

Land use evolves in Dutchess County



Land-use changes in Dutchess County are visible in aerial photographs from 1936 to 2009. / Courtesy photo

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The Dutchess County Environmental Management Council recently completed a State of the Environment report for the county. This is the second in a series of articles from the report. The entire report can be found online at <http://dutchessemc.files.wordpress.com/2012/04/dcsoereport2012.pdf>.

Dutchess County has had some dramatic land-use changes over the past century. Land uses have a profound effect on natural resources, such as clean and abundant water and open space, which provide a high quality of life for our communities. By knowing these effects and understanding the county's land use changes, citizens and local leaders can make more informed decisions that support their communities and conserve the natural resources on which they depend.

Much of Dutchess County was cleared for agricultural land uses from colonial times into the last century. A period of agricultural decline followed in the 1940s, with substantial field abandonment and a resurgence of forest cover. Analysis of historic aerial photographs provided by the Dutchess County Office of Computer Information Systems has shown that tree cover in the county has increased approximately 140 percent from 1936 to 2000. Recent photographs also capture a simultaneous increase in residential and commercial development.

The most substantial land-use change in recent years has been the expansion of developed areas for housing, commercial and transportation activities — mostly in previously forested areas. Developed land use has increasingly occurred away from urban centers, resulting in a development pattern called suburban sprawl. In the past 10 to 15 years, roughly one-third of new houses have been built on lots 2 acres or larger — a dramatic transition from the 1960s and 1970s. The total increase in developed land across the County from 1996 to 2006 was more than 1,000 acres, increasing the area of impervious surfaces (paved areas and rooftops).

As impervious surfaces increase, so does stormwater runoff (increasing flooding), the velocity of stormwater flows (increasing erosion) and pollutant levels in runoff. Impervious surfaces also reduce the amount of water available to recharge wells and springs. Some of these effects can be mitigated by site-design techniques and building practices referred to as green infrastructure.

Impervious surfaces can also be limited by developing communities with more walkable, transit-friendly centers and less suburban sprawl.

Total forest cover in Dutchess County has decreased by about 1,800 acres from 1996 to 2006. Large forests with substantial “core” areas are important reservoirs of biological diversity. Core forest area has decreased in the county, while non-core forested area increased. Non-core forests are small, isolated forest patches as well as the outer portions of large forested areas. These changes in forest cover indicate our forests are becoming more fragmented.

Forest fragmentation can cause the loss of native species, alterations to water cycles, the degradation of air and water quality and even increased risk of exposure to Lyme disease. Recent research conducted in Dutchess County showed that in small forest patches less than five acres, the risk of human exposure to Lyme disease was almost five times greater than in larger forested areas.

Land-use changes have important implications for our natural resources. Citizens and local leaders who are aware of these implications can make informed land-use decisions that will enable our communities to continue to prosper and grow.

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Neil Curri / Courtesy photo