ABSTRACT

Economic and Ecological Effects of Forest Practices and Harvesting Restrictions on Wisconsin's Forest Resources and Economy

The Forest Guild and our collaborators will conduct an assessment of the impact of forest harvest restrictions in Wisconsin. We will investigate the economic and ecological impacts of a broad range of restrictions on forestry, including practices designed to prevent or control invasive species, measures designed to protect or enhance populations of rare species, and forest practices designed to maintain forest productivity.

The first step of the project will be to gather information from forest practitioners and stakeholders in order to identify the most significant restrictions that affect forest operations, and to refine our analysis. We will then map each of the identified restrictions both geographically and temporally using geospatial datasets such as LANDFIRE (regional vegetation), SSURGO soils database, and the Natural Heritage Inventory (threatened and endangered species). We will work closely with forest managers and loggers to learn specifically how harvest restrictions play out on the ground. Our study will assess the site-specific economic impact of harvest restrictions and then extrapolate those findings across geographic areas, soil types, forest types, stand conditions, and timing of restrictions across the state. This will allow us to illustrate restrictions individually as well as how they collectively affect forestry in Wisconsin.

The second phase of the project will assess the economic impacts of the harvest restrictions on three specific case studies and, more broadly, the state of Wisconsin. The Bureau of Business and Economic Research at the University of Minnesota Duluth will lead the economic analysis. Their economic modeling will use IMPLAN, widely used input-output modeling software. The mathematical input-output model will employ a matrix representation of the region's economy to predict the effect of changes in one industry on the others and by consumers, government, and suppliers on the economy.

Applied Ecological Services of Brodhead, Wisconsin will lead the third phase of the project: ecological consequences of the timber harvesting restrictions. AES ecologists will use their extensive knowledge and forestry field experience in Wisconsin and the Upper Midwest, with a review of the existing science, to assess the impact of the restrictions addressed in the study on forest structure and composition, forest wildlife habitat, biodiversity, and water quality. Forest productivity will be addressed using soils as an index. The ecological consequences of harvest restrictions will be explained using the same boundaries as the restriction definitions. To the extent possible, ecological consequences will be mapped across the state.

The entire team will work together to interpret the economic and ecological consequences of the restrictions, individually and collectively, and to ensure consistency throughout the final report. The assessment team includes Dr. Zander Evans, Fred Clark, Tom Lovlien, Dr. Kim Alan Chapman, John Schwarzmann, Monica Haynes and Dr. Alex Finkral.

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