



A Landowner's Guide to Sustainable Forestry

in Indiana



Part 7. Managing for a Diversity of Value-Added Forest Products

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Most landowners may immediately think of timber when considering income opportunities from their woodland. Historically, timber has certainly been the most important income-generating forest resource. Other emerging markets, however, are expanding your income potential. The list of alternative income opportunities is long. An exhaustive treatment of the possibilities is beyond the scope of this publication. However, a few of the more popular alternative enterprises are highlighted below.

Forest Herbs

Ginseng, a native herb at home on the floor of densely shaded hardwood forests in Indiana, has been exported from North America to Asia since the 18th century (Beyfuss 1999a). It, along with other native forest herbs like goldenseal (yellow root), is growing in popularity in North America and Europe as a medicinal and dietary supplement.



Richard Myers

Ginseng was exported from North America to Asia as early as the 18th century. It remains a valuable export commodity today.

Collecting forest herbs from the wild for later sale on the botanicals market is referred to as wild-crafting. Although generations of rural folks have relied on wild-crafting for supplemental income, many conservationists fear certain species of forest herbs are becoming scarce as a result of over-harvesting. State and federal statutes regulate the harvest and sale of wild ginseng. Seasons and collection rules must be carefully adhered to and dealers purchasing wild ginseng must be licensed.

Indiana DNR, Division of Nature Preserves, can provide you with more information on state laws governing the harvest of wild ginseng.

Your forest may provide an ideal environment for cultivating forest herbs. Much research and experience has gone into current ginseng cultivation guidelines.

Pawpaw fruit, long revered as the “Indiana banana,” is finding its way into ice cream shops, bakeries, and on to the menu of 4-star hotels. Pawpaw leaves, twigs, and bark contain compounds that may prove useful for controlling cancer and as insecticides, creating new markets for this humble, low-growing native of Indiana.



Ron Rathfon

www.pawpaw.kysu.edu

Many other forest herbs are not as well researched. There are three generally recognized methods of cultivating ginseng:

1. Field cultivated – grown in raised beds in open fields under shade cloth or other partial shade, usually with irrigation and fertilization.
2. Woods cultivated – grown in tilled beds in the forest, with weeding and thinning.
3. Wild simulated – grown in untilled soil in the forest, without irrigation, fertilization, weeding, or thinning. Takes longer to grow to harvest size than previous two methods but closely resembles true wild ginseng.

Field cultivation of ginseng is currently not profitable for someone just entering the market. Woods cultivated can bring 2.5 to 10 times and wild simulated can bring 20 to 30 times the price paid for field cultivated ginseng roots. True wild ginseng roots command the highest price per pound, recently bringing \$350 to \$600 per pound-dry weight or 35 to 60 times the price paid for field cultivated ginseng (Beyfuss 1999b). There are many other sources of information on the cultivation of

ginseng and other forest herbs. Your county Cooperative Extension Service can direct you to more sources of information.

Mushrooms

Gourmet mushrooms like shiitake and oyster are now found in the produce sections of larger grocery stores and are being added to the menus of upscale restaurants. Forest production of mushrooms usually involves inoculating logs of specified species and dimension with fungal spawn. These fungi are decomposers, that feed on the wood and eventually rot it.

Logs 5- to 8-inches in diameter are ideal for growing mushrooms. This size log can be readily obtained during thinning and timber stand improvement work and from the tops of felled trees following logging. If you want to grow mushrooms for personal use or to share with your



Deborah Hill

Shiitake mushroom cultivation is a good way to utilize small diameter logs left after logging or cut during timber stand improvement work.

friends and neighbors, 10 to 15 logs, four feet in length, should be sufficient. If you want to supply a limited number of local supermarkets, farmer's markets, or natural foods stores, 200 to 500 logs may be needed. Major suppliers require thousands of logs to be in production at one time

(Hill 1999). Contact your county Cooperative Extension office to find out more.

Develop the Recreation Potential of Your Forest

Most forest owners enjoy recreating on their property. Research shows that 23% of forest land owned by private individuals in the United States is available for public recreational use. Another 45% is open only to people personally acquainted with the owners (National Research Council 1998).

You may feel comfortable inviting friends and family to recreate in your forest. Because of liability and privacy concerns, particularly if you live on your property, you may be less inclined to open your land to the general public. The choice is yours. Under Indiana law you may restrict public access to your land.

There is growing demand for outdoor recreation opportunities. In some regions, public lands and recreation facilities are overused. Outdoor recreation provides you with additional income producing opportunities. Nature-based tourism is the most rapidly growing sector

Alternative and Value-Added Forest Products

Here is a short list of possible alternative forest products that could be developed into a money-making business.

- Mushrooms - shiitake, oyster, stropharia
- Aromatics - cedar oil
- Fruits and Nuts - persimmons, pawpaw, black walnuts, chokecherry, elderberry, hickory nuts.
- Tree, Shrub, and Herb Seed - for sale to nurseries
- Custom Sawmilling
- Custom "Light-on-the-Land" Logging
- Specialty Wood Products for craft and other niche markets
- Shavings, Excelsior, Sawdust, Bark — for animal bedding and mulch
- Decorative Wood Burls, Spalted Maple, Figured Crotch and Root Crown Wood
- Flavor Wood for Grilling - hickory, beech, apple
- Medicinals - ginseng, goldenseal, cohosh, sassafras, witch hazel, bloodroot, and more
- Floral Products - grapevine, bittersweet, moss, ferns, decorative cut branches
- Maple Syrup
- Baskets - splint and willow twig
- Nature-based Tourism
- Lease Hunting
- Christmas Trees, Roping, and Garlands



Ron Radtford

Well-planned, -constructed, and -maintained trails are essential to a forest recreation enterprise.

of the tourism market, averaging a 30% annual increase since 1987 (Wissing 1999). A new breed of tourist is emerging that seeks authentic, quality experiences in a natural environment. In the United States, nature tourists spend \$7.5 billion annually on travel (Wissing 1999).

Nature-based Tourism

A new breed of tourist is emerging that seeks authentic, quality experiences in a natural environment. Here is a list of possible nature-based tourism enterprises. You're only limited by your imagination.

- Educational vacations - history, nature, photography.
- Accommodations - campgrounds, cabins, bed and breakfast, elderhostel.
- Guided nature, historical, hiking, canoeing, caving, bird watching, and fishing tours.
- Dude ranch.
- Hunting preserve.
- Canoe livery.

Try combining several ideas to make an attractive vacation package.

Lease hunting, hunting camps, guide services, and hunting preserves are examples of how forest landowners can capitalize on public demand for hunting and fishing opportunities. Many farmers have turned to lease hunting as an extra source of income.

You can take advantage of natural features of your property and combine those with complimentary accommodations and authentic, educational activities to create a unique tourist experience. Carefully research the nature-based and agri-tourism markets in your region. Measure demand and if possible avoid direct competition with other enterprises and public recreation facilities. Find a niche that allows you to partner with other local nature-based tourist attractions, instead of competing directly with them. Nature-based and agricultural-based tourism enterprises are an important rural development opportunity that many communities don't recognize or know how to develop.

Nature-based tourism enterprises need to protect the integrity of the forest. Soil compaction, tree root damage, and severe soil erosion on trails can occur under heavy foot, trail bike, all-terrain vehicle (ATV), and horse traffic. If forest health and wildlife habitat decline as a result of overuse or inappropriate recreational uses, your forest is no longer sustainable.

You should also carefully consider liability, labor needs, advertising, and how opening your land to the public may affect your private and family life. Contact your local county Cooperative Extension Service for help in finding sources of information and services in this growing field.



Christmas Trees and Greenery

Growing Christmas trees and Christmas greenery has been a popular alternative income producer for landowners in Indiana. Christmas trees offer a number of advantages:

- Require low capital investment.
- Have relatively short time period for return on investment (6 to 9 years).
- Can be grown on marginal and sloping farm ground with minimal fertilization.
- Can be grown economically on small acreage.

Many landowners start Christmas tree farms without fully understanding the intensive, ongoing maintenance they require; e.g., annual weed control, annual shearing, mowing, and final preparation for market. Of those that manage to keep up with Christmas tree maintenance, there are some who have difficulty marketing their trees because of lack of business skills or failure to do good business planning. Many fine-looking pine plantations started out as Christmas tree farms.

Competition from big Christmas tree producers in other states has held down wholesale tree prices in recent years, making wholesale production for small landowners unprofitable. Niche markets in the retail sector remain for enterprising, creative Christmas tree growers. Purdue Cooperative Extension Publication FNR-118, *Growing Christmas Trees in Indiana*, provides more information.

Christmas Tree Production Information:

Indiana Christmas Tree Growers' Association

8650 N. C.R. 100 E.
Springport, IN 47386
(765) 755-3345
www.indianachristmastree.com

National Christmas Tree Association

1000 Executive Parkway, Suite 220
St. Louis, MO 63141-6372
(314) 205-0944
www.realchristmastrees.org/about.html

Maple Syrup

Folks who have tasted real maple syrup on their pancakes know what a delectable treat it is. Most people think of Vermont when they think of maple syrup. Many people don't realize that maple syrup is also produced here in Indiana.

Indiana has a significant sugar maple tree resource. Sugar maple is valued for its wood in furniture, trim, flooring, and cabinet manufacturing. Tapping maple trees for syrup production reduces their timber value. Some landowners, however, are adding value to their forest resource and generating annual income by producing and marketing maple syrup and sugar products.

Maple Syrup Production Information:

North American Maple Syrup Producers Manual, M.R. Koelling and R.B. Heiligmann (editors), Ohio State Extension Bulletin 856.

Order from:

Ohio State University Extension

Media Distribution
385 Kottman Hall
2021 Coffey Road
Columbus, OH 43210-1044
(614) 292-1607

pubs@postoffice.ag.ohio-state.edu

Online Version:

<http://ohioline.osu.edu/b856/>

Indiana Maple Syrup Association

7773 S. 100 E.
Lynn, IN 47355
(765) 874-2170

Tapping the sweet sap of the sugar maple and its close cousin, the black maple, evolved from Native Americans inserting a hollowed elderberry branch into a tap hole in the trunk of a tree. Today, large producers connect trees directly to the sugarhouse with plastic tubing and vacuum pumps. Once in the sugarhouse, much of the water in the sap is evaporated to make a thick, sweet syrup. Forty or more gallons of tree sap are needed to produce one gallon of syrup. A gallon of syrup retails for around \$30 in Indiana. More than 90% of maple syrup produced in Indiana is sold retail.

The North American Maple Syrup Producers Manual (Ohio State University Cooperative Extension Service Bulletin 856) is a valuable guide to all aspects of maple syrup production; from how to manage and care for the trees to marketing the final product.



Some maple syrup producers still collect sap "the old fashion" way, with buckets. Many large producers directly connect trees to sugar house with plastic tubing and pumps.

Value-added Wood

Many Indiana communities are richly endowed with forests. Most have not yet realized the value-added opportunities of their forest resources, nor have they figured out how to keep those forest resource dollars in the community.

Landowners sell standing trees to timber buyers. Buyers of timber may come from outside the community,



Courtesy Woodmizer Products, Inc.

"Personal scale" band mills allow do-it-yourselfers to custom cut wood to fill niche markets not directly serviced by larger sawmills. Small band mill operators have the opportunity to convert logging residue into value-added wood products.





Ron Rault/for



Robert Mayer

Weekend loggers have a wide array of small scale logging equipment to choose from.

sometimes from outside the state, or even from another country. Timber is part of the global economy. Buyers of standing timber most often sell logs to sawmills and veneer mills located in another county or even state, and make a profit. The mills make lumber and veneer and sell it for a profit to furniture and cabinet manufacturers, again usually outside the county from where the wood originated. This is not to suggest that you should sell your timber only to timber buyers and mills within your own community. Competition and global markets handsomely reward astute forest landowners with good timber prices.

The advent of the “personal scale” sawmill allows the do-it-yourselfer to custom manufacture lumber for local furniture and cabinet manufacturers and other niche markets. Small dry kilns can be constructed or purchased to add further value to the product. Local farmers, craftsmen, and other wood users also find a local, affordable source of lumber. Custom sawing lumber adds value to the wood and keeps some of those timber dollars circulating within your community instead of waving good-bye to them as they cross the county line on the bed of a log truck.

Even logging has become more personalized. Farm tractors can now be readily converted into small-scale log skidders for the home, weekend logger. You can pur-

chase durable small-scale logging winches that attach to a farm tractor’s three-point hitch and operate off of the power take off (PTO). Small forwarders scaled and fitted for use with farm tractors include a log trailer and a boom grapple loader. The advantages of doing your own logging using this small-scale equipment include:

- low capital investment and operating costs;
- potential to earn higher net revenue from log sales than from selling standing trees, assuming you know how to market the logs;
- greater maneuverability in dense stands than standard logging equipment, therefore, causing less damage to remaining trees;
- less soil compaction and disturbance;
- ability to efficiently log small amounts of timber where professional logging crews cannot economically justify it;
- ability to salvage dead and dying timber that would otherwise rot;
- ability to accomplish forest management and wildlife habitat improvement and have it pay for itself through the sale of otherwise unmarketable timber;
- ability to provide wood for personal use;
- personal satisfaction and therapeutic value of doing your own work.

Logging Training Information:

IDNR, Division of Forestry

402 W. Washington St., Rm. W296
 Indianapolis, IN 46204
 (317) 232-4105

www.state.in.us/dnr/forestry/

Indiana Forest Industry Council

3600 Woodview Trace, Suite 305
 Indianapolis, IN 46268
 (800) 640-4452

www.fnr.purdue.edu/inwood/ific.htm

Doing your own logging is physically hard work. Logging is also the most dangerous occupation in the United States with an accident rate 2.5 times greater than the average for all other industries (Shaffer 1998). You should NOT attempt to do your own logging unless you have been properly trained and understand the risks involved. You should also have all prescribed safety equipment and be committed to using it. Training programs are available through the Indiana Forest Industry Council and Indiana DNR, Division of Forestry.

Doing your own logging also means making extremely important decisions about what trees to cut. Such decisions affect the long-term health of the forest for better or worse. Work with a forester to be sure your logging practices sustain your forest's health and productivity. Part 3 of the *Sustainable Forestry Series*, entitled *Keeping Your Forest Healthy and Productive* (FNR 182), outlines practices that promote forest health and also some practices that harm it. Part 5 of the series, entitled *Forests and Water* (FNR 184), refers to best management practices (BMPs) for logging to prevent soil erosion and water pollution. Part 6, *Maintaining the Aesthetic Beauty and Enhancing the Recreational and Cultural Values of Your Forest* (FNR 185), contains a list of tips for improving the appearance of your logging job.

While cutting and selling timber from your own property does not require state approval, purchasing standing and cut timber from someone else does require a Timber Buyers License. Contact Indiana DNR, Division of Forestry for more information. *Farm Tractor Logging for Woodlot Owners*, a Virginia Cooperative Extension publication, provides more information on doing your own logging and includes a partial equipment manufacturer and dealer list.

Do Your Homework!

Before purchasing specialized equipment or diving headlong into one of these enterprises, do your homework. Carefully analyze the market and your personal and family situation. Starting a new enterprise requires a substantial commitment of your time and often capital. Start small and avoid investing more money into the enterprise than you are willing to lose. Of course, for some folks, it's recreational — making money isn't as important. Many successful businesses start as hobbies, but most hobbies never develop into successful businesses.

The list of additional information sources at the end of this chapter includes publications on starting a small business. The U.S. Small Business Administration has a wealth of information on starting a small business. They have offices in Indiana and maintain a useful Web site at www.sba.gov. Contact your County Cooperative Extension office for more information on starting an alternative forest products enterprise.

Additional Information

- Beyfuss, R.L. 1998. *The Practical Guide to Growing Ginseng*. Cornell Cooperative Extension of Greene County, Cairo, NY. 65 p.
- Beyfuss, R.L. 1999. *American Ginseng Production in Woodlands*. USDA National Agroforestry Center, Agroforestry Notes, Forest Farming-3. 4 p.
- Beyfuss, R.L. 1999. *Economics and Marketing of Ginseng*. USDA National Agroforestry Center, Agroforestry Notes, Forest Farming-4. 4 p.
- Bordelon, B. 1995. *Growing Pawpaws*. Purdue University Cooperative Extension Service. HO-220. 4 p.
- Eliason, C., L. Pinson, and J. Kinnett. 1991. *The Business Plan for the Home-based Business*. U.S. Small Business Administration, MP-15. 39 p.
- Hill, D.B. 1999. *Shiitake Production on Logs: Step-by-Step in Pictures*. University of Kentucky Cooperative Extension Service. FOR-77. 13 p.
- Jones, S.C., R.N. Peterson, T.A. Turner, K.W. Pomper, and D.R. Layne. 1999. *Pawpaw Planting Guide, Cultivars and Nursery Sources*. Kentucky State University Cooperative Extension Program. 8 p.
- Kays, J.S., G.R. Goff, P.J. Smallidge, W.N. Grafton, and J.A. Parkhurst (eds.). 1998. *Natural Resource Income Opportunities for Private Lands*. Conference Proceedings, Maryland Cooperative Extension. 288 p.
- Koelling, M.R. and R.B. Heiligmann (eds.). 1996. *North American Maple Syrup Producers Manual*. The Ohio State University Extension, Bulletin 856. 178 p.
- Kozak, M.E., and J. Krawczyk. 1993. *Growing Shiitake Mushrooms in a Continental Climate*. Field & Forest Products, Inc. 112 p.
- National Research Council. 1998. *Forested Landscapes in Perspective: Prospects and Opportunities for Sustainable Management of America's Nonfederal Forests*. National Academy Press, Washington D.C. 272 p.
- Schuck, N.G., W. Knoblauch, J. Green, and M. Saylor. 1991. *Farming Alternatives: A Guide to Evaluating the Feasibility of New Farm-based Enterprises*. Northeast Agricultural Engineering Service, Ithaca, NY, NRAES-32. 88 p.
- Seifert, J.R. 1991. *Growing Christmas Trees*. Purdue University Cooperative Extension, FNR-118. 8 p.
- Shaffer, R. 1998. *Farm Tractor Logging for Woodlot Owners*. Virginia Cooperative Extension, Pub. No. 420-090. 8 p.
- Thomas, M.G. and D.R. Schumann. 1993. *Income Opportunities in Special Forest Products: Self-Help Suggestions for Rural Entrepreneurs*. USDA Forest Service Agricultural Information Bulletin 666. 206 p.
- U.S. Small Business Administration. 2000. *Small Business Resource Guide*. On U.S. Small Business Administration Web site at www.sba.gov.
- Wissing, D. 1999. *Southern Indiana Ecotourism Development and Marketing Plan*. Art Resource Consultants, Bloomington, IN. 96 p.

A Landowner's Guide to Sustainable Forestry in Indiana

Part 1. Sustainable Forestry - What Does It Mean for Indiana?—FNR-180

- Sustainable Forestry Described
- Historical Perspective
- Indiana's Forests Today
- How This Series Is Organized

Part 2. Planning for the Future—FNR-181

- The First Step - Who Can Help You?
- Your Objectives
- Gathering Information
- Planning Your Management Activities
- Using Legal Contracts

Part 3. Keeping Your Forest Healthy and Productive—FNR-182

- Maintaining and Enhancing Site Productivity
- Improving Tree Growth and Protecting Timber Quality
- Regenerating the Forest

Part 4. Conserving Nature—FNR-183

- Provide Wildlife Habitat
- Unusual Habitats
- Endangered Species
- Invaders! Harmful Exotic Species
- Forest Fire - Friend or Foe?
- Fragments of Forests

Part 5. Forests and Water—FNR-184

- Livestock
- Reforestation Benefits Water Resources
- Avoid Clearing Forest
- Forest Roads and Trails
- Best Management Practices (BMPs) for Timber Harvesting
- Pesticides
- Protecting Sensitive Water Resources

Part 6. Maintaining the Beauty and Enhancing the Recreational and Cultural Values of Your Forest—FNR-185

- Maintain Visual Buffers Next to Public Places
- Maintain Important Scenic Views
- Tips for a Better-Looking Logging Job
- Develop the Recreation Potential of Your Forest
- Protect and Enhance Cultural and Historic Values

Part 7. Managing for a Diversity of Value-Added Forest Products—FNR-186

- Forest Herbs
- Mushrooms
- Develop the Recreation Potential of Your Forest
- Christmas Trees and Greenery
- Maple Syrup
- Value-added Wood
- Do Your Homework!

Part 8. Help!—FNR-187

- Cost Share Grants
- Classified Forest and Wildlife Habitat Programs
- Leaving a *Forest Legacy* - Permanent Forest Protection Through Conservation Easements
- Tax Incentives and Estate Planning
- Forest Bank
- Forest Cooperatives
- Carbon Sequestration
- Forest Certification
- Education and Technical Assistance