



Non-timber Forest Products and Livelihoods in Michigan's Upper Peninsula

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Abstract.—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. These products 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 effects of developing markets for wild plant material on individuals and households in forest communities.

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 NTFP contributions to the livelihoods of people who currently rely on them. This lack of understanding on the part of policymakers 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

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region since the Woodland era, circa 3,000 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, the average annual growth of UP forests was a comparatively slow 150.2 million cubic feet during the period 1980 through 1992 (Schmidt *et al.* 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 what 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, what ecological characteristics are associated with products, what harvesting techniques and norms are used, 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 140 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 as raw materials for crafts and other decorative items. Many species are used in multiple ways. Edibles, such as berries and mushrooms, were mentioned most frequently by gatherers (102 occurrences), followed by floral/nursery/craft items such as birch bark

and boughs with 85 occurrences; medicinals like flag root (*Iris versicolor*) and balm-of-Gilead (*Populus balsamifera*) with 51 occurrences; and ceremonial/cultural uses with 18 occurrences (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 *et al.* 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 ensure 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, gifts, and government transfers such as Social Security pensions and public assistance (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 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 *et al.* 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 *et al.* 1990, Jensen *et al.* 1995, More *et al.* 1993, Tickamyer and Duncan 1990). Read together, these bodies of work 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



Table 1.—Upper Peninsula NTFPs

Latin name	Common name	Latin name	Common name
<i>Abies balsamea</i>	balsam, boughs	<i>Fraxinus nigra</i>	black ash
<i>Abies balsamea</i>	balsam, cones	<i>Ganoderma applanatum</i>	artist conk
<i>Abies balsamea</i>	balsam, needles	<i>Gaultheria procumbens</i>	wintergreen, berry
<i>Abies balsamea</i>	balsam, pitch	<i>Gaultheria procumbens</i>	wintergreen, leaf
<i>Acer saccharum</i>	maple, sap	<i>Gaylussacia</i> spp.	huckleberries
<i>Acer</i> spp.	maple, twigs	<i>Hericium coraloides</i> &/or <i>ramosum</i>	hedge hog mushroom
<i>Achillea millefolium</i>	yarrow	<i>Hierochloe odorata</i>	sweet grass
<i>Acorus calamus</i>	wiikenh/bitterroot/flag root	<i>Inonotus obliquus</i>	sketaugen
<i>Agaricus bisporus</i>	button mushroom	<i>Iris versicolor</i>	flag root
<i>Allium tricoccum</i>	wild leek	<i>Laetiporus sulphureus</i>	sulphur shelf mushroom
<i>Amaranthus</i> spp.	pigweed	LAMIACEAE	mint
<i>Amelanchier</i> spp.	juneberries	<i>Laportea canadensis</i>	stinging nettles
<i>Amelanchier</i> spp.	juneberry twigs	<i>Ledum groenlandicum</i>	Labrador tea
<i>Anaphalis margaritacea</i>	pearly everlasting	<i>Lycoperdon</i> spp.	puffball mushroom
<i>Anemone cylindrica</i>	thimbleweed	<i>Lycopodium obscurum</i> <i>complex</i>	princess pine
<i>Anthemis</i> spp.	chamomile	<i>Matteuccia</i> <i>struthiopteris</i> & spp.	fiddleheads
<i>Arctium</i> spp.	burdock, leaf	<i>Mitchella repens</i>	partridge berry
<i>Arctium</i> spp.	burdock, root	<i>Morchella</i> spp.	morel mushroom
<i>Arctostaphylos uva-ursi</i>	bearberry	<i>Nuphar variegata</i> & <i>advena</i>	yellow waterlily
<i>Armillaria mellea</i>	honey mushrooms	<i>Picea</i> spp.	spruce, boughs
<i>Artemisia</i> spp.	sage (woodland)	<i>Picea</i> spp.	spruce, cones
<i>Asclepias syriaca</i>	milkweed	<i>Picea</i> spp.	spruce, gum
<i>Betula papyrifera</i>	birch, bark	<i>Picea</i> spp.	spruce, needles
<i>Betula papyrifera</i>	birch, root	<i>Picea</i> spp.	spruce, tips
<i>Betula papyrifera</i>	birch, sections	PINACEAE	pine cones
<i>Betula papyrifera</i>	birch, twigs	<i>Pinus banksiana</i>	jack pine, cones
<i>Boletus</i> spp.	bolete mushroom (various)	<i>Pinus resinosa</i>	red pine, boughs
<i>Caltha palustris</i>	cowslip	<i>Pinus resinosa</i>	red pine, cones
<i>Calvatia gigantea</i>	giant puffball mushroom	<i>Pinus strobus</i>	white pine, boughs
<i>Cantharellus</i> spp.	chanterelle mushroom	<i>Pinus strobus</i>	white pine, cones
<i>Carpinus caroliniana</i>	ironwood, twigs	<i>Pinus strobus</i>	white pine, needles
<i>Cladonia</i> & <i>Cladina</i> spp.	reindeer moss	<i>Pleurotus</i> spp.	oyster mushroom
<i>Comptonia peregrina</i>	sweet fern	POACEAE	grasses, various
<i>Coprinus comatus</i>	shaggy mane mushroom	<i>Polygonatum pubescens</i>	Solomon's seal
<i>Coptis trifolia</i>	gold thread	<i>Populus balsamifera</i>	balm-of-Gilead
<i>Cornus sericea</i>	red willow, bark	<i>Prunus americana</i> & spp.	plums, feral & wild
<i>Cornus sericea</i>	red willow, sticks	<i>Prunus pensylvanica</i>	pin cherries
<i>Cornus</i> spp.	dogwood twigs	<i>Prunus pensylvanica</i>	pin cherry twigs
<i>Corylus cornuta</i>	hazelnuts	<i>Prunus serotina</i>	black cherries
<i>Dentinum repandum</i>	sweet tooth mushroom	<i>Prunus</i> spp.	cherry bark
<i>Dipsacus</i> spp.	teasel	<i>Prunus virginiana</i>	choke cherries
<i>Epigaea repens</i>	trailing arbutus	PTERIDOPHYTA	ferns, various
<i>Erythronium americanum</i>	trout lily root	<i>Pyrus malus</i>	apples, feral & wild
<i>Eupatorium maculatum</i>	Joe-pye weed	<i>Pyrus</i> spp.	crabapples
<i>Fagus grandifolia</i>	beechnuts	<i>Quercus</i> spp.	acorns
<i>Fistulina hepatica</i>	beefsteak mushroom	<i>Rhus typhina</i> & <i>glabra</i>	sumac berries
<i>Fragaria virginiana</i>	strawberries	<i>Ribes</i> spp.	gooseberries
<i>Fragaria virginiana</i>	strawberry leaves	<i>Ribes</i> spp.	currants

(Table 1 continued on next page)

(Table 1 continued)

Latin name	Common name	Latin name	Common name
<i>Rorippa nasturtium-aquaticum</i>	watercress	<i>Trifolium pratense</i>	red clover
<i>Rosa</i> spp.	rose petals	<i>Trifolium repens</i>	white clover
<i>Rosa</i> spp.	wild rose hips	<i>Tsuga canadensis</i>	hemlock, bark
<i>Rozites caperata</i>	gypsy mushroom	<i>Tsuga canadensis</i>	hemlock, boughs
<i>Rubus idaeus</i>	raspberries	<i>Tsuga canadensis</i>	hemlock, cones
<i>Rubus idaeus</i>	raspberry leaves	<i>Typha</i> spp. & hybrids	cattail
<i>Rubus parviflorus</i>	thimbleberries	<i>Typha</i> spp. & hybrids	cattail, corn
<i>Rubus strigosus</i>	blackberries	<i>Typha</i> spp. & hybrids	cattail, down
<i>Rudbeckia hirta</i>	black-eyed Susan	<i>Typha</i> spp. & hybrids	cattail, flour
<i>Rumex acetosella</i>	sheep sorrel	<i>Typha</i> spp. & hybrids	cattail, roots
<i>Salix</i> spp.	willow, twigs	<i>Typha</i> spp. & hybrids	cattail, shoots
<i>Suillus luteus</i>	slippery jack mushroom	<i>Ulmus</i> spp.	elm bark
<i>Syringa vulgaris</i>	lilac blossoms	Unidentified	cinnamon top mushroom
<i>Tanacetum vulgare</i>	tansy	<i>Vaccinium</i> spp.	bilberries
<i>Taraxacum</i> spp.	dandelion greens	<i>Vaccinium</i> spp.	blueberries
THALLOPHYTA	lichens	<i>Vaccinium</i> spp.	bog cranberries
<i>Thuja occidentalis</i>	cedar, boughs	<i>Verbascum thapsus</i>	mullein
<i>Thuja occidentalis</i>	cedar, cones	<i>Viburnum</i> spp.	high bush cranberries
<i>Thuja occidentalis</i>	cedar, foliage	<i>Viola</i> spp.	violets, flowers & leaves
<i>Thuja occidentalis</i>	cedar, switches & tips	<i>Vitis</i> spp.	grapevine
<i>Tilia americana</i>	basswood bark	<i>Zizania</i> spp.	wild rice

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
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surviving economic change. For many households in the Upper Peninsula, NTFPs are an important part of livelihood diversity strategies.

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). UP 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 were fluctuating much 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).

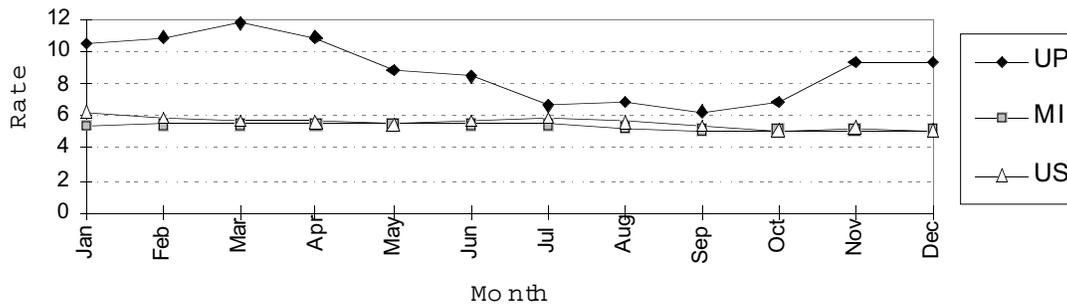


Figure 1.—1995 unemployment—Upper Peninsula (UP), Michigan (MI), and U.S. rates (in percent).

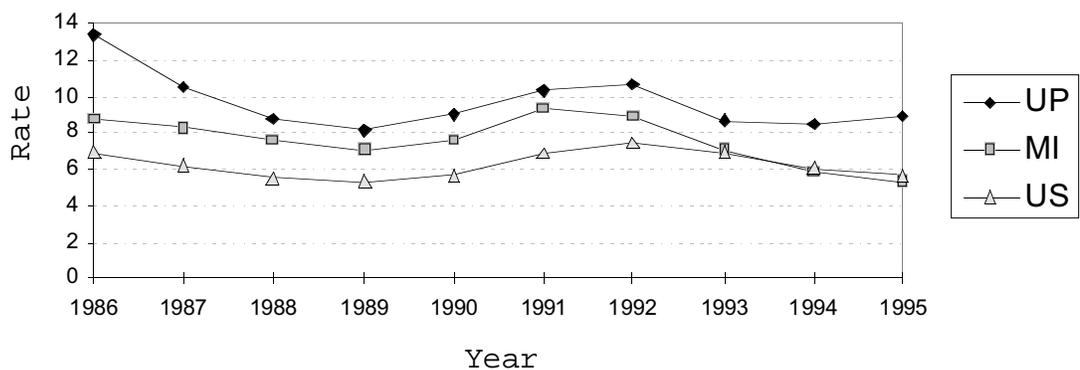


Figure 2.—1986 - 1995 average annual unemployment—Upper Peninsula (UP), Michigan (MI), and U.S. rates (in percent).

Table 3.—1989 income and government transfer payments

	Median income ¹	Percent of households		
		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

¹ In U.S. dollars.

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 longstanding linkages to the places where 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 fewer (22 percent) had formal part-time employment. Twenty-three 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 to meet their needs. For gatherer households, NTFPs are one of these livelihood strategies.

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.

Table 4.—Household cash-income strategies of Upper Peninsula gatherers

	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 (valuable information was collected from 43 people, but data from 1 person could not be used); 31 of the 42 lived in households that included one or more additional persons.

²Government pensions.



A bit more than a third of the livelihood uses of NTFPs (36 percent) were market based.² Earnings from market uses were rarely equivalent to income from a minimum wage job, when all time and expenses were factored in. However, NTFP 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 materials.

Results from the UP 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. 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 well-being 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 long 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 livelihood uses and values of existing NTFPs?

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² *This 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.*

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