

Climate-Informed Disease Threat Assessment for Montana's Species of Greatest Conservation Need

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State Wildlife Action Plans (SWAPs) identify threats and conservation actions for a state's species of greatest conservation need (SGCN). Revised every 10 years, SWAPs are instrumental for guiding management decisions and directing project funding. Historically, wildlife disease threats and influences from climate change have been minimally integrated in SWAPs. The 2025 revision of Montana's SWAP provides a timely opportunity to deliver actionable, locally relevant science on high-priority wildlife diseases, their relationship to climate change, and adaptation strategies. Our objective was to conduct a science synthesis assessing climate sensitivities and relative risks of diseases affecting Montana's SGCN for integration into the 2025 SWAP. We identified a list of high-priority candidate diseases (n=20) and conducted a targeted literature review and synthesis for each one. Literature synthesis focused on: (1) the relevance of each disease to Montana (2) the magnitude of potential impacts on wildlife (3) the sensitivity of each disease to climate, and (4) conservation actions for mitigating the disease. Additionally, we developed a database for project partners describing the estimated scope, severity, and timing of disease threats for Montana SGCN. Results from this effort will be integrated into Montana's revised SWAP and provides a potential framework for other states to investigate emerging disease threats.