Nutrient Mass Balance in Intensively Managed Hardwood Plantations. (S07-trettin082117-Poster)

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Abstract:

Conversion of abandoned agricultural lands to intensively managed hardwood plantations offers the opportunity to supply the increasing demand wood products while rejuvenating soils depleted in nutrients and carbon following a century of cropping. We report results from a 5 year study to assess plantation productivity, soil nutrient status and carbon accumulation. Replicated, operational-scale sweet gum and sycamore plantations were established on first-order watersheds in 1997. Each experimental catchment was instrumented to measure changes in soils, vegetation, water quality and surface water discharge. Sycamore was significantly more productive than sweetgum, with sweet gum yields less than 20% of sycamore. Soil C and N increased with other nutrients showing little change. The nutrient assessment demonstrated the importance of understanding the inherent site conditions, and incorporating nutrient mineralization into nutrient management prescriptions.

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Presentation Information:

Presentation Date: Tuesday, November 12, 2002
Presentation Time: 2:00-4:00 pm
Poster Board Number: 1524

Keywords:

soil productivity, afforestation, hardwood plantations