

# Impacts of Land Use Changes on Recreation and Open Space in the New York-New Jersey Highlands Region<sup>1</sup>

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**Abstract:** The more than 1 million acre New York-New Jersey Highlands Region is a unique forested and rural landscape at the urban/ wildland interface with the New York-New Jersey Metropolitan area where over 18 million people reside. Conversion of land to residential and urban uses, parcellation of lands, fragmentation of forest cover, and increasing demand for recreational activities threaten to significantly alter the open space and forest-wildland landscape. Projections of changes to the year 2010 suggest that more comprehensive planning strategies are needed.

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The New York-New Jersey Highlands Region is composed of portions of nine counties within the States of New York and New Jersey and encompasses over 1 million acres including over 487 thousand acres of forest lands and 159 thousand acres of agricultural lands. The Region provides more than 8 million days of recreation and tourism activity each year for residents and visitors. Most visitors reside within 100 miles of the Region in the New York-New Jersey Metropolitan Area. The Region has experienced continual residential and urban development over the last 20 years and that trend is expected to continue to 2010. Although large tracts (>10,000 acres) of public and private lands will remain, these lands are becoming relatively inaccessible both visually (except as a scenic backdrop of views into the Highlands) and physically to most recreationists and tourists.

## Population And Land Use Changes

The population density within the Region increased from 459 people per square mile in 1970 to 565 people per square mile in 1990. By 2010, population projections estimate an average density of 905 people per square mile. The U.S. Bureau of the Census defines urban areas based on 1,000 people per square mile and four of nine counties in the Region will exceed that by 2010.

By 2010, over 31,700 acres of forest and agricultural land are projected to be converted primarily to residential and forest-residential (i.e., dispersed residential projects within forested landscapes) developments. Current annual rates of forest loss in the New York portion of the Region are 122 acres to residential, 68 acres to forest-residential, and 77 acres to urban. For the New Jersey portion of the Region, annual conversion rates are 255 acres to residential, 87 acres to forest-residential, and 76 acres to urban.

These land conversion rates are considered to be extremely conservative estimates since they are based on older sets of

aerial photo graphs (1968/1972 and 1984/1986) and do not include the land conversion rates during the strong economic growth period between 1986 and 1991. Additionally, recent proposals for large scale residential developments (e.g., over 4,000 acres) are not included in the total estimates for 2010 since the probability of their being constructed is currently unknown.

## Parcellation And Fragmentation Impacts

The land use analysis revealed that the majority of forest lands (71 pct) were smaller than 50 acres in area and less than 5 percent were greater than 1,000 acres in size. With continued residential and urban development in the future, additional fragmentation of the forest cover and more deforestation is anticipated. Although the total amount of privately-owned forest land was decreasing, the number of forest owners in the New Jersey portion of the Region increased over 40 percent during 1972 to 1988. The average size of the land parcel decreased from 22.0 acres to 12.8 acres during the same time period.

A corresponding increase in the number of landowners and decrease in average parcel size are expected to continue to 2010 and are attributable to residential and commercial development, land speculation, and the increased cost of owning land. Two important impacts of these changes in the character of the land significantly affect open space and recreational opportunities. The first impact is forest fragmentation. With the creation of more smaller forest patches, fragmentation produces a "patchwork" pattern of forest cover. The increased fragmentation has both positive (e.g., initially more wildlife sightings) and negative (e.g., visual loss of unique forest landscapes) impacts on open space and recreation activities. The second impact is parcellation. Parcellation involves the division of the land ownership into more and smaller land parcels. Continued forest fragmentation and parcellation will make parkland acquisition more costly, likely decrease recreational access to both public and private lands, and reduce the buffer that private open space provides to public parks.

## Visual Impacts

Although only an additional 5 percent of the forest and agricultural lands will be converted to residential and commercial uses by 2010, the impact is greatly magnified because most of this development is along the major roadways where it significantly alters the visual landscape. Any residential or commercial development will increase road access (e.g., driveways, wider roadways), the number of buildings (e.g., residential projects and commercial strip developments), and infrastructure (e.g., telephone and utility lines) so that it will be most noticeable along heavier travelled and developed roadways in the Region.

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These collective impacts accelerate the public perception that the total land conversion from forest and agricultural uses to residential and urban uses is progressing faster than the land use data analysis have indicated.

## Recreation Supply And Demand

The 160,200 acres of public land owned and managed by federal, state, or county agencies within the Region provides for over 8 million visitors days of recreation and tourism per year. Increases in recreational demand, like the population growth, have averaged 2 - 3 percent per year over the last decade. Recreation and tourism demand is estimated to increase at a similar rate through 2010 due to the increase in population and demand within the entire New York-New Jersey Metropolitan Area. The Highlands Region is one of the most undeveloped natural areas in the Metropolitan Area and the most likely location for providing additional recreational access for increasing Metropolitan demand. Based on the projected population increases in the two states and the application of the New Jersey Balanced Land Use Guidelines to the Highlands Region, an additional 51,000 acres of publicly-owned lands may be necessary to meet recreational demand by the year 2010.

## Recommended Planning Concepts

The planning strategy for the Highlands Region needs to integrate recreation and tourism planning with preservation, conservation, and economic development approaches. The use of a comprehensive planning approach takes into account the inter-relationships and interdependence of the forested and natural environment, economic development, and the quality of rural life. Some of the important planning components include:

1. Preserve/conservate some of the large remaining tracts of forest land to maintain the unique open space and forest environment of the Region;
2. Designate a wildland or preserve area that maintains the forest environment as a natural system without

forest harvesting, management, or residential/urban development;

3. Protect the open space character along the roadways of the Region by encouraging residential and commercial development within existing communities and service centers;
4. Cluster recreation and tourism attractions and facilities to minimize environmental and open space impacts and to create a "critical" mass for visitor appeal;
5. Encourage the creation of greenways like the Morris County Greenway System and the proposed Skylands Greenway;
6. Educate residents and visitors about the unique opportunity to maintain a forested environment at the urban/wildland interface; and
7. Maintain commercial agriculture and forest production as part of the historic and cultural "working" landscape of the Highlands Region.

The conversion of land to residential and urban uses, parcellation of lands, fragmentation of forest cover, and increasing demand for recreational activities threaten to significantly alter the open space and forest-wildland landscape. More comprehensive planning strategies, such as those suggested above, are needed to mitigate or prevent some of these projected changes by the year 2010.

## References

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