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IDEAS FOR SHARED PROSPERITY

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Funding Forest Certification

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A joint project with
Mainewatch Institute

There is a growing niche market for wood products that come from environmentally certified forests. Certification programs measure current forest management practices against a set of environmental management standards. Such programs are being increasingly implemented across the country.

The two major certification activities are the initial audit of the forest and forest management practices, and ongoing review, usually annually. Certification programs are voluntary and these activities come at a price to the landowner. In many cases, landowners must develop, modify and implement programs to become certified; thus, certification encourages change.

Some landowners are willing to bear that cost so as to improve their market position or, out of principle, to improve the ecological health of the forest. But certification costs may be prohibitively high, particularly for small landowners.

According to forest certification organizations, small landowners face higher per acre costs for forestry certification due to economies of size. Anecdotal evidence suggests that there are many small landowners in Maine who would certify their forests if the certification cost was lower.

In addition, there are benefits

derived from forest certification for which the landowner receives no compensation. In many cases certification programs provide improved wildlife habitat, aesthetic values, and other environmental benefits that go beyond specific wood product management.

While some people are willing to pay a premium for a specific wood product, the general public is often

*...many small
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not willing to pay the full value of all of these additional "public goods" (i.e., goods that, once provided, are available to everyone). In economic terms, consumers - in this case Maine citizens and visitors - will choose to "free-ride", enjoying the benefits of a well-maintained forest without specifically paying for them.

Woodlot owners then bear the full cost of providing these public benefits. This is a disincentive to paying additional costs for the sustainable practices that derive from environmental certification. Economic theory suggests that it is efficient to subsidize the costs of providing such public goods.

The Research Project

The Maine Center for Economic Policy and Mainewatch Institute jointly sponsored a study by the authors to ascertain the likely market reactions to a tax/subsidy program to support forest certification for Maine's smaller landowners. This study was funded by the W. Alton Jones Foundation in their interest to advance tax shifts that improve environmental quality.

The original design of the proposed program would provide a subsidy for environmental certification to small forest landowners in Maine, with subsidy funds furnished through a severance tax on commercial timber harvests. The broad objectives of the study were to address this program's effectiveness in increasing small landowner's participation in forest certification and the program's political feasibility.

Methodology

We surveyed members of the Small Woodlot Owners Association of Maine (SWOAM) to determine their potential participation in the certification program. We also surveyed a sample of Maine residents to determine the level of potential public support for such a subsidy program. We also asked all survey respondents about their preferences for alternative methods of subsidy program funding. The survey results regarding the amount of land that would be certified and associated costs of a subsidy program are limited by design to landowners with between 20 and 499 acres.

Many of the results include low and high estimates of the projected potential acreage of certified forestland. Low estimates assume that non-respondents to the SWOAM survey would not certify their forest holdings. High estimates assume that non-respondents are similar to respondents in their rate of certifying their woodlots.

Subsidy Impact on Certification

Of the 17.1 million acres of forestland in Maine, 5.2 million acres are held by people that own between 20 and 499 acres. The study results indicate that some of that forestland would be certified even in the absence of a subsidy program (Figure 1). With no subsidy, the amount of forestland potentially certified by landowners owning between 20 and 499 acres ranges from 223,800 acres (low estimate) to 557,300 acres (high estimate).

A subsidy that covers 50% of the current average certification cost

increases the amount of certified land to between 384,900 and 881,400 acres; not a much greater response than no subsidy. However, when the proposed program covers all certification costs the amount of certified land increases almost fourfold, between 1.1 million and 2.9 million acres.

We also asked about payments over and above full certification costs but there was no discernible pattern of increase or decrease in the amount of forestland that would become certified. Taken together, these results indicate a strong willingness on the part of Maine landowners to participate in an environmental certification program, provided they do not incur any of the certification cost.

Program Costs

The projected program costs include the first-year subsidy and any associated payments, plus the annual subsidy for re-certification.

Figure 1: Projected Acres of Certified Forest Land with varying levels of subsidy, on plots of land from 20 to 499 acres

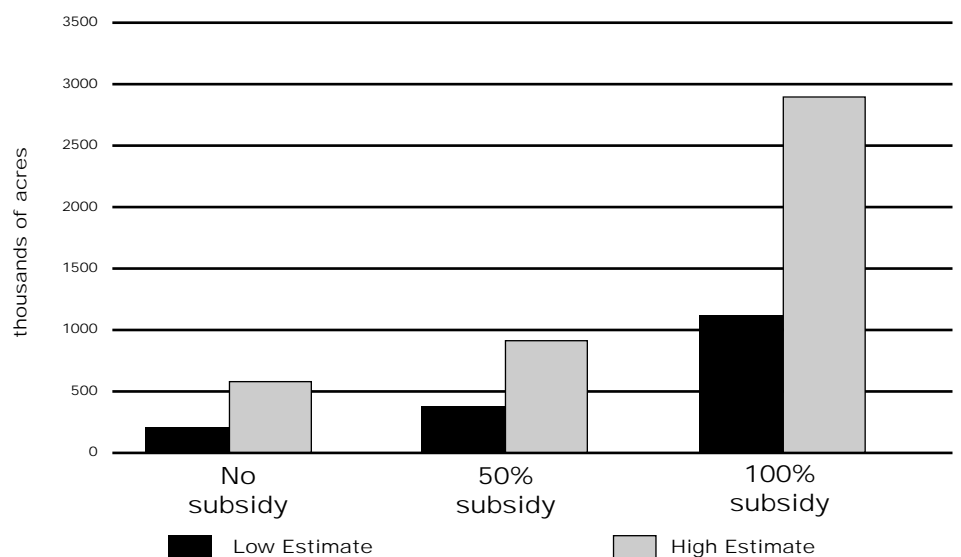
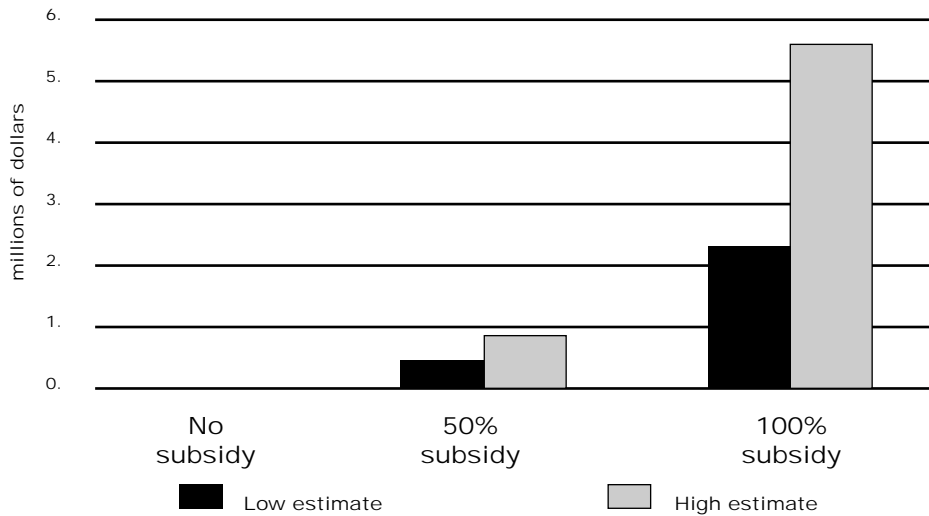


Figure 2: Total Annual Cost of a Certification Subsidy by varying levels of subsidy, on plots from 20 to 499 acres



All landowners with holdings in excess of 20 acres are included in estimating the taxation level necessary to support the program’s costs.

In the first year of certification, there are significant one-time expenses. To provide a meaningful comparison of the total year-to-year program costs, we amortized the one-time first-year costs over 30 years at a discount rate of six percent and added these amortized costs to the annual review costs. This is done under the assumption that the high initial program costs might lead state government to fund the program through a general obligation bond to be repaid with a portion of the proceeds from the associated severance tax.

The amount of money that would need to be raised by the severance tax every year is the annual amortized cost of the initial audit subsidy plus the annual cost of the re-certification subsidy (Figure 2). The chart shows the rapid escalation of program costs as the

level of subsidy rises from no subsidy, to 50% subsidy, to 100% subsidy. This is due largely to increases in forestland acreage that would come into the program at these subsidy levels.

To put these costs in perspective, it would be helpful to compare them to the value of improvements in environmental quality resulting from additional environmental certification. Lacking this information, however, we can

evaluate the costs in terms of total acres certified. On an annual cost per acre basis, the least expensive alternative is to offer no subsidy. Costs rise to approximately \$1 and \$2 per acre per year with 50% and 100% subsidies, respectively.

Amount of Severance Tax Needed

To derive a relative rate of taxation we compared the total annual costs of the proposed program to the total value of the harvest for landowners with 20 or more acres. (Table 1) The low and high estimates, range from 0.2% to 0.4% of the value of the wood harvested statewide to support a 50% subsidy, and from 1.2% to 2.9% with a 100% subsidy.

Landowners, loggers, and wood processors generally deal with units of harvested wood in terms of volume. Table 2 (page 4) provides the estimated severance tax per cord and thousands of board feet (MBF). Because the value of wood harvested in Maine varies considerably depending upon the species and type of wood, the tax that would apply to

Table 1. Estimated severance tax as a percentage of the total value of wood harvested commercially from woodlots at least 20 acres in size.

Proposed level of subsidy:	Low Estimate	High Estimate
No Subsidy	-%	-%
50% Subsidy	0.2%	0.4%
100% Subsidy	1.2%	2.9%

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a particular unit of wood must account for those differences. Generally, pulpwood is among the lesser-valued woods harvested in Maine and the corresponding tax per unit volume is relatively low. The 1999 stumpage price for miscellaneous hardwood was approximately \$8.00 per cord.

In absolute terms, the tax per unit volume is higher for high-valued timber such as hardwood sawlogs because the tax rate is assumed to be

the same across timber species. For example, the stumpage price of red pine saw logs in 1999 was \$64.00 per thousand board feet (approximately \$32.00 per cord). Spruce and fir saw logs were priced at \$128 per thousand board feet (approximately \$64.00 per cord).

Tax Shifting

To determine the tax burden shift across owners of different size woodlots we compare the total

amount of the tax paid by each size category to the total amount of the subsidy provided to landowners in that size class. The rate at which forest acres within each size category would be certified at the various subsidy levels determines the extent to which the total amount of subsidy received offsets the total amount of severance taxes paid (Table 3).

By construction, the smallest landowners (1-19 acres) are unaffected because they neither pay the severance tax nor do they receive subsidies for certification. Medium-sized landowners (20-499 acres) pay the severance tax, but for those who enroll in the certification program this increased tax burden is more than offset by the subsidies.

A 50% subsidy program would have the largest net gain for landowners in the category of 20 to 49 acres, whereas for a 100% subsidy, the group with between 100 and 199 acres obtains the largest net gain. Under both the 50% and 100% subsidy programs large landowners would face a relatively large negative tax shift. The incidence of the tax falls particularly on the largest landowners (those with more than 5000 acres), since the large majority of timber harvested in Maine (nearly 60%) comes from these large woodlots.

Support for Subsidies

SWOAM members are generally strongly opposed to using the state's general fund or severance taxes as sources of funding for the subsidy program. Members' attitudes toward the federal and/or private foundation grants mechanism were

Table 2. Estimated severance tax per unit of wood harvested commercially from woodlots at least 20 acres in size.

	Low Estimate		High Estimate	
	50% Subsidy	100% Subsidy	50% Subsidy	100% Subsidy
Pulpwood				
Dollars per Cord				
Aspen	\$ 0.02	\$ 0.09	\$ 0.04	\$ 0.23
Hemlock	\$ 0.02	\$ 0.13	\$ 0.05	\$ 0.32
Mixed Hardwood/Softwood	-	-	-	-
Other Hardwood	\$ 0.02	\$ 0.09	\$ 0.04	\$ 0.23
Other Softwood	\$ 0.03	\$ 0.16	\$ 0.06	\$ 0.41
Red Pine	\$ 0.02	\$ 0.12	\$ 0.04	\$ 0.29
Spruce & Fir	\$ 0.04	\$ 0.22	\$ 0.08	\$ 0.55
White Pine	\$ 0.02	\$ 0.10	\$ 0.04	\$ 0.26
Sawlogs				
Dollars per MBF*				
Ash	\$ 0.26	\$ 1.49	\$ 0.57	\$ 3.76
Aspen	\$ 0.09	\$ 0.50	\$ 0.19	\$ 1.25
Beech	\$ 0.12	\$ 0.72	\$ 0.27	\$ 1.81
Cedar	\$ 0.12	\$ 0.72	\$ 0.27	\$ 1.81
Hemlock	\$ 0.14	\$ 0.79	\$ 0.30	\$ 1.98
Mixed Hardwood/Softwood	-	-	-	-
Other Hardwood	\$ 0.21	\$ 1.22	\$ 0.47	\$ 3.09
Other Softwood	\$ 0.12	\$ 0.72	\$ 0.27	\$ 1.81
Red Oak	\$ 0.45	\$ 2.59	\$ 0.99	\$ 6.54
Red Pine	\$ 0.13	\$ 0.74	\$ 0.28	\$ 1.87
Red/White Maple	\$ 0.17	\$ 0.98	\$ 0.37	\$ 2.48
Spruce & Fir	\$ 0.26	\$ 1.48	\$ 0.56	\$ 3.73
Sugar Maple	\$ 0.31	\$ 1.81	\$ 0.69	\$ 4.58
White Birch	\$ 0.22	\$ 1.27	\$ 0.48	\$ 3.21
White Oak	\$ 0.30	\$ 1.72	\$ 0.66	\$ 4.35
White Pine	\$ 0.28	\$ 1.59	\$ 0.61	\$ 4.03
Yellow Birch	\$ 0.24	\$ 1.37	\$ 0.52	\$ 3.47
Biomass				
Dollars per Ton				
All Species	\$ 0.00	\$ 0.01	\$ 0.00	\$ 0.03

* MBF denotes a thousand board feet; divide by 2 to estimate tax per cord of sawlogs.

Table 3. Net tax shift resulting from a severance tax on all commercial harvests on woodlots of at least 20 acres in size, and a certification subsidy to owners with 20-499 acres by size, holdings and level of subsidy.

	50% Subsidy	100% Subsidy
Low Estimate		
<i>Size Class</i>		
1-9 acres	\$ 0	\$ 0
10-19 acres	\$ 0	\$ 0
20-49 acres	\$ 186,802	\$ 233,630
50-99 acres	\$ 24,765	\$ 485,171
100-199 acres	\$ 45,891	\$ 607,453
200-499 acres	\$ 12,582	\$ 234,979
500-999 acres	\$ (13,860)	\$ (80,131)
1,000-4,999 acres	\$ (16,334)	\$ (94,435)
5,000+ acres	\$ (239,847)	\$ (1,386,667)
High Estimate		
<i>Size Class</i>		
1-9 acres	\$ 0	\$ 0
10-19 acres	\$ 0	\$ 0
20-49 acres	\$ 368,088	\$ 748,669
50-99 acres	\$ 78,110	\$ 1,221,163
100-199 acres	\$ 133,377	\$ 1,454,582
200-499 acres	\$ 38,744	\$ 669,028
500-999 acres	\$ (31,735)	\$ (210,098)
1,000-4,999 acres	\$ (37,401)	\$ (247,602)
5,000+ acres	\$ (549,183)	\$ (3,635,743)

general public is more ambivalent about funding mechanisms. No answer received a majority response, though 43% of respondents indicated that they strongly favored the federal and/or private foundation grant mechanism. Many residents stated that they did not know how they felt about these funding alternatives. It is likely that, as typical Maine residents, they have not thought about these issues as much as have SWOAM members.

Conclusions

There is widespread public support in this state for enhancing the viability and sustainability of Maine forests. Domestic and international market forces and trade policies are likely to place increasing importance on environmentally responsible forest practices. Effective mechanisms that encourage non-industrial private forest (NIPF) landowners to adopt such practices could result in both an enhanced quality of life in Maine and a forest products market advantage. Environmental forest certification offers a potential approach for achieving both of these objectives.

We conclude from our study that, even without any subsidies, some environmental certification would happen but subsidies that

cover at least half of the certification costs would substantially increase certification.

For medium-sized forest landownerships, we estimate that as much as one-half of a million acres might be certified. We also find that the number of certified acres would increase greatly if all certification costs were covered - as much as three million acres, or about 50% of medium-sized ownerships could become certified.

Although there is widespread support for subsidizing environmental forest certification, there is little support among forest landowners as well as the general public for funding the program through the use of a severance tax or by using Maine’s General Fund revenues. Only the federal and private foundation grant mechanism received a relatively high degree of support. Given this finding, we turn to a discussion of potential external funding mechanisms.

External Funding Mechanisms

A number of existing federal government programs may provide a funding mechanism for environmental forest certification. Many of these programs are designed to assist the owners of (mostly small) NIPF lands.

The Environmental Quality Incentives Program, (EQI) provides cost-share payments to help owners of private lands address natural resource problems that threaten environmental quality. The Wetlands Reserve program (WRP) is a voluntary program that offers financial support to private

more polarized; 27% of members strongly liked and 34% strongly disliked the grant mechanism.

The word “federal” was crossed out on some of the surveys and several survey respondents indicated that they would approve of private funding for the subsidy program but were opposed to federal funding. One potential reason for this reaction is that private landowners may be fearful of federal involvement in local forest management issues.

Results from the Maine resident survey suggest that a large majority of Maine residents would support a subsidy program for environmental certification. The results suggest that, in contrast to SWOAM members, the

Forest Certification Programs

There are two major environmental forest certification programs in Maine.

Forest Stewardship Council

The Forest Stewardship Council (FSC) is generally recognized to be the more independent, rigorous, and publicly accountable certification program. It was formed in 1993 to standardize the labeling of forest products as originating from sustainably managed forests. It employs independent, third party audits and reviews.

FSC membership has a broad range of stakeholders including timber industries, landowners, community groups, indigenous peoples, environmental groups, and certifying organizations. FSC standards are developed through a stakeholder process not controlled by industry. FSC audits consist of on-the-ground inspections of logging sites before certifiers give the FSC seal of approval to the product. Both the guidelines for the audit and the audit report are available to the public.

Seven Islands (the Pingree

lands) and Irving are FSC-certified, and the Bureau of Public Lands has also applied for certification. Several local businesses and the retail chain Home Depot have begun to stock FSC-certified lumber.

Two Trees Forestry and Mid Maine Forestry, consulting firms that manage small non-industrial private woodlots, have received FSC certification of lands under their management.

Excerpts from Habitat: Journal of Maine Audubon, Vol 17 No 4

Sustainable Forestry Initiative

The Sustainable Forestry Initiative (SFI) is administered by the American Forest and Paper Association (AF&PA), a national trade association. AF&PA represents more than 250 companies and related associations that engage in or represent the manufacture of pulp, paper, paperboard and wood products.

AF&PA requires all member companies to comply with the SFI program. The SFI program has a set of industry-developed principles and guidelines and requires first,

second or third party audits. There are 13 member companies in Maine. They develop their own policies and strategies that are tailored to their land base, procurement mix, and employee skills. Many of the SFI efforts and policies are not shared among companies or with the public to ensure adherence to anti-trust laws.

In 1998, the Tree Farm System was formally recognized through resolution by the forest industry's SFI program as a tool for advancing sustainable forestry practices on private lands. Today, a Mutual Recognition Agreement encourages SFI program participants to discharge their responsibilities for non-industrial landowner outreach through direct participation in Tree Farm activities at the state and local levels.

As part of the agreement, an independent third-part audit of the American Tree Farm System will be initiated within the next 12 months to contribute to Tree Farm's course of continuous improvement.

Excerpts from Sustainable Forestry Initiative Program, AF&PA

landowners' wetlands restoration and protection projects. Under this program, the government buys easements and provides cost-share assistance to restore wetland functions and values.

The Wildlife Habitat Incentive Program (WHIP) provides cost-

share assistance to private landowners to help them enhance wildlife habitat areas on their lands. Preference for receipt of WHIP assistance is based on the potential benefit that the public may realize from habitat enrichment.

Programs more specifically

focused on forestlands are the Forestry Incentives Program (FIP) and the Stewardship Incentives Program (SIP). FIP, older than SIP, offers cost-share benefits that are focused on timber production.

SIP, administered in Maine by the Maine Forest Service, appears to

be best suited to underwrite practices compatible with environmental certification. SIP emphasizes the multiple outputs of forest management, including timber production, forest health (including natural disaster damage mitigation, such as for the 1998 ice storm), wildlife habitat, recreation, soil conservation, and water quality.

The SIP program covers up to 75% of the cost of a professionally prepared management plan, with limits of \$450 for parcels of 10 to 50 acres and \$9.00 per acre for parcels of 51 acres and up. Up to 75% of the cost of updating an existing plan can be covered, with limits of \$225 for parcels 10 to 50 acres and \$4.50 per acre for larger parcels. Landowners approved for cost sharing are eligible for up to 75% of the cost of having a licensed professional forester visit their woodlot and providing a brief written report of the findings, with limits of \$300 for 10 to 50 acres and \$450 for larger parcels. Most properties are less than 1,000 acres, but federal guidelines allow for up to 5,000 acres to be treated if there is a compelling public interest involved.

Once the forest management plan has been written, SIP will pay 75% of the cost of implementing practices such as reforestation and afforestation, woodland improvement (thinning, pruning, weeding), windbreak and hedgerow establishment and maintenance, soil and water conservation practices, riparian and wetland protection practices, fisheries habitat improvement, wildlife habitat improvement, and forest recreation

enhancement (aesthetics, walkways, trails, vistas, etc.). Practices must “conserve, nurture, enhance, and protect the forest resources” and be maintained for ten years. Cost-share payments may constitute taxable income, although the rules for this are complex.

The Stewardship Incentive Program (SIP) is highly compatible with environmental certification principles. Cost-share payments are already available to cover many of the necessary planning tasks and forestry practices for certification eligibility. We are not aware of any attempt to use SIP as part of a program to work towards certification, but, according to the

National Coalition for Sustaining America’s Nonfederal Forests, there is renewed interest in sustainable timber production from NIPF lands as public lands are increasingly restricted.

Sustainable timber production under management principles that protect and enhance non-timber forest resource values is encouraged by SIP. The next step appears to be a creative plan to meld the financial support of the various federal programs, especially SIP, into a motivation for certification.

Other decentralized solutions exist to increase certified lands. Landowners can join forces to overcome some of the barriers to

Promoting Certification in Maine

Natural Resources Council of Maine is working to promote Forest Stewardship Council independent certification in Maine. The Council’s website includes information about the FSC certification program and lists FSC-certified consulting foresters, retailers and wood processing companies in Maine. See www.maineenvironment.org or call 1-800-287-2345 and ask for Jeff McEvoy.

Maine Audubon Society is also promoting FSC certification. They are co-chairing the Northeastern Working Group of the FSC. They have developed a set of “Core Goals and Indicators of Sustainable Forest

Management”, highlighting sustainable forestry practices that should be incorporated into all certification programs.

Maine Audubon has authored a study comparing FSC and the Sustainable Forestry Initiative (SFI). They have conducted a field review of the SFI audit process and have been encouraging landowners in the SFI program to exceed their minimum standard and improve public accountability. They have also helped the Maine Forest Service develop its statewide Sustainability Standards.

See www.maineaudubon.org or call 207-781-6180 and ask for Robert Bryan.

widespread certification of NIPF lands. In Maine, the SmartWood program has aggregated smaller groups of landowners to lower individual certification costs. Two Trees Forestry with 62 landowners certified, and Mid Maine forestry with 64 landowners certified, are both in Maine and provide models of how small landowners can get their lands certified.

The New Hampshire-based Northeast Ecologically Sustainable Timber Company (NEST) evolved in 1994 to address the problem of high unit costs for small ownerships. NEST achieved certification by SmartWood for

nearly two dozen separate ownerships, averaging less than 200 acres. The ownerships are scattered through New Hampshire, Vermont, and Massachusetts, but the owners have committed to long-term ownership, sound management planning, and working with a pool of responsible loggers. This arrangement has yet to show financial benefits in excess of costs, but participants remain hopeful of long-term rewards.

Finally, it is important to consider how to develop markets for certified wood. When landowners actually receive a premium for their certified wood it

will increase the incentive to pursue certification, and thus, increase the amount of land being managed sustainably. Public and private investments could aid this process. The State of Maine could also establish a procurement policy of purchasing only certified wood.

In sum, there are a number of ways to support environmental certification of landownerships, and, thus, improve sustainable forestry practices in Maine. Market forces as well as public concern about the forest ecology will likely drive this movement forward and ways to support forest certification will continue to evolve.

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