Sustainable Landcare:
A Case Study of Forest Landowner Cooperation and the Forest Landcare Industry in Virginia, USA

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Abstract

The fate and function of U.S. forests face unprecedented challenges from urbanization, land transfer, and industrial globalization. Landcare is a landowner-led, community-based, and state supported approach to conservation and development that has had international success as a response to these challenges. The landcare movement has recently become active in the United States, engaging a broad coalition of government, industry, and local partners. The purpose of this paper is to describe and examine the emerging forest landcare movement occurring in Virginia and extract lessons from this case study useful to other areas facing similar issues. Specifically, we examine Grayson Landcare and the Blue Ridge Forest Cooperative to explore how well landcare promotes sustainability as defined using the Montreal protocol. We find that landcare strategies have great potential but as yet have a relatively small impact on local environment, economy, and community.

Keywords: forest cooperatives, grass roots, land trusts, triple bottom line, value-added processing

Introduction

The fate and function of U.S. forests face unprecedented challenges from urbanization, land transfer, and industrial globalization. How much land is affected? Most of it! Reliable data are years behind current conditions, but they indicate a major transformation of the American landscape. In 1950, only 5% of private land in the coterminous United States had at least one house every forty acres. By 2000, this residential landscape swelled to cover 27% of private lands *(Brown et al. 2005; Stein et al. 2005).* The trend is especially significant for forests because profit motivated forest businesses—Timber Investment Management Organizations, Real Estate Investment Trusts, integrated forest industries, family trusts—are understandably encouraging and capturing the significant returns on investment made possible by converting forest land into real estate. The new owners of this increasingly residential forest have new management needs and preferences, requiring innovation and accommodation by professional, public, and private forest management services *(Hull et al. 2004; Kendra and Hull 2005).*

At this same moment in history, as American forests are being fragmented and put under new management by new owners, forestry professionals are losing the capacity to manage and sustain the goods and services these forests provide. A globalizing and reorganizing forest industry is eroding traditional local management resources. Profit margins from timber harvests that make local management affordable are shrinking because of fiercely competitive international markets and because processing facilities are relocating to where land and labor are cheapest and productivity and profits are highest *(Wear et al. 2007).* For example, the number of private landowners assisted by forest industry Land Assistance Programs dropped by 1/3 in just one year (2005-2006) and the acres registered in those programs was reduced by almost 60% that same year. State and federal public forestry programs are also in retreat, as scarce tax revenues get redirected to meet physical and social security needs. Programs that once provided management, financial and technical assistance to landowners are eroding.

Forest landcare practitioner implementing firewise landscaping practices in the residential forest.

This urbanized, globalized, and politicized forest still needs management, perhaps now more than ever. Invasive species and disease such as gypsy moth, autumn olive, and oak wilt dramatically affect forest sustainability. Changing climate alters where species thrive, when they pollinate and hibernate, and how they interact with other species. Fire suppression has changed ecological compositions towards fire intolerant species. Off road vehicles, mushrooms and medicinal herbs collecting, road construction, housing developments, and a multitude of other past and current non-timber forest uses continue to alter the form and function of forests. We are witnessing, on our watch, threats to the green infrastructure that supports the very fabric of society. The stakes are enormous. Comprehensive assessments by forest, water, soil and agricultural organizations confirm the severity of these trends *(Wear and Greis 2002; American Farmland Trust 2007; Heimlich and Anderson 2001).* The landcare movement is a response to these concerns.

Landcare is a landowner-led, community-based, and state supported approach to conservation and development that has proven successful internationally (Landcare International 2007). Its emergence follows international trends that merge social justice, economic development, and environmental sustainability; trends perhaps best illustrated by Agenda 21 adopted by more than 178 Governments at the 1992 United Nations' Conference on Environment and Development held in Rio de Janerio, Brazil. Landcare also represents a response to the trend of decentralizing decision making: moving from command and control state/federal programs to local and market driven solutions. Collaborative conservation tailored to local needs and fine tuned by local expertise is increasingly the norm. Additionally, landcare reflects the Triple Bottom Line (3BL) accounting strategy that has become fashionable in management, consulting, investing, and NGO circles over the last few years in the hope that business success can and should be measured not just by the traditional financial bottom line, but also by its social/ethical and environmental performance.

Landcare has captured the imagination of millions of people, attracting billions of dollars and countless hours of voluntary support for conservation efforts. The landcare movement has achieved considerable success in Australia where it began in the mid-1980s and there are now more than 5000 landcare groups and 2000 coastcare groups *(Cary 2001; Wilson 2004).* 40% of Australian land managers are members of local landcare groups and another 35% receive information from landcare networks. 85% of the Australians, a mostly urban nation, recognize the landcare logo. By organizing into local landcare groups, landowners are able to work together along with government agencies, corporate sponsors, and other stakeholders to achieve natural resource management goals that cannot otherwise be attained on private (and public) lands. Similar landcare successes are found in other countries including New Zealand, South Africa, and the Philippines.

The landcare movement has recently become active in the United States where a broad coalition of partners, including US Department of Agriculture, US Environmental Protection Agency, and the National Associations of Conservation Districts, RC&D Councils, and Regional Councils, is currently promoting the landcare concept and working together to build the capacity of the landcare movement at local to national levels.

Forest landcare applies landcare principles to forests and forest owners. It is a market-based, self-sustaining, non-regulatory, property rights respecting forest service industry that restores forest health and utilizes previously unmanaged and unharvested forest biomass. The emerging forest landcare industry is tailored to the urbanizing and globalizing forest. It uses profits from value-added processing of wood products to promote forest restoration through affordable management, to improve the environmental and economic benefits of on-going forest management, and to reach out to forests that would otherwise be exploited or ignored. Forest landcare also provides management services to forest owners not interested in industrial forest practices or management for profit maximization through commodity production. Forest landcare also creates a necessary infrastructure of service providers to fill gaps left behind as forest industry restructures and relocates. Similar market-based strategies already successfully reach millions of acres in America's urbanizing landscape—the multi-billion dollar green industry that delivers lawn care, landscaping, and arboriculture.

The efforts of a few social entrepreneurs brought forest landcare to southwestern Virginia in 2004, and the fruits of these efforts are now receiving national attention in an effort to examine the potential of landcare and its contribution to regional, national, and global sustainability. The purpose of this paper is to describe and examine the emerging forest landcare movement occurring in Virginia and extract lessons from this case study useful to other areas facing similar issues.

Established case-study research methods were used, including participant-observation *(Bernard 1995)* and extensive interviews with participants *(Yin 2002).* Forest sustainability is the goal of forest landcare, thus "sustainability" serves the basis of our evaluation criteria.

Sustainability

Sustainability is notoriously difficult to define *(NCSSF 2005; Norton 2005; Peterson 1997).* We rely heavily on indicators developed for the Montreal Process, which is a multi-nation initiative launched in Montreal Canada in 1993 to coordinate member country efforts to assess progress towards sustainable forest management *(see Seventh American Forest Congress 2003).* We selected specific criteria that can be assessed qualitatively within the context of our case study. As a metaphor for organizing our presentation, we use the sustainability stool that stands on three legs: economy, community, and environment. This understanding of sustainability is often referred to as the triple bottom line (3BL) of sustained economic, social, and environmental benefits.

Economy: The Montreal Process identified numerous relevant indicators. Criterion 6.1 deals with producing value and volume of timber and non-timber products, particularly important here is value added processing capabilities that increase profits and make forest management affordable. Montreal criterion 6.3 focuses more generally on investment in the infrastructure supporting forest industry (i.e., management, research, and education). Montreal criterion 6.5 deals with direct and indirect employment generated by forest industry. We augment the Montreal criteria with economic benefits available to forest landowners (in this case, members of forest landowner cooperatives) made possible by improved silviculture, increased economies of scale, and access to new or larger markets.

Community: Sustainability requires that people have the skills and wills to act locally *(Dryzek et al. 2003; Shutkin 2000)* and the trust, norms, networks and other social capital to do so *(Putnam 1993).* Empowered communities capable of social learning and mobilizing resources can monitor and influence local conditions through a variety of social, economic, and political means. Montreal criterion 7.2 identifies institutional frameworks that encourage public involvement and education, planning and coordination, and nurturing relevant human resource skills. Following Edmunds and Wollenberg (2003) we look for how shared knowledge and trust as well as increased community identity build community capacity by helping people represent themselves, their needs, as well as their interests. We also look for evidence of horizontal and vertical social networks that enable sharing resources and mutual aid throughout a community *(Flora & Flora 1993).* Vertical networks reach outside the local community to bring in knowledge, power, finances, and other resources. Horizontal networks distribute those resources through the local community.

Environment: The Montreal Process proposed a rich tapestry of criteria for assessing environmental dimensions that make ecological systems resilient and sustainable: the area of forest land, genetic and species diversity, volume removals versus growth, departures from the natural range of variability, threats of invasive insects, soil erosion, water quality, and carbon cycles. Because we are studying a recently formed forest landowner cooperative, we have no ecological field work to report and, other than land area affected, few direct measures. However, a variety of indirect measures are available.

The implementation of certification by systems with third-party verification that emphasize sustainable forest practices provides one such measure, as does the level and detail of site level forest planning that involves qualified forestry professionals *(Newsom et al. 2006).* The likely impacts of harvesting technologies also can be examined. The Montreal Process did identify several indirect measures on which we can comment. Montreal criterion 7.4 refers to the capacity to measure and monitor forest conditions so that adaptive responses are possible and Montreal criterion 7.5 deals with conducting and applying research needed to improve forest sustainability.

A Case Study of Forest Landcare in Virginia

Headwaters Forest Landcare Partnership

The Headwaters Forest Landcare Partnership provides the over-arching frame for the example of landcare studied here. It is a public-private initiative including the Virginia Department of Forestry, Virginia Cooperative Extension, Virginia Tech, US Department of Agriculture and essential local organizations such as RC&D councils, planning districts, conservation districts, land trusts, landowner cooperatives, community foundations, and local businesses. These partners are now working together to improve green infrastructure in the Headwaters region of Virginia which includes the upper James, Roanoke, and New River watersheds feeding the Chesapeake Bay, Albemarle Sound, and Mississippi Basin, respectively. Some of the partners have been working together for decades to develop sustainable forest management systems. In 2006, the Headwaters Forest Landcare Partnership was formed to help the partners more effectively achieve their shared goals and objectives.

The Grayson Landcare group is one of the more active local grassroots organization of the partnership. The Blue Ridge Forest Cooperative is one of the most active forest landcare businesses in the partnership. Both of these organizations are discussed in detail below.

Grayson Landcare

The New River Land Trust (NRLT) in southwest Virginia has been a highly successful land conservation organization in terms of the number of acres of private land they have helped to put in conservation easement. However, the land trust realizes that conservation easements are only one tool for achieving land conservation objectives on private land. Residential development profits make keeping land in forest difficult for private landowners to justify. So, in 2005, the New River Land Trust with support from the Conservation Fund and other partners secured a grant from the National Fish and Wildlife Foundation to help farm and forest landowners get organized to improve their incomes from farming and forestry by working together for mutual gain. One goal was to sustain working forests, so that forests stay forested instead of developed into houses.

Jerry Moles was hired as a community organizer. He had worked overseas in Sri Lanka to develop management techniques for planting and growing trees in tandem with food and commercial products such as coffee, fish tail, palm and ginger—a practice known as analog forestry. The land there had been degraded and eroded by years of monoculture exploitation encouraged by local and international pressures to grow commodities for the global economy. Within a decade of being managed more holistically, these farms and forests started feeding families, creating a cash flow, and revitalizing community and culture: perennial streams returned, soil fertility increased, species diversity expanded, erosion slowed, and an empowered communities began addressing other concerns such as poverty and sanitation. It is an amazing success story; now there are hundreds of these groups organized by the NeoSynthesis Research Centre in Sri Lanka, which has exchanged people and ideas with Australia, and thus helped motivate and inform the landcare movement there and in other parts of the world.

Like many boomers, Jerry moved back to his birthplace, southwestern Virginia, to care for aging parents. He soon began working with the NRLT, advancing landcare. After months of organizing, Jerry arranged a meeting of landowners, professional land managers, and faculty at the nearby university (Virginia Tech) to discuss the challenge of keeping land in farm and forest. People were intrigued by the idea of landcare and after looking into it they decided to adopt the landcare name and basic principles (e.g., cooperation and the triple bottom line) as organizing elements for their own work. In 2005, Grayson LandCare was formed, and incorporated as the first "official" landcare group in the Americas. It describes itself as "a locally organized group of farmers, landowners, and residents concerned about economic and environmental problems faced by residents in Grayson County and southwest Virginia. Grayson County has historically been a rural agricultural community based on cooperative and family relationships, and has a unique cultural history of more than 200 years in the beautiful Appalachian landscape. Unfortunately, rising land prices, increasing property taxes, and competition from corporate farming have all threatened the security of family farms, fragmenting the country landscape, and dissipating the rural way of life. Grayson LandCare addresses these challenges with the triple-bottom-line: improving economy, community, and environmental sustainability. In short, the goals of Grayson LandCare are 1) to increase the incomes of citizens, 2) to involve the community and improve community services, and 3) to protect natural resources, on which people depend for food, water, and air."

Blue Ridge Forest Cooperative (BRFC)

Grayson Landcare has five active committees: communications and public relations, water resources, livestock, forestry, and tourism (including agro- and eco-tourism). This paper examines the efforts related to forestry. Many landowners in the region own forests and woodlots of varying acreages; many are intermixed

Harry Groot in the woods with landowners at the Annual Meeting of the Blue Ridge Forest Cooperative in 2007.

with housing, amenity, and/or grazing activities. Grayson Landcare has integrated much of its forest planning with the Blue Ridge Forest Cooperative, a forest landcare business described in some detail below. Again Jerry Moles, the local university, and the desires of landowners, provided the impetus for this integration. Both Moles and the second author of this paper are board members of the BRFC and active participants in the local-regional landcare movement.

The BRFC is a for-profit, producer cooperative providing its members with forest management advice, low-impact harvesting, and processing and marketing of value-added forest products. It markets itself as providing forest management services that protect environmental and amenity qualities as much or more than it markets making a profit from timber harvests. It was incorporated October 2004 in Virginia, but built upon a long existing forest management company called Next Generation Woods, which has similar goals and is owned and managed by the co-op's chief executive officer, Harry Groot. BRFC has over 10,000 acres committed and solicits investments from investors who may purchase stock that pays dividends up to 8% per year. These investments are used to acquire necessary equipment, cover initial operating expenses, and lease facilities.

Forest landowners wanting to join must have Virginia residency and at least ten acres of forestland in Virginia. They must purchase $500 of stock in the co-op, obtain a Forest Stewardship Council (FSC) certified forest management plan, and pay for oversight services during harvests. Management plans are developed at the landowner's expense and thus reflect the landowner's goals. Each member has only one vote but receives profits proportional to sales generated on their behalf. Members agree to patronize the cooperative for the harvesting and sale of timber, and to accept prices the cooperative offers. BRFC has pursued group certification schemes which will allow it to reduce the cost to members of obtaining a certified forest plan.

The Blue Ridge Forest Cooperative generates various skilled labor positions, including landowner relations, forest management, environmentally sensitive harvesting, milling, drying and value addition services including marketing and sales. Increasing volume will mandate additional staff. BRFC is expected to sustain initial base operations with a minimal staff and contractual arrangements with local service providers. BRFC adds value to a member's timber by (1) gathering, sorting and marketing logs according to grade and species, (2) processing selected logs into value-added products (e.g., flooring, trim, ceiling panels, cabinetry, timber frames, etc.), and (3) marketing as a unique local brand and labeled as third-party certified "sustainable". BRFC markets unprocessed FSC products to both regional and international markets, and markets finished products to local "green" architectural firms, construction companies, and niche timber re-sale merchants. Currently one challenge is to produce the volume these buyers are demanding because it is difficult to find willing and competent forest service-providers to harvest and transport the raw material according to BRFC standards. BRFC hopes to eventually be in a position where it provides only management and marketing services while contracting out the harvesting, transportation, sorting and processing services.

The BRFC targets forest owners concerned about regional environmental concerns, forest amenities, and property value protection. Traditional forest services are unavailable to these owners for two key reasons: owners do not trust forest service providers and forest service providers have trouble profiting from these small, amenity oriented operations. In a survey of landowners in the region three quarters were either neutral or outright skeptical about foresters' ecological ethics: they believe that foresters are more interested in money and timber than the ecological health of the land *(Hull et al. 2004).* BRFC addresses these concerns by providing services that respect and protect social, environmental and amenity concerns. According to BRFC

marketing materials: "The Blue Ridge Forest Cooperative …helps forest landowners who want to increase the long-term ecological and economic value of their forest in a socially responsible way…[and] to establish a permanent landscape of healthy forests."

Impacts on Forest Sustainability

Economy

Timber from a forest landcare salvage harvest.

Timber harvesting, value added processing, marketing, and program administration add to the local economy, make forest management affordable for some landowners, and help sustain a regional forest landcare workforce. The Blue Ridge Forest Cooperative employs a program administrator, occasional part time staff assistance, and provides work for consulting foresters and other service providers in the region. As operations gear up, it will also employee people to sort, saw, dry, process, and market timber products and generate some regional economic activity by organizing financial capital and constructing processing facilities. By 2020, BRFC's goal is to have 200 members and 100,000 acres enrolled. BRFC's business feasibility study completed in 2003 suggests that one well-trained forest landcare crew of 5-7 people, including harvesters and primary and secondary processors with a $750,000 suite of equipment, can be kept busy full-time, year-round, forever managing a these acres on a rotational basis. Thus if BRFC were to meet its projected goals and if a market existed for its product, it could generate several hundreds of new jobs and millions of dollars in forest product and equipment sales. Currently the output is modest, but the value added by the processing of raw materials stays locally and re-circulates through the economy as workers spend their wages compounding the impact on the regional economy.

The forest landcare industry, including specific forest landcare businesses such as BRFC, encourages active management and timber harvesting by land owners that might otherwise resist forest management for fear of degrading forest health and amenities, thereby increasing the flow of forest products into the regional economy. Thus, it may be generating jobs and profits that are otherwise not possible. In addition, there is the potential to reduce costs through timber stand improvement, prescribed fire, herbicide application, and other forest management activities conducted across boundaries shared by cooperative members. To date, the small and fragmented operations of the forest landcare industry in the BRFC region has not had the capacity to realize these economies of scale.

The BRFC seeks to improve profits to forest landowners through wise management. The "worst-first," stock portfolio management strategy is described in a BRFC member solicitation:

> "Look at your forest as an investment portfolio and every tree as an instrument and you'll begin to understand the consequences of the long-term strategy BFRC advocates. As with a stock investment portfolio, the objectives you have will define what your management practices will need to be. For most, aesthetics is an important objective as is the amount of short and long term income generation. Other objectives include wildlife management, habitat protection, bike or hiking access, medicinals, wildcrafts, attractiveness to songbirds or raptors, growing old trees, and so forth. As this illustrates, the forest investment portfolio has ecological and social aspects to integrate into the management, too.

Every stand of trees consists of good and bad instruments, each of which generates varying rates of return. Many trees have a negative return (some economically, some ecologically, and some both.) They should be removed. Other trees offer mediocre rates of return and need to be researched further before a decision is made. The class of trees that have the potential to generate significant rates of return need to be not only kept, but nurtured.

Unfortunately, the trees with the highest rates of return are those which have been most competitive to-date, so they re the biggest, straightest, and most desirable to remove to generate short-term income! This is a strategy for generating cash, but it's like liquidating the high performing instruments in a stock portfolio, and keeping the low performers."

Environment

Forest landcare practitioner making charcoal from low-value woody biomass.

Many forest owners have opportunities to convert part or all of their forests into real estate developments, further fragmenting and potentially degrading the ecosystem services that flow from forests. The BRFC promises an increased cash flow from forest products enabled by value-added processes as the means to encourage forest owners to retain ownership. Such a motivation would be particularly powerful if cash flow equals or exceeds long-term profits available from development options or the costs of rising tax bills. Although the latter seems possible, it is not clear that any timber products activity is competitive with real-estate development.

The BRFC has an explicit goal to improve forest health and promises to employ best management practices. One justification for adding value to lower grade timber is to make affordable thinning and other timber stand improvement operations that can control invasive species, reduce fire and insect risks, increase productivity and vigor of the residual stand, and restore conditions degraded by generations of high-grading. Nonetheless, because the cooperative has limited staff, equipment, and reserves, it will not be able to control acute outbreaks of insects, disease, or fire unless integrated into a larger coordinated network of forest landcare service providers in the region.

The BRFC promotes a mixture of uneven-aged management (i.e., group selection and single-tree selection) as their primary silvicultural practices, in preference to clear cutting, seed-tree harvests, deferment cuts or other even-age silvicultural practices that open larger areas in the forest canopy. It uses the slogan "worst-first" and "positive impact" harvesting to refer to the practice of removing vegetation of lower quality or in poorer health, while leaving behind the healthier, higher value, better genetic material to grow and regenerate. Worst-first harvesting is similar to the flexible diameter-limit cut silvicultural technique *(Miller & Smith, 1993).* These techniques present two challenges that BRFC acknowledges: (1) managing these silvicultural prescriptions is labor intensive and requires special training and (2) it can be difficult to regenerate shade-intolerant species (i.e., high value oaks), especially from stands that have been high-graded for generations. Therefore silvicultural clearcuts may be prescribed in some cases. However, many clients of the forest landcare industry dislike and will discourage large clearings, so it is not yet clear what mix of silviculture will be practiced over the long term. Additional research and public education regarding the benefits of forest landcare practices might help overcome some of these barriers.

Forest landcare also promotes low-impact harvesting techniques to minimize soil compaction and residual tree damage caused when selected trees are felled and transported out of the forest. Smaller equipment, such as small agricultural tractors and forwarding trailers, and increased operator care are the primary means advocated by many forest landcare businesses to carry out low-impact harvesting. We have no direct evidence from forest landcare operations to support or refute claims regarding the ecological benefits of low impact harvesting. Support for these claims in the scientific literature is mixed *(Yoho, 1980; Hood et al., 2002) et al. 2002; Updegraff and Blinn)* evidence suggests that soil compaction, erosion and sedimentation can increase because uneven aged management requires repeated or continuous opening of forest roads needed to enter, harvest, and remove the selected trees.

Certification is another tool that some forest landcare operations use to insure ecological sustainability. FSC is the certification system adopted by BRFC. It has relatively high environmental standards, third-party auditing, and requires public disclosure of audit results. Certification systems and forest landcare businesses recognize that most landowners have limited capacity to stay informed about forest management, cannot monitor forest health, nor can they engage scientific and political communities needed to affect environmental change. The BRFC, through its formal and informal education and outreach programs, educates landowners, increases public awareness, and engages local experts in forestry issues, thereby increasing community awareness, appreciation, and behavior towards the forested environment and potentially improving regional environmental quality in ways not possible one forest owner at a time.

Community

The BRFC engages the community to build support for forestry-related activities. Presumably this support will translate into increased appreciation for forests and local action that improves forest sustainability. But these impacts are diffuse and hard to assess. Horizontal and vertical social networks specifically resulting from cooperative functions provide a more tangible indicator of community capacity building *(Flora & Flora, 1993; Fischer, 1977).* Vertical networks link local communities with public and private resources outside of the region, providing access to information, leadership, loans, materials, and technical assistance. The forest landcare industry helps local communities nurture these vertical linkages. The BRFC provides vertical linkages with the Virginia Department of Forestry, the local land-grant university, the Southern Forest Network, Forest Stewardship Council, National Community Forestry Business Alliance and the Family Forest Alliance, as well as private land managers, foundations, and non-governmental organizations.

Additionally, the BRFC has connections and positive working relationships with forestry professionals in its region which provides a critical as a source of labor, skill, advice, and contacts with clients. We interviewed loggers and forestry consultants that operate in the same region and they view the cooperative positively, as opportunities to practice long-term, good forest management, to improve society's overall view of the forestry profession, and to access niche markets in planning, management, processing, and production. Interviews with state natural resource programs offered mixed support. Some agency staff saw BRFC as helping state agencies reach their objective of delivering to landowners good management advice, especially in a time of decreasing state budgets and mushrooming land ownership. But other agency staff considers the cooperative irrelevant or below the radar compared to other forestry operations and management programs.

Horizontal networks are the basic fabric of local community, providing trusted information, labor, material and emotional support. They are the social relationships among neighbors, church members, professionals, merchants, friends, and co-workers. The BRFC has actively forged linkages among forest owners, community

groups, wood processors, and local merchants to create a horizontal forest products network. County supervisors, zoning boards, land use administrators, and a host of other local government offices are another network that can nurture or degrade forest sustainability. For the most part, these networks have not been nurtured and as a result, local government officials are largely unaware of BRFC efforts. Interviews with local officials found interest in learning more but uncertainty about why or how to be involved.

Another indicator of community capacity is the existence of networks that include diverse social, ethnic, cultural interests *(Flora & Flora, 1993).* Diversity is fairly low in BRFC, with no evidence of ethnic diversity. This is likely a reflection of land ownership demographics. A few informants suggested that socio-economic diversity was low because these ventures initially need access to capital and thus approach people with higher disposable income and less immediate needs for cash flow. Forest landcare may also have some modest impact on community by promoting a local identity through their organization and product names—i.e., "Blue Ridge" Forest Cooperative.

Conclusion

Forest landcare is a grassroots effort to build local capacity and economic means to sustain environmental quality and quality of life. It empowers locals to identify problems and solutions relevant to their place and community. Grayson Landcare identified the need for trusted, value-added forest management and is working with the Blue Ridge Forest Cooperative to address those needs.

The BRFC moves control and value down the supply chain, closer to the landowner and the local community, thereby striving to achieve the ambitious goals of the forest landcare industry. It provides a source of trusted management advice and operations designed to protect the best interests of the landowner and community rather than some distant corporation focused on profit maximization. Timber harvesting and value added processing are means to the ends of sustainability. They generate the revenue needed to pay for activities that promote forest health, pay taxes that keep forests forested, and support a forest economy that keep forestry professionals working in the region.

We conclude that forest landcare as implemented through BRFC is a viable but somewhat limited response to the considerable challenges of globalization, urbanization, and political polarization. While it appears to contribute positively to matters of sustainability, the scope of its impact is small, affecting only thousands of acres and hundreds of landowners and employees. Nonetheless, it focuses attention exactly where action is needed: on the ground, in local communities affected by market forces. Perhaps an even more significant impact of forest landcare businesses is that they create opportunities for community members to learn about sustainability and empower them to do something about it by buying local, sustainable, forest products.

Implications

In the United States, there is a dense institutional infrastructure and network of organizations striving to achieve landcare-like outcomes, including conservation districts, regional councils, RC&D councils, land trusts, land owner groups, and others. The landcare movement appeals to diverse interests of this community because it has the potential to mobilize and affect diverse constituents.

Landcare can be used as a public relations tool that promotes a conservation agenda to congress,

citizens, program managers, land management professionals, scientists, and educators. Landcare provides an umbrella ethic/mission/vision that provides a politically unifying message that promotes and empowers existing conservation programs. Landcare is voluntary: it complements rather than competes. People and programs participate because doing so works to their advantage, not because of fiat or top-down mandate.

Landcare is a method to bring citizens, landowners, NGOs and businesses together to work with agencies and improve the efficacy of existing programs by leveraging resources, tailoring solutions to local knowledge and site-specific needs, and providing feedback to program directors and agency policy about projects and solutions that work.

Landcare is a method to engage citizens, landowners, NGOs, agencies, and businesses in on-the-ground actions that have tangible outcomes improving the triple bottom line in specific places (economic vitality, community capacity, environmental sustainability).

Landcare is a self-reinforcing network that sustains activity and capacity at specific landcare locations as well as builds and spreads capacity throughout the landcare network. It explicitly attempts to maintain the longevity and viability of local, emergent groups that typically dissipate as quickly as they emerge; thereby creating an accessible infrastructure responsive to conservation issues.

Land trusts provide a closing example of how landcare adds value to existing conservation strategies. Land trusts often secure control over critical open spaces by fee-simple purchase or with easements that restrict development and management practices. The 2005 National Land Trust Census found 37 million acres of private land under protective trusts and easements, a 54% increase from the last count in 2000 and averaged 2.6 million acres a year. Forest landcare provides land trusts with an opportunity to sustain the health and function of the forests in their portfolios.

Land trusts typically are locally governed by well connected and highly motivated people. They know how to get things done, especially working with landowners and community partners. Often what they lack is practical land management expertise and practice. They need the active management agenda of forest landcare. Some land trusts across the nation are struggling with the task of managing and sustaining their growing estates and one of the growing critiques of land trusts is that they don't do a very good job at it. Another growing critique of the land trusts is that they de-emphasize economic sustainability and community capacity in favor of environmental sustainability. By the act of removing forms of economic production from the land, land trusts can reduce regional economic activity and degrade community capacity dependent upon jobs, taxes, and a thriving economy. Forest landcare offers a viable strategy to address these concerns because it addresses the triple bottom line and has an active cooperative management emphasis that integrates cross-boundary and landscape-scale forest conservation and stewardship practices into local communities and economies.

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