
A METHOD TO ESTABLISH TREND AREAS THAT PREDICT PRONGHORN POPULATIONS TO GUIDE MANAGEMENT ACTIONS

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Trend area flights offer substantial cost and time-savings over total population counts, but trend area data need to be calibrated to total count data before they can be used with confidence in wildlife management decisions. To develop trend areas for pronghorn (*Antelopcapra americana*) in FWP Administrative Region 5, group location data from total surveys, for the period 1984-2009, were combined with classification information by hunting district (HD) into a GIS. Number of total counts conducted per HD varied from a low of six to a high of 13 and involved classification of between 364 and 8088 antelope. Grids, 5 mi x 5 mi to 12 mi x 12 mi (increasing by 1-mi² intervals) in size were overlain on the pronghorn locations as potential trend areas. Number of yearling, adult and total bucks, does, fawns and total number by year, were calculated for each grid and cross-referenced with HD census data. The predictive ability of each candidate trend area was estimated and internally validated. We selected grids with the highest internally validated predictive ability to be used as trend areas for each HD in Region 5. Correlation coefficients between trend count data and total count data varied from a low of 0.88 to a high of 0.98. Newly established trend areas varied in size from 64.3 mi² to 216.6 mi². The time-savings and reduction in survey costs will allow biologists to fly surveys in each HD annually without sacrificing the ability to predict pronghorn populations accurately.