Civic Forestry in the Green Mountains

Community forestry in Vermont & the obstacles to ecosystem management

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What is Ecosystem Management?

Over the past two centuries, forest managers have tended to regard forests as sites of commodity production. Focused primarily on board footage of merchantable timber, their mental map of the woods often did not include salamanders, fungi, nesting sites for birds, nuts and berries for animals, adequate canopy to keep streams from becoming too warm for trout, or countless invisible life-sustaining processes. To the extent that these things may be said to make up a forest, foresters have often failed to see the forest for the trees. Over time, management practices based on this simplified view began to reduce biodiversity and to interfere with the functioning of forest ecosystems (Scott 1998).

This production-oriented approach to forestry is consistent with the way other parts of the landscape have been managed, from the impounding and depletion of rivers for power and irrigation, to the leveling of mountains to remove ore. Industrial agriculture has been similarly focused on maximizing commodity production rather than maintaining a healthy agricultural landscape. Since 1960 the U. S. has lost more than half its topsoil (Ponting 1992), pesticides have become a persistent problem in the environment (Moore 2002), aquifers are being depleted at an alarming rate (Reisner 1993), agricultural pollution, mostly from fertilizers, has impacted almost three quarters of the nations waterways (Warshall 2002), and increasingly concentrated ownership has undermined the economic foundations of rural communities (Geisler and Lyson 1991; Heffernan 1999).

Beginning in the 1990s, increasing attention has been paid to the fact that farm and forest lands serve not only as sites of commodity production, but also provide (or have the potential to provide) a variety of essential public goods. These include vital ecosystem functions such as watershed maintenance and the conservation of biodiversity; rural economic development based on the strong multiplier effects associated with agriculture; and the maintenance of aesthetic and cultural values. The term ‘multifunctionality’ refers to the ability of agricultural and forested landscapes to produce these non-commodity benefits. This term is most commonly used in the context of international trade negotiations and was the subject of heated debate during the millennium round of WTO talks. Countries that insist on government protection of agriculture—ostensibly for the purpose of maintaining food security, rural viability, or

landscape functions (such as the use of rice patties for flood control in Japan)—use the concept of agricultural multifunctionality to argue that such support should not be considered a commodity subsidy (Jervell and Jolly 2003; Prestegard 2003; Romstad et al 2000). Because diversified small farms exhibit greater multifunctionality than large industrial ones, the concept has also become useful to advocates of small-farm agriculture, especially in debates over productivity (Bray 1994; Green and Hilchey 2002; Rosset 1999). Forests are also being recognized for the public goods that they provide. In 2005 the Union of European Foresters passed a resolution seeking to create "an equitable balance between the various functions of forests" and to promote "the benefits of multifunctional forestry" (UEF 2005). Also in 2005, a conference on "The Multifunctional Role of Forests" was held in Padova, Italy. In the proceedings it was recognized that "demand for new public goods and services adds to [demand for] traditional wood and non-wood forest products, resulting in increased pressure on—if not conflicts over—the use of forest resources" (Gatto 2005).

In the forestry literature, the term "ecosystem management" is used more frequently than multifunctionality, placing a greater emphasis on forest ecology. The term became widely used by the early 1990s, reflecting both improved scientific understanding and changing public values. To some, this signals a significant paradigm shift and the possibility of a major change in the way forests are managed (Cortner and Moote 1999). Definitions of ecosystem management stress the importance of ecological integrity, and *privilege the maintenance of conditions, including biological diversity, over outputs*. Most definitions also make it explicit that management choices are embedded in a framework of human values, suggesting the need for public involvement in decision-making. (Cortner and Moote 1999; Grumbine 1994) To some, ecosystem management is not just about improved science or management techniques; but more fundamentally about redefining the relationship between humans and nature (Grumbine 1994). Ecosystem management is not to be confused with a policy of multiple-use. Forest managers, especially on public land, have long balanced timber harvesting with grazing, hunting, mining, and recreational interests. The term multiple-use in this context has been used to refer to the production of multiple outputs. *Proponents of ecosystem management want to shift the focus away from outputs, placing it instead on maintaining*

the integrity of ecological processes (CRS 1994). It is also important not to confuse multifunctionality with multiple-use. Multifunctionality generally refers to the ability to produce a variety of *public goods*, in addition to one or more commodities. Thus, a woodlot does not demonstrate multifunctionality by producing mushrooms, berries, and hunting or hiking fees in addition to timber; but rather by contributing to watershed protection, local economic development, carbon sequestration, scenic beauty, and by being part of a larger mosaic of woodland habitat. Both multifunctionality and ecosystem management represent a movement away from looking at natural landscapes exclusively as sites of commodity production.

Obstacles to Ecosystem Management

Effective ecosystem management faces two obstacles, which in general challenge efforts to make farm and forest land more multifunctional. The first of these obstacles is fragmentation of the landscape into many small management units. The second obstacle is that the benefits of ecosystem management generally have the nature of public goods, the provision of which is not supported by effective incentive structures.

Highly fragmented patterns of landownership are clearly problematic for managing ecosystems as an integrated whole. In the northeast, nearly three quarters of the forestland is privately owned, with an average parcel size of about 22 acres (Kittredge 2005). Many important ecological functions, from hydrology to habitat, cannot be managed on parcels that small. Likewise, many of the challenges that landowners face, such as deer and invasive plant species, are nigh impossible to manage on one property in isolation, due to their mobility across property lines. In 1920 botanists in Montana declared that it was "almost impossible for a man to keep his land free from certain weeds …unless there is concerted effort to the same end by all farmers in the immediate neighborhood" (Fiege 2005). Small parcels are poorly insulated from the effects of surrounding land use decisions. The difficulty of managing the *content* of natural areas without any control over the *context* suggests the necessity of a landscape-level conservation strategy (Noss 1987). Patterns also matter: the contents of a landscape, such as woods, fields, and roads, will function differently and have different effects depending on how they are arranged in relation to each other (Olson 1999). Conservationists

working in highly developed landscapes, for example, try to stitch together functional patterns by creating corridors connecting different parcels, as well as by surrounding natural areas with buffer zones of low-intensity use (Noss 1987; Thompson 2002). The ecological need to integrate landscape management across highly fragmented forest ownership indicates a strong need for cross-boundary cooperation on the part of landowners. In a system of diffuse, uncoordinated landownership the cumulative effects of people's choices can sneak up on them—land uses that may not be very harmful in isolation can add up to serious threats if practiced by enough people (Freyfogle 2003). When many people are making decisions, each independently without communicating, the results can sometimes add up to outcomes that nobody is happy with.

Because most of the forestland in the northeast is non-industrial private forest, and because the ownership of this land is so fragmented, a fair bit of research has focused on the prospects for cooperation between individual owners of small parcels (Campbell and Kittredge 1996; Kittredge 2005; Rickenbach *et al.* 1998). Lack of effective organization between private forest owners (Wolf and Hufnagl 2005) however, and high rates of turnover among this group (Harou, Mack and Mawson 1985), suggests an important role for public land and other protected areas. Yet the degree to which these areas contribute to landscape level management is often limited by the ability of public agencies and non-profit organizations to work across administrative boundaries. The ecosystem management literature places a heavy emphasis on the need for cooperation. At the same time that ecologists are beginning to understand the interconnectedness of nature, and the corresponding need for landscape-level management; citizens, land managers, and policy makers are beginning to see the interconnectedness of human interests regarding the landscape, and how these, too, need to be managed at a landscape scale. A large part of the interest in ecosystem management stems from the perception that it offers a good framework for dealing with conflict over natural resources (CRS 1994; Cortner and Moote 1999; Gatto 2005; Yaffee *et al.* 1996). If healthy forests and farmland disappear, it won't be because we haven't devoted enough attention to silvicultural or agricultural science, but rather because we haven't devised appropriate "arrangements" (i.e. legal, economic, and cultural) for the sustainable use of rural land, or haven't learned what it takes to make those arrangements work.

The second major obstacle to ecosystem management is the public goods nature of its products. What are 'public goods'? I am using the term here to refer to goods that cannot be commodified or contracted for in a market due to the impossibility of excluding anyone from the benefits, and the consequent difficulty of collecting payment. Carbon sequestration is an example of such a good.

The production of public goods can be crippled by problems of collective action that resemble Prisoner's Dilemma games. These problems become even more difficult when the benefit in question cannot be provided by a single person or firm. For example, let's imagine that the presence of wild turkeys is something that the people of a given region greatly desire, and that it costs something for a landowner to create or maintain turkey habitat. Let's also say that it is not adequate for only a small number of landowners do this—in order for there to be turkeys, lots of landowners need to maintain habitat. It is also the case that if only a few people *don't* maintain habitat it won't make any difference; there will still be turkeys. The problem arises at the level of each landowner's decision-making. Even if every landowner would gladly pay the cost of maintaining habitat on their property for the sake of having turkeys in the area, each might reason: "If I undertake to maintain habitat and not enough other people do, I'll have paid the cost and there won't be any result. Conversely, if most other people *do* maintain habitat, then there will be turkeys whether I contribute or not." When the basis for decision-making is minimizing cost and weighing the probable impact of one's actions, as is often the case, landowners are likely to refrain from contributing to habitat. The tragic result is that none of the landowners will get to enjoy the sight of turkeys, even though each of them would be willing to contribute to habitat *if only they could be sure that others would do the same*.

Rural communities suffer from many dilemmas of this kind. Landowners sell land to developers in order to cope with property taxes that are rising as a result of increasing development; dairy farmers increase production to deal with low prices caused by overproduction; coastal fishermen respond to declining fish stocks by investing in gear that enables them to catch more fish; and the countryside is transformed into suburbs by people who each want to build their house in an isolated rural setting.

Of course, people's decision-making is not always based on the kind of cost-benefit analysis described in my turkey example, above. We often do things based on principle. Many Vermonters exercise good stewardship because they believe it is the right thing to do. Nevertheless, general trends indicate that the choices most Vermonters make are not consistent with the outcomes they desire. According to a poll conducted by the Vermont Forum on Sprawl, Vermonters "believe communities should consist of compact settlements with good access to preserved open land and a nearby working landscape. At the same time, they often make personal choices that work against this vision" (The Vermont Forum on Sprawl 1998). Between 1982 and 1992, Vermont's population grew by less than 10%, but developed land increased by more than 25%—about 2.5 times as much (Yacos and Wilhelm 1999). Nearly 40% of this newly developed land had previously been cropland or pasture (The Vermont Forum on Sprawl 1999). Some of this land may at one time have been spared by a person who decided to live in the village center instead of building their home on undeveloped land; but that person's choice didn't stop someone else from coming along and developing the land later. Here the would be developer is in the same situation as the fisherman who might limit his catch, but who realizes that the fish he leaves behind will only fill someone else's boat. It can be difficult to undertake principled actions unilaterally and to have them be effective. And as we noted in the section on fragmentation, good stewardship at the micro level does not ensure functional patterns at the landscape level.

In order for landscape level management goals to be achieved where the ownership of land is highly fragmented, and in order to maintain a stock and flow of benefits that by their nature are public goods (and thus cannot be provided by markets), even the best intentioned people need some kind of "arrangements" to facilitate cooperation between them. The next part of this paper examines the degree to which community forestry in Vermont is innovating these kinds of arrangements.

What is Community Forestry and what role can it play in addressing the challenges of ecosystem management?

The community forestry movement springs from a recognition that commodity-focused forest management frequently fails to support either healthy forest ecosystems or healthy communities. Often the two are brought into conflict with each other, as in the "owls versus jobs" debate in the Pacific Northwest.

Community forestry initiatives seek to manage woodlands sustainably for the benefit of local communities.

> The new discipline of community forestry links sustainable forestry to community well-being. Community forestry efforts…combine conservation with economic development and cultural values to benefit the local population (Brendler and Carey 1998: 21).

Brendler and Carey (1998) identify three attributes or goals that are common to most community forestry efforts: local ownership or control of the forest resource; conservation of this resource; and a process of civic engagement to see that it is managed for the public good.

It is this last attribute especially that suggests how community forestry might provide a solution to the problems of collective action that are the obstacles to ecosystem management. For Baker and Kusel (2003), improved democratic practice at the local level is a central feature of community forestry. They link the success of ecosystem management and local community development to the development of deliberative practices that foster cooperation and enable communities to problem-solve.

In Vermont, community forestry initiatives fall into two basic categories. Some try to cultivate cooperation among individual private land owners; while others strive to improve the democratic management of public or common land. Both involve community members working together to ensure that woodlands will be managed for the public good.

Community Forestry Profiles

Vermont Coverts: Woodlands for Wildlife

Vermont Coverts encourages private woodland owners to manage their forest in ways that enhance wildlife habitat. Originally begun as a project of UVM extension

forester Thom McEvoy in 1985 with funding from the Ruffed Grouse Society, Vermont Coverts is now an independent non-profit organization. The Vermont Coverts mission is pursued through four main program areas: the Cooperator training program, the Woodlands for Wildlife newsletter, an annual series of workshops, and the Neighborhood Wildlife Habitat Program.

The Cooperator Training Program is Vermont Coverts' central activity. Twice a year Coverts offers a three-day intensive training program in forest and wildlife management. In exchange for the training and a wealth of printed material, participants, called "cooperators," agree to spread the gospel in their communities about managing woodlands for wildlife.

The Neighborhood Wildlife Habitat Program began in 1997 as an experiment in getting neighbors to cooperate in woodland management. Seven trained cooperators agreed to reach out to their neighbors in an effort to initiate cross-boundary cooperation. These volunteers varied in their approaches and met with varying levels of success.[1]

The most successful such group, and the one that has received the most publicity, was started by David Clarkson of Newfane, VT, between 1987 and 1991. After attending a Cooperator Training in 1986, Clarkson understood that the amount of land most animals rely on to provide for their various needs is larger than most individual properties, and thus there is a need for neighbors to cooperate in making sure that animals have adequate habitat. He began by approaching two of his neighbors, who agreed to make a coordinated forest management plan that would protect and improve wildlife habitat. They employed forester George Weir of Williamsville, VT; and he helped them to design a survey that was distributed to 62 neighbors in order to determine their willingness to participate and what species they were interested in managing for. 32 people responded. After meeting with these people face-to-face and walking their land, Clarkson and Weir made a map of participating properties describing the habitat value and offering management prescriptions for each. This map was distributed to all participating landowners. By 1991 the management area included 42 contiguous properties totaling 4,600 acres. In 2001 there were 40 landowners participating with over

[1] The experiences of these cooperators have been documented in a collection of case studies/interviews compiled by Yellow Wood Associates of St. Albans, VT

6,000 acres, including a large parcel owned by the State of Vermont. The collaboration is referred to as the Wildlife Habitat Improvement Group, or WHIG.

In order to facilitate greater local connectivity between cooperators, Coverts is in the process of initiating the Local Contact Cooperators Program. Local Contact Cooperators are cooperators who volunteer to organize and plan activities for local cooperators and other interested people in the area.

Orange County Headwaters Project[2]

In 2005 more than 20 landowners in the towns of Corinth and Washington, VT made a joint commitment to donate conservation easements on their land. The area of these towns is recognized as one of special importance for being at the headwaters of three rivers; for being a working landscape in which people still make a living in forestry and agriculture; and for containing extensive rich forest sites and quality, unfragmented habitat for many wildlife species. At the same time, Washington and Corinth are under great development pressure, both being less than an hour's commute from larger population centers.

In 2003 the Machin Family was thinking about conserving their land, when they learned that two other property owners in the area were considering the same thing. Attracted by Forest Legacy Program funding, which pays landowners for conservation easements, these families realized they would have a stronger application if they submitted as a group; and they wondered how many other property owners in the community would be willing to join in. They began by discussing the idea with neighbors informally, and later had a community meeting. In the end, nine landowners with a total of 3,000 acres submitted a group application to the Forest Legacy Program.

The original FLP application was not a success; but many landowners expressed a willingness to donate conservation easements on their land regardless of FLP funding, and they began to look for other ways to move ahead. In 2004 OCHP sought funding for a feasibility study that would lead to a project proposal. They received a grant of $10,000 from The Conservation Fund contingent on their raising a matching sum, which they did.

[2] Much of the information in this section comes from an administrative case history of OCHP written in 2007 by Rachael Beddoe, Policy Program Intern at the Snelling Center for Government.

After defining a 30,000-acre project area and mapping it with GIS, project coordinators and volunteers conducted a survey of landowners to determine their level of interest, meeting in person with those who expressed the most interest. Following an initial group meeting, landowners were asked to sign a non-binding letter of intent expressing their commitment to donating a conservation easement on their land if funding could be secured to cover the transaction costs. For many landowners, a donation hinged upon the availability of this funding. Twenty-one people signed.

After submitting a proposal to the Vermont Land Trust and the Upper Valley Land Trust, OCHP coordinators worked closely with land trust staff to educate landowners about the technical details of placing conservation easements on their land. In 2005 the project received funding from an anonymous donor in partnership with The Conservation Fund and by early 2007 twelve parcels were conserved. VLT and UVLT continue to work with property owners to place conservation easements on their land.

There are currently two other initiatives underway in Vermont that are similar to OCHP. The New Haven River Headwaters Project seeks to protect the traditional uses and appearance of the land around Lincoln, VT by helping landowners in the joint pursuit of conservation easements. The Chateauguay No Town Conservation Project is a collaboration between the towns of Barnard, Bridgewater, Stockbridge, and Killington, VT to protect a 60,000-acre area of working landscape through the promotion of voluntary conservation efforts on private land. The project began in 1997 and has so far conserved 3,700 acres with the help of the Vermont Land Trust.

The Vermont Town Forest Project

There are currently 140 town forests in Vermont, belonging to about half the towns in the state. Whereas the projects mentioned above encourage the stewardship of private land for public good, the Vermont Town Forest Project seeks to enhance the role of town-owned forest in providing public benefits. The Vermont Town Forest Project is a collaboration of more than twenty partner organizations led by the Northern Forest Alliance. Program activities center around three main goals: deepening community ties

to town forestland, improving the stewardship of town forests, and helping towns to create new town forest or to expand existing ones.

Little Hogback Community Forest, LLC

The 115 acres in Monkton, VT that comprise the Little Hogback Community Forest offer an interesting alternative to fragmented private ownership on the one hand and to public ownership on the other. You might call it shared private ownership. The forest is owned by a limited liability company, which in turn is owned by members of the local community. The Vermont Land Trust holds conservation easements on the land, but members of the LLC own the timber, which is sustainably managed to produce a modest financial return over the long term. They may also harvest firewood, hunt, and access the land for recreational purposes.

The 115 acres had been donated to VLT, and Vermont Family Forests organized the LLC to buy it from the land trust, which retained the development rights. Sixteen shares were sold at $3,000 each. Half of the shares were made available to people with incomes below the county median and were eligible for loans of up to half their value. There is a limit of two shares per household. Each share is entitled to one vote in decisions regarding the management of the LLC, and management costs and proceeds are divided equally among the shareholders. There is no divided interest in the property. Vermont Family Forests has the right to repurchase any share that a member decides to sell, and to do so at a price that will afford a modest return (about 3% annually). Forest management is currently carried out by Vermont Family Forests.

Evaluations

I have presented these cases for the most part as stories about things that are happening, rather than as descriptions of institutional structures. This is because, with the exception of Little Hogback LLC, none of these cases represent fresh institutional innovations. What is happening in each of these cases is an attempt to mobilize people around pre-existing arrangements (e.g., private management, town forests, conservation land trusts) with the idea that these arrangements can take on renewed vitality in the context of heightened civic engagement.

How well might these initiatives fill the need for institutions that can coordinate and provide incentives for the generation of landscape-level public goods? All of them have begun so recently that it is difficult to judge; but I think it worthwhile to make an initial assessment, and to consider the feasibility of future research involving these cases.

Vermont Coverts reaches out to private owners of non-industrial forestland. Cooperators are educated about managing their woods in a way that creates habitat for wildlife; they are not bound to do so, and there is no incentive structure to encourage them in this direction should they be otherwise inclined. Good stewardship in this case is entirely voluntary.

The Cooperator Training Program does not in itself address cross-boundary issues, except in as much as it encourages cooperators to spread the word within their communities about managing woodlands for wildlife. The Neighborhood Wildlife Habitat Program on the other hand is specifically intended to promote cross-boundary management. The pilot programs do not seem to have really taken off, although one piece of organizational literature describes them as having "flourished." Their actual status is something that I want to follow up on. The idea is that neighbors are supposed to cooperate in making their management plans, but compliance with these plans remains completely voluntary. In theory, if neighborhoods were characterized by dense networks of social interaction, and if the mobility of landowners were limited, informal mechanisms of social control might enforce compliance; but such a situation is not the norm in contemporary Vermont society.

The short time frame and lack of appropriate comparisons make it impossible to judge the efficacy of these neighborhood groups as a whole; but the fact that five pilot programs were started simultaneously suggests the possibility of a comparison between them, with the aim of understanding why some were more successful at generating participation than others. Each of these five neighborhoods also offers a pool of participants and non-participants that might be queried about their long-term goals, why they did or didn't join the neighborhood group, what they value about the landscape, and what type of group, if any, would best help them realize their management goals and their preferences for the broader landscape.

The **Orange County Headwaters Project**, like Coverts, works with private owners to knit together a fragmented landscape. The focus of OCHP however is on the preservation of land through conservation easements. The donation of an easement is entirely voluntary; but once that decision is made, the easement is permanent and compliance with its terms is legally required. Because most of the landscape-level goals in Washington and Corinth do not require active management, only the protection of large contiguous areas, OCHP has less of a focus on landowner collaboration for cross-boundary management. The main challenge of collective action in this case lay in getting people to go in on a joint commitment to preserve their land.

The chief procedural innovation in this regard was having people sign a non-binding letter of intent, indicating their commitment to conserve their land. The letters of intent and the depiction of the corresponding parcels on a map were important to show landowners how many people were committed and how each parcel fit into a wider mosaic of landscape values. One project coordinator estimates that fewer than half of the people who volunteered to donate an easement would have done so in isolation.

From a game theoretic perspective, the letters of intent were of paramount importance. The decision a landowner must make about whether or not to conserve his or her land resembles a Prisoner's Dilemma game. Let's imagine that every landowner wants to see the landscape conserved and is willing to donate an easement on their own land if necessary, but let's also assume that they don't want to devalue their land unnecessarily. In this situation each landowner faces four possible outcomes, ranked in order of preference. I'll put them in the first person, as if I were a landowner:

1.) Lots of people donate easements on their land, but I don't.
2.) Many people, including myself, donate easements on their land.
3.) Neither I nor many other people donate easements on their land.
4.) I am one of very few people to donate an easement.

In the first scenario, I get all the benefits of a conserved landscape and don't pay any of the cost. In the second scenario, I share in both the benefits and the costs. In the third scenario, I neither pay the cost nor get any of the benefits. In the last scenario I pay the cost but without the benefit of a conserved landscape.

If I have no idea what my neighbors are going to do, I may reason thus "Either a lot of other people will donate easements or they won't. If they do and I don't, that works out fine for me. If they don't and I do, that's not so good. The safest bet is to refrain from donating an easement." If most people in a landscape reason like this, the tragic result is that the situation will always default to outcome number 3, even if everyone greatly prefers outcome number 2.

Solving this puzzle requires the elimination of outcomes 1 and 4 as possibilities. The options can be narrowed to outcomes 2 and 3 if landowners can make a credible commitment to each other of the nature, "I will donate a conservation easement on my land if certain other landowners will do likewise." The first barrier to making such a commitment would be lack of communication between landowners. The simple act of calling a meeting and having someone stand up and ask "how many of you would be willing to donate an easement if everybody else did?" is an enormous step forward in this respect. Then people who are considering the decision will know if they stand alone or not. The second barrier to making such a commitment might be doubt as to whether other people can be trusted to honor their commitments. In a community with ample social capital this might not be a problem. If it is a problem, a legal contract might be an adequate mechanism for solving it. In the case of OCHP, the letter of intent was not legally binding, but it was publicly visible. Long-standing social ties within the community and the frequency of social events as part of the project may have helped to generate an adequate level of trust.

I do not know the real extent to which the letters of intent contributed to the success of OCHP; I am only supposing their importance based on the theory outlined above. Furthermore, I do not know if landowners in Washington and Corinth really make their decisions in the rational fashion that the Prisoner's Dilemma model assumes, nor if they rank their preferences in the way that such rationality implies. It is not at all clear that the signed letters of intent were a deliberate attempt to overcome a classic problem of collective action. These letters appear to have been collected with the idea that a joint application for funding would be more successful that many individual applications. I do know, based on the statements of one project coordinator, that landowners expressed concern in early meetings about the possibility of being left in the lurch after making a

unilateral donation of easements. Empirical research could verify whether the theoretical expectations of the Prisoner's Dilemma model have any basis in reality. Interviews with landowners in the project area about their landscape preferences and decision-making, and especially the extent to which they take other landowners potential decisions into account, might reveal whether the signed letter of intent really is the essential tool that I am supposing it to be for orchestrating collaborative donations of easements. The presence of two additional communities that are undertaking similar projects to OCHP offers the opportunity to replicate the interviews and, if they have not already tried it, to test the effectiveness of a signed letter of intent.

Town forests are a very old institution in New England, although their vitality has waned in many towns whose inhabitants might not even know that they exist. The **Vermont Town Forest Project** aims to reconnect people to their town forests and to improve the stewardship of these lands. In some instances they have helped towns to acquire new town forest. While town forests cannot in themselves ensure landscape-level management, they are uniquely well suited to providing public goods. Many of the problems of collective action that would arise in the context of private citizen initiatives are swept away by the normal powers of town government. That being said, town forests vary widely in their ability to fulfill the potential of their role. The fact that a certain forest is publicly owned does not necessarily mean that it is well managed, either in ecological terms or in the best interest of the community. The success of town forests may require a certain level of civic engagement, both in general and with specific attention to public forestry; thus the vitality of town forests may ultimately depend on the same conditions as other forms of community forestry. In this respect, a study of successful town forests may offer a window on effective democratic practice in general.

Methodologically, town forests are the most inviting form of community forestry to study in Vermont on account of the volume and institutional similarity of cases. There are 140 town forests in the state, belonging to almost as many towns. I do not know what kind of disparities exist between towns in the level of citizen engagement or satisfaction with their forests; but if there are wide disparities, a multiple case study might offer us the opportunity to understand why some town forests fulfill their potential role better than

others. The Northern Forest Alliance, the organization that is spearheading the VT Town Forest Project, is also interested in research that would examine ways to link the consumption of forest products to local supply.

The purchase of **Little Hogback Community Forest** by the LLC was only just completed in the summer of 2007; thus, while it presents us with a fascinating mix of property rights in forestland, it is probably too young to be a subject for research. It is definitely worth keeping an eye on, however, to see how well they are able to achieve their goals, what difficulties they encounter (if any), and what the satisfaction level of the participants is over time. The project is explicitly intended to be replicated; and so it will be interesting to see not only whether the idea is able to spread, but also whether some of its replications are more successful than others.

I am very excited by the idea behind the project, but I am also left with the sense that shareholders don't actually get very much. Because the land is not posted, shareholders' access rights do not amount to a great deal more than those enjoyed by the general public; the financial return is less than one would make by putting one's money in the bank; and although the shareholders officially hold the management rights, in practice the land is managed by Vermont Family Forests. The part played by shareholders appears to be very small; and, at risk of missing the spirit of the whole enterprise, one might wonder whether the role of shareholder is really that of charitable donor to VFF's project. Given further opportunity to talk with shareholders I would like to ask them about their reasons for going in on the project; and as the project moves into the future I will be looking to see how active a role the shareholders play and whether replications of the project involve any shifts in the distribution of rights.

Although it was beyond the scope of my summer research to understand conditions affecting the success of community forestry initiatives, there were four factors that appeared to be of critical importance in these case studies. The first of these is the presence of large parcels of forest that serve to "anchor" a project. OCHP and David Clarkson's neighborhood initiative both were able to coalesce around a few large properties that signed on early. Both of these projects also benefited from the leadership

of one or more individuals who were exceptionally motivated to get things started and to keep up the energy. In the case of Little Hogback and the VT Town Forest Project this may not have been so necessary due to the preexisting organizational structure. Those projects that attempted to work across private property lines—OCHP and the Neighborhood Wildlife Habitat Program pilot groups—all found the use of mapping to be extremely helpful. Apparently the ability to visually show people how their property fits into a wider mosaic of habitat and recreational opportunities has great rhetorical value. Finally, the availability of specific funding opportunities has been a central factor for most of these projects. The pilot neighborhood groups were funded by a grant from the Orton Foundation. The original beacon around which OCHP came together was Forest Legacy Program funding; and when that did not come through, their momentum was sustained by at least one large anonymous donation. The sale of shares in Little Hogback LLC at such low prices was possible, first, because of the property having been donated to the VLT and, second, thanks to an anonymous contribution toward the purchase price. Over the next few months I will be working to select cases that lend themselves to research that can shed light on factors affecting the success of community forestry initiatives.

Addendum (written after the conference)

There are two cases that I have not mentioned because I hadn't thought they "counted" as community forestry groups. Now that I've attended the conference, and after a very helpful conversation with Marla Emery, I think that one of them is actually the best group to partner with for my dissertation research. I'll describe both of them.

A Forest Bank for Windham County? There is a project underway in Brattleboro, VT to create a district heating system based on a co-generation facility powered by bio-fuels. The plant would generate electricity for sale to the grid, and heat as a byproduct would be distributed throughout the downtown area via insulated pipes. The motivations of the stakeholders are various, but widely held concerns include local economic development, ecological sustainability, and local stability and independence in the face of peak oil and other global forces. It is expected by most of the stakeholders that the

facility should be locally owned by a non-profit organization, at least eventually if not immediately. The stakeholders have created numerous subcommittees to address issues such as ownership, technical details, financing, and fuel supply.

The issue of fuel supply is an important one. The first consultant that was hired advocated the planting of willows as a crop for biomass on a 5-7 year rotation. This suggestion created a great deal of concern amongst those in favor of local food systems that our scarce agricultural land should be given over to energy production. Likewise the foresters didn't want to miss a chance to market low-value wood. Everyone seemed enthusiastic about the possibility of giving the local forest economy a boost, but apprehensive lest the increased demand should lead to unsustainable harvesting. One member of the fuel supply subcommittee calculated that Windham County forests produce more than enough new growth every year to supply the needs of the co-generation facility; but he pointed out that the economics of getting that wood out of the forests is tricky. Furthermore, forest ownership in the county is extremely fragmented, which is likely to create headaches for the buyer.

The idea that I floated before the committee was that the time might be right for starting a forest bank in Windham County. A non-profit organization, committed to managing woodlands sustainably for the public good, might seek to acquire management rights to parcels of woodland. Legally, this would take the form of easements. When a landowner puts their woods into the forest bank they will receive an annual dividend based on the value of their deposit. The easements and possibly the shares would run with the deed, guaranteeing the property owner a certain income and the knowledge that their woodland will be well managed. If they, or any future owner, want to get a lump sum, this is also an option, in which case no further dividends would be paid to that property holder. The chief purpose of this project would not be primarily to benefit the cogeneration plant, but to provide a mechanism for long-term landscape-level management by stitching together many little parcels and bringing their management under democratic community control.

The committee was interested in this idea, but skeptical about landowner interest, and expressed some enthusiasm for doing a feasibility study. An exploratory committee could be formed, including the county forester, two consulting foresters, a former director

of the regional planning commission, and members of the Woodland Owners Association. We would begin by holding focus groups with members of the Woodland Owners Association (of which I'm a member), and then send a questionnaire to all of the members through the newsletter in order to determine their level of interest and to gage their reaction to various scenarios. A second round of focus groups would be held to discuss specific proposals, formulated with input from appropriate experts (e.g. a forest economist). The timeline for this would be one year, after which we would try to move ahead and actually start a forest bank if the feasibility study indicates a good chance of success.

The process would help my research by revealing what woodland owners value about their land and the broader landscape, as well as what they are and are not willing to compromise to protect these values. So far, attempts to facilitate cooperation between landowners in Vermont have moved ahead without any map to show where the rocks are and where the open water. This research would provide such a map, revealing any easy opportunities for cooperation as well as the likely snags. The process would bring landowners together to talk about these opportunities and obstacles, as well as to discuss solutions.

I had rejected this project as a possible case for two reasons. First, it seems very practical, rather than designed primarily to test a hypothesis drawn from social theory. Second, rather than finding a pre-existing community group and studying their activities, in this case I would be the main driver of the project. I would appreciate any feedback on the appropriateness of this project as a research proposal.

The Dummerston Biodiversity Project. This is the one that suggests itself to me as the most likely project for my proposal, in part because of the high level of enthusiasm for cooperation on the part of the community. The Dummerston (VT) Conservation Commission has begun to map areas of ecological importance across the mostly forested township (e.g., vernal pools, bear habitat, salamander crossings). Many local residents are interested in wildlife and will be involved in the mapping exercise. Once they are finished the commission will have a landscape-level view intended to facilitate better ecological management. The problem, of course, is that their map and their plan overlay

a landscape that is fragmented into so many parcels of private property, each representing a separate sphere of intention and control. Already at least two landowners have expressed anger after reading about the mapping, afraid that there will be some erosion of their property rights if it is discovered that there is anything ecologically important about their property. In order for this project to be effective it will have to engage landowners in a process through which they can articulate their values in the landscape and work with each other to arrive, if not at a shared vision, at least at a workable set of mutual commitments.

I will be in close communication with the Conservation Commission and other community members over the next couple of months to discuss how I might participate in their project. Whereas a number of other community members have the skills and interest to carry out the biodiversity surveys and to do the mapping; my interest would be in understanding how private landowners will (or won't) cooperate with carrying out the management prescriptions. The Commission sees the importance of this and is interested in making it a central part of their project. We will be talking about what their goals are and what kind of schedule we could commit to for the year that would satisfy the needs of their project and of my research. Methods that we are considering include surveys and focus groups to help us understand what Dummerston residents value about their own property and the broader landscape; whether the context of their decision-making resembles a prisoner's dilemma game; how willing they are to cooperate; what obstacles exist; and how these obstacles are overcome (if they are). My practical goal is to identify arrangements that will enable Dummerston residents to work together to carry out this project. (The implementation of such arrangements might not happen until the year following the fellowship year.)

Members of the Conservation Commission and other community members are interested in learning about and networking with other groups around the state who are engaged in similar projects. This interest offers the possibility of scaling my research up in some way to be broader than my community partnership. At the conference, Louise Fortmann cautioned against comparative studies, and I will be chewing over this advice throughout the fall. But if my partner community is interested in engaging other

communities with similar projects, this at least gives me a broader context in which to situate what we are doing.

I had originally rejected the Dummerston Biodiversity Project as a case because I thought it would not be deemed adequately silvicultural, but after attending the conference my impression is that this wouldn't be a problem. The landscape in question *is* almost entirely working forest. It also feels like cheating, that this is my own town where I know people (—*some* people, I only moved there in 2003 and have been at Cornell most of the time). In any case, I would appreciate feedback about the suitability of this case as a focus for my dissertation research proposal.

I would also like to thank you all very much for making my preliminary research this summer possible and for bringing me to the conference in Tennessee in September. I learned a great deal about what people are doing in Vermont and made some valuable connections. At the conference I felt the full sense of what the word fellowship is supposed to mean. The feeling of community in the presence of other scholars and activists who share my interests was something that I have missed so far in graduate school. It filled me with excitement and eagerness to begin next year's research. Thanks.

R E F E R E N C E S

Baker, Mark and Jonathan Kusel. 2003. *Community Forestry in the United States*. Washington DC: Island Press.

Bray, Francesca. 1994. “Agriculture for Developing Nations.” *Scientific American* (July).

Brendler, Thomas and Henry Carey. 1998. “Community Forestry, Defined.” *Journal of Forestry* 96(3): 21-23.

Campbell, Susan and David Kittredge. 1996. "Ecosystem-Based Management on Multiple NIPF Ownerships." *Journal of Forestry* 94(2): 24--29.

Cortner, Hanna J. and Margaret A. Moote. 1999. *The politics of ecosystem management.* Washington, DC: Island Press.

CRS. 1994. "Ecosytem management: status and potential."

Fiege, Mark. 2005. "The Weedy West: Mobile Nature, Boundaries, and Common Space in the Montana Landscape." *The Western Historical Quarterly* 35(1).

Freyfogle, Eric T. 2003. *The land we share: private property and the common good.* Washington, DC: Island Press/Shearwater Books.

Gatto, Paola. 2005. "The Multifunctional Role of Forests: Policies, Approaches and Case Studies (International Conference)." Retrieved 5/22/2006 http://www.tesaf.unipd.it/congress/home.htm.

Geisler, Charles C. and Thomas A. Lyson. 1991. "The Cumulative Impact of Dairy System Restructuring." *BioScience* 41(8): 560--567.

Gemmell, J. C. 1996. "The land and the people: problems in partnership." *Scottish Forestry* 50(4): 212--219.

Green, Joanna and Duncan Hilchey. 2002. *Growing Home: A guide to reconnecting agriculture, food and communities.* Ithaca, NY: CFAP.

Grumbine, R. E. 1994. "What Is Ecosystem Management?" *Conservation Biology* 8(1):27--38.

Harou, A., J. Mack and C. Mawson. 1985. "A Silvicultural-Financial Simulator for Nonindustrial Forest Land in the Northeast." *Forest Science* 31(3): 706--716.

Heffernan, William. 1999. *Consolidation in the Food and Agriculture System.* National Farmers Union.

Hospodarsky, Denver. 1997. "Institutional Design Concepts for Agency Resource Acquisition." *Journal of Park and Recreation Administration* 15(3): 19--39.

Jervell, Anne M. and Desmond A. Jolly. 2003. *Beyond Food: Towards a multifunctional agriculture.* Norway: Center for Food Policy.

Kittredge, David B. 2005. "The cooperation of private forest owners on scales larger than one individual property: international examples and potential application to the United States." *Forest Policy and Economics* 7: 671--688.

Knight, Richard L. and Peter B. Landres. 1998. *Stewardship across boundaries.* Washington, DC: Island Press.

Linden, Russel M. 2002. *Working across boundaries: making collaboration work in government and nonprofit organizations.* San Francisco: Jossey-Bass http://encompass.library.cornell.edu/cgi-bin/checkIP.cgi?ac.

Moore, Monica. 2002. "Hidden Dimensions of Damage: Pesticides and Health." Pp. 130--147 in *The Fatal Harvest Reader*, edited by A. Kimbrell. Washington, DC: Island Press.

Noss, Reed F. 1987. "Protecting Natural Areas in Fragmented Landscapes." *Natural Areas Journal* 7(1): 2--13.

Olson, Richard K. 1999. "A Landscape Perspective on Farmland Conversion." Pp. 53--95 in *Under the Blade: The Conversion of Agricultural Landscapes*, edited by R.K. Olson and T.A. Lyson. Boulder, CO: Westview Press.

Ponting, Clive. 1992. *A green history of the world: the environment and the collapse of great civilizations.* 1st U.S. ed. New York: St. Martin's Press.

Prestegard, Sjur S. 2003. "Policy Measures to Enhance a Multifunctional Agriculture: Applications to the WTO Negotiations on Agriculture."

Reisner, Marc. 1993. *Cadillac desert : the American West and its disappearing water.* Rev. and updat ed. New York, N.Y., U.S.A.: Penguin Books.

Rickenbach, Mark G., David B. Kittredge, Don Dennis and Tom Stevens. 1998. "Ecosystem Management: Capturing the Concept for Woodland Owners." *Journal of Forestry* 96(4): 18--24.

Romstad, Eirik, Arild Vatn, Per K. Rorstad and Viil Soyland. 2000. *Multifunctional Agriculture: Implications for Policy Design.* Norway: Dept. of Economics and Social Sciences, Agricultural University of Norway.

Rosset, Peter M. 1999. *The Multiple Functions and Benefits of Small Farm Agriculture.* Oakland, CA: Food First/The Institute for Food and Development Policy.

Scott, James C. 1998. *Seeing like a state: how certain schemes to improve the human condition have failed.* New Haven Conn.: Yale University Press.

Sullivan, Helen and Chris Skelcher. 2002. *Working across boundaries: collaboration in public services.* Houndmills, Basingstoke, Hamphsire ; New York: Palgrave.

Thomas, Craig W. 2003. *Bureaucratic landscapes: interagency cooperation and the preservation of biodiversity.* Cambridge, Mass.: MIT Press.

Thompson, Elizabeth H. 2002. *Vermont's Natural Heritage: Conserving Biodiversity in the Green Mountain State.* Vermont Biodiversity Project.

UEF. 2005. "Resolution of the Union of European Foresters: Multifunctional Forestry-- A multiple benefit for the nations and people of Europe.". Retrieved 5/22/2006 http://www.european-foresters.org/uefpage.asp?content=meetings⊂=1.

The Vermont Forum on Sprawl. 1999. *Economic, Social, & Land Use Trends Related to Sprawl in Vermont.* The Vermont Forum on Sprawl. Retrieved 4/6/2006 http://www.vtsprawl.org/Initiatives/research/research_expsprawl.htm.

------. 1998. *Vermonters' Attitudes on Sprawl.* Vermont Forum on Sprawl. Retrieved 4/6/2006 http://www.vtsprawl.org/Initiatives/research/research_expsprawl.htm.

Warshall, Peter. 2002. "Tilth and Technology: The Industrial Redesign of Our Nation's Soils." Pp. 168--180 in *The Fatal Harvest Reader,* edited by A. Kimbrell. Washington, DC: Island Press.

Wolf, Steven and Stefani Hufnagl. 2005. "External Resources and Organizational Development: an ecological perspective on forest landowner cooperation."

Wolf, Steven and Eeva Primmer. forthcoming. "Between Incentives and Action: an assessment of biodiversity conservation competencies for multifunctional forest management in Finland."

Wondolleck, Julia M. and Steven L. Yaffee. 2000. *Making collaboration work: lessons from innovation in natural resource management.* Washington, DC: Island Press.

Yacos, Karen and Doug Wilhelm. 1999. *The Causes and Costs of Sprawl in Vermont Communities.* The Vermont Forum on Sprawl. Retrieved 4/6/2006 http://www.vtsprawl.org/Initiatives/research/research_expsprawl.htm.

Yaffee, Steven L. and et al. 1996. *Ecosystem management in the United States: an assessment of current experience.* Washington, DC: Island Press.