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THE EFFECTS OF HIKING TRAILS AND FOREST ROADS ON AVIAN DIVERSITY AND ABUNDANCE

The objective of this study was to assess the impacts of forest roads and trails on birds breeding in a multi-use forest preserve. Black Rock Forest, located in Cornwall, New York, is a 1530 hectare forest preserve to which access is limited mostly to researchers, hikers, and school groups. Eighteen field sites (6 trailside, 6 roadside, and 6 forest interior) were set up at which both bird diversity and abundance were recorded. During early morning point count surveys completed from May to July of 2003 and 2004, 999 and 1186 bird observations were recorded, respectively. Human trail use data was collected using six sign in boxes and two motion-sensor camera traps during the 2004 field season. Avian diversity was not statistically different among road, trail, and forest interior sites, with averages of 19, 18 and 17 bird species recorded at those sites respectively. Likewise, abundance values were not statistically different among the three site categories. In both years, ovenbirds and red-eyed vireos constituted the largest proportion of recorded birds. During 2004, there was an absence of four wood warbler species, a decrease in mourning doves, and an increase in ovenbirds at survey sites when compared to the 2003 field season. This study concluded that the overall diversity and abundance of birds breeding in Black Rock Forest are not affected by the trails and roads within the forest, a finding likely attributed to the consistent canopy cover over these sites. Moreover, the number of hikers at each trail site did not appear to have an impact on avian diversity or abundance. However, the change in abundance and loss of specific species at these sites suggest more subtle impacts that should be clarified by species-specific studies, including nesting success and site preference along forest roads and trails.

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