



# Siting a Solar Project in the Endangered Ord's Kangaroo Rat Range in Alberta, Canada

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Photo credit: K. Pearson

## Ord's Kangaroo Rats

Ord's kangaroo rats (*Dipodomys ordii*; OKRA) are solitary and physiologically distinct nocturnal rodents. With an elongated tail and large hind legs and feet, OKRA have evolved to locomote using a bipedal hopping action similar to kangaroos. The species is native to sand dune regions across the Great Plains and has a small and isolated population in southeastern Alberta and southwestern Saskatchewan.

In Canada, the OKRA population is constrained by geographic isolation and habitat loss due to stabilization of sand dunes by encroaching vegetation. Additional sources of direct and indirect threat include anthropogenic development, agriculture, as well as parasites and predators.

## Regulatory Framework

Ord's kangaroo rats and their burrows are protected under the Alberta Wildlife Act and the Federal Species at Risk Act. As little is known about the impacts of renewable energy development on OKRA, Alberta Environment and Protected Areas (AEPA; Alberta's wildlife protection agency) has stipulated that, for solar development, active burrows must be setback from by 250 metres.

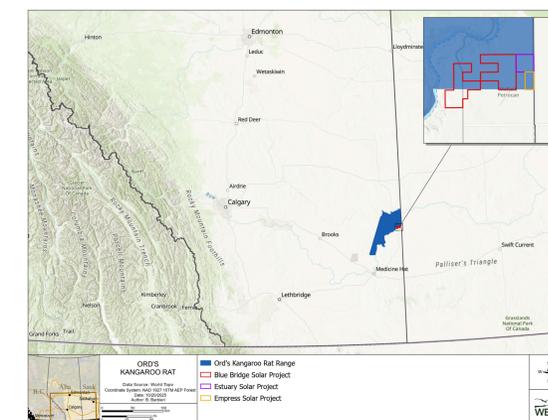


## Challenges & Approach

Several knowledge gaps existed regarding OKRA and solar impacts in Alberta:

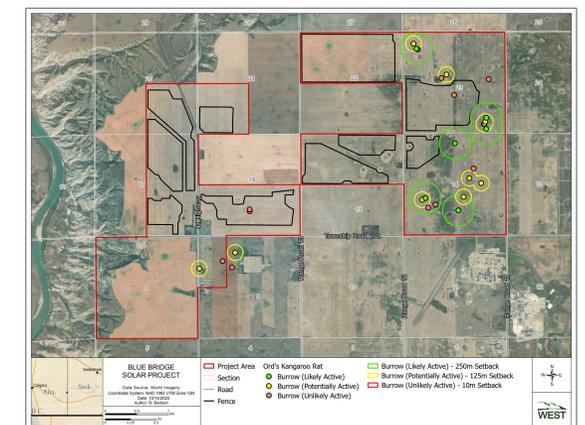
- How OKRA are distributed on cultivated lands
- How burrow use changes between seasons and years
- How to accurately detect OKRA burrows
- How to assess burrow status
- How to responsibly site a solar project in OKRA range

WEST, in collaboration with AEPA, developed a new, transect-based survey methodology designed to detect fossorial mammal burrows, and created a burrow classification guide to determine burrow quality, status, and associated species.



## Key Take-Aways

Siting a utility-scale solar project in an endangered species' range is challenging. Working collaboratively with developers and regulators is critical to effectively address those challenges. Pinch points must be identified and considered throughout the project's lifespan, not just through to the end of construction, and balance must be struck through identifying pinch-points, effectively assessing cause and effect relationships, and adaptive management of mitigation throughout the lifespan of the project as relevant data become available.



## Next Steps

Literature on the effects of renewable energy development on kangaroo rats, including OKRA, is sparse. Research is needed to identify and detail impacts of the various project stages (planning, construction, and operation) on the local OKRA population including health and survivorship, reproduction, and spatial/temporal use of lands within and surrounding a solar project with respect to different project life stages.

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## Introduction

Ord's kangaroo rats are small and nocturnal fossorial mammals occupying sand dune habitat across the western United States and Canada. In Canada, OKRA are classified as Endangered and occupy the geographically isolated northern extreme of their range. Due largely to habitat loss and population separation, only approximately 500 individuals remain in Alberta and Saskatchewan, respectively. This region also boasts some of the highest solar resources and photovoltaic potential in the Province.

Next, WEST and clients worked with AEPA to develop an OKRA Mitigation Plan that would facilitate feasible and responsible solar development. Mitigation measures included time of year and day restrictions, burrow surveys and monitoring, vegetation management and maintenance of OKRA food sources, as well as a revised burrow setback approach. Finally, WEST and clients proposed partnering with AEPA on a five-year research study aimed to determine the impacts of these Projects on the local OKRA population.