Year Two: Spatial Analysis of Chronic Wasting Disease in Northeastern Colorado Deer Populations -- Analysis of Age Structure Utilizing Cementum annuli

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Chronic wasting disease(CWD) is a contagious, fatal prion disease found in cervids, specifically whitetail and mule deer, resulting in their decline. Data (sex, species, CWD status, and harvest location) were collected during the 2023 rifle seasons in Colorado for Game Management Units 98, 101, and 102. Additionally, lower incisors were collected and sent to a lab for age analysis via the cementum annuli (CA) method. In 2024, tooth age data was received and analyzed to determine patterns of CWD in relation to age structure. It was hypothesized that during the 2023 deer harvest (based on CA determination) the highest prevalence of CWD would be found in 1. female whitetail and mule deer aged 4-5-years; and 2. male whitetail and mule deer aged 3-4 years. Additionally, it was hypothesized that 3. there would be clusters of specific ages, specifically ages three and four, where the prevalence of CWD would be highest. Utilizing a GIS mapping software, correlations between age “hotspots” and CWD status were analyzed. The first hypothesis was rejected as female deer aged 4-5 had a prevalence rate of 0%; however, it should be noted that the n value for this age group was 2, meaning the population was too small to draw definitive conclusions. The second hypothesis was supported, as male deer aged 3 and 4 had prevalence rates of 45% and 40%; respectively (n=16). The third hypothesis is generally supported, although more data analysis is needed. Hopefully this information can aid in population management decisions.

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