

## System dynamic modeling of land use regulation for water resource protection: The New Jersey Highlands Water Protection and Planning Act

Benjamin Witherell, Graduate Student, Montclair State University

The New Jersey legislature passed the New Jersey Highlands Water Protection and Planning Act on August 10, 2004. This sweeping legislation required the establishment of a “Highlands Council” charged with developing a regional master plan and given authority to create and implement regional zoning for the express purpose of protecting water resources for half of the population and much of the commercial and industrial base of New Jersey. The final draft of the Highlands regional master plan was released in July 2008. In urbanizing areas, like the New Jersey Highlands, the relationships and interactions between human systems (socio-economic), land use/land cover, and water are dynamic and complex. System dynamic modeling is used to investigate socio-economic impacts of implementing the New Jersey Highlands Water Protection and Planning Act.