

TRACKING ELK HUNTERS WITH THE GLOBAL POSITIONING SYSTEM ^{TWS}

L. Jack Lyon

USDA Forest Service, Intermountain Research Station
Missoula, MT 59807

Milo G. Burcham

School of Forestry, University of Montana - Missoula 59812

In a study of elk-hunter behavior in western Montana, we used battery powered Global Positioning System (GPS) units to record hunter locations at 15-second intervals during 99 hunting expeditions in 1993, 1994, and 1995. Subsequent analysis within a Geographic Information System (GIS) enabled us to determine time and motion budgets for hunter effort, estimate the departure distance from roads and hunting camps, and evaluate the influence of closed roads on elk hunting techniques. Hunter locations were overlaid on other GIS layers to determine time spent in different vegetation classes and identify topographic situations selected for hunting. Hunters averaged 4.7 hours per hunt, while moving at a speed of 40 m/min for a distance of 10.7 km. Only half of all hunters got more than 2.5 km from their starting point, and only 5 percent went more than 5 km. The average distance from the nearest road while hunting was only 267 m, and hunters on foot spent 26 percent of their hunting time on roads. Hunters who spent the most time on roads also

recorded the greatest distances from their starting points. Sixty percent of all hunting was done on slopes less steep than the study area average, and westerly aspects were favored. Among the forest types available to them, hunters selected open Douglas-fir and Western Larch while avoiding Lodgepole pine and Sagebrush.