

**COMPARISON OF WILDLIFE MORTALITY BETWEEN 2 CONSECUTIVE
WINTERS WITH CONTRASTING WEATHER CONDITIONS,
NORTHWESTERN MONTANA^{TWS}**

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Carcasses found (n = 71) during winter 1997-98 in the lower Clark Fork River drainage of northwestern Montana were examined and assessed for condition by bone marrow-fat index using visual and percent fat (dry / wet weight) rating methods. Species examined were bighorn sheep (*Ovis canadensis*) (n = 18), black bear (*Ursus americanus*) (n = 1), elk (*Cervus elaphus*) (n = 2), moose (*Alces alces*) (n = 1), mule deer (*Odocoileus hemionus*) (n = 5), and white-tailed deer (*Odocoileus virginianus*) (n = 44). For white-tailed deer, percent marrow-fat for both sexes combined (n = 20) during the first half of winter (Jan-Feb 98) was significantly higher from the second half of winter (Mar-May 98) (n = 15) ($P = 0.0004$). White-tailed deer percent marrow-fat was also significantly higher during the first ($P = 0.004$) and second ($P = 0.003$) halves of the 1997-98 winter than during the 1996-97 winter. For bighorn sheep, percent marrow-fat for the first half of winter (Dec 97-Feb 98) ranged from 77-93 percent (n = 5) compared to a range of 20-97 percent for the second half of winter (Mar-May 98)(n = 13). These data show a definite difference for physical condition of white-tailed deer subjected to nearly opposite extremes of winter weather. Poorer physical condition of bighorn sheep during the milder winter (1997-98) is suggested, but probably are a result of inadequate sample sizes. This report documents the seasonal, physical stress on a sample of wildlife in northwestern Montana comparing the effects of contrasting winter weather conditions during 2 consecutive years.