Travis Audubon
Baker Sanctuary

2024 - 2025 Annual Report

(October 1, 2024 - September 30, 2025)

prepared for the

Travis County Transportation and Natural Resources Department Natural Resources Program

by

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Baker Cabin rainbow (photo by Christopher Murray)

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Introduction

Baker Sanctuary (Sanctuary) is owned and operated by Travis Audubon Society (TAS) with approximately 715 acres managed as a component of the Balcones Canyonlands Preserve (BCP). As of March 2015, Travis County purchased a conservation easement on approximately 675 acres of the Sanctuary. Forty acres, the 'Headquarters Tract' are excluded from the easement (**Appendix A**). The management agreement dictated by the easement allows TAS to continue to manage the Sanctuary with minimal oversight from Travis County for as long as TAS retains ownership of the Sanctuary and adheres to the conditions of the management agreement.

Bisected by Lime Creek Road, the Sanctuary is within the Cypress Creek Macrosite and adjacent to several additional BCP tracts including the City of Austin's Lime Creek and Austin Simon tracts to the northeast, a small tract belonging to the City of Cedar Park to the south, and several tracts belonging to Travis County along the southwestern boundary, including the approximately 2300-acre Wheless tract formerly owned by the Lower Colorado River Authority (**Appendix B**). The Sanctuary is composed of densely wooded uplands, slopes, and canyons dominated by mature oak-juniper woodlands with occasional pockets of open and semi-open savannah which are slowly being encroached by Ashe juniper (*Juniperus ashei,* juniper).

Golden-cheeked Warbler Surveys

Formal golden-cheeked warbler (*Setophaga chrysoparia*, GCWA) surveys at Baker Sanctuary began in 1986 and continued for five years, terminating in 1991. The only area surveyed was the Baker Spring trail and the study birds were not banded. As a result, the estimated population size of the surveyed GCWA varied widely between various observers and breeding seasons.

In 2011, the 100-acre plot was established, once again in the Baker Spring area. Male GCWA were mist-netted, color-banded, and surveyed to determine territory distribution, territory size, and fecundity. With the benefit of color-banded individuals, a more precise and accurate population estimate was obtained for the study population. After the 2016

breeding season, the 100-acre survey effort was discontinued in favor of the rotating full Sanctuary survey initiated in the spring of 2017.

The goal of the rotating full Sanctuary survey is to determine territory distribution and density, fecundity, and a baseline Sanctuary population estimate for GCWA. To accomplish this goal, delineated study plots are surveyed for three consecutive years. When a plot is surveyed, an effort is made to mist net and color-band all male GCWA in the study area. To date, the Northeast plot (65-acres) was surveyed from 2017-2019, the Northwest plot (130-acres) from 2018-2020, and the North Valley plot (104-acres) from 2021- 2023, completing the survey of the northern section of the preserve. With the completion of the North Valley survey effort, the Southwest plot (97-acres) was established on the southern Sanctuary and surveyed for the first time in the spring of 2024. When the rotating survey is complete, it is anticipated that the color-banding and territory mapping effort will cease, and variable circular plot point counts will be the preferred GCWA survey instrument going forward.

Southwest Plot Synopsis:

During the spring of 2025, the second year of three golden-cheeked warbler surveys were undertaken for the approximately 97-acre Southwest plot. The Southwest plot is located south of Lime Creek Road, encompassing the area from the west boundary fence, east to gate 12313, and south to the Baker Spring area. Spot-mapping techniques as outlined in the USFWS protocol for GCWA presence/absence surveys (USFWS 2010) as well as Bibby *et al.* (2003) and the BCP Tier II Land Management Plan (2007a) were utilized for the survey. In short, GCWA were color-banded if possible, territories mapped, and an attempt made to quantify productivity.

Based on the compilation and analysis of 364 GCWA observations which comprised movement patterns, re-sighting of color banded males, counter-singing, and the presence of females and fledglings, it is conservatively estimated that 15 full territories and two edge territories were observed in the study plot for an adjusted total of 16 territories (**Figure 1**). Females were observed in 12 of the 15 full territories as well as a total of nine fledglings. Two territories were established directly adjacent to the 97-acre plot and were not included in the analysis nor indicated on the territory map.

Territory density was calculated at 0.16 territories per acre. This calculation was based on the adjusted total of 16 territories in the 97 acres surveyed.

The pairing success rate in the Southwest plot was 80% (females were observed in 12 of the 15 full territories). The breeding success was estimated at 33%, since five of the 15 full territories produced fledglings. The estimated brood size was 1.80 fledglings. Overall productivity was estimated at 0.60 fledglings per territory based on the total of nine fledglings observed in five of the 15 full territories.

While the 100-acre survey has been performed at Baker since 1999, intensity and methodology have varied enough to make significant comparisons between years problematic. With the onset of color-banding and adoption of a standardized survey protocol beginning in the 2011 season, the results of the subsequent seasonal surveys can cautiously be compared. The comparison is worthwhile to begin to ascertain if certain areas of the Sanctuary are more productive than others and, if so, what the possible causes of such a difference could be. Ultimately, the goal is to elucidate management techniques which would increase productivity in areas where it is comparatively lower, if possible.

Results from the 2025 Southwest survey appear to be consistent with results from surveys spanning 2014 - 2024 in most measured parameters, the exception being territory density, breeding success and overall productivity. Territory density in prior surveys has ranged from 0.09 – 0.14 (Southwest = 0.16), pairing success 67% - 100% (Southwest = 80%), breeding success 44% - 100% (Southwest = 33%), estimated brood size 1.50 – 3.70 (Southwest = 1.80), and overall productivity 1.00 – 2.80 (Southwest = 0.60).

With a territory density of 0.16 territories/acre, the Southwest plot has demonstrated the highest measured territory density at Baker since surveys were initiated. Further surveys will determine if the result is an outlier or more indicative of the typical density for that area. Even more interesting is the distribution of the territories. While the western half of the plot was saturated with territories, the eastern half of the plot had large swaths of similar habitat in which GCWA were not detected. This distribution could simply be

observer bias, or it may indicate a significant difference in habitat quality. One possible explanation, at least for the eastern edge of the plot, is the presence of a swath of degraded habitat which experienced a large degree of tree mortality in the drought of 2011. While the bulk of the degraded habitat is adjacent to the study plot, a tendril does extend well within the plot's boundary. It is possible that the presence of the degraded habitat, the tendril and the bulk to the east, confers a less appealing nature to the adjacent, non-affected habitat for GCWA. Surveys over the next several seasons should offer some illumination to this question.

In 2014 TAS obtained state and federal permits to band (plastic color-bands and USFWS aluminum bands) GCWA throughout the Sanctuary. Since then, a total of 83 GCWA males, 57 ASY and 26 SY, have been captured and banded under TAS and Travis County permits during various survey efforts (**Table 1**). It is anticipated banding will continue through the sanctuary-wide survey effort.

In an effort to explore alternatives in assessing the GCWA population density and distribution at Baker, a pilot variable circular plot (VCP) point count study was initiated in the spring of 2016. Point count stations were established 250 meters apart in a grid pattern for a total of 50 stations at the Sanctuary (**Figure 2**). Counts began no earlier than 10 minutes after sunrise and concluded by 11 AM. Originally, GCWA were counted for five minutes at each station and their locations, activity, and movements recorded per minute at each station where they occurred. To reduce potential bias from multiple observers, the Sanctuary steward conducted all surveys. The point counts were performed again for the 2017 breeding season utilizing the 2016 protocol (**Appendix D)** but the counts were doubled from five to 10 minutes in an effort to ascertain the most accurate survey interval for GCWA on the Sanctuary. The 10-minute count was utilized again for the 2025 effort which produced 42 GCWA male detections, 24 if truncated to five-minute counts, with the majority of the initial detections occurring during the first minute of observation (**Table 2**). Due to the ease of truncating the point count data if needed, the 10-minute count will be employed in future efforts until the entire Sanctuary has been methodically surveyed and the accuracy of the count interval tested over multiple seasons.

Whitetail Deer Management

Baker Sanctuary was closed to visitors from November 1, 2024 – January 19, 2025 for the annual whitetail deer (*Odocoileus virginianus*, WTD) management hunt (rifle hunting only). Seven primary hunters hunted at sites 3, 5, 10, 11, 12, 13, and 14 (**Figure 3**) and harvested a total of six deer (all bucks) during 337.25 hours of hunt effort, a decrease in take from the average harvest of 9.0 deer per season over the prior 23 recorded seasons (**Figure 4**).

To gain a better understanding of the size and composition of the whitetail deer population on the Sanctuary, an annual camera trap survey was initiated in the fall of 2016. The survey was again conducted in 2024, from September through the first week of October, utilizing a protocol outlined by Texas Parks and Wildlife (Oetgen *et al*, 2008). Six camera trap sites **(Figure 3)** were baited with feed corn for five days prior to deploying the camera traps which were then left active for 10 consecutive days. Results from the survey (**Table 3**) suggest the Sanctuary has a WTD density of approximately 7.3 deer/km2. It is difficult to put the results in context because little to no regional deer density data are available prior to the institutionalization of a regulated deer hunting season in Texas and prior to eradication of the screwworm (*Cochliomyia hominivorax*) parasite. According to the most recent version of the BCP Tier II LMP (2007b), TPWD recommends a density of approximately 13 deer/km2 but it is later acknowledged in the document that a density of approximately seven deer/km2 may be necessary for hardwood recruitment. References are not provided for either assertion, so it is not clear how the recommendations were determined. Dey (2014) proposes a density of three deer/km2 as a reasonable estimate of historical deer densities for the area but, once again, at best it is an educated guess. Despite having deer density below the TPWD recommended level, hardwood recruitment at the Sanctuary does not appear to be very robust, particularly in the uplands, with few preferred hardwood species such as Spanish oak (*Quercus buckleyi*), shin oak (*Quercus sinuata*), escarpment black cherry (*Prunus serotina*), and Texas ash (*Fraxinus texensis*) significantly regenerating, a pattern which may be occurring throughout the BCP (Russell and Fowler 1999, 2002, 2004).

The Hatfield Tract is a 50-acre parcel deeded to TAS in 1986 with the following stipulation: “it will never lease any portion of the property for hunting or trapping purposes”; as a result, no hunting took place on this tract during the 2024 – 2025 whitetail deer season.

Vegetation Management

Approximately 402 cubic yards of vegetation were trimmed from trails, maintenance roads, shooting lanes, and structures when it either encroached upon hiking trails or roads, posed a safety or structural hazard, or impeded hunting efforts. Unless it posed an immediate safety or structural concern, trimming was restricted to the GCWA non-breeding season (September 1 – February 28) and was performed so that canopy fragmentation, if it occurred, was kept to a minimum. When oaks (*Quercus* sp.) were trimmed, precautionary techniques such as disinfecting saws and painting wounds were utilized to prevent the spread of oak wilt fungus (*Ceratocystis fagacearum*). Due to the severe 2021 and 2023 February ice storms, many trees still require trimming or removal from trails, public spaces, shaded fuel break, and maintenance roads.

Slash from cut vegetation was chipped prior to the onset of the GCWA breeding season yielding an estimated 157 cubic yards of material. The mulch was spread on the Sanctuary’s trail system as well as utilized to mulch individual seedlings which were planted near Baker Cabin and the gate 12219 area.

During the fall and winter of 2024 - 2025 a total of 10 species of woody and herbaceous plants were put in the ground or sowed at the Sanctuary, donated by the City of Austin, sourced from Baker, or donated as rescue plants (**Table 4**).

In 2015, TAS applied for a Federal Emergency Management Agency grant to install a shaded fuel break in the Wildland Urban Interface Baker Sanctuary shares with approximately 85 homes of the Cypress Canyon subdivision. In total, it was estimated the fuel break would span 6,666 linear feet and treat an area of approximately 15.4 acres (**Figure 5**). The application was approved and, in the fall of 2018, TAS contracted Lake Travis Fire & Rescue (LTFR) to implement the grant and install the fuel break in accordance with the best management practices developed by USFWS and Travis County BCP. LTFR began work mid-January 2019 and completed approximately 98% of

the northern section before work was halted for the GCWA breeding season. Work resumed on the shaded fuel break in October 2019 and completed in November 2019 with the treatment of the remainder of the northern section and the three-acre southern section.

Baker Sanctuary is composed primarily of dense mature oak-juniper woodlands interspersed with pockets of open and semi-open savannah; there are nine Fire Behavior Prediction System fuel models that correspond with the habitats within the BCP. A fire management plan based upon these prediction systems is located in the Sanctuary headquarters and is available to assist the Steward in monitoring for fire safety and response readiness. The Sanctuary is also equipped with a wildfire call-down list and basic wildfire response tools to expedite early response to wildfires.

Brown-headed Cowbird Management

TAS operated two brown-headed cowbird (*Molothrus ater*, BHCO) traps from March 27 through May 25 of the 2025 season. Trap TAS1 was located on the south side of Lime Creek Road adjacent to the public parking lot and trap TAS2 in the semi-open savannah near hunt site 11. Traps were checked daily and non-target species were released when discovered. This season, trap TAS1 captured 12 males and one female and TAS2 captured no birds for a total of 13 BHCO captured, results significantly lower than the average of 17.1 per season captured over the prior 22 recorded seasons (**Figure 6**). One Inca Dove, one male Northern Cardinal, one female Dickcissel, one Texas Rat Snake (*Elaphe obsoleta*), and one Ringtail (*Bassariscus astutus*) were captured and released unharmed.

Exotics Control

Two distinct and robust populations of Malta star-thistle (*Centaurea melitensis*) were known to occur at the Sanctuary, one centered near Baker Cabin to the north of Lime Creek Road (LCR) and another centered at the Steward's former residence to the south of LCR. While both populations occurred in heavily disturbed, semi-open savannah habitat, the northern population was more established and extensive, typically forming a dense monoculture where it occurred. With a regime of consistent hand-pulling and

limited use of glyphosate over the past 15 years, both populations have been greatly reduced in density and distribution to the point where only occasional hand removal of scattered individuals is now required.

The extensive tree-of-heaven (*Ailanthus altissima*) grove discovered in December 2010 in a northern drainage of the Sanctuary is still being actively monitored and treated. Over the last year, no tree-of-heaven seedlings were discovered and hand pulled. Since the grove was discovered in 2010, a total of 5,151 tree-of-heaven (**Figure 7**) and 53 chinaberry (*Melia azedarach*) seedlings have been removed from the area. This area will continue to be monitored until three consecutive years have passed without detection of any emergent seedlings.

Various non-native, invasive plants were either manually removed or stump-cut and treated with a 40% imazapyr solution when encountered throughout the Sanctuary. Species treated or removed included 45 chinaberry, 413 Chinese pistache (*Pistacia chinensis*), 51 common mullein (*Verbascum thapsus*), one crepe myrtle (*Lagerstroemia* spp), 621 heavenly bamboo (*Nandina domestica*), nine patches of Japanese honeysuckle (*Lonicera japonica*), nine patches of Johnsongrass (*Sorghum halepense*), 1226 large-leaf privet (*Ligustrum japonicum*), 139 small-leaf privet (*Ligustrum sinense*), and one tree-of-heaven.

The 18 common figs initially treated on July 2013 near Walnut Spring were monitored over the course of the year and no new re-sprouts were observed. The site will continue to be monitored until no new growth has been recorded in three successive years.

Over the past fiscal year, 10 boiling water treatments were applied to visible red imported fire ant (*Solenopsis invicta)* mounds which occurred in high traffic, disturbed areas such as the Steward's residence.

Research

In an effort to achieve a more complete understanding of the composition, distribution, and density of avian species which inhabit the Sanctuary, the fixed-radius point count methodology proposed by Hutto *et al.* (1986) has been employed in an annual breeding

bird survey since 2011. From May 20 through June 02, the fifteenth annual count was performed at a total of 38 point count stations (**Figure 8**). While in the past the survey had been conducted over the course of one morning with the help of volunteer surveyors, beginning in 2016 one observer, Christopher Murray, conducted all the surveys over the course of a week. Of the 36 species recorded, the most abundant were northern cardinal detected at 100% of the stations, a three-way tie for second with lesser goldfinch (*Spinus psaltria*), painted bunting (*Passerina ciris*), and mourning dove (*Zenaida macroura*) at 87% of the stations, and black-crested titmouse (*Baeolophus atricristatus*) at 84% of the stations. Golden-cheeked warblers were detected at 21% of the stations (**Table 5**) compared to 24% for the previous year. Point count data were analyzed with a linear regression test (log-transformed, 2-tail, 95% confidence level) for the 15 years of data. All populations appear stable with no statistically significant trends with the exception of chimney swift (*Chaetura pelagica*), great crested flycatcher (*Myiarchus crinits*), lesser goldfinch (*Spinus psaltria*), northern cardinal, painted bunting, red-eyed vireo (*Vireo olivaceus*), summer tanager (*Piranga rubra*), white-eyed vireo (*Vireo griseus*), and yellow-billed cuckoo (*Coccyzus* americanus) who demonstrated significant positive population trends. Black-and-white warbler (*Mniotilta varia*), great-tailed grackle (*Quiscalus mexicanus*), northern bobwhite (*Colinus virginianus),* northern mockingbird (*Mimus polyglottos*)*,* and turkey vulture (*Cathartes aura*) demonstrated significant negative population trends.

From 2011 – 2014, 15 nest boxes were installed throughout the Sanctuary as a community outreach activity and to provide additional nesting opportunities for cavity nesting birds. Of the remaining three nest boxes, one was occupied by a wren species, as determined by nest composition. In addition to the nest boxes, the 15 chimney swift towers on the Sanctuary were estimated to have successfully fledged a total of 41 young, determined by analysis of nesting detritus accumulated on the bottom plates of the towers.

To enhance survivorship and to investigate factors which may contribute to hardwood seedling growth rates and mortality, an oak caging project was initiated in December 2013. Beginning in 2016, the caging effort was expanded to include other hardwood species of concern. During the 2024 - 2025 season, five Spanish oak, nine escarpment black cherry, and one shin oak *were* caged throughout the Sanctuary. To date a total of

60 plateau live oak, 43 shin oak, 160 Spanish oak, 29 Texas ash, 61 escarpment black cherry, two Western soapberry (*Sapindus saponaria*), one Mexican Plum, and one coma (*Bumelia lanuginosa*) have been caged, a total of 357 hardwood individuals of concern. In conjunction with the caging effort, data such as habitat type, basal stem diameter, seedling height, percent canopy cover, and distance to nearest mature individual were collected to potentially better understand factors which may affect seedling growth and survival. Currently, analysis of the data set has only focused on growth rates per species and has not yet explored possible effects related to habitat type or density of canopy cover. To date, caged Spanish oak have exhibited an annual average increase in height of 9.0 cm/season, plateau live oak 8.3 cm/season, shin oak 3.2 cm/season, escarpment black cherry 7.4 cm/season, Texas ash 9.1 cm/season, western soapberry 48.0 cm/season, coma 2.8 cm/season, and Mexican plum 3.4 cm/season. With regard to basal diameter, caged Spanish oak have exhibited an annual average increase of 0.182 cm/season, plateau live oak 0.317 cm/season, shin oak 0.195 cm/season, escarpment black cherry 0.143 cm/season, Texas ash 0.313 cm/season, western soapberry 0.256 cm/season, coma 0.161 cm/season, and Mexican plum 0.164 cm/season. To date, plateau live oak have demonstrated a 35% mortality rate for caged individuals, shin oak 21%, Spanish oak 30%, Texas ash 12%, escarpment black cherry 40%, and no mortality has yet been recorded for western soapberry, coma, or Mexican plum.

Following the extreme drought of 2011, Baker Sanctuary experienced significant, localized Ashe juniper mortality centered primarily on the east portion of the preserve near Lime Creek Road. In September 2014, 10 juniper seedlings were flagged and given a unique tag, but they were not caged. Ten additional Ashe juniper were flagged and tagged in February 2016. With the goal to obtain growth rates (height and mid-stem diameter) to compare with those of hardwoods, trees were selected with the criteria that they were seedlings and growing in full sun. To date seedling juniper height has increased at an average of 27.5 cm/season and mid-stem diameter at a rate of 0.365 cm/season. To date, a mortality rate of 30% has been observed for the monitored Ashe juniper individuals.

Monthly water quality tests were discontinued for Audubon and Baker Spring beginning in 2020 due to a lack of spring flow. In the past, both sites have been documented to support populations of the threatened Jollyville plateau salamander (*Eurycea tonkawae*).

While Baker Spring was occasionally monitored to determine if the spring was flowing, it was not consistently checked. In September of 2024, it was noted that the spring once again demonstrated marginal flow and, going forward, Baker Spring will now be regularly checked monthly. In lieu of water quality data for the spring, average spring depth will be the reported metric (**Table 6**).

Education and Outreach

From October 2024 through September 2025 Baker Sanctuary experienced a total of 1426 visitations from day hikers, 1383 of which were by TAS members. An additional 257 visitations occurred during organized activities such as educational programs, TAS events, Baker Nature Day, and guided hikes. A total of 479 volunteer hours were recorded for the Sanctuary on a variety of activities (see below).

October: Trails maintenance, habitat restoration.
November: Trails, grounds, & facilities maintenance, habitat restoration.
December: Trails. Grounds, & facilities maintenance, habitat restoration, invasive plant removal.
January: Trails maintenance, invasive plant removal.
February: Trails, grounds, & facilities maintenance, invasive plant removal.
March: Trails and facilities maintenance, invasive plant removal, biological monitoring, outreach.
April: Trails maintenance, outreach, biological monitoring, invasive plant removal.
May: Invasive plant removal, biological monitoring, outreach.
June: Grounds, trails, & facilities maintenance, biological monitoring, outreach, invasive plant removal.
July: Trails maintenance.
August: Habitat restoration.
September: Trails maintenance, habitat restoration.

Other activities to enhance community involvement and increase awareness of Baker Sanctuary and the BCP mission included 14 guided hikes for various community groups and a meeting venue for two conservation organizations . The annual Baker Nature Day was attended by an estimated 82 community members.

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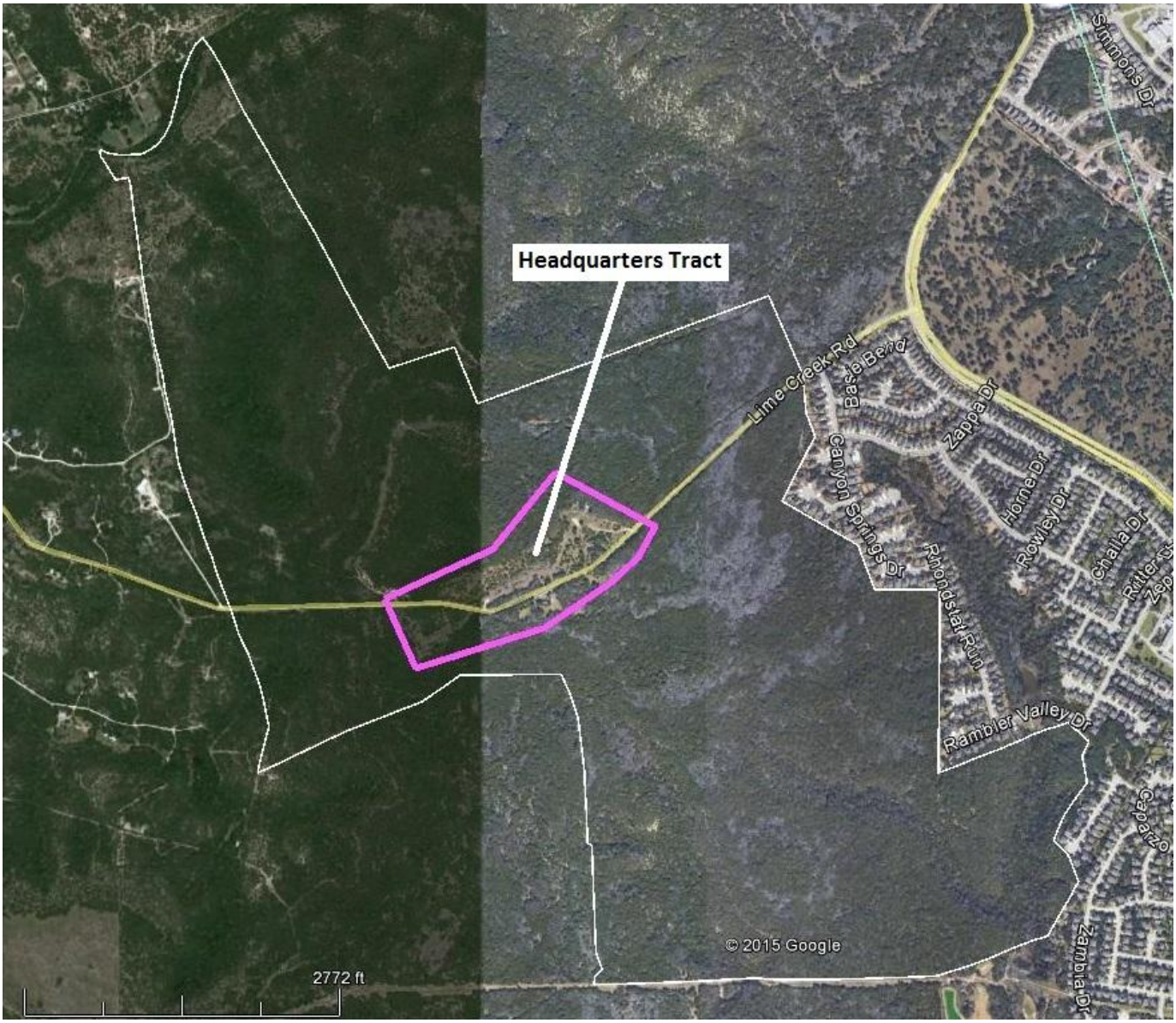
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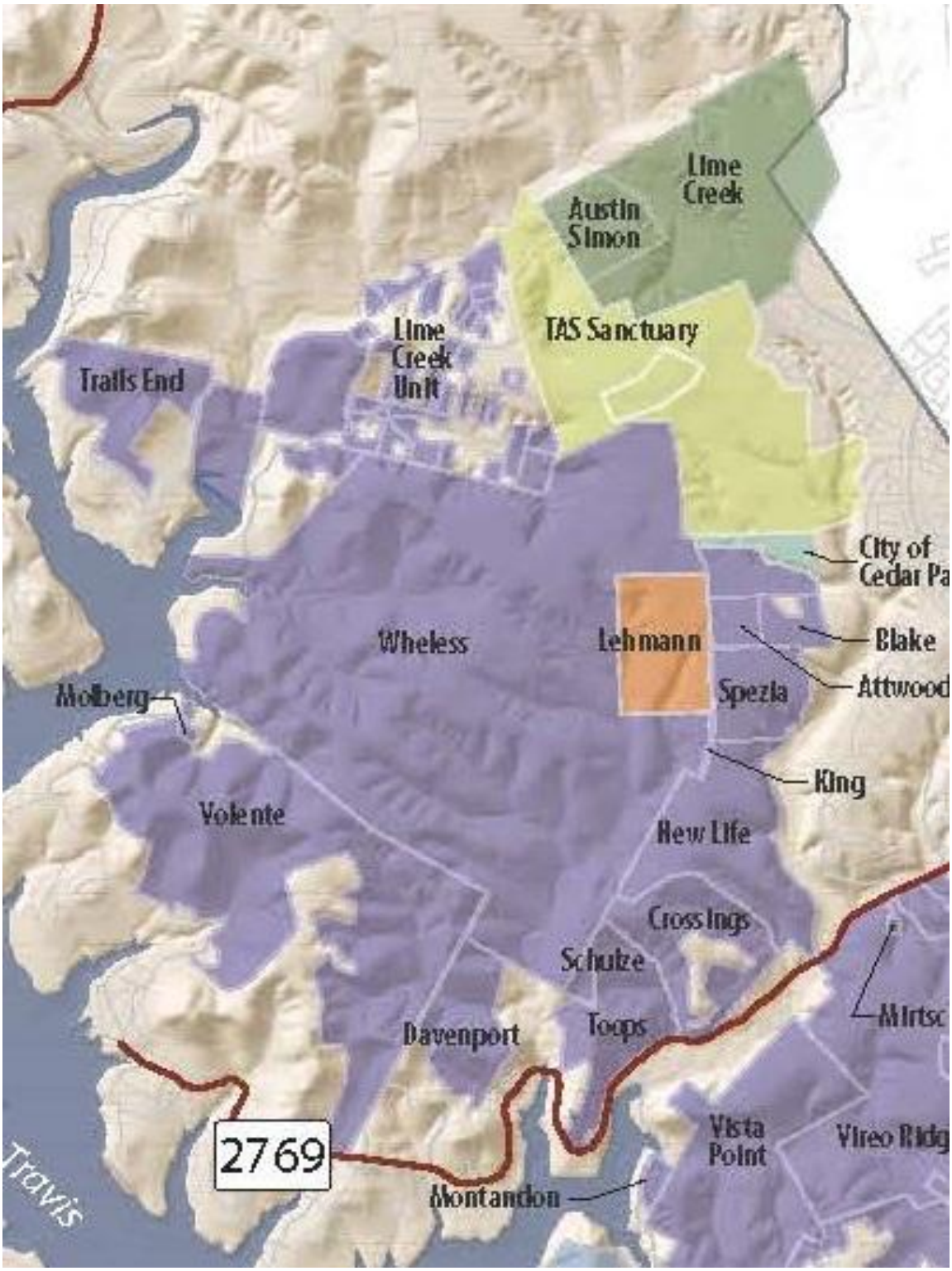
Appendix A

Baker Sanctuary 40-acre headquarters tract



Appendix B

Baker Sanctuary and adjacent BCP partner properties



Appendix C

Baker Sanctuary GCWA VCP point count example, 2017

Date	Station	Time Begin	Time End	Wind Spd (mph)	Temp (F)	Precipitation	Female	BoC
4/6/17	18	9:54.00	10:04.00	0	56°	N/A	Y (N)	WESJ BLJA NOBO

Bird	Position	Time	Detect	Dist (m)
1	1-1	9:54.05	A	46
2	2-1	9:54.15	B	46
1	1-1	9:55	A	46
2	2-1	9:55	B	46
3	3-1	9:56.05	B	71
1	1-1	9:56	A	46
2	2-1	9:56	B	46
1	1-1	9:57	A	46
2	2-1	9:57	B	46
3	3-1	9:57	B	71
2	2-1	9:58	B	46
3	3-1	9:58	B	71
1	1-2	9:58	A	36
1	1-2	9:59	A	N
2	2-1	9:59	B	46
3	3-1	9:59	B	71
1	1-2	10:00	A	36
2	2-1	10:00	B	46
3	3-1	10:03	B	71
3	3-1	10:01	B	N
1	1-2	10:01	A	36
2	2-2	10:01	A	56
1	1-2	10:02	A	36
1	1-3	10:03	A	39

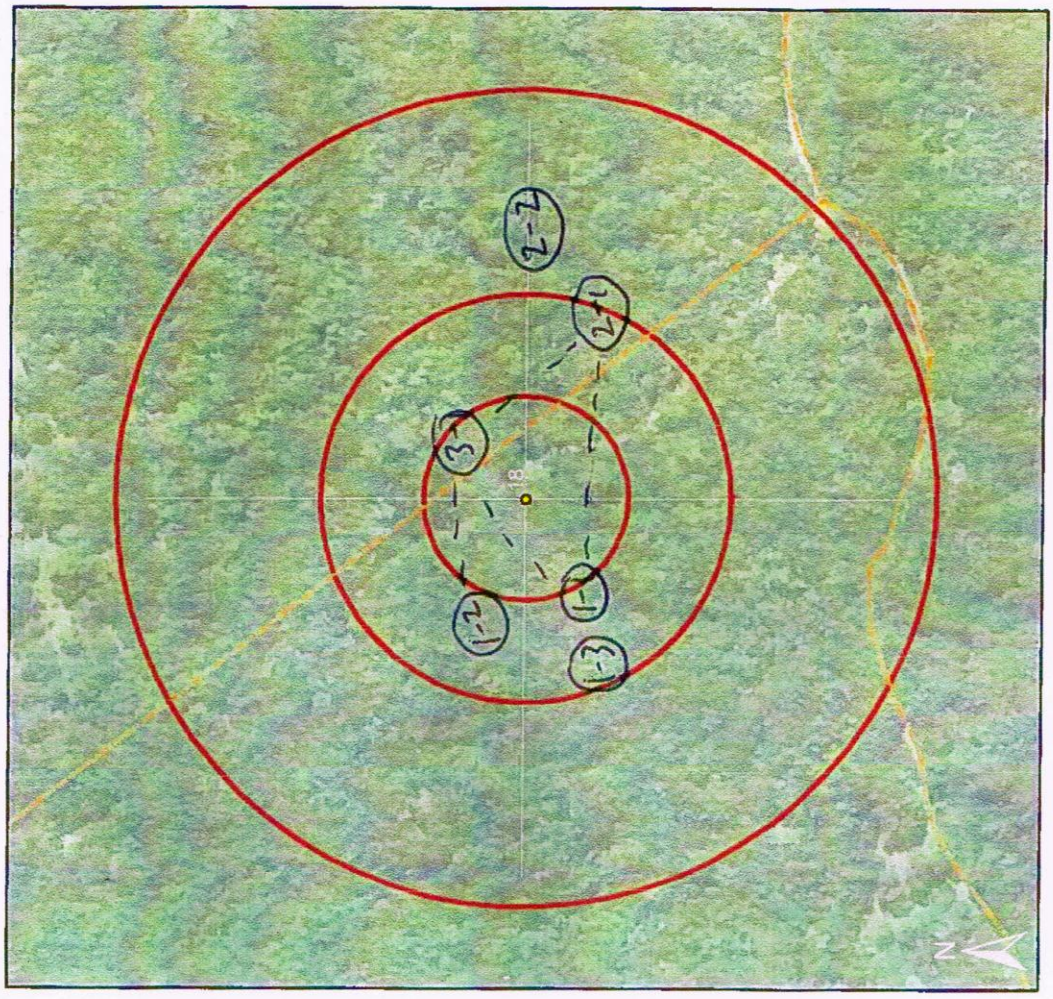


Figure 1. Southwest plot GCWA territory distribution, 2025.

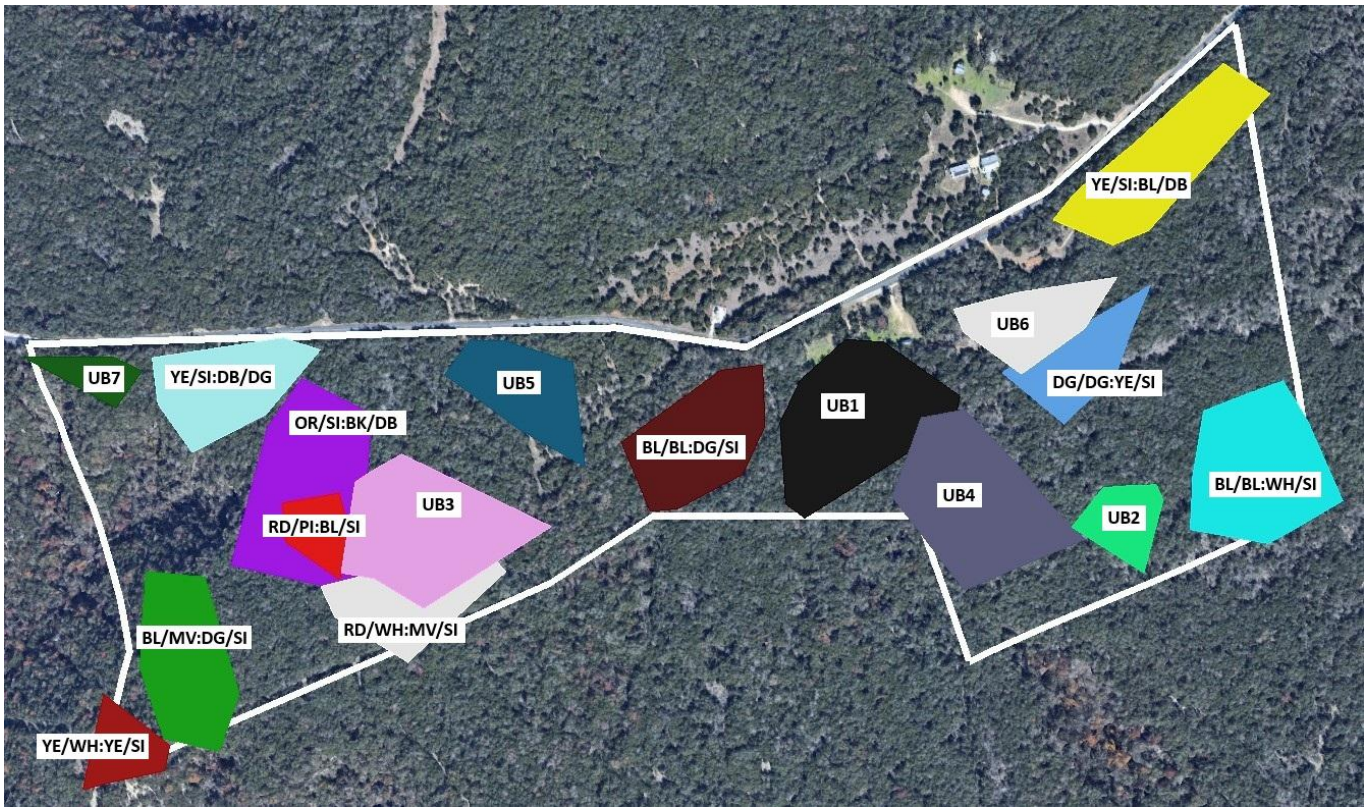


Figure 2. Baker Sanctuary VCP point counts stations, 2025.



Figure 3. Baker Sanctuary whitetail deer hunt and camera sites, 2024 - 2025.

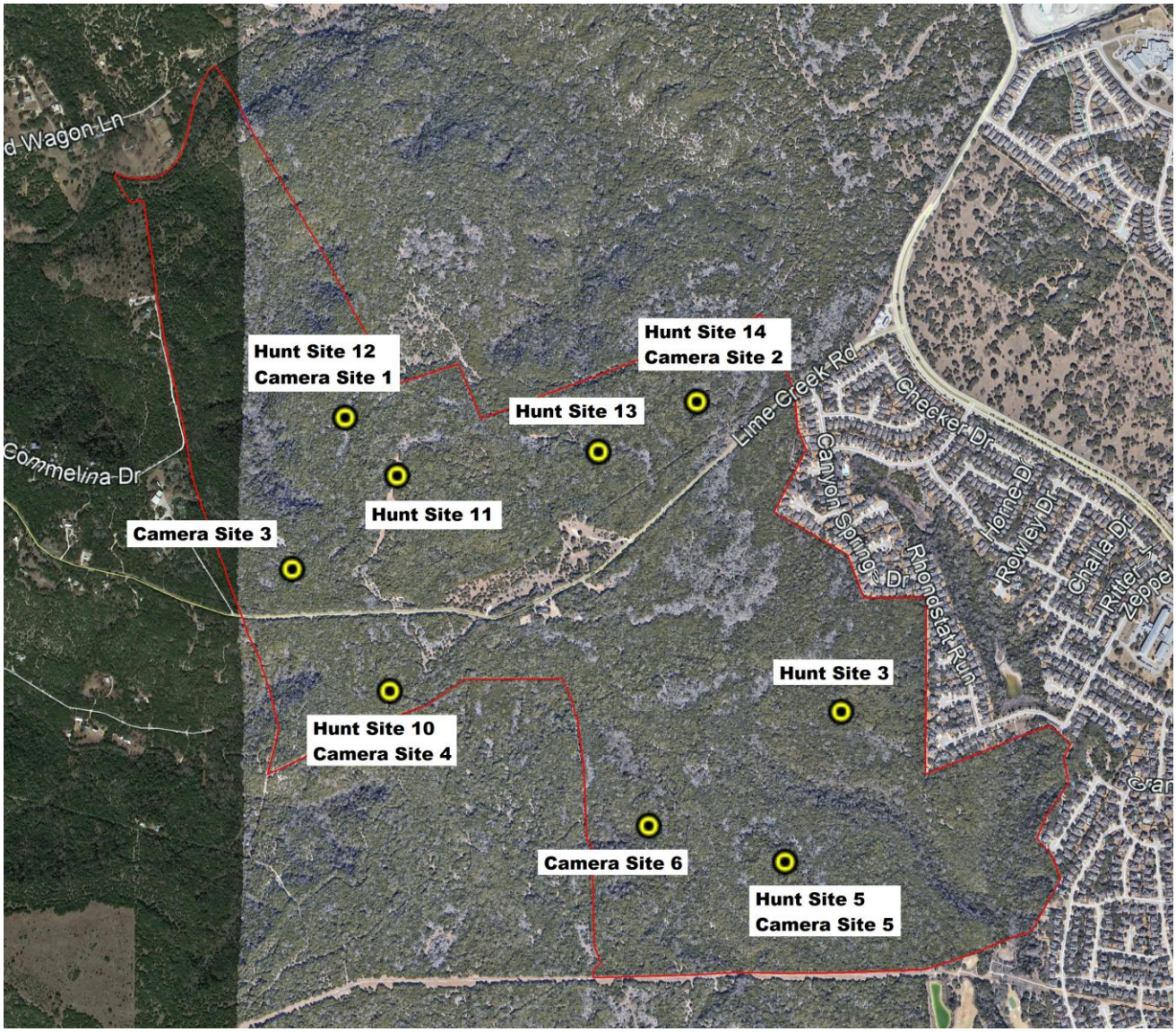


Figure 4. Summary of Baker Sanctuary whitetail deer harvest, 2000-2025. Juvenile deer are a year or less in age.

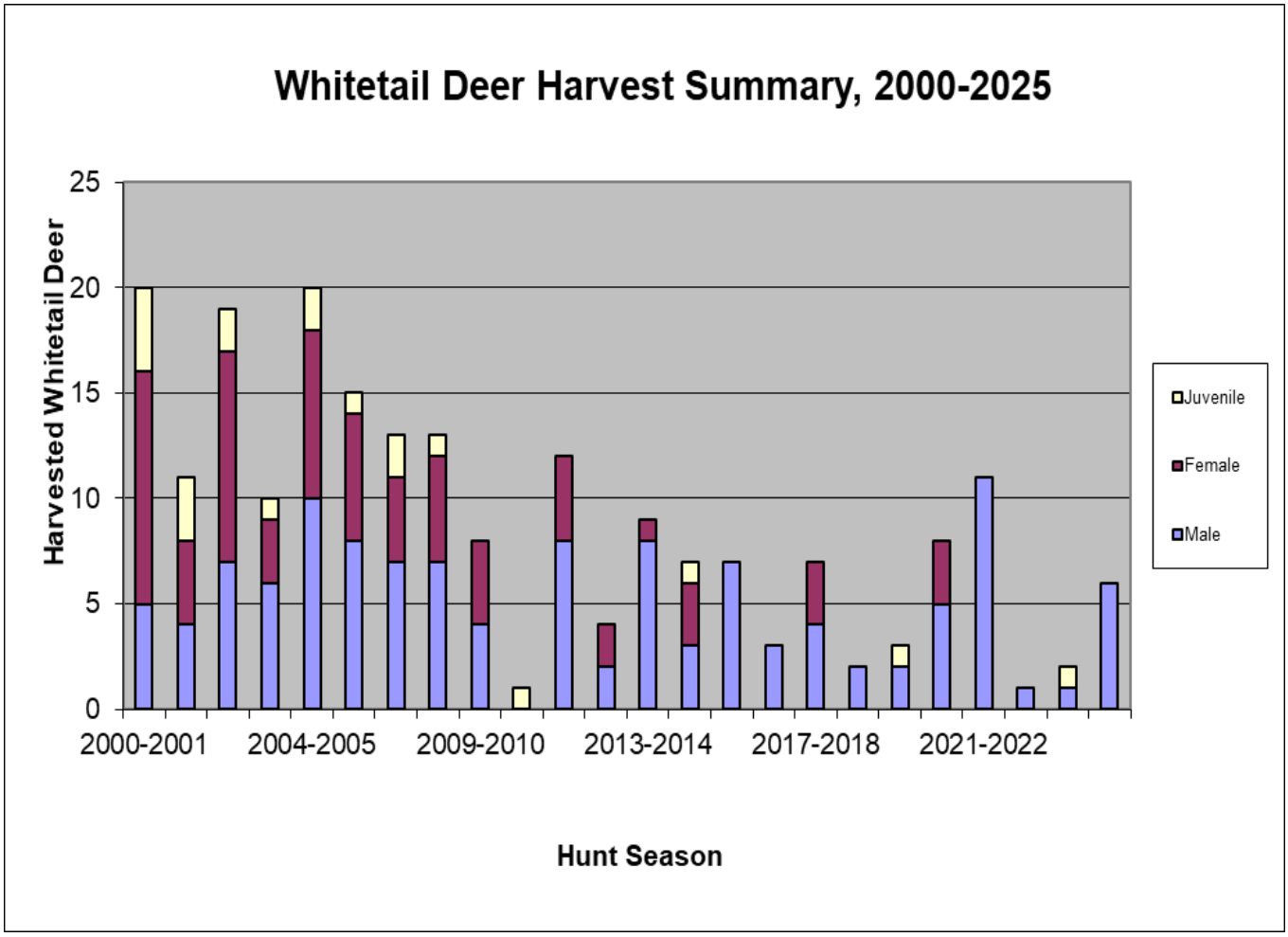


Figure 5. Baker Sanctuary shaded fuel break.

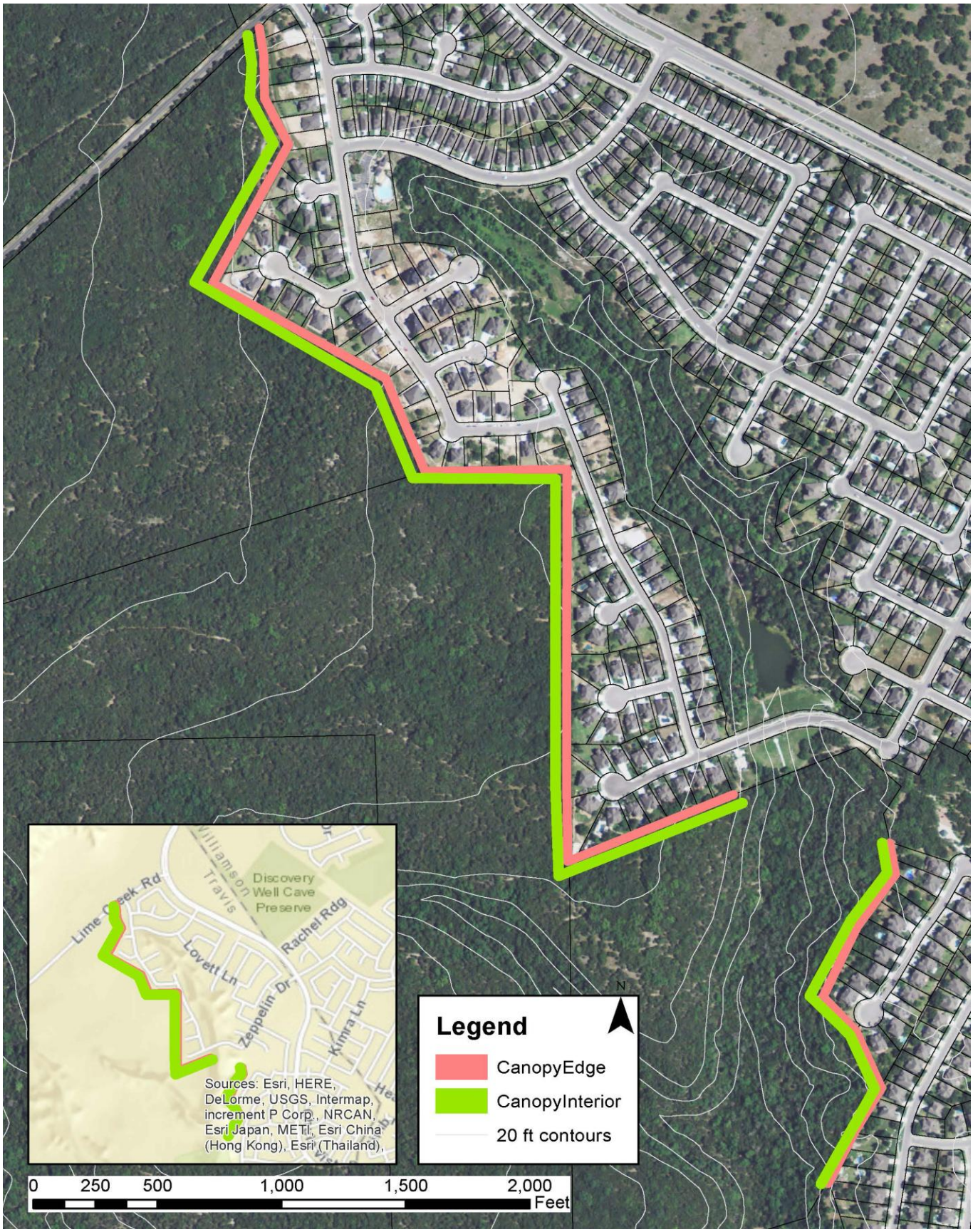


Figure 6. Summary of Baker Sanctuary brown-headed cowbird management, 2001-2025.

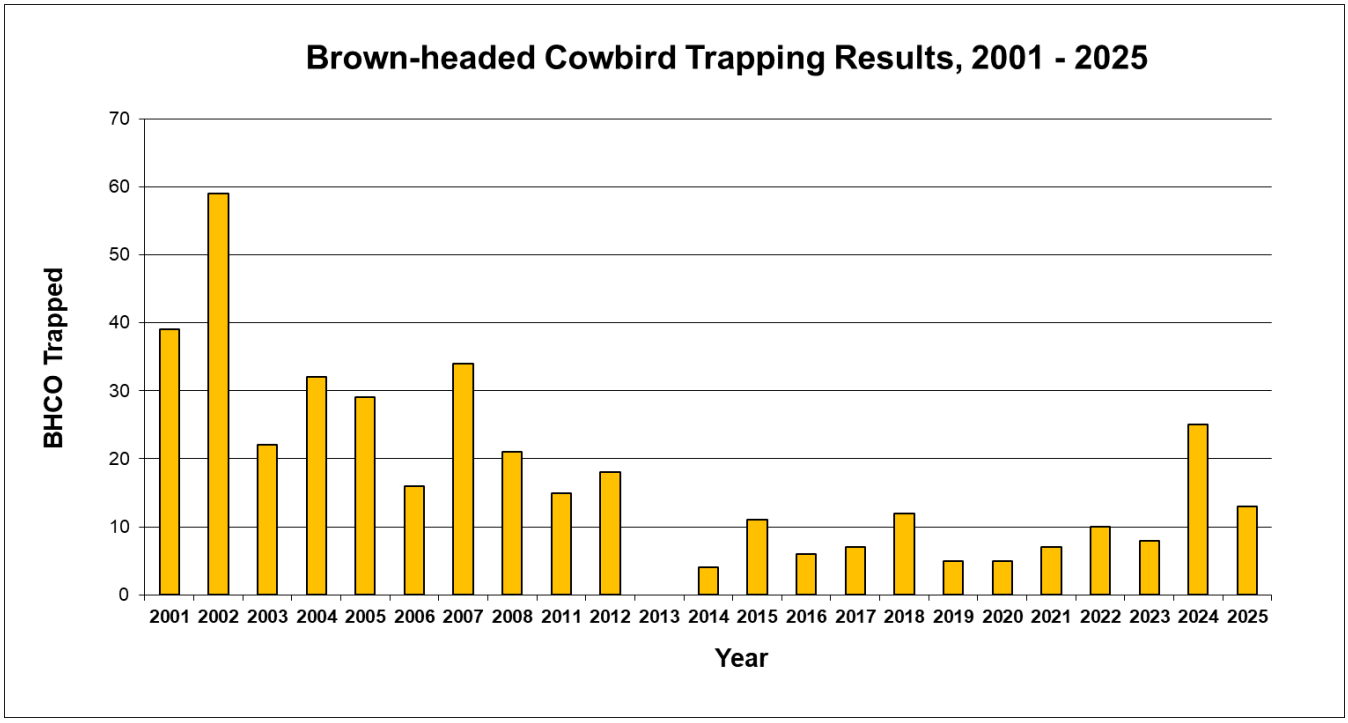


Figure 7. Summary of Baker Sanctuary tree-of-heaven eradication efforts, 2010-2025.

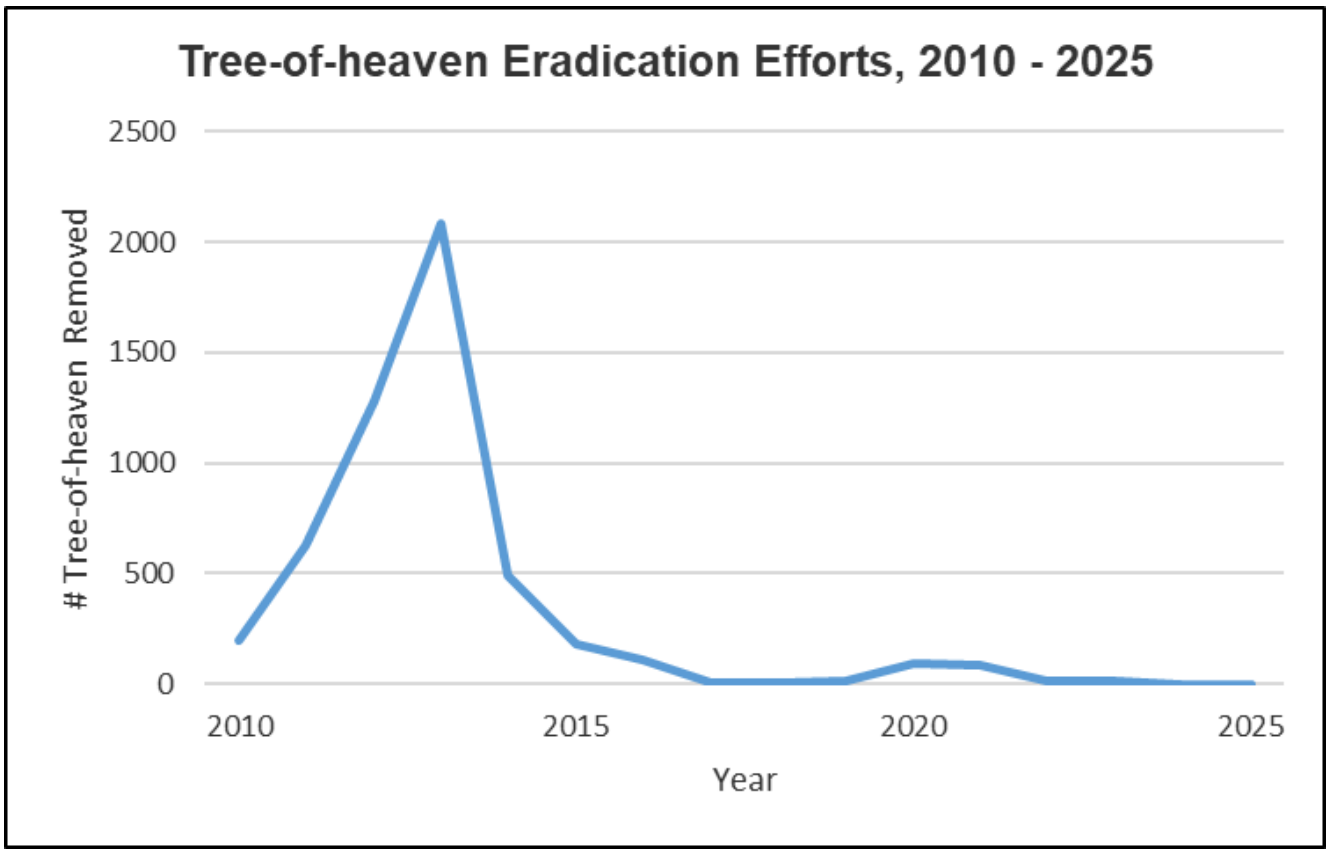


Figure 8. Baker Sanctuary BBS point count stations, 2025.



Table 1. Summary of GCWA banded at Baker Sanctuary, 2015 - 2025.

Year Banded	USFWS Serial Number	Color Band Combination	Survey Plot	Sex	Age
2015	2770-41201	RD/SI:RD/DB	100-acre	Male	SY
2015	2770-41202	MV/MV:YE/SI	100-acre	Male	ASY
2016	2770-41203	NB/SI:OR/DB	100-acre	Male	ASY
2016	2770-41205	BL/DG:BK/SI	100-acre	Male	ASY
2016	2550-99699	WH/SI:BK/WH	100-acre	Male	SY
2017	2770-41206	RD/RD:DG/SI	Northeast	Male	ASY
2017	2770-41207	DG/DB:OR/SI	Northeast	Male	ASY
2017	2770-41208	BK/WH:BL/SI	Northeast	Male	ASY
2017	2770-41209	PI/SI:WH/RD	Northeast	Male	ASY
2017	2770-41210	WH/BL:MV/SI	Northeast	Male	ASY
2018	2770-41211	MV/MV:MV/SI	Northwest	Male	ASY
2018	2770-41212	PI/SI:YE/RD	Northwest	Male	ASY
2018	2770-41213	WH/BL:DB/SI	Northwest	Male	ASY
2018	2770-41214	BK/DB:MV/SI	Northwest	Male	ASY
2018	2770-41215	YE/SI:WH/RD	Northwest	Male	SY
2018	2770-41216	OR/SI:BK/MV	Northwest	Male	ASY
2018	2770-41217	DG/PI:WH/SI	Northwest	Male	ASY
2018	2770-41218	BK/SI:GR/WH	Northwest	Male	ASY
2018	2790-44711	MV/SI:BL/YE	Northwest	Male	ASY
2018	2770-41219	WH/WH:OR/SI	Northeast	Male	SY
2018	2770-41220	MV/OR:RD/SI	Northeast	Male	ASY
2018	2770-41221	BK/PI:OR/SI	Northwest	Male	ASY
2018	2770-41222	WH/SI:WH/YE	Northwest	Male	ASY
2019	2770-41223	YE/DG:RD/SI	Northeast	Male	ASY
2019	2770-41224	GR/SI:PI/PI	Northwest	Male	ASY
2019	2770-41225	WH/RD:BL/SI	Northwest	Male	SY
2019	2770-41226	BK/SI:DB/DB	Northeast	Male	ASY
2019	*2770-41228	GR/PI:PI/SI	Northeast	Male	ASY
2019	2770-41229	WH/SI:YE/YE	Northeast	Male	SY
2020	2770-41230	DG/SI:PI/PI	Northwest	Male	ASY
2020	2770-41231	DB/YE:YE/SI	Northwest	Male	ASY
2020	2770-41232	BK/SI:WH/BL	Northwest	Male	SY
2020	2770-41233	BL/SI:MV/OR	Northwest	Male	ASY
2020	2770-41234	DB/GR:GR/SI	Northwest	Male	ASY
2020	2770-41235	MV/SI:DB/RD	Northwest	Male	ASY
2020	2770-41236	BK/MV:BK/SI	Northwest	Male	SY
2020	2770-41237	WH/SI:DG/PI	Northwest	Male	ASY
2020	**2770-41239	GR/BL:RD/SI	Northwest	Male	SY
2021	2770-41240	BL/OR:OR/SI	North Valley	Male	ASY
2021	2770-41241	MV/SI:BK/MV	North Valley	Male	SY

Year Banded	USFWS Serial Number	Color Band Combination	Survey Plot	Sex	Age
2021	2770-41242	RD/DG:WH/SI	North Valley	Male	SY
2021	2770-41243	WH/OR:DB/SI	North Valley	Male	ASY
2021	2770-41244	PI/SI:DG/RD	North Valley	Male	SY
2021	2770-41245	YE/SI:DG/DB	North Valley	Male	SY
2021	2770-41246	DG/BK:MV/SI	North Valley	Male	ASY
2021	2770-41247	OR/SI:WH/DG	North Valley	Male	ASY
2021	2770-41248	WH/RD:PI/SI	North Valley	Male	ASY
2021	2770-41249	PI/DG:WH/SI	North Valley	Male	ASY
2021	2770-41250	MV/DG:BL/SI	North Valley	Male	ASY
2022	2770-41251	OR/OR:RD/SI	North Valley	Male	ASY
2022	2770-41252	YE/SI:DB/BK	North Valley	Male	SY
2022	2770-41253	PI/SI:RD/RD	North Valley	Male	SY
2022	2770-41254	DB/SI:OR/DG	North Valley	Male	SY
2022	2790-44736	DG/SI:YE/BK	North Valley	Male	SY
2022	2770-41255	PI/MV:MV/SI	North Valley	Male	SY
2022	2770-41256	BK/MV:OR/SI	North Valley	Male	ASY
2023	2770-41257	PI/PI:BL/SI	North Valley	Male	ASY
2023	2770-41258	YE/PI:YE/SI	North Valley	Male	ASY
2023	2770-41259	OR/SI:WH/MV	North Valley	Male	ASY
2023	2770-41261***	BL/SI:RD/BK	North Valley	Male	ASY
2023	2770-41262	BK/SI:RD/MV	North Valley	Male	ASY
2023	2770-41263	DG/BK:DB/SI	North Valley	Male	SY
2023	2770-41264	RD/DB:DB/SI	North Valley	Male	SY
2023	2770-41265	WH/SI:PI/DG	North Valley	Male	SY
2023	2770-41266	RD/SI:WH/WH	North Valley	Male	ASY
2024	2770-41267	BL/BL:DG/SI	Southwest	Male	ASY
2024	2770-41268	MV/MV:YE/SI	Southwest	Male	ASY
2024	2770-41269	DB/DB:WH/SI	Southwest	Male	ASY
2024	2770-41270	RD/WH:MV/SI	Southwest	Male	ASY
2024	2770-41271	OR/SI:BK/DB	Southwest	Male	SY
2024	2770-41272	RD/BK:WH/SI	Southwest	Male	SY
2024	2770-41273	YE/SI:BL/DB	Southwest	Male	ASY
2024	2770-41274	PI/SI:RD/OR	Southwest	Male	ASY
2024	2770-41275	MV/RD:BL/SI	Southwest	Male	ASY
2024	2770-41276	RD/PI:BL/SI	Southwest	Male	ASY
2024	2770-41277	WH/SI:BK/DG	Southwest	Male	ASY
2024	2770-41278	DG/SI:BK/YE	Southwest	Male	ASY
2024	2770-41279	NB/SI:YE/PI	Southwest	Male	ASY
2025	2770-41280	BL/BL:WH/SI	Southwest	Male	SY
2025	2770-41281	DG/DG:YE/SI	Southwest	Male	SY
2025	2770-41282	YE/SI:DB/DG	Southwest	Male	ASY
2025	2770-41283	YE/WH:YE/SI	Southwest	Male	SY
2025	2770-41286	DG/SI:BL/MV	Southwest	Male	ASY

Red (RD), Orange (OR), Yellow (YE), Green (GR), Dark Green (DG), Blue (BL), Dark Blue (DB), Mauve (MV), Pink (PI), Black (BK), White (WH), USFWS band (SI), no band (NB)

*Band 2770-41227 was misplaced deep in the mystical forest, never to be found again.
**Band 2770-41238 was damaged and left as an offering for the Wendigo.
***Bands 2770-41260, 41284, 41285 were spirited away by a mischievous woodland sprites.

Table 2. GCWA detected per VCP point count time interval, 2017 - 2025.

Year	< 1 min.	1-2 min.	2-3 min.	3-4 min.	4-5 min.	GCWA Detected 5-min. Interval	5-6 min.	6-7 min.	7-8 min.	8-9 min.	9-10 min.	GCWA Detected 10-min. Interval
2017	27	5	4	3	6	45	2	2	0	3	4	57
2018	12	5	5	3	3	28	3	1	4	2	4	42
2019	24	8	7	2	2	43	2	2	4	2	1	54
2020	27	7	2	2	9	47	3	6	2	1	2	61
2021	28	5	3	3	3	42	3	2	3	1	1	52
2022	26	4	1	7	3	41	2	3	3	3	2	54
2023	16	7	3	2	6	34	4	3	2	1	2	46
2024	12	4	3	2	3	24	4	4	7	1	3	43
2025	11	6	6	0	1	24	4	0	4	5	5	42

Table 3. Baker Sanctuary whitetail deer population survey results, 2016 - 2024.

Year	Buck Ratio	Buck Estimate	Doe Estimate	Fawn Estimate	Total Population Estimate	Deer/km2	Doe:Buck Ratio	Fawn Production (%)
2016	0.05	10.00	8.41	1.85	20.26	7.00	0.84	22.0
2017	0.06	17.00	5.52	1.08	23.60	8.10	0.32	19.6
2018	0.12	9.00	3.24	1.68	13.92	4.80	0.36	51.9
2019	0.04	17.00	7.66	3.90	28.56	9.80	0.45	50.9
2020	0.04	9.00	4.90	1.37	15.26	5.20	0.54	27.9
2021	0.03	12.00	8.78	2.86	23.65	8.10	0.73	32.6
2022	0.05	6.00	6.72	1.58	14.30	4.90	1.12	23.6
2023	0.03	10.00	9.91	4.55	24.46	8.40	0.99	46.0
2024	0.03	7.00	10.17	4.09	21.26	7.30	1.45	40.2

Table 4. Baker Sanctuary plantings, 2024 – 2025.

Common Name	Scientific Name	Class	# Planted
Anacua	*Ehretia anacua*	Shrub/Tree	1
Firewheel	*Gaillardia pulchella*	Herbaceous/Grass	Sowed
Golden-eye	*Viguiera dentata*	Herbaceous/Grass	Sowed
Horsemint	*Monarda citriodora*	Herbaceous/Grass	Sowed
Lace Cactus	*Echinocereus reichenbachii*	Cactus	55
Mexican Plum	*Prunus mexicana*	Shrub/Tree	3
Rain Lily	*Cooperia pedunculata*	Herbaceous/Grass	Sowed
Silver Bluestem	*Bothriochloa laguroides*	Herbaceous/Grass	Sowed
Texas Bluebonnet	*Lupinus texensis*	Herbaceous/Grass	Sowed
Texas Mulberry	*Morus microphylla*	Shrub/Tree	3

Table 5. Baker Sanctuary BBS point count survey, 2025.

Common Name	Scientific Name	Number Observed	Mean[1]	Frequency (%)[2] (25 yd radius)	Frequency (%)[3] (unlimited radius)
American Crow	*Corvus brachyrhynchos*	0	0.00	0	3
American Robin	*Turdus migratorius*	0	0.00	0	5
Barn Swallow	*Hirundo rustica*	0	0.00	0	3
Bewick's Wren	*Thryomanes bewickii*	3	0.08	0	16
Black-and-white Warbler	*Mniotilta varia*	2	0.05	0	5
Black-chinned Hummingbird	*Archilochus alexandri*	4	0.11	0	11
Black-crested Titmouse	*Baeolophus atricristatus*	7	0.18	0	84
Blue-gray Gnatcatcher	*Polioptila caerulea*	7	0.18	0	18
Carolina Chickadee	*Poecile carolinensis*	15	0.39	0	39
Carolina Wren	*Thryoothorus ludovicianus*	13	0.34	0	42
Chimney Swift	*Chaetura pelagica*	0	0.00	0	21
Common Grackle	*Quiscalus quiscula*	0	0.00	0	3
Eastern Phoebe	*Sayornis phoebe*	2	0.05	5	5
Field Sparrow	*Spizella pusilla*	0	0.00	0	11
Golden-cheeked Warbler	*Setophaga chrysoparia*	7	0.18	0	21
Great Crested Flycatcher	*Myiarchus crinitus*	1	0.03	0	8
Greater Roadrunner	*Geococcyx californianus*	0	0.00	0	5
House Finch	*Haemorhous mexicanus*	7	0.18	0	11
House Sparrow	*Passer domesticus*	1	0.03	0	3
Ladder-backed Woodpecker	*Picoides scalaris*	1	0.03	0	5
Lesser Goldfinch	*Carduelis psaltria*	8	0.21	0	87
Mourning Dove	*Zenaida macroura*	9	0.24	21	87
Northern Cardinal	*Cardinalis cardinalis*	32	0.84	0	100
Northern Mockingbird	*Mimus polyglottos*	1	0.03	0	3
Painted Bunting	*Passerina ciris*	26	0.68	0	87
Pileated Woodpecker	*Dryocopus pileatus*	0	0.00	0	3

Purple Martin	*Progne subis*	0	0.00	0	29
Red-eyed Vireo	*Vireo olivaceus*	7	0.18	0	29
Red-shouldered Hawk	*Buteo lineatus*	0	0.00	0	5
Rufous-crowned Sparrow	*Aimophila ruficeps*	1	0.03	0	3
Summer Tanager	*Piranga rubra*	6	0.16	16	58
Turkey Vulture	*Cathartes aura*	0	0.00	0	3
Woodhouse's Scrub-jay	*Aphelocoma californica*	2	0.05	0	13
White-eyed Vireo	*Vireo griseus*	27	0.71	0	76
White-winged Dove	*Zenaida asiatica*	2	0.05	5	26
Yellow-billed Cuckoo	*Coccyzus americanus*	14	0.37	0	53
Total		162			
Total Number of Points	38				

[1] Mean number of individuals observed within the survey radius of each point.

[2] Percentage of total points where species was observed within the survey radius.

[3] Percentage of total points where species was observed regardless of radius.

Table 6. Baker Spring average depth (cm), 2014 - 2025.

