Snow And Climate Data In Wildlife Studies[TWS]

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Implementation of the snow survey telemetry (SNOTEL) system in the mountainous areas of the west by the Natural Resources and Conservation Service (NRCS) has provided near real-time daily climatic data year-around from areas typically inhabited by wildlife. Parameters measured typically include maximum, minimum, and average air temperatures, precipitation and snow water equivalent. When combined with National Weather Service Climatological Station data at lower elevation valley locations, a profile of climatic data can be extrapolated to most areas and elevations. The availability of daily data also makes it possible to calculate soil moisture and growing degree-days to estimate forage production on summer, transition, and winter ranges and to calculate index of winter severity for different species for various areas. Migration from summer to winter ranges can be related to snow water equivalent. Time of snowmelt and spring green-up can be related to temperature. In addition, analysis of critical climatic data parameters can be used to estimate whitebark pine cone and huckleberry production critical to grizzly bear survival. These data can also be used to estimate winter mortality, reproduction, predation, and physical condition of ungulates going into the winter. These are just a few examples of how climate and wildlife interact. Procedures to develop useable climatic data and algorithms used to develop independent parameters were presented and discussed. Examples of how these data might be used in wildlife management also were discussed.