

Land Transformation Along the Wildland-Urban Interface: Analyzing Urbanization Patterns and Ecosystem Impacts in Northeast Ohio (69)

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Urban form arises due to social and economic forces that range from economic and population growth to individual decisions rooted in the desire for an improved quality of life and dependable services. Patterns of urbanization, in turn, manifest themselves through fragmentation of wildlife habitat, as forest and wetlands are transformed by the expansion of human activity. Exploratory analyses of land cover data for the Cleveland-Akron-Elyria Combined Statistical Area will reveal whether urban configuration has changed over time, and whether such changes have a significant effect on the vitality of habitat along the urban-rural interface. The research approach integrates methods commonly used in land use/cover change study with those employed in the discipline of landscape ecology. Systematic land use changes in the region are calculated, and a regression analysis is performed to discern the relationship between socioeconomic factors associated with land use change and patterns of fragmentation. Socioeconomic factors of interest include educational attainment, per capita income, and age of the housing stock. The potential impact of land use change and fragmentation on wildlife habitat, through the utilization of landscape metrics such as perimeter-area ratio and contagion, is also examined. The validity of landscape metrics for such analysis will also be explored. By focusing on the interaction of recent land use change and ecosystem effects, this paper seeks to highlight the types of changes that can be expected in the near future.