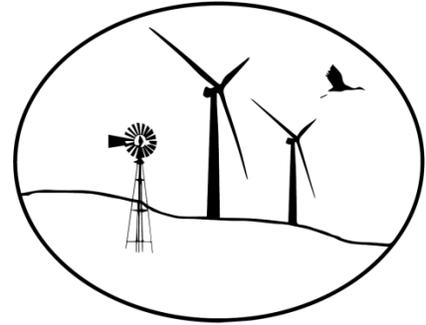


## Wind Energy and Wildlife News

February 11, 2016



### Around Nebraska...

#### **Nebraska Legislative Bills (Updates are in red).**

**LB736** - *Change provisions relating to electric utilities and electric suppliers under the Rural Community-Based Energy Development Act.* Introduced by Senator Friesen on 1/6/16; Referred to Natural Resources Committee on 1/7/16; Notice of Hearing for 2/4/16.

**LB824** - *Exempt privately developed renewable energy generation facilities from regulation as prescribed.* Introduced by Senator McCollister on 1/8/16; Referred to Natural Resource Committee on 1/11/16; Notice of Hearing for 1/27/16; **Natural Resources Hearing Transcripts available.**

**LB863** - *Adopt the Wind Energy Expansion Act.* Introduced by Senator Schilz on 1/11/16; Referred to the Natural Resources Committee on 1/12/16; Notice of Hearing for 2/4/16.

**LB881** - *Change provisions relating to energy financing contracts.* Introduced by Senator Schilz on 1/11/16; Referred to the Natural Resources Committee on 1/12/16; Notice of Hearing for 1/28/16.

**LB1012** - *Adopt the Property Assessed Clean Energy Act.* Introduced by Senator Mello on 1/15/16; Referred to Urban Affairs Committee on 1/20/16. Notice of Hearing for 2/9/16.

**LB1047** - *Change sales tax exemption provisions relating to purchases of energy and fuel.* Introduced by Senator Harr on 1/20/16; Referred to Revenue Committee on 1/22/16. **Notice of Hearing for 2/19/2016.**

**LB1069** - *Provide duties for the state investment officer relating to investment in energy-related companies or funds.* Introduced by Senator Haar on 1/20/16; Referred to Nebraska Retirement Systems Committee on 1/22/16. **Notice of Hearing for 2/9/2016.**

**LB1071** - *Adopt the Solar Energy Economic Development Act.* Introduced by Senator Haar on 1/20/16; Referred to Natural Resources Committee on 1/22/16. **Notice of Hearing for 2/11/2016.**

**LB1085** - *Change a renewable energy tax credit.* Introduced by Senator Davis on 1/20/16; Referred to Revenue Committee on 1/22/16.

## News

**[Wind energy bill compromise reached.](#)** A negotiated proposal to spur private development of wind energy in Nebraska was presented to the Legislature's Natural Resources Committee. The measure will be amended by Senator McCollister to address the concerns of NPPD.

**[UNL report: Nebraska must be proactive with climate action plan.](#)** Nebraska needs to be proactive in developing a climate action plan in response to current and projected changes in climate, a new University of Nebraska-Lincoln report suggests. The report shares the findings from [eight roundtable discussions on the implications of climate change](#), hosted last fall by the School of Natural Resources. It also notes UNL's importance in leading the development of adaptation and mitigation measures and also in educating policymakers, decision-makers and the public about climate change.

**[Climate Change Implications for Nebraska: Summary Reports of 2015 Roundtable Discussions Available.](#)** In the fall of 2015, Don Wilhite and Kim Morrow of the University of Nebraska's School of Natural Resources, in collaboration with key sector experts, organized a series of eight sector-based roundtable discussions on the implications of climate change. More than 325 people were engaged in the roundtable discussions, These participants represented a wide diversity of stakeholders with expressed concerns about the impacts of climate change on the state.

**[Lincoln Electric System celebrating 50 years.](#)** LES was born on Feb. 1, 1966, when the city bought poles, lines and infrastructure from Consumers Public Power District, which later became the Nebraska Public Power District. After five decades of operation, LES continues to forge ahead in stormy regulatory and technological seas. LES Administrator and CEO Kevin Wailes said being locally owned by its customers lets the company adapt while staying in touch with the values of its community. Looking to get ahead of tougher environmental regulations coming down the pike, LES is striving to create a diverse energy portfolio using coal, gas and renewable sources. This year, carbon-free sources will provide 48 percent of the utility's retail load.

**[Bats are Nebraska's natural pest control agents.](#)** You don't notice them flying in the night sky as you drive home, or in the trees above you as you walk your dog or under the bark of the dead tree at your fishing hole, but bats are everywhere in Nebraska. In fact, there are 13 species of bats inhabiting our state. They exhibit a wide variety of shapes, sizes and colors. Some migrate to unknown locations each winter. Others stay in Nebraska and hibernate in caves, mines and occasionally homes. You probably won't notice them unless you happen to catch a glimpse of one eating insects under a streetlight or they make an unwelcome appearance in your home.

**[Rare Bats Complicate Brewery Construction.](#)** Blue Blood Brewery is still on schedule for its move to historic Robber's Cave just south of 10th and Van Dorn, but it turns out the owners aren't the only ones who want to call it home: bats have staked their claim inside. The cave is a historic mine dug by brewers back in the 1870's. Store owner Brian Podwinski says there were always a few bats in Robber's Cave, but the number's spiked with winter hibernation. He called in bat experts and they found three species in the cave. One of those, the Northern Long-Eared Bat is what the U.S. Fish and Wildlife Service calls a threatened species, just shy of endangered.

## Around the Nation & World...

### *Wind and Wildlife*

[\*Genetic diversity in migratory bats: Results from RADseq data for three tree bat species at an Ohio windfarm\*](#), Sovic et al. 2016, PeerJ. These results, along with recent work also suggesting limited genetic structure in bats across North America, argue that additional biomarker systems such as stable-isotopes or trace elements should be investigated as alternative and/or complementary approaches to genetics for sourcing individuals collected at single wind farm sites.

[\*An assessment of non-volant terrestrial vertebrates response to wind farms—a study of small mammals\*](#), Łopucki and Mróz 2016, Environmental Monitoring and Assessment. In this paper, the impact of three functioning wind farms on terrestrial small mammal communities (rodents and shrews) and the population parameters of the most abundant species were studied. Small mammals were captured at 12 sites around wind turbines and at 12 control sites. In total, from 1200 trap-days, 885 individuals of 14 studied mammal species were captured. There was no difference in the characteristics of communities of small mammals near wind turbines and within control sites; i.e. these types of sites were inhabited by a similar number of species of similar abundance, similar species composition, species diversity ( $H'$  index) and species evenness ( $J'$ ) (Pielou's index).

[\*Impact of Wind Facilities on Bats in the Neotropics\*](#), Rodríguez-Durán and Feliciano-Robles 2015, Acta Chiropterologica. We monitored the bat fatalities caused by a 13 turbines wind facility installed in western Puerto Rico (West Indies) over a period of 23 months. The post-construction monitoring includes observed fatalities and a corrected fatality estimate expressed as bats/ turbine/year adjusted for bat carcass removal rates, searcher efficiency, and percent area searched. Data on seasonality of fatalities and distance of carcasses from turbines is also provided. Eleven out of the 13 species of bats in Puerto Rico suffered fatalities, including all five species of phyllostomids.

[\*Bat Activity at a Small Wind Turbine in the Baltic Sea\*](#), Rydell and Wickman 2015, Acta Chiropterologica. Activity of bats at an old wind park four km off the island of Gotland in the Baltic Sea was monitored during 50 nights from August to October 2013, using an automatic bat detector (Pettersson D500-X) mounted on one of the turbines.

[\*Investigating the potential effects of marine renewable energy developments on seabirds\*](#), Wade 2015, University of Aberdeen and University of the Highlands and Islands Thesis. I generate vulnerability and confidence indices to predict the effects of offshore wind, wave and tidal-stream renewable energy developments on Scottish seabird populations; track the movements of a seabird species identified as lacking in data to better understand overlap with MREDS; and investigate seabird use of a high current flow environment leased as a tidal-stream energy development site. Overall, this thesis indicates that seabird responses to MREDS are likely to be species-specific and will vary dependent on the development location and design of the energy generating technology. My findings indicate that effects of MREDS will differ dependent on individual foraging strategies, age and life stage of individuals, which implies that MREDS are likely to differently affect subsections of seabird populations.

[\*Milestone Achieved for Lesser Prairie-Chicken with Wind Energy Partnership\*](#). The Western Association of Fish and Wildlife Agencies (WAFWA) has finalized the first new wind energy development under the Lesser Prairie-Chicken Range-wide Conservation Plan. Mitigation payments for lesser prairie-chicken and habitat conservation tops \$50 million.

[\*\*USFWS Issues Pro-Wind Energy Sector 4\(d\) Rule for Northern Long-Eared Bats\*\*](#). The United States Fish and Wildlife Service (USFWS) recently released a final rule under § 4(d) of the Endangered Species Act (ESA) for the northern long-eared bat that contains a key exception for wind energy facilities. Activities within the white-nose syndrome zone not involving purposeful take or prohibited types of incidental take are not prohibited under the § 4(d) rule. Specifically, incidental take from the operation of utility-scale wind-energy turbines is not prohibited.

[\*\*Auburn's eagles participate in Colorado wind technology research to help prevent bird strikes\*\*](#). The Auburn University eagles, trainers and a veterinarian are in the Colorado Rockies participating in research to help the U.S. Department of Energy's National Renewable Energy Laboratory develop a radar system to prevent bird strikes in wind turbines.

[\*\*RSPB plans 'bat-friendly' wind turbines at Bedfordshire HQ\*\*](#). The charity, known for its opposition to turbines, claims to have commissioned a model that will not threaten local pipistrelle and noctule bats.

[\*\*Wind Energy Lobbyist: 'Drastic Steps' On Climate Change Or We'll 'Lose Up To 50% Of The Global Species In Our Generation'\*\*](#). John Anderson, senior director for permitting policy and environmental affairs at the American Wind Energy Association (AWEA), said at an event on Friday on Capitol Hill that climate change, not wind turbines, poses the "greatest threat" to wildlife and that without "drastic steps" being taken, up to half of all species around the world will be lost "in our generation."

## Wind

[\*\*Proposed Rhode Island Land-Based Wind Siting Guidelines\*\*](#). The proposed land-based wind siting guidelines made available for viewing and downloading on this webpage were prepared by the Rhode Island Office of Energy Resources (OER) as an update to the Division of Planning's 2012 technical report, "[Interim Siting Factors for Terrestrial Wind Energy Systems](#)." The updated guidelines are meant to provide information and helpful guidance for Rhode Island municipalities interested in establishing new (or revising existing) land-based wind turbine siting ordinances for their community.

[\*\*Blades could have smart future\*\*](#). German researchers have examined new concepts for so-called 'smart' rotor blades that can adapt to the wind. "The findings of this project offer turbine developers and operators new information and tools allowing them to launch more effective, more cost-efficient and more reliable system designs on the market," the researchers said.

## Wildlife

[\*\*Migratory Bird Treaty Centennial 1916-2016\*\*](#). USFWS website commemorating the treaty and providing migratory bird information.

[\*\*Explaining species differences in bat mortality from white-nose syndrome\*\*](#). Bat body type, and the environmental conditions bats use in their hibernation sites, may explain species differences in bat mortality from white-nose syndrome. The researchers used a mathematical model integrating the effects of bat body size and metabolism with growth of the fungus across a range of winter temperature and humidity conditions. They then showed why some bats survive infection while others do not.

**[Environment, host, and fungal traits predict continental-scale white-nose syndrome in bats](#)**

Hayman et al. 2016, Science Advances. White-nose syndrome is a fungal disease killing bats in eastern North America, but disease is not seen in European bats and is less severe in some North American species. We show that how bats use energy during hibernation and fungal growth rates under different environmental conditions can explain how some bats are able to survive winter with infection and others are not. Our study shows how simple but nonlinear interactions between fungal growth and bat energetics result in decreased survival times at more humid hibernation sites; however, differences between species such as body size and metabolic rates determine the impact of fungal infection on bat survival, allowing European bat species to survive, whereas North American species can experience dramatic decline.

**[Wyoming Adopts Wildlife Migration Conservation Guidelines](#)**. New state guidelines adopted in Wyoming, an energy-rich state that constantly seeks to balance conservation with development of fossil fuels, seek to protect some of North America's longest wildlife-migration routes from oil and natural gas drilling on public lands.

**[Mesmerizing Migration: Watch 118 Bird Species Migrate Across A Map Of The Western Hemisphere](#)**

For the first time, scientists at the Cornell Lab of Ornithology have documented migratory movements of bird populations spanning the entire year for 118 species throughout the Western Hemisphere. The study finds broad similarity in the routes used by specific groups of species—vividly demonstrated by animated maps showing patterns of movement across the annual cycle.

**[Convergence of broad-scale migration strategies in terrestrial birds](#)**

La Sorte et al. 2016, Proceedings of the Royal Society B. Geographical convergence of migration strategies was evident within specific terrestrial regions where geomorphological features such as mountains or isthmuses constrained overland migration. Convergence was also evident for transoceanic migrants that crossed the Gulf of Mexico or Atlantic Ocean. These findings suggest that the unique constraints and requirements associated with transoceanic migration have promoted the spatial convergence of migration strategies. The combination of seasonal atmospheric and environmental conditions that has facilitated the use of similar broad-scale migration strategies may be especially prone to disruption under climate and land-use change.

**[Distance Sampling Surveys of Population Size: Enabling Better Decision-Making by Wildlife Managers](#)**

Buckland et al. 2016, UK Success Stories in Industrial Mathematics Chapter. Distance sampling, in which distances of detected animals from a set of randomly located lines or points are recorded, is the most widely-applicable technique for obtaining such estimates. The methodological developments and associated software have allowed better-informed decisions to be made in the management and conservation of populations as diverse as whales, seals, fish, elephants, apes, deer, birds, ants, trees and flowering plants.

**Other**

**[Affordable clean grid really is possible with current technology](#)**

Clean wind and solar energy are crucial allies in the fight against global warming. But critics often point to the need for costly energy storage systems for when the wind isn't blowing and the sun isn't shining. A new study debunks that assumption. It shows that a reliable, low-carbon electrical power system is possible in the U.S. by 2030

with existing renewable energy technologies, and without energy storage or an increase in electricity cost.

[\*\*Future cost-competitive electricity systems and their impact on US CO2 emissions\*\*](#), MacDonald et al. 2016, Nature Climate Change. In the present study, we calculate the cost-optimized configuration of variable electrical power generators using weather data with high spatial (13-km) and temporal (60-min) resolution over the contiguous US. Our results show that when using future anticipated costs for wind and solar, carbon dioxide emissions from the US electricity sector can be reduced by up to 80% relative to 1990 levels, without an increase in the levelized cost of electricity.

[\*\*Mining deemed threat to Sage-Grouse; millions of acres withdrawn\*\*](#). In September 2015 the U.S. Fish and Wildlife Service decided to refrain from listing the greater sage-grouse (*Centrocercus urophasianus*) under the Endangered Species Act. The decision was based in part on the finalization of federal plans which aim to protect about 50 million acres of sage-grouse habitat across 10 states. This effort to conserve the species without listing it was hailed as a conservation success by some, and roused suspicion in others. The Bureau of Land Management is in the process of finalizing land management plans to help conserve the sage-grouse. Over 5,000 comments were received regarding a 10-million-acre withdrawal from mining claims on BLM and Forest Service lands, which are deemed important primary habitat for greater sage-grouse under the federal plans.

[\*\*'The town is surrounded' : From Climate Concerns to Life under Wind Turbines in La Ventosa, Mexico\*\*](#), Dunlap 2016, Global governance/politics, climate justice & agrarian/social justice: linkages and challenges Colloquium Paper No. 4. This paper will examine the experience of La Ventosa with wind projects through the notion of 'green grabbing'. Green grabs are transfers over the control of land and/or natural resource to powerful actors typically originating outside the area in question for 'green,' sustainable or renewable energy projects. Notably these land and resource transfers involve collaboration from people at the international, national and local level with these projects utilizing various forms of coercion and/or deception to achieve their desired goals of resource control and concentration.

## **Webinars**

[\*\*Species Conservation & ESA Initiative Webinar: Voluntary Species Conservation Incentives and Collaboration\*\*](#) – recording available.

[\*\*How to Prioritize Key Areas for Conservation Efforts in a Changing Climate: A Look at "Climate Refugia"\*\*](#) webinar - recording available.

## **Upcoming Conferences, Trainings & Events**

[\*\*Nebraska Chapter of the Wildlife Society Annual Meeting\*\*](#), March 8-10, 2016, Kearney, NE. The theme for the meeting is "50 Years of Wildlife Conservation and Management". The meeting will include a student-professional workshop, oral presentations, a student poster competition, our regular business meeting, banquet, auction, and a Student-Professional Quiz Bowl.

[\*\*Nebraska Planning and Zoning Association Conference\*\*](#), March 9-11, 2016, Kearney, NE. NPZA Celebrates 50 years as an organization supporting local planning in Nebraska!

[\*\*Audubon's Nebraska Crane Festival\*\*](#), March 17-20, 2016, Kearney, NE. We are already anticipating with great excitement the internationally celebrated migration of 500,000 Sandhill Cranes through central Nebraska. Thousands of people from all over the world come to witness this amazing, life-changing wildlife event. We hope this year you will choose to be part of this experience.

[\*\*AWEA Wind Project Siting and Environmental Compliance Conference\*\*](#), March 22-23, 2016, Charleston, SC. where leaders from the wind industry, environmental permitting and compliance sector, the scientific community and regulatory officials come together for a robust discussion about the current state of siting and environmental compliance, and network.

[\*\*Nebraska Prairie Chicken Festival\*\*](#), April 8-10, 2016, Burwell, NE. The Nebraska Prairie Chicken Festival aims to celebrate prairie grouse species, the grasslands they inhabit and the culture that surrounds them.

**The Wildlife Society Renewable Energy Working Group – LinkedIn.** Connect with other resource professionals involved in renewable energy – wildlife work. To join, go to:

[http://www.linkedin.com/groups?gid=4433729&trk=my\\_groups-b-grp-v](http://www.linkedin.com/groups?gid=4433729&trk=my_groups-b-grp-v), click Join.

Check out the Nebraska Wind Energy and Wildlife Project website at: <http://snr.unl.edu/renewableenergy/wind/> and Wind Energy and Wildlife news at: <http://www.scoop.it/t/wind-energy-and-wildlife>.

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