



White Buffalo
Conserving Native Species and Ecosystems

SUMMARY REPORT

Deer Distance Sampling Population Estimate

Tega Cay, South Carolina

by

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Introduction/Methods

We used a population estimation method called Distance Sampling. This approach is based on the premise that you can determine the width of a transect traveled by creating a detection probability from the field observations (i.e., number of deer and distance from the transect). In simple terms, the software program projects the area sampled and then integrates the number of deer observed in that area to determine density.

First, we delineated a non-overlapping spotlighting route on a Tega Cay road map (Figure 1). Spotlighting surveys were conducted from ~19:45 to 23:45 h on 18–19 September 2025. The transect was ~8.4 miles long and surveyed once each evening. For 2025, this transect route included 2.74 additional linear miles of extensions, improving access to areas frequented by deer in the community and enabling more accurate distance sampling estimates.

While driving 10 mph, spotters searched their respective sides of the road with 2,200 lumen spotlights. Upon sighting deer, the number in each social group, age and sex of the individuals (when it could be determined), and the perpendicular distance to the group was recorded. These data were then entered into a software program (Distance-Version 8.0) that estimates the deer density.

Results/Discussion

The survey team counted from 108–124 deer (34–37 groups of deer) on the two transect replicates. Deer were observed from 10 to 210 yards from the road, with most observations occurring less than 100 yards.

The complete observation sheets are attached as Appendix A. The estimated density for the area surveyed (~2.37 mile²) was 217.9 deer/mile² (95% confidence interval: 167.3–283.8) for the two nights of observation. The mean sighting distance was 41.0 yards and average cluster size was 3.3 deer. In comparison, we ran an additional analysis using only those deer spotted

from the original 5.66 linear mile transect used in recent years. That estimated density was lower at 124.6 deer/mile² (95% confidence interval: 71.7–216.6) for the two nights of observation.

The temperature ranged between 70–82 degrees Fahrenheit. Conditions were clear and wind speeds calm during both survey nights.

The effect of the expanded transect extensions is clearly demonstrated in the results from Table 1. By adding new extensions to the original spotlighting route, surveyors observed a total of 124 and 108 deer on consecutive nights, with nearly half of all deer counted found within the new transect segments. This expansion enabled us to document a greater portion of the local deer population, ultimately resulting in more accurate abundance estimates.

Demographics of the deer population from the current survey were yearling and adult females (72.4%), juveniles (8.2%), adult males (8.2%), and undetermined individuals (11.2%) based on field observations. Notably, approximately 49% of the observed females were tagged does, highlighting the ongoing mark-recapture and monitoring effort within the study area.



Figure 1. Delineated 2025 Tega Cay Distance Sampling Route including original transect (red; 5.66 linear miles) and new extensions (yellow; 2.74 linear miles).

Table 1. Distance sampling deer counts from 9/18–9/19/2025, Tega Cay, SC.

a) Deer Survey Results from 9-18-25

Original Transect	Total #	Bucks	Does	Fawns	Unknow n	Tags
1	16		16			10
1	25	1	24			14
2	1	1				
3	0					
4	0					
5	6		4	2		2
6	9	2	6	1		2
7	3		3			2
Subtotal	60	4	53	3		30
New 2025 Extensions						
1A	13	2	11			6
4A	1				1	
5A	28	2	16		10	6
6A	0					
7A	1	1				
8	4	1	3			1
9	17	3	12	2		5
Subtotal	64	9	42	2	11	18
Total	124	13	95	5	11	48

b) Deer Survey Results from 9-19-25

Original Transect	Total #	Bucks	Does	Fawns	Unknow n	Tags
1	6		5		1	2
1	23	2	9		12	2
2	2	1			1	1
3	0					
4	0					
5	10		6	4		1
6	8		6	1	1	7
7	11		9	2		8
Subtotal	60	3	35	7	15	21
New 2025 Extensions						
1A	11		11			5
4A	0					
5A	27	2	23	2		9
6A	2			2		
7A	0					
8	2		1	1		
9	6	1	3	2		
Subtotal	48	3	38	7	0	14
Total	108	6	73	14	15	35

Appendix 1

Date	# Deer in Group	Perpendicular Distance (yd)	AF/AM/Fawn/ Unk	Location
9_18_25	2	40	AF	Near Silver Gull
9_18_25	3	16	AF	Near Windjammer
9_18_25	7	51	AF	GC@#2
9_18_25	4	94	AF	#2
9_18_25	4	15	AF	Rurde Windward
9_18_25	5	21	AF	"
9_18_25	3	53	AF	Near Tara Ted
9_18_25	7	60	AF	#1 Pines Green
9_18_25	6	29	AF	Near Old Silver Gull
9_18_25	1	24	AM	#15
9_18_25	1	33	AF	Tulag 1
9_18_25	1	15	AF	
9_18_25	1	29	AF	Dalau
9_18_25	3	45	1 AF / 2 Fawn	"
9_18_25	1	69	AF	#2 Coue
9_18_25	5	26	2 AF / 1 Fawn / 2 AM	"
9_18_25	3	65	AF	#3 Coue
9_18_25	2	24	AF	Mary GC
9_18_25	1	33	AF	Marg @ Morro
9_18_25	6	18	5 AF / 1 AM	Near Runde
9_18_25	7	35	6 AF / 1 AM	Mariner Ct
9_18_25	1	17	Unk	Chestnuthill Pond
9_18_25	19	46	8 AF / 1 AM / 10 Unk	Snapper
9_18_25	1	22	AF	Snapper
9_18_25	3	39	2 AF / 1 AM	Snapper
9_18_25	4	35	AF	Snapper
9_18_25	1	35	AF	Snapper
9_18_25	1	13	AM	Marg & Diamond Head
9_18_25	4	23	3 AF / 1 AM	Anchorage
9_18_25	5	21	2 AF / 3 AM	Pointclear @ Kalina
9_18_25	4	42	3 AF / 1 Fawn	Pointclear @ 3057
9_18_25	1	10	AF	"
9_18_25	4	18	AF	Pointclear @ 3046
9_18_25	3	22	2 AF / 1 Fawn	Pointclear @ 3028
9_19_25	2	25	AF	TC Dr @ Silver Gull
9_19_25	3	50	AF	TC Dr & Riley
9_19_25	1	101	Unk	#2 Fairway
9_19_25	7	146	Unk	Runde

9_19_25	6	26	AF	Tara Tea
9_19_25	2	34	AF	"
9_19_25	3	210	Unk	#1 Fairway
9_19_25	2	33	AM	Old Silver Gull
9_19_25	1	39	AF	Old Archery Range
9_19_25	2	40	Unk	"
9_19_25	1	100	AM	T Box #15 GU
9_19_25	1	80	Unk	T Box #16 GU
9_19_25	2	34	AF	Agate Ct
9_19_25	2	20	Fawn	Palva
9_19_25	3	43	1 AF / 2 Fawn	"
9_19_25	3	64	AF	Neptunes
9_19_25	3	24	2 AF / 1 Fawn	Molokai & Clubhouse
9_19_25	1	80	AF	"
9_19_25	4	48	3 AF / 1 Unk	"
9_19_25	3	30	AF	Marg & Windward
9_19_25	4	20	AF	"
9_19_25	1	30	AF	"
9_19_25	3	20	1 AF / 2 Fawn	Marg & Bon Villa
9_19_25	4	81	AF	Timberlake
9_19_25	3	20	AF	Near Timberlake
9_19_25	4	46	AF	Old Chay Hall Lot
9_19_25	3	30	AF	Past Neptunes
9_19_25	2	47	AF	Near Snapper
9_19_25	4	57	2 AF / 2 Fawn	"
9_19_25	8	36	7 AF / 1 AM	Snapper @ Misty Way
9_19_25	8	25	8 AF	Snapper @ Morningside
9_19_25	2	15	1 AF / 1 AM	"
9_19_25	1	30	Fawn	Molokai @ Maikai
9_19_25	1	20	Fawn	1137 Molokai
9_19_25	2	24	1 AF / 1 Fawn	Anchorage 7101
9_19_25	1	20	AM	3087 Pt Clear
9_19_25	5	23	3 AF / 2 Fawn	3034 Pt Clear