Approaches to Sustainable Forest Management in Parcelized Landscapes

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PUTTING THE PIECES TOGETHER: VERMONT PARTNERSHIP
APPROACHES TO SUSTAINABLE FOREST MANAGEMENT IN
PARCELIZED LANDSCAPES

A Thesis Presented

by

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Abstract

The holistic, landscape-based approach of Sustainable Forest Management (SFM) in the United States emphasizes the importance of addressing three components of forest management: ecology, community, and economy. Many believe this approach represents an important and positive paradigm shift in natural resource management. In Vermont, as well as many other parts of the United States, parcelized forest ownership presents challenges to the achievement of SFM on private property. These challenges include that of applying concepts of landscape-scale management over a mosaic of small landownerships while addressing ecological, economic, and social dynamics. Many authors have suggested a need for new institutions that are better capable of addressing the integrated, boundary-crossing nature of SFM on private lands.

In Vermont, partnerships involving environmental non-profit organizations are implementing innovative management strategies to promote SFM which address the challenges of parcelization. In so doing, non-profit groups are branching out from traditional roles of advocacy and public goods protection to address not only the ecological, but also economic and community aspects of forest management. Examining the strategies, organizational roles, challenges and perceived permanence of these partnerships provides a greater understanding of the nature of these new institutional arrangements for SFM. This study asks the question: How do partnerships involving environmental nonprofit organizations in Vermont attempt to achieve goals of sustainable forest management in the context of a parcelized landscape?

Using a multiple case study approach, I examine three SFM-related partnerships in Vermont that involve environmental nonprofit organizations. I assess their strategies, organizational roles, challenges and perceived permanence. Results indicate that partnerships involving environmental nonprofit organizations are playing important roles in defining and institutionalizing SFM in Vermont. Partnerships use diverse strategies through which they strive to account for the three components of SFM. I find three points of entry into SFM-related issues, connected to three strategies used by partnerships to address issues of parcelization: community-based, alternative silviculture and product branding. This diversity in approach may complement the diverse nature of forest landowner’s wants and needs. Furthermore, demonstrated flexibility at the partnership and organizational levels allowed partnerships to better work toward their goals. Challenges encountered by partnerships involved both internal dynamics and external circumstances, including differential organizational capacity and economic conditions, respectively. In addition, perceived permanence of these institutional arrangements may be related to the roles that environmental nonprofit organizations play within each partnership. Findings increase our understanding of the changing roles of non-profit organizations in the forest management sector, raise key questions about the permanence of such arrangements, and provide insights into partnership practices and challenges that may be applied in other settings. The results of this study contribute to a broader analysis of national trends in SFM.
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Chapter 1. Literature Review

**Sustainable forest Management in the United States**

Sustainable Forest Management (SFM) in the United States represents a paradigm shift in natural resource use. Traditional management practices of sustained-yield and multiple-use often focused on the generation of singular outputs, such as timber supply, without considering the overall health of the forest ecosystem (Franklin and Kohm, 1997). SFM considers more than the outputs of a forest. It emphasizes the maintenance of ecosystem processes and functions (Floyd, 2002). In this respect, SFM is similar to ecosystem management, which requires taking a larger spatial and temporal view than found in conventional management (Cortner and Moote, 1999). Many authors believe that a holistic, landscape-scale approach to management is necessary to ensure healthy, productive forests into the future.

SFM recognizes the interrelationships between forest health, social well-being, and economic viability (Sample et al, 1993; Floyd, 2002). For example, these linkages came into the spotlight in the United States Pacific Northwest in the early 1990s, when the northern spotted owl controversy highlighted the necessity of balancing the economic needs of local communities and forest health (Kohm and Franklin, 1997). One way to understand SFM is to consider that it strives to produce both public and private goods.
Goods Promoted by SFM

SFM promotes a range of goods. Pure private goods are rival and excludable (Cornes and Sandler, 1996). Some pure private goods, including commodities such as lumber and firewood, may be easily quantifiable in monetary terms. A pure public good is both non-rival and non-excludable (Cornes and Sandler, 1996). Ecosystem services that a healthy forest provides, such as carbon sequestration and erosion control, are public goods. In contrast with private goods, pure public goods are harder to quantify monetarily. Other goods that SFM produces are not easily categorized as purely public or private. For example, club goods, are those which are non-rival but excludable (Cornes and Sandler, 1996). Some scenic views provided to landowners by their forests constitute club-goods. Common-pool resources are those which are rival but non-excludable, and therefore face problems of overuse (Ostrom, 1990). Fish and wildlife populations supported by healthy forests, are considered to be common-pool resources. The concept of SFM is complex because it encompasses the promotion of these diverse types of goods. This can make agreement on a single definition of SFM challenging.

Definitions of Sustainable Forest Management

While there is a lack of consensus over a single definition of SFM (USFS, 2003), many are rooted in the Brundtland Commission (1987, p. 54) definition of sustainable development: “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” In 1999, the United States Department of Agriculture Committee of Scientists defined forest sustainability as:
Meeting the needs of the present generation without compromising the ability of future generations to meet their needs. As an approach to decision making, it calls for integrating the management of biological and ecological systems with their social and economic context, while acknowledging that management should not compromise the basic functioning of these systems (Committee of Scientists 1999, p xiv)

To help define the roles and effectiveness of SFM, sets of principles have been developed. One set of these, the Montreal Process criteria and indicators for temperate and boreal forests, has drawn widespread international agreement (USFS, 2003). A response to the 1992 Earth Summit’s mandate of sustainable development, the Montreal Process brought together experts, including forest ecologists and members of the timber industry, from twelve countries. Forests in these countries represent approximately 90% of the world’s temperate and boreal forests. Through a series of working group meetings, these experts created and agreed upon a set of seven criteria and sixty-seven indicators of sustainable forest management. The criteria include conservation of biodiversity, soil and water, maintenance and enhancement of long-term multiple benefits, and legal, institutional and economic framework for forest conservation and sustainable management (Montreal Process, 2007). These criteria have been used by a wide array of public, private and non-profit organizations as a basis for defining SFM. For example, the U.S. Forest Service (2003, pg iii) used the Montreal Process criteria and indicators to create the National Report on Sustainable Forests, which provided a “fresh analysis on the available data on the condition of forests in the United States.” On a smaller scale, nonprofit organizations such as Vermont Family Forests use the criteria and indicators to guide practices for private forest management (D. Brynn, personal communication, November 13, 2006).
It should be noted that SFM and ecosystem management have similarities, making ecosystem management literature relevant to SFM. Although there is no direct connection between the two concepts, the forms of management developed in parallel in the mid 1990s: SFM as a type of sustainable development (USFS, 2003), and ecosystem management in response to conventional output-based forest management (Grumbine, 1994). While originating for different reasons, ecosystem management and SFM share certain traits. Ecosystem management often builds on the same three pillars as SFM: ecology, economy and society. It operates on larger scales than the individual stand or parcel level, resulting in ideas about cross-boundary collaboration that are useful to SFM (Gerlach, 1993). In addition, because ecosystem management also works with complex, dynamic socio-ecological systems, the literature contains ideas about institutional flexibility (eg, Olsson, Folke and Berkes, 2004) that are relevant for SFM. As a result of these similarities, I draw upon both SFM and ecosystem management literature to inform my study.

**Importance of Private Lands for SFM**

Fifty-eight percent of United States forests are privately owned. In the eastern half of the United States, private ownership levels are even higher (Figure 1). In Vermont, for example, more than 83% of forests are private, with the majority in non-industrial ownership (Vermont Agency of Natural Resources, 2006). Private forestlands provide private goods; they currently account for 71% of the commercial timberland in the country (Smith et al, 2002). These forests also produce public and common pool goods related to ecosystem functioning, such as wildlife corridors and varied habitats
necessary to maintain biodiversity (Pinchot, 2000). Furthermore, in the United States, certain habitat types occur solely on private lands (Pinchot, 2000).

The ecological principles of SFM operate on a landscape scale. Because landscapes cross property boundaries, and the public goods they provide are not confined to public lands (Brunson et al, 1996), any attempt at SFM in the United States needs to take private lands into consideration (Sampson and DeCoster, 2000). The challenges to SFM on private lands are highlighted when one considers the parcelized and fragmented nature of land ownership and land cover, respectively.

Figure 1. Private Landownership in the United States
Parcelization versus Fragmentation

The terms forest parcelization and forest fragmentation are often used interchangeably. Although they can be related, each term has a distinct meaning. Forest parcelization refers to the trend of increasing numbers of landowners owning smaller pieces of forestland, and can be caused by factors including, urbanization, landowner death, and landowner income (Mehmood and Zhang, 2001). Fragmentation refers to an actual physical separation of pieces of forestland, and its use as an ecological concept was introduced in MacArthur and Wilson’s (1967) seminal work on the theory of island biogeography. While an exact definition of the term remains ambiguous in the ecological literature, fragmentation is often used to refer to human-induced change (Haila, 2002). A contiguous area of forest may be parcelized if ownership is divided among landowners. However, it may or may not be fragmented.

Parcelization may pose a variety of ecological, economic and social challenges to landscape-scale forest management (Irland, 1994, Sampson and DeCoster, 2000). Parcelization can be associated with increased development and fragmentation, which may make it harder to maintain forest ecosystem functions, such as providing clean water (LaPierre and Germiane, 2005). Timber harvesting becomes less economically efficient as parcel sizes become smaller (Mehmood and Zhang, 2001) and public access to private lands may become more restricted (Cordell, Bliss, Johnson, and Fly, 1998). In addition, Sampson and DeCoster (2000) suggest that parcelization is a precursor to fragmentation and the development of forestland.
In New England, private forestlands are becoming increasingly fragmented due to development pressure (Kluza, Griffin, and Degraaf, 2000). For example, between 1985 and 1999, in Massachusetts 202,583 acres of land, mostly in forest cover, were developed (Breunig, 2003). Most of the forest cover was lost to housing developments, of which 65% were considered low-density units of half an acre or more. Vermont is beginning to feel the effects of development pressure as well, currently losing one square mile of critical natural habitat to development a year (Lindner, 2006). New England land use patterns reflect a national trend. The National Research Council (1998) predicts a loss of 20 million acres (5% of total) of private forestland by 2020. Most loss will be incurred from conversion of non-industrial forests to residential uses. This conversion will have direct impacts on forest health.

Forest fragmentation can be problematic because it breaks up habitat, detrimentally affecting forest health through multiple pathways, including loss of biodiversity (Wilcove, 1985), introduction of invasive species (Spellberg, 1998), and shifts in nutrient cycling (Debinski and Holt, 2000). Multiple ownership of private forestland can make responding to the problems of fragmentation on a landscape-scale through management challenging (Irland, 1994, Sampson and DeCoster, 2000).

A central problem facing SFM on private lands is how to overlay concepts of landscape-scale management over a mosaic of landownerships in order to maintain healthy forests. There are approximately 9.9 million forest owners in the United States (Birch, 1996) and 94% of them own less than 100 acres of land. The national average parcel size is closer to 20 acres. In Vermont, there are approximately 80,000 private
forest owners who own an average of 19 acres of land (Birch, 1996). While fragmented ownership does not necessarily equate to a physically fragmented landscape (Luloff, Finley and Melbye, 2000), it does result in a bigger number of landowners taking on a potentially wide array of forest management goals and approaches (Rickenbach et al, 1998).

The varied management interests and capacities of landowners can make coordination of efforts across private land boundaries difficult (Best and Wayburn, 2001). Each landowner may hold distinct values and management goals for her forests. Most non-industrial private forestland owners do not currently have management plans for their land, even if they are actively managing it (Birch, 1996; Butler and Leatherberry, 2004). The expense of proper management may be a hindrance to landowners. This is especially true in the case of SFM, which puts the costs of public goods provision onto the private landowner. Sound ecological management can be expensive and longer timber harvest rotations may result in a lack of short-term monetary returns (Best and Wayburn, 2001). Convincing landowners to commit to cooperative management can also be challenging. Speaking of cooperative efforts in the Northeast U.S., Don Dennis, Research Economist for the United States Forest Service notes “Cooperation is an investment, it is work. People wanted to be good stewards, but when it came down to laying out money and investing time, it kind of broke down” (D. Dennis, personal communication, November 15, 2006). Some authors argue that there is a need for innovative strategies and institutional arrangements that are more capable of addressing
the boundary-crossing nature of landscape-scale management (Irland, 1994), such as SFM (Sampson and DeCoster, 2000).

**Institutions and Institutional Arrangements**

An institution is a set of rules or norms that structure social actions in particular ways (Knight, 1992). The term institution is also used to describe specific organizational structures and organizations (for example, bureaucracies, and the Forest Service, respectively). Institutions help society to organize and order all forms of repetitive and structured interactions (Ostrom 2005). In order for a set of rules to be considered an institution, they must be shared by members of a specific society (Knight, 1992). Although not every member of society will abide by these institutional rules, they must be “known, understood and followed” by more than a single individual (Ostrom, 1992). It is also important to recognize that institutions do not have to be formal laws (Ostrom, 1992). In fact, some of the most enduring institutions are ingrained into our society without ever being legally enforced (Knight, 2002). Broad examples of institutions include religion, marriage and governments. In this study, the term “institutional arrangements” refers to the organization of and relationships between various institutions involved in sustainable forest management.

**The Need for New Institutional Arrangements for SFM**

Many past and current management institutions draw on a fundamentally different view of natural resources than the holistic, landscape-based approach of SFM and ecosystem management (Cortner et al, 1998), and may not be capable of dealing with the
integrated, cross-boundary nature of private lands involvement (Clark et al, 1999). As the needs and values of society shift, conditions that originally motivated the creation of these institutions may no longer be relevant. Past institutions grounded in public agencies and private industry may not be flexible enough to meet changing local needs, or capable of engaging private landowners in management efforts that transcend individual property boundaries. In addition, Leach, Mearns and Scoones (1999) argue that ecological principles that earlier conventional management strategies were based upon do not account for our current understanding of the complexity of forest systems. Furthermore, as Folke (2006) discusses, many existing natural resource management institutions base themselves on a fundamental separation of human and natural systems. These authors (Leach, Mearns and Scoones, 1999, Folke, 2006) highlight the increasing recognition that systems, both ecological and social, cannot be viewed as static or stable and are better understood as variable, complex, interrelated and adaptive. SFM operates on the assumptions that forest ecosystems and social systems are complex, dynamic, and interrelated.

These assumed system characteristics imply the need for institutions and organizational structures for SFM that are more capable of addressing multifaceted issues. Implications for institutions that deal with system variability, complexity and uncertainty, include the need to be flexible enough to deal with the changing nature of problems while adapting to local conditions (Leach, Mearns and Scoones, 1999; Yaffee, 1999; Franklin and Kohm, 1997; Dovers, 2001; Gunderson, 1999; Olson, Folke, and Berkes, 2004). Making recommendations for ecosystem management, Yaffee (1999,
suggests that taking a diversity of approaches is beneficial, and that resource management organizations should “seek new ideas and be willing to experiment with alternative management strategies”.

The need for new management institutions for SFM on private lands is highlighted by the boundary-crossing nature of current issues, in relation to the capacities of several past and current institutional arrangements. Applying landscape-scale management implies the need to work across jurisdictional and institutional boundaries (Gerlach, 1994; Irland 1994). However, governmental initiatives at the state and federal level do not make this a priority. For example, while federal agencies such as the Forest Service take an ecosystem-based approach to managing public lands, private lands are usually managed on an individual parcel level (Egan et al, 1999). Current state incentive programs do not stress cross-border cooperation (Sample, 1993). Take for instance, Vermont’s Current Use Program, which offers a property tax valuation at “productive value”, instead of “highest and best value” as a disincentive for development. It requires that participating landowners create long-term timber management plans for their parcels (Vermont Division of Forestry, 2007), without necessarily considering adjacent properties or ecosystem services in their decision making (Lindner, 2006). Federal programs that promote SFM through education, technical assistance and financial support, such as the Forestland Enhancement Program (USFS FLEP 2007) and the Forest Stewardship Program (USFS, 2007), also focus on management of individual parcels. The federal Forest Legacy Program stands out as an initiative that promotes cross-boundary conservation of important forestland. Administered through individual states,
the program provides up to 75% of the funds to purchase conservation easements of forestland that has been identified as “in need of protection from conversion to non-forest uses” (USFS, 2006). This promotes the conservation of threatened forestland, but does not account for its management.

Forest landowner cooperatives, which reached the height of their popularity in the United States during the mid 20th century, brought together small landowners to overcome economies of scale in timber marketing (Row, 1978), but did not necessarily address issues of ecological health. Today, conventional management of private forestland involves interactions between foresters and landowners to determine goals for individual parcels. Individual management plans may not include consideration for whole landscape processes or functions (Egan et al, 1999), which can be problematic for SFM. Furthermore, an individual parcel focus overlooks the possibility of collective marketing of timber products (Best and Wayburn, 2000). In addition, foresters may not take landscape-scale management into account when writing prescriptions, or be well equipped to address landowner concerns about issues other than timber.

A recent survey conducted in the Northeast showed that less than half of private foresters surveyed feel that landscape management is influential or very influential to their daily professional activities (Egan et al, 1999). Sample (1994) identified a lack of available technical information or direct assistance to landowners for landscape-based activities like biodiversity inventory due, in part, to lack of training among federal, state and private consultants.
As the primary source of information about management, foresters currently hold a great deal of power when making management recommendations. A study conducted by Gass et al (2006) suggests that landowners would be most inclined to participate in a collaborative, cross boundary management strategy if a forester coordinated the efforts (compared to independent coordination by multiple landowners or an organization as coordinator). However the likelihood of such activities occurring is questionable. For example, a pilot project of SFM cooperatives in Massachusetts failed because private foresters put a greater emphasis on selling timber than creating joint management plans or encouraging cooperation between landowners (Campbell and Kittredge, 1996).

A majority of landowners in Vermont, New Hampshire and Western Massachusetts are interested in implementing some sort of landscape-scale management concepts on their lands (Rickenbach et al, 1998; Belin et al 2005). Yet, numerous studies have shown that landowners express cautious interest in cross-boundary collaboration for a variety of reasons. Before participating, some landowners want to know more about the impact on their property rights (Klowkoski et al, 2001). Jacobson’s (2000) work in South Carolina highlights a concern for the impact of participation on timber and land values. Landowners considering participation in The Nature Conservancy’s “Forest Bank” (a management technique that would promote sustainable management of timber in areas of ecological importance while providing economic incentives to landowners) wanted to see successful examples before committing (Dedrick et al, 2000). Sinclair and Knuth (2000) suggest that landowner understanding of geographic data is a precursor to participation in landscape-scale management activities. In addition, landowner objectives regarding
cross-boundary cooperation vary (Finley et al, 2006). Finley and Kittredge (2006) propose that more landowners would participate in management activities if they were geared towards their specific needs.

Danks (2008) suggests that nonprofit organizations, particularly those that are community based, are often well suited to address community and forest-related goals. Strategies currently employed by partnerships involving nonprofit organizations in Vermont may provide institutional arrangements that are able to address the boundary-crossing nature of SFM more comprehensively.

**Roles of Nonprofit Organizations in Sustainable Forest Management**

In the United States, many social and political movements, such as the environmental movement, have been made operational through nonprofit organizations (Salamon, 1994). In general, the number of nonprofit organizations in the United States has increased drastically over the last 40 years. Currently, there are over 1.8 million registered nonprofit organizations in the United States (O’Neill, 2004). Weisbrod (1988, p 38) identifies three distinguishing characteristics of nonprofit organizations which affect their actions: “(1) no one owns the right to share in any profit or surplus of a nonprofit; (2) nonprofits are exempt from taxes or corporate income and (3) some nonprofits receive a variety of other subsidies- donations to them are tax deductible.”

Salamon (1997) has identified four distinct contributions that nonprofit organizations make to society: 1) *value guardian*, the provision of a vehicle for individual initiative in the public good, 2) *service provision* through addressing unmet needs, fostering innovation, providing “collective goods”, and being flexible enough to
adapt to local situations, 3) *creation of social capital* through development of a sense of community, and 4) *advocacy and problem identification*.

Nonprofit organizations often form in response to market and government failure (Salamon, 1994). Markets, while capable of assessing the value of private goods such as timber, typically cannot capture the value of public goods produced by a forest, such as erosion control and carbon sequestration (Ticknor, 1993). When a government is capable of providing public goods such as schools, environmental protection and social services to its citizens, there is less of a need for nonprofit organizations (Weisbrod, 1998). However, some governmental strategies, such as those used during the Reagan administration, leave public projects without adequate funding, and rely on the nonprofit sector to provide for public goods (Salamon, 1994).

Often times, nonprofit organizations promote public goods production indirectly through pressure on the government. For example, the Sierra Club uses member support to lobby for the protection of roadless areas in national forests. In this advocacy role, nonprofit organizations provide a mechanism for individual voices to gain strength through collective action. Furthermore, in highly heterogeneous populations, like that of the United States, nonprofit organizations may be relied upon to provide public services to minority populations whose needs are not met by services geared towards the majority of the population (Weisbrod, 1998). Insofar as they are characterized by organizational flexibility, relatively small scale, and ability to mobilize grassroots efforts, Salamon (1994) argues that nonprofit organizations are well situated to fill the gap between public and private sector.
Recently, traditional sector roles have become less defined (Weisbrod, 1998). Traditionally based in roles of advocacy and public goods promotion, nonprofit organizations have been engaging in sector-bending, activities that blur the distinction between nonprofit and for-profit activity (Dees and Anderson, 2004). In the case of SFM, nonprofit organization efforts at third party forest certification, a market-based approach, offer an innovative, sector-blurring strategy that attempts to mitigate the economic burden of sound forest management. By creating a product label, certification may raise awareness about the responsible manner in which timber was grown, potentially increasing the price that consumers are willing to pay for it (Forest Stewardship Council, 2007).

It should be noted that as the prevalence of nonprofit organizations in forest management increases, thoughtful critiques of such approaches have been made as well. McCarthy (2005) likened nonprofit and community-led strategies to forest management to neoliberalism in their decentralized nature, use of market-based strategies, and favoring of reduced government regulation. In the arena of community-based resource management, some suggest that approaches that often involve nonprofit organizations may not be effective at achieving certain goals, such as the preservation of biodiversity (Kellert et al, 2000). Other international assessments of resource management strategies that include nonprofit organizations find fault with assumptions of homogeneity within human communities, which overlook the inherent variety and subsequent power differentials that exist in a given population (Agrawal and Gibson, 1999). Despite these valuable critiques, nonprofit organizations continue to be important actors in SFM in the
United States, and therefore a fuller understanding of their roles and strategies is valuable.

Danks (2008) suggests that nonprofit organizations engaged in community based forestry activities assume three different, overlapping roles: bridge, catalyst, and service provider. Bridges connect different groups to each other, across sectors, across scales, or across chains of production. Bridges may also connect people or groups to resources that they would otherwise not have access to, such as funding and information. Catalysts facilitate change; create new relationships and new institutional arrangements. They contribute to capacity building efforts, provide start-up funding, stimulate new industries, conduct innovative research and lead demonstration projects. Service providers offer activities that are usually delivered by the government or for profit sector, such as job training and business incubation. The permanence of service provision roles by environmental nonprofit organizations is up for debate, and some question if such activities represent a means or an end to solving problems (Lewis, 2001, Danks, forthcoming). Carroll (1992) suggests that means often turn into ends, that is, that as nonprofit organizations become consumed with providing services, they lose sight of their broader goals. Regarding community based forestry, Danks (forthcoming) suggests that the work of organizations that catalyze change through service provision will not be finished when the desired transition is complete, and that they will find lasting roles in new institutional settings that they helped to create.

The Role of Nonprofit Organizations in Vermont SFM
In Vermont, nonprofit organizations are instrumental in SFM initiatives. Conventional approaches towards SFM employed by these nonprofit organizations include land conservation through easements and efforts to educate landowners about stewardship and management, which promote the provision of public goods. In the past, the forest products industry would often provide the infrastructure for provision of private goods such as timber management and marketing. In places like Vermont, however, that infrastructure has been significantly diminished.

Currently, some nonprofit organizations are developing innovative strategies that provide both public and private goods. They are assuming more participatory, sector-bending, sometimes market-based roles. Some, such as the certification and marketing of forest products, create economic incentives for SFM (Forest Stewardship Council, 2007). Other nonprofit organizations, such as Vermont Family Forests and Vermont Land Trust, have created a local label, Vermont Family Flooring, enabling a pool of small forest owners to collectively make large sales (Vermont Family Forests, 2007). To participate, landowners must manage their forests according to guidelines that prioritize forest health. Under the labeling system, each owner agrees to manage their forests sustainably, and sell what their land is ready to yield, hopefully for a higher price than they would normally command on their own. Through the use of joint management activities, this strategy can gain an economy of scale for the landowners, while contributing to landscape management (Best and Wayburn, 2001).

SFM initiatives can be promoted through the formation of partnerships involving nonprofit organizations. Sometimes, a partnership will form between two nonprofits.
One such example is the Atlas Timber Lands partnership (Vermont Land Trust, 2007). Formed between the Vermont Land Trust and the Nature Conservancy in 1997, the partnership manages the third largest private landholding in Vermont with the goals of testing market-based approaches to SFM and preserving the working landscape, which the Vermont Agency of Natural Resources has defined as: “a landscape dominated by land used for agriculture and/or forestry purposes, but usually with patches of natural and managed lands present” (Vermont ANR, 1999, p. 47).

**The Need for Collaboration/Partnerships in Resource Management**

Management problems in the United States have become increasingly complex, as more stakeholders compete for limited natural resources. Resource scarcity makes it more difficult for decision makers to create win-win situations in which all parties involved gain (Wondolleck and Yaffee, 2000). Compounding this problem, federal and state agencies that had traditionally been responsible for management decisions have been chronically under-funded since the 1980s. Furthermore, a general distrust of the government and big business has led to the recognition that a single sector approach is unlikely to produce suitable management outcomes (Wondolleck and Yaffee, 2000). Wondolleck and Yaffee (2000) suggest that across sectors, there has been a realization that pooling resources is more effective than duplicating efforts.

Natural resource managers have increasingly turned to collaborative processes, such as partnerships, in order to address problems (Selin and Chavez, 1995; Wondolleck and Yaffee, 2000; Poncelet, 2004). Wondolleck and Yaffee (2000) identified four major uses of collaborative processes in resource management: building understanding,
providing a mechanism for effective decision making, generating a means of getting necessary work done, and developing the capacity of agencies, organizations and communities to deal with challenges of the future.

Partnerships bring diverse sectors of society with a common goal together in a voluntary, non-antagonistic setting. This variety allows for strengthened relations between participants, a more comprehensive problem analysis, diversified response capability and an enhanced potential to discover innovative solutions (Gray, 1989). Formal or informal, partnerships allow each participant to achieve more organizational capacity than would be possible by acting alone.

How well a partnership functions is a key determinant of its ability to achieve goals. Well-functioning partnerships are able to accomplish more than individual organizations alone because of their ability to combine perspectives, resources, and skills of a group of people and organizations (Lasker, Weiss and Miller, 2001). This has been identified as partnership synergy (Lasker, Weiss and Miller, 2001) or collaborative advantage (Huxam, 1996). Evans (1996) refers to this quality of partnerships as complementarity: members each contribute different inputs, or roles, to increase efficiency or effectiveness. For example, one member of a partnership might have the capability to leverage funds for large projects, while another partner may have local connections needed to gain support for proposed initiatives, even as another might have resources to contribute, such as legal expertise and labor. Factors that have been identified as key in determining how well a partnership functions include: access to resources, such as funding, expertise, social connections, and labor; relationships among
partners, including trust, conflict resolution and power differentials; and management, including open communication, flexible structure, and presence of a strong leader who encourages the formation and continuation of the partnership (Gray, 1989; Williams and Ellefson; 1997; Lasker et al 2001; Leach and Pelkey, 2001; Olsson, Folke and Berkes, 2004; and Wondolleck and Yaffee, 2004)).

As Evans (1996) suggests, embeddedness, the creation of social capital and dense social networks that cross sectors, is also necessary for successful collaboration. Echoing the findings of Evans, many propose that partnerships that engage multiple sectors of society are more capable of addressing complex environmental problems (Poncelet, 2004; Clark et al 1999; Gray, 1989).

Regarding partnership flexibility, Lewis (2001, p. 75) suggests that it is important to view engaging in partnerships as an active process, recognizing that “form may need to be constantly reworked in the light of ongoing experience.” Active participation in partnerships includes negotiation, debate, and shared learning through trial and error. Lewis argues that taking an active process view, rather than remaining rigid in expectation and action, increases the chances of building sustainable connections between partners.

Ideally, a partnership suggests: a sharing of power between participants; that decisions are made and implemented jointly; and that credit for results is shared (Poncelet, 2004). In practice, the balance of power may be uneven, favoring one partner’s interests more than another’s. Organizations with opposition-based approaches may be ostracized from non-confrontational partnership settings. Poncelet (2004)
illustrates this point with radical members of the environmental justice movement who often use direct-action techniques to achieve their goals. In addition, power dynamics are present in any relationship and must not be overlooked. In the introduction to *Power* (1986), editor Stephen Lukes provides some frameworks for understanding the relationships of power. In distinguishing between types of power, three emerged: *power over*, *power to* and *power with*. *Power over* is the ability to adversely affect another, or control another. *Power to* is the ability to secure advantages for oneself in a situation of relative scarcity, while, *power with*, assumes a collaborative effort towards a common goal, regardless of status. In partnerships, these types of power dynamics can be witnessed through processes of decision making and control of resources such as funding. These power-related processes have a direct impact on how and why certain courses of action are pursued, and are therefore useful when examining partnerships, strategies and their perceived permanence. Furthermore, partnerships may not always be more effective with respect to time spent building and maintaining relationships, or cost and ease of implementation of projects. These challenges must be addressed to promote successful results.

**Innovative SFM Partnerships in Vermont**

Partnerships may provide important strategies for working across jurisdictional borders and mitigating the effects of parcelization (Sample, 1994; Wondolleck and Yaffee, 2000; Best and Wayburn, 2001), qualities which are important in terms of implementing SFM on private lands. The state of Vermont is home to several partnerships that work towards SFM-related goals in the context of a parcelized
landscape. Unlike standard landowner cooperatives of the past, which involved cross-boundary efforts to achieve economies of scale, these Vermont SFM partnerships are characterized by the participation of nonprofit organizations and the use of management strategies to produce not only economic, but ecological and social benefits as well.

One such example, mentioned earlier, is the Vermont Family Flooring partnership between the Vermont Land Trust and Vermont Family Forests (Vermont Family Forests, 2007). The partnership promotes the maintenance of healthy forests through the provision of economic incentives. Another is The Orange County Headwaters Project (OHCP). A partnership between Redstart Forestry, Vermont Land Trust, Upper Valley Land Trust, and an organized group of landowners, the OHCP has secured conservation easements on over 4,500 acres of mostly contiguous land in the towns of Corinth and Washington (Barlow and Machin, 2006). A third, the Atlas Timberlands Partnership brings together the Vermont Land Trust and the Nature Conservancy. The partnership puts equal weight on ecological and economic considerations while testing out strategies for alternative silviculture in Vermont.

An examination of such partnerships as potential institutional arrangements for SFM on private lands should consider how such new arrangements address the multiple components of SFM (ecological health, economic viability and social well-being). The

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1 A participant in the majority of Vermont SFM partnerships involving environmental nonprofit organizations is the Vermont Land Trust. A prominent and powerful statewide nonprofit organization that specializes in land conservation through the use of easements, the Vermont Land Trust has helped to permanently protect about 8% of Vermont’s privately-owned land, approximately 455,000 acres (Vermont Land Trust, 2007). Their statewide role and strategies for land conservation are similar to the nationwide efforts of the Nature Conservancy. An examination of SFM partnerships in Vermont must acknowledge the influence of the Vermont Land Trust in almost all activities.
diversity and flexibility of potential arrangements should be explored as well. Specific challenges to institutional arrangements for SFM on private lands, such as those posed by parcelization, also need to be addressed. Finally, the perceived permanence of specific arrangements needs to be kept in mind when considering the stability of strategies for SFM.

The sustainability or permanence of partnerships involving nonprofit organizations is important when considering their potential as enduring institutional arrangements for SFM. Sometimes, responses to environmental problems are met by ad-hoc partnerships and strategies that are not meant to be long-lasting. Other times, strategies are made to endure, through the creation of structures, such as non-profit entities, and resources, including a funding base, that will ensure their continuation (Wondolleck and Yaffee, 2000). Longevity of arrangements can allow sufficient time for institutional experimentation, learning and adaptation (Dovers, 2001), as well as development of credibility and authority. Alternatively, permanence of arrangements can sometimes lead to stagnation, ineffectiveness, and lack of further innovation. Given the dynamic nature of SFM issues, the ability of partnerships to provide a structure with enough flexibility to institutionalize interdisciplinary goals and develop innovative strategies will be of great importance, and may affect the permanence of such arrangements.

This study explores several aspects of SFM partnerships involving nonprofit organizations including perceived permanence and flexibility. Findings will increase our understanding of the roles of nonprofits in the forest management sector, examine
questions about the permanence of such arrangements, and provide insights into partnership practices that may be applied in other settings.

An understanding of how Vermont partnerships involving nonprofit organizations are working towards SFM-related goals in the context of a parcelized landscape is important because it can contribute to more general understandings of national trends in arrangements for SFM. Like the United States, the majority of Vermont’s forests are in private ownership. Like many other areas in the country, Vermont forests are becoming more parcelized, and are beginning to disappear due to fragmentation and development pressure. An area that once had substantial forestry operations, the presence of industry and related infrastructure has been declining. As timber companies leave the United States to do business in more profitable areas, other regions will begin to see similar trends. Therefore, research to systematically investigate innovations concerning private non-industrial forest management in Vermont could inform management in other parts of the United States.
Putting the Pieces Together: Vermont Partnership Approaches to Sustainable Forest Management in Parcelized Landscapes

Introduction

Sustainable Forest Management (SFM) in the United States represents a paradigm shift in natural resource use. Traditional management practices of sustained-yield and multiple-use often focused on the generation of singular outputs, such as timber supply without considering the overall health of the forest ecosystem (Franklin and Kohm, 1997). SFM considers more than the timber outputs of a forest. Recognizing the complex and dynamic nature of forests, SFM emphasizes the maintenance of ecosystem processes and functions (Floyd, 2002). In this respect, SFM is similar to ecosystem management, which requires taking a larger spatial and temporal view than found in conventional management (Cortner and Moote, 1999). SFM acknowledges interrelationships between forest

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1 An edited version of this chapter will be submitted to the journal *Society and Natural Resources*. Accordingly, the chapter has been formatted to *Society and Natural Resources* guidelines.

2 It should be noted that SFM and ecosystem management have similarities, making ecosystem management literature relevant to SFM. Although there is no direct connection between the two concepts, the forms of management developed in parallel in the mid 1990s: SFM as a type of sustainable development (USFS, 2003), and ecosystem management in response to conventional output-based forest management (Grumbine, 1994). While originating for different reasons, ecosystem management and SFM share certain traits. Ecosystem management often builds on the same three pillars as SFM: ecology, economy and society. It operates on larger scales than the individual stand or parcel level, resulting in ideas about cross-boundary collaboration that are useful to SFM (Gerlach, 1993). In addition, because ecosystem management also works with complex, dynamic socio-ecological systems, the literature contains ideas about institutional flexibility (ex. Olsson, Folke and Berkes, 2004) that are relevant for SFM. As a result of these similarities, I draw upon both SFM and ecosystem management literature to inform my study.
health, social benefits and economic viability (USFS, 2003). On private lands, taking a larger, landscape view often requires working across multiple small ownerships to address issues of ecological health, economic viability and social well-being. A holistic, integrated approach to management may be necessary to ensure healthy, productive forests and communities into the future.

Some authors argue that current resource management institutions may not be capable of dealing with the integrated, boundary-crossing nature of landscape-scale management (Clark et al, 1999), such as SFM. As the needs and values of society shift, conditions which originally motivated the creation of existing institutions may no longer be relevant. In their discussions of ecosystem management, many authors have argued for new institutions that are better equipped to address cross-boundary management on private lands (Irland, 1994; Kohm and Franklin, 1997; Cortner et al, 1998). Some propose that increased flexibility in institutional arrangements will be necessary to adapt to the dynamic nature of SFM issues (Gunderson, 1999, Olsson, Folke, and Berkes, 2004). Others suggest that new arrangements should provide innovative and diverse management strategies (Yaffee, 1999). These insights are equally relevant to SFM.

In recent years, much of the innovation around forest management on private lands has come from nonprofit organizations (Danks, forthcoming). Nonprofit organizations have taken on more participatory, sometimes market-based roles. Nonprofit organizations may be especially well suited for these roles, because they can offer innovation in service provision and are willing to experiment and take risks in
which the for-profit and government sectors are reluctant to engage (Lewis, 2001).

Partnerships may provide a vehicle for nonprofit organizations to implement important resource management strategies (Best and Wayburn, 2001), including working across jurisdictional borders and mitigating the effects of parcelization (Sample, 1994; Wondolleck and Yaffee, 2000).

The state of Vermont is home to several partnerships involving nonprofit organizations that implement strategies to achieve SFM-related goals. These partnerships are characterized by the use of management strategies to produce not only economic, but ecological and social benefits as well. An investigation of partnerships that approach SFM in Vermont can contribute to a broader analysis of national trends in SFM, and a better understanding of the changing roles of nonprofit organizations.

An examination of such partnerships as potential institutional arrangements for SFM on private lands should consider how such new arrangements address the multiple components of SFM (ecological health, economic viability, and social well-being). The diversity and flexibility of potential arrangements should be explored as well. Specific challenges to institutional arrangements for SFM on private lands, such as those posed by parcelization, also need to be addressed. Finally, the perceived permanence of specific arrangements should be kept in mind when considering the stability of strategies for SFM.

Using a multiple case study approach, I examine three SFM-related partnerships in Vermont that involve nonprofit organizations. I assess their strategies, organizational roles, challenges and perceived permanence. Results reveal that partnerships involving
environmental nonprofit organizations are playing important roles in defining SFM in Vermont. Partnerships use diverse strategies through which they strive to account for the three components of SFM. I find three distinct points of entry into SFM-related issues, connected to three distinct types of strategies used by partnerships to address issues of parcelization. This diversity in approach may complement the diverse nature of forest landowners’ wants and needs. Furthermore, demonstrated flexibility at the partnership and organizational levels allowed partnerships to better work towards their goals.

Challenges encountered by partnerships involved both internal dynamics and external circumstances, including differentials in organizational capacity and economic conditions, respectively. In addition, perceived permanence of these institutional arrangements may be related to the roles that environmental nonprofit organizations play within each partnership.

**Study Area**

The state of Vermont is located in the Northeastern United States. Generally classified as rural, the Vermont has 608,827 inhabitants, the second smallest state population in the country (US Census Bureau, 2007). Less than 150 years ago, agriculture dominated the Vermont landscape, and the state was about 25% forested. As poor soil quality drove hill farms out of business, forests began to regenerate naturally. Today, Vermont has approximately 4.63 million acres of forestland, covering about 78% of the state’s land base (Vermont Agency of Natural Resources, 2006). Of those 4.63 million acres, about 83% are owned privately.
Vermont’s private forest lands are becoming increasingly broken into smaller parcels due to changes in land ownership. What was once a strong industrial timber presence has all but vanished in the state. Large private companies have divested their timber holdings in the past 10 years, some of which have been broken up into multiple ownerships. Reflecting broader trends of parcelization, there are approximately 80,000 private landowners in Vermont who own, on average, 19 acres of land. In New England, private forestlands are becoming increasingly fragmented due to development pressure (Kluza, Griffin, and Degraaf, 2000). Vermont is beginning to feel the effects of development pressure as well, currently losing one square mile (approximately 640 acres) of critical natural habitat to development a year (Lindner, 2006).

*Parcelization versus Fragmentation*

The terms forest parcelization and forest fragmentation are related, though each term has a distinct meaning. Forest parcelization refers to the trend of increasing numbers of landowners owning smaller pieces of forestland, and can be caused by factors including, urbanization, landowner death, and landowner income (Mehmood and Zhang, 2001). Fragmentation refers to an actual physical separation of pieces of forestland, and its use as an ecological concept was first introduced by MacArthur and Wilson’s (1967) seminal work on the theory of island biogeography. While an exact definition of the term remains ambiguous in the ecological literature, fragmentation is often used to refer to human-induced change (Haila, 2002). A contiguous area of forest may be parcelized if ownership is divided among landowners. However, it may or may not be fragmented.
The need to consider issues of parcelization in relation to SFM is highlighted when one considers the characteristics of private forest ownership in the United States.

Fifty-eight percent of the nation’s total forestland is privately owned, and it is becoming increasingly parcelized. There are approximately 9.9 million forest owners in the United States (Birch, 1996) and 94% of them own less than 100 acres of land. The average parcel size is approximately 20 acres. Some suggest that parcelization is a precursor to fragmentation and development of forest land (Sampson and DeCoster, 2000). A central concern facing SFM is how to implement concepts of landscape-scale management on a mosaic of landownerships in order to maintain healthy forests, economies and communities (Sampson and DeCoster, 2000). While fragmented land ownership does not necessarily equate to a physically fragmented landscape (Luloff, Finley, and Melbye, 2000), it does result in diverse forest management goals and approaches (Rickenbach et al, 1998). Furthermore, parcelization may pose a variety of ecological, economic and social challenges to landscape-scale forest management (Irland, 1994; Sampson and DeCoster, 2000). Parcelization can lead to increased development, which may make it harder to maintain forest ecosystem functions, such as providing clean water (LaPierre and Germiane, 2005). Timber harvesting becomes less economically efficient as parcel sizes become smaller (Mehmood and Zhang, 2001). Public access to private lands may become more restricted as parcel sizes become smaller (Cordell et al, 1998).

Many recent studies have addressed parcelization by focusing on factors which influence a landowner’s willingness to participate in cross-boundary management.
strategies (Rickenbach, Guries, and Schmoldt, 2006; Belin et al, 2005; Klosowski et al, 2001). Fewer have examined organizational and institutional arrangements which might facilitate such strategies (Campbell and Kittredge, 1996; Jacobson, Abtand, and Carter, 2000; Wolf and Hufnagl-Eichiner, 2007). The purpose of this study is to examine partnerships in Vermont that involve nonprofit organizations as one potential institutional arrangement that may be capable of addressing some of the challenges of SFM in the context of a parcelized landscape.

Institutions and Institutional Arrangements

An institution is a set of rules or norms, formal or informal, that structures social actions in particular ways (Knight, 1992). Institutions help society to organize and order all forms of repetitive and structured interactions (Ostrom 2005). Although not every member of society will abide by these institutional rules, they must be “known, understood and followed” by more than a single individual (Ostrom, 1992). The term institution is also used to describe specific organizational structures and organizations (for example, bureaucracies and the Forest Service, respectively). In this study, the term “institutional arrangements” refers to the organization of and relationships between various institutions involved in sustainable forest management.

The Need for New Sustainable Forest Management Institutions on Private Lands

Many past and current resource management institutions draw on a fundamentally different view of natural resources than holistic, landscape-based approaches such as
SFM and ecosystem management (Cortner et al, 1998). Ecological principles that earlier conventional management strategies were based upon do not account for our current understanding of the complexity of forest systems (Leach, Mearns, and Scoones, 1999). Furthermore, many existing forest management institutions base themselves on a fundamental separation of human and natural systems. It is becoming increasingly recognized that systems, both ecological and social, cannot be viewed as static or stable and are better understood as variable, complex, interrelated, and adaptive (Leach, Mearns, and Scoones, 1999; Folke, 2006). SFM operates on the assumptions that forest ecosystems and social systems are complex, dynamic, and interrelated.

These assumed system characteristics imply the need for institutions and organizational structures for SFM that are more capable of addressing multifaceted issues. Implications for institutions that deal with system variability, complexity and uncertainty include the need to be flexible enough to deal with the changing nature of problems while adapting to local conditions (Leach, Mearns, and Scoones, 1999; Yaffee, 1999; Franklin and Kohm, 1997; Dovers, 2001). Making recommendations for ecosystem management, Yaffee (1999, p. 718) suggests that taking a diversity of approaches is beneficial, and that resource management organizations should “seek new ideas and be willing to experiment with alternative management strategies.” The need for new management institutions for SFM on private lands comes to light when one considers the boundary-crossing nature of current issues, in relation to the capacities of several past and current institutional arrangements.
Standard forest landowner cooperatives, which reached the height of their popularity in the United States during the mid 20th century, brought together small landowners to overcome economies of scale in timber marketing (Row, 1978), but did not necessarily address issues of ecological health. Today, conventional management of private forestland mainly involves interactions between foresters, loggers, and landowners to determine goals for individual parcels. This type of interaction can be challenging in terms of SFM because individual management plans may not include consideration for larger ecosystem processes or functions. In addition, private foresters may not consider landscape-scale management when writing prescriptions, or be well equipped to address landowner concerns about issues other than timber.

A recent survey conducted in the Northeast has shown that less than half of private foresters surveyed feel that landscape-level management is influential or very influential to their daily professional activities (Egan et al, 1999). Sample (1994) noted a lack of available technical information or direct assistance to landowners for landscape-based activities like biodiversity inventory. He found this was due, in part, to lack of training among federal, state, and private consultants. This lack of information is problematic because a majority of landowners in Vermont, New Hampshire, and Western Massachusetts are interested in implementing some form of landscape-scale management on their property (Rickenbach et al, 1998; Belin et al, 2005).

A study conducted by Gass et al (2006) suggests that landowners would be most inclined to participate in collaborative, cross boundary management strategies if a forester coordinated the efforts (compared to independent coordination by multiple landowners or
an organization as coordinator). However the likelihood of this occurring is questionable. For example, a pilot project of SFM cooperatives in Massachusetts failed because private foresters put a greater emphasis on selling timber than creating joint management plans or encouraging cooperation between landowners (Campbell and Kittredge, 1996).

Numerous studies have shown that landowners express cautious interest in cross-boundary collaboration for a variety of reasons. Before participating, some landowners want to know more about the impact on their property rights (Klowkoski et al, 2001). Jacobson’s (2000) work in South Carolina highlights a concern for the impact of participation on timber and land values. Landowners considering participation in The Nature Conservancy’s “Forest Bank” (a management technique which would ensure sustainable management of timber in areas of ecological importance while providing economic incentives to landowners) wanted to see successful examples before committing (Dedrick et al, 2000). Knuth and Sinclair (2000) suggest that landowner understanding of geographic data is a precursor to participation in landscape-scale management activities. In addition, landowner objectives regarding cross-boundary cooperation vary (Finley et al, 2006). Finley and Kittredge (2006) propose that more landowners would participate in management activities if they were geared towards their specific needs. Danks (2006) suggests that nonprofit organizations, particularly those that are community based, are often extremely well suited to address community and forest-related goals. Strategies currently employed by partnerships involving nonprofit organizations in Vermont may provide institutional arrangements that are able to more comprehensively address the boundary-crossing nature of SFM.
The role of nonprofit organizations in sustainable forest management

Nonprofit organizations often form in response to market and government failure (Salamon, 1999). Markets, while capable of assessing the value of private goods such as timber, typically cannot capture the value of public goods produced by a forest, such as erosion control and carbon sequestration (Ticknor, 1993). Often times, nonprofit organizations promote public goods production through pressure on the government. For example, the Sierra Club uses member support to lobby for the protection of roadless areas in national forests. In this advocacy role, nonprofit organizations provide a mechanism for individual voices to gain strength through collective action. Furthermore, in highly heterogeneous populations, like that of the United States, some nonprofit organizations provide public services to minority populations whose needs are not met by services geared towards the majority of the population (Weisbrod, 1998). Insofar as they are characterized by organizational flexibility, relatively small scale, and ability to mobilize grassroots efforts, nonprofit organizations are well situated to fill the gap between the government and for profit sector (Salamon, 1994).

Recently, traditional sector roles have become less defined (Weisbrod, 1998). Traditionally based in roles of advocacy and public goods promotion, many nonprofits have been engaging in sector-bending, activities which blur the distinction between nonprofit and for-profit activity (Dees and Anderson, 2004). In the case of SFM, nonprofit efforts at third party forest certification, a market-based approach, offer an innovative, sector-blurring strategy that attempts to mitigate the economic burden of sound forest management. By creating a product label, certification raises awareness
about the responsible manner in which timber was grown, potentially increasing the price that consumers are willing to pay for it (Forest Stewardship Council, 2007).

It should be noted that as the prevalence of nonprofit organizations in forest management increases, thoughtful critiques of such approaches have been made as well. Nonprofit and community-led strategies to forest management have been likened to neoliberalism in their decentralized nature, use of market-based strategies, and favor of reduced government regulation (McCarthy, 2005). In the arena of community-based resource management, some suggest that approaches which often involve nonprofit organizations may not be effective at achieving certain goals, such as the preservation of biodiversity (Kellert et al, 2000). Other international assessments of resource management strategies that include nonprofit organizations find fault with assumptions of homogeneity within human communities, which overlook the inherent variety and subsequent power differentials which exist in a given population (Agrawal and Gibson, 1999). Despite these valuable critiques, nonprofit organizations continue to be important actors in SFM in the United States, and therefore a fuller understanding of their roles and strategies is valuable.

Danks (2008) suggests that nonprofit organizations engaged in community-based forestry activities assume three different, overlapping roles: bridge, catalyst and service provider. Bridges connect different groups to each other, across sectors, across scales, or across chains of production. Bridges may also connect people or groups to resources that they would otherwise not have access to, such as funding and information. Catalysts facilitate change; create new relationships and new institutional arrangements. They
contribute to capacity building efforts, provide start-up funding, stimulate new industries, conduct innovative research and lead demonstration projects. Service providers offer activities that are usually delivered by the government or for profit sector, such as job training and business incubation. The permanence of service provision roles by nonprofit organizations is up for debate, and some question if such activities represent a means or an end to solving problems (Lewis, 2001, Danks, 2008). Carroll (1992) suggests that means often turn into ends because as nonprofit organizations become consumed with providing services, they lose sight of their broader goals. Regarding community based forestry, Danks (2008) concludes that the work of organizations that catalyze change through service provision will not be finished when the desired transition is complete, and that they will play lasting roles in new institutional settings that they helped to create. No matter which role or roles nonprofit organizations assume, they often attempt to achieve their goals by engaging in partnerships.

**Partnerships for sustainable forest management**

Natural resource managers have increasingly turned to collaborative processes, such as partnerships, to address problems involving multiple stakeholders (Selin and Chavez, 1995; Wondolleck and Yaffee, 2000; Poncelet, 2004). Well functioning partnerships are expected to accomplish more than individual organizations alone because of their ability to combine perspectives, resources, and skills of a group of people and organizations (Lasker, Weiss, and Miller, 2001). This has been identified as partnership synergy (Lasker et al, 2001) or collaborative advantage (Huxam,
Evans (1996) refers to this quality of partnerships as complementarity; members each contribute different inputs, or roles, to increase efficiency or effectiveness. For example, one member of a partnership might have the capability to leverage funds for large projects, while another partner may have local connections needed to gain support for proposed initiatives, even as another might have resources to contribute, such as legal expertise and labor. Factors that have been identified as key in determining how well a partnership functions include: access to resources, such as funding, expertise, social connections, and labor; relationships among partners, including trust, conflict resolution and power differentials; and management, including open communication, flexible structure, and presence of a strong leader who encourages the formation and continuation of the partnership (Gray, 1989; Williams and Ellefson; 1997; Lasker et al 2001; Leach and Pelkey, 2001; Olsson, Folke, and Berkes, 2004). Evans (1996) suggests that embeddedness, the creation of social capital and dense social networks that cross sectors, is also necessary for successful collaboration. Echoing the findings of Evans, many propose that partnerships that engage multiple sectors of society are more capable of addressing complex environmental problems (Poncelet, 2004; Clark et al, 1999, Gray, 1989).

Regarding flexibility, Lewis (2001, p.75) suggests that it is important to view engaging in partnerships as an active process, recognizing that “form may need to be constantly reworked in the light of ongoing experience.” Active participation in partnerships includes negotiation, debate, and shared learning through trial and error. Lewis argues that taking an active process view, rather than remaining rigid in
expectation and action, increases the chances of building sustainable connections between partners.

The sustainability or permanence of partnerships involving nonprofit organizations is important when considering their potential as enduring institutional arrangements for SFM. Longevity of arrangements can allow sufficient time for institutional experimentation, learning, and adaptation (Dovers, 2001), as well as development of credibility and authority. Alternatively, permanence of arrangements can sometimes lead to stagnation, ineffectiveness and lack of further innovation. Given the dynamic nature of SFM issues, the ability of partnerships to provide a structure with enough flexibility to institutionalize interdisciplinary goals and develop innovative strategies will be of great importance, and may affect the permanence of such arrangements. This study explores several aspects of SFM partnerships involving nonprofit organizations including flexibility and perceived permanence. While cases are presented in the context of the state of Vermont, results contribute to more general understandings of national trends in arrangements for SFM.

**Research Question**

In order to understand the nature of SFM partnerships involving nonprofit organizations in Vermont, and their potential as institutional arrangements for SFM, I ask the following question:

How do partnerships involving nonprofit organizations in Vermont attempt to achieve goals of sustainable forest management in the context of a parcelized landscape?
This question is addressed through the following objectives:

- Characterize and analyze SFM strategies employed by partnerships.
- Explore how strategies address parcelization and/or work across boundaries.
- Identify the organizational roles in each partnership, with special attention given to nonprofit organizations.
- Examine perceived permanence of these potential institutional arrangements.
- Identify challenges faced by partnerships, in relation to achieving goals.

**Methods**

I employed a comparative case study approach (Yin, 2002), partnerships being the primary unit of analysis. Vermont-based partnerships were selected using purposeful, homogenous sampling (Patton, 2002), based on the following criteria: 1) involvement in SFM activities on private land; 2) participation of at least one nonprofit organization; 3) involvement in strategies that address parcelization/work across property boundaries; and 4) provision of both public and private goods.

**Case Studies**

Using the above criteria, I developed a list of potential partnerships based on input from key informants and internet searches. I identified eight possible SFM partnerships in Vermont, and chose the three that best fit my criteria: The Orange County Headwaters Project; The Atlas Timberlands Partnership; and the Family Forest Flooring Partnership.
The Orange County Headwaters Project is a partnership between Redstart Forestry, a local forest management business; The Vermont Land Trust, the largest land trust in the state; The Upper Valley Land Trust, a smaller, local trust; The Conservation Fund, a national environmental nonprofit organization; and a steering committee of local landowners. The steering committee is in the process of becoming a nonprofit organization, which should be completed within the year. It is a landowner-driven land conservation effort based in the towns of Washington and Corinth in East-Central Vermont (See Figure 2). The project area is situated between the growing cities of Montpelier, the capital of Vermont, and Lebanon New Hampshire, and is characterized by high quality, unfragmented forestlands (OCHP, 2006). Many landowners make their living from the forest, as foresters, loggers, maple sugarmakers, and are very concerned about increasing development pressure in their area. They seek to “preserve undeveloped land while simultaneously supporting the vitality of their local forest economy” (OCHP,
Since the project began in 2003, it has conserved over 4,500 acres of mostly contiguous land, spanning over 31 different ownerships.

The Atlas Timberlands Partnership is a collaborative effort between The Nature Conservancy, and the Vermont Land Trust. In 1997, the two organizations acquired 26,789 acres on 23 parcels of land from Atlas Timber Company, which was divesting its assets, making them joint owners of what is now the second largest private forest holding in the state. While one parcel, which was sold early on was located in the Adirondack area of New York State, the rest of the parcels are found in the Northeast Kingdom (the counties of Essex, Caledonia, and Orleans) of Vermont. Becoming timberland owners was a major shift for both organizations. The Nature Conservancy had traditionally owned land as ecological reserves, while the Vermont Land Trust had put easements on forestland, but was never itself an owner. This project was the first time that The Nature Conservancy owned and actively managed timberland, an approach that they have continued in other states, such as Maine (The Nature Conservancy, 2007). They currently manage the property to test out new silvicultural approaches for SFM.

The Family Forest Flooring Project is the result of a three and a half year old partnership between the Vermont Land Trust and Vermont Family Forests, a nonprofit operating in Addison County, whose mission is to ensure the health of Vermont’s forests. The project is a statewide endeavor to produce and market a locally made, value added forest product that has been grown under ecologically-responsible conditions. Currently, wood for Family Forest Flooring is harvested from forests in several parts of Vermont, including Addison County and the Northeast Kingdom. Owners of the timberland
include the Vermont Land Trust, The Nature Conservancy, Middlebury College, a private
landowner, and the Little Hogback Community Forest, a piece of land jointly owned by
16 people and managed by Vermont Family Forests. The Vermont Land Trust holds
conservation easements on approximately 465,000 acres, about eight percent, of
Vermont’s privately-owned land. It is the partnership’s intent to engage owners of
Vermont Land Trust’s substantial conserved land base across the state to participate in
this project.

**Data Collection**

Case study data was collected from a variety of sources including partnership documents,
promotional material, websites and interviews. I used documents to obtain information on
partnerships and organizations, such as mission statements, goals, and agreed upon roles
within the partnership. Materials sampled include: promotional brochures, newsletters,
websites, press releases and Memoranda of Understanding.

I conducted a total of 14 semi-structured interviews with key informants from the
develop partnerships. Interviews generally lasted for an hour, but ranged from 35 minutes to
an hour and twenty minutes in length. In one partnership, no sampling was needed,
because there were only two individuals directly involved. In the other two cases, six
interviews each were conducted. I identified initial informants through partnership
documents, websites and word of mouth. Snowball sampling techniques (Patton, 2002)
were then used to obtain the names of other partnership participants. I employed
purposeful, stratified sampling (Patton, 2002) to select interviewees from this pool,
ensuring that: 1) for each partnership examined, all contributing organizations were represented by at least one interview; and 2) interviewees represented a variety of different positions and responsibilities within each partnership that have direct bearing on strategies pursued and/or internal partnership functioning.

The interview guide contained questions designed to explore partnerships which address parcelization or work across property boundaries. Questions were open ended with the exception of two close-ended questions which asked interviewees to rate aspects of the partnership based on a Likkert scale of one to five. Questions investigated reasons for participation in partnerships, partnership strategies, organizational roles, internal dynamics (with respect to decision-making and access to resources), and challenges. Perceived permanence of partnerships and current strategies were explored through questions related to project lifespan and shifting organizational roles.

**Data Analysis**

All interviews were recorded and transcribed. Each interview was assigned a number from one to fourteen, which will be used in this paper (along with specific transcript line numbers) to refer to quotation sources.

Data were coded and analyzed using thematic analysis (Boyatzis, 1998). Thematic analysis is useful, because it can be employed to analyze both theory driven and data driven material. Interviews and supporting material were reviewed several times for emergent themes, and a code book consisting of both theory and data driven codes was developed. Initial codes were related to questions posed in the interview
guide, and were grounded in frameworks of sustainable forest management, landowners, nonprofit organizations and partnerships. Codes that emerged from the data were related to types of strategies employed and social equity. Coding and subsequent analysis of interviews was aided by Ethnograph software. To further organize my analysis, I assigned each code a parent code. For this study, parent codes are broad analytical and thematic categories, including: partnership background, strategies, sustainable forest management and organizational dynamics.

Results and Discussion

Results are reported and discussed in order of the following project objectives: strategies, roles of nonprofit organizations, perceived permanence, and challenges. An additional category, links to other sectors, emerged during analysis and will also be discussed.

Strategies: Diverse Points of Entry

The three Vermont partnerships involving nonprofit organizations I present provide show a range of approaches to SFM in the context of parcelization. Although all three partnerships seek to address similar, interrelated goals of SFM, each employs a distinct point of entry: a community-based approach; an alternative silviculture approach, and a product-branding approach. These entry points correspond with one or more components of SFM (Figure 1). The following discussion is organized around the above-mentioned entry points rather than project names.
Community-Based. This point of entry has been employed by the Orange County Headwaters project. They encourage civic engagement through a better understanding of land stewardship and ecology by holding landowner meetings and offering workshops and field trips (OCHP, 2006).

The goal of the Orange County Headwaters Project continues to be trying to help people within the community that are interested in conserving their land. And, in the process, to educate people about ecology, the land, about land conservation, and get people more engaged with day to day decisions about their land and in the bigger picture decisions about what they want the future of their community to look like. - OCHP Participant, INT 6

While project leaders feel that the project has strengthened ties within the community, they stressed the importance of strong, existing social networks to the success of the project:
One of the key pieces making the project work was all of the social capital that existed at the onset. And that’s only been increased. I think it’s clear that this social capital could work to accomplish other things within this community as well. - OCHP Participant, INT 6

Participating landowners are interviewed by project leaders prior to conserving their land. In the process, landowner management interests are identified and incorporated into the project early in the process of conservation. Understanding landowner management objectives as well as physical land characteristics allowed project leaders to work with the Vermont Land Trust to modify their traditional easements, which focused on the production of high quality saw timber.

[Our easements] are focused on the long term goal of managing high quality saw logs off of conserved lands. And the folks at Redstart were saying “sure, we understand why you’re saying it, but, there may be properties where that’s not the most logical management goal.” Because of the type of timber that’s on that property, you know, and so, saw logs are great, but this land doesn’t make sense for high quality saw logs or the sizes you are talking about don’t make sense. So that’s some good feedback from them. - OCHP Participant INT 8

This knowledge has also allowed project leaders to provide educational activities geared towards landowners. As Finley and Kittredge (2006) suggest, understanding, and catering to, landowner interests can increase participation in management activities. For instance, one interviewee noted that a recent workshop hosted by the Orange County Headwaters Project that discussed how to manage woodlots for 12 of Vermont’s common birds was well attended (interviewee did not specify how many landowners were in attendance).

**Alternative-Silviculture.** The Atlas Timberlands Partnership uses an alternative silviculture point of entry, implementing management techniques that mimic patterns of natural disturbance. Management practices also attempt to increase the representation of
old-growth structure, which years of industrial timber operations have drastically reduced. Partnership participants estimate that 95% of harvests have occurred during the winter, operating under the motto “make no mud,” meaning that they only work when the ground is frozen, minimizing the impact on forest soils. All of the project lands are Forest Stewardship Council certified, and an objective of the partnership is to test whether the marketplace will support SFM with premium prices for products that come from certified forests. Because of the varying interests of the two organizations involved, management decisions are based on compromise and made with equal consideration for ecological and economic impacts. Participants cite this aspect of the project as a benefit of working in partnership, especially in comparison to other solo endeavors of The Nature Conservancy, suggesting that equal weighting makes their management decisions more “real”.

…the St. John River place (in Northern Maine) where TNC is practicing sustainable forestry also…But, they don’t have another partner saying “well, but, how is this gonna affect the return? And is this really something that the private sector could really replicate? So it becomes less real. - Atlas Timberlands Project Participant, INT 10

That balance point (between ecology and economics) I think, has been honed in a way that’s simply impossible without having a partner that plays a slightly different role… And in hindsight, I’m so glad that we had the partnership, so that what we’re doing has more reality in, hopefully in other private land bases. - Atlas Timberlands Project Participant INT 10

Product-Branding. The Family Forest Flooring Partnership has taken a product-branding point of entry through the creation of the Family Forest Flooring Brand. They wanted to create a locally labeled sustainable wood product in order to help create a new market in Vermont.
There is not yet a Vermont labeled, locally grown and processed flooring product. There are several furniture manufacturers, but in terms of dimensional wood or flooring, there’s just not much out there. So, the idea was “could we help jump-start or help to create this market?” We have this general notion of another wood product that may make some modest contribution to the forest economy—VLT participant, INT 11

They produce and market flooring made from small dimension timber grown in project certified, well managed forests. In order to participate, landowners must have a conservation easement on their land and a forest management plan that adheres to Vermont Family Forests (an FSC-certified resource manager) standards. The Family Forest Flooring Partnership’s goal is to return more value back to forest landowners in return for excellent management.

Partnership flexibility in the form of organizational compromise helped further partnership objectives in both the community-based and alternative silviculture approaches. Partnering organizations made informed compromises, based on shared knowledge and learning that occurred within the partnership. For example, in the Orange County Headwaters Project, knowledge shared between project leaders from Redstart Forestry and the Vermont Land Trust allowed for meaningful modifications of conservation easements.

**Strategies: Diverse Approaches to Addressing Parcelization**

The three points of entry taken by each partnership are connected to different strategies to address parcelization and/or work across property boundaries. While strategies employed by each partnership may be different, they all address the three components of SFM
(ecological health, social benefits and economic viability) as either primary or secondary objectives (see Figure 4a.,b,c.).

**Figure 4.a,b,c. Primary and Secondary Objectives of Parcelization Strategies**

4a. Community-based

4b. Alternative Silviculture

4c. Product Branding

*Community-based.* The community-based approach taken by the Orange County Headwaters Project addresses parcelization by unifying a community of small landowners around land conservation. Besides strengthening local community ties to each other and the land, the project creates large blocks of conserved land that are
beneficial for maintaining forest health and a local forest products economy. One of the goals of the OCHP is to demonstrate the benefits of working collaboratively to accomplish landscape-scale conservation (OCHP, 2006):

What we’ve tried to do is to look at the big picture goal that we have in mind, looking at this overall landscape, and, hoping to create some contiguous blocks of conserved land that will be valuable for ecology, forestry, recreation. We’ve realized that in order to get there, we need to involve the collective action of a whole bunch of different landowners working together. - OCHP Participant, INT 6

Because this project is a community effort, people have started to think about the importance of their land in relation to their neighbors, and in relation to a larger, landscape level. In fact, some landowners cite the scope of the project as a major reason for participation.

We are fortunate to have a beautiful property, but it’s really the scope of this project that has inspired us to conserve our land. It’s wonderful to think that in the future, all across this valley and beyond, the land will be used and appreciated much as it is today - OCHP participating landowner (OCHP 2006).

When scheduled land conservation is completed, the project area will enhance landscape connectivity between public and private lands, creating excellent corridors for wildlife.

Another important aspect of the OCHP in terms of working across boundaries is redefining the type of projects that are funded by the Forest Legacy Program. The federally funded Legacy Program, which is administered through individual states, provides up to 75% of the funds to purchase conservation easements of forestland which has been identified as “in need of protection from conversion to non-forest uses” (USFS, 2006). While they do promote cross-boundary conservation of forestland, they tend to prefer projects that will conserve large acreages.
In the project area, smaller ownerships are the rule, they’re not large classic legacy-sized parcels. We were trying to demonstrate with the Legacy application that a lot of the parcels that Legacy was created for, at least in Vermont, are gone. They’re under easement, or something else has happened to them. We were trying to show “well, maybe this is the future of Legacy in Vermont”. We’ve got a whole community of people who have joined together, showing very strong support for conservation, although they may not necessarily have the classic Legacy-sized parcels. - OCHP Participant, INT12

While not applicable to the whole project, four parcels of land in the Orange County Headwaters Project are FSC certified by Redstart Forestry, a green certified service provider. As explained by an employee of Redstart, a condition of their certification was that all management plans had to include a component that considered how a given parcel fit into its surrounding landscape.

That’s one of the things that our auditor asked us to add to our management plans during our green certification audit. We didn’t have a category of our plan that painted the landscape picture, and so it is something that is integrated into our planning documents for each property, going forward. - OCHP Participant, INT6

Alternative Silviculture. While addressing parcelization is not the stated goal of The Atlas Timberlands Partnership, it does so in several ways. An undeclared dimension of the project is that owning and managing substantial holdings keeps them in active, ecologically responsible timber production and prevents them from becoming parcelized. In addition, parcels that the partnership sells have easements put on them which prevent subdivision\(^3\). While this approach primarily addresses the economic and ecological

\(^3\) To date, four parcels of land have been sold from the Atlas Timberlands Partnership holdings. These parcels were originally identified as “non-core” in a Memorandum of Understanding signed by The Nature Conservancy and the Vermont Land Trust. Easements placed on the sold parcels stipulate that the land is to remain intact, undeveloped and be used for timber production. The revenue from the sale of these parcels has gone to funding management of the other holdings.
goals of SFM, local community benefits emerge as well. In addition to providing well-paying jobs to local loggers, an agreed upon dimension of the Atlas Timberlands Partnership is that managed land would remain open to the public, something that timber companies had historically allowed.

We greatly value their (the timberlands) economic role...in the communities in which parcels lie... and their roles within those towns in a cultural sense...So, part of our commitment to each other was that we’d keep these lands open to the public. - Atlas Timberlands Partnership Participant, INT 3

Keeping the land open to the public provides community access to established hunting and fishing areas, activities that are often restricted on smaller, private pieces of land. Furthermore, the Atlas Timberlands Partnership is exploring the types of sustainable forest management that can be implemented in Vermont on a large scale. While not the partnership’s main goal, they believe that their work will inform efforts to unify small landowners.

Product-Branding. The product-branding approach taken by the Family Forest Flooring Partnership tries to mitigate economic issues caused by parcelization while ensuring the health of the forest (VLT, 2006). By creating a pool of sustainably managed forests, there is a potential to gain economies of scale in forest management, while contributing to larger landscape level of ecosystem management (through joint planning and implementation of activities). A key goal of the Family Forest Flooring project is to return more value to landowners in return for sound forest management. Harvesting timber from small landholdings (Family Forest Flooring defines as less than
500 acres) is often not cost-effective (Mehmood and Zhang, 2001). The Family Forest Flooring Partnership tries to counteract these economic realities by creating a pool of certified forest owners. Each contributes timber that the forest is “ready to yield” (Vermont Family Forests, 2007).

Currently, landowners selling stumpage, don’t get enough money to pay the cost of landownership, let alone land stewardship. We recognized that we needed to try to address the severe economic constraints facing landowners. Our current economic system doesn’t value the ecosystem services of their forests. Someone can do well by their land but there’s currently no financial award to do that. We wondered if we could to use the marketplace to send more value back to the forest and the stewards of the forest. - *Family Forest Flooring Participant, INT 2*

What we realized early on was that we needed a method to take low grade material that’s standing in the forest and add substantial value to it. And, we needed to be able to draw wood from a variety of woodlots and bring it to market. Hardwood flooring was that product. - *Family Forest Flooring Participant INT 2*

While landowner participation in the project requires an easement, this approach is more flexible and less restrictive than the “Forest Bank” strategy that was tested by the Nature Conservancy, which required that landowners give up their timber rights in exchange for a steady modest return. The Family Forest Flooring approach may appeal to more landowners who do not want to lose control over their land, or who want a more active say in land management.

Although the social benefits of the Family Forest Flooring’s actions are not as pronounced as the ecological and economic ones, they are present. In fact, creating stronger social ties and a supportive community around the Vermont forest industry forms the foundation for achieving partnership goals of healthy forests and economies. Through telling the story of wood from the forest to the finished product, the partnership seeks to create strong connections between producers and consumers. These links can
sometimes strengthen community relations and connections to local forests: for example, through the flooring partnership, a customer was able to buy flooring made from wood harvested, in part, on his neighbor’s woodlot (VLT, 2006).

A common theme that emerged from all three strategies is the use of conservation easements. While requiring easements may pose a social challenge in terms of ability/willingness to participate (discussed below in the Challenges section), they can prevent land from being further parcelized and potentially fragmented. All easements used in these three partnerships require forest management plans, which include basic ecological considerations, such as stream buffers at least, and rigorous ecological standards at best. A recent easement created by the Vermont Land Trust for a parcel of Atlas Land being sold included innovative provisions for the maintenance of coarse woody debris. Considered to be an ecological attribute of healthy unmanaged forests, coarse woody debris is not usually considered a priority in traditional management plans or easements.

**Diversity and Flexibility in Roles/Contributions of Nonprofit Organizations**

Interviewees were asked to describe the roles and contributions of their organization, as well as of their partners. While the roles of nonprofit organizations within each partnership varied, significant overlap existed as well.

Nonprofits were relied upon to procure project funding through a variety of avenues: applying for Forest Legacy grants; soliciting donations from members or individual donors; and securing foundation funding. In all three cases, placing
conservation easements on land was performed by a nonprofit organization. In two cases, certifying forestland under FSC standards was the job of a nonprofit organization. In one case, innovative research and active management of forestland was performed by a pair of nonprofit organizations. In another, NPOs were responsible for the production and marketing of a value-added forest product.

In addition to the roles mentioned above, contributions attributed to nonprofit organizations were: connections (with funding sources and landowners), credibility, funding, legal expertise, forest management expertise, ecological expertise, and capacity (to accomplish projects).

An analysis of the above-mentioned roles using Danks’s (forthcoming) framework (Table 1) highlights the fact that environmental nonprofits in Vermont-based SFM partnerships are acting as bridges, catalysts and service providers. Not only do environmental nonprofit organizations play a diversity of roles as a group, but individual organizations have demonstrated the capacity and flexibility to play multiple, varied roles. Of the eight organizations found in these three partnerships, six assume all three types of roles presented in Danks’s framework. The ability to provide funding allows six out of eight organizations to act as bridges and catalysts. Perhaps most notable is the Vermont Land Trust, an organization that plays multiple roles both within and between all three partnerships.
<table>
<thead>
<tr>
<th>Partnership</th>
<th>Organization</th>
<th>Bridge Role</th>
<th>Catalyst Role</th>
<th>Service Provider Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orange County Headwaters Project</td>
<td>Conservation Fund</td>
<td>Connections to supporters/funds/Forest Legacy</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vermont Land Trust</td>
<td>Connections to foundation and membership funds</td>
<td>Funds to purchase and monitor easements</td>
<td>Easements and commitment to long term monitoring</td>
</tr>
<tr>
<td></td>
<td>Upper Valley Land Trust</td>
<td>Connections to funding</td>
<td>Funds to purchase and monitor easements</td>
<td>Easements and commitment to long term monitoring</td>
</tr>
<tr>
<td></td>
<td>OCHP Steering Committee (When it becomes a NP)</td>
<td>Connects landowners within a community, Provides educational opportunities</td>
<td>Redefining Forest Legacy parcels</td>
<td></td>
</tr>
<tr>
<td>Atlas Timberlands Partnership</td>
<td>The Nature Conservancy</td>
<td>Funding</td>
<td>Innovative Research for SFM, Funds</td>
<td>FSC Certification, Management of Timberlands</td>
</tr>
<tr>
<td></td>
<td>Vermont Land Trust</td>
<td>Foundation Funding</td>
<td>Innovative Research, Funds</td>
<td>Provides easements on sold off parcels, Management of Timberlands</td>
</tr>
<tr>
<td>Family Forest Flooring Partnership</td>
<td>Vermont Family Forests</td>
<td>Info provider for certification. Connects producers, processors and consumers. Funding</td>
<td>Stimulating a new market for green certified dimensional lumber in VT</td>
<td>Certification, Forester, Land Manager</td>
</tr>
<tr>
<td></td>
<td>Vermont Land Trust</td>
<td>Connects producers, processors and consumers. Funding</td>
<td>Stimulating a new market for green certified dimensional lumber in VT</td>
<td>Easement Provider, product advertising</td>
</tr>
</tbody>
</table>
While providing funding was a common catalyst role across partnerships, other distinct catalyst roles emerged depending on partnership strategies and points of entry to SFM.

*Community-based.* By applying for, and successfully receiving Forest Legacy funding, nonprofits in the Orange County Headwaters Project were able to address the shifting characteristics of land ownership and conservation in Vermont.

*Alternative-Silviculture.* Through innovative research and management, nonprofits in the Atlas Timberlands Partnership hope to inform SFM efforts on private lands.

We wanted to change the discussion about what constitutes good forest management… Our goal has always been and still remains that it is something that has reality to private lands, so you can put an easement that talked about ecology, that we can show that you can still produce wood products. - *Atlas Timberlands Partnership Participant, INT 10*

Furthermore, the groundbreaking nature of this partnership has changed the way that The Nature Conservancy approaches sustainable forest management on a national level.

I’m very proud that there are now hundreds of thousands of acres being bought by TNC to manage and work with other partners to get sustainable management going on. This project literally started that. - *Atlas Timberlands Partnership Participant, INT 10*

*Product-branding.* The nonprofits of the Family Forest Flooring Partnership are trying to catalyze a market for sustainably-harvested wood products in Vermont. They provide services that would normally be handled by for profit entities, including product production and marketing. They are actively trying to cultivate new ways of thinking about forest products and their production.
And so getting people to be more willing to buy what it is the forest wants to yield is very different. We are trying to create a different ethic and a different economy. One based on a commitment to a healthy, local place. - *VFF Participant, INT 2*

In addition to providing services that would normally be the duty of for-profit organizations, such as product creation and advertising, nonprofits provide services that are not usually the business of the government or for profit sector. In all three cases, a prime example is the provision of conservation easements, a legal tool which enables landowners to put restrictions on the development of their land for perpetuity.

*Links to other sectors*

Many (for ex. Gray, 1989, Poncelet, 2004) have suggested that efforts to address complex environmental problems, such as aspects of SFM and forest parcelization benefit from a multisectoral approach. While the three partnerships presented in this study are predominantly populated by environmental nonprofit organizations, strong links to the government and for-profit sectors are present, and must not be overlooked. For-profit entities are often called upon to provide services, but are not considered actual partners, raising questions if the partnerships have been defined too narrowly.

The Orange County Headwaters Project has funded several conservation easements with money received from a federally funded Forest Legacy Grant. The project does not have any full time staff, so it contracts out for-profit entities, such as lawyers and appraisers to provide services. The Atlas Timberlands Partnership hires private loggers. The Family Forest Flooring Partnership works with for-profit entities, including loggers, mill owners and flooring stores to create and sell a finished product.
One interviewee from the Family Forest Flooring Partnership cited all of these service providers as partners, but later stated that the formal partnership was actually between Vermont Family Forests and Vermont Land Trust, because they were the two groups who were assuming financial risk. However, the same interviewee stressed the need to incorporate all parts of the chain of production in order to be successful.

What we learned really early on is that if someone is a service provider, and if they are not with you, they’re not investors, they could ultimately be competitors…So, they’re just, they are service providers, and that’s not, that’s not a good design. We can improve upon that to succeed…And, so we would like to get it to the place where landowners are investors, loggers are investors, truckers, so that people are invested in this thing, financially, emotionally, and, spiritually into this deal. And that, we think that’s just key. – Family Forest Flooring Participant, INT2

Furthermore, two cases potentially foresee creating partnerships with for-profit businesses to accomplish goals in the future. The Orange County Headwaters Project is considering the possibility of a for-profit partner who is interested in developing affordable housing, while the Family Forest Flooring Partnership may link up with a partner who is interested in running day-to-day aspects of a flooring business.

**Perceived Permanence**

An objective of this study was to examine the perceived permanence of partnerships involving environmental nonprofit organizations as well as the strategies they employed. To that end, interviewees were asked questions about how long they thought the partnership would exist, and if they foresaw changes in current organizational roles. A variety of possibilities for permanence emerge, highlighting the importance of organizational and partnership flexibility for endurance.
While the interviewees were uncertain about the exact direction the project will take in years to come, all six felt certain that it would continue in some capacity. Interviewees emphasized how successful and outstanding they thought the project was, and remarked on the power of community to make a difference.

“When people get the difference they can make, and they understand that they’re the ones who created the possibility, they’re the ones that are creating the outcome, that they can just keep building on it…I mean, it really has no parameters.” – OCHP Participant INT 13

After the land conservation portion of the project is completed, several participants envision moving towards community and economic development, by combining forest management and conservation with issues of affordable housing and value-added forest products. Other participants are interested in doing more ecological work, including natural resource inventories. Remaining open to many possible directions allows the partnership to harness social momentum enhanced by the project and channel it in areas of shared interest.

“We seem to be on the edge of embarking on broader-scale community planning ideas. Land conservation is a particular planning approach that works really well, but there is increased interest regarding housing, and occasionally we talk about job creation as important to the future of the community. - OCHP Participant, INT 1

We’d like to build off of all of the relationships and all of the social capital that’s been enhanced through the project. And, that might take the form of something like an ecological initiative that I just described, but it might also take the form of, collaborative forestry activities where people are working together to contribute wood from their forests in a sustainable way, that goes into a marketplace that they believe in. - OCHP Participant INT 6
In addition, the flexibility that a partnership structure offers will allow the Orange County Headwaters Project to take on additional partners in order to pursue other areas of interest, should they decide to do so. This is evidenced by the possibility of bringing in other partners to address issues of affordable housing.

*Atlas Timberlands Project:* Both participants from TNC and VLT were certain that the partnership would exceed its original 10 year lifespan. They envision continuing for at least another 10 or 15 years, but preferably longer in order to understand the long term impacts of their alternative management approaches.

We’re not going to learn anything in 10 years. …To see if an alternative approach was going to work, we were going to need to own it for a while. Long enough to really see some results of the different type of management. – *Atlas Timberlands Partnership Participant, INT 10*

*Family Forest Flooring:* In relation to permanence, the product-branding approach employed by the Family Forest Flooring partnership seems to be the most uncertain. Participants expressed concern that the economics of the project simply will not work and that they may be straying too far from their mission statements.

What we’ve learned so far is that there isn’t a lot of money in this. If the numbers work, then I think we could figure out the partnership end. - *Family Forest Flooring Participant, INT 5*

We can’t be operating a business; we’re supposed to be conserving land. - *Family Forest Flooring Participant, INT 11*

Two participants mentioned that they would continue for another 2-3 years, and re-evaluate the partnership at that time. While not explicitly stating number of years, the other four participants all said that the partnership lifespan could range from very short to long-lived depending on partnership ability to overcome economic obstacles. Four out of
six interviewees mentioned a desire to shift current organizational roles, to move away from actually managing a business and producing a product. Instead, they would like to see their organizations take on roles that encourage and complement for profit endeavors, such as providing funding, and services such as conservation easements and certification standards.

We’re a small organization, so if we spend all of our time, running a flooring business, I think it takes us away from our, our end vision, rather than contributing to it. But, there may be ways in which we can help, sort of be the tugboat rather than the barge. - Family Forest Flooring Participant, INT5

If it’s successful, it’s got to spin off into a separate, likely for-profit entity. VLT doesn’t manage business enterprises. We’re going to reduce our role, no matter what, in two years. What I think what we’ll do is try to incubate… So, we would continue doing the subscription process with our landowners, the communications in support of wood marketing, but there ought to be at some point, if it’s successful, there needs to be a free standing enterprise. - Family Forest Flooring Participant, INT 11

Challenges

Partnerships studied face challenges that affect both process and desired SFM outcomes. Challenges that emerged from these three case studies were related to internal dynamics, economics, a lack of monetary support from landowners for participating organizations, and difficulty in engaging a variety of population demographics in Vermont.

Internal Dynamics: While nine out of twelve interviewees were very satisfied (as understood by a rating of 4 or above on a Likkert Scale of 1-5) with the working relationships between partnership members, several internal aspects of partnership participation remained challenging. In some cases, partnership dynamics slowed progress
towards desired outcomes. In one partnership, two out of six interviewees cited lack of an agreed-upon style of decision-making as a substantial source of inefficiency.

I would call their decision making model collegial/family, by consensus, and ours as being more mechanical, systematic, and, I think we’ve only recently realized that. So, part of the dilemma is that I don’t think that we’ve labeled, or come to grips early on about what our decision making style is. - *Family Forest Flooring Partnership Participant, INT 11*

Differing capacities between a large organization and a small one were also seen as a source of weakness by six out of six people interviewed for one partnership. In another partnership, at least two out of six people interviewed felt that issues of “turf” presented challenges that needed to be acknowledged. One interviewee explained that the contention between two organizations resulted in partnership inability to move forward with projects for almost a year.

**Economics.** It is yet to be seen if the market will support SFM strategies through the purchase of sustainably-grown wood or value added products at a higher premium. While members of the Atlas Timberlands Partnership noted this, the theme arose more strongly among members of the Family Forest Flooring Partnership.

The Family Forest Flooring Partnership is a fairly recent endeavor, and participants feel that they “haven’t actually tested the market” for sustainable flooring products yet. Economic challenges cited thus far by participants include remaining economically viable while still implementing sound management practices, and trying to keep the commodity chain and consumer markets within Vermont.

I would say that, the project is very successful ecologically. It is very successful on a community basis in that we have made excellent connections and people are beginning to inquire as to where their wood comes from. However, it’s challenging
economically. We converted into flooring what the forest was willing to yield. It is a mix. If we were selling all sugar maple, we could likely sell all we could produce. But that isn’t what the forest wants to yield. Selling more of what the forest wants to yield complicates matters. - VFF Participant, INT 2

There’s also a, a tension in all of this between, if you do it very small scale and very artisan, it doesn’t pay. You have to charge a premium. It’s a lot of work for smaller volume. But, you keep it local, all the way though. And, that’s kind of appealing. If you tried to get the economics to work better, and have it not be so high a premium, then, you have to get a higher volume. And, once you get a higher volume, you have to look for markets outside of the state, and you need a different sort of sales network. - VFF Participant, INT 5

All three partnerships are involved in some aspect of Forest Stewardship Certification as well. While they believe being certified is the right thing to do, they have yet to receive the increased returns that certification theoretically promises. Like many others, interviewees feel that the market for FSC certified wood in Vermont is challenged by a lack of reliable supply and demand. One interviewee suggested that in order for certification to work, the support of large institutions like the University of Vermont, shown through purchase of certified wood products, is needed.

There isn’t any added price premium in the market for the landowners. So, it would be hard to charge landowners more for being green certified, because they are not going to get paid any more for their wood. - OCHP Participant, INT 1

Well, it’s one of those things where there’s not enough supply one day and not enough demand the next. So, it’s really, we just haven’t reached a critical mass where there’s enough of it, and there’s a market for it. Because people who buy it need to have a really reliable supply, of course, and people who grow it need to have a reliable market, and neither of them have been quite been in place. So, the hope is, once it takes hold, it will take off, and then that problem will be solved. But, it’s just on that hovering, see saw right now. - OCHP Participant, INT 1

I think unless some significant projects pop up in the next year or two that demonstrate that there’s a place for certified wood in the marketplace,
certification in Vermont will take a downturn if not die completely. - OCHP Participant INT 6

Landowner Support/Subscription. The two partnerships studied that directly involved landowners have encountered some issues related to engaging landowners. Related to economics, landowner subscription has been lower than desired for the Family Forest Flooring Partnership. It is the intent of the partnership to elicit participation from some of the 1,500 landowners whose property is conserved by the Vermont Land Trust. Family Forest Flooring Partnership members feel that a lack of solid information about monetary returns may discourage participation.

I think a lot of people look at it and say “we really can’t tell what our return’s going to be, and we’re not sure if we can put ourselves out there if we don’t know what the return is going to be. – Family Forest Flooring Participant, INT 7

Advertising the project through a brochure and in VLT’s newsletter has generated some potential interest among landowners (supply) and those wishing to purchase flooring (demand). In the next few months, partnership participants are planning to make a more active effort to recruit landowners, primarily from VLT’s membership base, and to attract buyers, primarily targeting institutions such as universities. In contrast, the Orange County Headwaters Project does not depend on supply/demand logic, and has had virtually no problems recruiting landowners to participate. Where at least one participant in the Headwaters partnership sees problems, however, is not in landowner participation, but monetary landowner support.

Land trusts and the easements they facilitate play integral roles in the Orange County Headwaters Project. In turn, land trusts rely on their members to provide support
for activities, including the costs of easement monitoring. One interviewee noted that for a project the size of the Orange Headwaters Project, the land trust she worked for would normally recruit around 30 new dues-paying members to support their activities, something that has not occurred and may impact the sustainability of easement monitoring. Part of the reason suggested was a lack of public recognition for the services of land trusts.

Our commitment to perpetuity is as good as the public that supports us…If we don’t have public support of our organization, then ultimately it isn’t sustainable. The challenge in a project like Orange County Headwaters is, when the public sees these achievements as being Orange County Headwaters achievements, rather than Vermont Land Trust achievements or Upper Valley Land Trust achievements, where is that long term commitment? Where is the hook? - OCHP Participant, INT 14:336

*Population Representation/ Social Equity.* Natural resource management initiatives often face issues of equity which draw attention to underlying issues of class, and these three SFM partnerships are no exception. Several project participants mentioned that their strategies might only be applicable to people with “patient capital”-those who tend to be somewhat well off, and do not need to see immediate returns on their land.

We think that we can make this a relevant model for what we call patient capital. Somebody that’s willing to put a portion of their investments into the land with the idea that they are getting a return, but they’re not trying to maximize their return or get a quick return. That, I think our model will inform a great deal. - Atlas Timberlands Partnership Participant, INT10

When the above interviewee was asked if he thought that landowners in Vermont were representative of that type of person, he responded that larger trends in the cost of land were driving it to be that way.
My personal opinion I guess, would be that, at the moment, the trends in the value of forestland are driving it to that model…to the model where, um, only patient capital will be able to afford fairly sizeable chunks of forestland… The land’s getting expensive enough that you will either have to strip it or you’ll have to be patient. - Atlas Partnership Participant, INT 10

Reflecting a similar sentiment, none of the interviewees cited economic motivations as strong drivers of current landowner participation. Overwhelmingly, interviewees mentioned a conservation ethic, and the desire to participate in a meaningful project as reasons for landowner participation.

Regarding the two partnerships that work directly with forest landowners, representation of a diverse demographic is a challenge. By using conservation easements, certain strategies employed by the Orange County Headwaters Project and the Family Forest Flooring Partnership preclude the participation of those who might choose not to conserve their land, for economic or political reasons.

For example, although the Orange County Headwaters Project involves over 30 landowners who have diverse interests in forests, they have been unable to engage local “native” Vermon ters, a term used by partnership participants to identify people from the area who have been born and raised in Vermont. One project participant cited distrust of the government and organizations like VLT as a reason for lack of participation certain residents. Another reason suggested was the amount of rural poverty in the area, and concerns about the restrictive nature of a conservation easement.

Some folks who have been here for generations may not have much money, but they might have quite a bit of land. And the land can be the financial cushion in case of an emergency. For example, a trucker who lives in a nearby town, his wife got cancer a few years ago, and he cut the wood off of the hill in the back of his house because he needed to pay for her care. It’s that sort of stuff, and you

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really can’t argue with that. People just don’t want to have those opportunities shut off, and you certainly can’t fault that when it may be the only way to take care of your family in an emergency. - OCHP Participant, INT 12

While partnerships studied face issues of equity, what sets them apart from other conservation and management initiatives is that they are actively taking steps to address such problems. For example, a concern that has come up for the Orange County Headwaters Project is that of affordable housing. Partnership members are aware that their land conservation activities may result in a lack of affordable housing, and have been actively discussing ways to avoid such an outcome.

We’re aware of the often mentioned conservation pitfall that looks like this: We had successful conservation project and it drove land prices up, and some people can’t afford to live here anymore. One of the purposes of the project is protecting an intact forest based economy. If people who work in the woods can’t afford to live here anymore, then we haven’t been successful. - OCHP Participant, INT 12

Although no concrete solutions have been found in regards to affordable housing, one steering committee member suggested a potential answer might be finding a partner to work on these issues with.

I hope we can find partners who want to build some affordable housing, and do some sort of demonstration projects that combine an easement with an affordable housing development. It would probably be a combination of a business person and a non-profit. - OCHP Participant, INT 12

One of Family Forest Flooring’s primary goals is to make SFM more accessible to people who otherwise could not afford to properly steward their lands. To that end, their system takes into account the different economic capabilities of three types of landowners: 1) those who don’t need an immediate return and can share in processing costs; 2) those who don’t need an immediate return, but cannot share in the processing
costs; an 3) those who need an immediate return. In this instance, the challenge has been attracting participating landowners from each category, particularly those of lower means to make the system work.

Additionally, it should be noted that some wood for the flooring endeavor has come from the Little Hogback Community Forest, a project managed by Vermont Family Forests. The community forest is a 116 acre piece of land that will be jointly owned by 16 different families. The purpose of the community forest is to make land ownership more accessible to those who would not be able to afford it, and half of the land shares are only available to people whose income is below the county median.

**Implications**

The three case studies I have presented offer evidence of the spectrum of approaches and strategies for SFM in the context of parcelization employed by partnerships involving nonprofit organizations in Vermont. The case studies also provide examples of different types of flexibility found in these partnerships and in the roles of nonprofit organizations. While the perceived permanence of partnerships studied may vary, they currently play important roles in defining the way SFM is approached in Vermont.

Results indicate that partnerships may provide a structure in which the multiple goals of SFM can be institutionalized and acted upon. The three partnerships examined take at least two if not all three major components of SFM into account in their strategies and goals. This reflects the diversity of interests that partners bring to the collaboration, and speaks to the ability of partnerships to be flexible enough to accommodate integrated
objectives. Of the three components of SFM addressed, it can be argued that “social benefits” needs a greater amount of attention. Indeed, the fundamental nature of certain strategies that include conservation easements may not be flexible enough to allow participation of a full demographic spectrum, and suggest that alternative approaches need to be developed.

No single approach to SFM on private lands is likely to be successful in all situations. Forests and social systems are complex and dynamic. Forest composition and structure is constantly changing, and local conditions vary. Forest owners often have different management ideals and capabilities. It has been suggested that diversity is the key to ecological resilience in the face of dynamism (Peterson, Allen and Holling, 1998). Discussing strategies for ecosystem management, Yaffee (1999, p. 722), suggests a diversity of approaches is important as well: “If a diversity of biotic components is desirable as a source of resiliency, so is a diversity of ideas tested through experimentation and evaluation.”

Diversity within similar institutional arrangements may be beneficial, particularly in terms of involving landowners in management activities that transcend individual property boundaries. Landowner interests and values regarding cross-boundary cooperation vary (Finley and Kittredge, 2006). In reference to working across boundaries, Finley et al (2006) identify four types of private forest landowners, two of which are Conservation Cooperators and General Cooperators. Conservation cooperators have expressed interest in activities such as group conservation restrictions and joint management of wildlife habitat. General cooperators are interested in more “utilitarian”
activities, such as collective marketing of timber. A Conservation Cooperator may be interested in the community-based approach taken by Orange County Headwaters Project, while a General cooperator may be more aligned with the product-branding approach taken by the Family Forest Flooring Partnership.

Within and across the partnerships studied, nonprofit organizations play a variety of roles that catalyze and support new discussions and approaches to SFM in the context of parcelized private landownership in Vermont. While nonprofit organizations studied demonstrate flexibility in taking on a variety of different roles, both within and across partnerships, we must be aware of the limits of such flexibility as it applies to permanence. Flexibility may become bounded when concerns of mission fit or capacity cause some organizations to discontinue current sector-bending roles in favor of more traditional ones.

It should be recognized that the results of this study are bounded in the political and economic context of the state of Vermont. Trends in landownership in Vermont, as well as other New England states reveal that many forest owners have strong conservation ethics, and are not primarily interested in owning forests for timber revenue (Belin et al, 2005). Furthermore, the current political climate of Vermont is very supportive of local agriculture initiatives as well as efforts to preserve the “working landscape”, an aesthetic that is directly tied into the success of the Vermont tourism industry. These characteristics may be present in other New England states, increasing the transferability of study results in those areas, but study applicability may differ
substantially in other settings across the United States where political and cultural context vary.

In addition, the diversity of partnership approaches and organizational roles in Vermont SFM that this study highlights may be due to the novelty of nonprofit involvement in SFM activities. The partnerships studied may be seen as taking part in a “start-up” phase: experimenting with many different alternatives until successful, appropriate ones are identified. Some strategies and organizational roles may be more enduring than others. Implications for academics include the modification of existing frameworks regarding the roles of nonprofit organizations in resource management to include a stronger temporal component. This is coupled with the need for longitudinal research and evaluation to examine the evolving roles of nonprofit organizations and the structure of partnerships for SFM over time. Future research will also be needed to identify the full spectrum of approaches to SFM taken by partnerships involving nonprofit organizations.

Implications for practitioners include the need for more participation from the for-profit and government sectors if certain strategies put forward by nonprofit organizations are to continue. Indeed, interviewees from two out of the three partnerships studied can foresee working more intimately with businesses, reflecting the flexibility of partnerships to take on new members to address changing needs and interests. For-profit entities could assume service provision roles in a partnership with nonprofit organizations. In Vermont, businesses could enhance the effectiveness of SFM initiatives by strongly promoting local, sustainably harvested wood and wood products. This could involve
marketing campaigns, or showcasing local, sustainable products prominently in store displays. Government involvement in SFM strategies can come in several different forms. On a local or state level, educational outreach for landowners about forest ecology, economics and management can be a very powerful tool. A different approach on the state level which could facilitate more cross-boundary management would involve offering incentives to landowners for management plans which consider scales larger than an individual parcel. For example, the Current Use program in Vermont only allows landowners with over 25 acres of land to receive tax benefits from active forest management, yet many people in Vermont who would like to participate in the program own less than that amount. Although it might pose challenges to existing tax structures based on individual ownerships, allowing neighbors to pool their land together and participate in Current Use by writing joint management plans would allow for greater participation in sound management activities while addressing the issue of forest parcelization. On a national level, continued or increased funding for sustainable forest management activities through sources such as Forest Legacy grants and the Farm Bill would further the current efforts of nonprofit organizations.

Additional implications for practitioners include the need to consider the long-term sustainability of activities while remaining flexible and open to new ideas/possibilities. For example, thought should be given early on to the types of mechanisms needed to guarantee the continuation of activities such as monitoring of conservation easements, even after a partnership has dissolved. To avoid confusion and delay of progress towards goals, internal issues such as organizational roles and decision
making methods should be agreed upon early on in the partnership process. In addition, SFM strategies should be diversified in order to appeal and be accessible to a broader demographic.

In conclusion, the three partnerships studied are testing out a diversity of ideas and strategies for SFM. Some approaches may prove to be more permanent than others. Ultimately, what may be important about these partnerships is that they are catalyzing change around SFM in Vermont, irrespective of permanence. By creating and promoting innovative ideas and markets, by mobilizing communities, and by conducting innovative research, they are offering new avenues and new ways of thinking about and addressing the interrelated nature of SFM.

**Literature Cited**


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Brynn, David, from an interview with the author, November 13, 2006.


Dennis, Donald, from an interview with the author, November 15, 2006.


Appendixes
Appendix A. Description of Methods

In this project, I employed a multiple case study approach (Yin, 2003), with partnerships being the primary unit of analysis. Vermont-based partnerships were selected using purposeful, homogenous sampling (Patton, 2002), based on the following criteria: 1) involvement in SFM activities on private land; 2) participation of at least one environmental nonprofit organization; 3) involvement in strategies that address parcelization/work across property boundaries; and 4) provision of both public and private goods. The chosen case studies were literal replications (Yin, 2003), intended to increase the external validity of findings.

Case Studies

Out of eight possible SFM partnerships in Vermont, the three that best fit the above criteria were chosen: The Orange County Headwaters Project; The Atlas Timberlands Partnership; and the Family Forest Flooring Partnership.

The Orange County Headwaters Project is a partnership between Redstart Forestry, a local forest management business; The Vermont Land Trust, the largest land trust in the state; The Upper Valley Land Trust, a smaller, local trust; The Conservation Fund, and a steering committee of local landowners. The steering committee is in the process of becoming a non-profit organization, which should be completed within the year. It is a landowner-driven land conservation effort based in the towns of Washington and Corinth in East-Central Vermont. The project area is situated between the growing
cities of Montpelier, the capital of Vermont, and Lebanon New Hampshire, and is characterized by high quality, unfragmented forestlands (OCHP, 2006). Many landowners make their living from the forest, as foresters, loggers, sugarmakers, and are very concerned about increasing development pressure in their area. They seek to “preserve undeveloped land while simultaneously supporting the vitality of their local forest economy” (OCHP, 2006). Since the project began in 2003, it has conserved over 4,500 acres of mostly contiguous land, spanning over 31 different ownerships.

The Atlas Timberlands Partnership is a collaborative effort between The Nature Conservancy, and the Vermont Land Trust. In 1997, the two organizations acquired 26,789 acres on 23 parcels of land from Atlas Timber Company, which was divesting it’s assets, making them joint owners of what is now the second largest (at the time, it was the third largest) private forest holding in the state. Becoming timberland owners was a major shift for both organizations. The Nature Conservancy had traditionally owned land as ecological reserves, while the Vermont Land Trust had put easements on forestland, but was never itself an owner. This project was the first time that The Nature Conservancy owned and actively managed timberland, an approach that they have continued in other states, such as Maine (TNC, 2007). They currently manage the property to test out new silvicultural approaches for SFM.

The Family Forest Flooring Project is the result of a three and a half year old partnership between the Vermont Land Trust and Vermont Family Forests, a non-profit operating in Addison County, whose mission is to ensure the health of Vermont’s forests. The project is a statewide endeavor to produce and market a locally made, value added
forest product that has been grown under ecologically-responsible conditions. Currently, wood for Family Forest Flooring is harvested from forests in several parts of Vermont, including Addison County and Essex, Orleans, and Caledonia counties (collectively known as the Northeast Kingdom). Owners of the timberland include the Vermont Land Trust, The Nature Conservancy, Middlebury College, a private landowner, and the Little Hogback Community Forest, a piece of land jointly owned by 16 people and managed by Vermont Family Forests. The Vermont Land Trust holds conservation easements on approximately 465,000 acres, about eight percent, of Vermont’s privately-owned land. It is the partnership’s intent to engage owners of Vermont Land Trust’s substantial conserved land base across the state to participate in this project.

Data Collection

I conducted a total of 14 semi-structured, open-ended interviews with key informants from the three partnerships. All interviewees received copies of an Institutional Review Board-approved informed consent form that explained the purpose of my study, outlined the potential risk of a breach in confidentiality, and guaranteed participant anonymity (Appendix A). All interviewees consented to being tape-recorded for accuracy. Interviews generally lasted for an hour, but ranged from 35 minutes to an hour and twenty five minutes in length.

I identified initial informants through partnership documents, websites and word of mouth. Snowball sampling techniques (Patton, 2002) were then used to obtain the names of other partnership participants. I employed purposeful, stratified sampling (Patton, 2002) to select interviewees from this pool, ensuring that: 1) for each
partnership examined, all contributing organizations were represented by at least one interview; and 2) interviewees represented a variety of different positions and responsibilities within each partnership that have direct bearing on strategies pursued and/or internal partnership functioning. In one partnership, no sampling was needed, because only two individuals were directly involved. In the other two cases, six interviews each were conducted. The Family Forest Flooring Partnership involved two organizations. Within those two organizations, there were a fair number of employees who were directly involved in the partnership, so three people from each group were sampled. In regards to the Orange County Headwaters Project, five groups were involved. Due to the nature of the partnership, only one person from the Vermont Land Trust and the Conservation Fund were primary participants in partnership activities, so they were the only people I chose to interview. In the case of the Upper Valley Land Trust, I attempted to contact two potential interviewees, but only one of them was willing to be interviewed. The other did not have time. There are several members of the Project Steering Committee, but one of them had recently been interviewed for an administrative case study of the project, and project leaders were concerned that participants not be over-interviewed. Table 2 (below) provides a breakdown of interviewees by partnership, and organization. Potential interviewees were initially contacted via an email explaining the study and asking if they would be interested in participating (Appendix B).

<table>
<thead>
<tr>
<th>Partnership</th>
<th>Organization</th>
<th>Number Interviewed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orange</td>
<td>OCHP Steering Committee</td>
<td>1</td>
</tr>
</tbody>
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The interview guide (Appendix C) contained questions designed to explore partnerships in Vermont which attempt to address issues of SFM, including parcelization and working across property boundaries. Questions investigated reasons for participation in partnerships, partnership strategies, organizational roles, and internal dynamics (with respect to decision-making and access to resources). Perceived permanence of partnerships and current strategies were explored through questions related to project lifespan and shifting organizational roles. Interview questions were open-ended with the exception of two close-ended questions which asked interviewees to rate aspects of the partnership based on a Likert scale of one to five. Open-ended questions were worded to elicit thoughtful responses from interviewees and avoid dichotomous “yes” or “no” replies. Furthermore, questions were structured to avoid leading interviewees to specific responses.

During interviews, notes were taken to facilitate further questioning, and to complement tape recordings during analysis. At the conclusion of interviews, I recorded anything of note, including ending time, my perceptions of the interview with respect to
quality and mood, questions raised by the interview, and any thoughts or insights that came out of the interview. In one case, the device I used to record an interview (INT4) malfunctioned due to my error. I realized this at the conclusion of the interview, and immediately took detailed notes of our conversation, based on notes I had been taking during the interview, and my recollections of the conversation.

I used documents to obtain background information on partnerships and organizations, such as mission statements, goals, and agreed upon roles within the partnership. Documents sampled include: promotional brochures, newsletters, websites, press releases and Memoranda of Understanding.

**Data Analysis**

All interview recordings were transcribed. I coded and analyzed data using thematic analysis (Boyatzis, 1998). Thematic analysis was used because it can be employed to analyze both theory driven and data driven material. I reviewed interviews and supporting material several times for emergent themes (Glaser and Strauss, 1967), and developed a code book (Appendix D). The codebook consists of both theory and data driven codes. Initial codes related to questions posed in the interview guide, and were grounded in frameworks of sustainable forest management, landowners, roles of nonprofit organizations, and partnerships. Codes that emerged from the data related to types of strategies employed and social equity.

Coding and subsequent analysis of interviews was aided by Ethnograph software. To further organize my analysis, I assigned each code a parent code. Parent codes are
broad analytical and thematic categories, including: partnership background, strategies, sustainable forest management and organizational dynamics.

**Case Study Validity**

Yin (2003) identifies two types of validity that are important to consider when using a case study approach: internal validity, and external validity. Internal validity has been maintained in several ways. This study sought to explore partnerships involving environmental nonprofit organizations that work towards the interrelated goals of SFM, their motivations, their strategies, how they address parcelization or work across property boundaries, their organizational roles, and their perceived permanence. The questions I developed for my interview guide capture these main concepts. When an interviewee response was unclear or needed further explanation, I asked him/her to clarify or probed for further information through the use of prompts. Responses provided by interviewees appeared to me to be honest and truthful. On several occasions, interviewees requested that the tape recorder be shut off, so as to be able to speak more candidly to me. In order to ensure that responses from interviews accurately reflect the thoughts and perspectives of interviewees, I asked each interviewee to review her/his quotes that I intended to use to highlight findings. Furthermore, responses to specific questions were triangulated using converging responses from other interviewees and information from supporting documents. Gaining information from multiple informants within each partnership, as outlined in my sampling criteria also strengthens my internal validity.

The external validity of my individual case study findings was enhanced in several ways. For example, some of my results, including the bounded flexibility of
nonprofit organizations and challenges posed by issues of social equity are transferable to audiences broader than those interested in SFM. The external validity of these results is strengthened by drawing from and linking to theoretical frameworks related to partnerships (Gray, 1989; Wondolleck and Yaffee, 2000; Dovers, 2001; Lasker, 2001) and roles of non-profit organizations (Danks, 2008; Lewis, 2001; Dees and Anderson, 2004) as well as frameworks derived from SFM and ecosystem management literature (examples: Cortner et al, 1998; Yaffee, 1999; Sampson and DeCoster, 2000, Kohm and Franklin, 1997, and Johnson et al, 1999). In addition, my results clarify and extend frameworks, making them more specific. Although this is done in the context of Vermont, refined frameworks can be applied cases in other areas. However, it should be recognized that the results of this study are bounded in the political and economic context of the state of Vermont. Trends in landownership in Vermont, as well as other New England states reveal that many forest owners have strong conservation ethics, and are not primarily interested in forest ownership for timber revenue (Belin et al, 2005). Furthermore, the current political climate of Vermont is very supportive of local agriculture initiatives as well as efforts to preserve the “working landscape”, an aesthetic that is directly tied into the success of the Vermont tourism industry. These characteristics may be present in other New England states, increasing the transferability of study results in those areas, but study applicability may differ substantially in other settings across the United States where political and cultural context vary.

External validity was further enhanced by using multiple cases within my study. Cases were designed to be literal replications (Yin, 2003) bolstering results in regards to
the importance of partnership flexibility and diversity, issues of social equity and the roles of nonprofit organizations. As Yin (2003) suggests, the case study approach is not the best method for offering generalizations about a phenomenon. My choice of case studies is not intended to provide generalizations about all partnerships involving environmental nonprofit organizations. Rather, it is to illustrate a spectrum of strategies and approaches to SFM and addressing parcelization that exist within these institutional arrangements.

**Reliability**

Reliability of case studies ensures that a researcher has systematized her process in a way that is replicable, minimizing error and bias. Yin (2003) suggests maintaining a chain of evidence and creating a case study database as two ways to increase the reliability of case studies. I have maintained a chain of evidence throughout my project. Designed to provide transparency into research methods, a chain of evidence allows subsequent researchers to understand and repeat my process from beginning to end. Raw data in the form of original interview tapes are the beginning of the chain, followed by interview transcriptions and accompanying notes, and coded data files. Creating a case study database also enhances my reliability. I have compiled project components, including interview and research notes, partnership documents, including Memoranda of Understanding, newsletters, and brochures, interview transcripts, letters of consent, an interview guide; and IRB approval forms. Should I or anyone else need to refer back to
any of my research materials in the future, they will be organized in a way that is accessible.

**Researcher Bias/Subjectivity**

I come into my Master’s thesis work with a Bachelor’s of Science in Environmental Forest Biology. My undergraduate education provided me with a strong understanding of the biophysical components of a forest, and influenced me to favor forest conservation over timber harvesting without necessarily considering the social implications of my beliefs. In the past three years, I have become much more aware of societal issues surrounding forest conservation, and the fact that forest health need not exclude the social and economic needs of humans. I have also become very sensitive to issues of social equity that surround conservation efforts.

My feelings about equity and conservation caused me to be initially doubtful about the motivations of land trusts, a group of organizations which figure heavily in my thesis project. I felt that land conservation was really intended to benefit upper classes of society, by preserving farms and forests for aesthetic purposes, rather than functionality. While I still see issues of class arise in land trust actions, my research has softened my views. As I became more familiar with the organizations that I was studying, their concern for people and communities of all income classes became apparent to me.

In terms of the partnerships I am studying, my subjectivity lies in my support for the main ideas and beliefs that lie behind the actions and approaches of all three partnerships. I see a great deal of value in strengthening communities, supporting
landowners and local economies and protecting forest health. I believe that interdisciplinary approaches to SFM are the most likely to accomplish their goals, and would like to see successful examples of such approaches as a source of inspiration for others.

Recognizing these biases, I took steps to minimize my subjectivity throughout the research process. Patton (2002) recognizes that no qualitative inquiry can be completely objective, but suggests that employing rigorous field procedures provides a good way to mitigate researcher bias. As I mentioned earlier, my data collection was systematic, and interview questions were carefully constructed to avoid leading interviewees to specific answers. Interview results were triangulated with partnership documents and the results of other interviews. Finally, maintaining a chain of evidence (Yin, 2003) throughout my case study, including provision of access to raw interview data allows others to confirm the accuracy of my findings.
Appendix B. Sample Informed Consent Form

Making Sustainable Forest Management Work:
How partnerships bridge property and organizational boundaries.

Principal Investigator: Michelle Baumflek
Faculty Sponsor: Clare Ginger, PhD

You are being invited to take part in a research study. I am conducting this research as part of my Master’s thesis work at the University of Vermont. My project focuses on the role of partnerships involving non-profit organizations in sustainable forest management. I am specifically interested in how these partnerships approach issues of forest fragmentation, and develop and implement strategies to work across private property boundaries.

In order to examine the topic, I am conducting individual interviews, which will take approximately an hour. During the interviews I will take notes for later analysis. With permission, interviews will be audio taped to help in the data collection process. After notes are transcribed from the tape recorded interviews, the tapes will be erased.

All information will be kept confidential, and my project will not identify individuals. The study information is for research purposes and will be shared with my faculty advisor, Dr. Clare Ginger. Please feel free to contact her if you have any further questions or concerns by phone at 802-656-2698 or by email at Clare.Ginger@uvm.edu.

If you choose to participate in the study, you are free to withdraw at any time. You may also decline to participate. You will not be penalized for withdrawing or declining. The potential risk of a breach in confidentiality is low. Anonymity of participants will be maintained through the use of pseudonyms. Collected data, identified by pseudonym, will be stored in a locked cabinet in a locked office. If at any time during this study you have questions about your right as a research participant, you may contact Nancy Stalnaker, the Institutional Review Board Administrator at the University of Vermont, 245 South Park, Suite 900, Colchester, Vermont, 05405 (phone: 802-656-5040).

Please indicate whether you wish to participate in this project by checking a statement below and signing your name. You will receive a signed copy of this form.

_____ I wish to participate in this research project and agree to be audio taped.

_____ I wish to participate in this research project but DO NOT agree to be audio taped.

________________________________________            __________________________
Signature of Prospective Participant  Date  Print Name

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Signature of Principal Investigator  Date

**PI**: Michelle Baumflek, 103 Aiken Building, University of Vermont, mbaumfle@uvm.edu.

**Faculty Sponsor**: Clare Ginger, 260 Aiken Building, University of Vermont, Clare.Ginger@uvm.edu
Appendix C. Sample Email Script for Initial Contact

Dear ____,

My name is Michelle Baumflek and I'm a University of Vermont Master's student interested in sustainable forest management (SFM) and forest fragmentation. My thesis focuses on partnerships involving non-profits that conduct SFM on private lands in Vermont. I am especially interested in those that are implementing strategies which address some aspect(s) of forest fragmentation, such as habitat loss, provision of ecosystem services, or gaining economies of scale for small landowners in timber sales.

I have identified the ____ Partnership as an innovative partnership I would like to study. (If not the initial contact, next sentence would say “You were referred to me by ___.”) Would you be interested in participating in this project? Participation involves taking part in an interview, ranging from forty-five minutes to an hour. Questions will deal with the strategies employed by the ____ Partnership. Your responses will remain anonymous, and the interview can be conducted in person, or over the phone.

I would be happy to answer any questions that you have regarding this project and/or your participation in it. Please do not hesitate to contact me at 802-656-0934, or Michelle.Baumflek@uvm.edu.

Please let me know if you would be interested in participating, and if so, when you might be available to talk in the next few weeks.

Thank you for your consideration,

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Appendix D. Interview Guide

Individual Background
1. Can you please describe your current position/role?
2. How long have you been working there?

Partnership Background
1. What prompted your organization’s involvement in specific partnership name here?
   • Whose idea was it?
     o Is this person considered the leader of the partnership?
   • What problems/issues does this partnership attempt to address?
   • Fulfilling roles/niches
2. What are the goals of the partnership?

Partnership Strategies
1. Can you describe the strategies ------ partnership employs to achieve its goals?
   • How do they work across property boundaries?
   • What aspect(s) of SFM are addressed? (ecological, social, economic)
   • If appropriate- does this strategy involve individual parcel mgt, or consideration of multiple parcels as a single unit?
2. Why did the partnership decide to pursue these particular strategies?

Landowner Relations
1. How do you get landowners involved in this project?
   • Do you approach them, do they approach you?
2. Why do you think landowners get involved in your program?
   • Monetary reasons, conservation-minded, etc
3. Does your organization/project foster communication between landowners? How?
4. What do you perceive to be the greatest challenge obtaining landowner involvement?
   • Lack of education, lack of neighbor support

Organizational Dynamics in Partnership
1. What does your organization hope to gain from participating in this partnership?
2. How does your organization contribute to the partnership?
   • Roles
   • Resources, funds, connections, expertise…
3. What do your partners bring to the table?
   • Roles
   • Resources, $$, expertise, manpower
   • Explore level of participation- active day to day, decision making, just provide funding…
4. Where does the partnership receive its funding from?
   - Reliability, public vs. private

5. Does the partnership, as an entity, have any resources allocated to it?
   - Distinction between organizational contributions, and partnership-specific resources.
   - Who has access to/allocates/controls these resources?

6. How are decisions made affecting the partnership?
   - Who makes decisions?
   - What kinds of decisions? Internal process, external strategies

7. What do you consider to be some of the partnership’s strengths?

8. How about some weaknesses?

9. On a scale of 1-5, how would you generally rate the relations between members of the partnership, 1 being poor and 5 being excellent? 1…2…3…4…5
   - Explore cooperation, power dynamics, communication, trust
   - Are there any exceptions to the rating you gave?

10. On a scale of 1-5, how do you rate the success of the partnership? 1…2…3…4…5

11. How about the project? 1…2…3…4…5

12. Can you give me some reasons why you feel this way?
   - Differentiate between process and outcomes, factors

13. What do you think would make the partnership/project more successful?

14. What do you project the lifespan of this partnership to be?

15. How do you expect your role to change over time?

Can you tell me the names of some other people who have been instrumental in this partnership that I might be able to speak to? (Also ask about sources of literature)

Is there anything else that I did not cover, that you would like to add?

Thanks for your time!
Appendix E. Codebook for Ethnograph Analysis

Background Information
NAME: Name
GENDER: gender
JOB: Mention of job
YEARS: Years worked at job

Partnership Background
GOALS: Mention of goals of partnership, project or specific organization
MISSION: Mention of mission statement

Motivation
INVOLVE: Mention of what prompted involvement in partnership/project
GAIN: What an organization hopes to gain by participating in the partnership

Strategies
STRATEGY: Mention of strategies used by partnership, project, organization
ECONSTR: An economic strategy
ECOLSTR: An ecological strategy
COMMSTR: A community-based strategy
BOUNDARY: Mention of working across property boundaries
CERTIFICATION: Any mention of FSC/SFI certification or something similar
LANDSCAPE: Mention of taking a landscape-scale into account
STORY: Mention of telling a story of a product or place
DOUBT: Expressed doubt about cross-boundary management
BARRIERS: Barriers to cross-boundary management
INTEGRATION: Mention of addressing more than one issue at the same time
LOCAL: The idea that things must be kept “local” in some capacity
COLLECTIVE: Any mention of a need for collective action, especially with reference to working on a landscape scale.
FORESTER: Any mention of employing a forester

Sustainable Forest Management
ECOLOGY: Mention of ecological aspects of SFM
ECONOMY: Mention of economic aspects of SFM
SOCIETY: Mention of societal aspects of SFM
PARCEL: Mention of some aspect of parcelization

Organizational Dynamics
ROLE: Mention of specific organizational roles
CONTRIBUTE: Mention of specific organizational contributions to a partnership
FUNDING: Mention of partnership funding sources
DECISION: Mention of decision making within partnerships
CAPACITY: Mention of organizational capacity
STRENGTH: Mentions of partnership strengths
WEAK: Mentions of partnership weaknesses
SUCCESS: Mentions/ratings of partnership success
RELATIONS: Mention of the relationships between partnership participants
MOU: Mentions of a Memorandum of Understanding
LEARNING: Mentions of learning between organizations
COMPROMISE: Mentions of compromise between organizations
BENEFITS: Any mention of the benefits of being in a partnership
DRAWBACKS: Any mention of drawbacks of being in a partnership

Landowners
LANDBAR: Mention of barriers to landowner involvement
CHARACTERISTICS: Mention of types of landowners who participate
LANDMOT: Mention of motivation of landowners to participate
OUTREACH: Mention of methods to gain landowner involvement
INCOME: Mention of landowner income/income sources

Permanence
LIFESPAN: Mention of the perceived lifespan of the partnership
FUTUREROLE: Mention of perceived organizational roles in the future

Nonprofit Organizational Roles
SERVICE: Mention of NP acting as a service provider
BRIDGE: Mention of NP acting as a bridge
CATALYST: Mention of NP acting as a catalyst
BENEFITS: Mentions of benefits of being a nonprofit organization
Appendix F. Coding Reference System

In order to identify interviewees while maintaining their anonymity, I developed a coding reference system. Quoted interviewees are given a semi-anonymous descriptor, such as “OCHP Participant, or VLT Participant”, followed by an interview reference, such as INT4:89. “Interviews are numbered chronologically. INT4” refers to the fourth interview I conducted, and “89” refers to the line of text where the quote begins in the Ethnograph data file.