
A CORRECTION FOR OVERESTIMATION BIAS IN ESTIMATES OF BLACK-TAILED PRAIRIE DOG ABUNDANCE BASED ON AERIAL SURVEYS OF COLONY SITES IN COLORADO AND MONTANA.

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Estimates of abundance of black-tailed prairie dogs (*Cynomys ludovicianus*) are obtained by estimating the area occupied by colonies. An approach for estimating this area used in Colorado and Montana was based on aerial survey transects that recorded the end points where transects intercepted and exited colony sites. Line intercept mathematical techniques were applied to these intercept data to obtain estimates of occupied area. We define a “colony site” as an aggregation of prairie dog burrows while a prairie dog “colony” is defined as the portion of a colony site that is occupied by living prairie dogs. Because of poisoning, plague and other factors, colony sites are commonly not completely occupied by colonies. In both Colorado and Montana, however, estimates obtained were estimates of the area occupied by colony sites that had some undetermined level of occupancy by colonies. We show for Colorado that the difference between estimates of area occupied by colonies was much less than the area occupied by colony sites. We provide an approach to correct estimates based on the extent of colony sites. This approach requires ground surveys of a sample of aerial

intercepts of colony sites to document the proportion that is actually occupied by colonies of living black-tailed prairie dogs. Black-tailed prairie dogs were found as not-warranted for listing in 2004 in part because of inflated estimates of abundance obtained in Colorado that incorrectly equated the extent of colony-sites as equivalent to the extent of colonies in that state.