

УДК 911:2

NON-TIMBER FOREST PRODUCTS AND LIVELIHOODS IN MICHIGAN'S UPPER PENINSULA

M. Emery

*USDA Forest Service, Northeastern Research Station,
Burlington, VT, U.S.A.*

Non-timber forest products (NTFPs) are increasingly looked to as potential income sources for forest communities. Yet little is known about the existing livelihood uses of NTFPs. Drawing on a case study in Michigan's Upper Peninsula, this paper describes the contemporary contributions of NTFPs to the livelihoods of people who gather them. First-hand use of products from over 100 botanical species was documented during a year of ethnographic research. They contributed to gatherers' livelihoods through both nonmarket and market strategies. The paper suggests the need for a broad view of economic activity to fully understand existing NTFP livelihood uses and anticipate the affects of developing markets for wild plant material on individuals and households in forest communities.

Key words: non-timber forest products, livelihoods of people, nonmarket and market strategies, economic activity.

Introduction. As a small number of North American non-timber forest products (NTFPs) enter the international market, there is mounting interest in their potential as livelihood resources for forest communities. While NTFPs seem like a 'new' opportunity to many, they are, in fact, one of the first sources of the food, medicine, fiber, and other substances that have sustained human beings throughout the millennia. Even in the industrial and post-industrial worlds, they continue to provide important material and cultural resources for many. Yet little is known about their contributions to the livelihoods of people who currently rely on them. This lack of understanding on the part of policy makers and rural economic development entities creates a danger that well-meaning efforts to promote NTFPs could displace existing livelihood strategies even as they try to improve the economic well-being of forest communities.

In response to that concern, this paper examines the role of NTFPs in household livelihoods in Michigan's Upper Peninsula. Taking a broad view of economic activity, the case study demonstrates that the livelihood values of NTFPs go well beyond the numbers captured by market statistics. I begin with a brief description of the case study location and methods. A list of products gathered in the Upper Peninsula is followed by a discussion of their functional uses. Next, a brief theoretical interlude on a broad view of economic activity introduces information on the economic context of the region and the household livelihoods of individuals who participated in the study. This theoretical background and grounded information leads to a discussion of the specific livelihood uses of NTFPs in the case study and generalized characteristics of their livelihood uses. The paper concludes

with three questions, which I hope will provide food for thought as we contemplate active promotion of NTFPs as livelihood strategies for forest communities in the Third Millennium.

Case study location and methods. The Upper Peninsula (UP) is located in the north central United States. Bordered on three sides by Great Lakes – Superior, Huron, and Michigan – it is part of the U.S. state of Michigan, although its only land link is with the state of Wisconsin. Archaeological evidence suggests seasonal human occupation of the region since the Woodland era, circa 3000 to 300 years B.P. (Cleland 1992). Permanent year-round settlement appears to be relatively recent, dating to sometime around the early 1600s (Cleland 1983). The present-day population includes people of European and aboriginal ancestry. Average human population density in 1990 was less than 18 persons per square mile (U.S. Census Bureau 1990). Forest cover in 1993 was 8,812,500 acres (83.9 percent of the total land base) of mixed hardwood and coniferous species in largely second and third growth stands. Located between 47° and 45° North latitude, average annual growth is comparatively slow at 150, 2 million cubic feet during the period 1980 through 1992 (Schmidt, Spencer, and Bertsch 1997).

Between August 1995 and July 1996, I conducted over 400 hours of semi-structured interviews with gatherers, buyers, and public and private land managers in the UP to learn what NTFPs were harvested there and the role they play in gatherers' household livelihoods. The results reported here are based on information provided by 43 individuals about their personal gathering activities and experiences. Gatherers were identified through a networking, or snowball sampling, technique. Of these, 10 identified themselves as Native American and 33 as European American. Questions asked during the interviews focused on what the individual gathers, how each NTFP is used, ecological characteristics associated with products, harvesting techniques and norms, and how the gatherer learned these skills.

Upper peninsula non-timber forest products and their uses. By the end of the field year, I had compiled a list of 138 NTFPs that gatherers reported personally harvesting in the region's forests and associated open lands (Table 1). This plant material and fungi come from over 54 botanical families and 87 genera, including more than 100 species. Gatherers use them as edibles and medicinals, for ceremonial and cultural purposes, and to make crafts and other decorative items. Many species are used in multiple ways. Edibles, such as berries and mushrooms, are the largest group of functional uses (102 occurrences). The floral/nursery/craft items such as birch bark and boughs, accounts for the second most common functional use with 85 occurrences. With a total of 51 occurrences, medicinals like flag root (*Iris versicolor*) and balm of gilead (*Populus balsamifera*) were the third most frequently occurring functional use. With 18 occurrences, ceremonial/cultural uses were mentioned least frequently (Emery 1998).

A broad view of economic activity. Economic history and anthropology suggest a view that looks beyond the formal market and individual actors to a more inclusive definition of economic activity (Gudeman 1986; Halperin 1988; Hart 1986; McGuire, Smith, and Martin 1986; Smith and Wallerstein 1992). From this perspective, the economy is constituted by any undertaking that provides the material means for human existence (Polanyi 1977). People endeavor to assure their survival and meet their needs, as they perceive and define them, by pursuing a variety of what are termed livelihood strategies. These include both activities in the formal and informal markets – such as wage labor, barter, and petty commodity production and sale – and nonmarket approaches – subsistence activities and gifts, for example (Table 2). As social creatures, human beings generally reside in groups and put together a living by pooling the resources of the household. At any given time, most households will derive livelihood resources from multiple individuals and

Table 1

Upper Peninsula NTFPs

Latin Name*	Common Name	Latin Name	Common Name
1	2	3	4
<i>Abies balsamea</i>	balsam, boughs	<i>Laportea canadensis</i>	stinging nettles
<i>Abies balsamea</i>	balsam, cones	<i>Ledum groenlandicum</i>	labrador tea
<i>Abies balsamea</i>	balsam, needles	<i>Lycoperdon spp.</i>	puffball mushrooms
<i>Abies balsamea</i>	balsam, pitch	<i>Lycopodium obscurum complex</i>	princess pine
<i>Acer saccharum</i>	maple, sap	<i>Matteuccia struthiopteris & spp.</i>	fiddleheads
<i>Acer spp.</i>	maple, twigs	<i>Mitchella repens</i>	partridge berry (?)
<i>Achillea millefolium</i>	yarrow	<i>Morchella spp.</i>	morel mushrooms
<i>Acorus calamus</i>	wiikenh/bitterroot/flag root	<i>Nuphar variegata & advena</i>	yellow waterlily (?)
<i>Agaricus bisporus</i>	button mushrooms	<i>Picea spp.</i>	spruce, boughs
<i>Allium tricoccum</i>	wild leek	<i>Picea spp.</i>	spruce, cones
<i>Amaranthus spp.</i>	pigweed	<i>Picea spp.</i>	spruce, gum
<i>Amelanchier spp.</i>	juneberries	<i>Picea spp.</i>	spruce, needles
<i>Amelanchier spp.</i>	sugar plum, twigs (juneberry)	<i>Picea spp.</i>	spruce, roots
<i>Anaphalis margaritacea</i>	pearly everlasting	<i>Picea spp.</i>	spruce, tips
<i>Anemone cylindrica</i>	thimbleweed (?)	PINACEAE	pine cones
<i>Anthemis spp.</i>	chamomile	<i>Pinus banksiana</i>	jack pine, cones
<i>Arctium spp.</i>	burdock, leaf	<i>Pinus resinosa</i>	red pine, boughs
<i>Arctium spp.</i>	burdock, root	<i>Pinus resinosa</i>	red pine, cones
<i>Arctostaphylos uva-ursi</i>	bearberry	<i>Pinus strobus</i>	white pine, boughs
<i>Armillaria mellea</i>	honey mushrooms	<i>Pinus strobus</i>	white pine, cones
<i>Artemisia spp.</i>	sage (woodland)	<i>Pinus strobus</i>	white pine, needles
<i>Asclepias syriaca</i>	milkweed	<i>Pleurotus spp.</i>	oyster mushrooms
<i>Betula papyrifera</i>	birch, bark	POACEAE	grasses, various
<i>Betula papyrifera</i>	birch, root	<i>Polygonatum pubescens</i>	solomon seal
<i>Betula papyrifera</i>	birch, sections	<i>Populus balsamifera</i>	balm of gilead
<i>Betula papyrifera</i>	birch, twigs	<i>Prunus americana & spp.</i>	plums, feral & wild
<i>Boletus spp.</i>	bolete mushrooms (various)	<i>Prunus pensylvanica</i>	pin cherry, fruit
<i>Caltha palustris</i>	cowslip	<i>Prunus pensylvanica</i>	pin cherry, twigs
<i>Cantharellus spp.</i>	chanterelle mushrooms	<i>Prunus spp.</i>	cherry bark
<i>Carpinus caroliniana</i>	ironwood, twigs	<i>Prunus virginiana</i>	cherries, choke
<i>Cladonia & Cladina spp.</i>	reindeer moss	PTERIDOPHYTA	ferns, various
<i>Comptonia peregrina</i>	sweet fern	<i>Pyrus malus</i>	apples, feral & wild
<i>Coprinus comatus</i>	shaggy mane mushrooms	<i>Pyrus spp.</i>	crabapples
<i>Coptis trifolia</i>	gold thread	<i>Quercus spp.</i>	Acorns

The end of Table 1

1	2	3	4
<i>Cornus spp.</i>	dogwood twigs	<i>Ribes spp.</i>	currants
<i>Corylus cornuta</i>	hazelnut	<i>Rorippa nasturtium-aquaticum</i>	watercress
<i>Dentinum repandum</i>	sweet tooth mushrooms	<i>Rosa spp.</i>	rose petals
<i>Dipsacus spp.</i>	teasel	<i>Rosa spp.</i>	wild rose hips
<i>Epigaea repens</i>	trailing arbutus	<i>Rozites caperata</i>	gypsy mushrooms
<i>Erythronium americanum</i>	trout lily root	<i>Rubus idaeus</i>	raspberry, fruit
<i>Eupatorium maculatum</i>	joe pye weed	<i>Rubus idaeus</i>	raspberry leaves
<i>Fagus grandifolia</i>	beechnuts	<i>Rubus parviflorus</i>	thimbleberries
<i>Fistulina hepatica</i>	beefsteak mushrooms	<i>Rubus strigosus</i>	Blackberry
<i>Fragaria virginiana</i>	strawberry, fruit	<i>Rudbeckia hirta</i>	black-eyed susan
<i>Fragaria virginiana</i>	strawberry leaves	<i>Rumex acetosella</i>	sheep sorrel
<i>Fraxinus nigra</i>	ash	<i>Salix spp.</i>	willow, twigs
<i>Ganoderma applanatum</i>	artist conk	<i>Suillus luteus</i>	slippery jack mushrooms
<i>Gaultheria procumbens</i>	wintergreen, berry	<i>Syringa vulgaris</i>	lilac blossoms
<i>Gaultheria procumbens</i>	wintergreen, leaf	<i>Tanacetum vulgare</i>	tansy
<i>Gaylussacia spp.</i>	huckleberries	<i>Taraxacum spp.</i>	dandelion greens
<i>Hericium coraloides, ramosum</i>	hedge hog mushrooms	THALLOPHYTA	lichens
<i>Hierochloe odorata</i>	sweet grass	<i>Thuja occidentalis</i>	cedar, boughs
<i>Inonotus obliquus</i>	sketaugen	<i>Thuja occidentalis</i>	cedar, cones
<i>Iris versicolor</i>	flag root	<i>Thuja occidentalis</i>	cedar, foliage
<i>Laetiporus sulphureus</i>	sulphur shelf mushrooms	<i>Thuja occidentalis</i>	cedar, switches & tips
LAMIACEAE	mint	<i>Ribes spp.</i>	gooseberry
<i>Cornus sericea</i>	red willow bark	<i>Rhus typhina & glabra</i>	sumac berries
<i>Cornus sericea</i>	red willow, sticks		

strategies. The mix of livelihood strategies pursued by a household varies with its demographic composition and economic conditions. This mix of strategies at any one time and over the course of time may be thought of as 'livelihood diversity.'

The informal economy literature documents the reality of livelihood diversity in urban settings throughout the world (Mingione 1994; Portes, Castells, and Benton 1989; Roberts 1994; Smith 1994). A smaller body of work has begun to explore the diverse strategies that rural households in the United States use to secure their survival and the role of location in natural resource-rich areas in those efforts (Dick 1996; Glass, Muth, 1990,

Jensen, Cornwell, and Findeis 1995; More, Glass, and Zwick 1993; Tickamyer and Duncan 1990). Read together, these literatures point to four important characteristics of diverse livelihoods: 1) the often critical role of subsistence goods; 2) the importance of even small amounts of cash income for low-income households; 3) the primacy of culture and social relationships in much economic activity; and 4) the critical advantage of flexibility for surviving economic change. For many households in the Upper Peninsula, NTFPs are an important part of livelihood diversity strategies.

Table 2

Livelihood strategies

<ul style="list-style-type: none"> • Market strategies <ul style="list-style-type: none"> - Wage labor - Rent (of land, houses, goods, etc.) - Petty commodity production • Nonmarket strategies <ul style="list-style-type: none"> - Subsistence (personal consumption) - Gifts - Government transfer
--

Regional economy and household livelihoods. Beginning in the second half of the 19th century, the Upper Peninsula was a source of natural resources that helped fuel the territorial expansion and economic development of the United States. Timber from the region and other parts of the forested upper Midwest was fundamental to settlement of the largely treeless prairies to the west (Cronon 1991). U.P. iron mines provided material for transcontinental railroads and copper mines were considered vital to national security during World War II because they furnished one of the primary materials for defense communications systems. However, by the late 20th century the regional economy based on these resources had contracted drastically. Few mines remained open and employment in the timber industry was a shadow of its former numbers. Populations, which had swelled in the late 1800s and early 1900s, shrank (Catton 1976).

By the last quarter of the 20th century, unemployment rates in the region fluctuated considerably more than national and state levels (fig. 1) and were at times nearly double that of the nation as a whole (13.4 percent and 7.0 percent, respectively in 1986: fig. 2). Median household incomes were 67 percent lower than the national figure, while the percentage of households with no earnings or living on fixed Social Security incomes (i.e., government pensions) was at least 50 percent higher. Strikingly, the percentage of households accepting public assistance such as welfare and Aid to Families with Dependent Children was virtually identical to that in the rest of the state and country (Table 3).

Upper Peninsula gatherers make a living within this regional economic context. Gatherers are both women and men, Native Americans and European Americans. They are people of all ages, most often with long-standing linkages to the places they live and gather. In the face of low wages and a chronically erratic formal employment market, they put together livings through a variety of strategies. Table 4 details the cash income sources of gatherers and their households for the year in which they were interviewed. Fewer than 25 percent of gatherers had full-time formal employment and even less (22 percent) had formal

part-time employment. 23 percent were living on Social Security payments (i.e., government pensions). Fully 80 percent were engaged in some form of self- or informal employment. The prevalence of episodic, part-time, and fixed sources means that they must simultaneously and sequentially pursue a number of strategies in order to meet their needs. For gatherer households, NTFPs are one of these livelihood strategies.

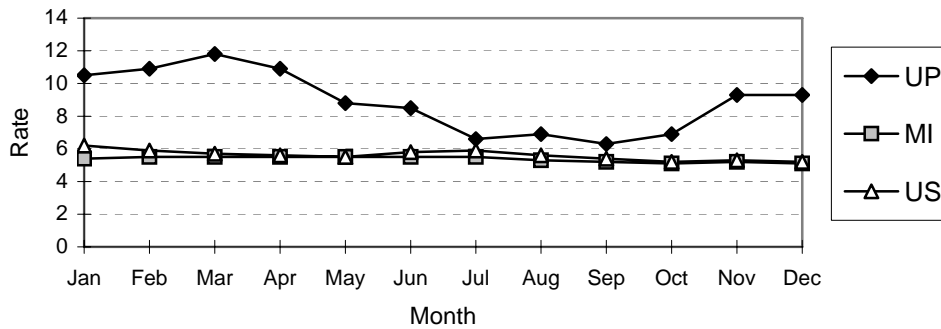


Figure 1. 1995 UP Unemployment Fluctuations – Upper Peninsula (UP), Michigan (MI), and U.S. Rates

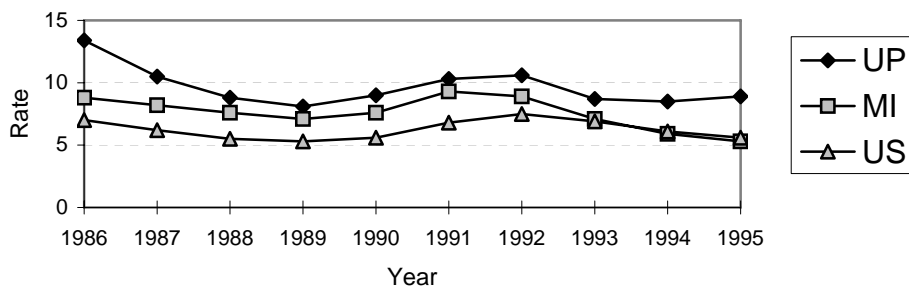


Figure 2. 1986 – 1995 Average Annual Unemployment – Upper Peninsula (UP), Michigan (MI), and U.S. Rates

Table 3

	1989 income and government transfer payments			
	Percent of Households			
	Median Income	No Earnings	Social Security	Public Assistance
Upper Peninsula	\$20,194	31	39	9
Michigan	\$31,020	21	27	10
United States	\$30,056	20	26	8

Source: U.S. Census Bureau

Table 4

Upper Peninsula gatherers' household cash-income strategies

	Full-time year-round employment	Full-time seasonal employment	Part-time employment	Self or informal employment	Other work	Social Security ²	Other transfer payments
Gatherers ¹	9	3	8	30	2	10	4
Household	7	2	3	23	0	3	4
Total	16	5	11	53	2	13	8

¹Figures reflect data collected from 42 individuals, 31 of whom lived in households that included one or more additional persons.

²Government pensions.

Livelihood uses of upper peninsula NTFPS. NTFPs contribute to gatherers' livelihoods through both nonmarket and market strategies. Nonmarket strategies include subsistence (that is, personal consumption), barter, and gift giving. Market uses may be either sale of the plant matter in a raw form, with little or no modification, or sale in a processed form, most frequently as crafts or foodstuffs. The gatherers interviewed for this research make extensive nonmarket use of the wild plant matter they harvest. Nearly two thirds (64 percent) of the livelihood uses mentioned took place entirely outside the market. Edibles were being consumed directly as valued and important parts of gatherers' diets. Medicinals were used by some to treat themselves and family members. Ceremonials were important in preserving culture and traditional practices. Florals and craft materials added beauty to people's lives and were often given as gifts.

A bit more than a third of the livelihood uses of NTFPs (36 percent) were market based.¹ Earnings from market uses were rarely equivalent to income from a minimum wage job, when all time and expenses were factored in. However, their contributions to individual and household livelihoods were often very important. In general, people gathered to meet specific needs. Among the frequently mentioned ends were property taxes, holiday celebrations, and basic living expenses. Once these targets were met and needs fulfilled, gatherers generally stopped harvesting and selling plant material for sale.

Results from the U.P. case study reveal aspects of the role of NTFPs in gatherers' livelihoods that correspond closely to the four characteristics of diverse livelihoods discussed in the economic activity section above. 1) Subsistence uses are widespread and often critical, accounting for the greatest number of species uses (although probably not the greatest volume of plant material). 2) Even small cash earnings from the sale of NTFPs can be critical to meeting household needs. 3) Gifts made from NTFPs or purchased with income from their sale help maintain the social relationships that are critical to both physical and emotional well being. In addition, gathered plant materials and/or the observance of special harvesting practices are often central to important cultural practices.

¹This figure reflects the number of times gatherers mentioned a livelihood use for a plant species rather than the amount of plant matter being used. While the research described here did not attempt to quantify volumes of NTFPs harvested, it is likely that the greatest amount of biomass is used for sale in a raw form.

4) One of the key values of gathering as a livelihood strategy is the roughly equal ease with which a knowledgeable person can turn to it in times of need or not engage in it when other pursuits occupy working hours and provide adequate resources.

Food for thought. In light of the characteristics described above, it may be worth our while to pause in the headlong rush to promote NTFPs as commodities and consider how this may affect existing NTFP livelihood practices. Many more species currently contribute in small but important ways to households than are traded in formal commodity markets. If we are to avoid the unintentional elimination of such existing livelihood values, we must adopt a broader view of economic activity. The wellbeing of forest communities is not captured adequately by industry sales figures and county or provincial tax receipts. To be certain, these are important statistics. But they tell us little to nothing about the distribution of those economic benefits. Nor do they represent the nonmarket and informal economy contributions that are so important at the individual and household level.

As this case study demonstrates, NTFPs have longed provided important livelihood resources to forest communities and continue to do so. In the interest of enhancing those opportunities rather than limiting them, we will do well to consider three interrelated questions:

- What kinds of new social and economic interests would be introduced by the creation of additional markets for NTFPs?
- What kinds of policies would likely be introduced in response to these new interests?
- How would they interact with existing NTFPs livelihood uses and values?

Acknowledgements. Gatherers provided common names for the products they harvest and, in most cases, plant specimens were not available. I am indebted to Beth Lynch, former botanist with the Great Lakes Indian Fish and Wildlife Commission, Dana Richter, Research Scientist at Michigan Technological University's School of Forestry and Wood Products, and Jan Schultz, Forest Plant Ecologist with the Hiawatha National Forest, for their assistance in identifying the Latin names and species of Upper Peninsula NTFPs. I am also deeply grateful to the Hiawatha National Forest and the USDA Forest Service's Northern Global Change Program for their support of the research on which this paper is based.

-
1. *Catton B.* Michigan: A Bicentennial History. New York: W.W. Norton & Company, 1976.
 2. *Cleland Ch.* Indians in a Changing Environment. In *The Great Lakes Forest: An Environmental and Social History*, edited by S. L. Flader. Minneapolis: University of Minnesota Press, 1983.
 3. *Cleland Ch.* Rites of Conquest: The History of Michigan's Native Americans. Ann Arbor: University of Michigan Press, 1992.
 4. *Cronon W.* Nature's Metropolis: Chicago and the Great West. New York: W.W. Norton & Company, 1991.
 5. *Dick R.* Subsistence Economies: Freedom from the Marketplace. *Society & Natural Resources* 9 (1), 1996.
 6. *Emery M.* Invisible Livelihoods: Non-Timber Forest Products in Michigan's Upper Peninsula. Ann Arbor, MI: UMI Dissertation Services, 1998.

7. *Glass R., Robert M., Flewelling R.* Subsistence as a Component of the Mixed Economic Base in a Modernizing Community. Radnor, PA: USDA Forest Service, Northeastern Forest Experiment Station, 1990.
8. *Gudeman S.* Economics as Culture: Models and Metaphors of Livelihood. London: Routledge & Kegan Paul, 1986.
9. *Halperin R.* Economies Across Cultures: Towards a Comparative Science of the Economy. New York: St. Martin's Press, 1998.
10. *Hart G.* Sources and Patterns of Livelihood. In *Power, Labor, and Livelihood: Processes of Change in Rural Java*. Berkeley: University of California Press, 1986.
11. *Jensen L., Gretchen T., Findeis J.* Informal Work in Nonmetropolitan Pennsylvania. *Rural Sociology* 60 (1), 1995.
12. *McGuire R., Smith J., Martin W.* Patterns of Household Structures and the World-Economy. *Review* X (1), 1986.
13. *Mingione E.* Life Strategies and Social Economies in the Postfordist Age. *International Journal of Urban and Regional Research* 18 (1), 1994.
14. *More Th., Glass R., Zwick R.* Fish and Wildlife Resources Allocated Through the Invisible Economy of Rural New England. Paper read at International Union of Game Biologists, XXI Congress, "Forests and Wildlife...Toward the 21st Century", August 15-20, 1993, at Halifax, Nova Scotia, Canada, 1993.
15. *Polanyi K.* The Livelihood of Man. Edited by H. W. Pearson, *Studies in Social Discontinuity*. New York: Academic Press, 1977.
16. *Portes A., Castells M., Benton L.* The Informal Economy: Studies in Advanced and Less Developed Countries. Baltimore: The Johns Hopkins University Press, 1989.
17. *Roberts B.* Informal Economy and Family Strategies. *International Journal of Urban & Regional Planning* 18 (1), 1994.
18. *Schmidt Th., Spencer J., Bertsch R.* Michigan's Forests 1993: An Analysis. Vol. Resource Bulletin NC-179. St. Paul: North Central Forest Experiment Station, 1997.
19. *Smith G.* Towards an Ethnography of Idiosyncratic Forms of Livelihood. *International Journal of Urban & Regional Planning* 18 (1), 1994.
20. *Smith J., Wallerstein Im.* Creating and Transforming Households: The Constraints of the World-Economy. Paris: Cambridge University Press, 1992.
21. *Tickamyer A., Duncan C.* Poverty and Opportunity Structure in Rural America. *Annual Review of Sociology* 16, 1990.
22. U.S. Census Bureau. 1990 Census of Population. In 1990 Census Lookup, edited by d. e. system: generated by Marla Emery 9/18/97, 1990.

НЕДЕРЕВНІ ЛІСОВІ ПРОДУКТИ ТА ЗАСОБИ ІСНУВАННЯ У ВЕРХНІЙ ЧАСТИНІ ПІВОСТРОВА МІЧИГАНУ

М. Емері

*USDA Лісова служба, Північно-східна дослідна станція,
Барлінгтон, Вермонт, США*

Недеревні лісові продукти (НЛП) дедалі більше розглядають як потенційний дохід лісових общин. Поки що мало відомо про можливості використання НЛП як засобу для існування. На основі досліджених полігонів у верхній частині півострова Мічиган описано сучасні засоби використання НЛП. Протягом одного року етнографічних досліджень задокументовано первинні засоби використання понад 100 ботанічних видів. Наголошено на необхідності розширення економічної діяльності для того, щоб повністю зрозуміти наявні засоби використання НЛП та прискорити вплив торгівлі рослинною продукцією на членів лісових общин.

Ключові слова: недеревні лісові продукти, засоби існування людей, неринкова та ринкова стратегії, економічна діяльність.

Стаття надійшла до редколегії 20.05.2005

Прийнята до друку 21.09.2005