Changes in Elk Resource Selection and Distributions Associated with the Madison Valley Late-Season Elk Hunt

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Changes in resource selection associated with human predation risk may alter elk (*Cervus elaphus*) distributions and availability for harvest. Using Global Positioning System (GPS) data collected from telemetry-collared cow elk, we evaluated effects of refuges (areas where hunting was prohibited), spatial variation in hunting risk and landscape attributes on resource selection within an established Greater Yellowstone Area wintering range and we evaluated elk distributions during and outside of a late-season hunting period. Refuge areas and landscape attributes such as habitat type and snow water equivalency (SWE) affected resource selection. During the hunting period, selection for refuge areas increased, and we estimated odds of elk occupancy in refuge areas more than doubled. Elk selection for flat grasslands

increased as SWE increased likely because these areas are heavily windswept leaving grasses exposed for foraging. Elk distributions differed during hunting and no-hunting periods, and during the hunting period elk distribution shifted to privately owned land where hunting was prohibited. Risk-driven changes in resource selection resulted in distributions that reduced the availability of elk for harvest. Elk selection for areas where hunting is prohibited presents a challenge for resource managers that use hunting as a tool for managing herd sizes.