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Challenging the Traditional Forestry Extension Model: Insights from the Woods Forum Program in Massachusetts

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Abstract Traditional forestry education and outreach activities tend to focus on transfer-of-knowledge, often through workshops initiated and led by professionals to "teach" landowners about forest management and conservation. Less than 10 percent of family forest owners in the US have a management plan, participated in cost-share programs, certified their forest land, or hold a conservation easement, suggesting flaws in this traditional model. Some researchers and practitioners have suggested the need for a paradigm shift away from transfer-of-knowledge to more facilitative, participatory approaches, among which peer learning has gained growing attention and is supported by a number of behavioral theories. By analyzing data from participant feedback of a peer learning pilot program in Massachusetts and a follow-up mail survey, this paper examines the perceived usefulness of peer-to-peer interactions and the effect of peer learning over time. The results suggest peer learning did not only appeal to landowners with forestry background, but also succeeded in attracting inexperienced landowners. Participants rated their peer-to-peer experience positively. The retention of information obtained through the program was reflected by participants' ability to correctly identify foresters, land trust organizations, and reasonable sources of forestry or land management advice. Participants also shared a strong willingness to spread information obtained through

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peer learning. This study contributes to the identification of potential barriers to and opportunities for peer learning, informs forestry extension efforts in the US and beyond, and highlights the importance of integrating peer learning into the broader forestry education, technical assistance, and financial incentive programs to increase participation and promote sustainable forest management and conservation.

Keywords Forest owner · Family forest · Non-industrial private forest · Peer-to-peer interaction · Peer learning · Forestry extension · Outreach

Introduction

An estimated 35 percent (264 million acres) of US forestland are owned by families, individuals, trusts, estates, family partnerships, and other unincorporated groups, collectively called family forest owners (Butler 2008). Although most of them hold small tracts of land, their collective land management decisions across the landscape and over time shape the future of the nation's forest and the public benefits it provides, including wood fiber, recreational opportunities, and various ecosystem services (e.g., climate mitigation, watershed protection, biodiversity conservation). In Massachusetts, 1.7 million acres of forestland are owned by approximately 290,000 family forest owners (Fig. 1; Butler 2008). A majority (90 percent) of these owners own between one and 10 acres of forestland. Average length of ownership is 21 years. Forty-one percent of family forestland in the state is owned by people 65 years of age or older. A third is owned by people who intend to sell or transfer their land in the next five years (2006–2011) (Butler 2008). The large number of family forest owners and the importance of their independent and uncoordinated actions present a great challenge to forestry extension professionals. How to effectively reach family forest owners and help them make informed decisions about their land remains unknown and is the focus of this study. By examining an innovative program in Massachusetts, this paper provides a preliminary assessment of the peer learning strategy and its effectiveness for forestry extension and outreach.

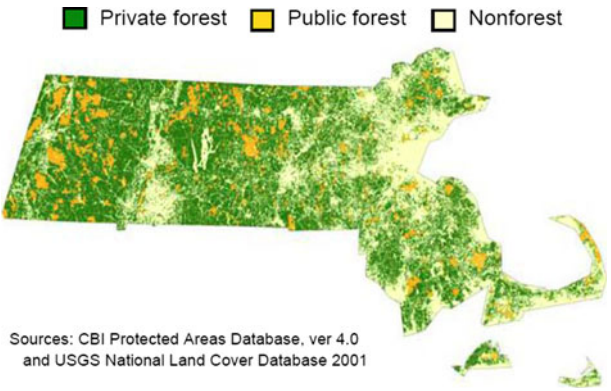

Fig. 1 Private and public forestland in Massachusetts

Traditional Forestry Extension Model and Emerging Challenges

Considerable effort has been made by forestry professionals and policy makers to encourage sustainable land management among family forest owners in the US and beyond. Commonly used non-regulatory programs include technical assistance, cost-share, tax incentives, and green certification. In addition, land trusts, conservation organizations, and natural resource agencies, have recently become interested in promoting the use of conservation easements to protect private lands from future development. These programs generally contain an education component to help landowners learn about the programs and eventually become participants (e.g., Massachusetts Forest Stewardship Program). The task seems straightforward—reaching out to individual landowners, communicating the important personal and public benefits of sustainable forestry and program participation, and convincing landowners to adopt certain practices and participate in particular programs. The challenge, however, is to figure out how to pursue this seemingly straightforward task effectively, particularly considering the large number of landowners and their diverse ownership objectives.

Traditional forestry extension activities tend to focus on the transfer-of-knowledge (Steyaert et al. 2007). Often initiated and led by forestry professionals, classes and workshops are offered locally to "teach" family forest owners how to manage their land sustainably and why they should participate in certain forestry programs (e.g., forest stewardship, green certification, conservation easement). The underlying assumptions of this model are that 1) professionals know what landowners need to "learn" in order to be good stewards; 2) professionals have university degrees, and often some kind of license or certification, and therefore, are the most credible source of land management information; and 3) education or delivering information to landowners leads to the actual practice of sustainable forestry or program participation. However, these assumptions are not supported by empirical evidence. For instance, research has shown that landowners tend to trust people like themselves rather than those who are considered experts (Gootee et al. 2010; Hujala et al. 2009; Knowles et al. 2005). Landowners are more likely to adopt conservation measures or participate in relevant programs if highly respected individuals in their community promote such actions or have done so themselves (Rogers 2003). After decades of extension and outreach efforts, four percent of family forest owners' nationwide (Butler 2008) and approximately 15 percent in Massachusetts (J. Fish, personal communication, June 20, 2010) have a written forest management plan. Less than 10 percent both nationwide and statewide have participated in a cost-share program, have certified their forestland, or hold a conservation easement (Butler 2008). These statistics suggest flaws in the traditional forestry education and outreach model.

Forestry professionals are facing three particular challenges. First, a large number of existing programs have a strong emphasis on active management. However, recent research has shown that the majority of family forest owners value the natural beauty, privacy, and other amenities provided by their land and are generally indifferent to generating income or active management as professionals would define it (Butler 2008; Erickson et al. 2002; Johnson et al. 1997; Jones et al. 1995;

Kendra and Hull 2005). Therefore, these landowners may not connect the need for participating in a forestry program with the achievement of their often vaguely defined amenity objectives (Kittredge 2004). As a result, extension and outreach messages or programs emphasizing active management may not be effective, even if they provide financial assistance or incentives (Kilgore et al. 2007).

Second, information that forestry professionals typically "teach" does not necessarily lead to the actual practice of sustainable forestry or program participation. Leahy et al. (2008) found that Minnesota family forest owners' initial attitudes toward green certification only became more entrenched as they were provided additional information about the program—skeptics became more disinterested while those inclined to participate became even more so. This phenomenon may be explained by the following: 1) the information delivered is confusing; 2) the way of delivering information is misleading; or 3) the expectation of outcomes needs to be adjusted. In other words, it is important to recognize that information may not lead to desired behavior; however, information may lead to informed decision making (Kittredge 2004). Gootee et al. (2010) likewise suggested that landowners' willingness to act upon information they received and consequently implement recommended practice was greatly influenced by their impressions of the individuals delivering it. The traditional forestry education and outreach model emphasizes the distinction between professionals and landowners (the lay audience), which significantly hinders clear communication (Paretti 2003). When a professional pressed for an "expert to non-expert" relationship or did not establish a mutually respectful interpersonal learning atmosphere, non-professional forest owners frequently resisted not only that individual, but also the information they provided (Gootee et al. 2010).

Lastly, "preaching to the choir" is an issue. Studies have shown that only a small segment of family forest owners are susceptible to traditional messages of "good" forestry promoted for decades through programs such as Tree Farm, Forest Stewardship, and current-use tax incentives (Kittredge 2004). This small segment is often referred to as model owners, who are generally committed to active management, have been working with forestry professionals, are members of landowner associations, have participated in various extension events, and have adopted particular forestry programs (Langer 2008). While maintaining communication with these model owners is important, effort is also needed to identify less active landowners, understand their needs, and explore strategies to engage traditionally underserved audience or those indifferent to conventional forestry programming (Butler et al. 2007; Finley and Kittredge 2006; Hujala et al. 2009; Johnson et al. 2006; Kittredge 2004).

Paradigm Shift from Transfer-of-knowledge to Peer Learning

Some forestry professionals have been discussing the need for a paradigm shift away from the transfer-of-knowledge approach to more facilitative and participatory approaches, among which a peer learning strategy has gained growing attention among forestry professionals (Johnson et al. 2006; Schraml 2003; Rickenbach et al. 2009; Woodland Owner Networks 2009). Peer learning can be defined as the

acquisition of knowledge and skill through active helping and supporting among status equals or peers (Topping 2005). The term "peer" is applied to describe close friends, habitual associates, or relative strangers who just happen to be involved in similar activities under similar conditions (Shiner 1999). In a forestry setting, peer learning poses an alternative to the "expert" status of forestry professionals and is further characterized by an emphasis on learning that is both interactive and participative (Cripps 1997; Shiner 1999).

Peer learning is considered as an effective alternative behavioral change strategy and supported by a number of behavioral theories, including Social Learning Theory, Theory of Reasoned Action, and Diffusion of Innovation Theory. Social Learning Theory claims that modeling is an important component of the learning process (Bandura 1986). The extent to which individuals are influenced by modeled behavior depends on the characteristics of models, the individuals' value, and the perceived consequences of adopting similar behavior (Turner and Shepherd 1999). Theory of Reasoned Action states that one of the influential elements for behavioral choice is an individual's perception of social norms about what people, who are important to the individual, do or think about a particular behavior (Fishbein 2008; Fishbein and Ajzen 1975). Lastly, Diffusion of Innovation Theory posits that certain individuals (opinion leaders) from a given population act as agents of behavioral change by disseminating information and influencing group norms in their community (Rogers 2003). There are similarities among these three theories in that families, friends, neighbors and other types of peers are influential because they have credibility through their status, competence, and shared values (Turner and Shepherd 1999; Young and Reichenbach 1987).

Since the 1960s, the popularity of peer learning has flourished within schools and youth service (Shiner 1999). Strong association also exists with social welfare programs that promote the reduction of drug use, alcohol consumption, and risky sexual behavior (Milburn 1995; Real and Rimal 2007; Shiner 1999; Ward et al. 1997). In recent years, there has been an increasing application of peer learning strategies in the field of natural resources (Allred and Goff 2009; Snyder and Broderick 1992; Steyaert et al. 2007; Wyckhuys and O'Neil 2007). Studies have shown that the presence of a knowledgeable peer, who has experience with a particular natural resource management practice, program, or decision, frequently makes the difference between whether an individual adopts or abandons the promoted practice or program (Coleman et al. 1966; Rogers 2003). The presence of such peer, who is willing to share knowledge and experience freely, can reduce fear and uncertainty about the practice or program, and encourage adoption (Snyder and Broderick 1992).

Efforts promoting peer learning in forestry have been successful to a certain extent through extension programs that identify and invest in local formal and informal opinion leaders (e.g., Keystone Project in Massachusetts and various master woodland owner programs in a handful of other states). Information communicated through peer-to-peer interactions is generally more effective than delivered by forestry professionals, because peer family forest owners do not carry the perceived interest to actively promote an agency or industry position (Kittredge 2004). The focus of existing programs is on training volunteer community opinion

leaders to serve as spokespersons or advocates for forest stewardship (Allred and Goff 2009). After the training, opinion leaders agree to return to their respective communities and assist their peers in making forest management decisions through informal conversations with neighbors or local landowners, organizing workshops in their communities, writing articles in the local newspapers, and so on.

Training opinion leaders is important, but not the only approach to peer learning (Watts and Dodds 2007). Effective learning may also occur in situations where a group of landowners exchange information, ask their peers questions, and provide suggestions or recommendations to each other. Under these situations, landowners communicate with each other as equals, which gives them novel ideas and access to resources and contributes to their desire and capacity to innovate (Nybakk et al. 2009). Such approach and the aforementioned opinion leader-focused programs are not mutually exclusive. However, the latter focuses on identifying specific individuals, investing in their learning, and using them as change agents to catalyze information dissemination within existing community structures; while in the former case, the role of opinion leader is less visible; instead, every participant may contribute to knowledge sharing and co-production. Although such approach has not been widely adopted in forestry, a pilot program has been established by the University of Massachusetts (UMass) Extension. Our objective is to describe the pilot program, examine its implementation, and provide a preliminary assessment of this peer-to-peer strategy and its effectiveness for forestry extension and outreach.

A Pilot: Woods Forum

Woods Forum is a program that facilitates information exchange and networking among peer landowners. It provides an opportunity to discuss issues surrounding family forest ownership and the importance of family forestland to local communities, specifically important decisions regarding land management and conservation. The Woods Forum model is based on the premise that local landowners have much to learn from one another about their land and their experiences, and it is important to create opportunities to stimulate such learning. Bringing together landowners to share information and experiences can also create an informal, local network of contacts. Since the majority of family forest owners do not have a written forest management plan nor have received professional advice (Butler 2008), the informal, local network of contacts may become valuable when landowners need to make a decision about forest management or the future of their land.

Specifically, Woods Forum sessions are not “workshops” at which landowners are “students” who are there to “learn” or be “taught” by forestry or conservation professionals. Instead, these sessions are organized to stimulate discussions and provide a platform where landowners can ask questions to and get answers from their peers. Each session starts with a brief, 20-minute presentation by an extension forestry specialist who discusses two common decisions landowners face (the sale of timber and the future of land) and present case studies. The program is then opened up to participants to ask their specific questions. The extension forestry specialist facilitates the discussion, encouraging landowners in the room to share

their experiences and knowledge about the questions. Land trust professionals and foresters are brought into the conversation when appropriate. The session is then brought to a close after about an hour of open discussion with a five-minute presentation of take-home messages, sources of information, and contacts for local professionals. A handout of local land trusts, foresters, and the Extension website is also made available to all participants.

Since 2007, Woods Forum programs have been held on weekday evenings in town halls and community centers across Massachusetts. Marketing of the Woods Forum targets areas under increasing development pressure but having had limited forestry extension activities. Specifically, a focus area of three to five towns is chosen for each program in order to be locally relevant. A description of the Woods Forum is direct mailed to landowners owning 20 or more acres within the target area. Announcements of the program are circulated through local conservation organizations and municipal boards. An advertisement is also placed in the local newspaper. Foresters and land trusts are encouraged to contact landowners in key landscape positions and/or those who may be making a decision about their land.

This study focuses on four Woods Forum programs held in Gardner, Petersham, Plainfield, and Shutesbury in 2008 because participant feedback was collected at the end of each program through a short written evaluation. Research questions include: (1) What are landowners' attitudes towards peer learning? (2) What is the perceived usefulness of peer learning programs among landowners? (3) Does peer learning better enable landowners to make informed land management decision? and 4) Does peer learning have a lasting effect on landowner learning outcomes? The results of this study shed light on the utility of peer learning in forestry education and outreach, particularly when an opinion leader is not identified and learning occurs through group interaction. The results will also help the Woods Forum organizers improve the current program and better serve family forest owners in the region.

Methods

The data for this study were drawn from two sources. The first source is the aforementioned participant feedback. Sixty-eight family forest owners participated in the four sessions held in Gardner, Petersham, Plainfield, and Shutesbury, among which 60 (88 percent) completed an evaluation at the end of their session. Quantitative data were collected concerning size of forest holding, landowners' forest management knowledge, activities and concerns, their ability to access forestry or land management information or assistance, their willingness to share information with peer landowners, the perceived usefulness of the peer learning experience, and the potential for program improvement.

The second data source is a mail survey of Woods Forum participants from the four 2008 sessions, conducted in January 2009, six to 12 months after their initial involvement. The survey was administered following the Dillman (2009) method. A postcard was mailed to all participants to briefly introduce the study. The questionnaire along with a cover letter was mailed a few days later, followed by a postcard reminder. A second questionnaire was sent to those who failed to respond.

Five questionnaires were returned due to undeliverable addresses. Fifty-eight participants responded representing a response rate of 92 percent. Questions asked were concerning landowners' forest management knowledge, activities and concerns, their ability to access forestry or land management information or assistance, the perceived usefulness of the information obtained from Woods Forum for helping them manage and conserve their land, and their desire and experience of sharing information with peers. The responses to these questions allowed us to assess whether landowners' knowledge had changed over time; in other words, whether peer learning through Woods Forums had a lasting effect on learning outcome. The questionnaire also provided an opportunity for respondents to share any comments they may have regarding the Woods Forum program. By using Excel to summarize and compare data collected through participation feedback and the mail survey, we were able to analyze Woods Forum participants' ownership characteristics, their management knowledge, access to information, the perceived usefulness of peer-to-peer interactions, and the effect of peer learning over time.

Results

A Profile of Woods Forum Participants

The average size of forest holding among Woods Forum participants was 119 acres, with a minimum of one acre and a maximum of 780 acres. Fifty-seven percent of respondents were enrolled in a state forestry property tax program. Thirty-seven percent had a written forest management plan. About one-fifth of respondents sold timber with the assistance of a licensed forester in the last five years. Eight percent of respondents were members of the Massachusetts Forest Owners Association. Eight percent participated in the state Tree Farm program. Less than a quarter of respondents held a conservation easement on their land limiting development rights. Half indicated that they were thinking about land conservation options. About a third was considering active forest management, such as timber harvesting. Finally, one-fifth of respondents were thinking about participating in a state or federal forestry program.

In general, Woods Forum participants owned more land than the average family forest owner in Massachusetts. The state mean is 18 acres if considering all properties and 42 acres if considering only properties that are 10 acres or larger (Kittredge et al. 2008). They were more likely to be engaged in forest management planning (37 percent vs. 15 percent of family forest owners in Massachusetts with a written forest management plan) (J. Fish, personal communication, June 20, 2010). They were more likely to hold a conservation easement (23 percent vs. an estimated five percent statewide) (Butler et al. 2009). Finally, Woods Forum participants were generally concerned about land conservation and forest management issues. On the other hand, a majority of respondents were not model owners and did not commit to active management. For instance, more than 60 percent of respondents had no written forest management plan, three quarters did not have a conservation easement, and 80 percent had no experience in the last five years selling timber with

a licensed forester. In addition, more than 90 percent of respondents were not part of the Massachusetts Forest Owners Association or Tree Farm program.

The Perceived Usefulness of the Peer-to-peer Approach

Overall, the Woods Forum program was perceived as a useful experience for family forest owners. Among those who provided participation feedback at the end of each forum, the program received a rating of 4.5 on a scale of 1 to 5 in terms of usefulness (1 being not useful at all and 5 being very useful) (Fig. 2). Participants also discussed the specific pieces of useful information they obtained through their peer-to-peer interactions. Specifically, when asked to name a forester who they could contact for forest management information or advice, 30 respondents (50 percent) provided names, among which 27 (45 percent) were able to correctly identify a licensed forester (Massachusetts Department of Conservation and Recreation 2009) and three identified a logger or other woods worker (Fig. 3). When asked to identify a land trust that could provide information about conservation easement, 42 respondents (70 percent) were able to name at least one accurate organization. In addition, 45 percent of respondents were able to

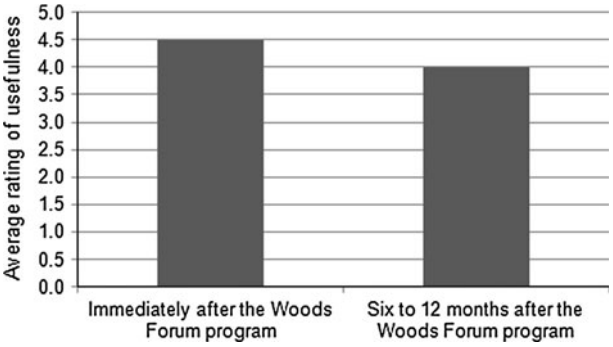

Fig. 2 Average rating of usefulness of the Woods Forum program by participants

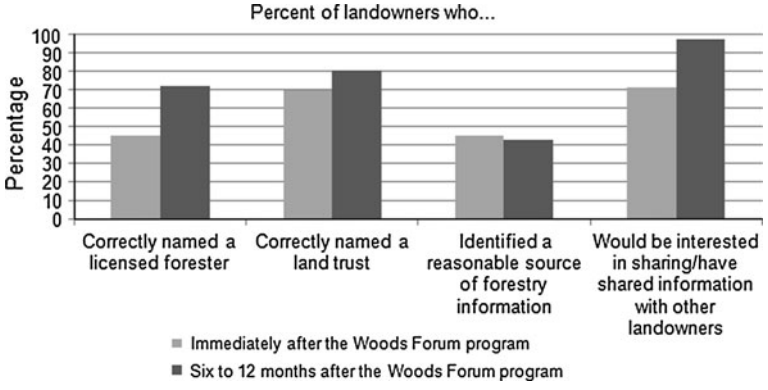

Fig. 3 Retention of information obtained through the Woods Forum program over time

identify a reasonable source of information if they were to seek forestry or land management advice. A reasonable source included any forestry professionals, conservation organizations, landowner associations, forestry agencies, and associated websites and publications. Finally, 71 percent of respondents indicated that they would pass on relevant information learned from the Woods Forum if a peer landowner was considering making a decision about his or her woodland.

The Test of Time and Broader Impacts

Do peer-to-peer interactions have a lasting effect on landowners' learning outcomes? Do Woods Forum participants remember their experience? How would they evaluate their experience six to 12 months after their participation? Among the 58 mail survey respondents, all but three remembered their participation in Woods Forum and 84 percent remembered the exact information they obtained through their interactions with peer landowners. Respondents were asked to rate the usefulness of the information obtained for helping them manage and conserve their land six to 12 months after their participation. The average rating was 4 on a scale of 1 to 5 (again 1 being not useful at all and 5 being very useful) (Fig. 2). Participants also discussed the retention of information (Fig. 3). Seventy-two percent were able to correctly identify a state forester; 81 percent were able to correctly identify a land trust organization; and more than 40 percent were able to identify a reasonable source of information if they were to seek forestry or land management advice. Finally, all but one respondent indicated that they had shared information obtained from the Woods Forum with peer landowners or would definitely do so if a peer landowner was considering making a decision about his or her woodland.

The Woods Forum model focuses on making information available to family forest owners by facilitating dialogue and learning among peers. Participants appeared to be very receptive to this model. Below are a few quotes from mail survey respondents highlighting the value of this peer learning strategy:

"Excellent program: low-key, unpressured, very effective. I appreciated meeting local people interested in the same thing."

"Excellent method of information transfer. Keep it casual! Landowners feel more comfortable and it is easier to participate."

"I think Woods Forums are a great informal way to get out info on programs and forest research to the public."

"A good program. I knew much of this but made good new connections."

"The information presented was easy to understand. The tone of the meeting was inviting. Encouraging audience participation was the key. It enhanced the relevance of the material presented to the participants and got them to think about their own situation."

Discussion

Only four percent of family forest owners nationwide have a written forest management plan, and 14 percent have received advice about their forestland. It is

fair to say that the majority of landowners are unengaged. How to reach unengaged landowners has proven to be a challenge for forestry professionals. The traditional "teaching" and offering forestry programs implies that the professionals provide the landowners with what they think a landowner needs to know. Such effort has proven largely unsuccessful at reaching all but a small segment. Peer learning allows landowners the opportunity to direct the outreach and communication activities to meet their own needs for the management or conservation decisions they are facing and the information is delivered to them by one of their often cited credible sources, their friends, neighbors, and peers. Peer learning leads to a greater satisfaction from landowners because they are assured to get what they need from participating in the educational or outreach program. Peer learning opportunities (e.g., the Woods Forum program) should target the unengaged landowners; at the same time, some engaged landowners or "choir" members are needed in the audience to provide a rich peer-to-peer experience and environment for those unengaged. The Woods Forum program appeared to have succeeded in getting a good balance of both segments of family forest owners. The participants of the Woods Forums program seemed to be a mix of experienced (i.e., those who had a forest management plan, worked with a licensed forester, had a conservation easement, was a member of the Massachusetts Forest Owner Association or Tree Farm program) and inexperienced landowners (i.e., those who did not involve in the aforementioned activities). In other words, the peer learning format did not appear to be only appealing to those "choir" members who were already engaged in forest management and established relationships with foresters and conservation professionals.

We did not administer a survey to Woods Forum participants before each program started. The data presented in Fig. 3 illustrate the knowledge participants possessed at the end of each Woods Forum and the retention of such knowledge. As a result, we do not have an estimate of what they knew or understood prior to each program and thus cannot accurately estimate the knowledge each person acquired from participating in the program. However, the results discussed earlier suggest that most Woods Forum participants were not model owners and had little experience working with forestry professionals or organizations. Thus, it is reasonable to believe that their prior knowledge about forest management and land conservation was minimal, and knowledge they possessed at the end of each program was to some extent gained through their participation, which was used as a proxy for knowledge obtained through peer learning. In an effort to maintain anonymity and confidentiality, we did not have the identities of respondents to our evaluations. Thus, we cannot track individual change in knowledge or attitude over time. However, our response rates are relatively high (88 percent on the day of the program and 92 percent through the mail survey six to 12 months later), providing a good estimate of pooled respondent attitude and knowledge at two points in time and of the associated changes over time.

The messages and lessons obtained from the Woods Forum program seemed to last the observed six to 12 months. Will they persist after that? Will landowners know where to go and who to call when they reach a decision point five years down the road? The preliminary results to date suggest that there is longevity and landowners tend to retain the information obtained in a peer-to-peer environment.

This is important, since most landowners do not anticipate making a decision or engaging in active management in the near future. For instance, according to Butler et al. (2009), an estimated 51% of Massachusetts woodland owners expect to leave their land as is and take no action in the next five years; 36% expect minimal activity to maintain forestland. Landowner behavior can best be described as reactive to circumstances (e.g., immediate financial need), and will they know where to turn when that need arises? Peer learning is an alternative model through which landowners may actually retain the information obtained in an education or outreach program.

Can forestry professionals reach landowners who do not physically participate in events such as the Woods Forum program? Although this study was not able to fully investigate the transitivity of the peer learning approach, the preliminary results suggest a strong recognition of the usefulness of the Woods Forum and an increased willingness among respondents to share and spread forest or land management information obtained through their peer-to-peer interactions. Most noticeably, there was a remarkable difference in the proportion of landowners who reported willingness to share (Fig. 3). Immediately after the program, 71 percent of respondents reported interest in sharing information they obtained from the Woods Forum program with peer landowners in their communities. In the six to 12 months following their Woods Forum experience, 98 percent of respondents either had shared information or would be willing to do so. The potential recipients of the information include their neighbors, friends, and other landowners who may be unlikely to seek professional help otherwise. This increase in desire and experience of sharing information also suggests that time spurred additional recognition among Woods Forum participants of the value of their peer learning experience.

Finally, the purpose of this study is not to suggest using this peer-to-peer approach to replace other forestry outreach strategies and programs. Rather, these results suggest taking a careful look at the potential of this approach and considering how to use it to complement traditional workshops and programs focusing on training master family forest owners or opinion leaders. For instance, peer learning may be promoted by giving trained volunteer master landowners or opinion leaders a role to play through organizing a Woods Forum or hosting a similar event. In addition, it is important for forestry professionals and policy makers to innovate when developing policies and programs, integrate the peer learning approach into the broader forestry education, technical assistance, tax incentive, conservation easement efforts, and use peer power to increase participation in forestry programs in general.

Conclusions

Traditional forestry extension activities have mostly focused on “teaching” family forest owners. Past efforts often had a strong emphasis on active management, did not necessarily lead to desired behavior, and were only appealing to a small segment of “choir” landowners. A number of behavioral theories suggest peer learning as an alternative behavioral change strategy and outreach approach. This paper provided a

preliminary assessment of a peer learning pilot program. Nonetheless, the program is a good representation of one peer learning model, which does not focus on training opinion leaders, but makes information available to participants by facilitating dialogue and learning among all peers. Participants of the pilot program appeared to be very receptive to this approach. The results of this study suggest that such approach has a great potential for promoting informed forest and land management decision making among not only model landowners but also traditionally unengaged landowners over time. Further effort is needed to communicate this potential with policy makers, program administrators, community planners, landowner organizations, and natural resource professionals to design extension and outreach programs with a broader constituency and longer lasting effect.

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