Competition and Climate Affects US Hardwood-Forest Tree Mortality
Daniel A. Yaussy, Louis R. Iverson, and Stephen N. Matthews
upcoming in *Forest Science*, August 2013

Individual-tree measurements have been collected periodically on sites established between 1959 and 1985 in Kentucky, New York, Ohio, and Pennsylvania to investigate the effects of thinning on the growth and yield of hardwood species. The long-term characteristics of this dataset allowed the authors to investigate potential climatic effects on tree mortality. Measures of competition, temperature, and precipitation were evaluated against mortality for 21 species groups. Competitive factors were very important; however, in a few cases some of the climate factors were more important. The models produced were then run using future climate predictions from general circulation model scenarios to estimate potential future rates of mortality. The high variability of future climate projections made it difficult to estimate changes in tree mortality. Nonetheless, the study reiterates that managing for more resilient forests by reducing competition can help mitigate the effects of climatic and other stresses.

Field Note: Observations of the Impact of Soil Scarification and Fire on Oak Accumulation on Shelterwood Sites
Michael C. Demchik, Tess Noel Radtke, and Melis Z. Arik
now appearing in *Northern Journal of Applied Forestry*, June 2013

Shelterwood harvest for oak (*Quercus*) regeneration is common but often fails as the stand converts to other species. Scarification and burning are sometimes promoted as potential ways to increase accumulation of oak regeneration. The authors measured oak shelterwood stands that had been (1) prescribed burned (five sites), (2) scarified (nine sites), or (3) neither scarified nor burned (three sites). Scarified or burned sites accumulated more oak seedlings and greater aggregate height of seedlings than control sites. Scarification or burning may be effective ways to increase oak reproduction in shelterwood harvests in Wisconsin.

Fuel Consumption Models for Pine Flatwoods Fuel Types in the Southeastern United States
Clinton S. Wright
upcoming in *Southern Journal of Applied Forestry*, August 2013

Modeling fire effects requires accurate predictions of fuel consumption. Empirical models were developed for predicting fuel consumption on prescribed fires in pine flatwoods ecosystems in the southeastern United States. Prefire fuel loading ranged from 4.6 to 23.7 Mg ha$^{-1}$ with 12–69% of total loading consisting of shrub species. Fuel consumption ranged from 1.3 to 15.7 Mg ha$^{-1}$. On average 76% of prefire fuel loading was consumed, although consumption was variable (28–93%). Model predictors include prefire shrub loading and burn season for shrub fuel; prefire dead/down woody fuel loading and 10-hour fuel moisture for dead/down woody fuels; prefire litter loading and pine litter fuel moisture for pine litter fuels; and prefire aboveground fuel loading and litter fuel moisture for all aboveground fuels. Models specific to burning season predicted consumption within 4.5% (dormant season) and 12.4% (growing season).

Stream Temperature and Streamside Cover 14–17 Years after Clearcutting along Small Forested Streams, Western Oregon
Mike Newton and Liz Cole
now appearing in *Western Journal of Applied Forestry*, July 2013

Stream temperatures were monitored on seven low-elevation western Oregon streams immediately after clearcut harvesting and 14–17 years later in two studies that examined buffer designs. One study on four streams used no-tree buffers with all trees next to the stream harvested within the clearcut units. The second study on three streams examined partial buffers designed to shade the stream only from direct sun. Streams with no-tree buffers in clearcuts 90 or 180 m long mostly exhibited significantly less warming 16–17 years after harvest than 1–5 years after harvest. Streams with partial buffers had originally shown slight response to harvest, and 14–15 years after harvest temperature trends were not different from preharvest trends.