Juniata Valley Audubon Society — www.jvas.org

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Juniata Valley Audubon Society is an independently chartered chapter of the National Audubon Society with more than 450 members in Blair, Huntingdon, and adjacent counties in the upper Juniata watershed. For the past five years, we've been active in mobilizing grassroots opposition to inappropriately sited wind plants in our area, and we've worked with local municipalities to craft wind ordinances that recognize and protect Important Bird Areas, Important Mammal Areas, National Wetland Inventory (NWI) wetlands, and County Natural Heritage Areas.

If the reality of global climate change is an inconvenient truth for many who profit off our current fossil-fuel addiction, an equally inconvenient truth is that industrial wind development will do little to reduce CO2 emissions, because of the way conventional power plants must be ramped up to balance out the grid when wind comes online. And if the wind industry gets its way in Pennsylvania, these symbols of green energy could actually compound the ecological disruptions that are projected to occur as a result of climate change. Conservation biologists tell us that north-south trending habitat corridors will be crucial to the survival of vulnerable species that will need to shift their populations northward over the coming decades and centuries. But the main, intact habitat corridors in our area—our forested ridges—are precisely where the wind industry plans to erect thousands of wind turbines.

As with any industrial-scale development, the construction phase presents special environmental challenges. DEP evaluates projects for impacts on surface water before issuing a National Pollution Discharge Elimination System (NDPES) permit. But from what we've seen, DEP evaluators don't give serious consideration to changes in hydrology or the thermal pollution of streams caused by the creation of new, permanent openings. These openings include access roads, transmission lines and substations in addition to the turbine pads themselves. Wind developments typically target the most remote, upland areas, endangering some of our cleanest and most pristine headwater streams—among the last strongholds for wild-reproducing brook trout. This is a cold-water-dependent species highly vulnerable to any elevation in water temperature due to roads and clearings in a watershed.

That's one example of the adverse ecological consequences of forest fragmentation, which is perhaps the most significant way in which wind development threatens wildlife in Pennsylvania. This state has a very dense network of roads and rights-of-way already, so large, unbroken blocks of forest are at a premium. Many species of birds, such as wood thrushes, cerulean warblers and scarlet tanagers, are declining throughout their ranges partly as a result of forest fragmentation. The Allegheny woodrat, a close relative

of the Western packrat, has already been extirpated from New Jersey and New York as a result of too many roads and developments encroaching on its rocky ridgetop habitat and affording access to raccoons, which transmit a deadly roundworm. Here in Pennsylvania, woodrat populations are just barely managing to hang on, but unfortunately their habitat is on the chopping block for wind plant development.

According to the Pennsylvania Biological Survey, forest fragmentation due to wind installations impacts wildlife through "reduced habitat area; habitat isolation and loss of species from an area; disruption of dispersal; increased edge effects and loss of core habitat; and facilitation of invasive species." The U.S. Fish and Wildlife Service recommends that wind energy development "avoid fragmenting large, contiguous tracts of wildlife habitat" and advises that wind turbines be placed "on lands already altered or cultivated, and away from areas of intact and healthy native habitats." Wind energy companies in Pennsylvania have largely ignored these recommendations.

The effects of habitat fragmentation, important as they are, might seem a little arcane. What about direct mortality through collisions with wind turbines? This too is a huge problem, and regardless of what wind industry representatives may tell you, it is far from being solved by new blade designs. Again, it's the placement of these turbines on our ridgetops that makes them especially problematic, because the ridges function as migration routes for hawks, vultures, eagles, falcons, and other birds. In Pennsylvania, one of the species most at risk is the golden eagle. A report from scientists at Penn State, the Carnegie Museum of Natural History, and the National Aviary noted that "This species commonly uses slope soaring and ridge updrafts during migration and foraging, flight patterns which are known to increase collision risk. ... [One study] found that 88% of migrating bald and golden eagles flew at an altitude within the rotor swept area of modern turbines." They concluded, "We consider eastern golden eagles to be the raptor species at greatest risk of population-wide impacts from wind energy development in the Appalachians."

Despite this risk, wind energy companies have forged ahead with developments all along the Allegheny Front, which annual raptor counts have shown to have the highest number of fall-migrating golden eagles in the eastern United States. Sadly, this is just one of many examples of the wind industry's contempt for the natural environment. Another example is their willingness to propose development in the vicinity of known populations of rare bats, such as the federally endangered Indiana bat and the state threatened small-footed bat. Please refer to Dr. Michael Gannon's excellent written testimony for much more on the danger wind turbines pose to bats, and why it matters to the larger ecosystem.

It's worth remembering that hydroelectric power was once pushed as a "clean and green" alternative to coal-burning power plants, too. We no longer hear that rhetoric anymore, because we've decided that rivers are worth preserving. What about mountains? If hydro doesn't get a pass, neither should wind. Policy makers and environmentalists should quit indulging in happy talk about green energy; there's no such thing. We have nothing but tough choices ahead and it's time we started to face them.