
SYNTHESIZING MOOSE MANAGEMENT, MONITORING, PAST RESEARCH, AND FUTURE RESEARCH NEEDS IN MONTANA

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Perceived declines in Shiras moose (*Alces alces shirasi*) in many areas across Montana in recent years have elicited concern from biologists, managers, and members of the public. Interest in moose research in Montana has correspondingly been mounting, however little new research has occurred. For this reason we attempted to synthesize existing knowledge and management programs for moose in Montana to provide collective awareness of the issues and research needs for moose. We used structured interviews of wildlife biologists and managers that work with moose to document current moose management in Montana. Most biologists reported that moose were stable or decreasing in their areas of responsibility. Predation was the most common concern for factors limiting moose, followed by habitat succession, hunter harvest, disease and parasites, Native American harvest, and habitat loss, fragmentation and degradation. In addition to information from post-season surveys of moose permit holders, biologists assessed moose populations using information from a variety of sources including landowner reports, hunter reports collected at check stations, unadjusted trend counts, bull: cow ratios, recruitment ratios, sightability-corrected population estimates and habitat condition. Nearly all respondents felt that available information was inadequate in various ways for making moose management decisions. Clearly identified research needs include calibration of currently employed moose population indices to actual trends in moose

populations, development of a survey program that will provide better and more moose survey data at the appropriate scale for management decisions, and research into how predation, habitat, disease, parasites, and climate affect moose survival and recruitment rates.