Vulnerability and Adaptability of Private Land Conservation in a Changing Climate

Menka Bihari

Climate change poses significant challenges to resource stewardship. Climate change impacts are expected to increase and may significantly alter the species composition, ecological function, and economic utility of current protected areas. Government agencies and nonprofit land trusts have increasingly invested in conservation easements—agreements between landowners and government or nonprofit easement holders that restrict land use—to achieve a variety of resource protection goals. Landscape change may impact how existing conservation easements meet their conservation goals. Because adaptation reduces the vulnerability of systems to the negative impacts of climate change, principled adaptation of conservation easements may be needed to reduce the legal and ecological vulnerability of private land conservation efforts. Examining conservation easements illuminates the tension between adaptation and permanence to achieve conservation goals.

The legal vulnerability of conservation easements is expected to increase with poor document drafting, inadequate monitoring and documentation, and where easement holders have low organizational capacity and inconsistent conservation missions. Furthermore, conservation easements may fail to achieve their purposes when targeted species and habitats will not persist on the property with climate change, or terms allow for inconsistent land uses. Sea level rise, disturbance events, or increased economic pressure may result in changed conditions that could affect conservation goals and compatible uses. Adaptation options may involve modifying existing or future conservation easement terms, targeting future acquisitions, providing for the shifting of conservation easement boundaries in response to changes in ecological conditions, turning to alternative conservation instruments, or exchanging existing properties for more suitable properties.

This presentation discusses the framework for assessing the enforceability, vulnerability, and adaptability of conservation easements in a changing climate. We are conducting community-based research involving land trusts and government agencies through distributed graduate seminars at six universities. Student teams are conducting regional case studies through online research, GIS mapping, interviews with conservation practitioners, and analysis of conservation easement documents. Qualitative and quantitative data analysis links landscape, organization capacity and response, and policy instruments to elucidate the vulnerability and adaptability of private land conservation, and engage conservation practitioners in improving conservation strategies. This integrated nested approach will allow for detailed study of specific regions, organizations, and properties, and development of a quantitative dataset to examine differences among regions and organizations. We will draw on an ongoing study of the Baraboo Hills, Wisconsin to examine private land conservation in a changing climate.