



# White Buffalo

Conserving Native Species and Ecosystems

## SUMMARY REPORT Deer Distance Sampling Population Estimate

Oxford, Ohio

White Buffalo, Inc.  
5 December 2025

### 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 an Oxford road map (Figure 1). Spotlighting surveys were conducted from ~18:15 to 00:00 h on 1–3 December 2025. The transect was ~20 miles long and surveyed once each evening.

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 67–102 deer (20–33 groups) across the three transect replicates. Deer were detected at distances ranging from 15 to 340 yards from the road, with most observations occurring within 100 yards. Most deer appeared tolerant of spotlighting, although some individuals in the western periphery of the Oxford Community Park showed signs of avoidance.

The estimated density for the area surveyed (7.5 mile<sup>2</sup>) was 37.7 deer/mile<sup>2</sup> (95% confidence interval: 30.1–47.3). The mean sighting distance was 71.7 yards and average cluster size was 3.1 deer.

Air temperature during the surveys ranged from 26 to 34 degrees Fahrenheit, and wind speeds ranged from 0 to 7 mph. Intermittent snow on 1 December reduced visibility and resulted in fewer deer detections on that date, whereas sighting conditions were clear on 2–3 December. Consequently, only data from 2–3 December 2025 were used to develop the final density model, while observations from all three nights are presented in Appendix A.

To better depict deer distribution throughout the community, all observations from the three survey nights are mapped in Figures 2–4. Each pin represents the approximate observation

location and the number of deer in the group. Deer appeared to be distributed throughout the area sampled, with the exception of the northeastern part of the City. Numerous deer groups were often spotted along the westernmost transect.

Demographics of the deer population included yearling and adult females (37%), juveniles (37%), adult males (3%), and undetermined (23%) based on observations made during the survey. The data indicate a recruitment rate of ~1.0 fawns per adult female.

Figure 1. Delineated 2025 Oxford, Ohio Distance Sampling Route (~20 miles).

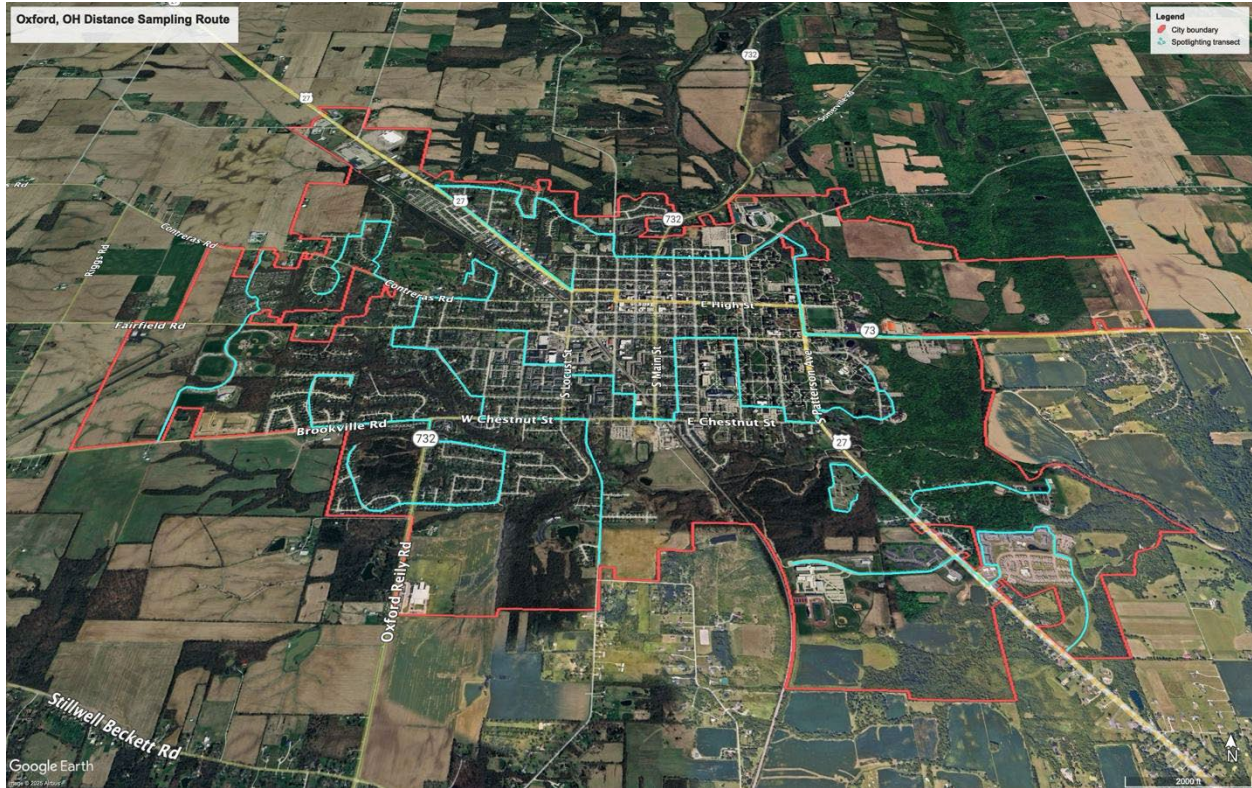


Figure 2. Distance Sampling observations for 1 December 2025, Oxford, OH.

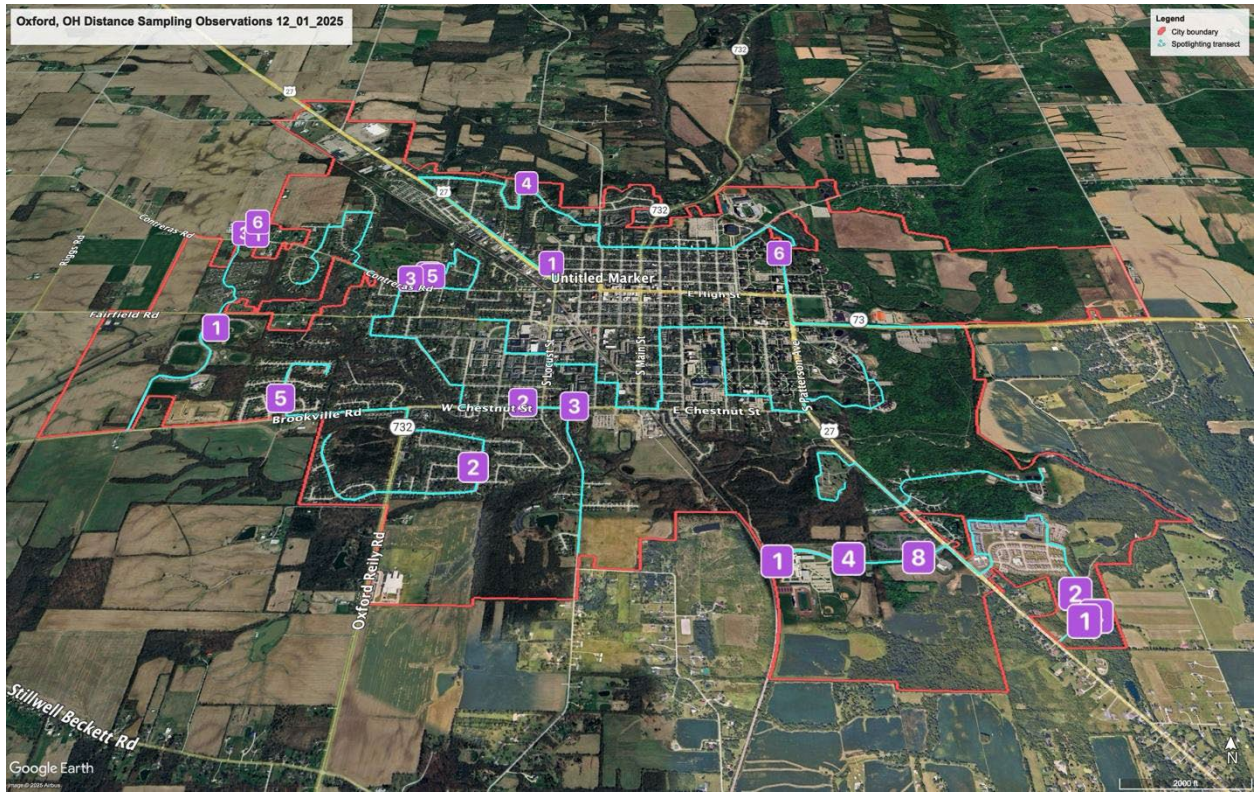


Figure 3. Distance Sampling observations for 2 December 2025, Oxford, OH.

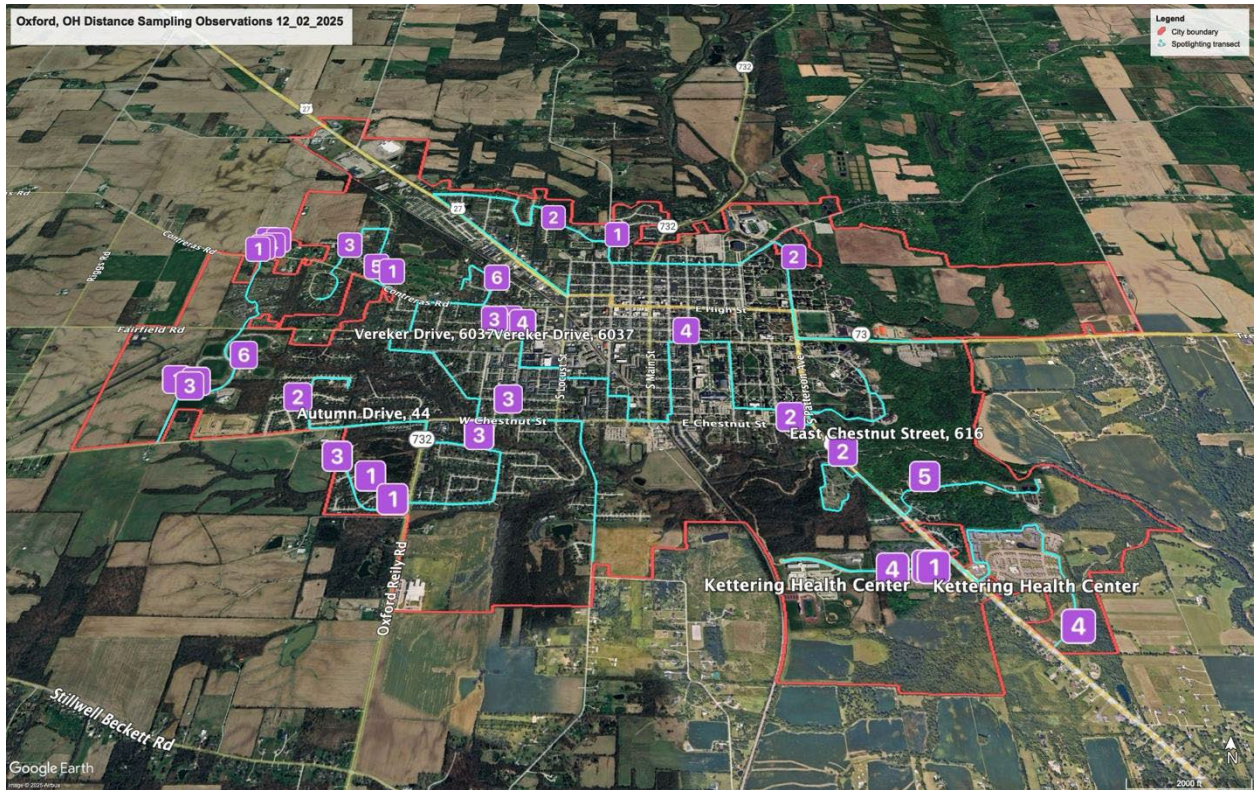
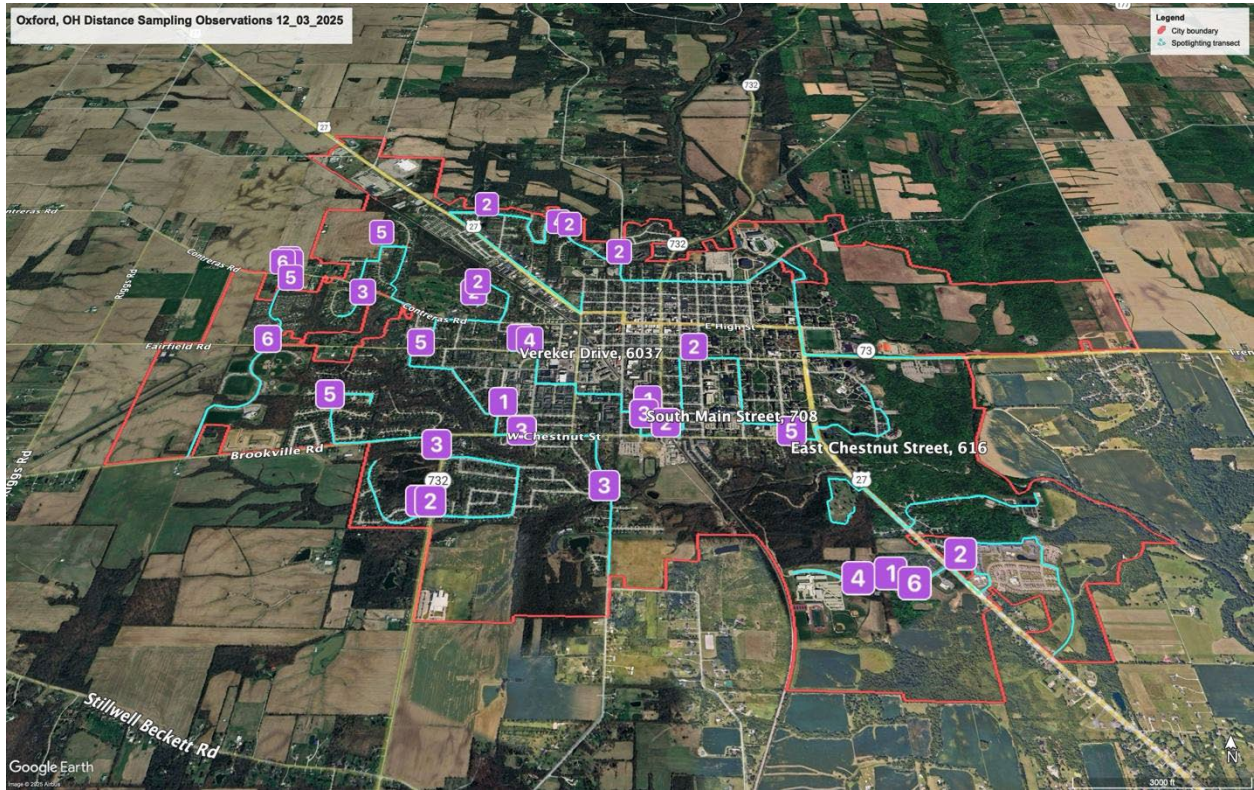


Figure 4. Distance Sampling observations for 3 December 2025, Oxford, OH.



## Appendix A

Date	Number of Deer in Group	Perpendicular Distance (yd)	AF/AM/Fawn/Unknown	Location
12/01/25	1	150	1Unknown	University Park Blvd
12/01/25	4	70	2 AF/2F	University Park Blvd
12/01/25	8	96	3AF/1F/4Unknown	University Park Blvd
12/01/25	2	30	1AF/1F	Lake Forest Dr
12/01/25	4	145	2AF/2F	Lake Forest Dr
12/01/25	1	110	1AM	Lake Forest Dr
12/01/25	6	50	4AF/2F	South Patterson Ave
12/01/25	4	60	2AF/2F	North Rdg Dr
12/01/25	1	50	1F	Rt. 27
12/01/25	2	44	1AF/1F	Dana Dr
12/01/25	5	47	1AM/1AF/3F	Winding Brook Dr
12/01/25	1	99	1AF	Kay Ranch Dr
12/01/25	3	53	1AF/2F	Knollwood Dr & Contreras Rd
12/01/25	6	125	6Unknown	Knollwood Dr & Contreras Rd
12/01/25	1	42	1AM	Knollwood Dr & Contreras Rd
12/01/25	5	25	3AF/2F	Contreras Rd
12/01/25	5	37	2AF/3F	Contreras Rd
12/01/25	3	38	3AF	Contreras Rd
12/01/25	2	35	1AF/1Unknown	West Chestnut St
12/01/25	3	40	1AF/2F	Kehr Rd
12/02/25	4	99	2AF/2F	University Park Blvd
12/02/25	2	60	2AF	University Park Blvd
12/02/25	1	90	1AF	University Park Blvd
12/02/25	4	110	4Unknown	Lake Forest Dr
12/02/25	2	120	1AF/1Unknown	Oxford Cemetery Assoc.
12/02/25	5	25	3AF/2F	McKee Ave
12/02/25	3	56	1AF/2F	Fairfield Rd
12/02/25	1	50	1F	Fairfield Rd
12/02/25	4	60	2AF/2F	Fairfield Rd
12/02/25	4	35	2AF/2F	East Spring St
12/02/25	2	52	2F	East Chestnut St
12/02/25	2	48	1AF/1F	North Rdg Dr
12/02/25	1	70	1Unknown	Brown Rd
12/02/25	2	30	1AF/1Unknown	North Patterson Ave
12/02/25	2	20	2F	Autumn Dr

12/02/25	3	53	2AM/1AF	Melissa Dr
12/02/25	1	80	1AF	Dana Dr
12/02/25	1	46	1AF	Dana Dr
12/02/25	3	15	1AF/2F	Dana Dr
12/02/25	5	135	1AM/1AF/3F	Knollwood Dr & Contreras Rd
12/02/25	2	340	2Unknown	Knollwood Dr & Contreras Rd
12/02/25	4	55	3AF/1F	Knollwood Dr & Contreras Rd
12/02/25	2	35	2AF	Knollwood Dr
12/02/25	1	50	1AF	Knollwood Dr
12/02/25	6	160	4AF/2F	Kay Ranch Dr
12/02/25	2	70	2F	Kay Ranch Dr
12/02/25	3	118	1AF/2F	Kay Ranch Dr
12/02/25	1	65	1AM	Kay Ranch Dr
12/02/25	1	160	1Unknown	Contreras Rd
12/02/25	5	61	3AF/2F	Old Farm Rd
12/02/25	3	77	1AF/2F	Prevalent Dr
12/02/25	3	20	1AF/2F	McGuffy Ave
12/02/25	6	61	3AF/3F	Hilltop Rd
12/03/25	2	72	2Unknown	Miami Western Dr
12/03/25	6	77	2AF/3F/1Unknown	University Park Blvd
12/03/25	1	30	1AF	University Park Blvd
12/03/25	4	53	4Unknown	University Park Blvd
12/03/25	1	40	1F	Fairfield Rd
12/03/25	4	20	2AF/2F	Fairfield Rd
12/03/25	1	21	1AF	West Central Ave
12/03/25	3	35	2AF/1F	South Beech St
12/03/25	2	90	2F	West Chestnut St
12/03/25	2	38	2F	East Spring St
12/03/25	5	25	2AF/3F	East Chestnut St
12/03/25	2	84	1AF/1F	North Rdg Dr
12/03/25	2	30	2Unknown	North Rdg Dr
12/03/25	4	55	4Unknown	North Rdg Dr
12/03/25	2	40	1AF/1F	Hester Rd
12/03/25	5	53	1AF/1F/3Unknown	Winding Brook Dr
12/03/25	3	35	1AF/2F	Oxford Reily Rd
12/03/25	3	78	1AF/2F	Dana Dr
12/03/25	2	74	1AF/1F	Dana Dr
12/03/25	4	150	4Unknown	Knollwood Dr & Contreras Rd
12/03/25	5	300	5Unknown	Knollwood Dr & Contreras Rd

12/03/25	6	250	6Unknown	Knollwood Dr & Contreras Rd
12/03/25	5	120	5Unknown	Knollwood Dr
12/03/25	6	20	3AF/3F	Key Ranch Dr
12/03/25	3	39	1AF/2F	Stone Creek Dr
12/03/25	5	100	2AF/3F	Grace Ln
12/03/25	2	32	1F/1Unknown	Hilltop Rd
12/03/25	2	25	1AF/1F	Hilltop Rd
12/03/25	5	53	1AF/2F/2Unknown	Fairfield Rd
12/03/25	1	62	1AF	Emerald Woods Dr
12/03/25	3	60	1AF/2F	West Chestnut St
12/03/25	3	62	1AF/2F	Kehr Rd