

Mabee, T.J., B.A. Cooper, J.H. Plissner, and D.P. Young. 2006. Nocturnal Bird Migration Over an Appalachian Ridge at a Proposed Wind Power Project. *Wildlife Society Bulletin* 34:682-690.

Abstract: Characteristics of nocturnal bird migration are poorly understood for many regions of the United States. This information will be critical in areas where wind power projects are proposed. We used portable marine radar to conduct a nocturnal bird migration study at multiple sites along the Allegheny Front, West Virginia, on 45 nights during autumn 2003, to document migration characteristics at a proposed wind power project. Nocturnal passage rates were highly variable among nights, ranging from 8 to 852 targets/km/hour, with a seasonal mean of 241 ± 33 targets/km/hour at the primary (central) study site and 199 targets/km/hour for the entire proposed development. Mean flight altitudes also were highly variable among nights, ranging from 214 to 769 m above ground level (agl), with a mean flight altitude of 410 ± 2 m agl. Flight directions indicated that most migrants crossed, rather than followed, the Allegheny Front ridgeline. We believe portable marine radars, when coupled with a rigorous study design, can collect important baseline information on avian migration and address site specific questions posed at proposed developments. Concurrent collection of low-altitude migration and avian fatality data could help elucidate which metrics are most useful for predicting avian fatalities at wind power developments.