

BURROWING OWL (*ATHENE CUNICULARIA*)

Background and Identification of Interaction with Wind Development

The burrowing owl occupies open grasslands including shrubland habitats, steppes, and deserts; prefers sites with short vegetation and relatively flat topography; and is often associated with burrowing mammals including prairie dogs whose colonies provide nesting and foraging habitat.¹ In Colorado, populations are concentrated on the eastern plains, with smaller populations in south-central and west-central sections of the state.^{2,3,4} Currently, burrowing owls are listed as state threatened in Colorado.

Primary threats to burrowing owls include habitat loss and degradation arising mostly from agricultural and urban development.⁵ Roads and other infrastructure associated with wind energy developments may act as corridors for generalist predators which may prey upon burrowing owls and/or nests. Due to the behavior of the burrowing owls, they are attracted to fragmenting features and are particularly susceptible to collisions with moving vehicles.^{1,5}

State of the Science

Eighty percent of burrowing owls in eastern Colorado occur on black-tailed prairie dog colonies; most colonies and owl locations (79.3%) are on private land.⁶ Burrowing owl densities and numbers are highest on prairie dog colonies, which provide ideal nesting habitat with abundant nesting sites, short vegetation, and high prey diversity. Burrowing owls may occupy abandoned prairie dog colonies for several years following the loss of prairie dogs. Burrowing owls prefer open expanses of short grass to barren habitat to detect predators. Little information exists on the potential for collision related fatality or impacts of fragmentation from wind turbines.⁵ However, in one study no collision related fatality with communication towers was recorded.⁷

Best Management Practices

The Federal Advisory Committee Draft Recommendations for wind energy development discuss surveys for other bird species potentially impacted by wind energy development: “To the extent practicable, the site visit(s) should identify landscape features or habitats that could be important to...other birds that may be at risk of adverse impacts ... including nesting and brood-rearing habitats, areas of high prey density, movement corridors...” (Chapter 3, page 24; Draft Recommendations 3/2010)⁸

- Conduct surveys in prairie dog colonies in consultation with the Colorado Division of Wildlife during one breeding season. Pre-construction avian point count surveys may identify additional burrowing owl occurrences.

Avoid

1. Wind turbine and associated infrastructure development in prairie dog colonies, both active and inactive, identified in the surveys.
2. Colorado Division of Wildlife Recommends: “No human encroachment within 150 feet [46 m] of the nest site from March 15 through October 31. Although Burrowing Owls may not be actively nesting during this entire period, they may be present at burrows up to a month before egg laying and several months after young have fledged. Therefore it is recommended that efforts to eradicate prairie dogs or destroy abandoned towns not occur between March 15 and October 31 when owls may be present. Because nesting burrowing owls may not be easily visible, it is recommended that targeted surveys be implemented to determine if burrows are occupied.”⁹

Minimize

If placement of a wind farm is at a site occupied by burrowing owls, impacts to habitat should be reduced. This can be accomplished by:

1. The Federal Advisory Committee Draft Recommendations for wind development recommend: “To reduce avian collisions, place low and medium voltage connecting power lines associated with the wind energy development underground to the extent possible, unless burial of the lines is

prohibitively expensive (e.g., where shallow bedrock exists) or where greater adverse impacts to biological resources would result:...

- Above-ground low and medium voltage lines, transformers and conductors should follow the 2006 or most recent APLIC ‘Suggested Practices for Avian Protection on Power Lines.’(Chapter 3, page 44; Draft Recommendations 3/2010).^{8,10}
2. “Instruct employees, contractors, and site visitors to avoid harassing or disturbing wildlife, particularly during reproductive season.” (Recommendation from the Federal Advisory Committee Draft Recommendations for wind energy development).⁸
 - Instruct employees, contractors, and site visitors that burrowing owls are particularly susceptible to vehicle collisions and to take caution when approaching prairie dog colonies in a vehicle, especially at night.⁹

Conservation Offsets (Mitigation)

True Offsets (actions that increase habitat quantity):

1. Work with landowners to create a grazing management plan to reduce chance of seasonal risk to burrowing owl.^{11,12,13}
2. Conserving breeding habitat for burrowing owl through partnerships with landowners should be an ongoing activity.
3. Conserving existing prairie dog colonies is more favorable and cost effective than creating new prairie dog colonies.

Acknowledgments

This BMP was originally drafted by Tammy VerCauteren, Executive Director of the Rocky Mountain Bird Observatory. Karl Kosciuch, Jill Shaffer and John Sidle provided valuable scientific review. The final draft of this BMP is a result of a collaborative review by CRCC participants.

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