Ecology, Conservation, and Wind Farms: The Future of the Flint Hills Prairie

One of the goals of ecology is to be a "predictive science", to understand enough about the workings of nature to be able to predict how a species or an entire ecosystem will respond to some human activity or change. A central aim of the Konza Prairie Biological Station is to conduct basic research to understand ecological principles and the workings of our natural grasslands as a foundation for their conservation and for predicting their response to future changes and future threats. For example, the many large watershed units on Konza that are burned at different frequencies and seasons, and under different grazing regimes not only help us understand the role of these key ecological factors, but they also help us predict how our grasslands may respond to potential future changes in land management such as reductions in controlled burning or changing grazing practices. The rainfall manipulation facilities near headquarters are designed to experimentally control and alter the patterns of seasonal rainfall falling on the prairie, such as the intensity of rain events and the duration of drought periods. These will help us predict how our native prairies may respond to any future regional climate changes. Ongoing Konza studies are also helping us to understand the consequences of changing land cover in the Flint Hills, such as the increase in woody plants and decrease in grassland cover that has been occurring over the past few decades. Changes in land use and management (e.g. reduction in the use of fire, hilltop development, overgrazing, or suburban expansion), or changes in climate represent real potential threats to our Kansas tallgrass prairies. Other threats to the ecology of our grasslands include invasive non-native species, such as the Sericea lespedeza plant that has successfully become established and is spreading throughout the Flint Hills.

Recently, the idea of wind-turbine-farm development has emerged as another potential ecological threat to the Flint Hills prairies. A wind farm can cover up to several thousand acres with 35O-foot-tall turbines that generate electricity. The word "farm" is misleading in suggesting an agricultural land use, as these are clearly industrial facilities. A 12, OOO-acre wind-turbine facility is already operational in Gray County in southwestern Kansas, and the idea of wind-farm development in the Flint Hills is under discussion. I refer to wind-farms as a potential threat because I have strong concerns about their potential impact on our region. On one hand, I strongly favor efforts to develop cleaner, sustainable energy sources as alternatives to fossil fuels. I'm an even stronger advocate of energy conservation, but we have become a consumptive society that seems to focus our attention primarily on getting more rather than using less. I've often beard others note, "Conservation will not solve our energy problems. We need to develop more".

True, energy conservation alone is only a partial solution, but it should not be dismissed on that basis. Conservation should be a key component of our stewardship of energy resources.

I've digressed. **Back to wind power. Although in principle, wind farms have merit in providing a relatively clean alternative energy source, it would be inappropriate to convert areas of the Flint Hills to such an industrial land use. Our Kansas Flint Hills region contains the last remaining large contiguous area of native tallgrass prairie, a productive and diverse grassland ecosystem that once spread throughout the eastern Great Plains region from Texas to the Dakotas. Less than 4% of the original tallgrass prairie remains today, and over 80% of what is left is in the Flint Hills. This tallgrass prairie region is an important natural treasure, and also the key resource supporting Kansas' $5.0 billion ranching and livestock production economy, the largest sector of our agricultural economy and heritage. The development of expansive wind-turbine facilities would certainly compromise the ecological and cultural integrity of this native landscape. The Flint Hills tallgrass prairie covers less than 20% of the Kansas land area, and there are many alternative areas in our state that are more appropriate for wind power development. It is also highly likely that such development would have a net negative effect on tourism in our region, as the scenic beauty of the Flint Hills landscape and our native prairies is our chief natural asset and one of the primary features attracting visitors to our area.**

I encourage everyone to learn more about this and other issues relevant to the conservation of our natural heritage here in the Flint Hills, and to be actively involved in the discussions, in stewardship of our land, and in charting the future course of our tallgrass prairie.

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