

LAKE CACHUMA OAK TREE RESTORATION PROGRAM

2025 ANNUAL REPORT

with

Fiscal Year 2025-2026 Financials and Water Usage



Prepared for: Cachuma Operation and Maintenance Board

Prepared by: Timothy H. Robinson (COMB), Scott J. Volan (COMB), Daniel Razo (COMB), and Kenneth A. Knight (Kenneth A. Knight, Consulting)

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Executive Summary

The following is the annual report for the Lake Cachuma Oak Tree Restoration Program (Program) that contains the results of the 2025 annual inventory of all planted mitigation oak trees and the Fiscal Year 2025-2026 financial and water usage details. The results of the 2015 Lakeshore Survey set the mitigation number for the Lake Cachuma Oak Tree Restoration Program at 4,722 by 2025 (COMB, 2016). This number included the established mitigation ratio of two to one (2:1) (4,002) and an 82% survival rate (or 18% mortality rate, 720 trees) that was determined from the 2015 and 2016 annual survey reports (COMB, 2017a; COMB, 2017b). The determined mortality rate provides the margin needed to reach the specific mitigation target number of 4,002 alive and self-sustaining oak trees at the end of 2025. As of the end of this year's inventory, 5,740 oak trees have been planted (and 110 adopted trees for a total of 5,850 trees) and 4,553 are alive which is a survival rate of **77.83%** (Figures 1, 2 and 3). No new mitigation trees were planted this year since it takes approximately 3 years for an

oak tree to become self-sustaining. The current margin (alive minus target) is **551** trees above the target number of 4,002 trees that provided cushion as the Program ended at the end of 2025. The cost of the Program during Fiscal Year 2025-2026 was \$58,661 with a total cost of the Program since it started in 2005 of \$2,292,472. Water usage for irrigation over the year was 0.23 acre-feet.

Since the Program has ended and this is the last annual report, the only recommendations for the years to come are to continue to remove deer cages on trees that are taller than six feet, remove tree stakes, and reposition tree tags onto the tree. COMB-FD staff should continue to work with the Lake Cachuma County Park staff for future care of the planted oak trees within the park.

Introduction/Background

This Annual Report presents the results of the 2025 oak tree inventory and Fiscal Year 2025-2026 (FY25-26) maintenance with water use and financials for the Lake Cachuma Oak Tree Restoration Program (Program). For Program details and objectives, see the 2-Year Plan for Fiscal Years 2013-14 and 2014/-5 (COMB, 2014). This annual report contains oak tree survival rates, maintenance with water usage, financials, and suggestions now that the Program has concluded. Annual Reports have been written for each year of the Program. References for the recent reports are as follows: 2015 (COMB, 2017a), 2016 (COMB, 2017b), 2017 (COMB, 2018), 2018 (COMB, 2019), 2019 (COMB, 2020), 2020 (COMB, 2021), 2021 (COMB, 2022), 2022 (COMB, 2023), 2023 (COMB, 2024), and 2024 (COMB, 2025). The survey results for this reporting period are presented by the year of the Program that they were planted that includes the financials and maintenance effort. There have been 5,740 oak trees planted through this Program in multiple planting areas within Lake Cachuma County Park and near Bradbury Dam (Figure 1).

The objective of the annual survey is to determine the status and success rate of the trees planted since the beginning of the Program with thirteen years of plantings; Year 1 (2005-2006), Year 2 (2006-2007), Year 3 (2007-2008), Year 4 (2008-2009), Year 5 (2009-2010), Year 6 (2010-2011), Year 7 (2014-2015), Year 8 (2015-2016), Year 9 (2016-2017), Year 10 (2018-2019), Year 11 (2019-2020), Year 12 (2020-2021), Year 13 (2021-2022), and the Dam Tender (DT) trees (approximately 2005 through 2018). Annual surveys traditionally are conducted in the late fall and early winter to best document the survival after the dry season and growth since the last survey.

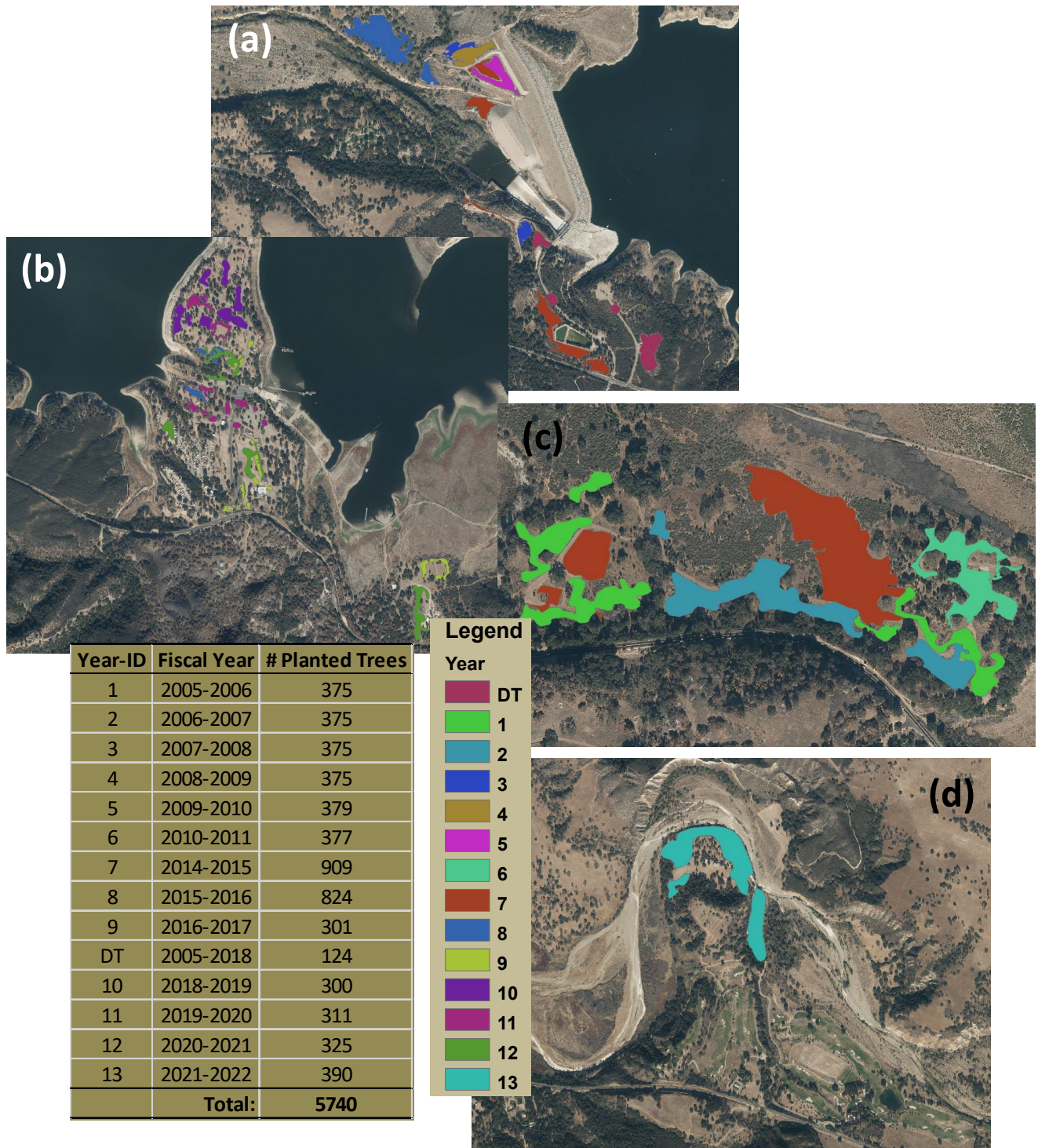


Figure 1: Oak tree planting locations by year planted (Year-ID) at; (a) Bradbury Dam area, (b) Cachuma Lake Recreation Area (County Park), (c) Storke Flats, and (d) Live Oak Camp.

Results of the 2025 Inventory

The 2025 inventory (or survey) of the oak trees planted through the Lake Cachuma Oak Tree Restoration Program was completed on 5/28/26 with the data entry and quality-assurance/quality-control occurring during the following weeks. The following figures and tables are the results of the survey in 2025 with 2024 results included for comparison: overall success rates in 2024 and 2025

(Figures 2 and 3) and success by planting year in 2024 and 2025 (Figures 4-17). The overall success rate went from 78.62% in 2024 to 77.83% in 2025. It is possible to have an increase in the number of alive trees from one year to the next due to identifying a tree was dead one year and then the next year the tree resprouted and was identified as alive. In the case of Year 12 trees, Park renovation trees (45) were incorporated and are now part of our annual maintenance efforts.

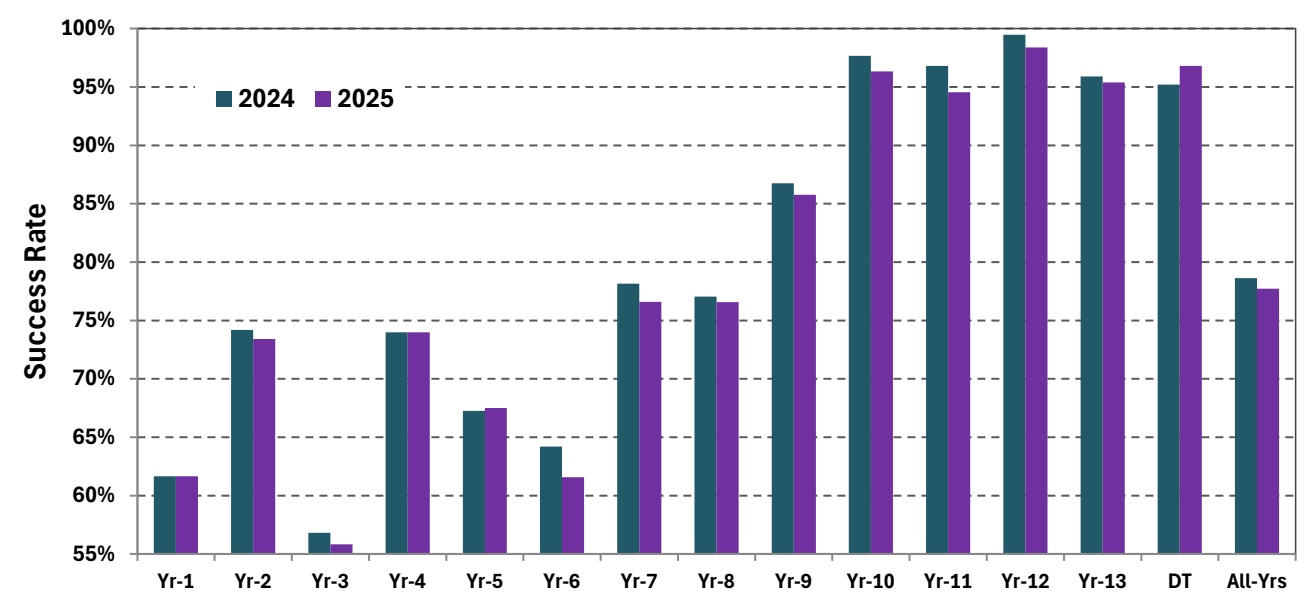


Figure 2: Success rate comparison from 2024 to 2025 for each and all three years (Yr).

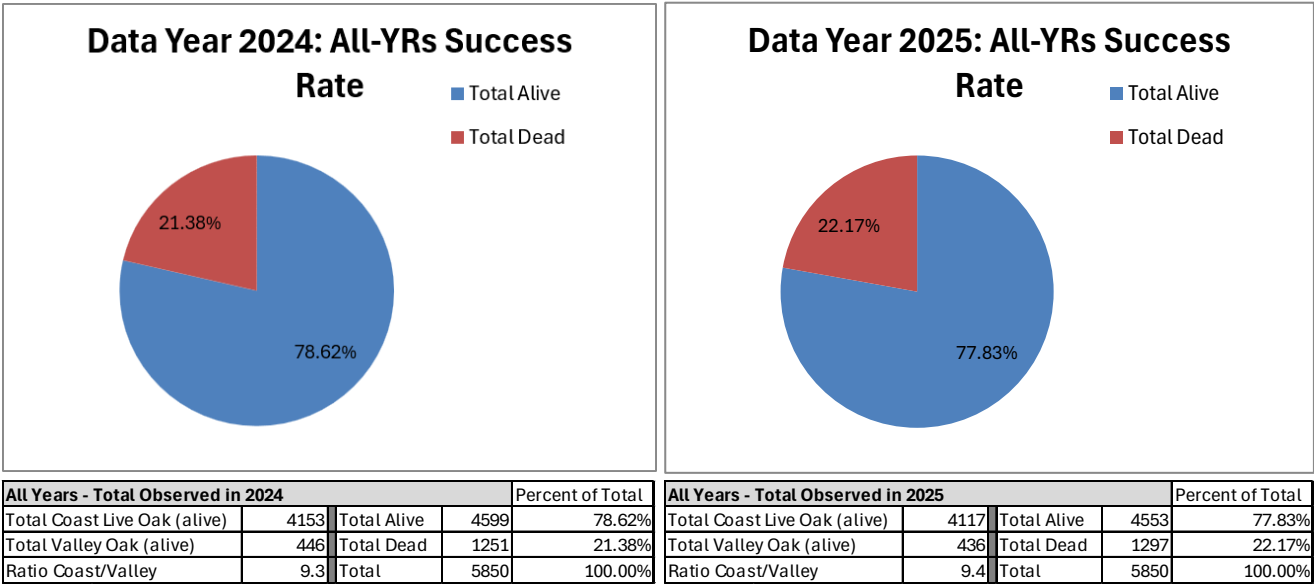


Figure 3: 2024 and 2025 status of oak trees from all years (Years 1 through 13) planted; including Dam Tender (DT) trees.

Prior to WY2017, six consecutive years of below average rainfall were observed that made it difficult for planted trees to survive particularly in the Year 1 through Year 6 trees that were thought to be self-sustaining by then at a minimum of ten years since planted. The number of required mitigated trees from the Lake Cachuma Surcharge Project was set in 2015 and reported in the 2015 Lakeshore Survey

Data Year 2024: YR 1 Success Rate

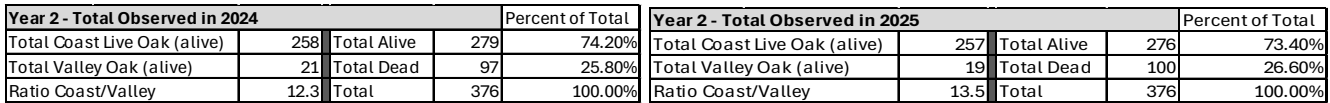
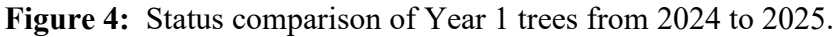
This pie chart displays the Year 1 success rate for Data Year 2024. The chart is divided into two segments: a blue segment representing 'Total Alive' at 61.66% and a red segment representing 'Total Dead' at 38.34%. A legend to the right of the chart identifies the colors: blue for 'Total Alive' and red for 'Total Dead'.

Category	Percentage
Total Alive	61.66%
Total Dead	38.34%

Data Year 2025: YR 1 Success Rate

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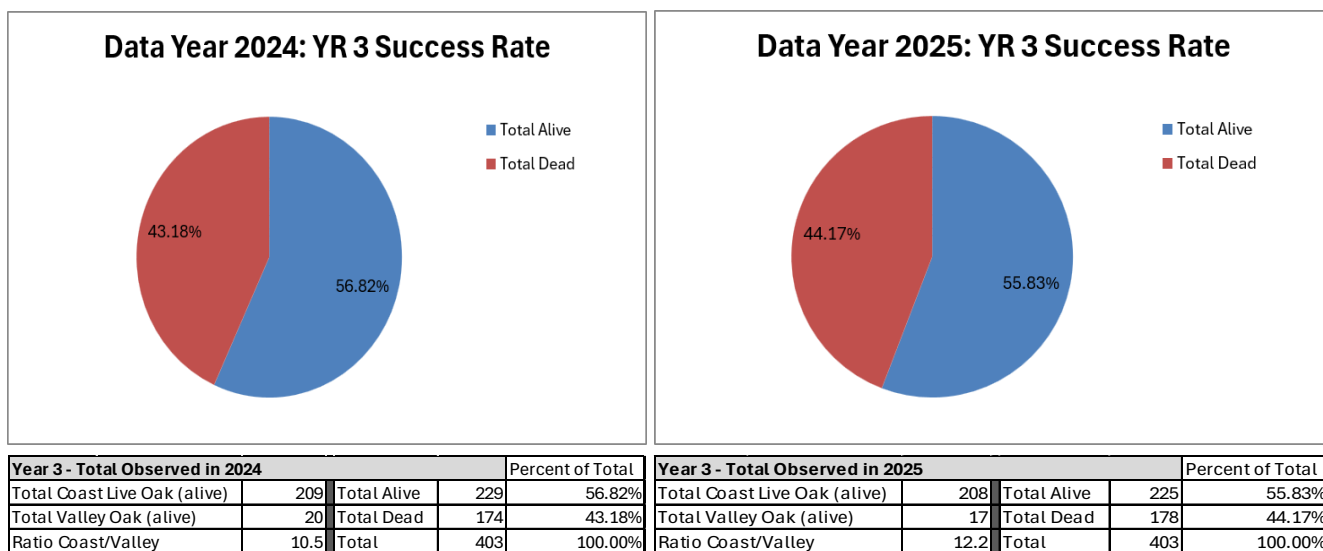


Figure 6: Status comparison of Year 3 trees from 2024 to 2025.

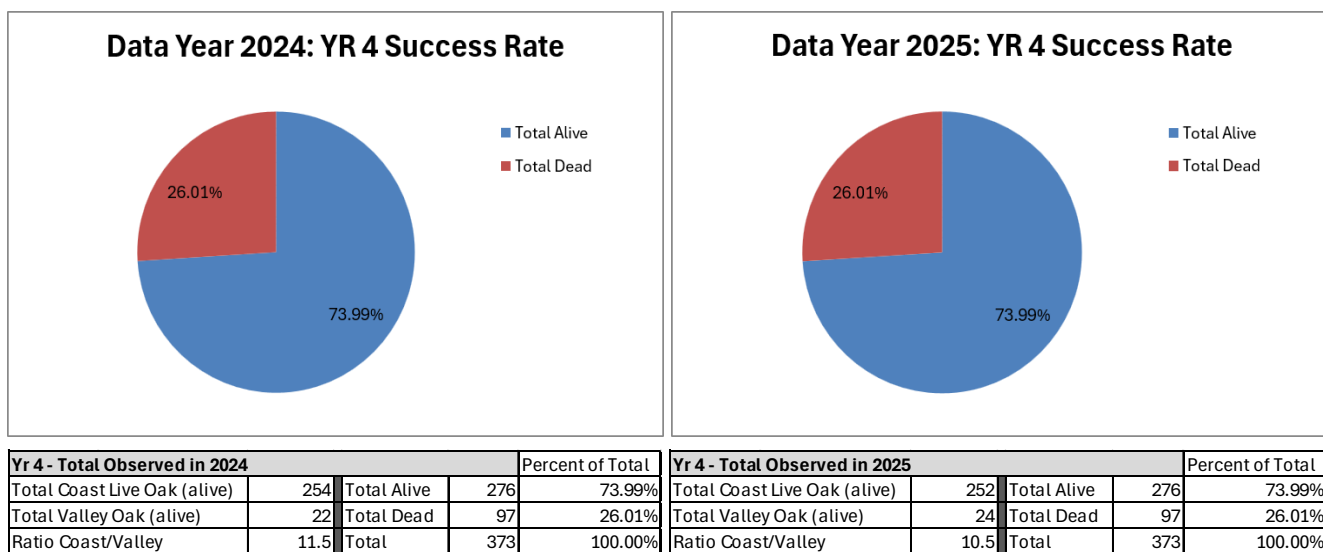


Figure 7: Status comparison of Year 4 trees from 2024 to 2025.

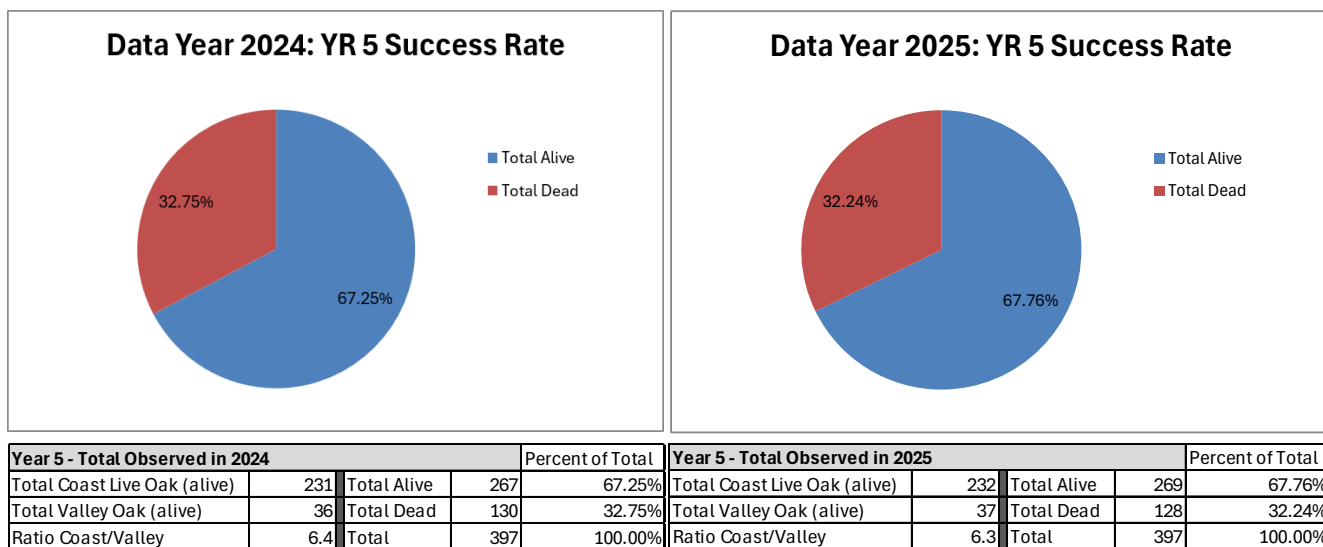


Figure 8: Status comparison of Year 5 trees from 2024 to 2025.

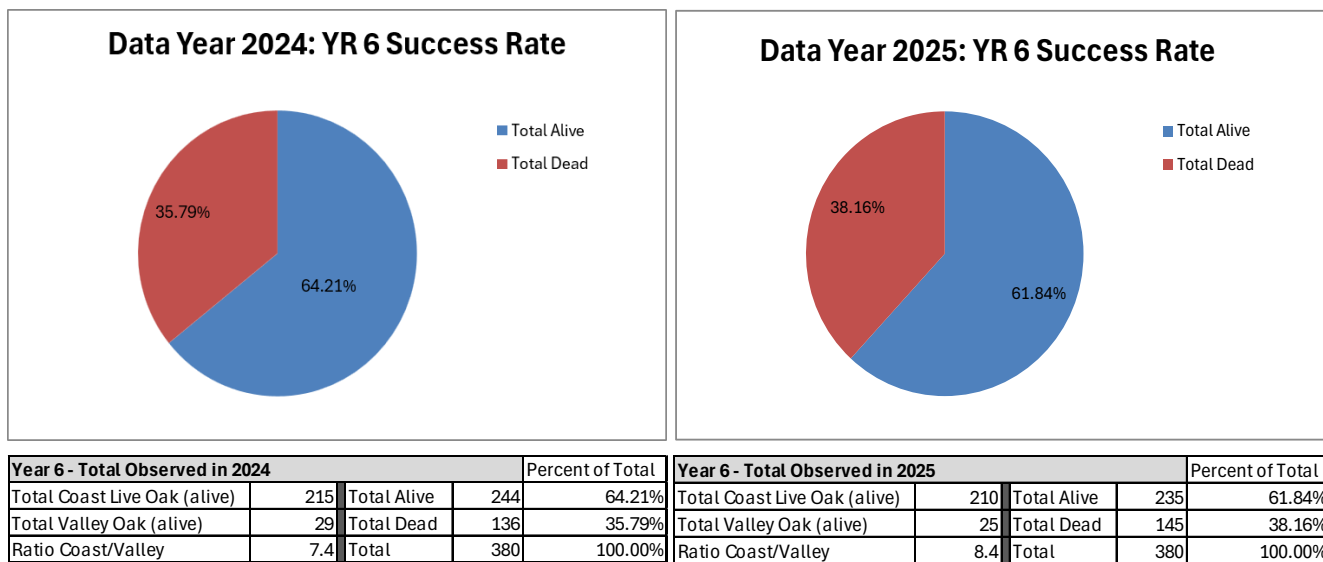


Figure 9: Status comparison of Year 6 trees from 2024 to 2025.

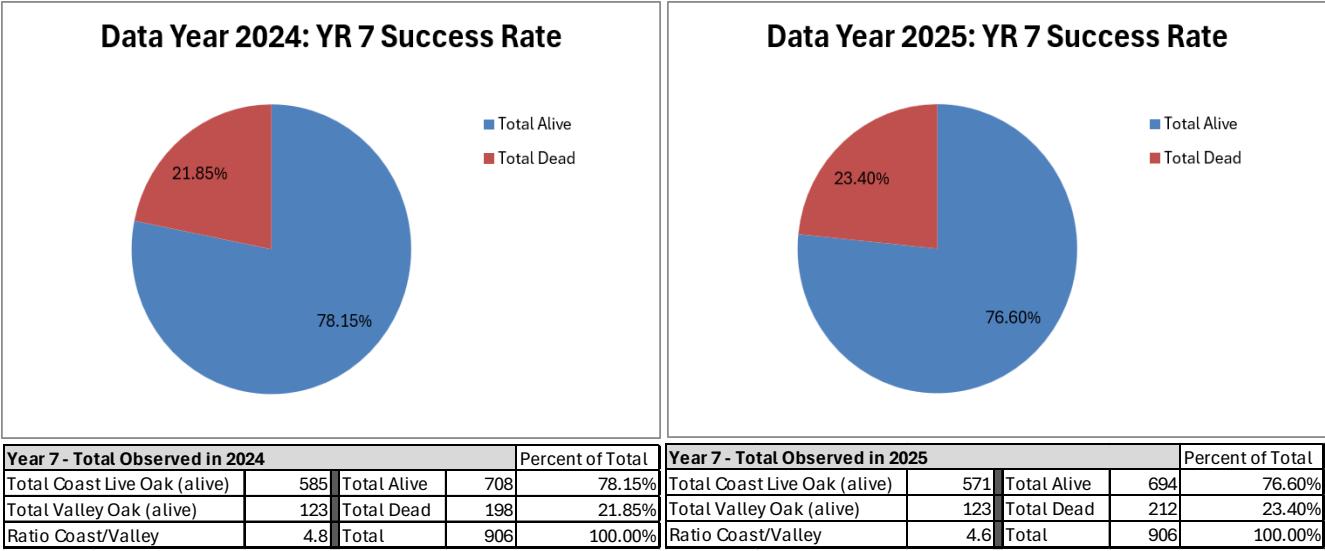


Figure 10: Status comparison of Year 7 trees from 2024 to 2025.

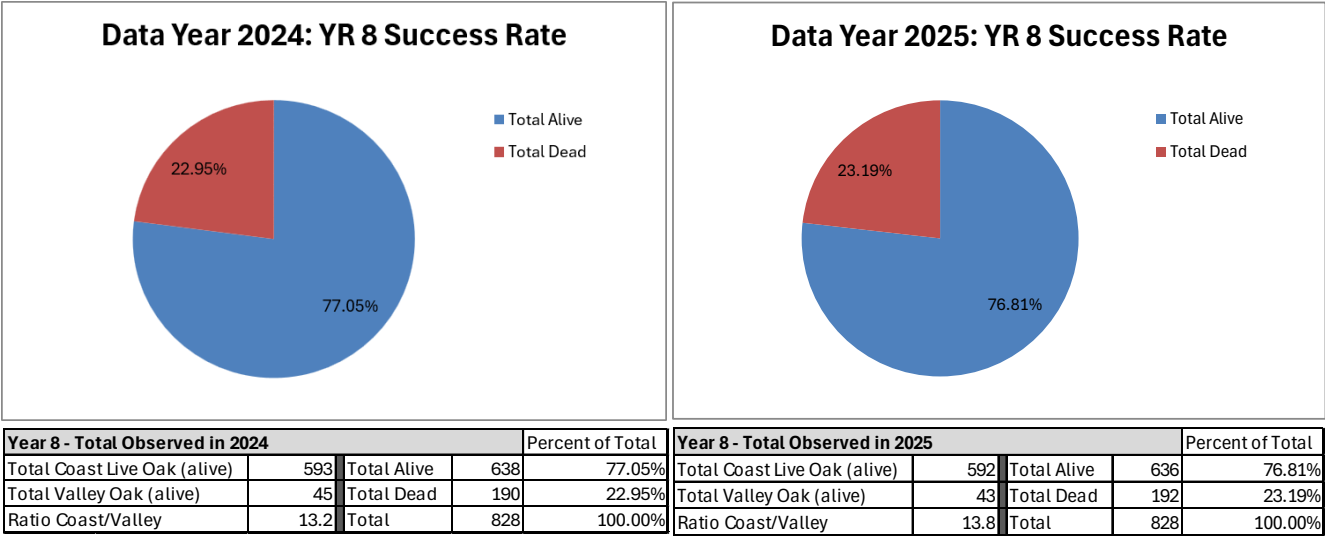


Figure 11: Status comparison of Year 8 trees from 2024 to 2025.

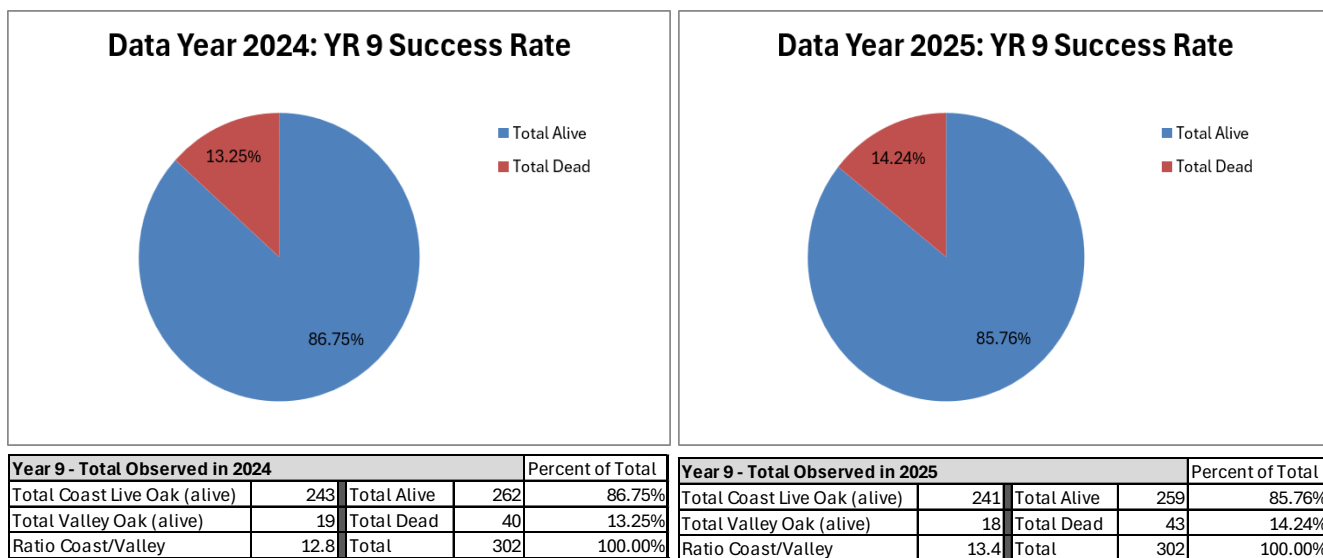


Figure 12: Status comparison of Year 9 trees from 2024 to 2025.

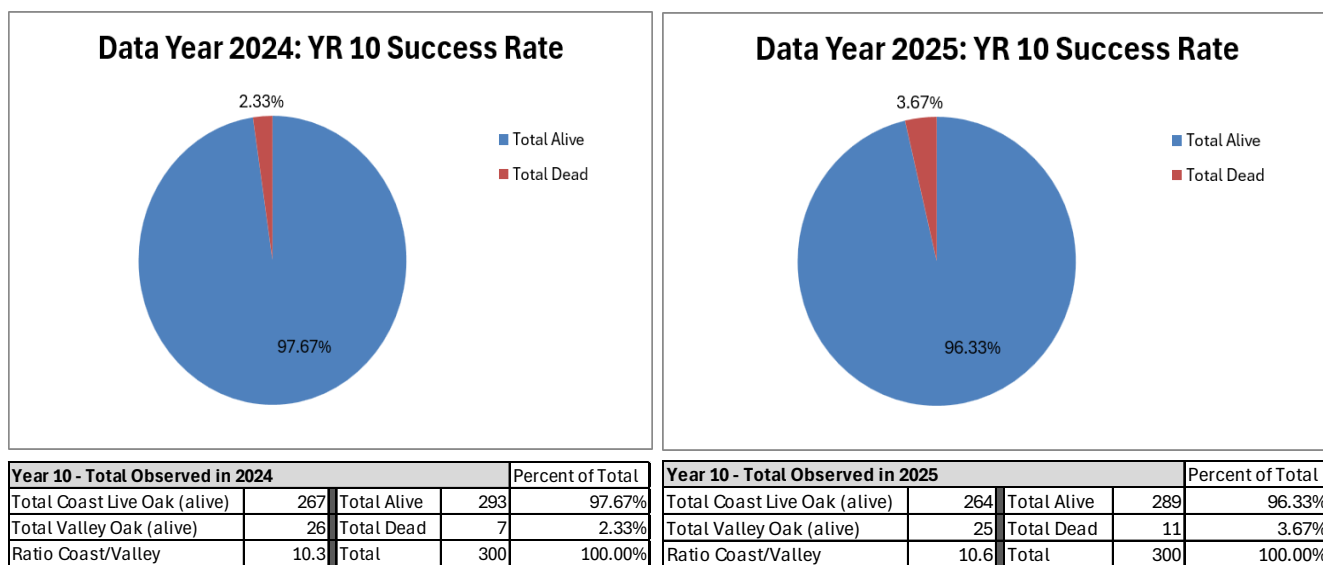
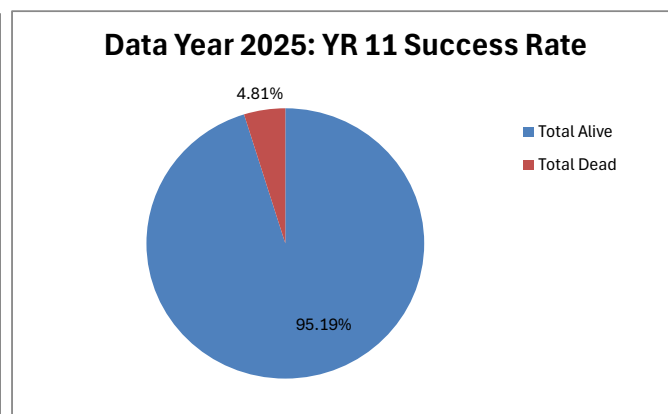
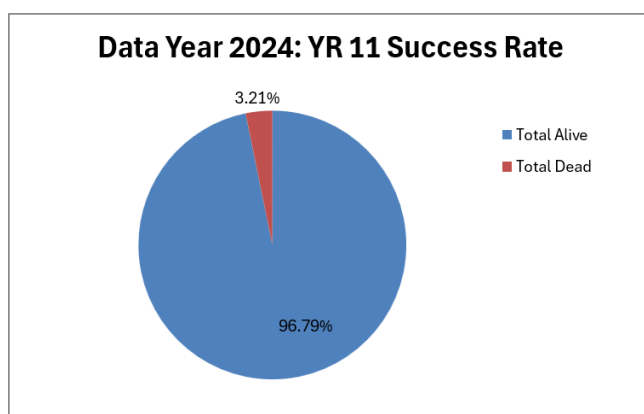


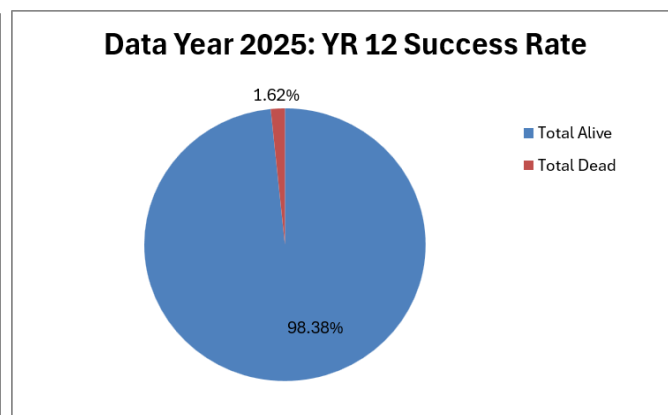
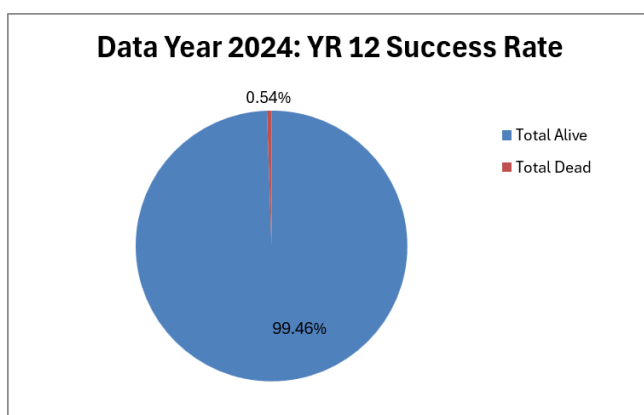
Figure 13: Status comparison of Year 10 trees from 2024 to 2025.



Year 11 - Total Observed in 2024			Percent of Total	
Total Coast Live Oak (alive)	278	Total Alive	302	96.79%
Total Valley Oak (alive)	24	Total Dead	10	3.21%
Ratio Coast/Valley	11.6	Total	312	100.00%

Year 11 - Total Observed in 2025			Percent of Total	
Total Coast Live Oak (alive)	273	Total Alive	297	95.19%
Total Valley Oak (alive)	24	Total Dead	15	4.81%
Ratio Coast/Valley	11.4	Total	312	100.00%

Figure 14: Status comparison of Year 11 trees from 2024 to 2025.



Year 12 - Total Observed in 2024			Percent of Total	
Total Coast Live Oak (alive)	335	Total Alive	369	99.46%
Total Valley Oak (alive)	34	Total Dead	2	0.54%
Ratio Coast/Valley	9.9	Total	371	100.00%

Year 12 - Total Observed in 2025			Percent of Total	
Total Coast Live Oak (alive)	333	Total Alive	365	98.38%
Total Valley Oak (alive)	32	Total Dead	6	1.62%
Ratio Coast/Valley	10.4	Total	371	100.00%

Figure 15: Status comparison of Year 12 trees from 2024 to 2025.

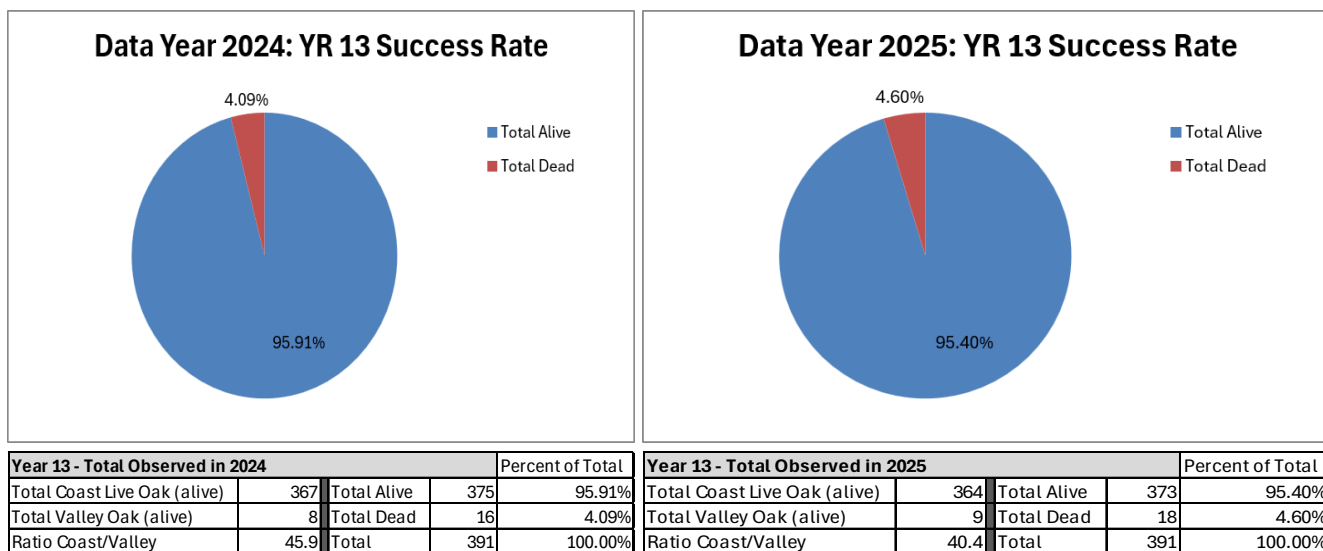


Figure 16: Status comparison of Year 13 trees from 2024 to 2025.

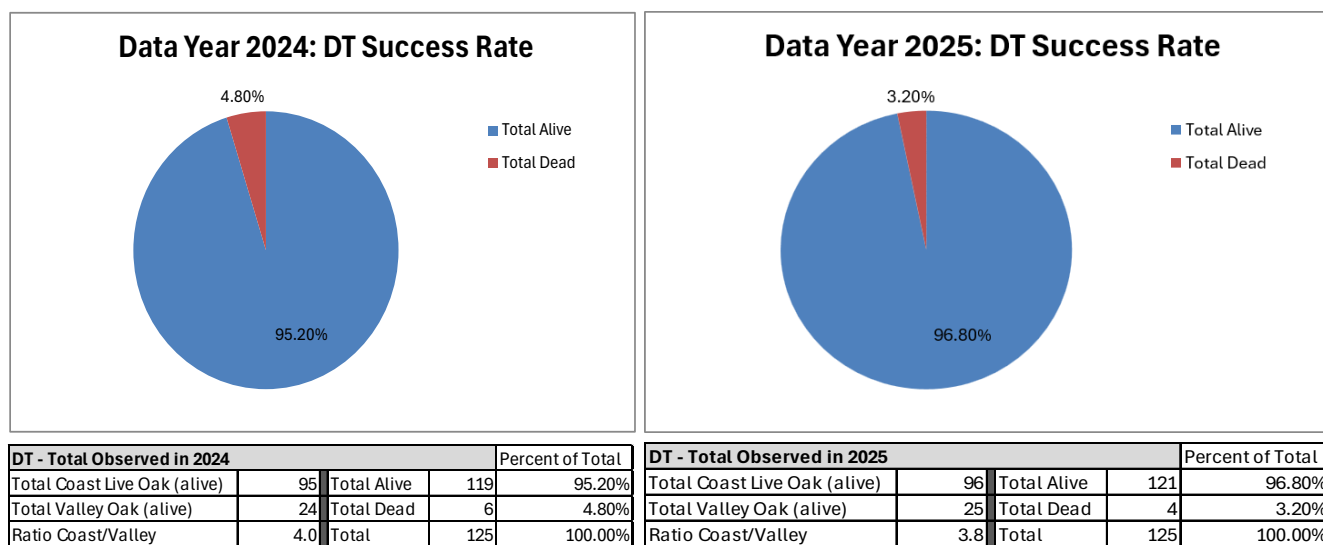


Figure 17: Status comparison of DT trees from 2024 to 2025.

Many trees in the program are now over six foot tall and require removal of their deer cages. This will also require moving the tree tag from the deer cage to the tree and removing the tree posts (Figure 18). Cage removal has been initiated inside the Cachuma Lake County Park with priority given in areas of high traffic and visibility first. Deer cages that are not salvageable will be recycled and those that can be salvaged will be moved and stored at the staging area near Bradbury Dam.

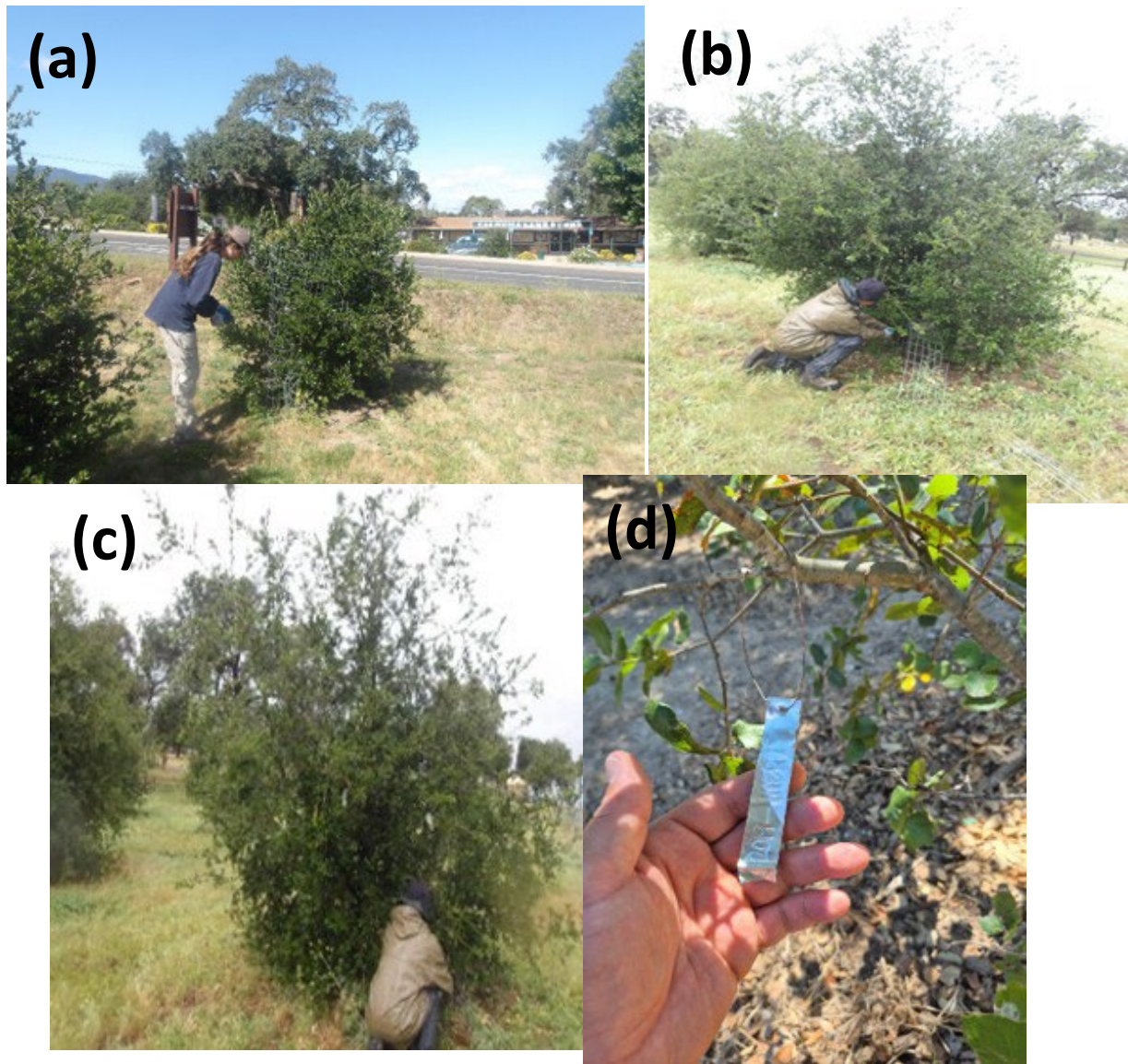


Figure 18: Deer cage removal within Lake Cachuma Park (a, b + c) and (d) repositioning tree tags.

Dam Tender trees were planted by one of the dam tenders between 2005 and 2018. Some of those trees are located along the entrance road to the Dam Tender building. In January of 2025, Reclamation conducted extensive vegetation clearing along that road where several of those planted trees were heavily pruned or cut down. Fortunately, all of those impacted trees survived and have now resprouted (Figure 19).

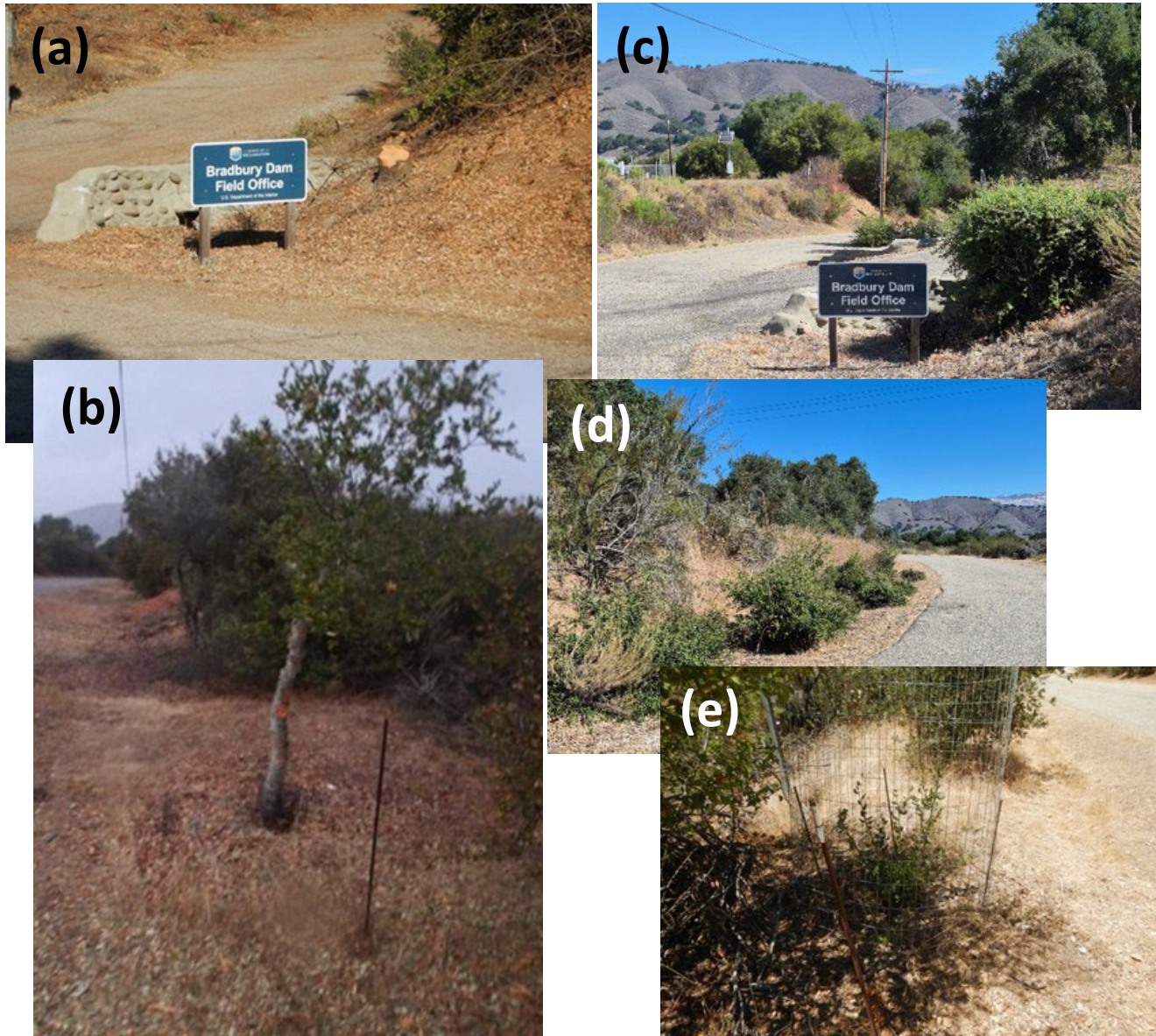


Figure 19: Dam tender trees that were (a + b) heavily pruned or cut down in January 2025 that have (d + e) resprouted and are now flourishing.

Santa Barbara County Parks has been renovating the full hook-up / long-term camping area of Lake Cachuma County Park. The project will be completed soon that included planting of oak trees between campsites. Year 12 trees were planted several years ago in that area and well before the project design was established. The design required the contractor to move several of COMB's planted and established trees while preserving others that fit into the project layout (Figure 20). The contractor transplanted our mitigation oak trees (18), none of which survived. To replace those lost trees, some of the project planted oak trees were adopted (45) into the Program to match the lost trees during construction that needed to be moved but unfortunately those trees did not survive (Figure 21).

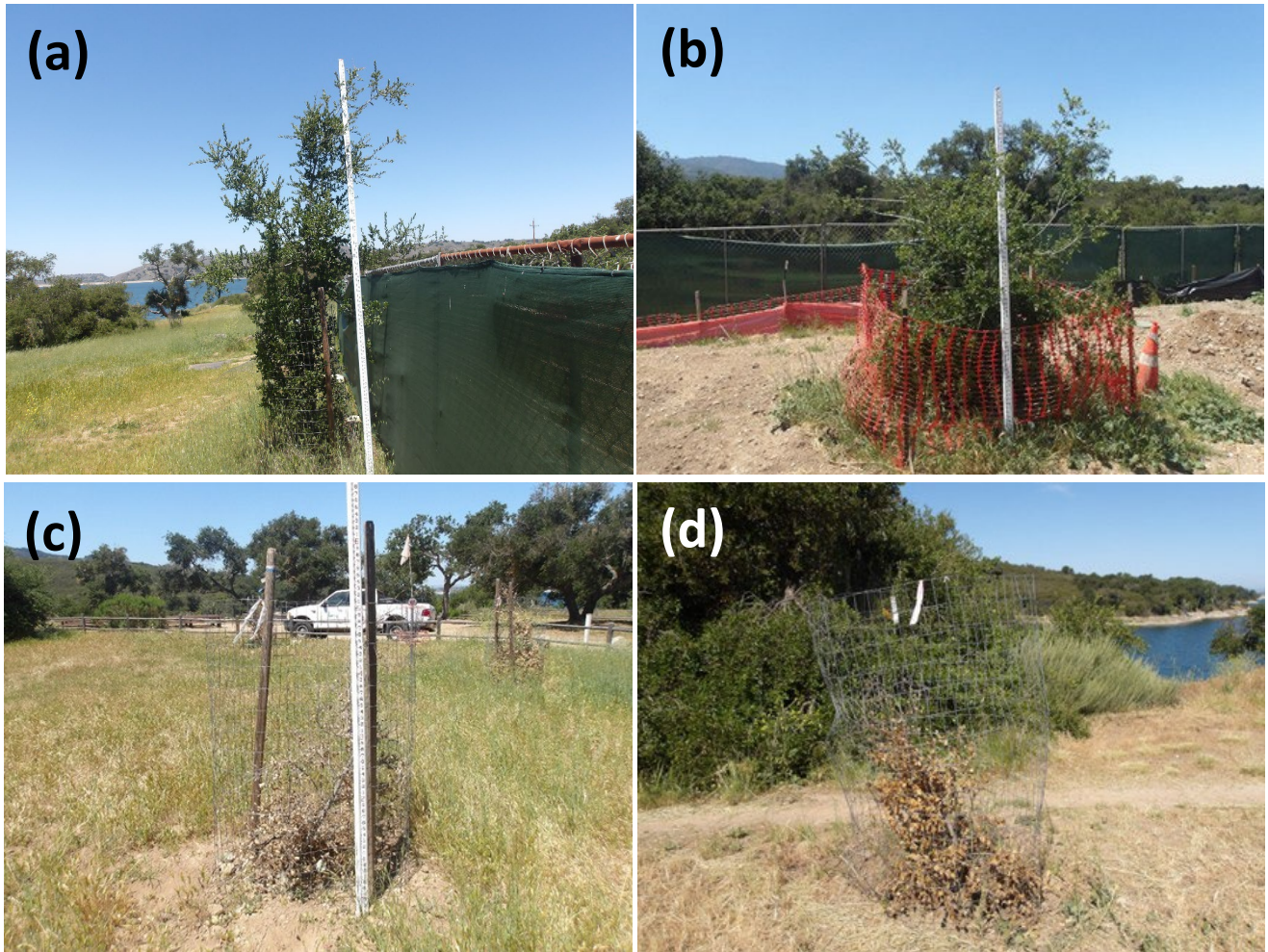


Figure 20: Year 12 trees near the Park renovation project showing COMB planted trees (a) outside and (b) inside the construction green fencing, as well as (c + d) contractor transplanted trees that died.

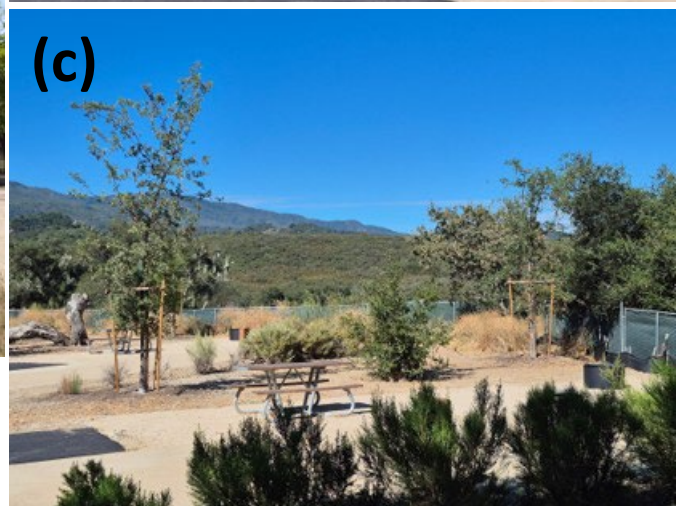


Figure 21: Adopted Year 12 trees planted by the Park Project contractor (a, b, + c) between camp sites within the renovation project area (July 2026).

The large storms of WY2023, WY2024 and WY2026 resulted in significant inflow to the reservoir as it filled and spilled during three of the last four water years. Reservoir operators maintained the lake elevation higher than the established and the long-term maximum lake elevation of 753 ft. It was as high as 754 ft for an extended period of time during WY2024 and WY2026. This caused unexpected flooding in some oak tree planting areas and some of those inundated trees died, specifically in the Mohawk (Yr-9) and lower Storke Flats (Yr-7) areas that were included in the 2025 inventory (approximately 47 in total). There was hope for regeneration when the lake level subsided but that has not happened (Figure 22).



Figure 22: Mohawk area (Yr-9 trees) in Lake Cachuma County Park, showing (a + b) the extent of flooding due to high surcharged lake water above maximum elevation in WY2026 and conditions in (c) July 2025 and (d) July 2026 after the lake had dropped several feet.

Some of the oak tree planting areas have shown extensive tree growth. For example, near the entrance to Lake Cachuma County Park (Parade Grounds), trees planted in 2016 are now 15 to 25 feet tall (Figure 23).



Figure 23: Extraordinary tree growth near the entrance to the Park (a, b, + c) showing Year 9 trees (planted in 2017) that are now greater than 15 feet tall.

Maintenance

Maintenance of all planted oak trees in FY25-26 included irrigating, weeding, and deer cage removal is presented in Table 1. The total amount of water used from Lake Cachuma to irrigate oak trees from all year classes in FY25-26 was 0.23 acre-feet which is lower than the amount used last year at 0.34 acre-feet (Table 2). With all the trees maturing and becoming established, less watering was necessary than the previous year.

Table 1: Cachuma Oak Tree Restoration Program completed maintenance in FY25-26.

	July 2025	Aug 2025	Sept 2025	Oct 2025	Nov 2025	Dec 2025 ¹	Jan 2026 ¹	Feb 2026 ¹	Mar 2026 ¹	April 2026 ¹	May 2026 ¹	June 2026 ¹
Year 13 Oaks (2021-2022)	Irrigated Weeded	Irrigated Weeded	Irrigated Weeded	Irrigated Weeded								
Year 12 Oaks (2020-2021)	Irrigated Weeded	Irrigated Weeded	Irrigated Weeded	Irrigated Weeded	Deer Cages	Deer Cages	Deer Cages	Deer Cages	Deer Cages	Deer Cages	Deer Cages	Deer Cages
Year 11 Oaks (2019-2020)					Deer Cages	Deer Cages	Deer Cages	Deer Cages	Deer Cages	Deer Cages	Deer Cages	Deer Cages
Year 10 Oaks (2018-2019)					Deer Cages					Deer Cages	Deer Cages	Deer Cages
Year 9 Oaks (2016-2017)												
Year 8 Oaks (2015-2016)												
Year 7 Oaks (2014-2015)												
Year 6 Oaks (2005-2011)												
Year 5 Oaks (2009-2010)												
Year 1-4 Oaks (2005-2009)												
Year 1-3 Oaks (2005-2008)												
Year 2 Oaks (2006-2007)												
Year 1 Oaks (2005-2006)												
¹ Oak tree inventory.												

Table 2: Cachuma Oak Tree Restoration Program water usage from Lake Cachuma for irrigation during FY25-26.

	Gallons	Acre-feet
July	12,900	0.040
August	22,825	0.076
September	20,500	0.063
October	13,750	0.042
November	1,800	0.006
December		
January		
February		
March		
April		
May		
June		
Total:	71,775	0.23

Financials

Annual expenses by Fiscal Year since the beginning of the Lake Cachuma Oak Tree Restoration Program in FY05-06 are presented in Table 3. The totals include COMB staff (plus burden) and consulting arborist hours, material, supplies, fuel expenses, GPS mapping, conducting the annual inventory, replanting trees over the period, and reporting. The breakout for those costs is presented by

labor in Table 4 and the total cost (labor, materials, and supplies) in Table 5. The financials do include WY2025-26 maintenance efforts.

Table 3: Total Program costs by Fiscal Year including planting, maintenance, mapping, conducting the annual inventory, and reporting by year (Year-ID) and number of trees planted during those years.

# of Years	Fiscal Year	Operator	Year-ID	# Planted Trees	Cost
1	2005-2006	Fournier	1	375	\$116,731
2	2006-2007	Fournier	2	375	\$117,620
3	2007-2008	Fournier	3	375	\$138,786
4	2008-2009	Fournier	4	375	\$137,872
5	2009-2010	Fournier	5	379	\$136,900
6	2010-2011	Fournier	6	377	\$137,878
7	2011-2012	Fournier	-	-	\$79,439
8	2012-2013	COMB	-	-	\$101,431
9	2013-2014	COMB	-	-	\$48,097
10	2014-2015	COMB	7	909	\$134,054
11	2015-2016	COMB	8	824	\$128,241
12	2016-2017	COMB	9	301	\$101,227
13	2005-2018	COMB	DT	124	\$128,752
14	2018-2019	COMB	10	300	\$120,573
15	2019-2020	COMB	11	311	\$140,775
16	2020-2021	COMB	12	325	\$119,113
17	2021-2022	COMB	13	390	\$135,594
18	2022-2023	COMB	-	-	\$88,368
19	2023-2024	COMB	-	-	\$72,945
20	2024-2025	COMB	-	-	\$49,414
21	2025-2026	COMB	-	-	\$58,661
Total:				5740	\$2,292,472

Table 4: Labor costs for the Lake Cachuma Oak Tree Program during FY25-26.

	Total
COMB Staff (hours):	
Seasonal Biologist Aide A	394
Seasonal Biologist Aide B	86
Seasonal Biologist Aide C	179.5
Seasonal Biologist Aide D	67.5
Seasonal Biologist Aide E	102
Biologist	554
Project Biologist A	8
Project Biologist B	28
Senior Resource Scientist	52
Total Staff Hours:	1471.0
Cost - Labor plus burden	\$55,416.60
Consultant Service Hours (Ken Knight):	3.0
Consultant Cost	\$375.00
Total Personnel /Consultant Cost	\$55,791.60

Table 5: Total expenses (labor, materials and supplies) for the Lake Cachuma Oak Tree Program during FY25-26.

	Total
Materials and Supplies:	
Hand tools	\$221.35
Cameras	\$742.35
Vehicle Fuel Cost	\$1,085.05
Equipment Fuel Cost (incl. diesel H2O truck)	\$820.52
Total Materials and Supplies	\$2,869.27
TOTAL EXPENSES (labor, materials + supplies)	\$58,660.87

The total cost of the Lake Cachuma Oak Tree Restoration Program in FY25-26 was \$58,660.87. Again, the total reflects personnel cost (labor plus burden), materials, supplies, expenses (vehicle and equipment fuel), and consultant fees. For comparison, during the first six years of the project annual contractor costs were approximately \$131,000 to plant approximately 375 and maintain the previously planted trees. In FY16-17, COMB staff planted 301 trees and maintained all previously planted trees

(4,290 trees) at a cost of \$101,227. The ability to keep costs down is attributed to multiple factors, which include but are not limited to:

- Relying on the COMB Fisheries Division seasonal staff to conduct the bulk of field activities.
- Minimizing the number of full-time staff being used.
- Reduced equipment needs as the bulk of purchases occurred during the fiscal year when COMB took over the project.
- Higher tree survival rates after Year 6 due to following the latest professionally based standards used in planting and caring for the oak trees.
- Reduced consultant hours due to staff gaining more free-care experience.
- Reduced equipment (generator/pumps) gas consumption from more efficient irrigation hosing and better delivery technique for extracting water from Lake Cachuma.
- Repurposed salvaged deer cages and stakes from Program trees over 6 feet in height.

Summary and Recommendations for Program Improvements

As of the end of the 2025 Oak Tree Inventory, there were 4,553 alive oak trees (Years 1-13 and DT trees). The survival rate to date is 77.83% which can be attributed to the tree maintenance effort of the Program and would be considered very respectable in any open range oak tree planting effort in a similar climate. Now that the Program has successfully met its mitigation requirements and reached its conclusion after 20-years, the only recommendations are to:

- Continue to remove deer cages once the mitigation tree is over 6-feet tall, remove the tree posts and place the tree tag on the tree. All removed materials should be reused or recycled.
- Work with the Lake Cachuma County Park staff to continue caring for the oak trees and educating the visitors to the park.

This 20-year Program has been highly successful and appreciated by all. The Program is an excellent example of how oak tree mitigation efforts should be done, documented, and reported.

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