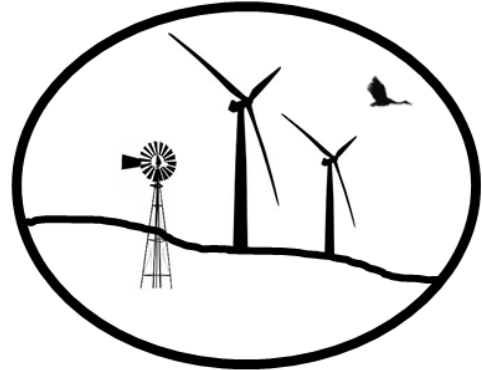


Wind Energy and Wildlife News

August 4, 2015



Around Nebraska...

[Jocelyn Oleny Harrison to defend master's thesis](http://newsroom.unl.edu/announce/snr/4419/25149), "Assessment of disturbance effects of an existing wind energy facility on greater prairie-chicken (*Tympanuchus cupido pinnatus*) breeding season ecology in the Sandhills of Nebraska." Although her defense has already occurred, you can check out her complete abstract is available at: <http://newsroom.unl.edu/announce/snr/4419/25149>.

[Graduate Research Assistantship – Bat habitat: Nebraska Cooperative Fish & Wildlife Research Unit](#). During the past few years, we have received grant funding to bring graduate students on to help us learn more about bat distribution, habitat use, and migration in Nebraska. The research the students are conducting will be useful in siting and mitigation for wind energy as well as other resource management decisions. I am happy to announce that we have a Master's level Graduate Assistantship for motivated student with interest in bat ecology, habitat modeling, landscape ecology. Student will conduct state-wide sampling of bats utilizing acoustic detectors, and use resulting data to construct habitat specific range maps for Nebraska to aid in Nebraska bat management. Student will additional help create a monitoring network using citizen-scientists that will be a legacy for the future and provide data to the NABat National Bat Monitoring effort. Successful applicant will join a team of ecologists working to understand bat habitat use and movements in Nebraska.



[Texel: Wind energy production rising](#). Texel cited those statistics in a talk to the Grand Island Rotary Club Tuesday as he discussed challenges in Nebraska's electric industry, with the rise of renewable energy production and regional transmission organizations being two of the more notable changes during his time with the Power Review Board.

[Managing grasslands for greater prairie chicken habitat](#). The loss of habitat in Nebraska and surrounding grassland states has includes a decline in the quantity and quality of native grasslands. Prairie chickens are grassland birds; areas dominated by cropland are not suitable habitat. More than 40 percent of Nebraska is now cropland. The conversion of grassland to cropland continues, especially in the eastern Great Plains, where native tallgrass prairie has been reduced to 1 percent of its original range. The Nebraska Sandhills is one of the few remaining regions in the Great Plains with a stable population of prairie chickens. The varied habitat prairie chickens require throughout the year can be found on grazed and ungrazed Sandhills rangelands on public and private land.

[Management of Sandhills rangeland for greater prairie-chickens](#). Powell et al. EC305 IANR Publication.

[On the existence of maximum likelihood estimates for presence-only data](#). Hefley and Hooten 2015, Methods in Ecology and Evolution. Presence-only data can be used to determine resource selection and estimate a species' distribution. Maximum likelihood is a common parameter estimation method used for species distribution models. Maximum likelihood estimates, however, do not always exist for a commonly used species distribution model – the Poisson point process. We found that when habitat preferences are strong or the number of presence-only

locations is small, by chance, maximum likelihood coefficient estimates for the Poisson point process model may not exist. We found that several alternative estimation methods can produce reliable estimates, but results will depend on the chosen method.

[Study is first to measure global population-energy relationship.](#) If you've lived between the year 1560 and the present day, more power to you. Literally. That's one of several conclusions reached by University of Nebraska-Lincoln ecologist John DeLong, who has co-authored the first study to quantify the relationship between human population growth and energy use on an international scale.

[Socio-Economic Instability and the Scaling of Energy Use with Population Size.](#) DeLong and Burger 2015, PLoS One. We find that on average energy use has indeed kept pace with population size over long time periods. We also show, however, that the energy-population scaling exponent plummets during, and its temporal variability increases preceding, periods of social, political, technological, and environmental change. We suggest that efforts to increase the reliability of future energy yields may be essential for stabilizing both population growth and the global socio-economic system.

[Local View: \\$30 million is a lot of money.](#) \$30 million is a lot of money. We have made changes to our watersheds with the best of intentions — to feed our families and the world. But, it is simply a fact that those little changes on each farm or urban property have accumulated to create a situation in which it will take \$30 million to restore a small local watershed in Lancaster County. Multiply that across the state of Nebraska if you like. These are unaccounted costs in the production of food.

Around the Nation & World...

Wind and Wildlife

[Breeding Bird Distribution Affected by Wind Turbines in the Dakotas.](#) New wind energy facilities placed in prime wildlife habitat in North and South Dakota can influence the distribution of several species of grassland birds for years after construction, including species whose populations are in serious decline. According to a U.S. Geological Survey [report](#) recently published in the journal Conservation Biology, seven of nine bird species studied from 2003-2012, including the significantly declining grasshopper sparrow and bobolink, were displaced from suitable breeding habitat in native mixed-grass prairies after wind turbine construction. Displacement typically started one year after construction and persisted for at least two to five years.

[Effects of wind-energy facilities on breeding grassland bird distributions.](#) Shaffer and Buhl 2015, Conservation Biology. Our research provides a framework for applying a BACI design to displacement studies and highlights the erroneous conclusions that can be made without the benefit of adopting such a design. More broadly, species-specific behaviors can be used to inform management decisions about turbine placement and the potential impact to individual species. Additionally, the avoidance distance metrics we estimated can facilitate future development of models evaluating impacts of wind facilities under differing land-use scenarios.

[Seasonally-Dynamic Presence-Only Species Distribution Models for a Cryptic Migratory Bat Impacted by Wind Energy Development.](#) Hayes et al. 2015. PLoS One. Hoary bats (*Lasiurus cinereus*), a cryptic, wide-ranging, long-distance migrant, comprise a substantial proportion of the tens to hundreds of thousands of bat fatalities estimated to occur each year at wind turbines in North America. We created seasonally-dynamic species distribution models (SDMs) from 2,753 museum occurrence records collected over five decades in North America to better understand the seasonal geographic distributions of hoary bats.

[AWWI Releases Updated Summary of Research Results on Wind Turbine Interactions with Wildlife.](#) AWWI is pleased to release the 2015 update of [Wind Turbine Interactions with Wildlife and their Habitats: A Summary of Research Results and Priority Questions](#). This document summarizes current scientific knowledge about the adverse impacts of land-based wind power on wildlife in North America, and how to avoid and minimize these

impacts. The Summary of Research Results does not address the benefits that wind power might provide to wildlife through the displacement of other energy sources and of their impacts on wildlife and wildlife habitat.

[Rescue golden eagle dies after being hit by wind turbine.](#) A young female golden eagle rescued by San Ramon Valley firefighters in March and rehabilitated by Lindsay Wildlife Hospital died hours after being struck by a wind turbine. Two power workers found the 12-pound raptor near a wind turbine at Altamont Pass in Livermore, according to officials from the Lindsay Wildlife Experience. The workers watched the sub-adult golden eagle struggle as she flew near the ground before falling.

Policy

[Obama doubles down on climate rule.](#) The Obama administration on Sunday unveiled a tougher climate change rule for power plants, demanding that generators cut their carbon dioxide output 32 percent in the first-ever limits on the pollutant. The historic regulation from the Environmental Protection Agency is the main pillar of President Obama's climate agenda. It is the biggest piece of his drive to [create a legacy](#) and go down in history as the first United States president to take comprehensive action against climate change by cutting emissions of greenhouse gases such as carbon dioxide.

[CLIMATE CHANGE AND PRESIDENT OBAMA'S ACTION PLAN.](#) Learn more about the Climate Change, The Clean Power Plan, and President Obama's efforts. Check out the short video, *Climate Change is not a Problem for Another Generation. Not Anymore.*

["Zoned Out" analyzes different approaches to wind energy zoning in four Midwest states.](#) Zoned Out analyzes different approaches to zoning commercial wind energy systems in four different Midwest states – Iowa, Minnesota, Nebraska, and Wisconsin. The report also broke down the advantages and disadvantages of these approaches, and what makes for effective zoning standards.

Wildlife & Habitats

[Natural Yeast Byproduct Inhibits White-Nose Syndrome.](#) Researchers may have found a natural way to treat white-nose syndrome in bats, according to a new study. In a [paper](#) published in the journal *Mycopathologia*, researchers report that a compound produced by a yeast microbe that occurs in caves inhibits the growth of the fungus which causes white-nose syndrome (WNS) — *Pseudogymnoascus destructans*.

[Effect of Trans, Trans-Farnesol on Pseudogymnoascus destructans and Several Closely Related Species.](#) Rudabaugh and Miller 2015. *Mycopathologia*. Our results suggest that some *Candida* isolates may have the potential to inhibit the growth of *P. destructans* and that the sesquiterpene trans, trans-farnesol has the potential to be utilized as a biological control agent.

[US Wildlife Agency Says App Can Help Log Endangered Species.](#) U.S. wildlife officials want smartphone-owning outdoor lovers to use a downloaded app to report any [endangered species](#) they see in the wilderness. The U.S. Fish and Wildlife Service said Monday it's teaming up with Sweden-based FishBrain, a social network and free-to-use mobile app for anglers. The mobile product was developed so sport-fishing enthusiasts could share information on their catches.

[Sage grouse latest win for greens in sweeping listing pact.](#) The Bureau of Land Management has beefed up sage grouse protections on some 50 million acres of the West. The Agriculture Department has spent hundreds of millions of dollars to preserve and enhance the bird's habitat. Western governors have signed executive orders to prioritize the bird's welfare.

[Column: If wind turbines get bigger, birds could pay the price.](#) By extending the “hub-height” of turbines up to 360 feet, the chief executive of the American Wind Energy Association said, wind energy could expand to all 50 states. Less ardent was the association’s response to well-documented concerns over the half million birds that die each year from collisions with existing turbines: Some migrating birds, a spokesman said, fly too high to be harmed by rotor blades.

[Tracking Endangered Birds.](#) UMass Amherst researcher Pamela Loring is studying endangered coastal birds in areas of potential wind energy development. She fits mini transmitters onto plovers and terns and tracks their flights with 17 antenna towers along the Northeast coast.

Wind

[Future acceptance of wind energy production: Exploring future local acceptance of wind energy production in a Swiss alpine region.](#) Spiess et al. 2015, Technological Forecasting and Social Change. Rarely visible wind plant installations evoked little opposition. Focus group workshop participants emphasized the regional value creation. Technical performance and economic feasibility are also significant. Small scale wind energy turbines are preferred options for isolated buildings. Future local acceptance can be explored by the focus group method.

[Renewable Electricity Use by the U.S. Information and Communication Technology \(ICT\) Industry.](#) Miller et al. 2015, National Renewable Energy Laboratory Technical Report NREL/TP-6A20-64011. This paper seeks to fill those gaps by examining trends in renewable electricity use by the ICT industry. Our analysis examines renewable electricity use by 113 ICT companies in the United States using data from the U.S. Environmental Protection Agency’s (EPA’s) Green Power Partnership and the Carbon Disclosure Project Worldwide (CDP).

Other

[Balancing demands on public lands.](#) Ensuring that renewable energy development on public lands occurs in coordination with support for this growing economic sector is a sound policy direction that will support rural economies and Americans’ continued and growing enjoyment of their public lands.

[Beneath Alaskan Wildfires, A Hidden Threat: Long-Frozen Carbon's Thaw.](#) A little fire like this could have a huge impact on the surrounding environment and ecosystem — not just here in Alaska, but across the planet. The Fish Creek Fire is mostly done burning the trees and brush above ground and has moved on to the organic matter underground — organic matter that goes, Hollingsworth says, "meters and meters deep." Below that duff, there's permafrost — which, as the name implies, is permanently frozen ground. And all of that biomass is made up of carbon — the same carbon that's a leading cause of climate change.

[Interior allows Shell to drill in Arctic, with limits.](#) The Interior Department gave Shell approval Wednesday for exploratory drilling at two sites in the Chukchi Sea. But Shell [won't be allowed to drill deep into oil-bearing zones](#) and will face limits to avoid impacting walrus in the region, the Bureau of Safety and Environmental Enforcement said. As a result, Shell will only be able to drill one site at a time.

Tools

[Free Learning Sources for GIS and Geospatial Analysis.](#) Here is a list of FREE learning sources, including GIS software training courses and tutorials, applied learning materials, workshops and webinars related to GIS and/or Geospatial analysis, etc. All of them are Free of Cost .

Upcoming Conferences & Trainings & Webinars

[WREN Quarterly Webinar #4: Avian Sensitivity Mapping and Wind Energy](#). August 27, 2015 @ 11am – 12:30pm (ET). The topic of this webinar is Avian Sensitivity Mapping and Wind Energy Projects as presented by Julia Willmott and Greg Forcey of Normandeau Associates, and Roel May of the Norwegian Institute for Nature Research (NINA). The speakers will present on tools they have developed to assess the potential vulnerability of birds to wind energy development.

[Electric Transmission 101 Workshop](#). October 6-8, 2015. Grand Rapids, MI. This workshop is designed to train state fish and wildlife agency and federal agency personnel who review and comment on electric transmission line projects. This will be a good opportunity for state and federal agency staff to meet members of the electric utility industry and better understand the planning and design process for electric transmission. Register at the following link: <http://www.cvent.com/d/xrqc4y/4W>.

[The Effects of Noise on Aquatic Life](#). The fourth International Conference on "The Effects of Noise on Aquatic Life" will take place in Dublin, Ireland, July 10-16, 2016.

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, 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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