.15	0.07			Non-Native	NL
Festuca myuros	rattail sixweeks grass	FEMY			0.4									Non-Native	FACU
Galium aparine	goose grass	GAAP							0.03					Native	FACU
Galium sp.	bedstraw	GA sp.			0.1									-	NL
Gamochaeta ustulata	purple cudweed	GAUS					0.7			0.15				Native	NL
Geranium dissectum	cut-leaved geranium	GEDI				0.03	0.1	0.30	4.93	4.19			0.50	Non-Native	NL
Gnaphalium palustre	lowland cudweed	GNPA			0.5						2.93	0.33		Native	FACW
Heliotropium curassavicum var. *oculatum*	Chinese pusley	HECUO							0.10			0.21		Native	NL
Helminthotheca echioides	bristly oxtongue	HEEC											0.04	Non-Native	FAC

Table H-1 (continued). Comparison table of percent cover by wetland plant species on transects for 2007, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, and 2025 at Pond 5 (Reference).

Species	Common Name	Species Code	% Cover											Native vs. Non-Native	Wetland Indicator Status
			2007	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025		
Hypochaeris glabra	smooth cat's-ear	HYGL						0.37	1.27	3.48	0.20			Non-Native	NL
Hypochaeris radicata	rough cat's-ear	HYRA				0.1	0.7	0.07		0.30				Non-Native	FACU
Isoetes howellii	Howell's quillwort	ISHO		16.5							8.67			Native	OBL
Isolepis cernua	low bulrush	ISCE			0.3									Native	OBL
Juncus balticus	Baltic rush	JUBA			1.3	1.9	6.4	11.93	7.47	4.56	0.33	9.96	0.13	Native	FACW
Juncus bufonius var. *bufonius*	common toad rush	JUBUB			0.6	0.03	0.1			0.07			0.13	Native	FACW
Juncus bufonius var. *congestus*	clustered toad rush	JUBUC2					0.03							Native	FACW
Juncus phaeocephalus	brown-headed rush	JUPH		0.4	10.9	6.0	1.7	0.67				2.83	0.50	Native	FACW
Juncus sp.	rush	JU sp.	8.3											-	NL
Lysimachia arvensis	scarlet pimpernel	LYAR			0.3	1.7	0.1				0.07		0.13	Non-Native	FAC
Lysimachia minima	chaffweed	LYMI			0.4	0.2	0.1				2.13	0.13	0.13	Native	FACW
Lythrum hyssopifolia	grass poly	LYHY			2.5	0.6	0.6	0.03	0.03	0.11	8.33	0.29	0.29	Non-Native	OBL
Madia gracilis	gumweed	MAGR							0.10	0.04				Native	NL
Madia sativa	coast tarweed	MASA							0.07					Native	NL
Malvella leprosa	alkali mallow	MALE		0.6		0.7	0.5	0.13	0.70	2.30		0.46	0.25	Native	FACU
Nuttallanthus texanus	blue toadflax	NUTE				0.1								Native	NL
Phalaris lemmonii	Lemmon's canary grass	PHLE				0.1		0.93	0.37	2.48	5.13		1.46	Native	FACW
Plagiobothrys chorisianus var. *hickmanii*	Hickman's popcornflower	PLCHH			0.3	0.03	0.07	0.07	0.03	0.07	0.20	0.04	0.25	Native	OBL
Plantago coronopus	cut-leaved plantain	PLCO				0.09						0.08		Non-Native	FAC
Polypogon monspeliensis	rabbitfoot grass	POMO			0.04	3.8	8.6	2.40	0.07	0.15	3.47	1.17	13.33	Non-Native	FACW
Pseudognaphalium luteoalbum	weedy cudweed	PSLU			2.4	0.8	0.3	0.03	0.20		1.07		1.88	Non-Native	FACW
Pseudognaphalium ramosissimum	pink everlasting	PSRA				0.03	0.1		0.13					Native	NL
Pseudognaphalium stramineum	cottonbatting plant	PSST			2.6	1.8	0.3	0.33	0.27		1.07	0.63		Native	FAC
Pseudognaphalium sp.	false cudweed	PS sp.								0.11		0.08		-	NL
Quercus agrifolia	coast live oak	QUAG				0.03								Native	NL
Rumex acetosella	sheep sorrel	RUAC			0.8	0.2	0.9			0.04	1.40	0.04		Non-Native	FACU
Rumex crispus	curly dock	RUCR				0.2	0.2	0.57	0.53	0.30			0.17	Non-Native	FAC
Senecio glomeratus	cutleaf burnweed	SEGL			0.1	0.6	0.9	0.17	0.63	0.37			0.08	Non-Native	NL
Silene gallica	small-flower catchfly	SIGA			0.04	0.1								Non-Native	NL
Solanum americanum	small-flowered nightshade	SOAM			3.2	0.2						0.63		Native	FACU
Sonchus asper	prickly sow thistle	SOAS				0.2	0.3		0.57	0.26				Non-Native	FACU
Sonchus oleraceus	common sow thistle	SOOL				0.2	0.1	0.07	0.67	0.59	0.07		0.17	Non-Native	UPL
Stachys ajugoides	bugle hedge nettle	STAJ		0.3	0.5	2.5	1.5	6.87	6.87	2.56	2.53	0.04	1.58	Native	OBL
Toxicodendron diversilobum	poison oak	TODI				0.03								Native	FAC
Verbena lasiostachys var. lasiostachys	western vervain	VELAL										0.42	0.04	Native	FAC
Vicia sp.	vetch	VI sp.			0.2									-	NL
Zeltnera davyi	Davy's centuary	ZEDA			0.04	0.1								Native	NL
Bare Ground	-	BG			19.4	29.9	9.7	0.87	5.67	3.78	11.93	5.50	8.75	-	-
Thatch	-	TH	63.7	25.2	21.0	15.6	14.3	51.50	55.00	55.00	13.53	14.54	43.0	-	-

Table H-2. Comparison table of percent cover by wetland plant species on transects for 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, and 2025 at Pond 101 East (East)(Reference).

Species	Common Name	Species Code	% Cover										Native vs. Non-Native	Wetland Indicator Status
			2016	2017	2018	2019	2020	2021	2022	2023	2024	2025		
Acmispon americanus var. *americanus*	Spanish lotus	ACAMA			0.03	3.9	2.5						Native	NL
Acmispon parviflorus	hill lotus	ACPA		0.1									Native	NL
Agoseris grandiflora	large-flowered agoseris	AGGR					0.1						Native	NL
Agrostis avenacea	Pacific bent grass	AGAV	0.1			1.2	3.3	1.6	0.4	18.8	9.8	16.5	Non-Native	NL
Agrostis lacuna-vernalis	vernal pool bent grass	AGLAV			0.03	0.1							Native	FACW
Agrostis pallens	seashore bent grass	AGPA			0.4								Native	UPL
Alopecurus saccatus	Pacific foxtail	ALSA	0.2								2.7	4.6	Native	FACW
Avena barbata	slender wild oat	AVBA					0.03				0.0		Non-Native	NL
Azolla filiculoides	fern-like azolla	AZFI									0.1		Native	OBL
Baccharis glutinosa	marsh baccharis	BAGL							0.1				Native	OBL
Baccharis pilularis	coyote brush	BAPI					0.1						Native	NL
Briza minor	annual quaking grass	BRMI			0.1	3.4	0.5		0.1		0.1	0.1	Non-Native	FAC
Bromus diandrus	ripgut grass	BRDI	2.1				0.03		0.4			0.1	Non-Native	NL
Bromus hordeaceus	soft chess	BRHO							0.05		0.0		Non-Native	FACU
Carex praegracilis	clustered field sedge	CAPR		6.7	5.9	2.9	4.2						Native	FACW
Cirsium brevistylum	Indian thistle	CIBR										0.1	Native	NL
Cirsium vulgare	bull thistle	CIVU				0.2	0.03						Non-Native	FACU
Cyperus eragrostis	tall cyperus	CYER		2.0						7.8			Native	FACW
Distichlis spicata	salt grass	DISP		0.2		0.1							Native	FACW
Echinochloa crus-galli	barnyard grass	ECCR								0.1			Non-Native	FAC
Eleocharis acicularis var. *acicularis*	needle spikerush	ELACA			0.3	0.1				7.1	0.0		Native	OBL
Eleocharis macrostachya	pale spikerush	ELMA	27.6		15.1	20.9	11.8	3.2	9.9		23.8	11.1	Native	OBL
Epilobium brachycarpum	tall annual willowherb	EPBR					0.1						Native	NL
Epilobium ciliatum	fringed willowherb	EPCI						0.2	0.1		0.0		Native	FACW
Erigeron canadensis	horseweed	ERCA			0.03	2.7	0.8	0.1	0.1	1.3	0.1	0.4	Native	FACU
Erodium botrys	long-beaked filaree	ERBO		0.3	0.1	0.2	0.3	1.3	2.8	0.3		1.3	Non-Native	FACU
Erodium cicutarium	redstem filaree	ERCI			0.1				0.1				Non-Native	NL
Euthamia occidentalis	western goldenrod	EUOC						1.3	1.2		0.2		Native	FACW
Festuca bromoides	brome fescue	FEBR				0.1	0.2		0.3			0.1	Non-Native	NL
Festuca myuros	rattail sixweeks grass	FEMY					0.3						Non-Native	FACU
Gamochaeta ustulata	purple cudweed	GAUS	1.9		0.1								Native	NL
Geranium dissectum	cut-leaved geranium	GEDI				0.1	1.7	6.2	6.6			1.8	Non-Native	NL
Gnaphalium palustre	lowland cudweed	GNPA		12.7	0.2					17.1	0.3	0.3	Native	FACW
Heliotropium curassavicum var. *oculatum*	Chinese pusley	HECUO		5.8	0.4	0.1	0.5	0.1	0.1	0.1	0.1	0.5	Native	NL
Helminthotheca echioides	bristly oxtongue	HEEC										0.1	Non-Native	FAC
Hypochaeris glabra	smooth cat's-ear	HYGL	0.1			0.2	2.5	0.4	1.7			0.1	Non-Native	NL
Hypochaeris radicata	rough cat's-ear	HYRA				0.1			2.0				Non-Native	FACU
Juncus balticus	Baltic rush	JUBA	12.9	23.3	7.2	8.1	10.0	7.3	4.2	12.9	10.0	0.2	Native	FACW
Juncus bufonius var. *bufonius*	common toad rush	JUBUB		0.7	11.8							0.4	Native	FACW

Table H-2 (continued). Comparison table of percent cover by wetland plant species on transects for 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, and 2025 at Pond 101 East (East)(Reference).

Species	Common Name	Species Code	% Cover										Native vs. Non-Native	Wetland Indicator Status
			2016	2017	2018	2019	2020	2021	2022	2023	2024	2025		
Juncus bufonius var. *occidentalis*	round-fruited toad rush	JUBUO									0.1		Native	FACW
Juncus mexicanus	Mexican rush	JUME	1.3										Native	FACW
Juncus phaeocephalus	brown-headed rush	JUPH				0.2	3.2			2.1		0.5	Native	FACW
Lasthenia glaberrima	smooth goldfields	LAGL3							6.0		2.7	3.5	Native	OBL
Lysimachia arvensis	scarlet pimpernel	LYAR			0.1	0.4	0.03						Non-Native	FAC
Lysimachia minima	chaffweed	LYMI									0.1	0.3	Native	FACW
Lythrum hyssopifolia	grass poly	LYHY	1.4	5.4	2.4	1.0	0.03			3.3	3.4	0.5	Non-Native	OBL
Madia gracilis	gumweed	MAGR					0.3	0.3	0.1			0.1	Native	NL
Madia sativa	coast tarweed	MASA	0.7			0.1	0.8	0.2	1.5				Native	NL
Malvella leprosa	alkali mallow	MALE	7.7		11.0	0.6	5.2	8.4	9.8		3.1	4.1	Native	FACU
Phalaris lemmonii	Lemmon's canary grass	PHLE					0.0		1.8				Native	FACW
Polypogon monspeliensis	rabbitfoot grass	POMO	0.3		1.1	5.0	1.4	0.7	0.3	0.1	10.7	17.5	Non-Native	FACW
Potentilla rivalis	brook cinquefoil	PORI		0.3	0.1								Native	FACW
Pseudognaphalium luteoalbum	weedy cudweed	PSLU	0.5	8.4	1.1	0.8	0.2			4.2	0.3	0.3	Non-Native	FACW
Pseudognaphalium stramineum	cottonbatting plant	PSST		3.9	3.8	0.7	0.9		0.1				Native	FAC
Pseudognaphalium sp.	false cudweed	PS sp.											-	NL
Rorippa curvisiliqua	western yellowcress	ROCU	0.3	0.2	0.1		0.03			0.4			Native	OBL
Rumex acetosella	sheep sorrel	RUAC	1.0	12.9	4.4	10.2	3.2	1.4	1.2	6.0	7.0	1.0	Non-Native	FACU
Rumex conglomeratus	clustered dock	RUCO			0.03								Non-Native	FACW
Rumex crispus	curly dock	RUCR	0.6	0.3	0.1	0.2	1.7	1.4	1.2		0.8	0.5	Non-Native	FAC
Rumex salicifolius	willow dock	RUSA	1.4			0.2	0.8						Native	FACW
Rumex sp.	dock	RU sp.			0.5								-	NL
Senecio glomeratus	cutleaf burnweed	SEGL							0.05				Non-Native	NL
Silene gallica	small-flower catchfly	SIGA				0.1							Non-Native	NL
Sonchus asper	prickly sow thistle	SOAS	0.6			0.2			0.2		0.1		Non-Native	FACU
Sonchus oleraceus	common sow thistle	SOOL				0.1	0.2	0.1			0.1	0.3	Non-Native	UPL
Stachys ajugoides	bugle hedge nettle	STAJ		1.3	1.5	1.9	3.4	3.7	0.5	1.2	0.4	0.7	Native	OBL
Toxicodendron diversilobum	poison oak	TODI							0.1				Native	FAC
Trifolium barbigerum	bearded clover	TRBA					0.03		0.0			0.3	Native	FACW
Trifolium depauperatum	sack clover	TRDE							0.4				Native	FAC
Trifolium depauperatum var. *amplectens*	pale sack clover	TRDEA										0.6	Native	FAC
Trifolium gracilentum	pin point clover	TRGR					0.2		0.3			0.3	Native	NL
Trifolium microcephalum	small head clover	TRMI			0.03	2.5	0.2		0.2			2.5	Native	FAC
Trifolium sp.	clover	TRI sp.			0.1								-	NL
Trifolium variegatum	variegated clover	TRVA				0.2	0.3		0.05			0.3	Native	FAC
Triglochin scilloides	flowering quillwort	TRSC					0.1				0.6		Native	OBL
Unknown 2	-	UNK 2							0.05				-	NL
Unknown herb	-	UNK			0.03								-	NL
Verbena lasiostachys var. *lasiostachys*	western vervain	VELAL		0.3		1.7	0.4		0.05				Native	FAC

Table H-2 (continued). Comparison table of percent cover by wetland plant species on transects for 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, and 2025 at Pond 101 East (East)(Reference).

Species	Common Name	Species Code	% Cover										Native vs. Non-Native	Wetland Indicator Status
			2016	2017	2018	2019	2020	2021	2022	2023	2024	2025		
Veronica peregrina ssp. *xalapensis*	speedwell	VEPEX									0.0		Native	FACW
Vicia sativa	spring vetch	VISA						0.1	1.2			0.3	Non-Native	UPL
Vicia sativa ssp. *nigra*	common vetch	VISAN			0.4	0.8	0.8	0.2					Non-Native	UPL
Vicia sativa ssp. *sativa*	spring vetch	VISAS				1.7	1.1	0.4					Non-Native	UPL
Bare Ground	-	BG	16.0	13.1	22.4	6.3	8.9	5.2	7.1	14.5	7.6	11.5	-	-
Thatch	-	TH	25.0	3.5	10.1	22.3	27.8	56.4	37.3	2.9	15.6	17.2	-	-

Table H-3. Comparison table of percent cover by wetland plant species on transects for 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, and 2025 at Pond 997 (Reference).

Species	Common Name	Species Code	% Cover									Native vs. Non-Native	Wetland Indicator Status
			2017	2018	2019	2020	2021	2022	2023	2024	2025		
Acmispon americanus var. *americanus*	Spanish lotus	ACAMA		0.1	0.3			0.1		0.1		Native	NL
Acmispon parviflorus	hill lotus	ACPA				0.4						Native	NL
Agrostis exarata	spike bent grass	AGEX	3.2									Native	FACW
Agrostis sp.	bent grass	AG sp.	6.1									-	NL
Aira caryophyllea	silvery hair-grass	AICA		0.2	0.7	0.8	0.3	0.7				Non-Native	FACU
Baccharis pilularis	coyote brush	BAPI		0.1	0.1	0.1	0.1	0.1			0.1	Native	NL
Briza maxima	rattlesnake grass	BRMA	0.3	0.5	1.9	3.9	8.6	5.0	11.0	4.4	7.3	Non-Native	NL
Briza minor	annual quaking grass	BRMI	1.1	2.6	2.4	1.2	0.4	0.9	0.7	0.7	2.9	Non-Native	FAC
Brodiaea terrestris ssp. *terrestris*	dwarf brodiaea	BRTET			0.3	0.3		0.1	0.8	0.2	0.2	Native	NL
Bromus diandrus	ripgut grass	BRDI						0.2	0.8			Non-Native	NL
Bromus hordeaceus	soft chess	BRHO			0.1		0.4	0.7				Non-Native	FACU
Castilleja ambigua	Johnny-Nip	CAAM										Native	FACW
Castilleja ambigua ssp. *ambigua*	Johnny-Nip	CAAMA3	0.5		0.4	1.6		0.2		0.4	0.4	Native	FACW
Castilleja attenuata	valley tassels	CAAT							0.7			Native	NL
Cicendia quadrangularis	timwort	CIQU		0.1	0.3			0.1			0.6	Native	FACW
Cotula coronopifolia	brass buttons	COCO									0.2	Non-Native	OBL
Crassula aquatica	aquatic pygmy-weed	CRAQ			0.3	0.1		0.1		0.1	0.3	Native	OBL
Danthonia californica	California oat grass	DACA	8.3	5.3	0.3	8.3	6.7	4.0	0.3	9.1	3.7	Native	FAC
Deinandra corymbosa	coastal tarweed	DECO	0.3	0.1	0.7	0.6	0.6	0.7		1.1		Native	NL
Deschampsia danthonioides	annual hair grass	DEDA	0.3	0.1								Native	FACW
Elatine californica	California waterwort	ELCA				0.1						Native	OBL
Eleocharis acicularis var. *acicularis*	needle spikerush	ELACA	1.3	0.1	0.6	0.5			1.9	2.4	4.0	Native	OBL
Eleocharis macrostachya	pale spikerush	ELMA	1.3	0.4	0.3	0.4	0.1	0.2		0.1	0.1	Native	OBL
Erodium botrys	long-beaked filaree	ERBO	0.1	1.9	0.7	0.3	2.8	10.6	2.1	0.6	3.3	Non-Native	FACU
Erodium cicutarium	redstem filaree	ERCI	0.3									Non-Native	NL
Eryngium montereyense	coyote thistle	ERMO	11.4	6.3	11.5	12.8	16.3	5.2	6.7	8.2	5.3	Native	FACW
Festuca bromoides	brome fescue	FEBR			0.2	0.5	1.3	3.9	1.3	0.7		Non-Native	NL
Festuca myuros	rattail sixweeks grass	FEMY	0.1	0.4	0.1	0.3		0.4			0.3	Non-Native	FACU
Festuca perennis	Italian rye grass	FEPE									0.2	Non-Native	FAC
Galium porrigens	climbing bedstraw	GAPO		0.2	0.2				0.1	0.1		Native	NL
Gamochaeta ustulata	purple cudweed	GAUS		0.1			0.1			0.3		Native	NL
Geranium dissectum	cut-leaved geranium	GEDI	0.1	0.2	0.6	0.4	0.3	0.1	0.7	0.2	0.4	Non-Native	NL
Gnaphalium palustre	lowland cudweed	GNPA									0.3	Native	FACW
Grass 1	-	-				0.1						-	NL
Hypochaeris glabra	smooth cat's-ear	HYGL	0.3	4.3	1.6	1.3	1.8	6.3	2.3	1.1	3.8	Non-Native	NL
Hypochaeris radicata	rough cat's-ear	HYRA		3.1		0.1		1.3			0.3	Non-Native	FACU
Isoetes howellii	Howell's quillwort	ISHO		0.1	0.7	0.1			10.0			Native	OBL
Isolepis carinata	keeled bulrush	ISCA		0.2	0.6	0.1				0.3	0.7	Native	OBL
Isolepis cernua	low bulrush	ISCE	1.1		0.6	0.2				0.3		Native	OBL

Table H-3 (continued). Comparison table of percent cover by wetland plant species on transects for 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, and 2025 at Pond 997 (Reference).

Species	Common Name	Species Code	% Cover									Native vs. Non-Native	Wetland Indicator Status
			2017	2018	2019	2020	2021	2022	2023	2024	2025		
Juncus bufonius var. *bufonius*	common toad rush	JUBUB	0.5	0.2	1.8	0.7	0.2		5.1		1.0	Native	FACW
Juncus bufonius var. *occidentalis*	round-fruited toad rush	JUBUO				0.1				0.7		Native	FACW
Juncus capitatus	dwarf rush	JUCA		0.1	0.3			0.2	3.8	0.1	0.3	Non-Native	FACU
Juncus phaeocephalus	brown-headed rush	JUPH	5.6	10.1	15.6	18.8	0.2		6.6	11.3	3.3	Native	FACW
Juncus uncialis	inch-high rush	JUUN	0.3							0.1		Native	FACW
Lasthenia conjugens	Contra Costa goldfields	LACO		0.1		0.1					0.1	Native	FACW
Lasthenia glaberrima	smooth goldfields	LAGL3			0.1						0.1	Native	OBL
Logfia gallica	narrowleaf cottonrose	LOGA		0.1	0.1							Non-Native	NL
Lysimachia arvensis	scarlet pimpernel	LYAR		0.2	0.5	0.2		0.3	1.4	0.7	0.1	Non-Native	FAC
Lysimachia minima	chaffweed	LYMI	0.4	0.6	1.2	1.0	0.1	0.3		1.8	3.8	Native	FACW
Lythrum hyssopifolia	grass poly	LYHY	5.5	0.7	5.4	2.6	0.5	0.6	10.3	0.3	1.8	Non-Native	OBL
Madia gracilis	gumweed	MAGR			3.3	0.9	1.2	0.8		0.7	0.7	Native	NL
Madia sativa	coast tarweed	MASA			2.8	2.0						Native	NL
Microseris paludosa	marsh microseris	MIPA		0.1	0.4	0.1	0.2	0.2	0.9	0.5	0.7	Native	NL
Plagiobothrys chorisianus var. *hickmanii*	Hickman's popcornflower	PLCHH	1.8	0.5	5.2	0.6	0.3	0.8	4.2	8.1	15.5	Native	OBL
Plantago coronopus	cut-leaved plantain	PLCO		1.2	0.1	1.4	1.4	0.8	3.8	0.2	1.0	Non-Native	FAC
Plantago lanceolata	English plantain	PLLA		0.1	0.3							Non-Native	FACU
Pogogyne zizyphoroides	Sacramento mesa mint	POZI		0.1							0.1	Native	OBL
Polypogon monspeliensis	rabbitfoot grass	POMO	5.2	3.3	7.3	2.8		0.5	1.3	6.4	1.5	Non-Native	FACW
Pseudognaphalium sp.	false cudweed	PS sp.		0.1				0.3				-	NL
Pseudognaphalium californicum	California everlasting	PSCA					0.1					Native	NL
Pseudognaphalium stramineum	cottonbatting plant	PSST			0.1							Native	FAC
Psilocarphus chilensis	round woolly-marbles	PSCH	1.6	0.4	2.3	3.4	0.6	1.1	4.2			Native	FACW
Psilocarphus tenellus	slender woolly-marbles	PSTE								1.4	1.6	Native	OBL
Rumex acetosella	sheep sorrel	RUAC	0.1	0.4	0.4	0.9	0.5	0.3	0.3	0.1		Non-Native	FACU
Senecio glomeratus	cutleaf burnweed	SEGL		0.1	0.1						0.3	Non-Native	NL
Sidalcea malviflora ssp. *malviflora*	checkerbloom	SIMAM							0.4			Native	FACW
Silene gallica	small-flower catchfly	SIGA	0.1	0.1	0.1			0.1				Non-Native	NL
Silybum marianum	milk thistle	SIMA								0.2		Non-Native	NL
Sisyrinchium bellum	western blue-eyed grass	SIBE		0.1	0.1	0.1		0.2		0.1		Native	FACW
Sonchus asper	prickly sow thistle	SOAS		0.1	0.1						0.1	Non-Native	FACU
Sonchus oleraceus	common sow thistle	SOOL			0.2		0.1				0.8	Non-Native	UPL
Trifolium dubium	little hop clover	TRDU							1.3			Non-Native	FACU
Trifolium sp.	clover	TR sp.		0.1								-	NL
Triglochin scilloides	flowering quillwort	TRSC		0.1						3.6	1.1	Native	OBL
Triteleia ixioides	coast pretty face	TRIX		0.1	0.1	0.2	0.1			0.2		Native	FAC
Unknown 4	-	UNK4							0.8			-	NL
Zeltnera davyi	Davy's centuary	ZEDA				0.1						Native	NL
Bare Ground	-	BG	27.9	19.7	9.9	10.6	18.4	28.1	3.3	6.3	8.1	-	-
Thatch	-	TH	15.9	35.7	18.6	19.2	36.6	25.0	13.3	26.9	23.9	-	-

Table H-4. Comparison table of percent cover by wetland plant species on transects for 1999, 2019, 2023, 2024, and 2025 at Pond 21 (Year 3 Post-Mastication and Post-Subsurface Munitions Remediation).

Species	Common Name	Species Code	% Cover					Native vs. Non-Native	Wetland Indicator Status
			1999	2019	2023	2024	2025		
Achillea millefolium	common yarrow	ACMI	0.3		0.3		0.4	Native	FACU
Acmispon parviflorus	hill lotus	ACPA					0.1	Native	NL
Aira caryophyllea	silvery hair-grass	AICA				0.2		Non-Native	FACU
Anaphalis margaritacea	pearly everlasting	ANMA	0.6					Native	FACU
Baccharis pilularis	coyote brush	BAPI	0.2		1.3	0.1	0.1	Native	NL
Briza minor	annual quaking grass	BRMI	0.4	1.2	1.5	0.4	0.7	Non-Native	FAC
Bromus hordeaceus	soft chess	BRHO		0.6		0.3	0.6	Non-Native	FACU
Callitriche heterophylla	water starwort	CAHE	0.9					Native	OBL
Callitriche marginata	California water-starwort	CAMA	0.9					Native	OBL
Carex barbarae	whiteroot	CABA			8.1	8.1	6.8	Native	FAC
Cicendia quadrangularis	timwort	CIQU		0.1			0.1	Native	FACW
Cirsium brevistylum	Indian thistle	CIBR				0.1		Native	NL
Crassula aquatica	aquatic pygmy-weed	CRAQ	0.5				0.1	Native	OBL
Deinandra corymbosa	coastal tarweed	DECO			3.8			Native	NL
Deschampsia danthonioides	annual hair grass	DEDA		3.2		0.2	0.2	Native	FACW
Eleocharis acicularis	needle spikerush	ELAC						Native	OBL
Eleocharis acicularis var. *acicularis*	needle spikerush	ELACA	0.7	3.0		3.4	4.2	Native	OBL
Eleocharis macrostachya	pale spikerush	ELMA	1.5	5.0	5.1	3.3	0.9	Native	OBL
Erigeron canadensis	horseweed	ERCA				0.1	0.4	Native	FACU
Erodium cicutarium	redstem filaree	ERCI	0.1					Non-Native	NL
Eryngium montereyense	coyote thistle	ERMO		12.7	20.0	34.8	11.1	Native	FACW
Festuca bromoides	brome fescue	FEBR		0.9	0.2	0.4	2.1	Non-Native	NL
Festuca myuros	rattail sixweeks grass	FEMY					0.4	Non-Native	FACU
Gamochaeta ustulata	purple cudweed	GAUS				0.1		Native	NL
Geranium dissectum	cut-leaved geranium	GEDI		2.2	0.2	0.5	5.4	Non-Native	NL
Gnaphalium palustre	lowland cudweed	GNPA	0.2				0.2	Native	FACW
Heterocodon rariflorum	western pearlflower	HERA	0.3				0.2	Native	FAC
Hordeum brachyantherum ssp. *brachyantherum*	meadow barley	HOBRB		1.0	0.6	0.2	1.7	Native	FACW
Hypochaeris glabra	smooth cat's-ear	HYGL		0.2		0.2	1.1	Non-Native	NL
Isoetes howellii	Howell's quillwort	ISHO		1.9				Native	OBL
Juncus bufonius var. *bufonius*	common toad rush	JUBUB	4.4		0.2			Native	FACW
Juncus bufonius var. *occidentalis*	round-fruited toad rush	JUBUO				0.1		Native	FACW
Juncus phaeocephalus	brown-headed rush	JUPH	3.8	26.2	31.8	12.6	10.3	Native	FACW
Lasthenia glaberrima	smooth goldfields	LAGL3		4.8		2.1	8.7	Native	OBL
Lotus corniculatus	bird's-foot trefoil	LOCO6	0.1					Non-Native	FAC
Lysimachia arvensis	scarlet pimpernel	LYAR	0.1		0.1	0.1	0.2	Non-Native	FAC
Lysimachia minima	chaffweed	LYMI	0.9	1.1		0.1	0.3	Native	FACW
Lythrum hyssopifolia	grass poly	LYHY		0.4	0.1	0.1	0.2	Non-Native	OBL
Madia sativa	coast tarweed	MASA					0.5	Native	NL
Malvella leprosa	alkali mallow	MALE		0.4	0.3	0.1	0.4	Native	FACU
Phalaris lemmonii	Lemmon's canary grass	PHLE		0.7			0.1	Native	FACW

Table H-4 (continued). Comparison table of percent cover by wetland plant species on transects for 1999, 2019, 2023, 2024, and 2025 at Pond 21 (Year 3 Post-Mastication and Post-Subsurface Munitions Remediation).

Species	Common Name	Species Code	% Cover					Native vs. Non-Native	Wetland Indicator Status
			1999	2019	2023	2024	2025		
Plagiobothrys chorisianus var. *hickmanii*	Hickman's popcornflower	PLCHH	1.8	3.8	0.8	0.3	1.2	Native	OBL
Pogogyne zizyphoroides	Sacramento mesa mint	POZI					0.1	Native	OBL
Polypogon monspeliensis	rabbitfoot grass	POMO		2.9	7.3	5.1	3.1	Non-Native	FACW
Pseudognaphalium luteoalbum	weedy cudweed	PSLU	0.1					Non-Native	FACW
Pseudognaphalium ramosissimum	pink everlasting	PSRA					0.1	Native	NL
Ranunculus californicus	California buttercup	RACA		1.2	0.3	0.2	0.3	Native	FAC
Rumex acetosella	sheep sorrel	RUAC		0.1				Non-Native	FACU
Rumex salicifolius	willow dock	RUSA				0.4	0.6	Native	FACW
Sanicula crassicaulis	Pacific sanicle	SACR				0.1		Native	NL
Senecio glomeratus	cutleaf burnweed	SEGL				0.1	0.1	Non-Native	NL
Senecio vulgaris	common groundsel	SEVU					0.1	Non-Native	FACU
Stachys ajugoides	bugle hedge nettle	STAJ					0.1	Native	OBL
Trifolium barbigerum	bearded clover	TRBA				0.1		Native	FACW
Trifolium variegatum	variegated clover	TRVA				0.1		Native	FAC
Triglochin scilloides	flowering quillwort	TRSC	0.8			0.1	0.4	Native	OBL
Verbena lasiostachys	western vervain	VELA	0.1					Native	FAC
Verbena lasiostachys var. *lasiostachys*	western vervain	VELAL			0.2			Native	FAC
Zeltnera davyi	Davy's centuary	ZEDA	0.1					Native	NL
Bare Ground	-	BG	46.1	17.4	1.3	4.6	8.2	-	-
Thatch	-	TH	0.3	8.9	16.7	21.7	28.4	-	-
Open Water	-	-	35.2					-	-

Table H-5. Comparison table of percent cover by wetland plant species on transects for 2023, 2024, and 2025 at Pond 76 (Year 3 Post-Mastication, Year 2 Post-Subsurface Munitions Remediation).

Species	Common Name	Species Code	% Cover			Native vs. Non-Native	Wetland Indicator Status
			2023	2024	2025		
Acmispon parviflorus	hill lotus	ACPA		0.1	0.1	Native	NL
Agrostis exarata	spike bent grass	AGEX	0.8			Native	FACW
Aira caryophyllea	silvery hair-grass	AICA	0.8	0.1		Non-Native	FACU
Arctostaphylos sp.	manzanita	AR sp.	0.8			Native	NL
Baccharis pilularis	coyote brush	BAPI	1.2	0.1	0.1	Native	NL
Briza minor	annual quaking grass	BRMI	1.4	0.2	1.0	Non-Native	FAC
Cerastium glomeratum	sticky mouse-ear chickweed	CEGL			0.2	Non-Native	FACU
Crassula aquatica	aquatic pygmy-weed	CRAQ			0.1	Native	OBL
Deschampsia danthonioides	annual hair grass	DEDA	0.2	0.5	5.9	Native	FACW
Eleocharis acicularis var. *acicularis*	needle spikerush	ELACA	10.8	8.2	8.6	Native	OBL
Eleocharis macrostachya	pale spikerush	ELMA	0.4			Native	OBL
Erodium botrys	long-beaked filaree	ERBO			0.1	Non-Native	FACU
Eryngium montereyense	coyote thistle	ERMO	8.9	27.0	18.6	Native	FACW
Festuca bromoides	brome fescue	FEBR	0.4	0.1	0.3	Non-Native	NL
Festuca myuros	rattail sixweeks grass	FEMY	0.5	0.1		Non-Native	FACU
Galium porrigens	climbing bedstraw	GAPO	0.2			Native	NL
Gamochaeta ustulata	purple cudweed	GAUS		0.3	1.1	Native	NL
Geranium dissectum	cut-leaved geranium	GEDI			0.8	Non-Native	NL
Hypochaeris glabra	smooth cat's-ear	HYGL	0.2	0.3	3.0	Non-Native	NL
Hypochaeris radicata	rough cat's-ear	HYRA			0.3	Non-Native	FACU
Isoetes howellii	Howell's quillwort	ISHO	0.6		0.8	Native	OBL
Juncus balticus	Baltic rush	JUBA	0.5			Native	FACW
Juncus occidentalis	western rush	JUOC	0.1			Native	FACW
Juncus phaeocephalus	brown-headed rush	JUPH	20.4	12.4	5.2	Native	FACW
Lysimachia arvensis	scarlet pimpernel	LYAR	0.1		0.8	Non-Native	FAC
Lysimachia minima	chaffweed	LYMI		1.1	1.3	Native	FACW
Lythrum hyssopifolia	grass poly	LYHY	0.8			Non-Native	OBL
Madia exigua	small tarweed	MAEX	0.1			Native	NL
Plagiobothrys chorisianus var. *hickmanii*	Hickman's popcornflower	PLCHH	4.5	4.8	3.8	Native	OBL
Pogogyne zizyphoroides	Sacramento mesa mint	POZI		1.9	0.1	Native	OBL
Polypogon monspeliensis	rabbitfoot grass	POMO	5.0	14.4	17.2	Non-Native	FACW
Ranunculus californicus	California buttercup	RACA			0.2	Native	FAC
Senecio glomeratus	cutleaf burnweed	SEGL			0.8	Non-Native	NL
Senecio vulgaris	common groundsel	SEVU			0.1	Non-Native	FACU
Trifolium microcephalum	small head clover	TRMI	0.1		0.1	Native	FAC
Triglochin scilloides	flowering quillwort	TRSC	2.8			Native	OBL
Uropappus lindleyi	silver puffs	URLI5			0.1	Native	NL
Bare Ground	-	BG	20.4	7.7	6.8	-	-
Thatch	-	TH	18.5	20.7	22.7	-	-

APPENDIX I

Rank Abundance Curves

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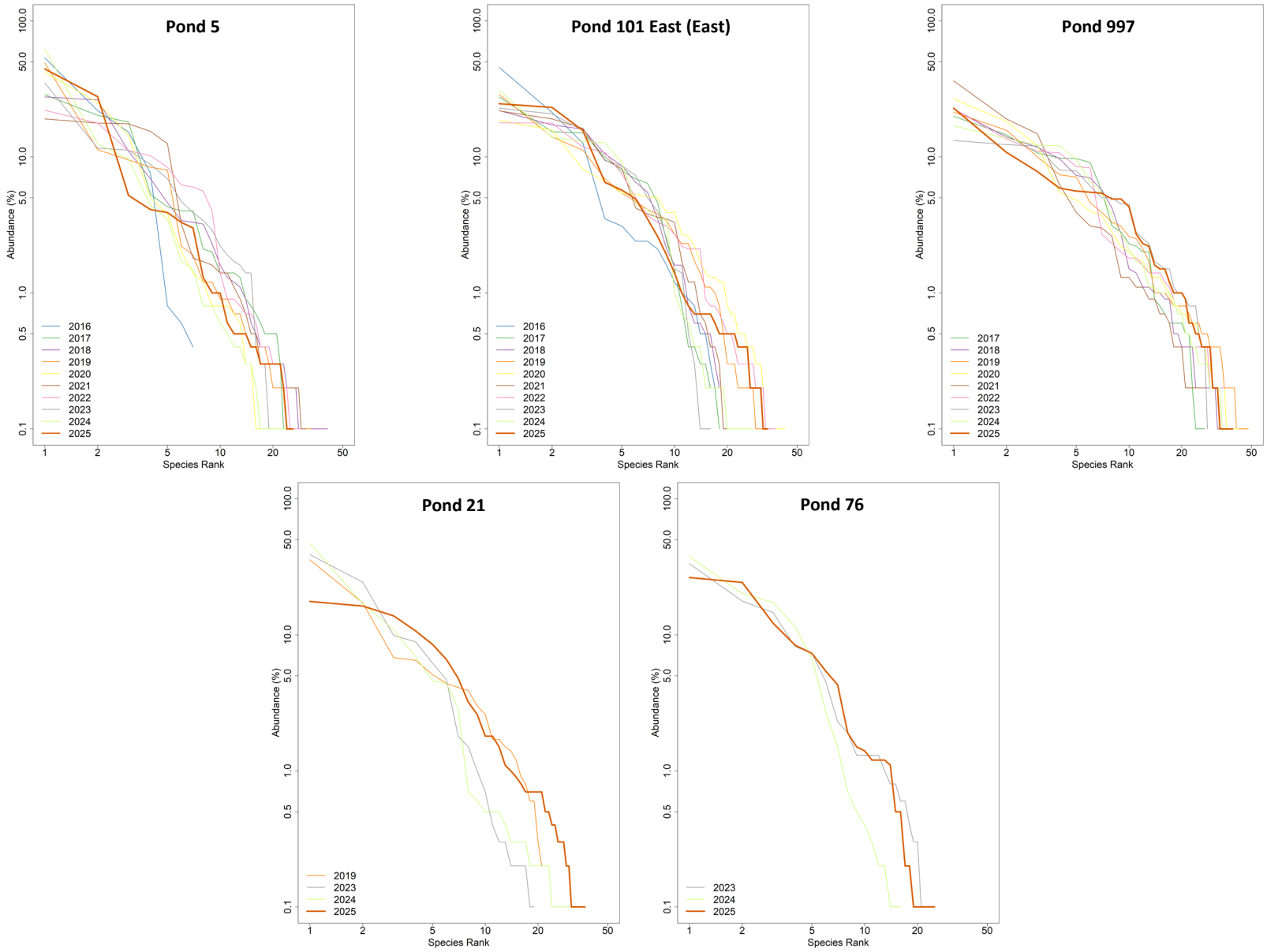

Figure I-1. Comparison Plots for RACs by Pond for all years. The top three plots are reference vernal pools. The bottom two plots are remediated vernal pools in their second and third years of monitoring. Both the x-axis and y-axis are in log-10 scale.