

Massachusetts Family Forests

Birth of a Landowner Cooperative

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ABSTRACT

The story is as old as our profession: private lands, low-value species, a stagnant rural economy, development pressure, and loss of forests. A group of foresters and landowners is trying to reverse this cycle by forming a cooperative enterprise. This article summarizes our approach and experiences during the start-up phase. The overarching objective of Massachusetts Family Forests is to sustain or enhance the forest resources, rural character, and economy of our region.

Keywords: community forestry; forestry extension; nonindustrial private forestland; private forest landowners; sustainable forest management

This article summarizes our experiences and observations during the formative stages of a landowner cooperative—Massachusetts Family Forests (MFF)—aimed at enhancing forest management in western Massachusetts. We have learned a great deal from our predecessors (i.e., Vermont Family Forests, Sustainable Woods Cooperative in Wisconsin) and many other people and organizations during the past two years. We hope this account will help other foresters identify opportunities and challenges as they consider the potential for landowner cooperatives in their neck of the woods. Although some degree of risk and frustration comes with any new venture, we believe landowner cooperatives are a promising way to overcome key obstacles to sustainable management of small private forests.

Right: A guiding tenet of Massachusetts Family Forests is stewardship for the next generation. Photo by Todd Fuller.

Centuries of Use and Change

In their seminal forest ecology textbook, Spurr and Barnes (1964) used the Harvard Forest Models to introduce generations of forestry students to the dramatic effects of land-use changes in southern New England. (More detailed and contemporary discussions can be found in Barnes et al. 1998; O’Keefe and Foster 1998; Foster 1999.) The age structure and species composition of the forest reflects more than 300 years of economic, political, and ecological change. Agricultural land use during the 18th and 19th centuries resulted in the conversion of about 60 percent (up to 85 percent in some areas) of Massachusetts’ forests to fields and pastures. Farm abandonment during the 19th and early 20th centuries led to the rapid natural regeneration of forests on most of this land. In 1938, a severe hurricane blew down extensive areas of forest. Exotic insects and diseases (e.g., chestnut blight, Dutch elm disease, gypsy moth, etc.) also produced landscape-scale changes



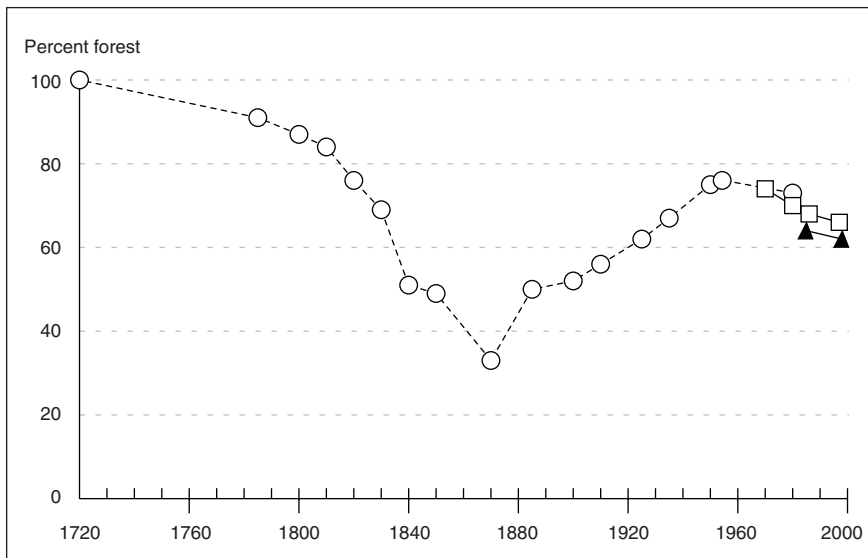


Figure 1. Changes in Massachusetts forest cover, 1720–2000. The differences between recent estimates are a result of different classification systems. Sources: O’Keefe and Foster 1998 (circles); Steele 1999 (squares); Alerich 2000 (triangles).

Table 1. Summary of forest ownership statistics in Massachusetts and the Massachusetts Family Forests project area: Berkshire, Franklin, Hampden, and Hampshire Counties.

Ownership type	Statewide			MFF project area			
	Area (square miles)	Percent of area	Percent of forest	Area (square miles)	Percent of area	Percent of forest	Percent of state
Public forest	1,472	19	30	478	17	23	6
Private forest	3,413	43	70	1,627	59	77	21
Nonforest	2,953	38	—	676	24	—	9
Total	7,838	100	100	2,781	100	100	36

SOURCE: Alerich 2000.

Table 2. Consumption of forest products in Massachusetts (\$ millions).

Commodity	Manufacturing (raw material costs)	Wholesale sales	Retail sales
Lumber	327	1,979	4,743
Furniture	301	1,155	1,857
Paper products	2,288	3,548	—
Total	2,916	6,682	6,600

SOURCE: US Bureau of the Census, 1997 Economic Census: Manufacturing, Wholesale, and Retail Trade Geographic Area Series.

in forest health and species composition. So what began as a mixed species, uneven-aged forest is now dominated by two age classes (with median ages of approximately 120 and 60 years) and a less diverse assemblage of flora and fauna. In this transitional area between central and northern hardwood types, the most common merchantable tree species include northern red oak, east-

ern white pine, eastern hemlock, sugar maple, and red maple.

Our project area encompasses the four counties of western Massachusetts—Berkshire, Franklin, Hampden, and Hampshire. The topography and soils of the region were strongly influenced by the last period of glaciation, about 10,000 years ago. Rounded hills and rock outcrops, incised stream and

river valleys, vernal pools and riparian wetlands are dominant terrain features. Upland soils are stony, glacial tills well suited to growing trees but poorly suited to most other land and resource uses. Limited areas of high-productivity alluvial soil occur in the floodplains, and they still support agriculture. Our climate is moderate by New England and Lake States standards, with 40 to 50 inches of annual precipitation (snow from December through March) and a growing season that extends from late April through mid-September.

Land Ownership Patterns

With 6.2 million people in a total area of 7,838 square miles, Massachusetts is the third most densely populated state in the United States. A general decrease in population density occurs along an east-west line from Boston to the Berkshires, accompanied by an increase in the amount of forestland. In addition, the average parcel size increases from less than one acre in Boston and surrounding communities to tens of acres in western Massachusetts.

State forests (285,000 acres) were acquired in the early 1900s, largely on marginal farmland and inaccessible sites (Rivers 1998). Other units of government and nongovernment organizations (NGO)—towns, water utilities, wildlife management areas, land trusts, and others—also own forestland. Nevertheless, the majority of Massachusetts forest is in private ownership. There are approximately 220,000 nonindustrial private forestland (NIPF) owners in the state.

Even with the laudable efforts and effects of the forest stewardship and current use tax programs, much of this land is exposed to subdivision and development pressure (fig. 1). Suburban sprawl is occurring at an alarming rate (Steele 1999). The corresponding loss of forest cover adversely affects many ecological and economic values, including biological diversity and drinking water supplies for most of the region’s residents.

Challenges and Opportunities

For most of the 20th century, landowners, resource managers, and community leaders grappled with the re-

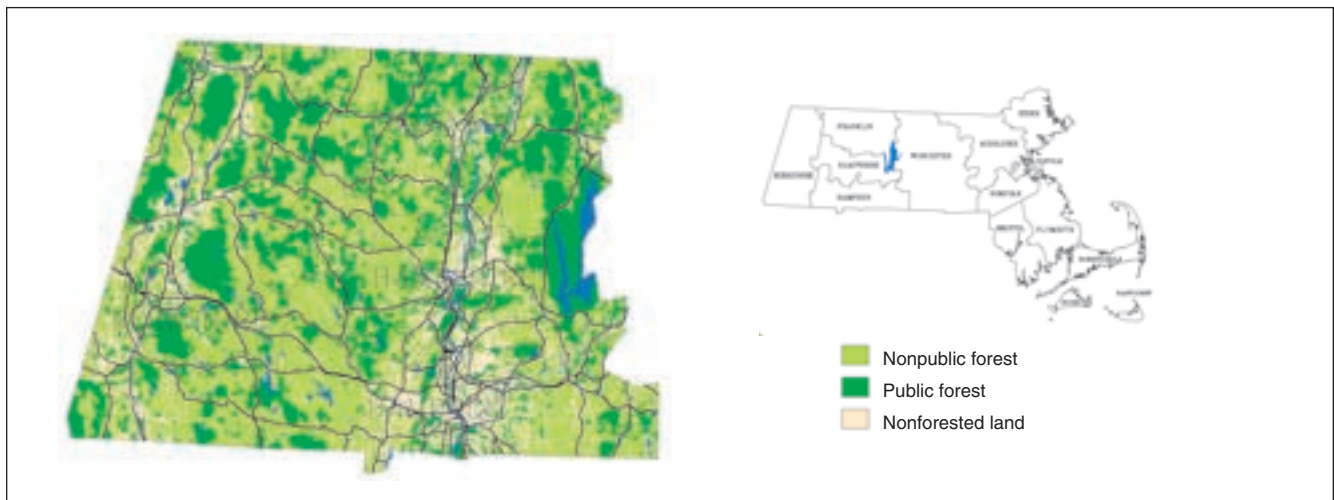


Figure 2. A map of forests by ownership type in western Massachusetts (Berkshire, Franklin, Hampden, and Hampshire Counties).

Source: David W. Goodwin, University of Massachusetts–Amherst, Resource Mapping Laboratory.

sults of a checkered ecological and economic history, complex land-ownership patterns, high turnover rates, taxation and development pressures, and a plethora of forest conservation and community development challenges. Recent studies and outreach efforts at the national level (Sampson and DeCoster 1997; National Research Council 1998) and the regional level (Leak et al. 1997; Foster 1998; Richenbach et al. 1998; Campbell et al. 1999) have clearly defined problems and opportunities. Both circumstances are evident in *table 1* and *figure 2*. Simply put, what some see as a problem—many small private parcels in key landscape positions—we see as an opportunity. At the very least, a new approach is worth a try.

If You Think Globally, then Buy Locally

Although Massachusetts has 3.1 million acres of forest, it is, ironically, a net importer (at nearly 95 percent) of forest products. Therefore, if the productivity of small woodlots could be enhanced with community forestry it would help alleviate development pressure, reduce dependence on imported wood, and improve local and regional environmental quality. Many urban and suburban residents have long supported organic agriculture, food cooperatives, local and regional artisans, and other community-based enterprises. They also could be a sizeable market for locally produced forest and wood products, especially with Forest Stew-

ardship Council (FSC) certification. In fact, because of the region's population density, the market is so enormous it provides a substantial opportunity to change the status quo (*table 2*).

Early cooperatives formed as a result of common needs, economies of scale, and the indirect influence of other institutions (e.g., churches and town meetings). They were the natural extension of community activities such as barn raisings, husking bees, haying, and other agrarian and early American traditions (Sloane 1958). Familiar examples include the grange; dairy, grain, rural electric, and food cooperatives; and credit unions and buying clubs. More recently, forest landowner cooperatives have been formed to address common problems and capitalize on unique opportunities.

Addison County forester David Brynn and other landowners formed Vermont Family Forests in 1995 to promote “local family forests for economic and social benefits while protecting the ecological integrity of the forest.” It now includes 30 landowners and 5,300 acres (with parcels ranging from 32 to 1,714 acres) and is FSC-certified. The cooperative's first major timber sale supplied northern hardwoods from four woodlots for the new Middlebury College Science Center. It also supplies wood to Beeken/Parsons, a fine-furniture manufacturer in Shelburne, Vermont, that deliberately integrates “character-marked” hardwood (wood marked with knots, color varia-

tions, and worm holes) into their designs. A Wisconsin forester, Jim Birke-meier, and several colleagues formed the Sustainable Woods Cooperative, incorporated in 1998. This cooperative now includes 120 landowners and 25,000 acres, operates a sawmill and solar kiln, and sells FSC-certified hardwood lumber products to woodworkers across the United States.

Both organizations focus on harvesting low-value woods, building equity in residual stands and infrastructure, and performing value-added manufacturing while maintaining high standards of practice and contributing to local and regional economies. As was true for their agrarian ancestors, self-reliant people form cooperatives based on common values, goals, and objectives; economic opportunities; and various types of heavy lifting.

Catalysts and Building Blocks

We recognized many assets that could serve as building blocks for a new approach to NIPF management in Massachusetts, among them:

- Chapter 61 and 61A current use tax assessment programs (enrollees must have a forest management plan and are included in a statewide database).
- Chapter 132, the Forest Cutting Practices Act, and a forestry best management practices (BMP) field manual (Kittredge and Parker 1995).
- Service forester districts organized on a watershed basis.

Growth and Development of Massachusetts Family Forests

Spring 1999

- Paul Catanzaro, service forester, Massachusetts Department of Environmental Management (DEM), discusses prospects of forming a green-certified landowner cooperative to enhance management options and standards of practice with David Kittredge, state extension forester and professor, University of Massachusetts. Kittredge suggests contacts with David Brynn of Vermont Family Forests and Paul Barten, professor, forest and water resources, University of Massachusetts.

- Catanzaro and Barten meet to discuss landowner cooperatives, certification programs, watershed forest management, and related topics. Barten signs on and suggests that David Damery (lecturer, Building Materials and Wood Technology Program [BMATWT], University of Massachusetts) be included in future discussions.

- Catanzaro has conversation with David Brynn about Vermont Family Forests. Brynn mentions he spoke with Priscilla Caouette, Hilltown Community Development Corporation, Chesterfield, Massachusetts, about similar issues.

- Catanzaro and Caouette meet and agree to combine efforts.

- Damery submits research proposal for wood supplier and wood user surveys, data analyses, and focus groups to University of Massachusetts Public Service Endowment Grants program. Funding is awarded for wood supplier survey. A BMATWT graduate student is hired as a research assistant.

- Damery and Caouette request funding for a summer internship from Massachusetts DEM. A BMATWT senior is selected to work on the wood user survey.

Summer 1999

- Wood supplier and wood user surveys under way.
- Barten, Caouette, Catanzaro, and Damery coauthor a proposal to the Ford Foundation for a community-based forestry program grant.

- Catanzaro, Campbell, Damery, and Jennifer Fish (service forester, Massachusetts DEM) begin organizing a landowner meeting to present the idea of forming a forest landowner cooperative. A list of invitees is compiled by University of Massachusetts faculty, and Forest Stewardship Program, public, and private foresters.

Fall 1999

- The first landowner meeting is held. In addition to Massachusetts DEM foresters, University of Massachusetts faculty, and Hilltown Community Development Corporation staff, a group of 18 landowners (with a total of 3,400 acres), consulting foresters, sawmill owners, and loggers attend. The general idea is enthusiastically received and the group agrees to meet again.

- Ford Foundation community forestry proposal is not funded.

- Susan Campbell revises and expands the scope of the Ford Foundation proposal and submits it to the USDA Forest Service, Northeastern Area State and Private Forestry, Newtown Square, Pennsylvania.

- A second meeting in November is attended by 30 people. The group begins to enumerate objectives, adopts the name "Massachusetts Family Forests" (pending permission from Vermont Family Forests), and designates the four western counties as the initial project area.

Winter 2000

- A landowner steering committee is formed, and Arthur Eve agrees to lead it. Participants from University of Massachusetts, Massachusetts DEM, Forest Stewardship Program, and Hilltown Community Development Corporation form a resource group that reports to the steering committee. Three teams of landowners, craftspeople, and foresters are asked to address the following questions: What is our inventory of forest resources? What value-added products could we produce? How should we organize MFF? A forestry student intern is hired to assist with data compilation, mapping, and analyses.

- USDA Forest Service Focus Funding grant is awarded to Massachusetts Family Forests. The scope of work includes completion of wood supplier and wood user survey data analyses, focus groups to determine feasibility of a wood buyers cooperative, survey of western Massachusetts landowners, and support for the start-up phase.

- The steering committee now meets monthly with the general membership meetings switched to an "as needed" basis, to avoid burnout.

Spring and Summer 2000

- Barten makes a presentation on certification programs and field assessment procedures. After a thorough discussion of potential benefits and costs, participants agree to continue to investigate certification as a quality assurance and business development option for MFF.

- Roger Albee, Cooperative Development Institute, Greenfield, Massachusetts, is retained as a consultant to MFF.

- The steering committee decides it is important to quantify (and encourage) landowner interest in joining MFF before making decisions on potential value-added products and potential services for the cooperative and developing a business plan.

Fall 2000

- Damery works with the steering committee, resource group, and the Donahue Institute at the University of Massachusetts to develop a survey for western Massachusetts landowners with more than 50 acres. Massachusetts DEM Chapter 61 and Forest Stewardship Program databases are used to generate the mailing list ($n = 923$).

- Survey results are analyzed and used to outline a draft business plan. All survey respondents ($n = 232$; 61,568 acres) are invited to an informational meeting.

- Approximately 50 landowners, consulting foresters, and resource group members (representing more than 20,000 acres) attend the November informational meeting.

- Steering committee appoints subcommittees to draft bylaws, develop articles of incorporation, and continue work on the business plan.

- USDA Forest Service–Massachusetts Department of Environmental Management Forest Stewardship Program.

- University of Massachusetts forestry extension and outreach programs.

- Forest inventory data and spatial information from state and federal agencies.

These institutional assets are the result of work by our predecessors and senior colleagues over several decades. In addition, a collaborative approach to problem solving and program development by public- and private-sector foresters, the land-grant university, and landowners is the rule, not the exception.

The genesis of our efforts to help landowners establish a forestry cooperative is summarized in “Growth and Development of Massachusetts Family Forests.” We hope it will prompt those interested in the potential of landowner cooperatives to inventory their assets, build networks, and secure broad-based support as quickly and efficiently as possible. From the earliest stages, our intent was to move from a leadership to a supporting role as soon as landowners were ready to build and shape the cooperative. We now serve as a “resource group”—an ad hoc professional staff—for a landowner steering committee and a general membership that includes other landowners, loggers, mill owners, consulting foresters, and wood users.

Early progress has been made in fits and starts. A strong personal and professional commitment by the steering committee and the resource group, an optimistic (albeit pragmatic) attitude by landowners, encouragement by others (i.e., the USDA Forest Service, the Massachusetts state forester, and University of Massachusetts administrators), along with the prospect of new and unique opportunities, has generated the following vision, principles, goals, and objectives.

Vision

Massachusetts Family Forests is a forest management, processing, and marketing cooperative organized by and for landowners to create a sustained flow of forest benefits including

Table 3. Stand types, stand areas, and volumes for 16 members of Massachusetts Family Forests landowner cooperative.

Stand type	Acres	Mean dbh (inches)	Sawtimber volume (mbf)	Pulp and fuelwood volume (cords)
Northern hardwoods	608	10	227	193
Hemlock-hardwoods	526	10	157	72
White pine-hardwoods	370	11	102	287
Oak-hardwoods	318	8	24	0
Mixed oak	170	11	64	0
Hemlock	154	10	119	0
White pine-hemlock	55	11	28	14
Red oak	47	8	9	0
White pine	46	12	18	0
Beech	40	10	200	200
Red maple	32	12	59	0
Aspen	30	6	0	90
Total	2,396	—	1,007	856

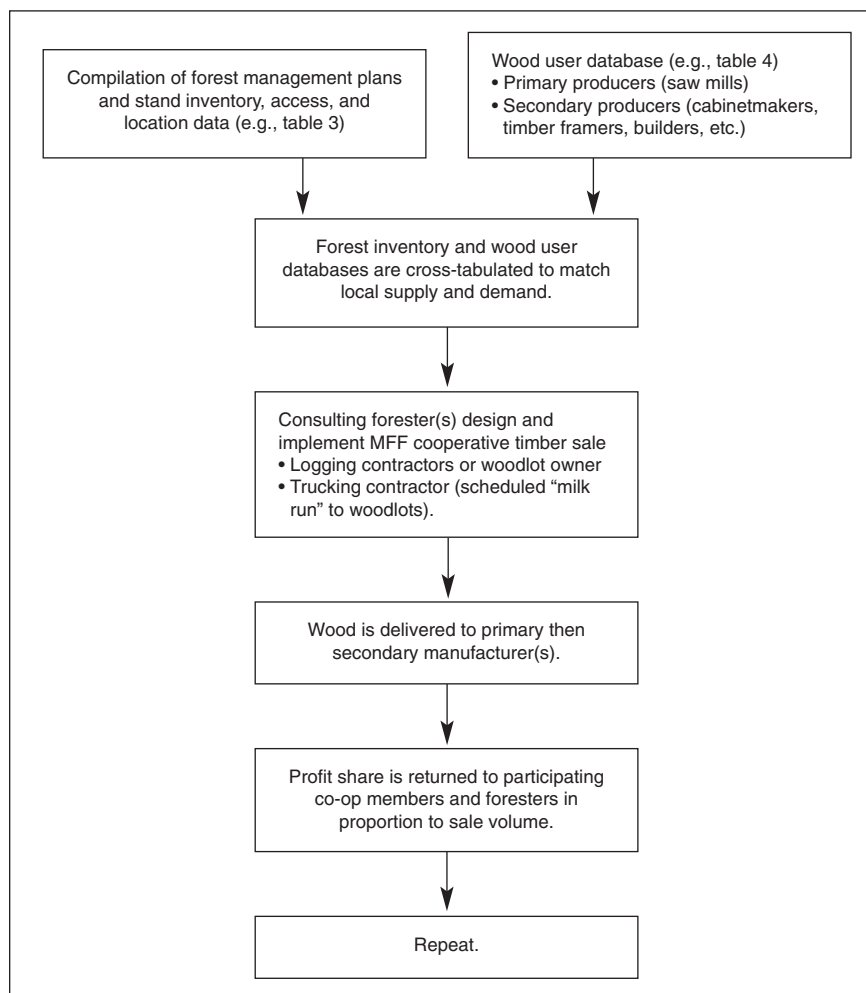


Figure 3. An example of how a landowner cooperative could plan and coordinate a timber sale involving several members. This approach could work equally well for large volumes of low-value wood or small volumes of high-value wood. With the help of a consulting forester, members could sell stumpage or logs at roadside. Either Massachusetts Family Forest landowners or wood users could initiate the process.

Table 4. Abbreviated summary of responses to wood user pilot survey (103 respondents).

Products and trades: furniture and woodworking, 39%; general contracting, 23%; cabinets, 19%; architectural woodworking, 15%; timber framing, 2%; other, 2%.
Wood species: maple, 16%; cherry, 15%; pine, 15%; oak, 15%; birch, 4%; ash, 3%; nonnative species, 32%.
Typical purchase quantity: <500 bf, 41%; 500–1,000 bf, 13%; >1,000 bf, 15%; variable, 31%.
Annual purchase quantity: <1,000 bf, 18%; <10,000 bf, 57%; >10,000 bf, 25%.
Grade requirements: clear, 9%; #1, 10%; #2, 7%; FAS, 43%; construction, 5%; all others, 26%.
Moisture content requirements: kiln-dried, 76%; air-dried, 15%; green, 9%.
Surfacing requirements: rough sawn, 53%; surfaced only, 32%; either, 15%.
Lengths: random, 62%; 8', 3%; 10'–12', 28%; 14'–16', 7%.
Widths: 4"–6", 32%; 8"–10", 36%; 12"–14", 25%; 16", 7%.
Thicknesses: 4/4", 30%; 5/4"–10/4", 58%; 12/4" or 16/4", 12%.
Aware of certified wood? yes, 59%; no, 41%.
Prefer local certified wood? yes, 69%; no, 12%; undecided, 19%.
Interested in forming a wood-buying co-op? yes, 41%; no, 27%; undecided, 32%.

timber, wildlife, clean water, aesthetics, and recreation. The mission of MFF is to maintain the environment and rural character of western Massachusetts through the conservation of one of the region's most plentiful resources, the forest.

Operating Principles

MFF will place primary emphasis on practicing sustainable forestry and conserving the natural resources of western Massachusetts for future generations. In the process, MFF will protect streams and wetlands, enhance wildlife habitat, avoid high-grading of timber, invigorate the local economy, and provide educational programs for its members and the general public.

Preliminary Goals and Objectives

1. *Create or enhance access to markets for low-value wood.* Meeting this objective through a cooperative effort is critical to the long-term success of the enterprise. Until the glut of low-value wood is removed via timber stand improvement (TSI) or regeneration cuts, we will not be building equity and future management alternatives efficiently in the residual growing stock while actively managing nontimber resources. Until sales of low-value wood can generate a modest profit, or at least break even, they cannot or will not be undertaken by most landowners. *Table*

3 summarizes the inventory of merchantable timber for the original 16 members of MFF; *table 4* summarizes the results of the wood user survey; and *figure 3* illustrates the cross-tabulation of supply (MFF landowners) and demand (local woodworkers and builders) in our adaptation of the pioneering efforts of Vermont Family Forests and the Sustainable Woods Cooperative.

2. *Produce value-added products.* Through ownership or subcontracts, other cooperatives have successfully developed the infrastructure and associated markets for products from their forests. MFF could, for example, use one of our most abundant low-value species, red maple (*Acer rubrum*), to produce tongue-and-groove hardwood flooring. Eastern hemlock (*Tsuga canadensis*) mortality salvaged after insect attacks could be used to produce framing timber, barn siding, and bark mulch. On the other end of the spectrum, premium-quality white and red oak (*Quercus alba and rubra*, respectively) could be used to build fine furniture in western Massachusetts rather than being sold wholesale from small mills to log buyers, shipped to Europe, and finally sold as "imported" furniture in Boston.

3. *Build local economies.* Many woodworkers and builders in western Massachusetts use raw materials im-

ported by wholesale firms from other regions of the United States and Canada. If MFF, along with other public and private forests, can generate a reliable supply of wood to meet the needs of primary and secondary manufacturers, connections between forest landowners, manufacturers, and consumers can be developed and reinforced to the mutual benefit of all.

4. *Manage cooperatively to improve wildlife habitat, water quality protection, and recreational opportunities.* As evinced in *figures 1 and 2* and *table 1* and documented by several recent studies (Sampson and DeCoster 1997; National Research Council 1998), the sheer number of private landowners, ownership turnover rates, parcelization, and seemingly inexorable development pressure can make ecosystem-based management a daunting task. However, recent successes of initiatives such as the New York City Watershed Forestry Program (www.nycwatershed.org/forest.htm) and the Chesapeake Bay Program (www.chesapeakebay.net/fwg.htm) have shown that a positive cumulative effect can be achieved one landowner at a time. MFF already has attracted a core group of progressive and energetic landowners from throughout western Massachusetts. Our recent survey indicates that an additional 232 landowners are interested, with a total of approximately 61,600 acres.

In addition to economic benefits, the functional addition of MFF lands to public and NGO landholdings could provide the foundation for landscape-scale efforts to conserve all forest resources. In effect, we hope to add another shade of green to *figure 2* showing MFF land. GIS-based mapping will highlight opportunities for linking adjacent parcels to protect riparian areas, create early-successional wildlife habitat, provide viable habitat for threatened and endangered species, control invasive plants, and enhance recreational opportunities (e.g., shared trail systems). The benefits of this working landscape could quickly extend to the bed-and-breakfast, restaurant, crafts, summer festival, and ecotourism sectors of the economy, while enhancing the quality of life for year-round residents.

5. *Organize as a group for grant opportunities and political influence.* The recent grant from the USDA Forest Service, Northeastern Area, was a watershed event for MFF. It provided the financial resources for data compilation and analysis (e.g., wood-user survey, landowner survey, GIS, FIA, and state continuous forest inventory [CFI] data compilation); provided special stewardship incentive funds for MFF members; and leveraged other resources to successfully complete the start-up phase.

In a diverse, urbanized state such as Massachusetts, forest landowners need a unified and credible voice in local, state, and even national political processes. Beginning with the choice of our name and extending to our vision statement and operating principles, MFF will advocate proactive conservation of forest resources. Our work will focus on demonstrating to a skeptical, often ill-informed urban public that forest management is a key part of the conservation solution, *not* the source of the problem.

6. *Provide educational opportunities.* MFF provides an exceptional venue for service foresters and university faculty and extension staff to deliver high-quality workshops and training to landowners and others interested in forestry. In addition, direct links between the university, state and consulting foresters, and landowners will generate opportunities for service learning, problem-based instruction, internships, and research projects by upper-division undergraduate and graduate students in forestry and related fields. Study tours and field days are an excellent way for the entire community of people interested in forests and forestry to learn and lead by example.

7. *Barter equipment and services.* From portable sawmills and firewood processors to tractors and dump trucks, the inventory of equipment owned by MFF members—along with members' skills and experience—is impressive. A directory of these resources, contact information, and various forms of communication (e.g., meeting minutes, e-mail, and newsletters)

will help MFF members restore an integral part of the rural economy and maximize the value of these resources.

8. *Explore green certification.* Like Vermont Family Forests and the Sustainable Woods Cooperative, we believe green certification could be a strategic investment for MFF. In particular, FSC certification could help the cooperative develop a market niche for western Massachusetts forest products in nearby urban areas—Boston, Hartford, Providence, Springfield, Worcester, New York—where third-party quality assurance may be crucial to consumer confidence, name recognition, and word-of-mouth advertising.

9. *Provide a mechanism for land protection.* This overarching objective stems from all of the others.

Conclusion

Much has happened in the two years since Paul Catanzaro tested the waters with colleagues and started work on MFF. We offer the following suggestions to forestry colleagues considering starting a cooperative.

- Learn about the structure and function of cooperatives already in existence.

- Assemble an interdisciplinary working group of people with a demonstrated commitment to forest conservation and stewardship on private lands.

- As a group, assess the feasibility of a cooperative by considering forest resources, ownership patterns, landowner characteristics, and institutional assets.

- Present your preliminary assessment of the potential benefits, costs, opportunities, and challenges to a diverse group of landowners. If interest is sufficient, keep working and seek start-up funds and in-kind resources.

- The fledgling organization should quickly evolve to a landowner-led enterprise. Foresters and other natural resource professionals should help sustain forward progress through a staff and advisory role.

Two well-worn phrases of the environmental movement serve as useful reminders of our potential impact and

professional responsibilities as foresters. What better way to “think globally, act locally” than to help landowners and rural communities sustainably manage forests and support local economies. Margaret Mead’s famous quote—“Never doubt that a small group of thoughtful, committed people can change the world. Indeed it is the only thing that ever has.”—calls to mind the diligent and creative work of foresters in the early 20th century. What better way to begin the second century of forestry than to emulate them.

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