David White, USDA Forest Service

## Eastern National Forests

# Managing for Nontimber Products

**James L. Chamberlain, Robert J. Bush, A.L. Hammett, and Philip A. Araman**

ABSTRACT

Many products are harvested from the forests of the eastern United States that are nottimber-based but originate from plant materials. Over the past decade, concern has grown about the sustainability of the forest resources from which these products originate, and an associated interest in managing for these products has materialized. A content analysis of the management plans of 32 eastern national forests revealed that seven of the plans addressed nontimberforest products (NTFP). We used interviews with USDA Forest Service district- and forest-level managers to convey their ideas about NTFP management and to identify critical issues that affect efforts to manage for these products.

**Keywords:** forest products; industry; national forests; policy

Many products collected from the forests do not fit clearly within the objectives identified and detailed in legislation guiding the management of the national forests. This guiding legislation, from the Organic Act of 1897 through the National Forest Management Act of 1976, requires that national forest management plans address timber, recreation, range, watershed, fish and wildlife, and wilderness. But many people in rural areas collect medicinal and edible products from national forests for household consumption and to supplement their incomes. Products such as moss, grapevine, boughs, pine straw, and birch twigs are harvested from national forests to supply the floral and decorative industries. Crafters collect wood for carvings, burls for bowls, and saplings for furniture.

The variety and number of products harvested from the forests of the eastern United States are significant. For example, millions of pounds of black walnuts are harvested each year, and estimates of the number of forest species in the eastern United States valued for their medicinal qualities range from 125 to more than 500 (Krochmal et al. 1969; Foster and

***Above:*** **Two ramp diggers in the Pisgah–Nantahala National Forest in North Carolina head home with sacks full of the wild leeks, which appear in early spring before the forest canopy closes.**

**Table 1. National forests included in this study.**

| National forest | Year forest plan approved | Plan revision due[1] |
|---|---|---|
| **Region 8 (Southern)** | | |
| Alabama | 1986 | 2001 |
| Chattahoochee–Oconee | 1985 | 2000 |
| Cherokee | 1986 | 2001 |
| Croatan-Uwharrie | 1986 | 2901 |
| Daniel Boone | 1985 | 2000 |
| Florida | 1986 | 2001 |
| Francis Marion | 1985 | 1996 |
| George Washington | 1986 | 1993 |
| Jefferson | 1985 | 2000 |
| Kisatchie | 1985 | 1999 |
| Mississippi | 1985 | 2000 |
| Nantahala-Pisgah | 1987 | 2002 |
| Ouachita | 1986 | 2001 |
| Ozark-St. Francis | 1986 | 2001 |
| Sumter | 1985 | 2000 |
| Texas | 1987 | 1996 |
| **Region 9 (Eastern)** | | |
| Allegheny | 1986 | 2001 |
| Chequamegon | 1986 | 2001 |
| Chippewa | 1986 | 2001 |
| Finger Lakes | 1987 | 2002 |
| Green Mountain | 1987 | 2002 |
| Hiawatha | 1986 | 2001 |
| Hoosier | 1985 | 2000 |
| Huron-Manistee | 1986 | 2001 |
| Mark Twain | 1986 | 2001 |
| Monongahela | 1986 | 2001 |
| Nicolet | 1986 | 2001 |
| Ottawa | 1986 | 2001 |
| Shawnee | 1986 | 2001 |
| Superior | 1986 | 2001 |
| Wayne | 1988 | 2003 |
| White Mountain | 1986 | 2001 |

[1]The National Forest Management Act requires that forest plans be revised every 10 to 15 years.

tional statutory direction for plans to include "coordination of outdoor recreation, range, timber, watershed, fish and wildlife, and wilderness." Together, these policies provide the major guidance for management of national forests.

The RPA and NFMA ensure that national forest management plans are uniform and consistent throughout the National Forest System. These plans outline the "desired future conditions" of the forest as well as for each management area. Multiple-use goals and objectives are established to guide program activities, and standards and guidelines are developed to be consistent with national standards and guidelines. Management prescriptions are prepared for each multiple-use management area to describe the specific activities for each unit. Lands suitable for harvesting timber, as well as other natural resources, are identified and estimates made of the sustainable extraction levels.

Although the legislation may imply that national forests will manage for nontimber forest products, there is no explicit mandate to include these products in forest management plans and activities. Our research was designed to determine if NTFPs were included in forest plans and to examine the extent to which they were incorporated into these plans.

## Research Methods

The goal of this research was to help broaden our understanding of issues affecting management for NTFPs in eastern United States. National forests in the East, rather than the West, were selected for study, as less attention has been paid to NTFPs in this region. Also, eastern forests include NTFPs that are unique to the region. The forests of this region have been an important source of many NTFPs long before European settlers colonized this country. Yet most of the dialogue concerning managing forests for these products is being driven by the experiences of national forests in the western United States. Certainly, the West has realized tremendous changes in the collection, use, and trade of these products, and the eastern United States also has seen significant growth and concomitant pressures.

This study was limited geographically to USDA Forest Service Regions 8 (Southern) and 9 (Eastern). The research examined the first-round forest plans for 32 national forest management planning units, with the exception of the Francis Marion, George Washington, Kistachie, and Texas forest plans (table *1).* The revised forest plans were used for these four forests because they had been accepted before the start of this study. Further, our research did not include the Caribbean National Forest (it is outside the continental United States) or the Midewin National Tallgrass Prairie (the plan was accepted after this research was completed) .

This study adapted a methodology developed to analyze the content of newspapers, presidential speeches, and other printed material (Holsti 1969; Carney 1972; Krippendorff 1980) to determine the extent to which NTFPs were addressed in national forest management plans. The area of text in each management plan was measured for three general categories: legislated objectives, significant issues, and NTFPs. Legislation mandates that national forest management plans consider and include timber, range, minerals, recreation and wilderness, water, and fish and wildlife. Significant issues identified in the Forest Service Manual (USDA-FS 1998a) or that emerged through public input included roads, special uses, habitat protection, and facilities maintenance, as well as ecosystem management, biodiversity, and old-growth. The third category of text that was measured focused on NTFPs

wild rice beds to their former abundance within five to 10 years. These national forests identified gaps in the knowledge based concerning management of specific NTFPs.

While four national forest management plans provide general forestwide guidance for NTFPs, only two have specific prescriptions for maintaining or enhancing NTFP production. The Green Mountain National Forest provided forestwide standards and guidelines to maintain and increase apple and other fruit production for wildlife food and to increase blueberry production through prescribed burns. The forest plan for the Nicolet National Forest (1986) in Wisconsin established that district rangers would not grant permits for ginseng harvesting. On the other hand, the forestwide standards established for the White Mountain National Forest (1986) directed that applications for permits to harvest maple sap, Christmas trees, and evergreen boughs would be considered on a case-by-case basis. The plan for the Finger Lakes not only established forestwide guidelines for blueberries but also prescribed specific activities to promote production.

Although each of the seven forest plans included some coverage of NTFPs, no plan provided comprehensive coverage similar to that of other natural resources. It is interesting that the Finger Lakes National Forest, the smallest national forest in the eastern United States, provided the most complete coverage. It not only addressed research needs but also responded to public issues concerning NTFPs. The plan established a goal and a desired future condition for NTFP management on the forest and defined forestwide standards and guidelines as well as specific prescriptions.

### Management Perspectives

The perspectives of forest mangers toward NTFPs is based on extensive interviews with the managers. District- and forest-level managers have diverse experiences and a wealth of knowledge that must be considered in developing and implementing appropriate management policies and strategies for NTFPs. Their perspective can significantly affect how national forests approach NTFP management.

*Forest-level managers.* The experiences and perceptions of forest-level managers with NTFPs are as varied as the products themselves. Some managers had been in situations where the products were plentiful and market demand was high, and they perceived that substantial collection was taking place. A general sense among forest-level managers was that the Forest Service would be surprised at the volume of NTFPs harvested from the national forests. A perception shared by many forest-level managers was that there is not enough information to determine if collection is having an impact on forest health. A common impression was that the agency "takes a very light-handed approach" toward NTFPs. A general view emerged that policies and practices were inconsistent across forests and districts.

Many forest-level managers indicated a concern that the agency "does not have the technical capability to manage for these products." For most NTFPs there are "no manuals that present prescriptions" to help guide management practices. There is "no research on the shelf that provides the information needed to make sound management decisions." But most managers felt that "the knowledge exists to start collecting appropriate data to generate information needed to guide management."

Perhaps the most critical issues include "determining sustainability and the impact on forest health, and determining and controlling permitted versus non-permitted collection." The lack of knowledge concerning the "reproductive biology" of the flora from which these products originate is perceived as critical to improving management. The agency really "does not understand the ecosystem function of these products as it does for trees." Further, forest managers indicated that "a lack of knowledge concerning the fair market value for NTFPs inhibits management." Clearly, the ecological and economic uncertainties are daunting to forest-level managers.

*District-level managers.* District-level managers are responsible for implementing the policies and directives outlined in the forest management plans. They are the closest to the forest operations and activities and should know better than most about local NTFP activities and the implications of changes in management strategies. As expected, the perceived level of NTFP activities varied among district-level managers; some were aware of a great deal of collection, and others felt that little or no collection was taking place in their district. A general perception that emerged from the interviews was that NTFP collection is an integral part of local people's lives. District managers were aware of a variety of products being collected from the forests, including ferns, ginseng, ramps, evergreen boughs, moss, princess pine *(Lycopodium* spp.), firewood, and Christmas trees. Many district-level managers viewed these products more as "a service to the local communities than a revenue source" for the agency.

Perhaps the best way to summarize the district managers' perspective concerning the current management approach toward NTFPs is that "it is limited to the issuance of permits." District-level managers suspect that "only a small portion of the actual collection is permitted." It is perceived that more people are collecting without permits than with them. NTFPs have been "considered a nuisance" that the agency has tried to deal with through the permit system.

Some district-level managers felt that the agency may have "recognized that NTFPs impact local economies, but it has not dedicated resources to these products." Perhaps one reason that "NTFPs do not get the attention they deserve is because there is not the demand" for the products. In general, district managers perceived that the agency does not know how many products are being collected, nor does it have an "idea of how to get a handle on the situation." Some managers expressed the sentiment that "the agency would adjust the program accordingly if it determined more attention was needed on this issue." But there seemed to be agreement that "the Forest Service has not done sufficient studies to determine the impact" of collec-

CHAMBERLAIN, J.. R. BUSH, and A.L. HAMMETT. 1998. Nontimber forest products: The other forest products. *Forest Products Journal* 48(10):2–12.

CHEQUAMEGON NATIONAL FOREST. 1986. *resource management plan for the Chequamegon National Forest.* Milwaukee: USDA Forest Service, Eastern Region.

CROATAN NATIONAL FOREST. *1998. Land and resource management plan for the Croatan National Forest.* Atlanta: USDA Forest Service, Southern Region.

FINGER LAKES NATIONAL FOREST. 1986. *Land and resource management plan for the Finger Lakes National Forest.* Milwaukee: USDA Forest Service, Eastern Region.

FLORIDA NATIONAL FORESTS. 1985. *Land and Resource Management Plan:* National *Forests in Florida.* Atlanta: USDA Forest Service, Southern Region.

———. *1999. Revised Land and Resource Management Plan for National Forests in Florida.* Tallahassee: USDA Forest Service.

FLOYD, D.W., ed. 1999. *Forest of discord: Options for governing our national forests and federal public lands.* Bethesda, MD: Society of American Foresters.

FOSTER, S. 1995. *Forest pharmacy: Medicinal plants in American forests.* Durham, NC: Forest History Society.

FOSTER, S., and J.A. DUKE. 1990. *A field guide to medicinal plants: Eastern and central North America. New* York: Houghton Mifflin.

GREEN MOUNTAIN NATIONAL FOREST. 1993. *Land and Resource Management Plan for the Green Mountain National Forest.* Milwaukee: USDA Forest Service, Eastern Region.

HAUSLOHNER, A.W. 1997. Couple builds green empire with pine-roping outfit. *Roanoke Timer,* December 6, p. A1.

HOLSTI, O.R. 1969. *Content analysis for the social sciences and* humanities. Menlo Park, CA: Addison-Wesley.

KRIPPENDORFF, K. 1980. *Content analysis: An introduction* to *its methodology.* Beverly Hills, CA: Sage Publications.

KROCHMAL, A., R.S. WALTERS, and R.M. DOUGHTY. *1969. A guide to medicinal plants of Appalachia.* Research Paper NE-138. Upper Darby, PA: USDA Forest Service, Northeastern Forest Experiment Station.

NICOLET NATIONAL FOREST 1986. *Land and Resource Management Plan for the Nicolet National Forest.* Milwaukee: USDA Forest Service, Eastern Region.

USDA FOREST SERVICE (USDA-FS). 1998a. *Forest service manual (FSM) Title 11 00, directive system.* Washington, DC.

———. 1998b. Analysis of the management situation: Special forest products. Chequamegon and Nicolet National Forests, Wisconsin, Eastern Region. Unpublished report. Milwaukee.

———. 2001. *National strategy for special forest products.* Washington, DC.

WHITE MOUNTAIN NATIONAL FOREST 1986. *Land and Resource Management Plan: White Mountain National Forest.* Milwaukee: USDA Forest Service, Eastern Region.

WORLD WILDLIFE FUND. 1999. Medicine from US wildlands: An assessment of native plant species harvested in the United States for medicinal use and trade and evaluation of the conservation and management implications. Unpublished report to the National Fish and Wildlife Foundation. Washington, DC.

**James** *(jachambe@vt. edu) is research scientist and Philip A. Araman is team leader, USDA Forest Service, Southern Research Station, 1650 Ramble Road, Blacksburg, VA 24060; Robert J. Bush is associate dean for research and graduate programs and A. L. Hammett is associate professor, Department of Wood Science and Forest Products, College of* Natural *Resources, Virginia Polytechnic Institute and State University, Blacksburg.* *Financial support for this research was provided by the USDA National Needs Fellowship and USDA Forest Service, Southern Research Station.*