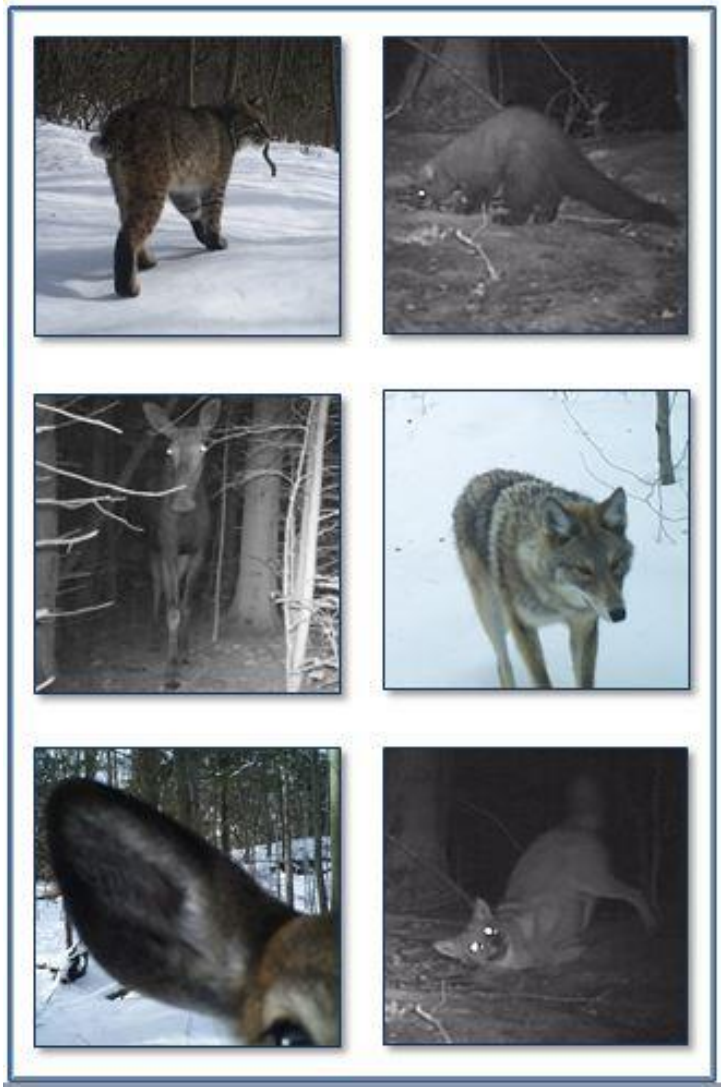
Wildlife connectivity in western Massachusetts: Results and recommendations from a 2013-14 study of wildlife movement in two corridors



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Executive Summary

The Appalachian forests of eastern North America stretch from Maine and Canada to Georgia -- the most intact temperate broadleaf and mixed forest in the world. People living within this forest rely on it for clean drinking water, air that is free of pollution (both particulates and carbon), forest products from maple syrup to timber, and as the base of tourism and recreation industries. Wildlife living within this forest are often found within habitat "cores," large areas of forest and the wetlands, streams, and open shrublands and grasslands embedded within them. Cores contain winter and summer habitat, feeding grounds and breeding grounds, and enough space for even the most wide-ranging species to roam. However, all wildlife need to be able to move to find food and habitat, and need to be able to move from one core habitat to another to adapt their ranges in response to climate change. Both wildlife and people, therefore, depend on a landscape that includes large, intact, healthy cores surrounded and connected by a much larger area of forest within which animals and people alike can safely get where they need to go.

With partners in the Staying Connected Initiative, The Nature Conservancy has been identifying corridors throughout the Northern Appalachian forests of New England, New York, and Canada. Western Massachusetts contains one of those important corridors, called the Berkshire Wildlife Linkage. Within the linkage, there is a patchwork of core habitats, as well as potential barriers to wildlife moving between them in the form of well-traveled roads and areas of residential and commercial development along these roads. This report details a study conducted along two parts of the Berkshire Wildlife Linkage that seem, based on computer models and conditions on the ground, likely to enable most animals to move between core habitats. Both of these areas – the southern Berkshires and the Westfield River watershed -- also contain roads that have the potential to prevent movement. Using winter tracking of mammal species, motion-triggered wildlife cameras, and surveys of roadkill, we studied where animals are able to move across these roads. We combined field data from 2013-14 with computer modeled data to suggest ways to maintain and enhance the ability of wildlife to move through the southern Berkshires and Westfield River watershed. We include suggestions for landowners and groups interested in wildlife movement, but many of these same conservation actions will also safeguard the ability of eastern US forests to continue to provide people with the clean air, water, products, and economic and recreational opportunities we count on.

In the Westfield River watershed portion of the Berkshire Wildlife Linkage, we suggest a focus on maintaining the existing ability of wildlife to move freely. The corridor studied within the Westfield watershed is almost entirely in natural cover, with low densities of development. We found abundant wildlife along the Westfield River and an adjacent ridge, with 13 mammal species observed by trackers and cameras. We did not find that route 112, a north-south

highway with relatively high traffic volume, was a significant barrier to mammal movement. 4.5 successful crossings per mile on average were observed after each winter storm (min 0, max 22.8), and our roadkill surveys found that mammal roadkill were rare (note that amphibians and reptiles show greater roadkill mortality than mammals). We suggest continuing to build on the history of land conservation and stewardship in this area, and conserving a continuous path of protected land between the cores.

In the southern Berkshires portion of the Berkshire Wildlife Linkage, the large core habitat in and around Mt. Washington is somewhat disconnected from habitats to the northeast. We suggest a focus on protecting the areas where wildlife appear able to move and restoring portions of the areas where they do not appear to be able to cross route 7. Route 7 and 23 each showed areas of successful road crossings and adjacent areas where no crossings were observed this winter. On average, route 7 had 3.8 successful mammal crossings per mile after each winter storm (min 0, max 13.6), and route 23 had 7.7 (min 0, max 25.6). Both route 23 and route 7 contain areas that are currently heavily used by animals but are vulnerable to future development, where additional land conservation to protect and widen crossing spots may be appropriate. In the portions of the road that did not have crossings, restoration of natural vegetation, or changes to transportation infrastructure (especially road-stream crossings) are suggested as ways to increase the ability of wildlife to move between the core habitats to the southwest and northeast.

Both the Westfield and Berkshires have a strong history and ethic of careful stewardship and land conservation. Additional work to protect land in areas used by wildlife to cross roads, improve road infrastructure to get wildlife under the roads where appropriate, and support landowners who steward their land for wildlife is needed in the corridors. Our hope is that this study may provide a new focus to existing efforts to safeguard the habitat that provides so much of the quality of life in this area.

To download the full report, please go to:
http://www.nature.org/media/massachusetts/wildlife-connectivity-study-final.pdf

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