Assessing Bird and Bat Migration Over Appalachian Ridges

Developing an Information Database to Evaluate Wind Power Development

Alternative Energy Efforts

Interest in developing wind power as an alternative renewable energy source has increased in recent years. Efforts are underway, both nationally and within states, to increase the proportion of electric power generated from wind and other renewable sources. Federal tax incentives are offered to energy companies that develop wind power projects. In the eastern United States, the focus of onshore wind power development is in the Appalachian Mountains, where exposed summits or ridge crests have high wind power potential. Large numbers of birds and bats are believed to follow or cross these landforms during their seasonal migrations and wind power projects could impact them.

At present, we lack the knowledge to fully assess the potential impacts of wind power development in the Appalachians on migrating birds and bats. Baseline data have been collected at several wind power development sites in the region, but we cannot yet answer such basic questions as how numbers of migrant birds and bats vary temporally or spatially.

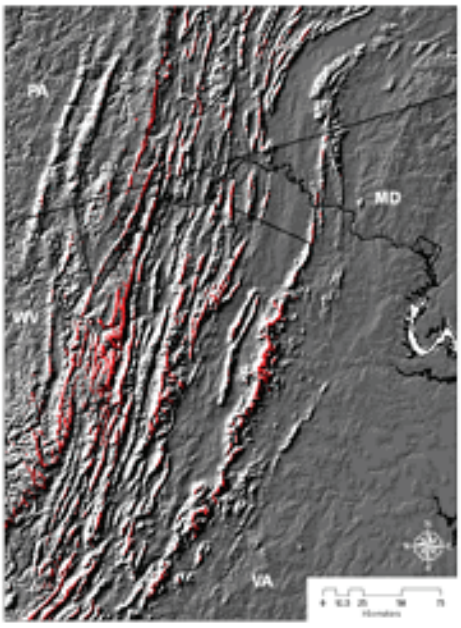
Current Research Efforts

To address some of these information needs, biologists at the U.S. Geological Survey's Patuxent Wildlife Research Center and the U.S. Fish and Wildlife Service are developing a multi-year collaborative regional study of the spatial and temporal distribution patterns and flight characteristics of birds and bats that migrate nocturnally through the Appalachian Mountain region of the mid-Atlantic states (MD, PA, VA, WV). The study will use portable marine radar and acoustical monitoring techniques to document passage rates, species relative abundance, flight direction and altitudes of migrating birds and bats during fall and spring at multiple locations in the region. This information will be used to model the effects of weather, site and landscape characteristics, and other variables on migrant abundance and flight characteristics to identify where, when, and under what conditions migrants may be at risk.

Wind turbines atop an Appalachian Mountain Ridge. *USFWS photo*

Invitation to Partners

This study will increase our understanding of nocturnal bird and bat migration through the Appalachians, so that informed and scientifically sound recommendations can be made to reduce the risk to wildlife at proposed and operational wind power projects. For the next three years USGS will contribute funds to the study through its Science Support Program. Additional funding is essential to ensure successful completion of the study. We invite new partners to join the Atlantic Coast Joint Venture, Maryland Department of Natural Resources, West Virginia Department of Natural Resources, Pennsylvania Game Commission, and Bat Conservation International in this effort.



Digital elevation model of the Mid-Atlantic region showing areas where wind power development is likely .

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