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Let's Use the Dead Hemlock Trees

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The hemlock woolly adelgid (*Adelges tsugae* Annand) is a non-native pest that is decimating the eastern hemlock (*Tsuga canadensis* L.) population in the forests of the eastern United States. Nearly one-third of the area inhabited by native hemlocks is infested with the insect. Once a tree is heavily infected, it is estimated that tree death usually occurs within 3 years. The majority of the current research effort focuses on preventing the spread of the adelgid. Unfortunately, the damage is already done in many areas and little research has been done on examining the utilization potential for the dead hemlocks. We will present potential uses for the dead hemlock trees to include being dropped in streams to be large woody debris and other uses as logs for cabins, material for pallets and biomass for burning.

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Wildlife as Indicators of Optimal Scale for Bottomland Forest Management

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Specialist wildlife that evolved within forest ecosystems can be sensitive to disturbance regime changes and thereby serve as indicators of optimal scale for forest management. Bottomland hardwood forests (BLH) were once extensive within the Lower Mississippi Alluvial Valley, but land cover conversion has reduced BLH forests by approximately 80% over the last century. Furthermore, conservation management has eliminated virtually all fire and all tree felling activities. Since 1990, a multi-agency effort has been underway to restore bottomland forests, with the preservation of wildlife habitat as a primary goal. Loss of BLH and disturbance regime changes have been associated with a decline of the swamp rabbit (*Sylvilagus aquaticus*), a BLH specialist, throughout the southeastern US. Often, remaining BLH stands are restricted to narrow riparian zones and may be too mature to provide adequate early successional habitat required by swamp rabbits and other wildlife. Afforestation beginning in 1990 has created a patchwork of early-successional stands embedded within a larger agricultural landscape and adjacent to mature riparian stands. Here, we address how the spatial arrangement of BLH plantings influences habitat use by swamp rabbits in southern Illinois. We examine the influence of stand age, spatial arrangement of stands, and the presence of other land cover types on home range size of 37 swamp rabbits monitored during 2009–2012. These results are used to infer the scale, frequency, and spatial distribution of silvicultural interventions that may be needed to maintain swamp rabbit habitat. Implications for implementing these interventions across multiple agency land holdings are discussed.

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Ginseng, Timber Harvest, and Hardwood Forests Inventory to Improve Comanagement

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The roots of American ginseng have been harvested from the hardwood forests of eastern United States, along side timber, since the mid-1700s. Very little is known about this nontimber commodity relative to timber, although significant volumes of ginseng root have been harvested from the same forests along with timber. The harvest of ginseng correlated positively and significantly with hardwood forest area, hardwood growing stock volume, and timber removals. Also, it correlated with hardwood growing stock on public forest lands in the region. The annual wholesale value of American ginseng was estimated at approximately $26.9 million compared to annual stumpage value of harvested hardwood timber of just over $1.27 billion. The volume of ginseng root harvested from natural forests represents substantial extraction of biomass, and the associated value represents substantial income for people living in an economically marginalized region. Comanagement of eastern hardwood forests for timber and nontimber forest products could improve local economies and better conserve the biodiversity of these forests.

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Examining Participation in Forest Certification Amongst Wisconsin Loggers

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Wisconsin loggers serve in many capacities. They help landowners and forest managers meet land management goals, provide the link between suppliers and fiber markets, and directly and indirectly impact sustainability in Wisconsin. One of the ways they fulfill the latter role is by participating in forest certification, in which Wisconsin is a national leader. A mail survey of Wisconsin loggers focusing on the 2010 production year and conducted in 2011, was conducted to assess the status of the logging industry, including participation in certification programs. Wisconsin is a national leader in certification, with State Forests and County Forests certified by Forest Stewardship Council (FSC), Sustainable Forestry Initiative (SFI) or both, while small ownerships enrolled in Wisconsin's Managed Forest Law (MFL) program hold American Tree Farm System (ATFS) and FSC Certification. Participation in certification amongst loggers is important, as loggers are often the first link in chain-of-custody certification (such as FSC and SFI). In addition, loggers in Wisconsin can be "Certified Master Loggers", a Wisconsin-specific program. Logging businesses participating in the survey were most likely to be chain of custody certified through SFI (82%). Similarly, 90% of the harvest volume reported in our study was undertaken by businesses that were SFI chain of custody certified. The probability of chain of custody certification in logging firms is proposed to be a function of land attributes, production attributes, and owner/firm characteristics. Characteristics driving certification will provide future insight into this important aspects role in firm retention.

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