

Renewable Energy Development and Wildlife in Nebraska

Developing renewable energy can be an opportunity for rural economic development and a means to minimize the impacts of climate change on wildlife and their habitats.

Thoughtful planning and coordination are required to develop these resources in a manner that takes into consideration the potential impacts to wildlife and habitats.

Recommendations for Renewable Energy Projects

- ◆ Consult with Nebraska Game and Parks Commission and the U.S. Fish and Wildlife Service.
- ◆ Select locations where impacts to resident and migratory species are minimized.
- ◆ Develop in areas where native habitats have already been disturbed.
- ◆ Use existing roads and minimize building more roads.
- ◆ Look beyond project boundaries to assess potential impacts to native ecosystems and wildlife species in the area.
- ◆ Plan associated infrastructure (buildings, transmission lines, etc.) to minimize impacts to native habitats and wildlife.

Potential Impacts of Renewable Energy Development on Rural Economies

- Provide additional job opportunities and increase the tax base in rural areas.
- Diversify farm operations.
- Slow the attrition of rural populations and communities.

Emerging Issues

- Increasing need for additional transmission lines to bring power from wind and solar energy facilities to users.
- Concerns about transforming rural landscapes.

For more information: <http://snr.unl.edu/renewableenergy/index.asp>



Wind Energy



General Information:

- ◆ 4th – Nebraska rank in U.S. for potential wind power generation.
- ◆ 11 operating wind energy facilities; 3 under construction.
- ◆ 459.3 Megawatts installed = energy to power ~165,880 homes.

Potential Impacts on Wildlife and Habitats:

- ◆ Fatalities estimated at 880,000 bats and 573,000 birds per year with 51,630 megawatts installed (Smallwood 2013).
- ◆ Habitat fragmentation and wildlife avoidance of tall vertical structures.

Ways to Avoid, Minimize, & Mitigate Impacts:

- ◆ Adjust operations to minimize bat fatalities – feather turbine blades when not producing energy and increase cut-in speeds.
- ◆ Avoid areas where migratory birds concentrate and where threatened and endangered species are found.
- ◆ Use the minimum amount of lights as allowed by the FAA and use only flashing lights

Bioenergy

General Information:

- ◆ 2nd - Nebraska rank in U.S. for ethanol production.
- ◆ 24 operating ethanol plants producing over 2 billion gallons of ethanol
- ◆ Potential to convert some plants to alternative feedstocks: switchgrass, sorghum, corn stover.

Potential Impacts on Wildlife and Habitats:

- ◆ Native grassland ecosystem conversion to low-diversity monocultures.
- ◆ Non-native biomass crops have proven to be invasive and costly to eradicate.

Ways to Avoid, Minimize, & Mitigate Impacts:

- ◆ Avoid conversion of native ecosystems to bio-energy crops.
- ◆ Promote diverse native species for biofuels production.
- ◆ Utilize best management guidelines for production and harvest to provide wildlife habitat.



Solar Energy



General Information:

- ◆ 13th - Nebraska rank in U.S. for potential solar power generation.
- ◆ No large solar installations currently in NE.
- ◆ Potential to develop in combination with wind energy.

Potential Impacts on Wildlife and Habitats:

- ◆ Habitat loss and/or fragmentation.
- ◆ Displacement of wildlife from the area.
- ◆ Bird deaths associated with strikes and/or stranding on panels mistaken for water.

Ways to Avoid, Minimize, & Mitigate Impacts:

- ◆ Avoid unnecessary ground disturbance.
- ◆ Design fences to allow wildlife migrations and movements.
- ◆ Marking panels with white lines may reduce impacts to birds.
- ◆ Develop on rooftops, in parking lots, or in other developed areas.