# Initial Site Evaluation for Wind Resource Development in Montana: An Index Relative to Potential Impacts on Vertebrate Wildlife ™

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Windpower technology has advanced significantly in recent years, and demand for development has stimulated concern over the impact of hastily developed wind farms on vertebrate wildlife. Furthermore, legal responsibilities of developers pertinent to risk posed by wind farms are elucidated in the Migratory Bird Treaty Act, the Bald and Golden Eagle Protection Act, and the Endangered Species Act. We present a process to determine geographic appropriateness of wind farm siting relative to potential impact on vertebrate wildlife by developing initial site evaluation criteria, and evaluating the potential impacts on aerial wildlife resources (birds and bats) from a collision risk perspective. A Physical

Attribute checklist considers topographic, meteorological, and site characteristics that may influence bird/bat occurrence and movements. A Species Occurrence and Status checklist includes all endangered, threatened and candidate species that occur in Montana, but only bird and bat species of Special Concern listed by the Montana Natural Heritage Program. An Ecological Attractiveness checklist evaluates the presence and influence of ecological magnets and other conditions that would draw birds and bats to the site or vicinity. The Site Suitability Index is derived from checklist totals of each site evaluated. Cumulative totals are adjusted for disproportionate numbers of criteria in each checklist. Adjusted checklist totals are added to produce the Site Suitability Index. A less suitable site evaluation does not preclude development, nor does a more suitable site evaluation eliminate the need to verify the appropriateness of the development with regard to impact on vertebrate wildlife. Rather, this method ranks sites among one another, and identifies focal areas for further investigations or mitigating measures as development proceeds