Highlights from 15 Years of White-Tailed Deer Research in Northwestern Montana

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White-tailed deer (*Odocoileus virginianus*) are the most abundant big game species in northwest Montana, accounting for more than 75 percent of annual deer harvests in Montana Fish, Wildlife and Parks' (FWP) Region 1. FWP initiated a study in 1988 in the Salish Mountains to better define ecological relationships of white-tailed deer occupying conifer-dominated winter ranges in northwest Montana. Data collection spanned the period of 1988-2000; however, collection of harvest records continued through 2003. Most white-tailed deer in the Salish Mountains typically migrated ~20-30 km (12-19 mi) between summer ranges consisting of higher elevation forest and meadows and winter ranges in lower valleys with relatively dense coniferous cover. Patterns of resource use supported a hypothesis that deer enhance survival by adopting a strategy of energy conservation during most winters. Dense tree canopy intercepts snowfall and hence reduces energetic costs of movement and likely enhances ability to evade predators. Overall deer density in the Salish Mountains ranged from 2.3-10.8 deer/km^2 (6-28 deer/mi^2) with densities on winter range from 130-205 deer/km^2 (116-530/mi^2). We conclude that variation in female survival operated independently of recruitment to drive population trend of white-tailed deer in the Salish Mountains. More detailed results of this work are available in the recently completed report titled: White-tailed Deer Studies in the Salish Mountains, Northwest Montana, published by FWP.

Alberta), and East (South Dakota). We are currently examining nuclear loci, which will be used in combination with our current mtDNA results, to determine if these groups should be managed as distinct population segments or separate management areas.

Patterns and Rates of Wolverine Movement Using GPS Technology in Glacier National Park, Montana

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Documentation of wolverine presence in remote areas has been carried out using winter track surveys. Description of wolverine travel patterns and rates of travel have been based on anecdotal evidence at best. During the past 4 yrs we captured and instrumented 22 wolverines in Glacier National Park. Of these, five individuals have successfully carried Lotek store-on-board GPS collars for periods of up to several months, and have provided nearly 10,000 data points. A high recapture rate provided an opportunity to reinstrument individuals with varying GPS acquisition rates within a single trapping season. Initial GPS location data were programmed for a 4-hr cadence, but wolverine movement rates at this interval did not provide adequate information on travel paths and patterns and indicated a need for a finer scale fix rate. We varied the frequency of GPS fix attempts at 4 hours, 2 hours, 30 min, and 5 min as we recaptured study animals. Subsequently most data sets were programmed to collect GPS locations at 5-min intervals, 24 hrs/day, 7 days/wk. Analysis of these fine-scale data reveals travel paths and corridors, as well as rates and patterns of travel for wolverines astride the Continental Divide in alpine and subalpine sections of Glacier National Park.