

SUMMARY REPORT

14 February 2019

Deer Distance Sampling Population Estimate

Town and Country, Missouri

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.

The transect was the same as last year, ~21 miles long, and was surveyed once each evening. Spotlighting surveys were conducted from ~2200-0200 h on 8-10 February 2019.

While driving 10 mph spotters searched their respective side of the road with 400,000 candlepower spotlights. Upon sighting deer, the number in each social group, age and sex of the individuals, whether deer were marked or unmarked, and the perpendicular distance to the group was recorded. These data were then entered into a software program (Distance-Version 6.0) that estimates the deer density. The full data set is included as Appendix A.

Results/Discussion

The survey team counted from 64–78 deer (18-25 groups of deer) on the 3 transect replicates (Appendix A). Deer were observed from 5 to 142 yards from the road, with most observations occurring at less than 100 yards. The estimated density for the area surveyed (~10 mi²), using three transect data sets, was 32.5 deer/mile² (Confidence interval: 19.6 – 53.9), an increase of 7 deer/mi² from the 2018 estimate of 25.7 deer/mi². The number of deer/cluster was 3.3, 10% larger than the survey in 2018. The mean sighting distance was 54.6 yards, 7.3 yards shorter than the January 2018 mean of 61.9 yards.

Culling operations continued during the surveys, resulting in the reduction of 7 deer between the first and second survey and 5 deer between the second and third survey. During the three survey nights, large groups of deer were detected along Mason Road in Queeny Park, at the junction of Williamsburg Estates and Clayton Road, and in the area of Amersham/Bickford/Delvin Drive. The group of deer in the Amersham/Bickford/Delvin Drive area contained 7 female adult deer that had been sterilized in previous non-lethal deer management efforts. Excluding the deer observed in Williamsburg estates and Amersham/Bickford/Delvin Drive area reduces the density estimate to 28.8 deer/mi² (Confidence interval: 18.7 – 44.3) with a cluster size of 3.1.

Aside from the three areas mentioned above deer appeared to be evenly distributed in the area. In an effort to better demonstrate where deer appeared during the Distance Sampling Survey, maps were generated plotting the number of deer in each group and specific location of observations. Each replicate's observations are attached as Figure 1, 2, and 3 for the samples conducted on 8, 9, and 10 February 2019, respectively.

The demographics of the population were ~42% yearling and adult females, ~45% fawns, 6% yearling and adult males, and 6% undetermined based on observations during the survey. Although detection is difficult, due to the small ear tag size, several sterilized deer were witnessed during the population estimate accounting for ~7.5% of the total observations and ~18% of the adult female observations.

Observations from the 2019 survey indicate that deer are becoming more prevalent in the area bound by Ladue Road to the north, Conway Road to the south, and the municipal boundaries to the east and west. During the 2018 survey only 16 deer were observed in this area, during the 2019 survey 39 deer were observed. Consideration should be given to allocating effort to this area during deer management activities in the future.

Figure 1. Distance Sampling Observations 8 February 2019 Town and Country, MO

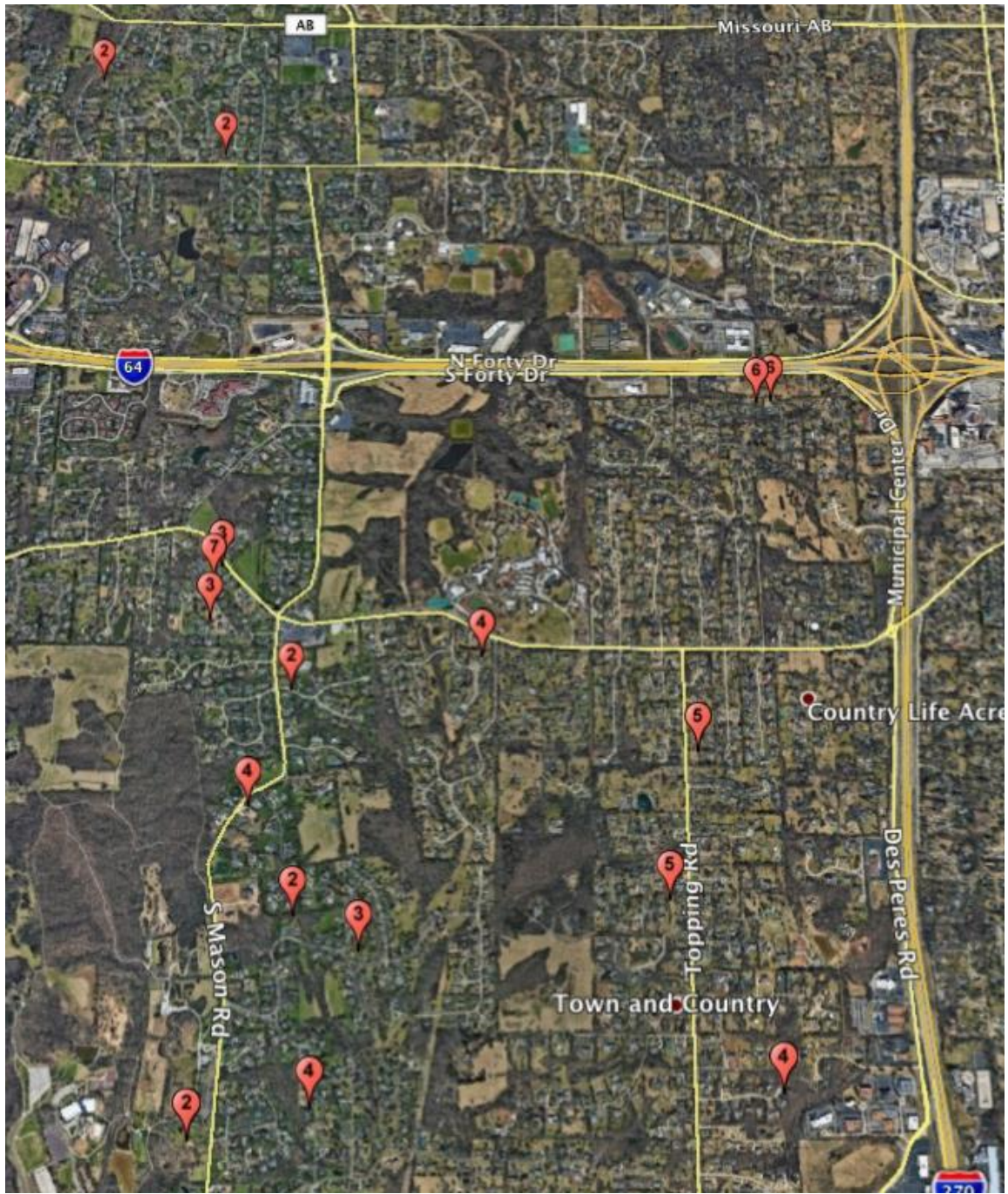


Figure 2. Distance Sampling Observations 9 February 2019 Town and Country, MO

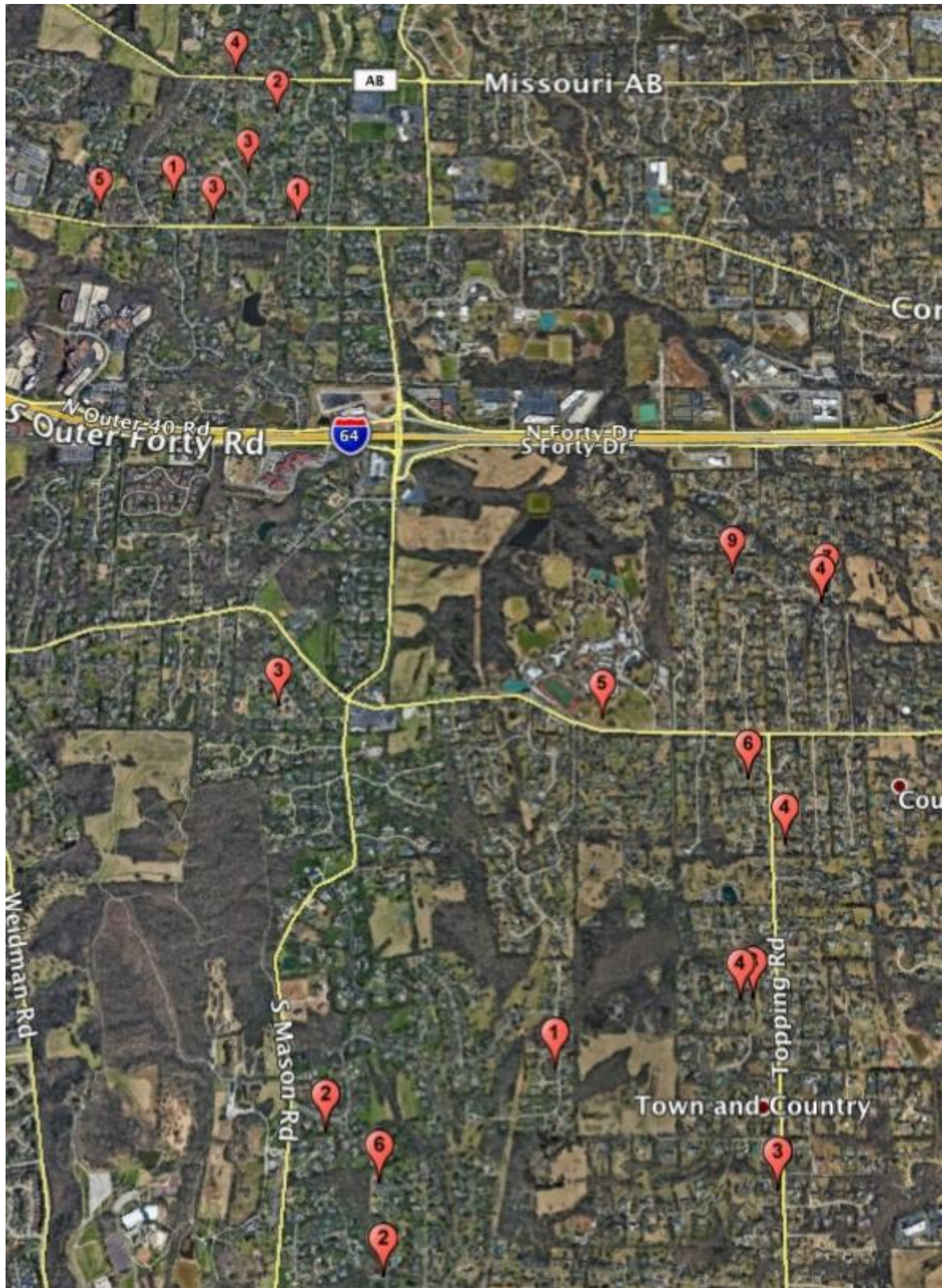


Figure 3. Distance Sampling Observations 10 February 2019 Town and Country, MO

