The Interaction between Soil Nutrients and Leaf Loss during Early Establishment in Plant Invasion
Elizabeth A. Leger, Katherine M. Howe, Jessica Gurevitch, Eliza Woo, Jonathan Hickman, Isabel W. Ashton, and Manuel Lerdau
now appearing in Forest Science, December 2007

Nitrogen affects both plant growth and herbivore preferences. An interaction between these two factors could affect establishment of native and exotic species differently, promoting invasion. Taxonomically paired native and invasive tree, shrub, and vine seedlings were grown in high-resource (hardwood forests) and low-resource (pine barrens) communities on Long Island, under ambient and nitrogen-enhanced conditions. Invasives outperformed natives in nitrogen-enhanced plots in hardwood forests, where all plants experienced increased damage relative to control plots. Natives experienced more damage in hardwood forests, losing 45% more leaves than exotics; only natives decreased growth rates (32% compared with controls). In contrast, in pine barrens, there were no differences in damage or performance between natives and invasive plants. Unequal damage in nitrogen-enhanced environments may affect community composition by shifting the competitive advantage to exotic species.

Low-Density Management of White Pine Crop Trees: A Primer and Early Research Results
Robert S. Seymour
now appearing in Northern Journal of Applied Forestry, December 2007

Growing white pines at low density after pruning appears to offer advantages over more conventional silvicultural systems. This article describes how to design and implement a low-density thinning schedule using published relationships between crown architecture and stemwood growth. Short-term results from a replicated thinning study in Maine show that diameter growth of heavily released crop trees was 2.8 times that of similar trees in the unthinned controls and 1.6 times that of trees in plots thinned to the B line on the pine stocking guide. Total stemwood volume growth per acre was similar for the low-density and B-line treatments. Gross stemwood growth was strongly and linearly related to four parameters of stand density, and no evidence of an optimum density zone was found. The traditional B line on the white pine stocking guide is shown to have little relevance for either low-density or high-production thinning schedules.

Technical Note: Dual-Cropping Loblolly Pine for Biomass Energy and Conventional Wood Products
D. Andrew Scott and Allan Tiarks
upcoming in Southern Journal of Applied Forestry, February 2008

Southern pine stands have the potential to provide significant feedstocks for the growing biomass energy and biofuel markets. A study exploring a dual-cropping system for southern pine bioenergy and solidwood products was performed in 1982 in Louisiana. Fertilization of 60 kg ha$^{-1}$ of P was required to produce 90% of the maximum volume at the age of 22 years. Direct-seeding pine in the interrows of a traditional pine plantation produced about 10.2 Mg ha$^{-1}$ of biomass for energy at the age of 5 years but had no lasting effect on the planted pine height, diameter, or standing volume. The system is a viable method to produce both bioenergy and solidwood products. Herbaceous competition control and N fertilization likely would make the system even more productive and profitable.

The Effects of Spatial Patterns on the Accuracy of Forest Vegetation Simulator Estimates of Forest Canopy Cover
Treg A. Christopher and John M. Goodburn
upcoming in Western Journal of Applied Forestry, January 2008

Research assessed the accuracy of Forest Vegetation Simulator (FVS) estimates of canopy cover in stands with nonrandom spatial patterns. A method for measuring canopy cover within GIS was developed to compare with FVS estimates of cover for 19 stem-mapped plots across Idaho and Montana. The Ripley’s K(d) statistic was used to describe natural and simulated spatial patterns, so that the accuracy of canopy cover estimated by FVS could be considered for plots classified as regular, clustered, or random. Analyses of spatial patterns indicated that the FVS may underestimate canopy cover by 11% for plots with highly regular spatial patterns and overestimate by 2% for plots with clustered patterns. Information on the general spatial pattern of the stand could be used by managers to anticipate the expected degree and direction of the bias.