

My name is Ron Shupe. I am a retired wildlife biologist, here today representing the North Dakota Chapter of the Wildlife Society. The North Dakota Chapter of The Wildlife Society (Chapter) is generally supportive of the wind industry as a renewable source of energy that can be produced locally. The Chapter is concerned, however, about the impacts that wind facilities placed in grasslands, particularly extensive tracts of native prairie, have on ecosystem health and wildlife. In a 2007 report, *Environmental Impacts of Wind-Energy Projects*, by the National Research Council to the U.S. Congress, the Council recognized that the construction and operation of wind-energy facilities directly influence ecosystem structure. These influences include disturbance, removal of vegetation, soil compaction and erosion, and changes in hydrologic features. Wildlife is impacted directly through mortality or indirectly through alteration of habitat and behavioral avoidance. Furthermore, research conducted in various parts of the United States indicates small-scale displacement of songbirds. Specifically, preliminary research results conducted in North Dakota and South Dakota by the US Geological Survey indicate displacement of some species of grassland songbirds by wind facilities.

The Chapter is particularly concerned with the impact to wildlife of wind facilities placed on the Missouri Coteau, such as the CPV Ashley Wind Project. The Missouri Coteau contains large expanses of unfragmented grasslands intermixed with millions of wetlands and is a vital breeding area for many grassland and wetland nesting birds. In addition, it is a hunter's paradise and a prime area for ecotourism potential. The Missouri Coteau is in the midst of the Central Flyway, a migratory corridor used by millions of migrating waterfowl and other migratory birds during spring and fall. It is also an endangered ecosystem, even more so than tropical rainforest. Only about 30% of mixed-grass prairie remains intact in North America. The Missouri Coteau is critically important for wildlife in North Dakota, as well as to the hunters, outdoor enthusiasts, and operators of ecotourism industries that value these irreplaceable resources. The importance of tourism to the state's economy is underscored by the fact that the tourism industry ranks second in its contribution to the state's economic base; tourism generated \$3.96 billion in 2008. Hunting contributes about \$365 million annually to the state's tourism industry. The CPV Ashley Wind Project would be located in an area of largely intact native prairie with high wetland density. Because of the unfragmented nature of the area within which the CPV Ashley Wind Project would be located, the Chapter is concerned about the impact of the CPV Ashley Wind Project to wildlife and the native prairie ecosystem. In addition to my comments the Chapter is submitting, for the record, two maps. The first shows waterfowl nesting densities in the project area. Densities exceeding 80-100 pairs per square mile are significant habitat for waterfowl and other ground nesting birds. The second map shows the various types of habitat in the area, especially grasslands. The two maps are Exhibits 2 and 3.

The Chapter also has concerns about the larger landscape in which the CPV Ashley Project is embedded. That area of the Missouri Coteau is experiencing rapid growth by the wind industry. The operational NextEra Energy's Kulm/Edgeley Wind Center and Acciona Energy's Tatanka wind facility are near the CPV Ashley Project. Future nearby projects include the next growth phases for the NextEra and Tatanka wind resource areas, and individual projects under development by EnXco, BP Alternative Energy, and Just Wind – Wind Farm Development.

Many plant and animal species are sensitive to anthropogenic disturbance, be it increased human presence on the landscape or the introduction of a non-native plant into the environment. These types of influences seldom work independently on wildlife. The combination of new roads, increased vehicular traffic, increased human presence, alteration of wetlands, introduction of non-native plants, construction of very large structures on the landscape, and other anthropogenic disturbances, are termed cumulative impacts. The cumulative impacts of wind developments and other anthropogenic pressures on wildlife undoubtedly will be negative. Whereas one wind facility may have minimal discernible negative influence on wildlife, the accumulation of numerous wind facilities built in the same area may begin to break down species' thresholds of tolerance to disturbances.

The several “small” projects in the same vicinity could in time become, in essence, one wind facility, but because of current state regulations, the facilities’ biological effects could accumulate without the benefit of regulatory review. The Chapter strongly believes that each new wind facility should be considered in the context of other existing and planned projects in the region. This consideration of cumulative effects should include *all* other anthropogenic impacts in the area, including such things as additional transmission lines, roads, and other types of infrastructure that may or may not be unrelated to wind facilities. Whether or not the aforementioned projects will have minimal impact on the environment can not be ascertained without a cumulative impacts analysis.

The Chapter is most supportive of wind facilities that are placed in habitats of limited conservation value to wildlife, such as cropland in predominantly agricultural landscapes. In areas where turbine placement on grasslands is unavoidable, the Chapter urges mitigation in ratios exceeding 1:1. That is to say, for every acre of grassland destroyed, more than an acre should be restored or protected. Native prairie should receive the highest mitigation ratio, followed by planted grasslands. The Chapter realizes that there is no established system in North Dakota for this type of mitigation for wind facilities, but also realizes that Basin Electric Power and BP Alternative Energy and Clipper Wind Power Development (for a jointly owned South Dakota project), have already committed to voluntary conservation measures. The Chapter applauds these efforts.

The Chapter urges wind developers to contact state and federal natural-resource agencies early in the planning process to discuss the entire scope of a wind-resource area, and thus ultimate impact footprint, regardless of current regulations. If contacted early, agencies and wind developers can address concerns over potential cumulative impacts, as well as ways to avoid or minimize them. Another benefit of early contact with state and federal agencies, as well as other concerned entities, is the opportunity to coordinate efforts to study the potential impacts of wind facilities on wildlife. There are numerous unanswered questions about the impacts of wind facilities on wildlife. Whereas many wind developers conduct pre-operational baseline surveys and sometimes post-operational monitoring surveys, these surveys are not always relevant to a particular region. Money might be better spent on surveys of a different nature. For example, in North Dakota, very little is known about rates of bird and bat mortality or the impacts of turbines on prairie grouse. To our knowledge, very little research is being conducted in the state on these issues. Data from such research would help biologists make better-informed decisions about the impact of wind facilities on wildlife.

Some wind developers are beginning to write Avian and Bat Protection Plans for their facilities. The Chapter supports the development of such plans, especially if these plans are written in coordination with state and federal natural-resource agencies, address what pre- and post-operational monitoring will be conducted, how the resulting data will be used and shared, and explains how potential impacts to migratory and resident birds and bats will be avoided, minimized, and mitigated.

*The Wildlife Society is an international, nonprofit, scientific and educational organization composed of professionals, students, and laypersons active and interested in wildlife research, management, education and administration. The NDCTWS is an active affiliate. It is specifically concerned with approaches to effective management of North Dakota's plant and animal communities. The Chapter provides expertise in advising legislative and judicial processes surrounding the controversial management of many natural resource assets. It advocates the holistic treatment of environmental questions. The Chapter was founded in 1963 and incorporated in 1981 under the laws of North Dakota. The NDCTWS would be very willing to engage the PSC in issues concerning wildlife impacts from wind facilities, as well as offer advice based on member's expertise in matters of wildlife management and impacts of human-derived disturbances.*