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Contact: Laura Ellis, National Aviary, 412.559.3519
Dr. Todd Katzner, National Aviary, 412.3232.7235, x210

FACT SHEET

Assessing the Risks of Wind Energy Development on the Conservation of Eastern Golden Eagles in Pennsylvania

- The people of the Appalachian region of the United States, including central and western Pennsylvania, have a unique and special responsibility for the conservation of the eastern North American population of golden eagles (*Aquila chrysaetos*). Most Pennsylvanians probably are unaware aware that hundreds of these majestic raptors traverse the state twice a year during spring and fall migration.
- Preliminary data suggest that eastern golden eagles migrate through one or more narrow (30-60 mile) bottlenecks along the Appalachian Mountains. According to the U.S. Fish and Wildlife Service, the ridges in these bottlenecks are also the sites within the region with the highest potential for wind power development. This puts us on a potential collision course between the interest of traveling birds and those of large and fast moving turbine blades.
- Dr. Todd Katzner, Director of Conservation & Field Research at the National Aviary; Robert Mulvihill, Field Ornithology Projects Coordinator, Powdermill Avian Research Center of the Carnegie Museum of Natural History; Mike Lanzone Assistant Field Ornithology Projects Coordinator, Powdermill Avian Research Center of the Carnegie Museum of Natural History; Trish Miller, GIS Coordinator, Powdermill Nature Reserve of the Carnegie Museum of Natural History; Dr. David Brandes, Associate Professor of Civil and Environmental Engineering, Lafayette College; and Dan Ombalski, Director of the Tussey Mountain Hawkwatch, have teamed to study the migration paths of eastern golden eagles in order to assess, and hopefully mitigate, the risk to these birds posed by the development of wind power in an area where they concentrate heavily.
- The team trapped and tagged two migrating golden eagles in November 2006, near the town of Central City, Pennsylvania. The birds were outfitted with a telemetry device that is attached via a nonabrasive harness made of Teflon ribbon. Configured as a backpack, the device is able to obtain highly accurate GPS-quality location fixes and then transmit these data via the ARGOS satellite system.

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- Annual counts at hawk watches across Pennsylvania of migrating eagles show that golden eagles use the states western ridges heavily. Data collected via satellite tracking will, for the first time provide detailed information on where and how individual eastern golden eagles migrate through the entire Appalachian Mountain flyway. The telemetry data will not only show the birds' flight paths, but also altitude and flight speed under a suite of climatic and topographical conditions. It is this sort of detailed information that is essential to have before wind power projects are sited and constructed to accurately assess and effectively mitigate risk to migrating raptors from wind power projects.
- These telemetry data will be used to create landscape-scale models that look at the cumulative impacts of many wind farms on eagle movements and identify critical migration bottlenecks where turbine development should proceed with caution.
- Data collected from these birds and others that will be tagged will enable the team to create explicit computer models that predict migration patterns and individual flight behavior during migration. This information will be used to create regional maps showing the relative areas of high and low risk to birds of development of wind power in different parts of Pennsylvania and the Appalachian region.
- The ultimate goal is to produce maps that will be a crucial tool for land managers and politicians to guide wind power development and the placement of wind turbines throughout the region.
- Since being tagged in November, the birds have traveled between 350 and 850 miles, leaving Pennsylvania and spending time in Maryland, West Virginia and Kentucky.
- Wind power development is important to U.S. and local economies, it is the world's fastest growing energy technology and in many cases it has clear environmental benefits. Industrial scale wind power development along the narrow ridgetops of the Appalachians, however, has been shown to present significant threats to flying animals - such as the thousands of bats found dead at turbines in previous years. Researchers at the National Aviary and the Powdermill Avian Research Center are working hard to collect the data needed to avoid a scenario where eagles are found injured or killed by turbines. By conducting this research in advance, the information provided can be taken into consideration during the siting, permitting and construction phases of wind farm development in Pennsylvania. This presents a unique opportunity to generate scientific information to allow wind power, a clean, renewable energy source, to be developed in a manner that is sensitive not only to our air and climate but to birds as well.

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The National Aviary inspires respect for nature through an appreciation of birds.

The mission of Powdermill Nature Reserve is to advance understanding of our natural world and to communicate that knowledge through research, exhibits, and educational programs.