



# Project Impacts

NSRC-FUNDED RESEARCH FINAL REPORT

## Net Carbon Impacts of Biomass Energy Development in the Northern Forest



PROJECT AWARD YEAR AND TITLE:

**2016**

*Synthesis of Net Carbon Impacts of Biomass Energy Development in the Northern Forest*

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Proposals and policies to increase biomass energy production from northern forests have been controversial with often widely different claims about potential climate mitigation effects. Much of the research has focused on very different working forest landscapes and markets for biomass energy feedstocks in the southeastern United States. NSRC researchers conducted a northern-forest-specific computer model analysis of the 4-state region to examine the net carbon impact of several scenarios of biomass energy production. They included a “business as usual” baseline of the current mix of forests, harvest regimes, and level of bioenergy production.

Their analysis projected that forests in the region could sequester an average of 4.2 metric tons of CO<sub>2</sub> equivalents per hectare per year over the next 50 years under the current business as usual baseline. This includes carbon storage in wood products and displacement of fossil fuel emissions from biomass energy. Scenarios that increased harvest rates and proportion of harvests diverted to bioenergy feedstocks resulted in net carbon sequestration marginally lower (maximum of 4.1 metric tons CO<sub>2</sub> equivalents per hectare per year) over the same time. All scenarios resulted in significant positive net carbon sequestration (including fossil fuel emission displacement) every year for the next 100 years.

Net carbon impacts are just one component to be considered when assessing alternative scenarios of forest biomass energy development in the Northern Forest. Other considerations include potential economic benefits to Northern Forest communities and landowners and a comprehensive assessment of the ecological and social consequences of changes in the Northern Forest landscape as a result of changes in forest harvest regimes.



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