The Adverse Effects of Hunting on the Length of Bellows of American and Canadian Bison During Rut

D'Alessio, Alexandra (School: Half Hollow Hills High School West)

This study investigates the potential effects of hunting on the length of bison (Bison bison) bellows, a guttural vocalization which is essential to male-male competition and therefore female mate selection. It is hypothesized that an increase in hunting season duration will cause a decrease in bison bellow length. Previous literature has detailed how bellows indicate male reproductive fitness as well as the effect of hunting on bellow rate, but the impact of hunting on bellow qualities such as length has not been explored. Bison recordings were obtained from nine hunted or non-hunted populations in Canada and North and South Dakota, United States. Bellows were identified and analyzed visually and auditorily on Praat acoustic analysis website. Bison populations exposed to hunting were observed to have significantly shorter bellows in comparison to non-hunted groups. Statistical analysis was performed using T-tests and ANOVA, demonstrating a strong negative correlation between hunting season length and bellow duration, with year-round hunting having the shortest bellows. These findings suggest that hunting may influence bison mating behavior, possibly impacting mating dynamics and overall population fitness over time. This research emphasizes the importance of considering hunting's effects on bison mating behaviors for conservation purposes, ensuring the species' keystone role in its ecosystem and population are conserved.

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