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Wildlife Buffers for Wind Energy Projects: An Emerging Paradigm

Wildlife buffers are becoming a common element of energy project design. Placing wind turbines on cropland can often minimize impacts to wildlife, but not every project lends itself to that strategy. Where more natural landscapes are involved, siting turbines and other infrastructure outside of buffer areas can streamline project approvals. The consequence, however, is reduced land available for energy generation and transmission.

Wildlife buffers have arisen from concern over endangered species, migratory birds, declining grassland bird populations, and the sensitivity of raptors and waterfowl. Wildlife agencies and utility commissions are now defining a paradigm of ecologically appropriate buffers for siting of wind energy projects and transmission lines. Recommended buffer widths range from 100 yards to 5 miles and are highly variable across jurisdictions (see table below).

Prairie grouse exemplify the debate over wildlife buffers. Each spring, these chicken-like birds congregate at courtship display grounds in suitable open habitats across the Great Plains and western states. The display grounds, called leks, are typically located in the same areas year after year. The traditional nature of lek locations, combined with recent population declines, have biologists concerned about the encroachment of wind turbines into prairie grouse habitat.

Various state wildlife agencies recommend that grouse leks be buffered from wind energy facilities by 0.5 to 5 miles. The U.S. Fish and Wildlife Service has advocated for 5-mile buffers, though the American Wind Energy Association has argued that such a conservative buffer is without scientific basis. The challenge in resolving this debate is that nobody knows how grouse will respond to more wind farms and transmission lines. Although grouse show strong attachments to their breeding habitat and might appear to adapt to infrastructure in the short-term, the long-term impacts on grouse populations are unclear. Some wildlife agencies are asking developers to help fill the knowledge gaps with post-construction wildlife studies, but larger buffers may replace the need for such studies. The trade-off between reduced developable land area and post-construction monitoring costs varies by project.

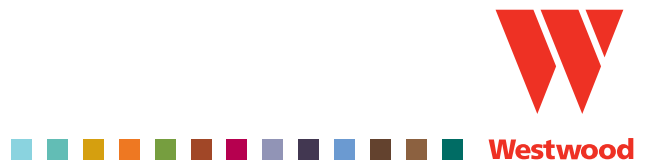


The greater prairie chicken (left) is one of several prairie grouse species, some of which have federal status. The Attwater's prairie chicken is endangered, while the lesser prairie chicken and the greater sage grouse (right) may soon become listed.

Wildlife buffers will likely become a definitive element of energy project siting and mitigation planning. Whether for screening alternative project sites or negotiating approvals, wildlife buffers can be a key to project success. Projects that avoid sensitive areas may escape intense scrutiny and avoid the cost of pre- and post-construction wildlife studies.

Sample Wildlife Buffer Recommendations

State/Province	Buffer Width	Resource	Agency
Minnesota and Wisconsin	600 – 1,000 feet	public parks, state wildlife areas, managed grasslands	various counties
North Dakota	¼ mile	Waterfowl Production Areas	Public Service Commission
Iowa	1 mile	high-quality wildlife areas of 40+ acres	Dept. of Natural Resources
Wisconsin	2 miles	Horicon Marsh National Wildlife Refuge	Public Service Commission
Alberta	100 yards – 5 miles	grouse leks, wetlands, raptor nests	Sustainable Resource Dept.
Ohio	1 – 5 miles	major rivers, Lake Erie shoreline, endangered birds	Dept. of Natural Resources



For more information, please contact
Rob Bouta,
 Senior Environmental Scientist
rob.bouta@westwoodps.com
 952-906-7436