



Title: Distribution and Habitat Selection/Space Use of Migratory and Resident Golden Eagles (*Aquila chrysaetos*) in Areas with High Potential for Wind Energy Development in New Mexico

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Summary:

Over the past several decades there has been an increasing push by federal and state governments to develop renewable sources of energy including wind energy facilities. In spite of their attractiveness as a renewable energy source, wind energy developments are not ecologically benign. Potential impacts of wind energy facilities on avian species include collision mortality, habitat degradation or loss, and displacement caused by disturbance from wind energy facilities.

Impacts of wind energy facilities on endangered, threatened, or rare species are of particular conservation concern. One species that has specifically elicited concern regarding wind turbine-related mortalities is the golden eagle (*Aquila chrysaetos*). Golden eagles are long-lived birds that mature late (approximately 4 - 5 years of age) and have low reproductive rates; consequently, their population growth rates can be severely impacted by increases in adult mortality. High rates of mortality for golden eagles have been documented at other wind energy facilities (e.g., Altamont Pass Wind Resource Area, California). More recently, there has been increased interest in developing wind energy facilities on BLM-managed lands in southeastern New Mexico, which is inhabited by both breeding and overwintering populations of golden eagles.

Our research goal is to assess the risk that proposed wind energy developments might have on resident and migratory golden eagles in southeastern and south-central New Mexico and help develop irrigation strategies that will reduce impact. To accomplish this goal, we seek to assess habitat use, productivity, and survival of golden eagles areas with a high potential for wind energy development.

Our approach includes conducting at cooperator facilities and elsewhere as appropriate, research directed toward:

- Assessing habitat and space use of migratory and resident golden eagles in areas managed by the Bureau of Land Management (BLM) with a focus on areas with a



high potential for wind energy development in southeastern and south-central New Mexico.

- Identifying nest sites and estimate productivity and survival of golden eagles on BLM managed lands in areas with a high potential for wind energy development in southeastern and south-central New Mexico.
- Determine phylogeographic patterns of relatedness for resident and wintering golden eagles in southeastern and south-central New Mexico and identify origin and migration patterns for wintering golden eagles.
- Identify the origin and migration patterns for golden eagles over-wintering in southeastern and south-central New Mexico.