



Project Impacts

NSRC-FUNDED RESEARCH FINAL REPORT

Predicting Impacts of Housing Density Changes on Black Bear Occurrence

PROJECT AWARD YEAR AND TITLE:
2002

Land Use Change in Northern Forests: Assessments and Recommendations for Conserving Biodiversity

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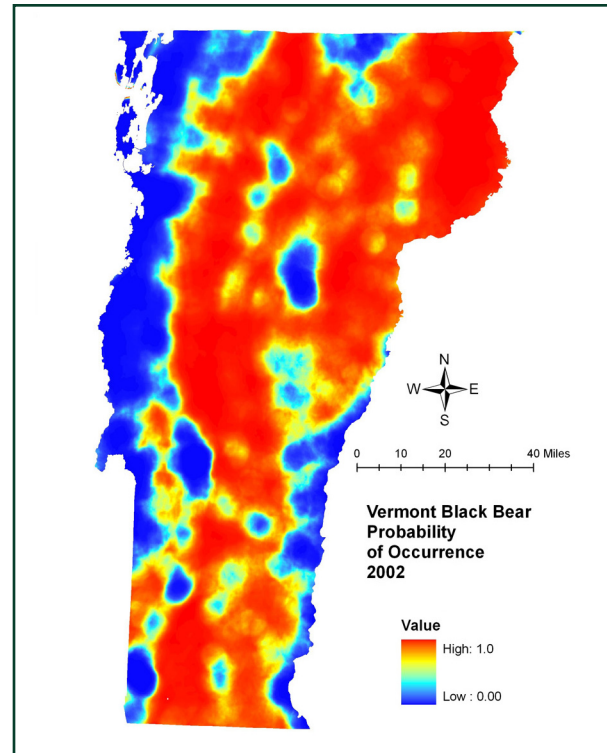
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Land use change involves conversion of one land cover type to another and often results in loss and fragmentation of wildlife habitat. Although large areas of contiguous habitat remain in the Northern Forest, increasing development pressures result in conversion of forest land to urban, suburban, or exurban land types. Research to understand impacts of land use change on the region's native plants and animals is much needed.

NSRC researchers established a baseline for monitoring effects of land use change on wildlife species. In 2003-2004, researchers surveyed for plants and animals at 168 sites across Vermont. To detect presence of carnivores, such as black bears, they used remote cameras, hair snares, and scat detection dogs. They then predicted probability of occupancy for bears at each site and how this probability is expected to change with projected changes in housing density in Vermont between 2000 and 2020.

As a result of increased housing, sites were projected to have increased percent of development and decreased forest cover which reduces black bear occurrence. In a traditional growth scenario, on average, researchers projected a 5% decline in probability that a site will be occupied by black bear compared to baseline measures in 2000. In a sprawl scenario where development occurs at 240% over human growth, researchers projected an 18% decline in probability that a site would be occupied by black bear compared to baseline measures in 2000. Shifting development to areas with greater than 30% current development, where bears are not present now, would help conserve their habitat.