Forestry best management practices (BMP) have historically focused most protection on large, fish-bearing streams. But foresters, ecologists, and watershed scientists now recognize that headwater streams compose the majority of stream networks, perhaps as much as 80% or more. Management restrictions adjacent to headwater streams can result in large impacts on forest management activities. This special issue of *Forest Science* provides a collection of 20 articles on headwater stream research. Articles include syntheses reviewing key headwater stream topics as well as original research on headwater streams. While there is disagreement about the exact definition of headwater streams there is no disagreement about their importance. The findings from this special issue of *Forest Science* on headwater streams contribute to our understanding of the hydrology, ecology, and management of these systems.

**Do Improvement Harvests Mitigate Oak Decline in Missouri Ozark Forests?**

John P. Dwyer, John M. Kabrick, and James Wetteroff

*upcoming in Northern Journal of Applied Forestry, June 2007*

Oak decline is a chronic problem throughout the oak-dominated forests of the Missouri Ozarks. Because oak decline appears to be initiated by environmental stress, some scientists and managers have advocated stand thinning to mitigate decline by improving tree vigor. Others have cautioned that cutting may exacerbate decline. The authors conducted a 14-year study to determine if improvement harvests would reduce the severity of decline symptoms. They found that improvement harvests did not mitigate oak decline, but neither did they make decline worse, and they had the benefit of increasing diameter growth in the residual stand. More than 70% of red oaks that initially exhibited little or no crown dieback remained in the same classes over the study period, even in unharvested control stands. Also, more than 50% of red oaks that initially exhibited moderate to severe decline appeared to improve during the study, regardless of harvest treatment.

**Nonindustrial Private Forest Landowners and the Southern Pine Beetle: Factors Affecting Monitoring, Preventing, and Controlling Infestations**

Joseph Molnar, John Schelhas, and Carrie Holeski

*upcoming in Southern Journal of Applied Forestry, May 2007*

Efforts to promote forest health must identify new ways to reach sociologically diverse and spatially dispersed nonindustrial private landowners. This study examined the knowledge, perceptions, and forest management practices of southern forest landowners with respect to southern pine beetles (SPB) (*Dendroctonus frontalis* Zimmermann). Respondents with personal value commitments to conservation took more monitoring, prevention, and control actions. Membership in forest landowner associations, familiarity with public assistance programs, and use of more sources of forest management advice defined a context for increased awareness, interest, and desire to manage SPB. Recent SPB-caused timber losses in the county and possessing a written management plan were associated with greater prevention efforts. Involving forest holders in a broader community of landowners seems to be a central means for stimulating early intervention in forest health problems before larger losses ensue.

**Fire Climbing in the Forest: A Semiquantitative, Semiquantitative Approach to Assessing Ladder Fuel Hazards**

Kurt M. Menning and Scott L. Stephens

*now appearing in Western Journal of Applied Forestry, April 2007*

Ladder fuels carry fire from the forest floor to the canopy and may turn low-intensity fires into severe canopy fires. Assessing ladder fuels have been either expensive and spatially limited or variable expert opinion strategies. We developed a mixed semiquantitative, semiquantitative approach using a flow chart that systematizes observations and constrains judgments and decisionmaking. The ladder fuel hazard assessment approach leads to ladder hazard ratings and some quantified observed data; it can be repeated across a very large area at relatively low cost and results are mostly consistent and repeatable. Key attributes assessed are clumping of low aerial fuels, height to live crown base, and maximum gaps in vertical fuel ladders. For the northern Sierra Nevada, more than 25% of sites were rated high hazard and 40% were moderate risk.