Spotted owls in young forest stands

Indicator species in old-growth ponderosa pine

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4 Elevated Carbon Dioxide in the Atmosphere: What Might It Mean for Loblolly Pine Plantation Forestry?
John W. Groninger, Kurt H. Johnsen, John R. Seiler, Rodney E. Will, David S. Ellsworth, and Chris A. Maier

Research suggests that increasing CO$_2$ may enhance the short-term productivity of southern pine plantations, but managers may need to alter silvicultural practices to capitalize on the potential benefits.

Editor’s note. The journal will devote the September 2000 issue to the subject of carbon forestry. To be considered, papers for this issue should be submitted by March 31, 2000.

12 Will Management of Vulnerable Species Protect Biodiversity?
Leonard E. Broberg

Use of wildlife species designations based on the imperilment criteria set forth in the proposed forest planning regulations of the Forest Service may not protect upland old-growth ponderosa pine ecosystems in Idaho, Montana, and Washington.

20 Designing Spotted Owl Habitat in a Managed Forest
Lorin L. Hicks, Henning C. Stabins, and Dale R. Hierter

Telemetry research indicates that certain young forest stands may meet some of the spotted owl’s biological needs. Computer-generated stand visualization techniques help illustrate the types of forest structure used by owls in a managed landscape.

For a complete listing of upcoming journal topics and past issue contents, visit www.safnet.org.
26 **A Scentsible Approach to Controlling Southern Pine Beetles: Two New Tactics Using Verbenone**

Stephen R. Clarke, Scott M. Salom, Ronald F. Billings, C. Wayne Berisford, William W. Upton, Quintin C. McClellan, and Mark J. Dalusky

Two methods using synthetic verbenone, a pheromone, have been developed and tested for suppressing southern pine beetle infestations. EPA registration is expected shortly, and southern foresters need to learn how to apply the techniques.

32 **Estimating Stumpage Values from Transaction Evidence Using Multiple Regression**

B. Bruce Bare and Robert L. Smith

Using sales transaction evidence, the authors present a stumpage model for estimating the value of individual species in lump-sum timber sales that produces credible and usable results.

**Pages from the Past**

See page 48

Researcher David S. Ellsworth collects data on tree growth at the Duke Forest in North Carolina.

Are elevated levels of atmospheric CO₂ in effect, fertilizer for trees? In theory, yes, but figuring out what that means for plantation management is more complicated. Groninger et al. (page 4) set out to summarize how CO₂ affects the physiology, vigor, growth, and development of loblolly pine.

Like all articles in the *Journal*, this paper was peer-reviewed, and like most, it went through two rounds of revision before the lead reviewer signed off on it. The hurdle for Groninger et al. was using the results from short-term, small-scale CO₂ studies to develop silvicultural recommendations at the stand level.

Given the importance of their subjects—global climatic changes and pine plantation productivity—both they and the reviewers are to be commended for giving *Journal* readers a paper that meets a high standard of scientific integrity and points the way to new directions in on-the-ground management.

**Departments**

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January  State Forestry
Innovations in organization, management, and planning in our state forests.

February  Open Forum
Research, developments, discussions, issues, and history.

March  Forest Fragmentation and Urban Sprawl
New woodland owners, fewer large tracts of forests. What are the implications for the next generation of forestry?

April  Open Forum
Research, developments, discussions, issues, and history.

May  Ethics
Foresters' professional society debates the proposed revisions to its code of ethics.

June  Open Forum
Research, developments, discussions, issues, and history. Plus the JOURNAL'S new Professional Resource Guide.

July  Ecological Restoration
Reasons to attempt it, the science that supports it, the art of doing it, the arguments against it.

August  Open Forum
Research, developments, discussions, issues, and history.

September  Carbon Forestry
The promise of forestry projects intended to mitigate increasing concentrations of CO₂ and other environmental changes.

October  Open Forum
Research, developments, discussions, issues, and history.

November  Looking Back
At the close of the century, the Society of American Foresters turns 100. Centennial convention issue.

December  Open Forum
Research, developments, discussions, issues, and history.

January 2001  Looking Ahead
Forestry in America steps forward into its second century.

Editorial policy. The Journal of Forestry welcomes scientific and editorial manuscripts that advance the profession of forestry by presenting significant developments and ideas of general interest to natural resource and forestry professionals. Papers published in the JOURNAL present, in a readable style, new and state-of-the-art knowledge, research, practices, ideas, and policies. Manuscripts submitted to the JOURNAL must not have been published previously and must not be under consideration for publication elsewhere.

Acceptance for publication is based on both editorial criteria and peer review. Each manuscript undergoes review, arranged by a member of the editorial board, and is evaluated for methodology, technical accuracy, breadth of appeal, clarity, contribution, and merit.

The JOURNAL reserves the right to publish countering or supplemental articles to promote discussion.

Submission guidelines. Maximum length is 3,000 words (approximately 11 double-spaced manuscript pages of 12-point type), plus a 75-word abstract. Omit footnotes and endnotes. Citations should number 20 or fewer; use full titles for all publications cited. The JOURNAL's style (including literature citations) is based on The Chicago Manual of Style. English units are preferred.

Articles should contain no more than five tables or figures. Consult recent issues of the JOURNAL for guidance in preparing tables and figure captions. Figures may be sent in EPS or TIFF files.

Color photographs should be glossy prints or duplicate slides (no originals); illustrations should be camera ready. Illustrations and photographs may also be sent in EPS or TIFF electronic files. Include caption, photographer's or artist's credit, and written permission from the photographer or artist for each image.

Submit three copies of the manuscript plus an electronic copy in, preferably, Word or WordPerfect, or an ASCII file or a Macintosh- or PC-compatible format. Label the disk with the lead author's name, the file name, and the software used. Include phone and fax numbers and e-mail addresses for all authors. Send to Manuscript Manager, Journal of Forestry, 5400 Grosvenor Lane, Bethesda, MD 20814-2198. Phone (301) 897-8720 x 130; fax (301) 897-3690; e-mail goellj@safnet.org.

History papers. For 2000, SAF's centennial year, the JOURNAL is publishing articles on the history of the profession. Before submitting a history paper, please query the editor, in writing.

Perspectives. These short opinion pieces are not formally reviewed but are evaluated for content and style. Maximum length is 850 words (three double-spaced manuscript pages). Send two copies of the manuscript, a brief biographical description, and a head-and-shoulders photograph. The contributor of a "Perspective" must be a member of the Society of American Foresters.
"Forest certification strengthens our community-based approach to forestry."

---Marshall Pecore
Forest Manager
Menominee Tribal Enterprises, WI

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The following articles appear in the June 1999 issue of the Northern Journal of Applied Forestry

Approximation, Evaluation, and Extension of the Lake States Composite Taper and Volume Tables
T.E. Burk and Alan R. Ek

USDA Technical Bulletin 1104, "Composite Volume Tables for Timber and Their Application in the Lake States," by Gevorkiantz and Olsen (1955), is used extensively for prediction of individual tree stem volumes in the Lake States region of the United States. Application of cubic spline interpolation and numerical integration provides a means of efficiently utilizing the bulletin's information in modern computer systems while simultaneously extending the tables to a range of utilization standards.

Five-Year Performance of Three Conifer Stock Types on Fine Sandy Loam Soils Treated With Hexazinone
D.G. Pitt, C. Stern Krisika, E.W. Bell, and A. Lehela

In May 1987, hexazinone (Velpar® L) was applied by helicopter at 0, 1, 2, and 4 kg active ingredient in 45 L of total solution per hectare to a sandy loam site approximately 74 km northwest of Thunder Bay, Ontario. Container (FH408 paper pot) jack pine (Pinus banksiana Lamb.) and container (FH408 paper pot) and bare root (1½ + 1½) black spruce (Picea mariana [Mill.] B.S.P.) were hot-planted one month and deferred-planted 12 months after herbicide application. Overall, a one-year delay in planting resulted in stem and stand volumes that were less than half of those observed in hot-planted areas.

Determinants of Land Use in Maine with Projections to 2050
T.E. Mauldin, A.J. Plantinga, and R.J. Alig

Data on land use in Maine are assembled from USDA Forest Service inventories, the Census of Agriculture, and other sources. Regression analysis is used to estimate the relationships between land use and determinants of land use such as land rents and soil characteristics.

Wildlife Communities Associated with Even-Aged Reproduction Stands in Two State Forests of Pennsylvania
L.A. Boardman and R.H. Yahner

The Pennsylvania Bureau of Forestry recently adopted a new forest management practice termed "even-aged reproduction stands with reservation guidelines," hereafter termed EAR stands, which is intended to replace clearcutting as the primary method of even-aged forest management. Overstory trees and snags in EAR stands serve as important substrates for breeding birds. Furthermore, EAR guidelines promote regeneration and growth of a dense layer of vegetation near ground level, which is beneficial to wildlife.

Use of Vegetational Characteristics and Browsing Patterns to Predict Deer Damage in Eastern White Pine (Pinus strobus) Plantations
M.R. Saunders and K.J. Puettmann

Browsing of seedlings by white-tailed deer (Odocoileus virginianus) can make natural and artificial forest regeneration difficult. This study described browsing patterns and assessed influence of vegetational characteristics on browsing. Results indicated that deer concentrate browsing on terminal leaders in shorter seedlings, shifting to laterals as seedlings approach browsing height limits (140 cm).

Tree Shelters Reduced Growth and Survival of Underplanted Red Oak Seedlings in Southern Iowa
R.E. Bardon, D.W. Countryman, and R.B. Hall

A major concern in the management of northern red oak (Quercus rubra L.) is the difficulty in regenerating stands that have dense understories of shade tolerant species. A replicated study in southern Iowa indicated that over a five-year period, tree shelters have a major impact on establishment of underplanted, 1-0, northern red oak bareroot stock. In this study, tree shelters reduced both growth and survival when used to protect underplanted, 1-0, red oak seedlings.

Response of Immature Trembling Aspen to Season and Height of Cut
E.W. Bell, D.G. Pitt, A.E. Morneault, and S.M. Pickering

Effects of season and height of cutting to control the regrowth of young trembling aspen were studied on four sites in Ontario, Canada. Two years of post-treatment data indicate that aspen regeneration may be reduced if manual cutting occurs in June/July, at a cutting height of 50 to 75 cm.

Stand Structure in Even-Aged Northern Hardwoods: Development and Silvicultural Implications
W.B. Leak

Stand structure was examined in even-aged northern hardwoods in New Hampshire. Over time, these northern hardwood stands develop a layered canopy structure with the intolerant and short-lived paper birch and aspen dominating the larger size classes. The usual silvicultural recommendation in such stands is to thin to prescribed stocking levels. In variable stands such as this, a gradual transition to group selection may be a better tactic.

Field Note—Silviculture Research Needs in the Northeast—A Survey of Foresters
Peter R. Hannah

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