

**“What Do Healthy Rural Economies Look
Like In The U.S. And How Might
Conservation Organizations Help Support
Them?”**



**Working Draft Background Paper
For The 2012 Berkley Workshop, July 12-14
Wingspread Conference Center, Racine, WI**

**Prepared by Jonathan Loevner, Luke J. McKay, Michael
Parks and Aaron Reuben**

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Introduction

*Bradford S. Gentry
Yale School of Forestry & Environmental Studies*

Tremendous gains in conserving land have occurred over the past few decades – across urban, suburban, working and wilderness areas. At the same time, rural economies in the U.S. have continued to evolve – with large areas depopulating as a result of shifts in production and accompanying economic decline, others experiencing intensive resource development and production, with still others attracting tourists and second home owners. Where does the conservation of land fit into this evolution? How has it added to or detracted from a healthy future for rural areas and their residents? How might conservation resources best be used to help strengthen and sustain healthy, resilient rural economies in the future?

The purpose of the 2012 Berkley Workshop is to explore these and related questions as part of an on-going effort to inform and make even more effective the strategies used by conservation organizations in the U.S. An integrated, cross-regional and cross-sectoral approach will be taken, both to reflect the variations in landscapes, economies and conservation efforts across the U.S., as well as to distill out any common themes or identify any opportunities for sharing information and resources even more effectively. As shown in the matrix below, the workshop will draw experiences, success stories, lessons learned and ideas for moving forward from the participants.

	Forestry	Agriculture	Tourism	Energy	Environmental Markets
Northeast	<ul style="list-style-type: none"> • Cross-regional/cross-sectoral sharing of: • Successful case studies. • Individuals, organizations and networks doing great work. • Ideas on opportunities for more conservation organizations to be even better partners in efforts to build healthy rural economies across the U.S. 				
Southeast					
Midwest					
Interior West					
Pacific Northwest					
Northwest					

Up to 30 participants for the workshop will be drawn from a range of backgrounds across these regions and sectors, including conservation leaders, as well as leaders from businesses, governments, economic development entities, academia/research institutes and other interested organizations. Background materials will be developed by Yale graduate researchers in collaboration with participants. The results of the workshop will be published by the Yale School of Forestry & Environmental Studies as part of the on-going Berkley Workshop series at http://environment.yale.edu/publication-series/land_use_and_environmental_planning/. Participants' costs to attend will be covered by Yale thanks to the generous support of donors to the Berkley Program on Strategies for the Future of Conservation.

Berkley Workshop Participants (as of 5/25/12)

- Mark Ackelson, *President, Iowa Natural Heritage Foundation, IA*
- Avery Anderson, *Director, The Quivera Coalition, NM*
- Judy Anderson, *Principal, Community Consultants, NY*
- Dana Beach, *Executive Director, Coastal Conservation League, SC*
- Fletcher Beaudoin, *Sustainability Partnerships Director, Portland State University, OR*
- Forrest Berkley, *Board Member, Maine Coast Heritage Trust, ME*
- Story Clark, *Author, Conservation Finance, WY*
- Bobby Cochran, *Executive Director, Willamette Partnership, OR*
- Dee Davis, *President, Center for Rural Strategies, KY*
- Michael Dowling, *Former Chair Colorado Oil & Gas Conservation Commission, Current Chair Land Trust Alliance, CO*
- Kim Elliman, *CEO, Open Space Institute, NY*
- Jay Espy, *Executive Director, Elmina B. Sewall Foundation, ME*
- Roberto Jimenez, *Executive Director, Farmworker Housing Development Corporation, OR*
- Brad Gentry, *Director Berkley Conservation Program, Yale University, CT*
- Drew Lanham, *Associate Professor, Clemson University, SC*
- Gil Livingston, *President, Vermont Land Trust, VT*
- Roel Lopez, *Professor, Texas A&M University, TX*
- Deborah Markley, *Director, RUPRI Center for Rural Entrepreneurship, NC*
- Luke McKay, *Yale School of Forestry & Environmental Studies, CT*
- Fred Monroe, *Executive Director, Adirondack Park Local Government Review Board, NY*
- Danyelle O'Hara, *Consultant, OK*
- Mikki Sager, *Resourceful Communities Program Director, The Conservation Fund, NC*
- Mary Sexton, *Director, Montana Department of Natural Resources, MT*
- Joe Short, *Policy Director, Northern Forest Center, NH*
- Marc Smiley, *Partner, Decisions Decisions (Facilitator), OR*
- Peter Stein, *Managing Director, Lyme Timber Company, NH*
- Eileen Swan, *Former Executive Director, New Jersey Highlands Council, NJ*
- Dave Tobias, *Deputy Chief, New York City Department of Environmental Protection, NY*
- Kristin Tracz, *Associate, Mountain Association for Community Economic Development, KY*
- Hank Venema, *Director, IISD Natural and Social Capital Program, MB*
- Laurie Wayburn, *President, The Pacific Forest Trust, CA*
- Jim Welch, *Vice Chairman, Brown-Forman Corporation, KY*
- Rand Wentworth, *President, Land Trust Alliance, DC*

Section 1: Why Is This An Important Question Now?

1.1: Background

Aaron Reuben

Yale School of Forestry & Environmental Studies

It is going to continue to be a tough time for many communities in rural America. Though initially spared from the worst effects of the 2008 economic downturn—largely because they barely participated in the decade’s earlier housing boom and subprime lending fiasco—America’s rural communities are now feeling the full impacts of the recession and our long-term economic restructuring. Accelerating job losses, tightening credit standards, and low consumer demand for rural products are eroding many of the economic gains rural communities achieved over the past decade, when rural commodity prices were high and mining and energy-related services were in demand (Henderson, 2009; Henderson, 2010; Council of Economic Advisors, 2010).

As rural America is being challenged to adapt to new and harder times, the conservation community is not alone in asking what a healthy rural economy looks like in the U.S. What services and industries will support a thriving and resilient rural town in the years ahead, once our national economy presumably returns to full force? What will a healthy rural economy look like if the American economic engine emerges from its recession vastly changed – and what will its effects be on small town America? As communities dependent on dwindling natural resources or fleeing industries now struggle to find ways to diversify their economies and enrich their livelihoods, everyone with a stake in the health of America, and the quality of the lives lived in it, must wrestle with these questions.

And the answers to these questions are likely to have profound implications for privately conserved land in this country. Though rural, non-metro areas only contain 17% of the U.S. population they nevertheless account for over 80% of our land area (Economic Research Service, 2009). The communities living in these regions are the communities that interact with the majority of our privately conserved lands, and these are the communities whose engagement will inevitably influence the long-term protection of working lands, critical wildlife habitats, and other areas of high conservation value. If we fail to make private land conservation “work” for rural communities, will they continue to protect and steward conserved lands in 50 years? In 100 years? Will the next generation view our generation’s conservation of land as a triumph or a mistake?

The goal of this workshop is to explore potential overlaps between the need of rural communities to diversify their economies and respond to new economic times and the need of the private land conservation community to find ways to ensure the lasting protection and sustainable management of important conserved lands. Participants will consider examples of on the ground actions that are linking these two communities and driving real results – and through discussions, hopefully, generate new ideas and ways for successful organizations to be even more effective.

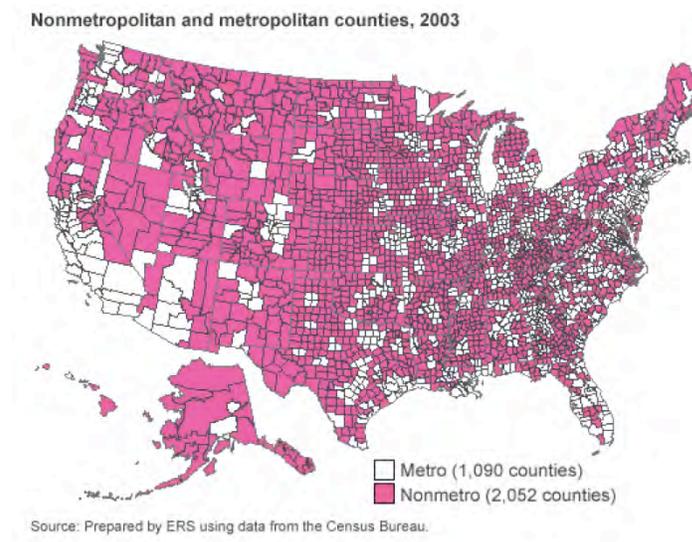
What Do We Mean By “Rural?”

The U.S. Census Bureau defines rural areas as those that include “open country and settlements with fewer than 2,500 residents.” Urban areas, in contrast, are those that “comprise larger places and densely settled areas around them” (Economic Research Service, 2007). As these definitions imply, rural and urban regions do not fit within census tracts or follow county lines. The designation of an area of the country as rural is then partly subjective and, partly, liable to change over time. In testament to these loose parameters, the U.S. Department of Agriculture’s Economic Research Service notes that differentiating urban and rural areas can best be accomplished by examining how they “might appear from the air,” and that “most counties, whether metropolitan or nonmetropolitan, contain a combination of urban and rural populations” (Economic Research Service, 2007).

Because of the inherent difficulty in strictly defining an area as rural or not, and because the best social, economic, and demographic data is available on a county by county basis, a more critical distinction for our background analyses is the distinction between metropolitan and non-metropolitan counties. The Census Bureau defines metro counties as those with a large urban nucleus of 50,000 or more people—which may or may not represent an actual unified “city”—with non-metro counties simply encompassing everything else. The Federal Executive Office of Management and Budget goes one step further and includes “outlying counties that are economically tied to the core counties” as metro areas as well, noting that many residents of otherwise non-metro counties are nevertheless employed in urban centers and are thus economically connected to them.

Importantly, when referring to regional demographic or economic data in these background papers we will be referring to county-based metrics in non-metro counties (see map below). For a longer discussion of what it means to be rural see: <http://www.rupri.org/dataresearchviewer.php?id=38>.

America’s Metro and Non-Metro Counties, 2003



What Is Happening To Rural Economies In The U.S.?

Though unemployment rates in non-metro counties now mirror those of their metro counterparts—between 15% and 16% if workers discouraged from seeking employment are taken into account—the rural poor are the most likely to stay poor. In 1999, almost 90% of the country's persistently poor counties, those that had remained poor over the previous three decades were in non-metro, rural areas (Economic Research Service, 2004).¹ Compounding this trend, disparities between rural and urban community access to health care, Internet and broadband, financial services, and public infrastructure have also increased over the last few years (Council of Economic Advisers, 2010).

In addition, economically disadvantaged populations in rural communities are disproportionately bearing the brunt of the recent economic downturn. In the last four years, unemployment of African-Americans in rural areas grew by 9.7%, Hispanics by 5.5%, and non-Hispanic Whites by only 3.2%. As a result of rural economic losses, 38.1% of female-headed families in non-metro areas lived in poverty in 2009 – fully ten percentage points higher than female-headed families in urban areas (28.1%) (Economic Research Service, 2011). And these trends reach back well beyond the recent recession. In 2002, during a bullish American economy, when 19.5% of America's non-metro population lived in poverty (compared to 12.4% poverty in metro areas), 34.6% of non-metro Native Americans lived in poverty (19.2% in metro areas), 33.2% of non-metro African-Americans (22.7% in metro areas) and 26.7% of non-metro Hispanics (21.4 % in metro areas) (Jensen, 2006).

At the same time, even though rural communities experienced population growth over the last decade, the smallest rural communities are shrinking. The overall share of the U.S. population living in non-metro areas dropped from 18% to 16.5% from 2000-2010. (Economic Research Service, 2011). In the same ten-year period, populations in non-metro counties not adjacent to metro centers or urban areas of 2,500 people or more declined by 1.3% (Council of Economic Advisers, 2010; Economic Research Service, 2011). This means that counties with already small populations and no nearby cities became even smaller over the last decade.

What Are The Links Between Healthy Rural Economies And Land Conservation?

By all accounts, the private land conservation community has saved a lot of land. By 2010, local, state, and national land trusts had cumulatively saved over 47 million acres of wilderness and working forest and agricultural lands (Land Trust Alliance, 2011). That is just under half the size of the state of California – and is in addition to the land conserved by local, state and federal agencies.

In concert with this success, many land trusts are changing their perspectives on what a land trusts does and does not do – particularly with an eye on permanent land conservation. Many conservationists now see their work as less about stopping

¹ Persistently poor counties are those in which poverty rates consistently exceed 20% for more than 30 years (Economic Research Service, 2004).

development and more about starting community stewardship programs for protected lands and encouraging sustainable use of those lands by surrounding communities.

As such, the conversation is shifting between conservationists and people working to sustain rural economies. From a land conservation perspective:

- Hard economic times will increase the pressure to develop open spaces and protected landscapes in rural areas hit hard by the recession. Conservation initiatives that can help build healthy rural economies may take the pressure off undeveloped lands.
- Engaging rural communities in the care and stewardship of nearby protected areas will be essential to the long-term protection and health of these critical landscapes. Nurturing industries that are linked to the protection of land will help connect communities to their protected landscapes and give them new reasons to fight for conservation.
- Changing demographics in rural regions means that conservation organizations will have to adapt to stay relevant to new communities. Getting involved in economic development work may be a first step in this process.

From the perspective of the rural economic development community:

- Working with the private land conservation community may bring new funding sources and opportunities to bear on economic development projects that are more necessary than ever as the U.S. economy struggles to emerge from recession.
- Many traditional economic drivers have left rural areas and may not soon return – finding ways to build healthy rural livelihoods tied to the land can diversify rural economies and provide lasting, quality jobs.

In thinking about what healthy rural economies might look like, more examples are being developed like those of the town of Skowhegan, Maine, where the development of a local grain industry and sustainable food hub has contributed to the conservation of working agricultural lands. By bringing members of the land conservation community together with individuals concerned with rural economic development and resiliency, can we find new linkages and synergies and new ways for conservation to help support rural communities?

Somerset Grist Mill: Rebuilding a Grain-Based Economy in Central Maine

Skowhegan, Maine is now being referred to as the “unlikely ground zero for the nouveau-wheat movement,” a fancy name for the growing effort by rural communities across the country to revitalize their economies by returning to local grain production. Though rural Maine was once one of America’s keystone grain producers, cheaper Midwestern grains replaced Maine varieties on shelves across the country in the years after the Civil War, when efficient railroad transport made nationwide produce distribution profitable. Now the town of Skowhegan, which has been struggling in recent years to grow its shrinking

economic base, has become the center of a local food hub through the construction of a new grist mill, in the unused shell of a former county jail, and the development of a well-attended local grains festival, The Kneading Conference, which is generating momentum around local food and inspiring the development of similar festivals in other parts of the country.

Skowhegan residents Amber Lambke and Michael Scholz started the Somerset Grist Mill “to create new economic opportunities for local farmers and those selling value-added, grain-based products.” As a result of the mill’s construction, farmers around Maine are being encouraged to grow local wheat sustainably, and they now have a way to mill and market their wheat cheaply and close to home. Regional bakers, chefs, and restaurant owners are supporting these efforts in turn by committing to source their grain directly from the new mill. The result is a local food hub that is supporting working farmlands and driving economic development.

Building on this momentum, the Elmina B. Sewall Foundation, a grant provider committed to environmental protection, recently gave the Somerset Economic Development Corp., a local economic development institution, \$250,000 to support efforts by local farmers, farmers markets, and food processors to join and enrich the new food hub. In all, Jim Bately, director of the Somerset Economic Development Corp., estimates that more than \$576,000 in economic development grants has been delivered to Skowhegan farmers and businesses to support the new food hub.

For more information see: <http://somesetgristmill.blogspot.com/>.

Structure For The Background Papers

Regional Focus On People, Economy And Place

Because not all rural lands or economies in the U.S. are alike, we are taking a regional approach in our investigations of rural American economies and conservation. In the sections that follow we will look at some of the many faces of rural America, exploring the changing demographics, historic economic drivers, and natural and social resources that make each part of our country so unique, and so distinct from one another. We will also explore the challenges facing the communities in these regions, as well as some of the great conservation and economic development opportunities that these challenges hold. We will present stories from organizations, communities, and individuals that have successfully fought with these issues in their towns and regions. And, whenever possible, we will highlight success stories that hold promise for replication elsewhere or insights to glean for innovations in a different region.

Because of their unique regional differences we have chosen to focus on six primary U.S. regions, the Northeast, Southeast, Midwest, Interior West, and Pacific Northwest. Although we could have grouped rural regions differently, say by trends in immigration or emigration, or by distinct opportunities for energy development or agricultural innovation, we chose to focus on these regions because their mixture of climate, natural resources, demographics, and historical and political geography have distinguished them

from one another since America's inception. When possible, however, we hope to show areas of similarity as well.

Regional Snapshots

People: Interior West

With just over 24 million residents, the Interior West is the least populous—and consequently least dense—of all the regions considered in our background analyses. It is also one of the fastest growing: every state in the region, except Montana, experienced population growth well above the national average over the last 10 years. Some Interior West states, like Arizona, Idaho, and Utah, grew by more than 20%. Nevada, the country's fastest growing state, grew by an astonishing 35%. The nation's fastest growing states are also some of our most diverse. New Mexico, for example, is the second most diverse state in the country, with 59.5% of its population identifying as non-White. And those states with small minority populations are nevertheless experiencing demographic changes towards increased diversity. Utah and Idaho, which currently rank well below the national average for diversity, saw increases of over 60% in minority populations in the last 10 years. The Interior West is a region quickly changing, with growing and diversifying populations.

Economy: Southeast

Despite a variety of strong economic drivers—including growing manufacturing concerns, consistent tourism, and economically-viable natural resource industries—the states of the Southeast are plagued by struggling economies. Every state in the region, except Virginia, experiences median household income levels below the national average. Eight of the ten lowest state median household incomes are in the Southeast, with one southern state, Mississippi, ranking the lowest in the country. Additionally, some of the U.S.'s highest rates of income inequality occur in the Southeast, particularly in Louisiana, Alabama, and Florida. Nevertheless, this region holds tremendous potential for economic development, particularly for industries with links to land conservation. The Southeast contains some of the most commercially productive forests in the world, high producing fishing ports, and well-developed natural tourism industries.

Place: The Midwest

America's Breadbasket has earned its moniker for good reason – almost all of our nation's most heavily farmed states are in the Midwest, with some states, like Iowa, Illinois, and the Dakotas, having converted more than 75% of their land base towards agricultural production. In 2007, over 90% of South Dakota's land area was put to agricultural use. This magnitude of agriculture-based land use presents the conservation community with a distinct challenge in this region: how to ensure the best management of these farmed lands and how to keep the remaining unconverted landscapes intact? Recent conservation success stories in the Midwest involve the development of new markets to provide payments to landowners for maintaining ecosystem services and the development of large-scale conservation plans that may allow for ecologically-

responsible development of the Midwest's considerable renewable energy potential. Meanwhile, the presence of large intact forests in the north, extensive lake systems throughout, and a large amount of publicly-held land means that the Midwest holds considerable opportunity for successful conservation initiatives that can improve rural livelihoods.

Information sourced from the regional background analyses of this report.

Datasets

To maintain consistency across regions and enable greater generalization of our findings, we have drawn on the same large, national datasets for the majority of our background analyses and examinations of rural America across the six identified regions. These datasets include:

- The comprehensive census of conservation lands compiled by the Land Trust Alliance in 2010. Available here: <http://www.landtrustalliance.org/land-trusts/land-trust-census>;
- The U.S. National Census recently completed in 2011. Available here: www.census.gov; and
- The detailed national rural economic datasets provided by the U.S. Department of Agriculture's Economic Reserve Service. Available here: <http://www.ers.usda.gov>.

In addition to being detailed, standardized, and comprehensive, these datasets are routinely updated, making examinations like ours reproducible and comparable across time for future scholars and practitioners.

Economic Sectors

When we think of healthy rural economies linked with land conservation we typically think of a few bedrock economic drivers: forestry, agriculture, tourism, energy and mineral extraction. In our regional descriptions we will highlight the particular roles that these economic sectors have played across the country—or have the opportunity to play in the future—because we know that these economic sectors have worked for rural America in the past and will certainly play some role in the mosaic of uses that we can envision for a healthy rural America in the future.²

We would also add to this list a less traditional source of jobs and economic growth: environmental markets. In communities like those in Northwest Oregon's Willamette

² Though we have not examined them in our background papers because they generally relate to land conservation less directly, it is important to note that other economic sectors have been important drivers of rural economic health in many communities historically and may be expected to play important roles in the future, including the manufacturing, health care, education, prison, military and other public service provision sectors.

Valley or New York State's Catskill Region, payments to landowners for the provision of ecosystem services, such as clean water or sequestered carbon, have increasingly been playing a role in supporting diverse and resilient rural economies. Places where markets for environmental services exist may perhaps offer the best sites of overlap for achieving the separate goals of the private land conservation and economic development communities.

Payments for Ecosystem Services: The Story of the Willamette Partnership and Regional Water Markets

The Willamette Partnership in Northwest Oregon represents a coalition of leaders from local scientific, business, and conservation organizations that came together in the early 1990's to improve regional watershed planning and to ensure the long-term protection of local water resources in the Willamette River Basin. Today, the coalition is best known for its successful approach to water quality trading and its achievements in delivering payments to landowners for protecting water resources.

One of the most visible accomplishments of the Partnership has been a deal in which a regional water resource agency, Clean Water Services, avoided \$150 million in water temperature treatment costs by paying farmers to restore 35 miles of riparian corridor along the Tualatin River, one of the principal water bodies in the region, with native shade producing plants. By 2011, Clean Water Services had expanded its protection program to 50 miles of river and paid for the planting of over 4 million native plants – all for less than \$3.5 million. This has meant cleaner and cheaper water for Willamette residents, real payments to farmers owning riparian lands, and support for a locally-focused restoration industry, as well as improvements to local wildlife habitat and river ecosystem functioning. Sixty percent of restoration has occurred in rural regions, with more than 34 rural landowners having enrolled in the program. Importantly, though the Clean Water Services agreement benefited rural farmers, that deal depended on the presence of a large urban center nearby. Now, a similar program is underway in the more rural Rogue Valley, where the small city of Medford, Oregon is set to start paying farmers to restore riparian habitats for river cooling purposes.

For more information see:

http://www.ecosystemmarketplace.com/pages/dynamic/article.page.php?page_id=8084§ion=news_articles&eod=1.

Risks / Limits Of This Approach

Having private land conservation organizations become more involved in economic development—and having economic development institutions become more involved in private land conservation—may mean that new, creative partnerships can be forged, with new support found for initiatives that build resilient rural communities and protect healthy lands.

But this approach also comes with a number of risks. For the private land conservation community, some risks and challenges can include:

- Mission creep and losing programmatic focus. It can be hard for small conservation organizations to enter a new arena, with the inherent risk that some may spread themselves too thin or struggle to prioritize projects effectively.
- The loss of some donors. Conservation benefactors donate money for a number of reasons, including the desire to improve the environment or protect keystone lands. But for some donors having land trusts get involved in economic development may be a bridge too far. Many land trusts have found it difficult to fundraise for projects that are not about directly acquiring land or stopping bulldozers. Furthermore, many wealthy donors are interested in preserving landscapes that have great aesthetic value or familiarity because they surround vacation or second home destinations. They may be less interested in supporting projects to protect land in far-flung rural areas or a region redeveloping after an extractive industry has left.
- Competing in a crowded space. To many land trusts it may seem that there are already a large number of organizations working to improve rural livelihoods and economies, organizations with real skills and experience in this work. Such a perspective may make the risks of engaging in economic development seem greater than the possible benefits. While this may be a reasonable perspective, it may also mean that partnerships and collaborations are the best way to move forward.

For the economic development community, other challenges can include:

- Overcoming past conflicts with conservation organizations. Some groups focused on rural economic development may have previously found local land trusts and private conservation organizations to be in opposition to specific development projects. Finding ways to overcome past conflicts to work on new projects jointly will be an important part in the process of creating new partnerships.
- The possibility that a conservation-based development mechanism (e.g., landscape-based tourism) may fail to create many quality jobs. Investors and economic developers looking to diversify and strengthen rural economies through land conservation might struggle to match the jobs and dollars previously offered by shrinking industries like coal mining and manufacturing.
- The frequent need to charge a premium for sustainably generated, conservation-oriented products. Greener, local production is often more expensive – and that expense often translates into the need to charge premiums for local products. Local producers charging premiums must then ensure that the quality of their products fits the higher price. This can be a big challenge for small producers, who may be unable to control every step of the production process and thus the cost and quality of their final products.

Opportunities

For all the challenges of this kind of approach, having the private land conservation community bring their experience and expertise into the work of rural economic development means a new set of skills and resources will be brought to bear on these issues. Private land conservation organizations in particular can offer:

- Knowledge about landscapes and important ecological or working land features.
- A proven track record of bringing in money, particularly from donors outside of rural communities (i.e., in urban areas) and particularly from state and federal funding sources.
- An innovative entrepreneurial spirit with a focus on getting things done on the ground. Many land trusts and conservation organizations have a history of finding creative ways to bring people together to get deals made.
- Local credibility and local investment. Land trusts, particularly smaller state and local land trusts, are already deeply embedded in communities. They have a focus on permanence—of health of land and communities—and a proven track record of commitment across time. This kind of deep knowledge and earned trust can be a strong asset to outside organizations.
- Resources. Private land conservation organizations do have resources to bring to projects and are always looking for ways to leverage them with others to achieve broader benefits.

Useful Readings/Works Cited

Council of Economic Advisers. 2010. *Strengthening the Rural Economy*.

Executive Office of the President Council of Economic Advisors.

Retrieved at http://www.usda.gov/documents/Rural_America_final.pdf.

Economic Research Service. 2004. *Rural Poverty At A Glance*. Retrieved at

<http://www.ers.usda.gov/publications/rdr100/rdr100.pdf>.

Economic Research Service. 2007. *Measuring Rurality: What is Rural?* Retrieved at

<http://www.ers.usda.gov/Briefing/Rurality/whatisrural/>.

Economic Research Service. 2009. *Rural Population and Migration*. Retrieved at

<http://www.ers.usda.gov/Briefing/Population/>.

Economic Research Service. 2011. *Rural America at a Glance, 2011 Edition*. Retrieved

at <http://www.ers.usda.gov/Publications/EIB85/EIB85.pdf>.

Henderson, J. 2009. Prospects for a Rural Recovery. *The Main Street Economist*.

- Retrieved at http://kansascityfed.com/publicat/mse/MSE_0509.pdf.
- Henderson, J. 2010. Will the Rural Economy Rebound in 2010? *Federal Reserve Bank of Kansas City*. Retrieved at <http://www.kansascityfed.org/Publicat/Econrev/pdf/10q1Henderson.pdf>.
- Jensen, L. 2006. At the Razor's Edge: Building Hope for America's Rural Poor. *Rural Realities*. Retrieved at <http://web1.ctaa.org/webmodules/webarticles/articlefiles/razor.pdf>.
- Land Trust Alliance. 2011. *2010 National Land Trust Census Report: A Look at Voluntary Land Conservation in America*. Retrieved at <http://www.landtrustalliance.org/land-trusts/land-trust-census/national-land-trust-census-2010/2010-final-report>.

Section 2: *The Northeast*

2.1: Background

Luke J. McKay

Yale School of Forestry & Environmental Studies

Home to a third of the nearly 1,700 land trusts in this country, with close to 7 million residents in rural communities, the Northeastern United States is a region where the question of what healthy rural economies look like, and how conservation organizations might support them, is especially relevant (Land Trust Alliance, n.d.; Economic Research Service, 2012). The Northeast comprises the states of Pennsylvania, New Jersey, New York, Connecticut, Rhode Island, Vermont, New Hampshire and Maine, all areas where rural communities have undergone significant economic changes in the last few decades. Related to these changes, many rural communities in the Northeast are depopulating, leading to questions about their long-term resiliency and posing an uncertain future for the people who call these communities home. During that same time span, land conserved in the Northeast through private land conservation efforts—predominantly in rural areas—has increased rapidly with over 5 million acres of land currently protected (Land Trust Alliance, 2011).

A clear opportunity exists for the private land conservation community in the Northeast to help strengthen and sustain healthy rural economies and communities while continuing to pursue their primary mission of conserving land. The purpose of this paper is to provide background on this opportunity in the Northeast and to help expand the dialogue on how the private land conservation community in this region has helped support rural economies and communities, how they have not helped in supporting them, and what they can do moving forward to ensure a healthy future for rural areas and their residents.

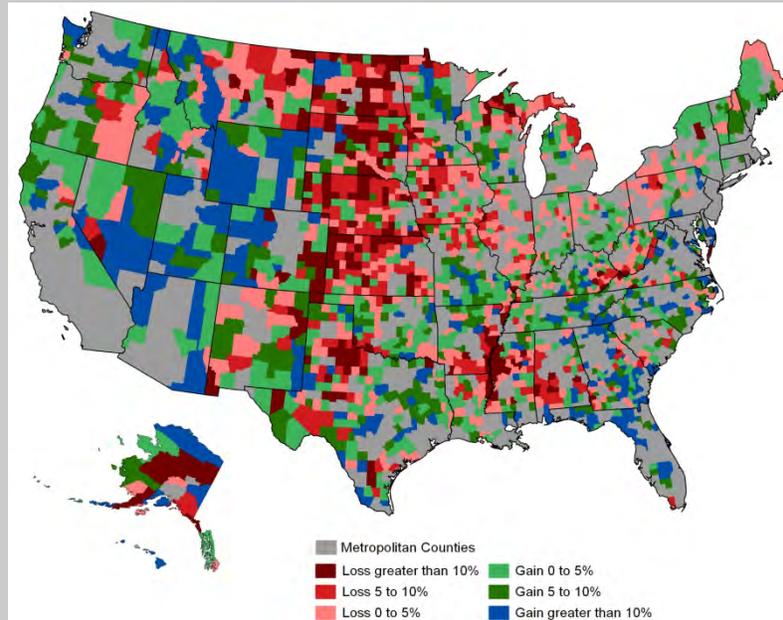
People

According to the 2010 U.S. National Census, rural populations in all the Northeast states—excluding Rhode Island and New Jersey, where no populations met the U.S. Census Bureau’s definition of rurality—increased, albeit slightly, from the 2000 census. This increase was comparable to the nationwide increase in rural populations of 4.2% over the last ten years (Johnson, 2012). Although at first glance rural population growth in the Northeast over the past decade may appear to be a sign of stability in rural areas, the census numbers require a closer look.

Rural Population Dynamics in the Northeast

Population growth is calculated by summing natural increase (i.e., births minus deaths) with net migration (in-migrants minus out-migrants). In the Northeast, population growth over the last decade occurred predominantly along the periphery of large urban areas as well as in areas with natural amenities (see map below) like temperate summers recreational water bodies (Johnson, 2012). Rural communities with natural amenities, recreational opportunities, and quality of life advantages, particularly for retirees, have not only consistently been the fastest growing communities in the rural Northeast, and

rural America as a whole, but have also been of considerable interest to the private land conservation community as a result of the high conservation value of the lands that surround these communities. Rural areas with natural amenities in the Northeast that experienced growth (roughly 5-10%) over the past decade include communities in Northwest Connecticut, Central New Hampshire, Northeast Kingdom of Vermont, southwestern Maine, and the Downeast region of Maine (Johnson, 2012).



These rural regions represent areas where population increase resulted more from net migration than from natural increase per se. In the rural areas that experienced population growth through migration gains, growth was largely due to an accelerated influx of individuals over the age of 50. Meanwhile, these same rural areas, and almost all rural communities throughout the Northeast, continue to see a significant outflow of young adults (Johnson, 2006). For example, in Hamilton County in New York State—which falls entirely within the Adirondack Park—population numbers for individuals between the ages of 25-44 are projected to fall from 885 people in 2010 to 344 in 2040. In this same county, population for individuals ages 65 and over are projected to rise sharply (Cornell Program on Applied Demographics, n.d.). These projections for Hamilton County and other rural areas are especially troubling because they portend a continued decrease in natural growth, as individuals of childbearing age will represent a smaller and smaller portion of the existing population.

Image Source: The Carsey Institute at the University of New Hampshire

Due to a rising incidence of natural decrease, decreasing in-migration, and an out-migration of young adults, rural population growth in Northeast has slowed and in many communities started to decrease. Rural areas that experienced population decline over the past decade in the Northeast include the mining and industrial belts of New York and Pennsylvania, as well as communities in Northern Maine and New Hampshire, south central Vermont, and Upstate New York around and within the Adirondack Park (Johnson, 2012).

Unlike population trends, demographic trends concerning ethnicity and educational attainment in rural communities of the Northeast have remained relatively stable over time. Between 2000 and 2010, non-Hispanic whites accounted for 82.7% of rural population growth and 21% of rural populations in the U.S. (Johnson, 2012). However in the Northeast, rural communities are almost exclusively white. In fact, New York and Pennsylvania are the only states in the Northeast that have rural counties with a minority population of at least 10% – in two counties each respectively. Furthermore, with child population concentrations consisting of a significant non-Hispanic white majority, rural communities in the Northeast will continue to be predominantly white (Johnson, 2012).

Another other key demographic characteristics of rural communities in the Northeast is one of varying educational attainment. According to the U.S. National Census, 11% of individuals in rural communities in the Northeast over the age of 25 have not completed high school. This demonstrated a slight decrease since the previous census in 2000. Pennsylvania at 14.5% has the highest percentage of rural individuals over the age of 25 without a high school diploma in the Northeast while Massachusetts has the lowest with 6.6% (Economic Research Service, 2012). Given that educational attainment—particularly higher levels of education—is a significant determinant of economic well being for both individuals and communities, this latter trend is especially troubling for the rural Northeast.

Lastly, the poverty rate in the rural Northeast has grown by several percentage points over the last two decades and is currently projected at 12%. While the rural Northeast is still well below the national average of 16.6%, and the gap between rural and urban has narrowed and increasing poverty rates are a potentially ominous trend for rural communities and economies in the region (Economic Research Service, 2011).

Economy

As of June 2011, the Northeast economy was the country's fastest growing, and fastest recovering (U.S. Bureau of Economic Analysis, 2011). Economic growth in the Northeast in 2010 resulted largely from growth in the finance and insurance sectors, as well as an increase in durable-goods manufacturing. Although these signs of growth are encouraging, they have been harder to find in the rural communities of the Northeast.

Historically, rural economic development in the Northeast relied on natural resource industries (e.g., forest products, farming, and food products) and recruiting industry and manufacturing jobs by promoting cheap land and labor. However, globalization has resulted in thousands of lost jobs in these sectors in the Northeast over the last few decades, as mills, lumber yards, and manufacturing concerns are less competitive than their developing country competitors (Johnson, 2006).

While natural resource extraction and manufacturing continue to play a critical role in supporting the livelihoods of rural residents in the Northeast, rural economies have started to diversify over the past few decades. Using a typology produced by the Economic Research Service that organizes rural counties based on the dominant characteristics of the local economy, dominant economies in rural counties in the Northeast include the service sector (e.g., retail trade, finance, and real estate) in Central

New Hampshire and coastal Maine, federal and state government jobs in northern New York, and manufacturing jobs in western Maine, northern New Hampshire, and northern Pennsylvania (Economic Research Service, 2004). Another dominant characteristic of many rural economies in the Northeast not directly outlined by the Economic Research Service are the jobs and opportunities created by the influx of retirees and amenity migrants to rural recreational areas (Johnson, 2006).

Though farming is not a dominant characteristic of rural economies in the Northeast, agriculture nevertheless remains an important economic driver for many small rural economies in the region. In Pennsylvania, New York and Vermont, close to a quarter of the total land area is dedicated to farming while 10-15% is dedicated to agriculture in New Jersey, Connecticut and Massachusetts (Economic Research Service, 2012). In addition to actual agricultural production and sales, farming continues to play an important role in the cultural identity of many rural communities. Through agritourism initiatives and branding efforts of agricultural commodities (e.g., maple syrup production in Vermont and potato production in northern Maine) rural communities in the Northeast are working to grow agriculturally based economies.

Place

The Northeast is the birthplace of private land conservation in America. With over 5 million acres of land conserved and over 700 land trusts established, it is also one of America's most successful regions for the private conservation of land (Land Trust Alliance, 2011). Faced with development pressures and sprawl, impacts from climate change, rising land prices, and the fragmentation of land within conservation priority areas, the private land conservation community in the Northeast has achieved a remarkable degree of success in conserving land.

Many, if not all, private land conservation organizations in the Northeast are trying to figure out how to balance their conservation objectives with the needs of the communities that live around priority lands. Most of these communities are rural but the challenges they present to the private land conservation community vary state-by-state and even within states. For example, in the New York and New Jersey Highlands, the New Jersey Highlands Council, and partner organizations that include many private land conservation organizations, are reacting not only to development demands and sprawl from increasing populations surrounding urban centers, but they are also planning for the needs of the 14 million individuals who visit this popular natural region each year (Eileen Swan, personal communication, March 2, 2011).

While rural communities in New Jersey are looking to get ahead of development pressures and potential land fragmentation, rural communities in Maine are attempting to encourage development while conserving natural resources. The Northern Forest Center is trying to encourage tourism in Maine's Northern Forest to promote both economic and population growth. Both efforts represent attempts by the private land conservation community to support and sustain healthy rural communities and economies albeit under different circumstances and through different means.

Private land conservation projects in the Northeast have become increasingly complex, often involving many different stakeholders. Whereas several years ago the partnership between Plum Creek, The Nature Conservancy, The Forest Society of Maine, and The Appalachian Mountain Club to conserve over 400,000 acres in the Maine North Woods under the Moosehead Forest Project was seen as an unprecedented collaboration to conserve land and promote restricted development in the rural community of Greenville, such partnerships have become more of the reality in the Northeast in the last few years. While many of the private land conservation organizations in the Northeast are small, single-town land trusts, they too are increasingly conserving land through unique means and incorporating many different stakeholders with goals that go beyond simply conserving land. One of those goals is to help support and sustain rural economies.

How Can Conservation Organizations Help Support Rural Economies In The Northeast?

Forestry

The Southeast and Pacific Northwest contain a majority of the forestry and wood products industries in the U.S. Yet, the Northeast is the most densely forested region in the country and forestry industry is a key economic driver for rural communities in the region. This is especially true in the Northern Forest where recent challenges to the forestry and wood products industry include a virtual upheaval of forestland ownership and increasing competition from overseas timber production. Despite these challenges, forestry and wood products manufacturing are key cogs in the greater Northern Forest economy.

The Northern Forest, comprised of northern Maine, New Hampshire, Vermont and New York, is the most densely forested area in the Northeast with over 85% covered in a diverse mix of forest types (U.S. Forest Service, n.d.). Forestry-related industries in the Northeast, primarily located in the Northern Forest, sustain—directly or indirectly—close to 158,000 jobs and contribute over \$6 billion annually to local economies (Forest2Market, 2009).

To help sustain this strong economic sector, local organizations such as the Northern Forest Center, and its subsidiary, Sustainable Forest Futures, are working with the private land conservation community to develop innovative financing and networking strategies that will make rural communities in the Northeast economically competitive in the 21st century and beyond.

Regional Wood Products Consortium's Specialized Innovation Workshops

The Regional Wood Products Consortium, a collaborative effort between the Sustainable Forest Futures and the wood products manufacturing industries in Maine, New Hampshire, Vermont, and New York, works to develop opportunities and increase access to wood product markets in order to enhance economic competitiveness. Partnering with local wood products industry trade associations, the Consortium implemented various initiatives such as a workshop series from 2010-2011 assisting leaders of small and medium sized wood products companies on whether to pursue particular innovations and

investments. Workshops were attended by 120 companies from the Northern Forest's hardwood and softwood manufacturing sectors such as furniture, architectural millwork, specialty products, and sawmills. Workshop topics included:

- Developing New Marketing Strategies.
- Making Effective Use of Technological Advances.
- Lean Manufacturing for Wood Products Companies.
- Mass Customization for the Wood Products Industry.
- Enhancing Economic Competitiveness through Going Green.

After the completion of the workshops, Sustainable Forest Futures provides follow-up financial assistance to the wood products companies wishing to implement the ideas that come out of the workshops.

For more information see:

<http://www.foresteconomy.org/programs/wood-products/workshops/>.

In addition to helping the forestry sector develop economic development strategies, private land conservation organizations are also collaborating with individual rural communities and a wide range of public and private organizations to develop community forests in the Northeast. Community forests are municipal or community owned and managed forestlands that seek to directly provide economic, cultural, recreational, and ecological benefits to local residents by bringing them into management decisions and, hopefully, ensuring that benefits from forestlands flow to the local community.

Community Forest Collaborative

The Community Forest Collaborative, a partnership among The Trust for Public Land, the Northern Forest Center, Sustainable Forest Futures, and the Quebec Labrador Foundation, structures their community forest projects around a model based on the following fundamental tenets:

- Community Forests are owned and managed by a municipal entity or by a community based non-profit on behalf of a community.
- The acquisition process and management structure ensures community participation in and responsibility for management decisions.
- The community has secure access to the value and benefits of the forest, both monetary and non-monetary that can support and reinforce community priorities and economic development objectives.
- The conservation values of the forestland are permanently protected through a conservation easement and sustainable forest management practices.

One of the projects based on this model is the 13 Mile Woods Community Forest in Errol, New Hampshire. At the time of its implementation, the 5,269-acre forest has projected an average net revenue of \$225,000 from timber-harvesting operations, up to seven logging jobs, and revenue from increases in recreational tourism. Another project, the West Grand Lake Forest in Grand Lake Stream, Maine, is profiled in the 2011 Berkley Workshop Report (see: <http://environment.research.yale.edu/publication-series/6122>). Both projects were partially funded by the Open Space Institute's

Community Forest Fund that provides financial assistance to support the creation and expansion of community forests in the region.

For more information see:

Community Forest Collaborative:

<http://www.foresteconomy.org/programs/community-forests/>.

OSI Community Forest Fund:

http://www.osiny.org/site/PageServer?pagename=Issues_Forests_More.

The implementation of community forest projects and other working forest initiatives in the Northeast is largely dependent on funding from both public and private sources. Working with private land conservation organizations, timberland investment management organizations, landowners, and other public bodies to finance projects, private community development firms such as Coastal Enterprises, Inc., help subsidize and finance working forestland projects in the Northern Forest through the use of the federal New Markets Tax Credit (NMTC) program. In addition to the NMTC program, federally allocated funding opportunities such as the Forest Legacy Program has funded working forests projects and conserved over 1 million acres of working forestland in the Northeast. With experience financing land conservation projects of all different sizes, private land conservation organizations can help sustain rural economies and continue to conserve landscapes with high conservation value by supporting projects that keep forests as forests and encourage working forests to remain so.

Agriculture

Farming in the Northeast is not the same economic catalyst and driver as it is in the Midwest and other regions of the U.S. Yet, it remains very much a part of the identity and livelihood of rural communities and residents in the Northeast. Agricultural lands in the Northeast protect the quality of life in rural communities by preserving scenic and cultural landscapes and supporting farmers' markets and other Community Supported Agriculture (CSA) ventures, recreational opportunities, local jobs, and community businesses. They also contribute important goods and services for the environment such as wildlife habitat, flood control, watershed protection, and air quality maintenance. Given the market and non-market values of farmland, as well as growing support and demand for locally produced foods, organizations including the private land conservation community are increasingly becoming involved in efforts to conserve agricultural lands and support productive, working farms throughout the Northeast.

This regional trend is especially apparent in Vermont and in the work of the Vermont Land Trust. According to Vermont's Farm to Plate Strategic Plan, Vermont has 6,984 farms providing close to 20,000 jobs located predominately in rural areas (Farm to Plate Strategic Plan, 2011). The goals of the Farm to Plate Strategic Plan are to increase economic development in Vermont's food and farm sector, create jobs in the food and farm economy, and improve access to locally produced food.

One of the most significant barriers to the achievement of the goals of the Farm to Plate Strategic Plan in Vermont is the lack of affordable access to farmland for new farmers and preexisting farmers wanting to expand their current operations. Over the last three

decades, nearly 41,000 acres of agricultural land in Vermont was converted to developed land (Farmland Information Center, n.d.). With rising development pressures and the increasingly prohibitive costs of agricultural land, the number of fulltime working farms in Vermont and other states in the Northeast are decreasing. For example, although Vermont is the largest dairy producer in New England, the number of working dairy farms has dropped by 91% over the last nine decades (Farm to Plate Strategic Plan, 2011). In order to curb this trend, the Vermont Land Trust (VLT) has conserved more than 700 working farms and farmland parcels through the purchase of conservation easements and their Farmland Access Program.

The Vermont Land Trust and Agricultural Conservation Easements

The use of conservation easements as a tool to support rural agriculture ensures that local farmers receive the development value of their farmland – allowing them to reinvest in the farm, pay off debts, and finance future generational transfers of the farm. Conserved for farming in perpetuity, VLT has recently added provisions to their farmland conservation easements that give VLT the right of first refusal when a conserved farm is put on the market as well as the option to buy a conserved farm on the market for its agricultural value. When VLT exercises these reserved rights, they sell the farm under their Farmland Access Program, which provides farmers with opportunities to purchase or lease affordable farmland in order to start up or expand their agricultural businesses.

For more information see: <http://www.vlt.org/land-weve-conserved/farmland> and <http://www.vlt.org/initiatives/affordable-farmland/farmland-access-program>.

Although agricultural conservation easements remain the primary tool for conserving farmland, many organizations in the Northeast, including private land conservation organizations, have realized that easements alone cannot adequately address the problem of farmland affordability or ensure that productive rural farming communities remain productive. In other words, conserving farmland is only part of the solution. In order to keep working farms working, an economic market must exist for the products that they produce. Organizations such as the Center for Agriculture Development and Entrepreneurship (CADE) in New York State are helping farmers and farming communities accomplish this by creating production, business development, marketing, and distribution strategies to take advantage of current market opportunities and to develop new ones. More specifically, CADE stresses the importance for farmers and farming communities of developing value-added products such as dairy farmers producing their own milk products (e.g., cheese, yogurt, and bottled milk) under their own label. CADE's value-added product development is not only occurring in New York State but also in New Jersey thanks to grant support from the New Jersey Highlands Council.

Commercial Kitchen Project, Sussex County, NJ

The New Jersey Highlands Council has an active grant program that provides funding for projects throughout the Highlands Region that promote and develop the goals of the Highlands Act and the Regional Master Plan. One of the grants recently awarded by the Council in Sussex County, to the Commercial Kitchen Project, is intended to support and retain sustainable agriculture in rural New Jersey through value-added product development.

Bringing together Sussex County, Sussex County Technical School, and local farmers, the Commercial Kitchen Project assists farmers in creating value-added products that can be marketed locally. The Highlands Council grant supported, specifically, an educational program to assist farmers in developing recipes, manufacturing their products, and marketing products using the latest in graphic design and labeling processes. It also provided funding for the purchase of a piston filler, with both a hopper and compressor, so that farmers could bottle their products more efficiently, thereby lengthening selling seasons and increasing potential profit margins for produce.

For more information see: <http://www.highlands.state.nj.us/njhighlands/grantprograms/>.

By no means are the agricultural opportunities discussed in this section the only ones available to the private land conservation community to help sustain and support rural agricultural communities and economies in the Northeast. While agricultural conservation easements and the promotion of successful agricultural markets are two of the most widely used tools in the region, there are many organizations working to create new tools, strategies, and opportunities in order to keep farmlands in farming. From the Working Lands Alliance advancement of farmland leasing in Connecticut to Maine Farmland Trust's FarmLink program—connecting prospective farmers seeking farmland with retiring farmers—opportunities to support rural economies through agriculture vary from state to state throughout the region.

Tourism

With recent demographic studies showing that the rural communities achieving sustained population and economic growth are ones with natural amenities, many rural communities are looking towards ecotourism, agritourism, and heritage tourism as a vehicle for economic growth by encouraging visitation and residency. Tourism is one of the few economic sectors in Northeastern rural communities that have experienced relatively consistent growth over the last few decades (Reeder and Brown, 2005). Although there is concern over the quality of tourism jobs and a growing tourism sector's influence on housing costs and other social conditions in rural communities, tourism is generally viewed by local officials and community development organizations as an important driver for rural economies.

Throughout the Northeast there are numerous examples of private land conservation organizations assisting rural communities in developing tourism strategies. And there is considerable potential for more. For instance, private land conservation organizations can

encourage tourism indirectly by conserving land with both conservation values and tourism values like The Trust for Public Land's (TPL) proposed Barre Town Forest project in north central Vermont.

Barre Town Forest, Barre Town, VT

The Trust for Public Land (TPL), in partnership with the Town of Barre, Millstone Trails Association (MTA) and local community members, is working to establish a community forest in Barre, VT, a small rural community of just over 9,000 people. The proposed Barre Town Forest would not only conserve an ecologically and historically significant landscape but would also strengthen the local economy by enhancing outdoor recreational opportunities (e.g., increased cross country skiing, hiking, hunting, and snowmobiling) in one of Vermont's most economically depressed areas.

In 2011, an estimated 7,150 visitors from outside Barre visited the proposed Barre Town Forest and the Millstone Trail Network, one of the premier mountain biking trail systems in the Northeast. According to an economic impact analysis conducted by the Gund Institute at the University of Vermont, visitation to the town is projected to increase in the coming years with visitation spending estimated to reach \$640,000 annually by 2015. This same analysis also projects that the Barre Town Forest would create jobs in the tourism sectors thanks to rising visitation and spending as well as timber revenue from the forest itself. Finally, the analysis by the Gund Institute concludes that the Barre Town Forest would curb local tax expenditures and help the town become more fiscally stable.

For more information see:

The Trust for Public Land:

<http://cloud.tpl.org/pubs/local-vt-barretownforest-econbenefits-rpt.pdf>.

Millstone Trails Association: <http://millstonetrails.com/>.

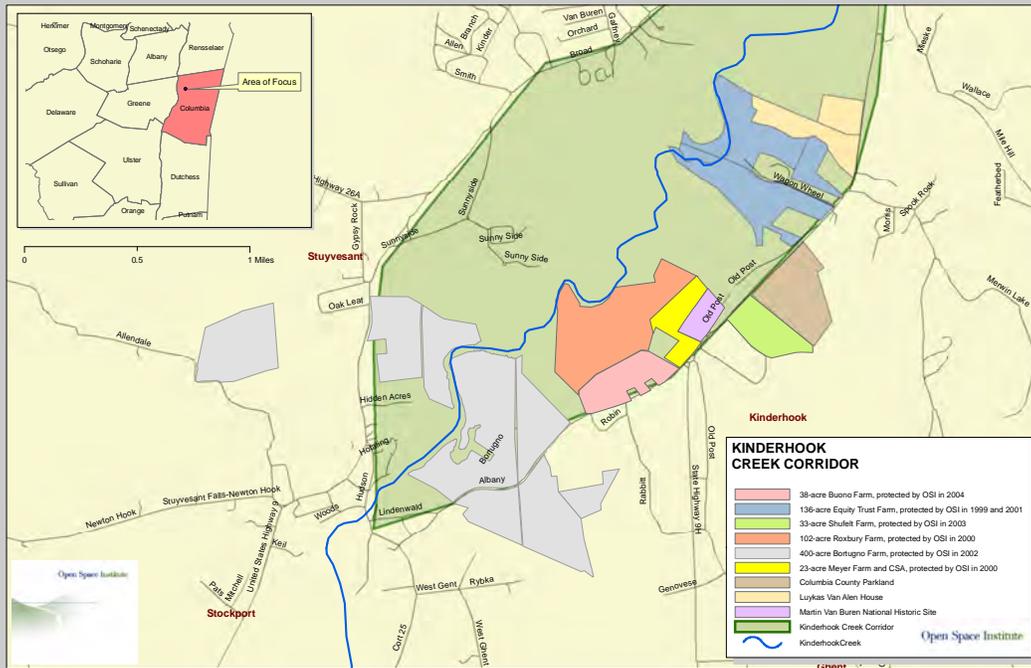
The Town of Barre: <http://www.barretown.org/>.

In addition to promoting tourism by enhancing outdoor recreational opportunities on conserved landscapes, private land conservation organizations are also encouraging tourism in rural areas throughout the Northeast by conserving land with both historic and touristic values. In the Hudson River Valley in New York State, between 1.5 and 2 million tourists a year visit rural communities with historic resources providing a total economic benefit of \$140 to \$200 million to the region (Preservation League of New York State, 2001). Realizing the economic benefit provided by heritage tourism, organizations such as the Open Space Institute (OSI) are increasingly working to conserve land with both conservation and historic value.

Open Space Institute's Historic Land Conservation Efforts in the Hudson River Valley, NY

Through the protection of public and private lands and the use of conservation easements, OSI and various partner organizations have worked to conserve lands with historic and touristic values in Upstate New York. In Saratoga County, OSI helped conserve a 1,000-acre viewshed along the Saratoga Battlefield – a National Historic Park and a memorial to the Revolutionary War battles that took place there. The deal involved one of New

York’s largest utilities, the Niagara Mohawk Power Corporation, the American Farmland Trust, and a local family.



Also in Upstate New York, OSI recently conserved over 1,000 acres of the Kinderhook Creek Corridor that includes the historic properties of the Martin Van Buren National Historic Site and the Luykas Van Alen House. Both projects represent efforts by OSI to conserve land that not only have conservation value, but also touristic, historic and agricultural value. By preserving the corridor’s scenic qualities and agricultural heritage, as well as laying the groundwork for a trail system that would expand recreational opportunities in the corridor, OSI’s efforts in Upstate New York help preserve the values and qualities that help support the region’s rural economies.

For more information see: <http://www.osiny.org/>.

Image Source: Open Space Institute

While expanding tourism opportunities in rural communities through land conservation remains an effective method for the private land conservation community to promote both conservation and economic development, opportunities exist for non-conservation oriented organizations in this endeavor too. For example, the Maine Woods Consortium (MWC), an open association of non-profit organizations, businesses, and government agencies, invests in coordinated tourism development projects in order to promote tourism and further economic growth in the Maine North Woods.

Following a “triple bottom line” approach that focuses on building economy, environment and community, MWC is currently supporting numerous tourism initiatives such as:

- The Maine Woods Tourism Training Initiative, an educational program aimed at meeting the needs of tourism businesses and their employees;
- Researching and producing quality labels and brands for Maine Woods tourism; and
- The Maine Woods Discovery pilot project, launched to help understand the shared attributes and standards of Maine Woods tourism businesses while developing better marketing strategies.

With over twenty partner organizations (e.g., Appalachian Mountain Club, Maine Rural Partners, and USDA Rural Development), the MWC is an example of the type of work and partnerships private land conservation organizations can participate in that look beyond simply conserving land to advance tourism in rural areas.

From ecotourism and heritage tourism in Vermont and Upstate New York respectively, to agritourism in the New Jersey Highlands, there are currently many opportunities available in the Northeast for the private land conservation community to sustain and support rural economies via tourism. However, many challenges remain for rural communities to achieve significant tourism growth. According to a report by the Maine Center for Economic Policy on *Amenity Investments and Tourist Destination Development*, the key to positive tourism growth is creating destinations that appeal to more “experiential tourists” – tourists who visit destinations providing outdoor recreational experiences as well as high quality hospitality services, shopping opportunities, and cultural and heritage amenities. In order to attract such tourists, amenity investment and tourism development must include both “hard” components (e.g., road improvements, building renovations, trails and signage) and “soft” components (e.g., customer service training, arts and culture offerings) (Vail, 2010).

The private land conservation community in the Northeast has both the expertise and experience to help support tourism growth in rural communities by alleviating some of these challenges. Although conserving land remains the primary tool for private land conservation organizations to support tourism in rural communities, many opportunities beyond conserving land exist.

Energy

Sustaining and supporting rural economies through energy development is a sensitive issue for private land conservation organizations. Although energy development opportunities are not as great in the Northeast as they are in other regions of the U.S., energy development opportunities do exist. These will carry both potential costs and benefits for rural residents and landscapes.

In Pennsylvania, private land conservation organizations such as the Pennsylvania Land Trust Association and the Natural Lands Trust are working to figure out how to best balance and mitigate the land conservation, job creation, and energy security impacts of Marcellus shale gas operations, where over 5,000 shale wells have been drilled in the last 6 years (Begos, 2012). While recent advances in drilling technology have led to a boom in shale gas production—creating jobs and profits throughout Pennsylvania’s rural communities and causing natural gas prices to drop for rural residents—serious questions

remain about the environmental costs of this process. As the private land conservation community in Pennsylvania responds to shale gas drilling and how best to mitigate its impacts, conservation organizations and rural communities in the Catskill Region of New York State have begun to examine the costs and benefits of what shale gas drilling would mean for Upstate New York and New York City's public water supply if a current moratorium were lifted.

In addition to shale gas development, two renewable alternatives for energy development that are gaining momentum and increasing support in both rural communities and private land conservation circles throughout the Northeast are biomass and wind energy. For biomass, the ability to generate energy—particularly thermal energy—from the byproducts of tree harvesting and thinning operations is an attractive energy alternative for a region where winters are long and cold and heating oil prices are high. Although generating thermal energy from biomass is a complex issue that involves many stakeholders, the potential benefits are significant when biomass projects effectively balance the economics with ecological sustainability. While small-scale biomass projects such as the construction of woodchip boilers and heating systems for public schools and other public buildings are increasingly being developed and implemented in rural communities, larger community-scale biomass projects are also underway in the region. For example, the Northern Forest Center, using the findings of the Manomet Center for Conservation Sciences' Biomass Sustainability and Carbon Policy Study, initiated biomass pilot projects in Colebrook, NH and Saranac, NY.

The Northern Forest Center's Supported Biomass Projects

The goal of the Northern Forest Center's community-scale biomass pilot projects is to help the rural towns of Colebrook and Saranac assess the feasibility of installing a district heating or combined heat and power system using biomass energy. More specifically, the Northern Forest Center is currently helping both towns meet a variety of needs regarding biomass energy development such as improving education, stakeholder engagement, sustainable harvesting, market drivers research, and project implementation. The Northern Forest Center envisions future biomass energy development projects such as the current pilots in Colebrook and Saranac to not only sustain jobs in the forestry sector and encourage sustainable forestry but to also serve as a cheap, local renewable energy source for rural communities.

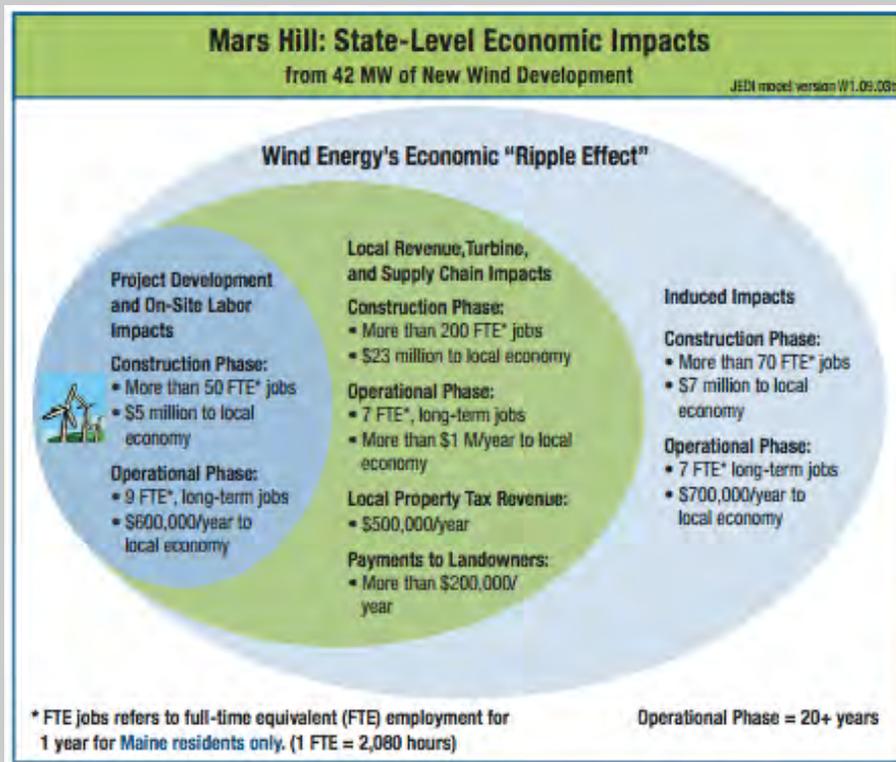
For more information see:

http://www.northernforest.org/default/renewable_energy_biomass.html.

Whereas biomass energy development projects are still very much in their infancy, and the extent to which they can help sustain rural economies in the Northeast is still an open question, wind energy development in the region has a proven history, and a track record of success, in many rural communities. Although private land conservation organizations are still determining how best to site for wind energy development in the Northeast, a series of successful projects in rural Maine show that wind energy development does not need to come at the expense of the environment and that the economic benefit for rural communities can be significant. One such rural wind energy development project that has had a strong economic impact is the Mars Hill Project in northern Maine.

First Wind's Mars Hill Project, ME

The Mars Hill Wind Farm, featuring 28 turbines with the capacity to generate up to 1.5 Megawatts (MW) each, was the first utility-scale wind energy project in New England. The 42 MW project was commissioned on March 27, 2007 in the town of Mars Hill, a rural farming community of 1,500 people in Aroostook County in northern Maine. Through a Tax Increment Financing (TIF) deal, the project provides the town \$500,000 annually over the next 20 years, helping the town support its school system and other community expenditures. With this additional revenue, the town lowered the mill rate for residents from 24 mills—\$24 per \$1,000 of assessed property—to 20 mills creating a 20% reduction in local property taxes. In addition to the decreased mill rate, local landowners receive revenue thanks to land-lease payments for turbines built on their property. Nine residents are employed full time by First Wind to operate the turbines. The economic impact of the Mars Hill project was also felt during the construction of the wind farm: according to First Wind, the project employed 300 local residents and spent over \$22 million during construction.



For more information see:

First Wind: <http://www.firstwind.com/>.

The Town of Mars Hill: <http://www.marshillmaine.com/>.

Wind Powering America: <http://www.windpoweringamerica.gov/>.

Image Source: U.S. Department of Energy, Wind Powering America

Given rising demands for energy not only in the Northeast but throughout the entire U.S., rural communities, with large, undeveloped landscapes, will likely continue to be attractive areas for potential energy development projects. Although the private land conservation community in the Northeast is still trying to figure out how to respond to shale gas development, renewable energy development and current investments in biomass and wind energy provide an opportunity for conservation organizations to help promote renewable energy and economic development in rural communities throughout the region.

Environmental Markets

Of all the economic sectors addressed in the Northeast so far—Forestry, Agriculture, Tourism and Energy—probably the least is known about the potential for the development of environmental markets for ecosystem services. What environmental markets exist already in the Northeast? And what are individuals in this region willing to pay for the services intact environments provide? A report commissioned by the GreenSpace Alliance and the Delaware Valley Regional Planning Commission on *The Economic Value of Protected Open Space in Southeastern Pennsylvania* found that Pennsylvania's 200,000 acres of conserved land contributes an estimated \$132.5 million in annual cost savings and economic benefits due to ecosystem services such as water supply, water quality, flood migration, wildlife habitat, air pollution removal, and carbon sequestration. Is there a way to capture these economic benefits to promote rural livelihoods?

Although ecosystem services can clearly provide cost savings, how can the private land conservation community help rural landowners and communities generate income from them in order to encourage both land conservation and economic development? Through various initiatives and significant investment, New York City's Department of Environmental Protection (NYCDEP), in collaboration with many other public and private organizations, are attempting to answer this very question in the rural communities that make up New York City's watershed.

One of the most unique aspects of New York City's public drinking water system is that it meets the Environmental Protection Agency's water quality standards without filtration. While avoiding an estimated \$8-\$10 billion in water treatment facility construction costs, and approximately \$1 million daily in treatment plant operation costs, New York City's Watershed Protection Program ensures that both New York City residents and rural residents of the Catskills have high quality and affordable drinking water (New York State Department of Environmental Protection, n.d.). In order to protect the watershed and improve water quality, NYCDEP, as mandated under the 1997 New York City Watershed Memorandum of Agreement:

- Purchases hydrologically-sensitive and priority land through acquisition of fee simple or conservation easements;
- Funds residential septic systems repair and maintenance as well as stormwater planning and control;

- Provides Watershed Education Grants to schools, libraries, museums, vocational institutions and non-profit organizations;
- Implements a Community Wastewater Management Program; and
- Provides grants to rural communities conducting watershed protection and land uses planning initiatives.

New York City's Water Supply System



Source: New York City Department of Environmental Protection

In addition to the above programs and initiatives, NYCDEP, in partnership with the Catskill Watershed Corporation (CWC), supports numerous economic development programs to support businesses and to create and retain jobs in the rural communities of the Catskills to help mitigate the impacts of New York City's watershed regulations and the acquisition of thousands of acres of land that are protected from development in perpetuity.

NYCDEP and CWC's Rural Economic Development Programs

Funded by the Catskill Fund for the Future—a revolving fund initially capitalized by a \$59.7 million appropriation by New York City—and based on a 1998 economic development study, the Catskill Watershed Corporation (CWC) provides loan, grant, and tourism promotion programs for the rural communities of the Catskill Region. Since 1998, the CWC has approved more than 150 loans valued at over \$33 million helping

rural businesses make capital improvements in order to expand their operations thereby retaining and creating jobs. In addition to providing loans and grants, the CWC also works to promote tourism development. For example, CWC created a web-based Catskill Area Mapping Service that helps visitors to the region locate major roads, topographical features, historic sites, and recreational areas. Finally, CWC, in partnership with the Mid-Hudson Small Business Development Center, provides business counseling to the residents of the rural communities that make up the watershed.

For more information see:

Catskill Watershed Corporation: <http://www.cwconline.org/>.

Catskill Fund for the Future:

http://www.cwconline.org/programs/econ_dev/cffrules_revised_030612.pdf.

West of Hudson Economic Development Study:

http://www.cwconline.org/programs/econ_dev/final_cffed_study.pdf.

The current efforts in the Catskill Region of New York State are an example of a large, well established, and highly-valued rural environmental market. However, what opportunities exist in the Northeast for rural communities to establish new markets that provide ecosystem services, albeit on a much smaller scale? Though still in the early stages of implementation, two pilot projects in northern New England are exploring such opportunities.

The Northern Forest Center's Ecosystem Services Program

Under the Northern Forest Carbon and Ecosystem Services Network, public and private organizations such as The Lyme Timber Company, Coastal Enterprises, Inc., and the Vermont Land Trust are working with the Northern Forest Center to develop ecosystem service markets in the Northern Forest by sharing information and advocating policy changes. Out of this Network, the Northern Forest Center launched two pilot projects to assess the potential of carbon offsets in the Northeast Kingdom of Vermont and watershed protection services in Maine, New Hampshire, and Vermont. The first of these two pilot projects is currently exploring opportunities to sell carbon offsets from forest landowners in Vermont's Northeast Kingdom to voluntary buyers around the state. The project also provides technical assistance to landowners to help them better understand the services their forestland can provide and marketing those services to potential buyers. The second pilot project, the Northern Forest Watershed Services Project, is testing techniques to help landowners in the Crooked River and Connecticut River watersheds create income from the watershed protection services that their land provides to municipalities.

For more information see:

http://www.northernforest.org/default/ecosystem_services.html.

From large established environmental markets such as the West of Hudson Watershed in the Catskill Region of New York State to smaller, less established markets, ecosystem services can help support and sustain rural economies in the Northeast. Although questions remain over how to establish environmental markets and what, if any, economic impact the ecosystem services they provide will have, opportunities for the

private land conservation community exist nonetheless and should continue to be explored as a means of supporting rural economies in the Northeast.

Conclusion

Clear opportunities exist for private land conservation organizations in the Northeast to help support and sustain rural economies and communities. As this background paper has discussed, innovative conservation and community development strategies are already being implemented throughout the Northeast and achieving positive economic results. Yet, more work can be done and many questions over the future of rural communities remain.

As private land conservation organizations move forward in addressing the issue of healthy rural economies, it is important that they look at this issue from the perspective of rural communities and residents. Doing so will not only ensure best practices and solutions, but also help organizations develop economic strategies for rural communities that go beyond traditional thinking.

Discussion Questions

- Is there space for private land conservation organizations to address other stresses on healthy rural economies and communities in the Northeast, such as a lack of adequate community access to health care, education and affordable housing, without experiencing mission creep?
- What, if any, other economic sectors—outside of the ones addressed in this background paper—present opportunities for private land conservation organizations to support rural economies in the Northeast?
- How might climate change influence the opportunities for private land conservation organizations to support rural economies in the Northeast?
- What environmental markets from other regions in the U.S. might be applicable to the Northeast and how can they be established?

Organizations Doing Interesting Work

Adirondack Futures Project is a *pro bono* project by Dave Mason and Jim Herman on behalf of the Adirondack Common Ground Alliance that takes a collaborative scenario approach to stimulate creative thinking about the Adirondack Park 25 years in the future. See <http://www.adkfutures.org/>.

Adirondack North Country Association works to build vibrant rural communities and resilient local economies where people and businesses thrive in New York State's Adirondack North Country. See <http://www.adirondack.org/>.

American Farmland Trust is committed to protecting the nation's farm and ranch land, keeping it healthy and improving the economic viability of agriculture.

See <http://www.farmland.org/>.

Catskill Mountainkeeper is a grassroots advocacy organization dedicated to protecting and preserving the unique and irreplaceable Catskill Region of New York State. See <http://www.catskillmountainkeeper.org/>.

Catskill Watershed Corporation is a partnership focusing on water quality protection, economic development and community preservation in the New York City Watershed West of the Hudson River. See <http://www.cwconline.org/>.

Center for Agricultural Development & Entrepreneurship works to build a vibrant local food system in New York State, in which locally owned agricultural businesses thrive and consumers are nourished by healthy sustainably produced food. See <http://www.cadefarms.org/indexC.php>.

Coastal Enterprises Inc. is a private, nonprofit Community Development Corporation and Community Development Financial Institution that provides financing and support for job-creating small businesses, natural resources industries, community facilities, and affordable housing. See <http://www.ceimaine.org/>.

Farm Catskills is a not-for-profit membership organization that believes in supporting a working landscape that in turn supports our rural economy. See <http://www.farmcatskills.org/>.

FSG works across all sectors to find better ways to solve social problems by partnering with foundations, corporations, school systems, nonprofits, and governments in every region of the globe. Their approach to social impact is distinguished by four key themes that they believe are critical to solving the world's most challenging problems – Catalytic Philanthropy, Collective Impact, Shared Value and Strategic Evaluation. See <http://www.fsg.org/>.

Land for Good is a nonprofit organization offering education and assistance to owners and managers of working lands, entering farmers, and other-land use decision makers in the six New England states. See <http://www.landforgood.org/>.

Maine Farmland Trust is a statewide organization committed to strengthening farming in Maine with a mission to protect and preserve Maine's farmland, keep agricultural lands working, and support the future of farming in Maine. See <http://www.maineFarmlandTrust.org/>.

Northern Forest Center advocates for the Northern Forest Region and helps its communities benefit from forest-based economic and conservation initiatives. See <http://www.northernforest.org/>.

Open Space Institute protects scenic, natural, and historic landscapes to ensure public enjoyment, conserve habitats, and sustain community character. See <http://www.osiny.org/>.

The Carsey Institute at the University of New Hampshire conducts policy research on vulnerable children, youth, and families and on sustainable community development. See <http://www.carseyinstitute.unh.edu/index.html>.

The Center for an Agricultural Economy uses an entrepreneurial driven-approach to support sustainable agriculture in rural communities in Vermont so that they may rebuild their economic and ecological health. See <http://www.hardwickagriculture.org>.

Vermont Land Trust is a statewide land trust working to protect the land that gives Vermont its rural character. Since 1977, they have permanently conserved more than 500,000 acres including more than 700 working farms, hundreds of thousands of acres of productive forestland, and numerous parcels of community land. See <http://www.vlt.org/>.

Watershed Agricultural Council works with farm and forest landowners in the New York City Watershed region to protect water quality on behalf of nine million New York residents. See <http://www.nycwatershed.org/>.

Working Lands Alliance is a project of American Farmland Trust consisting of individuals, business and organizations using policy, education and advocacy to protect productive farmland in Connecticut. See <http://www.workinglandsalliance.org/>.

Yellow Wood Associates is a small consulting firm in St. Albans, VT, with expertise in rural community economic development, community capacity building, forestry, social capital and learning communities, agriculture, and water resources. See <http://www.yellowwood.org/>.

Useful Readings/Works Cited

Begos, K. 2012. Most of State's Natural Gas Drilling Takes Place in 11 Counties. *Pittsburgh Tribune-Review*. March 15. Retrieved at http://www.pittsburghlive.com/x/pittsburghtrib/s_786554.html.

Brown-Graham, A. and W. Lambe. 2008. *Measures and Methods: Four Tenets for Rural Economic Development in the New Economy*. Durham, NH: Carsey Institute. Retrieved at <http://carseyinstitute.unh.edu/publications/PB-Brown-Graham-Measures08.pdf>.

Community Forest Collaborative. 2007. *Community Forests: A Community Investment Strategy*. Retrieved at http://www.communitiescommittee.org/pdfs/Community_Forests_Report_web.pdf.

- Cornell Program on Applied Demographics. *New York State Projections*. Retrieved at <http://pad.human.cornell.edu/counties/projections.cfm> (accessed on May 10, 2012).
- Economic Research Service. 2004. *Measuring Rurality: 2004 County Typology Codes*. Retrieved at <http://www.ers.usda.gov/Briefing/Rurality/Typology/> (accessed on May 10, 2012)
- Economic Research Service. 2011. *Rural America at a Glance, 2011 Edition*. Retrieved at <http://www.ers.usda.gov/Publications/EIB85/EIB85.pdf>.
- Economic Research Service. 2012. *State Fact Sheets*. Retrieved at <http://www.ers.usda.gov/StateFacts/> (accessed on May 10, 2012).
- Economy League of Greater Philadelphia, Econsult Corporation, and the Keystone Conservation Trust. 2011. *The Economic Value of Protected Open Space in Southeastern Pennsylvania*. Retrieved at http://economyleague.org/files/Protected_Open_Space_SEPA_2-11.pdf.
- Farmland Information Center. *Vermont Statistics*. Retrieved at http://www.farmlandinfo.org/agricultural_statistics/index.cfm?function=statistics_view&stateID=VT (accessed on May 10, 2012).
- Forest2Market. 2009. *The Economic Impact of Privately-Owned Forests*. Retrieved at http://nafoalliance.org/wp-content/uploads/f2m_economic_impact_study_2009.pdf.
- Gallardo, R. and B. Bishop. 2012. College Degree Gap Widens. *Daily Yonder*. March 27. Retrieved at <http://www.dailyyonder.com/college-degree-gap-widens/2012/03/26/3828>.
- Hartter, J. and C.R. Colocousis. 2011. *Environmental, Economic, and Social Changes in Rural America Visible in Survey Data and Satellite Images*. Durham, NH: Carsey Institute. Retrieved at <http://www.carseyinstitute.unh.edu/publications/IB-Hartter-Changes-Rural-America.pdf>.
- Johnson, K.M. 2006. *Demographic Trends in Rural and Small Town America*. Durham, NH: Carsey Institute. Retrieved at http://www.carseyinstitute.unh.edu/publications/Report_Demographics.pdf.
- Johnson, K.M. 2012. *Rural Demographic Change in the New Century: Slower Growth, Increased Diversity*. Durham, NH: Carsey Institute. Retrieved at <http://www.carseyinstitute.unh.edu/publications/IB-Johnson-Rural-Demographic-Trends.pdf>.

- Land Trust Alliance. 2011. *2010 National Land Trust Census Report: A Look at Voluntary Land Conservation in America*. Retrieved at <http://www.landtrustalliance.org/land-trusts/land-trust-census/national-land-trust-census-2010/2010-final-report>.
- Land Trust Alliance. *About the Northeast*. Retrieved at <http://www.landtrustalliance.org/about/regional-programs/ne/about-the-northeast-region> (accessed on March 13, 2012).
- Manomet Center for Conservation Sciences. 2010. *Biomass Sustainability and Carbon Policy Study*. Retrieved at [http://www.manomet.org/sites/default/files/Manomet Biomass Report Full LoR ez.pdf](http://www.manomet.org/sites/default/files/Manomet_Biomass_Report_Full_LoR_ez.pdf).
- New England Governors' Conference, Inc. 2010. *Blue Ribbon Commission on Land Conservation: 2010 Report to the Governors*. Retrieved at http://efc.muskie.usm.maine.edu/docs/2010_clc_report.pdf.
- New York State Department of Environmental Protection. *New York City Watershed Program*. Retrieved at <http://www.dec.ny.gov/lands/25599.html> (accessed on March 31, 2012).
- Preservation League of New York State. 2001. *New York Profiting Through Preservation*. Retrieved at <http://www.placeeconomics.com/pub/placeeconomicspub2001.pdf>.
- Reeder, R.J. and D.M. Brown. 2005. *Recreation, Tourism, and Rural Well-Being*. Washington, DC: Economic Research Service. Retrieved at <http://www.ers.usda.gov/Publications/ERR7/>.
- U.S. Bureau of Economic Analysis. 2011. *Economic Recovery Widespread Across States in 2010*. Retrieved at http://www.bea.gov/newsreleases/regional/gdp_state/gsp_newsrelease.htm (accessed on May 10, 2012).
- U.S. Forest Service, Northern Research Station. *Ecology and Management of Northern Forests*. Retrieved at <http://www.fs.fed.us/ne/durham/4155/wud.htm> (accessed on April 3, 2012).
- Vail, D. 2010. *Amenity Investments and Tourist Destination Development*. Augusta, ME: Maine Center for Economic Policy. Retrieved at <http://www.mecep.org/view.asp?news=1020>.
- Vermont Sustainable Jobs Fund. 2011. *Farm to Plate Strategic Plan: Executive Summary*. Retrieved at <http://www.vsjf.org/project-details/5/farm-to-plate-initiative> (accessed May 10, 2012).

Section 3: *The Southeast*

3.1: Background

Jonathan Loevner

Yale School of Forestry & Environmental Studies

The Southeastern United States is a land of contrasts. Mountainous states to the north, with small populations and natural resource-based economies, give way to the southern downland states consisting of old plantations and new manufacturing concerns, before ending abruptly at the large coastal metropolises of the deep south, where tourism vies with shipping and the high-technology sector as the dominant economic drivers.

Generally encompassing the “cotton” states of Florida, Georgia, Alabama, Mississippi, Louisiana, and South Carolina, and the Appalachian and coastal plain states of North Carolina, Virginia, West-Virginia, Kentucky, Arkansas, and Tennessee, as well as parts of Texas, the Southeast is at turns diverse, populated, sparse, historically complex, unchanged, and quickly changing.

People

The Southeast is the most populous region in the U.S., containing 37% of the total U.S. population (U.S. Census Bureau, 2011c). With the exception of Mississippi and West Virginia, the population density of the Southeastern states exceeds the national average (U.S. Census Bureau, 2010). According to the 2010 U.S. National Census, the South’s population grew by 14.3 million people between 2000 and 2010, resulting in a population increase of 14.3% – more than any other region in the U.S. The region with the next highest rate of growth was the West—encompassing the Interior West and the Pacific Northwest—which expanded by 13.8%.

The distribution of this growth across the region is highly stratified. Southern states on the Atlantic Coast grew at rates far greater than the national average of 9.7%, with Georgia growing by 20%, and Florida and North Carolina growing by more than 15%. The population growth in these states is primarily a result of the migration of workers from other states – attracted by the positive employment prospects of these high growth areas. On the other hand, the Appalachian and Gulf States exhibited much weaker population growth: Kentucky and Alabama grew by roughly 6%, while West Virginia and Louisiana grew by less than 1% (U.S. Census Bureau, 2011c).

Population growth favored urban areas over rural. According to the Economic Research Service, between 2000 and 2010, urban population growth accounted for 88% of the total growth in Georgia’s population, 82% of North Carolina’s, and 92% of Florida’s (Economic Research Service, 2012). As a consequence, a smaller percentage of the population of these states live in rural communities than ten years ago. Every state in the region contains both rural counties that lost population and rural counties that gained population, with the exception of West Virginia, in which every rural county lost population (Economic Research Service, 2011).

The Southeast also features substantial ethnic diversity – 40% of inhabitants are identified as a minority as compared to the national average of 36.3%. The Deep South states of Mississippi, Florida, and Georgia rise above the regional average, while Appalachian states such as Kentucky and West Virginia fall well below it (U.S. Census Bureau, 2011b). South Carolina, Georgia, Alabama, and Louisiana have the greatest density of rural African Americans in the country while Florida and Texas have some of the largest rural Hispanic populations (Probst et al., 2002). From 2000 to 2010, the Southeast experienced large increases in Hispanic populations. The proportion of Florida’s total population that identify as Hispanic leapt from less than 17% in 2000 to over 22% in 2010. Georgia’s Hispanic population grew from about 5% to almost 9%; Virginia’s from less than 5% to almost 8%; and Louisiana’s from roughly 2% to 4%. African American populations in the South generally increased slightly or remained steady (U.S. Census Bureau, 2011b).

Educational Attainment in the Southeast

The Southeast has the lowest levels of educational attainment of any region in the country. In 2009, 83.4% of the adult population in the Southeast had completed high school and 25.8% had completed a bachelor degree, compared to national averages of 85.3% and 28.1% respectively. Only 79.9% of the adult residents of Texas have completed high school or equivalent, the lowest figure of any U.S. state. Likewise, Mississippi has the lowest level of bachelor degree attainment at 19.6%. Virginia is the only state in the region that exceeds the national averages for high school and bachelor degree attainment, 86.6% and 34.0% respectively (U.S. Census Bureau, 2012). Rural counties in the Southeast perform particularly poorly with respect to high school completion and bachelor degree attainment. As the map below illustrates, in 2000, rural counties in the Southeast fell almost exclusively in the bottom quarter of high school completion rates nationwide (Economic Research Service, 2004).

High school completion rates, 2000 (adults 25 and older)

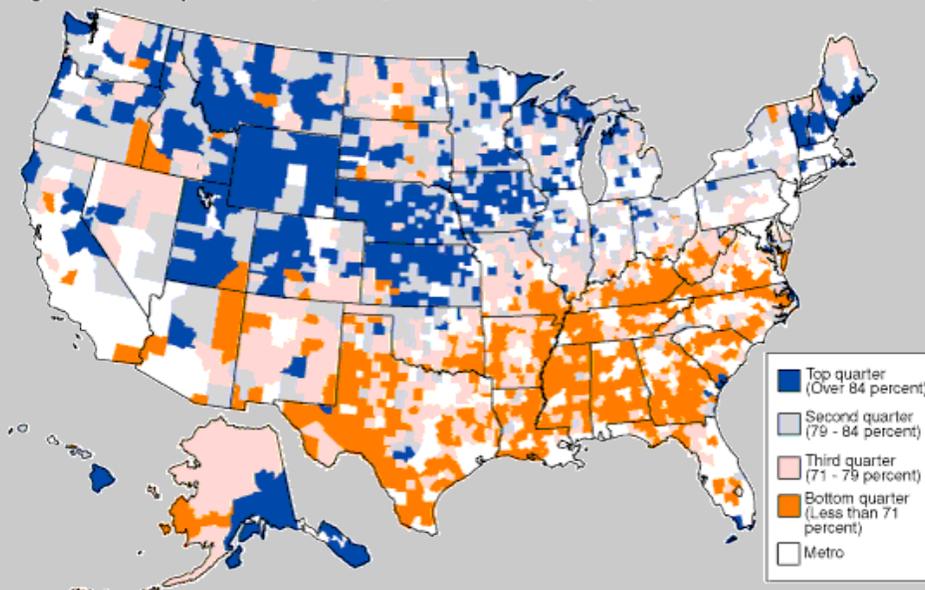


Image Source: Economic Research Service

Economy

Historically, the economy of the Southeast was dominated by the agricultural industry in the low country and natural resource extraction in Appalachia. However, by the late 20th century, the region had transitioned more towards the manufacturing, banking, and service sectors. While this change has generally favored urban areas over rural ones, the growth of some industries, such as auto assembly facilities, has had a positive economic impact on some rural communities.

Manufacturing contributes 16% to the region's GDP, with greater impacts in new manufacturing bases, such as in North Carolina, where manufacturing contributes 19% to state GDP (U.S. Bureau of Economic Analysis, 2011). In particular, over the last 20 years, the rural South has become a center for the manufacturing of foreign-owned automobiles, which have located facilities in the Southeast because of a desire to manufacture closer to U.S. markets, incentives from state and local governments, lower labor costs, and favorable weather conditions (Federal Reserve Bank of Atlanta, n.d.). Automakers Mercedes-Benz, BMW, Toyota, Hyundai, GM, Nissan, and Volkswagen have all opened production facilities in predominantly rural areas of the Southeast.

The Southeast has also become a center of the financial services industry, which accounts for 7% of the region's total GDP and as much as 11.5% in North Carolina, where financial services make up a larger portion of the GDP than in any other state in the region (U.S. Bureau of Economic Analysis, 2011). Of the U.S.'s fifty largest bank holding companies, Bank of America, Wachovia, SunTrust, BB&T, Capitol One, Regions, Synovus, First Horizon, First Citizens, and Hancock are all headquartered in the Southeast, exclusively in urban areas (Federal Financial Institutions Examination Council, 2012).

Commercial fishing remains an important industry in the Gulf States of Florida, Alabama, Mississippi, Louisiana, and Texas. The National Marine Fisheries Service valued the 2010 commercial fish and shellfish harvest in these states at \$639 million. By harvest value, eight of the nation's top twenty fishing ports can be found on the Gulf Coast (Environmental Protection Agency, 2011a). With a few exceptions in Alabama and the panhandle of Florida, counties on the Gulf Coast are classified as metropolitan (Miller, 2009).

Even with this variety of economic drivers, the Southeast is currently plagued by unemployment. Seven states in the region are at or above the national unemployment rate. North Carolina claims the highest unemployment rate in the region, second nationally only to California (Bureau of Labor Statistics, 2012). North Carolina also has the most rural unemployed workers in the country (Bishop, 2011). Rural communities in the Southeast are disproportionately impacted by unemployment. In every state in the region except Texas and Florida, the 2011 unemployment rate was higher in rural areas than in urban areas. This disparity is particularly apparent in South Carolina, where the 2011 unemployment rate was 3.1% higher in rural areas than in urban areas (Economic Research Service, 2012).

Median household incomes in the Southeastern states are uniformly below the national average, with the exception of Virginia's, which is among the highest in the country

(primarily because of the government agencies and businesses in Northern Virginia communities that fall within the Washington, DC metropolitan area). Furthermore, eight of the ten lowest state median household incomes are in the Southeast, including Mississippi, the lowest in the country. Rural areas in the Southeast have universally lower per capita income and higher poverty rates than urban areas. In Virginia, 2010 per capita income in urban areas was nearly \$16,000 higher than in rural areas. In Mississippi, the rural poverty rate was 7.5% higher than in urban areas (USDA Economic Research Service, 2012). The region also has highest rates of income inequality, as measured by the GINI index, particularly in Louisiana, Alabama, and Florida (U.S. Census Bureau, 2011a).

Place

The story of land use and conservation in the Southeast is primarily one of private ownership and protection. An astounding 87% of forestland in the Southeast is privately owned. Half of the total forested acres in the region are owned by families or individuals—a majority of whom own small parcels of 10 acres or less—a trend that the U.S. Forest Service predicts will continue. Private companies own another third of southern forestland while the federal and state governments own the remainder (Hanson et al., 2010).

The challenges confronting private land conservation efforts in the Southeast are rooted in the fragmented nature of southern land ownership, which requires a different set of tools and tactics than in the Interior West, for example, where the federal government owns large swaths of land. Southern landowners face development pressure from expanding metropolitan areas (e.g., Atlanta), have difficulty making a living through traditional land uses (e.g., farming and timber production), and experience complex land tenure issues (e.g., “heir’s properties”).

Heir’s Property in the Southeast

“Heir’s properties” are created when a landowner dies without a will (i.e., intestate), causing ownership of their property to be passed to the members of the succeeding generation. Under state law in much of the Southeast, these family members receive undivided property rights in the land without any stipulation regarding how responsibility for the land may be divided. After a few generations, ownership of the land may become dispersed among a very large number of heirs, many of whom may not be aware that they hold ownership in the property. Heir’s properties are particularly common in rural African-American communities (Dunham, 2011).

If the heirs are unable to identify and reach consensus with all of the owners of a property, it may be impossible to obtain clear title on the land, leaving the land in a state of limbo – where it may be neglected or become a barrier to community development. Worse, a developer may exploit the situation by purchasing a small share in the property from a single descendant—enabling them to force a court-ordered sale of the property—in which case they may be able to purchase it for a price far below its actual value (Dunham, 2011). The poor are disproportionately affected, as they are more likely to die without a will. Conflicts over heir’s properties have exacerbated and accelerated the

decline of African American landownership in the U.S. which currently sits at 3.3 million acres, down from 15 million at its peak in 1910 (Auburn University, 2011).

The Center for Heir's Property, based in Charleston, SC, is working to empower low-income heir's property owners to maintain ownership of their ancestral land through legal assistance and education programs. To date, the Center has successfully drafted 121 wills and achieved clear title on 57 properties. Helping heir's property owners to achieve clear title to their land can foster healthy rural communities by protecting farmlands from development and keeping working families in the community.

For more information see: <http://www.heirsproperty.org/>.

Despite these challenges, the Southeast has proven to be fertile ground for private land conservation efforts. According to the Land Trust Alliance's 2010 Census, conserved lands increased significantly in the Southeast during the last five years. Private land conservation organizations in this region conserved an average of more than 20,000 acres, well above the national average of 16,000. Several states in the region doubled or tripled the number of acres conserved by private land conservation organizations, including Georgia, Kentucky, Florida, and Arkansas. Virginia leads the region in the greatest total acreage under private conservation at over 1 million acres (Land Trust Alliance, 2011).

In addition to privately conserved lands, there are some federally protected areas in the Southeast, including 13.3 million acres of National Forests, and a number of National Parks, such as the Everglades and Great Smoky Mountains – two of the largest parks in the lower 48 States (U.S. Forest Service, n.d.).

How Can Conservation Organizations Help Support Rural Economies In The Southeast?

Forestry

Southern forests are among the most commercially productive in the world, contributing to the region's reputation as the nation's "wood basket." The Southeast produces 18% of the world's pulp for paper manufacturing, and 7% of the roundwood. The region is responsible for greater than half the total timber harvested each year in the U.S. In 2007, the regional economic impact of the South's forest industry was estimated to be \$30 billion, including the provision of 600,000 jobs (Hanson et al., 2010).

Unfortunately, the success of commercial forestry in the Southeast is due in large part to the industrial plantation model of forest management, under which dense stands of single-aged pine are managed for maximum financial return. High impact site preparation and harvest methods, as well as the liberal application of fertilizer, pesticides, and herbicides, are pervasive. This approach to forest management is at times at odds with sustainable management strategies that provide improved wildlife habitat and promote healthy watersheds.

Longleaf Pine Restoration

At the time of European settlement, longleaf pine was the dominant forest type in the Southeast, covering some 36 million hectares of land (Alavalapati et al., 2002). As a result of unsustainable logging practices, development, exclusion of wildfire, and conversion to plantations of other species of pine, longleaf pine exists on only 3% of its pre-settlement range (National Wildlife Federation, 2009). Commercial forest managers favor loblolly and slash pine over longleaf pine because they can be grown and harvested on shorter rotations – allowing industrial forest owners to cash-out sooner. Unfortunately, these species are vulnerable to severe weather events and offer inferior habitat for wildlife.

Climate change is expected to bring increased fire activity, droughts, floods, and storms to the Southeast, with severe consequences for forests and the rural communities that depend upon them. While commercially favored Southern pine species are particularly vulnerable to these changes, longleaf pine has demonstrated incredible resiliency. Longleaf pine thrives in both dry and wet conditions, tolerates fire, and resists storm damage.

Numerous organizations in the South are currently working to promote the conservation and restoration of longleaf pine forests. For example, the South Carolina Wildlife Federation and the National Wildlife Federation are working with land trusts and African American communities in the South Carolina Low Country to encourage the reestablishment of longleaf pine on private lands through technical workshops and field days. In Louisiana, the Natural Resource Conservation Service has partnered with the Louisiana Department of Wildlife and Fisheries and the National Wild Turkey Federation to form the Longleaf Pine Initiative, which provides technical and direct financial assistance to restore and manage longleaf pine on private forests. Additionally, the U.S. Department of Defense has funded research on how to restore longleaf pine systems. Restoration projects have been completed at Fort Stewart, Georgia; Fort Bragg, North Carolina; and Fort Polk, Louisiana (Dorminey, 2011).

Longleaf pine restoration provides a number of direct and indirect economic benefits to landowners and rural forest communities. Longleaf pine can have a high commercial value, as it produces dense, straight, and rot-resistant logs. It also produces valuable non-timber products, such as pine straw, which is used in landscaping. Longleaf pine is less susceptible to catastrophic, stand-replacing fires, decreasing the potential for damage to homes and infrastructure and the degradation of watersheds, as well as the financial risk associated with managing forests for commercial timber. These systems also promote biodiversity by providing habitat for a range of species, including the endangered red-cockaded woodpecker and valuable game species like white tailed deer, turkey, and quail, which may provide landowners the opportunity to generate income through hunting leases.

For more information see: <http://www.longleafalliance.org/>.

While commercial forests offer important advantages over other land uses, such as intensive agriculture, mining, or residential development, the ecological and social values

generated by the forests of the Southeast could be improved through the restoration of longleaf pine and an expansion of management approaches that emphasize sustainability.

Agriculture

Much of the Southeast was once dominated by the plantation-scale production of tobacco, cotton, rice, and peanuts, among other commodity crops. However, crop and animal production now account for less than 1% of the region's GDP. Agriculture is slightly more relevant in states that have smaller overall economies, such as Arkansas and Mississippi, where the industry contributes 2% and 1.4% to GDP respectively (U.S. Bureau of Economic Analysis, 2011). The region's dominant agricultural commodities include oranges, tomatoes, sugar cane, and cattle in Florida; chickens, hogs, and tobacco in North Carolina; and soybeans, poultry, and cotton in Mississippi (Economic Research Service, 2012).

In many areas of the Southeast, the availability of locally grown fruits and vegetables is severely limited, while family farms continue to be lost to development. The food hub mode has been identified as an effective strategy to support local agriculture and promote the consumption of local produce. Organizations such as GrowFood Carolina connect rural farmers and urban merchants by aggregating distribution and marketing services.

GrowFood Carolina

Of the \$7 billion that South Carolina residents spend on food each year, less than 10% comes from South Carolina agricultural producers – the vast majority is trucked in from distant states. In part a legacy of the Deep South's historical economic dependence on industrial-scale monoculture, government policies, and the existing distribution infrastructure, large commercial producers are favored over small, local farmers, who lack the economy of scale to compete with Midwestern rivals. Meanwhile, rural South Carolina communities are plagued by the conversion of agricultural land as a result of development, unemployment, and poverty. Limited access to fresh produce contributes to high rates of obesity and diabetes, among other health problems.

To address these challenges, the Coastal Conservation League founded GrowFood Carolina, a food hub that connects local producers with local merchants. Based out of a Charleston warehouse that opened in September of 2011, GrowFood Carolina uses a wholesale business model to provide to small farmers the aggregation, storage, distribution, marketing, and sales services that were previously available only to industrial-scale producers. The food hub creates a market for local farm products, and increases the availability of local produce for grocery stores and restaurants. During its first three months of operation, the organization sold more than \$30,000 in produce, grown on 25 local farms, to 45 customers in the area – primarily restaurants and grocery stores. The Coastal Conservation League projects that GrowFood Carolina will be financially self-sufficient by 2017.

For more information see: <http://growfoodcarolina.com/>.

Food hubs boost rural economies by creating and sustaining jobs in local agriculture. Small farms with diversified products generally have higher labor inputs than larger

mechanized operations, maximizing employment opportunities for rural communities. Food hubs also help to preserve cultural traditions, curb land conversion, and improve quality of life by ensuring access to healthy produce. They reduce auto emissions and traffic congestion by greatly reducing the distance that produce must travel to market, and are typically less dependent on the use of synthetic, fossil fuel-based pesticides and fertilizers. The food hub model has been successfully implemented in other parts of the Southeast, such as the Virginia based Appalachian Sustainable Development (see: <http://www.asdevelop.org/>).

Tourism

Tourism is a significant economic driver in some Southeastern states, particularly Florida, where 11.4% of workers are employed in the leisure and hospitality industry (Bureau of Labor Statistics, 2012). In 2011, the state received nearly 86 million visitors, who spent an estimated \$67 billion in the state (VisitFlorida.com, 2012). Tourism also has a substantial impact in North Carolina, home to most of the Great Smokey Mountains National Park, which received 9.4 million visitors in 2010, making it the most visited national park in the country. The economic impact to adjacent communities from tourism is estimated to be \$718 million a year (National Park Service, n.d).

The draw of national parks and other scenic areas has created development pressures in adjacent rural areas that offer desirable locations for second home construction. This presents a dilemma for rural communities that wish to promote economic development and increase tax revenue without fragmenting natural open spaces. With the help of land trusts and other conservation organizations, some communities, such as Bryson City, NC, have found ways to both encourage economic development and protect lands with high conservation values.

Lands Creek Reservoir, NC

Bryson City, NC lies on the southern border of Great Smoky Mountains National Park in Swain County. Like many of the rural communities adjacent to the Park, the town has witnessed substantial second home construction because of the scenic and recreational amenities it offers. Swain is also unique among southern counties in that the vast majority of its lands are off the tax rolls because the Great Smoky Mountains and the Eastern Cherokee Indian Reservation (i.e., Qualla Boundary) are non-taxed parcels. This creates real challenges for the town as it seeks to raise funds to maintain basic infrastructure and provide public services.

In the mid-1980's, Bryson City abandoned the Lands Creek Reservoir, a 750-acre tract immediately adjacent to Great Smoky Mountains National Park that had previously served as the city's primary source of drinking water. By 2002, the tract had caught the attention of real estate developers because of its prime location and the cash-strapped municipality of Bryson City was feeling pressure to sell. The Land Trust for the Little Tennessee and The Conservation Fund negotiated a deal, however, under which they would purchase a conservation easement and timber rights on the tract from the town, using funds secured from the North Carolina Clean Water Management Trust Fund, and from prominent conservation donors Fred and Alice Stanback. In total, the town received

\$1.8 million—\$400,000 of which was dedicated towards badly needed water and sewer infrastructure improvements—which will help promote economic development in Bryson City.

The town continues to own and manage the tract, for which it provides open recreational access. It is now one of the longest stretches of protected land bordering Great Smoky Mountain National Park.

For more information see:

http://www.smokymountainnews.com/issues/06_06/06_28_06/out_bryson_conserves.html.

Rural economic development does not have to occur at the expense of conservation. By working with Bryson City to address its economic development challenges, the private land conservation community was both able to protect a threatened parcel of land, maintain recreational access, and secure substantial assistance for the municipality.

Energy

Although increasingly controversial because of the high level of greenhouse gas emissions associated with it, coal remains an important source of energy for most of the United States. About 1 billion short tons of coal a year are required to power the 1,400 coal-fired plants that generate almost half of the electricity produced in the country.

Appalachian states are responsible for producing 30.8% of this billion, which ensures that mining will continue to play an important role in the economies of the Appalachian states, particularly Kentucky, Tennessee, and West Virginia (U.S. Energy Information Administration, 2011). It makes up only 1.6% of the Southeast's total regional GDP, but 11% of GDP in West Virginia (U.S. Bureau of Economic Analysis, 2011). The Bureau of Business and Economic Research at West Virginia University estimated that in 2008 the industry employed 20,454 individuals in the state, garnering \$1.5 billion in cumulative wages (West Virginia University, 2010). Unfortunately, mining has left a legacy of scarred landscapes across Appalachia, where the tops of over 500 mountains have been removed to facilitate the extraction of coal. Meanwhile, renewable sources are responsible for only 3.7% of the Southeast's electricity generation, well below the national average of 9.5%. In no state in the region does renewable energy generation exceed the national average (Brown et al., 2010).

Appalachia is now faced with large areas of heavily degraded land, high rural unemployment, and a dearth of renewable energy production. Organizations like the Northern West Virginia Brownfields Assistance Center are working to address these challenges through efforts that create rural jobs by siting renewable energy projects on degraded former mining sites. These projects present opportunities in the form of rural economic development and clean energy production, as well as a potential ethical dilemma, in that it may lessen the degree to which mining is perceived as a destructive land use.

Sustainable Energy Parks

Mountaintop coal mining has left an indelible mark on landscapes and communities in Appalachia. Often called mountaintop removal, this method involves the excavation of the upper layers of a mountain or hill to allow for extractive access to the coal seams beneath. Deposits of resulting mining debris fill adjacent valleys. Besides altering the physical appearance of the landscape, mountain top mining can increase the toxic mineral content of important sources of water, bury important headwater streams, and dramatically fragment forests (Environmental Protection Agency, 2011b). To date, 1,160 acres and 501 mountains have been mined in Appalachia, primarily in eastern Kentucky, southern West Virginia, southwest Virginia, and east-central Tennessee (Appalachian Voices, n.d.).

West Virginia University and the Northern West Virginia Brownfields Assistance Center are currently working to develop Sustainable Energy Parks (SEP) on former mountaintop removal and surface mining sites in the state. SEP's would provide job growth to nearby rural communities and clean, locally produced renewable energy. Abandoned and reclaimed surface mining sites are particularly attractive for large-scale renewable energy development because of their enormous size, access to existing infrastructure, and road access. A \$550,000 Environmental Protection Agency Training, Research, and Technical Assistance Grant was awarded to support an inventory of surface mining sites in West Virginia to determine the best potential SEP sites. Current efforts include research into viable biomass crop species that are able to grow under the nutrient poor conditions of most former mine sites (Kuykendall, 2011). Other potential renewable energy technologies include biomass, geothermal, solar, and wind energy.

For more information see: <http://wvwrri.nrcce.wvu.edu/programs/nwvbac/>.

Siting renewable energy projects in mountain top removal areas presents a dilemma for the private land conservation community. While these projects may create jobs in communities harmed by mountain top mining, they have the potential to “green-wash” over the ecological, cultural, and economic consequences of mountaintop removal, while also providing further justification for the practice to continue.

Environmental Markets

While markets for ecosystem services in the Southeast remain in the earliest stages of development, recent research by the World Resource Institute and other organizations indicates that there are substantial opportunities to expand and scale-up projects that pay forest landowners for the valuable services that their timberlands provide such as carbon sequestration, clean water, and wildlife habitat (Yonavjak, 2012).

The fragmented nature of forestland ownership in the Southeast presents obvious challenges to the development of environmental markets. Large portions of forests in the region consist of small privately owned parcels. The collective environmental services provided by these parcels is tremendous, but the families that own them lack the economies of scale to monetize, market, and sell these services. Initiatives like the

Appalachian Carbon Partnership seek to protect small family forests by ensuring that landowners are compensated for the values their forestland provides.

Appalachian Carbon Partnership

The forests of Central Appalachia support incredible biodiversity. Yet, 130 acres of forestland in the region are lost every day as a result of coal mining, development, and land conversion. Of the 90% of Central Appalachian forests that are privately owned, less than 5% have a management plan in place, a problem that has contributed to unsustainable logging and management practices that degrade the health of the remaining intact forests and watersheds.

The Mountain Association for Community Economic Development (MACED), in partnership with Rural Action and Appalachian Sustainable Development, established the Appalachian Carbon Partnership (ACP), as the first program in Central Appalachia that seeks to conserve and improve management of small, non-industrial parcels of forest by compensating landowners for management that increases carbon sequestration in trees on their land.

The ACP focuses on smaller parcels of land—generally 500 acres or less—that may be too small to be eligible to participate in other carbon offset schemes. Under the program, consulting foresters work with participating landowners to inventory and improve the management of their forest, which must be verified as sustainably managed under the American Tree Farm or the Forest Stewardship Council certification systems. MACED documents and aggregates the amount of carbon sequestered each year, then markets and sells the offsets for \$15 per metric ton to individuals and groups seeking a means to offset their carbon emissions. Proceeds are then returned to the landowners. To date, 50 landowners in central Appalachia have enrolled a total of 50,000 acres, from which \$64,000 in offsets has been sold.

For more information see: <http://www.appalachiancarbonpartnership.org/>.

By promoting sustainable forest management, programs like the ACP help to improve the ecological health and economic value of small Southeastern forest parcels. Small landowners, who may have no other alternative than to develop or sell their land, are given an income stream that might allow them to maintain their land as forest. They also help to create permanent rural jobs, by increasing the demand for forest professionals capable of inventorying, managing, and auditing enrolled lands.

Discussion Questions

- In recent years, the urban centers of the Southeast have undergone tremendously rapid economic and demographic growth, which has created obvious challenges for private land conservation efforts in the region. On the other hand, growth in the region's rural communities has been mixed – growth has generally been either slow or negative. Does this trend of slow growth present an opportunity to ensure that rural economic development occurs in a manner that complements, rather than conflicts with, land conservation efforts?

- The Southeast currently lags behind the rest of the nation in terms of the production of renewable energy. Does this fact imply an opportunity for rural economic development in conjunction with land conservation, or does it belie political and cultural barriers?
- The rural communities in certain areas of the Southeast exhibit some of the highest levels of poverty and lowest levels of education in the U.S. How can private land conservation organizations effectively make the case to the residents of these areas that conservation can contribute to the health of their communities?
- Does siting renewable energy projects on mountain top removal sites provide a justification for this destructive form of mining? How should the private land conservation community approach this issue?
- Many successful efforts to promote land conservation and economic health in rural communities in the Southeast involve linking rural to urban—often through markets—such as those for agricultural products or for carbon offsets. Do these projects risk eroding the independence and self-sufficiency of rural communities by making them economically dependent on urban centers?

Organizations Doing Interesting Work

The Appalachian Institute for Renewable Energy (AIRE) promotes the development of renewable energy projects in North Carolina by assisting project organizers to identify investors and access tax credits and other incentives.

See <http://aire-nc.org/>.

The Black Family Land Trust provides educational, technical, and financial services to ensure, protect, and preserve African American land ownership.

See <http://www.bflt.org/>.

The Center for Heir's Property is working to empower low-income heir's property owners to maintain ownership of their ancestral land through legal assistance and education programs. See <http://www.heirsproperty.org/>.

The Center for Rural Strategies seeks to improve economic and social conditions for rural communities worldwide through the creative use of media and communication. See <http://www.ruralstrategies.org/>.

The Coastal Conservation League works towards protecting the natural environment and enhancing communities on the coastal plain of South Carolina.

See <http://coastalconservationleague.org/>.

The Land Loss Prevention Project (LLPP) was founded by the North Carolina Association of Black Lawyers to provide legal support and assistance to financially distressed and limited-resource farmers and landowners in North Carolina in order to

curtail the loss of farmland. See <http://www.landloss.org/>.

The Land Trust for the Little Tennessee helps to conserve the landscape of the upper Little Tennessee and Hiwassee River Valleys by accepting gifts of land, promoting conservation easements, and purchasing at-risk properties.

See <http://www.ltlt.org/>.

The Longleaf Alliance coordinates a partnership between private landowners, forest industries, government, conservation groups, and researchers, to promote the management and restoration of longleaf pine forests.

See <http://www.longleafalliance.org/>.

The Mountain Association for Community Economic Development (MACED) is a community development financial institution (CFDI) that works to improve family well-being, strengthen rural economies, protect natural resources, and ensure political accountability in Central Appalachia. See <http://www.maced.org/>.

West Virginia Brownfields was created to empower communities to plan and implement brownfield redevelopment projects, including former mountain top mining sites.

See <http://www.wvbrownfields.org/>.

Useful Readings/Works Cited

Alavalapati, J.R.R., G.A. Stainback, and D.R. Carter. 2002. Restoration of the Longleaf Pine Ecosystem on Private Lands in the U.S. South: An Ecological Economic Analysis. *Ecological Economics* 40(3): 411-419.

Appalachian Voices. *Mountaintop Removal 101*. Retrieved at <http://appvoices.org/end-mountaintop-removal/mtr101/> (accessed on April 3, 2012).

Auburn University. 2011. *Agricultural Economics and Rural Sociology: Land Loss*. Retrieved at <http://www.ag.auburn.edu/agec/heirproperty/landloss.php> (accessed on April 15, 2012).

Bishop, B. 2011. North Carolina Has Most Rural Unemployed. *Daily Yonder*. March 24. Retrieved at <http://www.dailyyonder.com/north-carolina-has-most-rural-unemployed/2011/03/23/3243>.

Brown, M., E. Gumerman, Y. Baek, C. Morris, and Y. Wang. 2010. *Renewable Energy in the South: A Policy Brief*. Atlanta, GA: Georgia Institute of Technology School of Public Policy. Retrieved at <http://www.spp.gatech.edu/faculty/workingpapers/wp58.pdf>.

Bureau of Labor Statistics. 2012. *Products by State*. Retrieved at <http://www.bls.gov/> (accessed on April 3, 2012).

- Dorminey, B. 2011. Military Bases Provide Unlikely Refuge for South's Longleaf Pine. *Yale Environment* 360. November 10. Retrieved at http://e360.yale.edu/feature/military_bases_provide_unlikely_refuge_for_longleaf_pine_in_us_south/2463/.
- Dunham, M. 2011. *PEL Update: Heir Property*. Retrieved at <http://blogs.planning.org/policy/2011/10/31/pel-update-heir-property/> (accessed on April 9, 2012).
- Economic Research Service. 2004. *Rural Education at a Glance*. Retrieved at <http://www.ers.usda.gov/publications/rdr98/rdr98.htm> (accessed on May 7, 2012).
- Economic Research Service. 2011. *Mapping Population and Economic Trends in Rural and Small-Town America*. Retrieved at <http://www.ers.usda.gov/AmberWaves/March11/DataFeature/> (accessed on May 7, 2012).
- Economic Research Service. 2012. *State Fact Sheets*. Retrieved at <http://www.ers.usda.gov/StateFacts/> (accessed on April 3, 2012).
- Environmental Protection Agency. 2011a. *General Facts about the Gulf of Mexico*. Retrieved at <http://www.epa.gov/gmpo/about/facts.html> (accessed on April 10, 2012).
- Environmental Protection Agency. 2011b. *Mid-Atlantic Mountaintop Mining*. Retrieved at <http://www.epa.gov/region3/mtntop/> (accessed on April 4, 2012).
- Federal Financial Institutions Examination Council. 2012. *Top 50 Bank Holding Companies*. Retrieved at <http://www.ffiec.gov/nicpubweb/nicweb/Top50Form.aspx> (accessed on May 7, 2012).
- Federal Reserve Bank of Atlanta. *Southeast's Auto Industry Climbs Into the Driver's Seat*. Retrieved at http://www.frbatlanta.org/pubs/econsouth/econsouth-vol_7-no_1-southeasts_auto_industry_climbs_intodrivers_seat.cfm?redirected=true (accessed on May 5, 2012).
- Hanson, C., L. Yonavjak, C. Clarke, S. Minnemeyer, L. Boisrobert, A. Leach, and K. Schleeweis. 2010. *Southern Forests for the Future*. *World Resource Institute*. Retrieved at <http://www.seesouthernforests.org/southern-forests-for-the-future>.
- Kuykendall, T. 2011. Biomass Industry Developing in West Virginia. *Register Herald*. February 4. Retrieved at

<http://www.register-herald.com/local/x856148097/Biomass-industry-developing-in-West-Virginia>.

- Land Trust Alliance. 2011. *2010 National Land Trust Census Report: A Look at Voluntary Land Conservation in America*. Retrieved at <http://www.landtrustalliance.org/land-trusts/land-trust-census>.
- Miller, K. 2009. Demographic and Economic Profile: Nonmetropolitan America. *Agriculture Chairs Summit, San Diego, CA, January 23-25, 2009*. Retrieved at <http://www.rupri.org/Forms/Nonmetro2.pdf>.
- National Park Service. *Great Smoky Mountains National Park: Park Statistics*. Retrieved at <http://www.nps.gov/grsm/parkmgmt/statistics.htm> (accessed on April 4, 2012).
- National Wildlife Federation. 2009. *Standing Tall: How Restoring Longleaf Pine Can Help Prepare the Southeast for Global Warming*. Retrieved at <http://www.nwf.org/~media/PDFs/Global-Warming/Reports/LongleafPineReport.ashx>.
- Northern West Virginia Brownfields Assistance Center. 2011. *Annual Report*. Morgantown, WV: WV Water Research Institute. Retrieved at <http://www.wvbrownfields.com/docs/2011-nbac-report.pdf>.
- Probst, J., M. Samuels, K. Jespersen, K. Willert, R.S. Swann, and J. McDuffie. 2002. *Minorities in Rural America*. Columbia, SC: South Carolina Rural Health Research Center. Retrieved at <http://rhr.sph.sc.edu/report/minoritiesInRuralAmerica.pdf>.
- U.S. Bureau of Economic Analysis. 2011. *Economic Recovery Widespread Across States in 2010*. Retrieved at http://www.bea.gov/newsreleases/regional/gdp_state/gsp_newsrelease.htm (accessed on April 3, 2012).
- U.S. Energy Information Administration. 2011. *What is the Role of Coal in the United States?* Retrieved at http://205.254.135.7/energy_in_brief/role_coal_us.cfm (accessed on April 8, 2012).
- U.S. Census Bureau. 2010. *Resident Population Data: 2010 Census*. Retrieved at <http://2010.census.gov/2010census/data/apportionment-dens-text.php> (accessed on May 3, 2012).
- U.S. Census Bureau. 2011a. Household Income for States: 2009 and 2010. *American Community Survey Briefs*. Retrieved at <http://www.census.gov/prod/2011pubs/acsbr10-02.pdf>.

- U.S. Census Bureau. 2011b. Overview of Race and Hispanic Origin: 2010. *2010 Census Briefs*. Retrieved at <http://www.census.gov/prod/cen2010/briefs/c2010br-02.pdf>.
- U.S. Census Bureau. 2011c. Population Distribution and Change: 2000 and 2010. *2010 Census Briefs*. Retrieved at <http://www.census.gov/prod/cen2010/briefs/c2010br-01.pdf>.
- U.S. Census Bureau. 2012. Educational Attainment in the United States: 2009. *Current Population Reports*. Retrieved at <http://www.census.gov/prod/2012pubs/p20-566.pdf>.
- U.S. Forest Service. *About the Southern Region*. Retrieved at <http://www.fs.usda.gov/main/r8/about-region> (accessed on April 3, 2012).
- VisitFlorida.com. 2012. *Florida Experiences Record Visitation in 2011*. Retrieved at <http://media.visitflorida.org/news/news.php?id=224> (accessed on May 5, 2012).
- West Virginia University. 2010. *The West Virginia Coal Economy 2008*. Retrieved at <http://www.be.wvu.edu/bber/pdfs/BBER-2010-04.pdf>.
- Yonavjak, L. 2012. Bringing Ecosystem Markets To Scale In The Southern United States. *WRI Insights*. March 14. Retrieved at <http://insights.wri.org/news/2012/03/bringing-ecosystem-markets-scale-southern-united-states>.

Section 4: *The Midwest*

4.1: Background

Michael Parks

Yale School of Forestry & Environmental Studies

For those seeking to link private land conservation and the health of rural economies, the Midwest presents some of the most substantial challenges in the United States. Across much of the region, the dominance of intensive monocrop agriculture has had a severe impact on landscapes and natural resources, while also creating barriers—in the form of both policies and prevailing perspectives—that hinder the development of new economic paradigms.

Yet, the Midwest is far from monolithic, and conservation organizations are finding ways to make inroads in the region. They are protecting, restoring, and demonstrating the economic value of the region's forests, prairies, lakes, and waterways. They are also working alongside industry, farmers, and rural communities to pioneer new approaches to mitigating the impacts of agriculture. Finally, they are building one of the country's fastest growing and most community-oriented clean energy economies.

For the purposes of this background paper, we define the Midwest as encompassing Minnesota, Iowa, Wisconsin, Illinois, Indiana, Michigan, Ohio, eastern North and South Dakota, and a portion of Manitoba.

The paper is organized into three parts. The first section provides context on the Midwest, and the second section delves into the details of five economic sectors where there are opportunities for connecting conservation and rural development goals. Finally, the third section poses a few questions for discussion, suggests resources for further reading, and lists organizations doing interesting work in the Midwest.

People

The Midwest is one of the most rural and slowest growing regions in the country (Johnson, 2012; Economic Research Service, 2012). Between 1980 and 2010, most Midwestern states saw only minor population increases and at least one state—Michigan—registered a net population loss in the past decade (U.S. Census Bureau, 2010b). The U.S. Census Bureau has projected that these growth trends in the Midwest will continue to 2030, with all states in the region experiencing growth that is at the lower end of the national spectrum (U.S. Census Bureau, 2004).

For rural areas, population trends depend heavily on location. Overall, rural population growth lags behind the national average of 4.2%, and several states in the region have registered net negative rural population growth over the last decade, reflecting high youth out-migration (Johnson, 2012; Economic Research Service, 2012). This trend is most pronounced in western Iowa and in North and South Dakota, which border on the drier and much less densely populated Great Plains Region (U.S. Census Bureau, 2010a). Yet, a number of Midwest counties have also experienced large, sometimes double digit

growth in recent years. In these cases, proximity to cities or immigration of older people to areas with high natural amenity values are the major forces driving population shifts.

One notable area is the Upper Great Lakes Region where both of these growth-increasing trends occur. Michigan's Grand Traverse County, for example, is rich in natural amenities and has seen major growth (gains of 64%, 20%, and 12% between 1970 and 1990, 1990 and 2000, and 2000 and 2010, respectively) over the last four decades (Johnson, 2012).

In terms of ethnic diversity, the Midwest remains one of the more homogenous regions in the country. A few counties—most notably those near Reservations in northern Minnesota and Wisconsin—have American Indian populations exceeding 10%, and a handful of counties spread across the region have Hispanic populations exceeding 10%. For the most part, however, the rural parts of the Midwest are predominantly non-Hispanic white (Johnson, 2012).

Economy

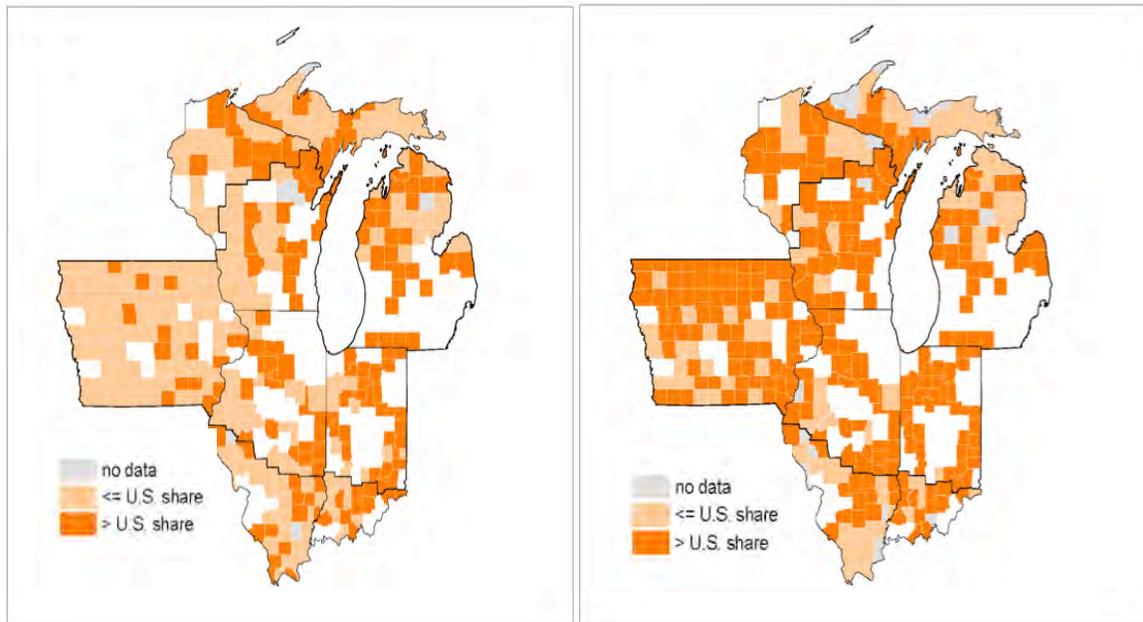
The Midwest has rebounded from being one of the regions worst hit by the recent recession, to being one of the bright spots in the economy. According to a Bureau of Economic Analysis report that broke down state GDP growth for 2009-2010, most Midwest states saw growth in that year that either matched or exceeded national averages (U.S. Bureau of Economic Analysis, 2011). Since then, recovery in the manufacturing sector has continued to bolster Midwestern cities, while high crop and land prices, along with a strong energy sector, have contributed to stable or growing per capita incomes in rural areas.

The rural Midwest economy depends heavily on agriculture, with most states having a majority of their land area under cultivation. The most intensely agricultural states are South Dakota (90% of land area used for agriculture, as of 2007), North Dakota (89.8%), Iowa (87%), and Illinois (75.4%) (Economic Research Service, 2012). In recent years, dramatic increases in crop prices and land values, driven both by global demand for food and ethanol production, have made agriculture an even more important economic driver for the Midwest. To take Iowa as one example, in February, 2012, the Ames Tribune reported that farmers in the state will be “planting the biggest corn crop since World War II, taking advantage of the highest agricultural prices in at least four decades” (Wilson and McFerron, 2012). Meanwhile, 2011 saw the highest percentage increase in Iowa land prices in recorded history, as well the highest statewide average price per acre (\$6,708) of farmland (Testa, 2012).

The connection between gross agricultural receipts or land values and rural livelihoods is not as clear-cut as it may seem, however. Since the mid-1960's, even as per acre yields have doubled for some crops, agriculture has become less labor-intensive, meaning it provides fewer jobs than it once did (Testa, 2012). According to a typology of counties produced by the U.S. Department of Agriculture's Economic Research Service, only a handful of counties outside of North and South Dakota today have 15% or more of their total earnings or jobs coming from agriculture (Economic Research Service, 2012).

One sector that has counter-balanced decreasing farm labor needs is manufacturing, which has spread further into rural areas of the Midwest. Much of this manufacturing is related to processing agricultural products, such as food, ethanol, and dairy. Thanks in large part to the influence of manufacturing, per-capita income growth in the rural Midwest has closely tracked urban growth, despite substantial changes in the agriculture industry (Testa, 2012).

Change in Manufacturing as Share of Income for Rural Midwestern Counties, 1969 and 2009



Source: Federal Reserve Bank of Chicago

In addition to agriculture and manufacturing, recreation and tourism are important for sustaining rural economies in certain parts of the Midwest. This is particularly true in the northern parts of Michigan, Wisconsin, and Minnesota close to the Great Lakes, in a small part of central Wisconsin, and along certain sections of the Missouri River in North and South Dakota (Johnson, 2012).

Finally, while it is not as large an economic driver as in other regions, forestry plays a role in sustaining rural communities in the more northern parts of the Midwest (The Conservation Fund, n.d.).

Place

For most Americans, to think of the rural Midwest is to think of a land of cornfields and churches, small towns, and endless straight roads. Yet, while there is some truth in this vision, the reality of the region belies its reputation as an undifferentiated “agricultural heartland.” Across the Midwest, diverse landscapes and diverse communities produce both challenges and opportunities for conservation organizations.

Even within the Midwest's agricultural core, where a deep agrarian history, high land prices, and extensively altered landscapes present an overarching set of challenges, varying local contexts have led conservation organizations to pursue different tactics. In areas near rivers and streams, for instance, initiatives like the Conservation Marketplace of Minnesota are looking towards environmental markets as a way to lessen agriculture's impact on water quality and simultaneously bolster rural economies. In other places, conservation organizations, such as the Iowa Natural Heritage Foundation, have been able to gain traction in heavily agricultural landscapes by targeting and restoring old railways to trails – an approach that provides refugia for wildlife and outdoor recreational opportunities for community members. In still other areas, conservation organizations continue to pursue a more traditional approach to land protection, identifying and seeking to protect and restore remnants of prairies, savannas, and other uniquely Midwestern landscapes and ecosystems.

Conservation leaders interviewed for this background paper also noted that the character of human communities varies tremendously across the Midwest, with important conservation ramifications. For example, in Iowa, many rural communities are oriented toward large-scale, commodity crop production, making initiatives to diversify and improve farming practices difficult to implement. Yet, strong ties to a unique Norwegian settlement history and the presence of Luther College, for instance, have helped make Winneshiek County, Iowa, the center of a vibrant regional food scene.

The Midwest is also diverse in that it encompasses much more than an agricultural core. In the north, intact forests, extensive lake systems, and a relatively large amount of publicly held land create opportunities for conservation initiatives that bolster rural economies through sustainable forestry, tourism, and environmental markets.

Other parts of the Midwest contain unique landscapes. Southern Illinois, for example, is home to extensive cypress and tupelo swamps. Such natural features have been the setting for tense relationships between conservation organizations and rural communities in the past, but also hold potential for new future partnerships.

How Can Conservation Organizations Help Support Rural Economies In The Midwest?

Agriculture

In the Midwest, agriculture poses vexing challenges for those aiming to connect private land conservation and rural economic development. Commodity crop production is both extensive and intensive, and the better part of several Midwest states have been entirely transformed by monocultures of corn, soybeans, and wheat. Moreover, a number of factors—from federal subsidy programs to high global food prices—reinforce the dominant agricultural paradigm.

There can be little doubt that agriculture as it is currently practiced in the Midwest has substantial negative effects on wildlife, soils, and water resources. But how can private land conservation and other environmental organizations counteract the effects of “Big Ag” in a way that does not put them at odds with rural communities?

One answer is that conservation organizations can help producers implement improved farming practices and facilitate the development of smaller-scale food economies. Numerous non-profit organizations are already working across the Midwest to provide the technical assistance farmers need to access funding for and implement sustainable agriculture initiatives.

Private land conservation organizations also have a critical role to play in helping new farmers get established. By linking new farmer and sustainable agriculture training, some initiatives, such as the Minnesota Beginning Farmers' program, are having success in launching a generation of value-added operations.

Helping New Farmers Get Started: The Land Stewardship Project's Farm Beginnings Program

One major barrier to sustaining rural economies through local and regional food networks in the Midwest is a lack of new farmers. For years, the Midwest farm operator population has been aging; in Minnesota, the average age is now 55.3 years. As a result, relatively small farms are increasingly being subsumed into larger, more industrial, and often absentee-owned operations. Small towns, meanwhile, must contend with the pernicious economic effects of high youth out-migration.

A recent survey of 1,000 young farmers conducted by the National Young Farmers' Coalition (NYFC) identified access to capital, affordable land, and affordable healthcare as the three main barriers that prevent young farmers from succeeding. The NYFC also recommended a number of policy changes, from expanded tax credits, educational, and conservation programs at the federal level, to grants and marketing help at the state and community levels, to help new farmers get established.

Across the Midwest, various organizations are working to address the issues identified by the NYFC. One representative program is the Minnesota Land Stewardship Project's Farm Beginnings Program. Farmers who enroll in the 10-month program learn about low-cost approaches to sustainable agriculture, including everything from actual farming techniques to financial planning and alternative marketing. To date, the program has been successful, if somewhat limited in scale. Sixty percent of graduates from the first 8 years of the program are still farming across 6,000 acres. The program has recently spread beyond Minnesota to a number of other states.

For more information see:

The National Young Farmers' Coalition: www.youngfarmers.org.

The Land Steward Project's Farm Beginnings Program:
<http://www.landstewardshipproject.org/farmbeg.html>.

The private land conservation community's role in expanding sustainable agriculture in the Midwest extends beyond direct assistance for farms and farmers. There is also a need for analyses of regional food systems, support for small-scale agricultural product processing, and marketing and market facilitation necessary to connect rural producers with urban consumers. In the context of the Midwest, a single organization with a holistic perspective on agricultural issues can have major impacts in both the conservation and

economic development arenas. Though several such groups operate across the Midwest, one example is the Leopold Institute for Sustainable Agriculture.

A New Kind of Land Grant Program: The Leopold Center for Sustainable Agriculture

Based out of Iowa State, and funded by state education appropriations as well as fees assessed on nitrogen and pesticide registrations, the Leopold Center for Sustainable Agriculture has become one of the Midwest's most important clearinghouses for information on new approaches to agriculture. The Leopold Center conducts its own research on issues such as nitrogen management, food systems, and rotational grazing, and also maintains a robust—35 to 45 new projects per year—grant program. Examples of current grants range from \$86,000 to study the complex role of tall fescue in grassland ecology to almost \$40,000 for research related to involving new immigrants and migrants in local food systems.

In addition to education and grant making, the Leopold Center has convened a number of special issue “working groups.” Examples include the 16-member Regional Food Systems Working Group; the Iowa Land Tenure Working Group; and Green Lands, Blue Waters – an initiative aimed at improving the health of waterways by introducing more perennials and continuous cover crops into agricultural landscapes. Each working group brings together a broad partnership of individuals and organizations to focus on approaches to making advancements in a particular topic area.

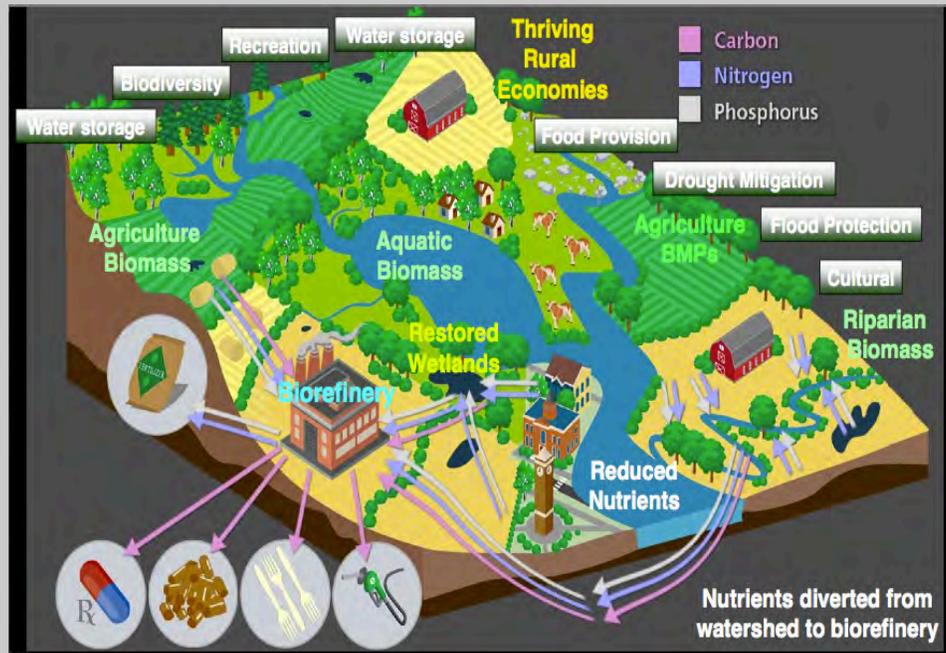
For more information see: <http://www.leopold.iastate.edu>.

Initiatives like those described above have had a substantial positive effect in the Midwest. For each of the last 20 years, the Minnesota Department of Agriculture has increased the number of local producers in its Minnesota Grown database, and now includes more than 1,000 farmers and ranchers (Minnesota Rural Partners, 2011). And even in the most commodity-oriented states, local food programs are now the rule rather than the exception.

Despite the progress that has been made, however, it is important to recognize how dominant conventional agriculture remains in the Midwest. Minnesota has some 50 million acres of farmland, only about 120,000 of which the U.S. Department of Agriculture classifies as organic (Economic Research Service, 2012). Despite having what are arguably some of the world's best agricultural soils, Iowa imports 86% of its food (Economic Research Service, 2012). Across the Midwest, only 4.6 acres per 1,000 people are devoted to fruit and vegetable production, a number far lower than the national average of 9.1 acres per 1,000 people (Swenson, 2010). Making sustainable agriculture work for both rural economies and the environment will require that conservation organizations find creative approaches to effecting change in every arena, from federal policy to local prairie buffers.

One example of how holistic approaches to agricultural problems may create change at large-scales comes from the International Institute for Sustainable Development, which is working in the region around Lake Winnipeg in Manitoba.

Thinking Holistically: Building a Bio-Economy Around Lake Winnipeg



Lake Winnipeg is one of Canada’s most beautiful and economically important water bodies. It is also widely recognized as the most polluted large lake in the world, a product of nutrient runoff from its nearly 400,000 square mile watershed. Given that two thirds of the nutrients flowing into Lake Winnipeg come from non-point agricultural sources, the task of cleaning up the lake—and of mitigating the flood and drought problems that are expected to severely impact area farmers as climate change advances—can seem hopelessly complex. Yet, for the International Institute for Sustainable Development (IISD), Lake Winnipeg presents a chance to turn a challenge into an economic opportunity.

Recently, the IISD hosted The Lake Winnipeg Basin Summit, a gathering of 150 scientists, policy-makers, business people, and civil society leaders. The group was asked to answer the question: “How do we create and take advantage of Manitoba’s economy while reducing nutrient loading within the Lake Winnipeg Basin?” Among the important ideas to emerge from the conference was the principle that Manitoba can and should take the lead in reducing nutrient run-off, despite the fact that the basin crosses several jurisdictions, and the notion that Manitoba may actually be fortunate to have such large amounts of phosphorous. With the regard to the latter idea, it was suggested that it may not only be possible to capture nutrient runoff using plantings along waterways, but to actually create a new economy based on harvesting plantings and extracting and recycling scarce fertilizer resources.

The Lake Winnipeg Bio-economy is still in its infancy. Yet, the planning process that regional leaders are engaging in is itself an innovative development. As private land conservation organizations confront increasingly complex systemic problems, it will

likely be useful for them to find similar ways of partnering broadly and thinking holistically.

For more information see: www.iisd.org/wic.

Image Source: The International Institute for Sustainable Development

Beyond promoting sustainable agriculture, it is worth noting that conservation organizations can contribute to rural economies and improve environmental quality by leading efforts to restore former agricultural lands. Though restoration is made necessary by the degradation of the Midwest landscape, it also provides jobs and builds community. Indeed, the Midwest has become a hub for research on ecological restoration and collaborative large-scale restoration, particularly in prairie ecosystems.

Forestry

Though forestry is not as dominant an economic sector in the Midwest as it is in the other regions of the U.S., it still contributes a great deal to rural economies. It is also a sector that has seen major changes in recent decades, leading to a need for new ways of thinking about both forest conservation and economies based on forest products. As in other regions of the U.S., the dominant trends in the Midwest's forests have involved:

- Draw-downs in harvests on both public and private lands;
- Declining competitiveness of the timber industry vis-a-vis the global market; and
- Fragmentation of private lands into smaller parcels.

For the purposes of this paper, the latter trend is particularly noteworthy. Traditionally, large, integrated paper and pulp companies owned many private timberlands in the Midwest. Starting in the mid-1990's, however, these companies began to sell off their lands, primarily to Timber Investment Management Organizations (TIMOs). In Minnesota, for instance, roughly one third of industrial timberland has been sold in the past 20 years (The Conservation Fund, n.d.). At the same time, rising land prices and immigration for natural amenity values have led to increased development of non-industrial private timberlands. As a result, large acreages of unbroken timberland are increasingly threatened by development and parcelization (The Blandin Foundation, 2009).

The Lyme Timber Company's St. Croix-Brule Headwaters Forest Purchase: When TIMOs Lead the Conservation Charge

At first glance, the Lyme Timber Company's recent purchase of 72,800 acres of Wisconsin timberlands, plantations, and pine barrens from Wausau Paper seems to fit the trend of TIMOs buying industrial timberland for development. Lyme Timber is unique, however, in that selling conservation easements is a core part of its business model. The company is currently working with The Conservation Fund and the Minnesota Department of Natural Resources to ensure that working timberlands will remain as working forests, even after being sold to other landowners. These lands will be protected from development and continue to contribute to the Minnesota timber economy.

Statistics on the St. Croix-Brule property highlight the importance of stemming the parcelization of Minnesota's northern forests, and the value of a working conservation easement approach to land conservation. The territory encompasses 83 lakes and 14 streams, and is the largest private property in a three county area where tourism generates nearly \$350 million of economic impact annually. Under Wausau's ownership, the working forest supplied forest products to more than a dozen processing mills.

For more information see: <http://www.lymetimber.com/>.

Conservation organizations working in the Midwest have seen an opportunity to simultaneously protect forestlands from division and development and contribute to regional timber economies. Working conservation easements in particular have quickly gained ground as a tool of choice. Prior to 2005, the biggest easement project in Minnesota only protected about 3,100 acres of industrial timberlands. Since then, however, The Conservation Fund and partner organizations have purchased one Minnesota working conservation easement covering some 51,000 acres of TIMO-owned land and another, covering 188,000 acres, to be held by the Minnesota Department of Natural Resources and the Blandin Paper Company (The Conservation Fund, n.d.). Similarly, in Michigan, the Department of Natural Resources and the Environment recently partnered with The Nature Conservancy to purchase a 247,803-acre working conservation easement on TIMO land (Michigan Department of Natural Resources, n.d.).

Working forest conservation easements have proven remarkably successful in the Upper Midwest. In addition to protecting conservation values, these easements ensure the continued existence of timber industries that can support rural economies. With that said, conservation organizations will need to look to new tools and for new opportunities as time goes on. In particular, they will have to find ways to help revitalize and diversify the Midwest timber industry, bridge a growing capacity gap for management of public lands, and provide incentives that prevent the development of non-industrial private lands. Both the Pacific Northwest and Southeast regions may provide some lessons that will help conservation organizations working on forest issues in the Midwest.

Energy

The Midwest's ample land, wind, biomass, and solar resources make it a region with enormous potential for developing new rural economies centered on renewable energy production. And indeed, the region has shown early leadership in adopting state-level policies that have driven renewables forward. Minnesota, for instance, has a Renewable Energy Standard that requires its utilities to meet high percentages of demand via renewables, as well as policies that specifically encourage the development of community-owned wind facilities. As a result, the state boasts the nation's fourth largest installed wind power capacity, and the greatest installed capacity of community-owned wind power (Bolinger, 2004; The Pew Charitable Trusts, n.d.; Wörlen, 2010). Additionally, the Midwest is home to some of the country's first and largest renewable energy development networks such as RE-AMP, a coalition of 144 non-profits and foundations working in eight Midwestern states to reduce greenhouse gas emissions in the region by 80% by 2050 (Re-Amp Network, 2012).

However, even as the Midwest's energy economy grows, it still makes up a small part of the overall energy mix in the region. Coal remains king, accounting for anywhere from 50% to more than 90% of electricity generation in states across the Midwest (Wörten, 2010).

For groups looking to simultaneously achieve conservation and rural economic goals in the Midwest, renewable energy presents both challenges and opportunities. Renewable energy can play a crucial role in sustaining rural economies and environmentally friendly farming operations; at the same time, the need for undeveloped land, for wind power in particular, could bring renewable energy development into conflict with conservation goals related to protecting habitat or avian migration routes.

It is also possible to develop renewable energy in a way that does little to benefit rural economies. As a recent report comparing renewable energy development in the Midwest with Germany noted, U.S. policies tend to favor the development of large-scale, utility-owned renewable energy projects, which provide less value for local communities than their community-owned European counterparts (Wörten, 2010). Across the Midwest, there is a major need for organizations and coalitions that can work to align conservation and renewable energy goals, assist rural communities in accessing existing renewable energy options, and push new renewable energy policies that have a maximum benefit for rural economies.

In terms of siting for solar or wind power, environmental and rural economic development organizations both stand to gain from taking a proactive approach. For conservation organizations, taking a leading role in developing siting rules is an opportunity to minimize the impact renewable energy development has on wildlife and key landscapes. For groups more concerned with economic development or creating resilient rural energy systems, creating uniform siting rules is essential to preventing unnecessary holdups on renewable energy initiatives.

As groups like The Conservation Fund, the Michigan Land Use Institute, and Renew Wisconsin have shown, there are many possibilities for shaping renewable energy development in a way that simultaneously protects wildlife and advances development goals.

The Conservation Fund: Uniform Wind Siting Across the Midwest

Because no federal regulatory agency oversees wind power projects, wind project developers—be they utility companies or communities—must often contend with a multitude of state and local regulations. In the Midwest, this has led to a situation in which regulators are alternately accused of unnecessarily slowing the development of new power projects and of failing to sufficiently protect rare and endangered wildlife species.

As a result, The Conservation Fund is preparing a Multi-Species Habitat Conservation Plan (MSHCP) for 27 million acres spread across eight Midwest states. If successful, the MSHCP will allow project developers to make long-term plans that avoid important habitat for 30 federally listed wildlife species, such as the Indiana bat and piping plover,

which can hold up new wind projects. At the same time, the MSHCP will allow officials to more quickly evaluate the environmental impacts of proposed wind projects.

For more information see: <http://www.conservationfund.org>.

Wind and solar development can also have a positive impact on both rural economies and conservation by contributing to broader efforts by communities to move toward sustainable agricultural systems. Renewable energy development can provide agriculturalists with an additional revenue stream that they can use to pursue organic or other improved agricultural practices. At the same time, generating energy for farms from renewable sources can add further marketplace value to sustainably produced farm products. One of the world's largest agricultural marketing co-ops, Organic Valley, is based in Wisconsin and runs an active program dedicated to helping member farms pursue renewable energy or energy efficiency retrofits. In addition to offering free energy audits and site assessments, the co-op helps farmers select an installer and access grants to overcome installation cost barriers (Organic Valley, 2008).

Another area where conservation, renewable energy, and rural economic development objectives dovetail is in the production of biodiesel or biogas from livestock or crop wastes. Wisconsin is currently leading the country's young biogas for electricity market (Bilek, 2010). As with other forms of renewable energy, environmental and economic organizations alike have a strong role to play in promoting policies that provide incentives that will help to develop biogas and biodiesel markets in a way that benefits both the Midwest's natural landscape and its rural economies.

Finally, it is impossible to speak about renewable energy in the Midwest without discussing ethanol. Corn ethanol has long been a controversial topic, for reasons ranging from the debate over its true greenhouse gas emissions compared to gasoline (the answer depends on the parts of the ethanol lifecycle that are considered) to its contribution to recent spikes in global food prices (Searchinger, 2008). In the Midwest, corn ethanol production has also helped to perpetuate the high land and crop prices that make conservation or the development of new agriculture and food systems difficult.

Yet, the dynamics surrounding ethanol production began to change recently, when the U.S. Congress allowed a corn ethanol subsidy, which was worth roughly \$6 billion in 2011, to expire. For now, ethanol demand and corn prices remain so high that land prices and production levels are unlikely to be substantially affected by the end of the subsidy, but this may change in the future (Pear, 2012).

For conservation and other environmental organizations, it will continue to be important to find ways to bring logic and data to bear on policy decisions related to biofuels. While corn ethanol has proven highly problematic, cellulosic ethanol, for instance, may in the future provide more sustainable opportunities for sustaining rural economies. Private land conservation organizations will need to stay abreast of developments in this area, and take care to find ways to protect natural resources while also supporting rural communities.

Environmental Markets

The Midwest was an early leader in the environmental markets field and continues to be at the vanguard of efforts to use markets to simultaneously sustain rural economies and improve environmental quality. Some of the first attempts at creating environmental markets focused on reducing the effects of agricultural runoff on regional waterways. Today, the nexus of agriculture and water remains the focus of most Midwest environmental markets.

The federal Clean Water Act forms the backdrop for the Midwest's most active markets by requiring in-kind compensation for permitted, unavoidable wetland destructions. Wetland and stream banks are wetland or stream areas that have been restored, enhanced, created, or protected to compensate for wetland impacts generated by development projects elsewhere. The party responsible for creating an approved wetland bank can generate wetland credits – which they can then sell to a developer that needs the credits to come into compliance with Section 404 of the Clean Water Act. Wetland and stream mitigation banks are widespread, particularly in Minnesota, Illinois, and Wisconsin, where Ecosystem Marketplace tallied 119, 43, and 22 active or sold out banks, respectively, in 2011 (Madsen, 2011).

Water quality trading (WQT) is another environmental market that depends on the Clean Water Act. Over the years, the Midwest has been home to a number of small WQT systems. For example, the Southern Minnesota Beet Sugar Cooperative wanted to expand in the late 1990's, but was not permitted to release the additional phosphorous that would be created into the lower Minnesota River. The Cooperative solved this problem by entering into an agreement whereby it paid beet farmers in the area to grow spring cover crops, thereby reducing their non-point phosphorous contributions to the Minnesota River (Environmental Protection Agency, 2008). Today, the Midwest is also home to one of the first major attempts at a multi-state WQT market.

Water Quality Trading Across Borders: The Ohio River Basin Trading Project

Part of the challenge of establishing water quality trading (WQT) markets stems from the fact that watersheds often do not adhere to jurisdictional boundaries. The Ohio River Basin, for instance, encompasses parts of eight states, ranging from Illinois to Tennessee. For this reason alone, the Electric Power Research Institute (EPRI)-led effort to create an interstate WQT program along the Ohio River is highly ambitious. If successful, the initiative would become the world's biggest WQT program, and provide a market for upwards of 200,000 farmers, 46 power plants, and several thousand wastewater treatment facilities.

Though still in an early stage, the Ohio River Basin Trading Project has already had some successes. EPRI has been able to convene many of the numerous stakeholders involved, including large business players such as American Electric Power and Duke Energy, which have contributed a combined \$400,000 in startup funds. The U.S. Department of Agriculture has also contributed \$1 million to planning for the project, in the form of a Conservation Innovation Grant. Cognizant of the fact that most WQT programs to date

have failed, EPRI has launched a robust research process, and is attempting to identify best practices.

For private land conservation organizations, the Ohio River Basin Trading Project offers an opportunity to help prove the validity of a new conservation tool. One particular area where local organizations may be able to help will be in resolving problems of scale and inclusivity, ensuring that small-scale agriculturalists or landowners have a voice in the development and operation of the market. Particularly because the market development process has been industry led, private land conservation organizations also have a role to play in ensuring that the program actually achieves environmental goals.

For more information see: <http://my.epri.com/>.

In addition to trading systems for water quality, the Midwest is a hub for efforts to develop new, multiple environmental credit trading schemes. Multiple credit schemes allow farmers or other land users to generate different kinds of environmental credits from a single parcel of land.

The most advanced multiple credit scheme in the Midwest is currently the Conservation Marketplace of Minnesota, which seeks to improve the health of three Minnesota watersheds. Eventually, participating landowners should have the option to engage in practices that not only generate water quality credits, but also credits related to improving pollinator habitat, carbon sequestration, and a host of other ecosystem services. The program draws directly on the Pacific Northwest's Willamette Partnership's approach to allocating credits across a parcel, and has an explicit goal of keeping farms working by improving practices rather than locking land up for conservation.

Despite early leadership, the Midwest is less advanced in the area of carbon markets. Until 2010, Chicago was home to the Chicago Climate Exchange, the first and only legally binding voluntary carbon market in North America. More recently, several Midwest states have pursued the development of a regional carbon market, but the so-called Midwest Greenhouse Gas Reduction Accord has yet to produce tangible results. This means that any carbon deals carried out in the Midwest are likely to occur as one-off offset agreements. Given that much of the Midwest encompasses landscapes where carbon accounting is less well developed than for forests, it seems unlikely that carbon markets will be a substantial boon for rural economies in the near future.

Similarly, conservation banking has yet to come into play in the Midwest. If the example of California, which leads the nation on conservation banking, is any guide, expanding conservation markets in the Midwest would require passage of state-level endangered species laws that fill a role similar to that which the Clean Water Act plays for wetland mitigation and WQT.

Tourism

Compared to regions like the Pacific Northwest or Northeast, rural Midwest economies generally do not depend very heavily on tourism. That being said, some parts of the Midwest—such as counties in the Upper Great Lakes Region—are among the most important, and fastest growing, natural amenities areas in the U.S. Even in the

agricultural core of the Midwest, communities and non-profit organizations are finding ways to link conservation and healthy rural economies via tourism. In general, regional leaders spoken to for this background paper expressed the sentiment that tourism should become a more prominent part of conversations on linkages between conservation and rural economies.

One important point of intersection between conservation and rural economic goals in the Midwest centers on hunting and fishing. National sportsmen organizations such as Ducks Unlimited, Pheasants Forever, and Trout Unlimited have designated parts of the Midwest as major conservation priorities. For other organizations, such as The Conservation Fund and The Nature Conservancy, hunting and fishing opportunities are a byproduct of conservation, rather than a primary objective. Regardless, hunting and fishing represent an obvious area where private land conservation and rural development goals can go hand in hand in the Midwest.

On a broader level, land conservation and tourism dovetail in the Midwest in the sense that conservation organizations can help to restore and identify high-natural amenity areas in the region. Indeed, private land conservation organizations working in the core of the Midwest regularly identify their mission as being focused on changing the perception that the area lacks natural beauty. Such organizations engage in educating citizens about the wild past of the region, while also protecting or restoring prairies, streams, and other features that allow people to become reacquainted with native flora and fauna.

One particularly unique feature of land conservation in the Midwest is its emphasis on trails. Though expensive to develop, trails allow land conservation organizations to reconnect people with nature—at once generating tourism dollars and refugia for wild species—in even the most heavily agricultural areas. An organization that has done substantial work in this area is the Iowa Natural Heritage Foundation.

Looking to the future, conservation organizations will need to better understand how their missions relate to tourism, and how that relationship in turn affects rural development or conservation goals. Understanding how conservation drives tourism can help conservation organizations to demonstrate the value of their work for rural economies. On the other hand, it will be important for conservation organizations to be aware of, and work to proactively reduce, the potential negative effects of tourism, particularly in fast growing areas like the Upper Great Lakes.

Discussion Questions

- What other economic sectors—outside of the ones addressed in this paper—present opportunities for private land conservation organizations to support rural economies in the Midwest?
- In an environment where agriculture dominates and public policy often tilts against conservation, what are the most promising new tools for linking conservation and rural economic development? Is this even a valid question to be asking in the Midwest?

- How can conservation organizations help rural communities build the capacity necessary to reap economic benefits from restoration activities on public lands?
- What role can conservation organizations play in scaling up environmental markets so that they serve as a more useful tool for conserving rural landscapes and sustaining rural communities?

Organizations Doing Interesting Work

Center for Rural Affairs strives to establish strong rural communities, social and economic justice, environmental stewardship, and genuine opportunity for all while engaging people in decisions that affect the quality of their lives and the future of their communities. See www.cfra.org.

Chicago Wilderness is a regional alliance of more than 250 organizations that work together to restore local nature and improve the quality of life of all who live in the greater Chicago region. See www.chicagowilderness.org.

Conservation Marketplace of Minnesota is a collaboration of conservation professionals providing technical and administrative services for those engaged in developing emerging environmental markets. See www.cmp.sunstonecreative.com.

Electric Power Research Institute is an independent, non-profit company performing research, development, and demonstration in the electricity sector for the benefit of the public. The Institute has led an effort to create a major new water quality market in the Ohio River Basin. See www.epri.com.

Gaylord and Dorothy Donnelley Foundation invests in organizations and partnerships engaged in land conservation and artistic vitality in the Chicago region and the South Carolina Lowcountry. See www.gddf.org.

International Institute for Sustainable Development champions sustainable development around the world through innovation, partnerships, research, and communications. One of Institute's areas of focus is the Lake Winnipeg region in Manitoba. See www.iisd.org.

Iowa Natural Heritage Foundation protects and restores Iowa's land, water and wildlife. See www.inhf.org.

Land Stewardship Project fosters an ethic of stewardship for farmland, to promote sustainable agriculture, and to develop sustainable communities. See www.landstewardshipproject.org.

Leopold Center for Sustainable Agriculture is a research and education center on the campus of Iowa State University created to identify and reduce the negative environmental and social impacts of farming and to develop new ways to farm profitably while conserving natural resources. See www.leopold.iastate.edu.

Lyme Timber Company is a private timberland investment management organization (TIMO) that focuses on the acquisition and sustainable management of lands with unique conservation values. See www.lymetimber.com

Michigan Land Use Institute works with citizens, officials, and other organizations to promote people-friendly, regional planning; healthy food from local farms; and Michigan's leadership in the new green-energy and clean-water economy. See www.mlui.org.

National Young Farmers' Coalition works for young farmers by strengthening their social networks, helping them hone their skills through facilitation of peer-to-peer learning, and fighting for the policies that will keep them farming for a lifetime. See www.youngfarmers.org.

Openlands protects the natural and open spaces of northeastern Illinois and the surrounding region to ensure cleaner air and water, protect natural habitats and wildlife, and help balance and enrich our lives. See www.openlands.org.

Organic Valley is the largest cooperative of organic farmers in the United States, and is based in La Farge, Wisconsin. See www.organicvalley.coop.

Re-Amp Network is an active network of 144 nonprofits and foundations across eight Midwestern states working on climate change and energy policy with the goal of reducing global warming pollution economy-wide 80% by 2050. See www.reamp.org.

Renew Wisconsin is dedicated to promoting economically and environmentally sustainable energy policies and practices in Wisconsin. See www.renewwisconsin.org.

Rural Policy Research Institute provides unbiased analysis and information on the challenges, needs, and opportunities facing rural America, with a goal of spurring public dialogue and helping policymakers understand the rural impacts of public policies and programs. See www.rupri.org.

The Conservation Fund works with partners across the country to demonstrate balanced conservation solutions that emphasize the integration of economic and environmental goals. See www.conservationfund.org.

Wetlands Initiative is dedicated to restoring the wetland resources of the Midwest to improve water quality, increase wildlife habitat and biodiversity, and reduce flood damages. See www.wetlands-initiative.org.

Useful Readings/Works Cited

- Bilek, A. 2010. *Spotlight on Biogas: Policies for Utilization and Development in the Midwest*. Minneapolis, MN: Great Plains Institute. Retrieved at <http://www.gpisd.net/vertical/Sites/%7B1510F0B9-E3E3-419B-AE3B-582B8097D492%7D/uploads/%7B6DEFD5AC-B930-4ED1-AB05-0AD7EB86EA6B%7D.PDF>.
- Bolinger, M. 2004. *A Survey of State Support for Community Wind Power Development*. Berkeley, CA: Lawrence Berkeley National Laboratory. Retrieved at <http://eetd.lbl.gov/ea/EMS/cases/>.
- Economic Research Service. 2004. *Measuring Rurality: 2004 County Typology Codes*. Retrieved at <http://www.ers.usda.gov/Briefing/Rurality/Typology/>.
- Economic Research Service. 2012. *State Fact Sheets*. Retrieved at <http://www.ers.usda.gov/StateFacts/>.
- Environmental Protection Agency. 2008. *Water Quality Trading Evaluation*. Retrieved at www.epa.gov/evaluate/pdf/wqt.pdf.
- Johnson, K.M. 2012. *Rural Demographic Change in the New Century: Slower Growth, Increased Diversity*. Durham, NH: Carsey Institute. Retrieved at <http://www.carseyinstitute.unh.edu/publications/IB-Johnson-Rural-Demographic-Trends.pdf>.
- Madsen, B. 2011. *State of Biodiversity Markets*. Washington, DC: Forest Trends. Retrieved at http://www.forest-trends.org/documents/files/doc_2848.pdf.
- Michigan Department of Natural Resources. *Northern Great Lakes Forest Project*. Retrieved at http://www.michigan.gov/dnr/0,4570,7-153-30301_30505_34240-247789--,00.html (accessed on April 24, 2012).
- Minnesota Rural Partners, Inc. 2011. *Local and Regional Foods in Minnesota*. Retrieved at www.regionalpartnerships.umn.edu (accessed on April 24, 2012).
- Organic Valley. 2008. *On-Farm Sustainability*. Retrieved at <http://www.organicvalley.coop/about-us/sustainability/on-farm-sustainability/>. (accessed on April 24, 2012).
- Pear, R. 2012. After Three Decades, Federal Tax Credit for Ethanol Expires. *The New York Times*. January 1. Retrieved at http://www.nytimes.com/2012/01/02/business/energy-environment/after-three-decades-federal-tax-credit-for-ethanol-expires.html?_r=1.
- Re-Amp. *About*. Retrieved at <http://www.reamp.org/about> (accessed on April 24, 2012).

- Searchinger, T. 2008. *Use of U.S. Croplands for Biofuels Increases Greenhouse Gas Emissions Through Land-Use Change*. *Science*, 319(5867): 1238-1240. Retrieved at <http://www.sciencemag.org/content/319/5867/1238.abstract>.
- Swenson, D. 2010. *Selected Measures of the Economic Values of Increased Fruit and Vegetable Production and Consumption in the Upper Midwest*. Ames, IA: Iowa State University. Retrieved at http://www.leopold.iastate.edu/research/marketing_files/midwest.html.
- Testa, B. 2011. Non-Metropolitan Counties Bouncing Back. *Federal Reserve Bank of Chicago*. November 10. Retrieved at <http://midwest.chicagofedblogs.org/archives/rural/>.
- The Blandin Foundation. 2009. *Vital Forests/Vital Communities Initiative Documents*. Retrieved at <http://www.blandinfoundation.org/resources/reports>.
- The Conservation Fund. *Upper Mississippi Forest Project*. Retrieved at http://www.conservationfund.org/upper_mississippi_forest (accessed on April 24, 2012).
- The Pew Charitable Trusts. *Clean Energy Economy: State Fact Sheets*. Retrieved http://www.pewtrusts.org/news_room_detail.aspx?id=53262 (accessed on April 24, 2012).
- U.S. Bureau of Economic Analysis. 2011. *Economic Recovery Widespread Across States in 2010*. Retrieved at http://www.bea.gov/newsreleases/regional/gdp_state/gsp_newsrelease.htm.
- U.S. Census Bureau. 2004. *Interim U.S. Population Projections by Age and Sex: 2004-2030*. Retrieved at <http://www.census.gov/population/www/projections/projectionsagesex.html>.
- U.S. Census Bureau. 2010a. *Current Population Reports: Population Dynamics of the Great Plains*. Retrieved at <http://www.census.gov/prod/2009pubs/p25-1137.pdf>.
- U.S. Census Bureau. 2010b. *State and County QuickFacts*. Retrieved at <http://quickfacts.census.gov/qfd/index.html>.
- Wilson, J., and W. McFerron. 2012. Corn to Lead Biggest Crop Plant Since 1984. *Ames Tribune*. February 10. Retrieved at <http://www.amestrib.com/sections/business/iowa/corn-lead-biggest-crop-plant-1984.html>.
- Wörten, C. 2010. *Clean Energy Jobs for the U.S. Midwest: Lessons Learned from the German Success Story of Low Carbon Growth*. Retrieved at www.boell.org/web/139-658.html.

Section 5: The Interior West

5.1: Background

Jonathan Loevner

Yale School of Forestry & Environmental Studies

The Interior West is generally considered to fall between the Sierra and Cascade mountain ranges to the west and the Great Plains to the east. It consists of the mountain states of Idaho, Montana, Wyoming, Nevada, Utah, Colorado, Arizona, and New Mexico. The geography of this region is among the most varied in the country. It includes vast areas of high mountains, deserts, and plains, all characterized by an arid climate. Burgeoning metropolises including Phoenix, Denver, and Las Vegas punctuate empty expanses of unpopulated interior steppe.

People

According to the 2010 U.S. National Census, the population of the Interior West totals 24,135,983 (U.S. Census Bureau, 2011b). With a population density of just 27.9 people per square mile—compared to the national average of 88.2—the Interior West is far and away both the least populous and least densely populated region in the country. It is the only region in which every state falls below the national average with respect to density (U.S. Census Bureau, 2010).

However, parts of the Interior West are growing at exceptionally high rates. Between 2000 and 2010, every state in the region, with the exception of Montana, grew at a rate higher than the national average of 9.7%. Nevada was the fastest growing state in the country during this period, ballooning at an astonishing rate of 35%, although growth cooled significantly between 2010 and 2011, as a result of the economic downturn. The next fastest growing states in the nation between 2000 and 2010 were Arizona, Utah and Idaho, each with a growth rate around 20%. Likewise, four of the ten fastest growing metropolitan areas during this period were located in the Interior West: St. George, UT; Las Vegas, NV; Provo, UT; and Greeley, CO (U.S. Census Bureau, 2011b).

As in other fast growing regions, growth in the Interior West is highly concentrated around urban areas. Between 2000 and 2010, growth in urban areas accounted for 94% of the total growth in Nevada's population and 93% of New Mexico's (Economic Research Service, 2012). During this period, every state in the region except Utah contained at least one rural county that shrunk in population. In the case of Montana, the majority of rural counties in the state lost population during this period (U.S. Census Bureau, 2011b).

The ethnic diversity of the Interior West varies greatly by state. With minorities making up 59.5% of its population, New Mexico ranks second nationally, lagging one half a percentage point behind California. Minority representation in Nevada and Arizona are also above the national average of 36.3%. Moving north, Wyoming, Montana, Utah, and Idaho all fall well below the national average, with minority population percentages in the mid-teens. The minority population of these states, however, did increase dramatically between 2000 and 2010. Utah and Idaho both exhibited minority population

increases above 60%, putting them in 3rd and 4th place nationally. Minority populations in these states are almost exclusively Hispanic with some Native American representation (U.S. Census Bureau, 2011a). A substantial portion of the country's rural Hispanic counties are found in the Southwestern states. The rural communities in the Southwestern states in which both Native Americans and Hispanics reside, make up some of the very few multi-ethnic rural communities in the country (Johnson, 2012).

Educational attainment also varies within the region. With respect to high school completion, Utah, Wyoming, Colorado, Montana and Idaho all exceed the national average. The southern states, New Mexico, Arizona, and Nevada fall below the national average. When foreign-born residents are excluded, however, rates of high school completion in these states do rise above the national average. With the exception of Utah and Colorado, the percentage of residents in the region that have completed a bachelors degree is lower than the national average (U.S. Census Bureau, 2012). In nearly all cases, educational attainment was lower in rural areas than in urban areas (Economic Research Service, 2012).

Economy

The economy of the Interior West was historically based in mining, oil and gas extraction, and ranching. While these industries maintain an important role and will be examined later in this paper, the Interior West has also experienced economic diversification into the service, tourism, technology, and manufacturing sectors.

Manufacturing accounts for 8.5% of regional GDP. Aside from government spending and real estate, it is the largest single contributor to the region's economy. Manufacturing has a particularly strong presence in Idaho, Arizona, and Utah. In Idaho, it currently accounts for 10.8% of GDP, due in part to a growing technology industry. Micron Technology, Hewlett-Packard, ON Semiconductor, and Sun Microsystems all have facilities in either Boise or Pocatello – two of Idaho's most urbanized communities. Manufacturing also contributes 12.6% of GDP in Utah, where there are a variety of medical, food, and consumer good manufacturing concerns (U.S. Bureau of Economic Analysis, 2011).

Financial Services has also become an important regional industry, accounting for 6.9% of GDP region wide. Banking contributes 7.9% of Arizona's GDP, where Wells Fargo, Bank of America, JP Morgan Chase, American Express, USAA, and Charles Schwab are among the state's largest employers, employing over 80,000 Arizonans (Arizona Republic, 2012; U.S. Bureau of Economic Analysis, 2011). The vast majority of these jobs are located in urban areas.

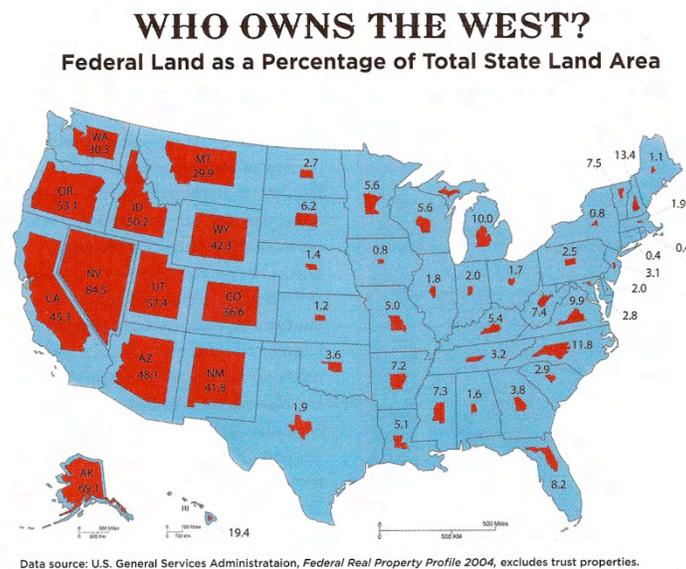
States within the Interior West currently exhibit some of both the highest and lowest levels of unemployment in the country. At 12.7%, Nevada has the highest unemployment rate in the nation. Arizona is also above the national average. Wyoming, Utah, and Montana have among the lowest rates in the country; and Colorado and New Mexico fall below the national average. Median household income is higher than the national average in Colorado, Utah, and Nevada. The remainder of the states in the region fall below the national average (Bureau of Labor Statistics, 2012a).

Median income is lower and poverty rates are higher in rural areas of the Interior West, as compared to urban areas. The difference in unemployment rates between rural and urban areas varied by state. For example, rural areas of Wyoming had lower unemployment rates than urban areas, while in Montana, the reverse is true (Economic Research Service, 2012).

Place

The importance of federal land to western conservation cannot be overstated. Literally half of the Interior West’s land area is controlled by the federal government – a total of 270 million acres (Property Rights Research, n.d.). In Nevada alone, 84.5% of the state’s land area is federally controlled (Kennedy, 2008). Western federal lands are managed primarily by the U.S. Forest Service, the Bureau of Land Management, the National Park Service, the Fish and Wildlife Service, the Department of Defense, and other federal entities (Property Rights Research, n.d.).

Federally Owned Land in the Interior West



Federal land managers in the Interior West face many challenges. Oil and gas development is destroying critical wildlife habitat and contributing to climate change but has also provided the region with tens of millions of mitigation dollars for habitat enhancement and conservation projects, such as the purchase of easements that permanently protect vulnerable landscapes. Many western forests are suffering as a result of climate change and decades of fire suppression, which has increased their vulnerability to catastrophic fires and outbreaks of forest pests. This trend significantly threatens the health of regional watersheds, many of which support the region’s urban centers, but presents opportunities for collaborative restoration efforts that can create rural jobs and improve the health of forests in the Interior West.

The Interior West also contains vast tracts of privately held land, typically in the form of working forests and ranches. In Montana and Wyoming alone, there are over 90 million acres of privately owned land under agricultural production, the vast majority of which serve as pasture for beef production (Economic Research Service, 2012). Timber companies and individuals own 6,036,132 acres of timberland in Montana (Montana Wood Products Association, n.d.). Threats to private lands in the Interior West include subdivision and development, often for residential real estate. This vulnerability has increased as traditional rural economies and livelihoods, such as ranching and logging, have declined. It also presents opportunities for the conservation of private lands through mechanisms that protect landscapes by prohibiting development while protecting rural culture and traditional ways of life by allowing timber harvests and ranching to continue.

Fortunately, the Land Trust Alliance's 2010 Census reports significant progress in private land conservation. For instance, Colorado and Montana rank 3rd and 4th nationally with regard to total acres conserved. Between 2005 and 2010, Wyoming and Arizona made enormous strides in private land conservation, increasing their total conserved acres by 731% and 439%, respectively (Land Trust Alliance, 2011).

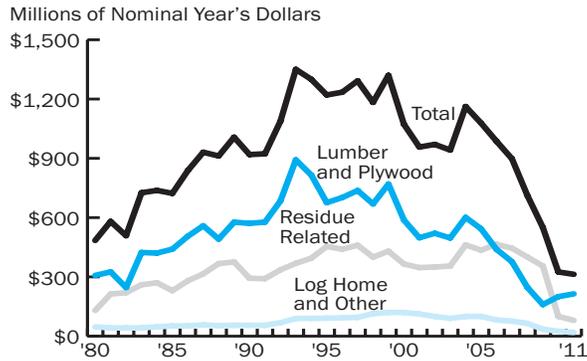
How Can Conservation Organizations Help Support Rural Economies In The Interior West?

Forestry

Timber grows relatively slow in Rocky Mountain forests as compared to the Southeast and the Pacific Northwest. Despite this, Idaho and Montana rank fifth and sixth nationally with respect to the production of saw timber (Rueth et al., 2002). Montana has more than 14 million acres of commercial forest, and the milling of timber and the manufacturing of wood products is the state's leading industrial activity (Montana.gov, n.d.). In 2011, the Montana forest products industry employed 6,530 people and produced a total wood and paper product sale value of \$314. However, the volume and value of Montana timber harvests has declined sharply since peaking in the mid-1980's and mid-1990's, respectively (see figure below) (Morgan et al., 2012).

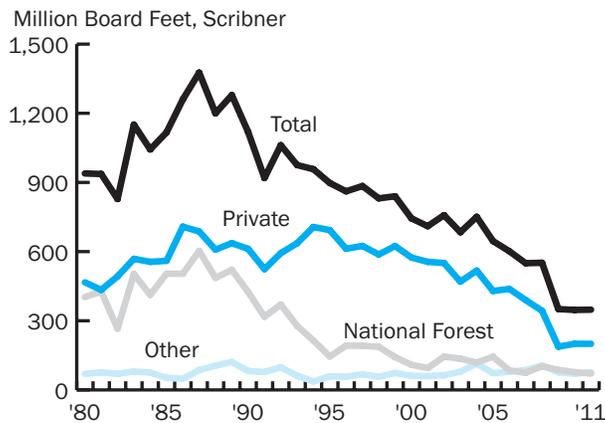
Montana's Forestry Industry, 1980-2011

Sales Value from Montana Primary Wood Products Industry, 1980-2011



Source: Bureau of Business and Economic Research, The University of Montana; Western Wood Products Association.

Montana Timber Harvest by Ownership Class, 1980-2011



Source: Bureau of Business and Economic Research, The University of Montana; U.S. Forest Service Region One.

Source: The University of Montana's Bureau of Business and Economic Research

The industry deflated in the 1990's due to a combination of low prices, wildfires, decline in timber harvests on federal forests, and increased electricity rates, which resulted in the closure of 15 Montana sawmills during that decade. The economic crisis and collapse of the housing market in 2008 has further dampened the industry (Montana Department of Commerce, 2010).

A depressed timber economy has not only lead to rural job losses, but has also created new challenges for managers of timberlands, who are finding it more difficult to

implement the treatments necessary to restore forests to health and protect rural communities from wildfire. In an effort to address the combined impacts of declining forest health and a declining forestry industry, the U.S. Congress passed legislation to create the Collaborative Forest Landscape Restoration Program at the U.S. Forest Service, which funds restoration projects that are initiated and planned by coalitions of non-traditional allies, such as environmental groups and logging companies. In its first year, the program funded projects that were projected to create and maintain a total of 1,550 jobs, and treat more than 200,000 acres of forestland (The Nature Conservancy, 2011b). Among the largest and most prominent of the projects that have been funded through this program is the Southwestern Crown of the Continent project in Montana.

Southwest Crown Collaborative

The Southwestern Crown of the Continent is a 1.5 million acre area of forests, mountains, ranches, and communities in the Blackfoot, Clearwater, and Swan River Valleys of northwestern Montana. Like many areas of the Interior West, aggressive fire suppression and poor management have degraded the health of forests and watersheds. These forests are overly dense, homogenous, and vulnerable to catastrophic fire and pests.

The health of these forests can be improved through selective harvests and treatments that thin dense stands of trees and reintroduce a natural cycle of fire. Meanwhile, the local timber industry has endured sustained hardship, eliminating jobs from ailing rural economies and limiting the tools available to land managers.

With a membership that includes representatives from federal and state government, the timber industry, conservation groups, land trusts, and the University of Montana, the Southwest Crown Collaborative is working to improve the health of forests and the adjacent rural communities that rely upon them. Using funding from the Collaborative Forest Landscape Restoration Program (CFLRP), the project is expected to restore 1,000 miles of streams, improve tens of thousands of acres of wildlife habitat, and reduce fire threats to neighboring communities. By putting loggers, mill workers, and other natural resource professionals to work, the Southwest Crown project is expected to create or maintain 179 full and part-time jobs over the next 10 years – contributing \$9.1 million annually in direct labor income.

For more information see:

Southwest Crown Collaborative: <http://www.swcrown.org/>.

The Nature Conservancy:

<http://www.fs.fed.us/restoration/CFLR/documents/CFLRPAnnualReportNov2011.pdf>.

The Southwest Crown Collaborative has been successful in bringing together a diverse group of stakeholders to support forest restoration and rural job creation. Unfortunately, vast acreages of forestland in the Interior West are in dire need of restoration, and the potential for CFLRP projects on these landscapes is limited due to congressional funding. An opportunity exists to scale-up forest restoration in the Interior West if new markets can be created and sustained for the wood products harvested as part of these projects.

Agriculture

Although it remains an important source of rural livelihoods, the agriculture industry has had a decreasing impact on the Interior West's economy. In 2009, crop and animal production accounted for only 1% of the region's GDP (U.S. Bureau of Economic Analysis, 2011). Ranching is the dominant agricultural activity, except in Idaho, New Mexico, and Arizona, where it is second to dairy production (Economic Research Service, 2012). These industries remain most relevant in Idaho, where agriculture accounts for 3.6% of GDP, due to active dairy processing, ranching, and potato production industries. Even in Wyoming, which has traditionally been thought of as a ranching state, agriculture accounts for less than 1% of GDP (U.S. Bureau of Economic Analysis, 2011). Between 2002 and 2007, the amount of land under agricultural production in the state dropped by 6.8% and the average farm and ranch size decreased by 25.3% between 2002 and 2007 (Economic Research Service, 2012).

The subdivision and development of ranchlands in the Interior West has caused the degradation of both habitat and the economic and cultural health of ranching communities. Several conservation groups operating in the region, including the Wyoming Stock Growers Association, have initiated programs targeted specifically at addressing the loss of agricultural lands.

Wyoming Stock Growers Land Trust

Wyoming has a long history of ranching. Over 92% of its privately held land is in agricultural production, primarily cattle ranching. The Wyoming Stock Growers Association was established in 1872 to represent the interests of Wyoming ranches, livestock businesses, and families. Since that time, ranchland in Wyoming has been under increasing threat to subdivision and development. The U.S. Forest Service has identified the fragmentation of ranchland as one of the greatest threats to the integrity to open spaces in the Interior West. In the next 10-15 years, the American Farmland Trust predicts that 50-75% of ranches in the West will change hands. The explosive population that many western states experienced in the last decade has proliferated low-density residential development on agricultural land. Wyoming's growth rate is expected to be among the highest in the region in the coming years. This trend threatens the economic and cultural viability of rural ranching communities.

The Wyoming Stock Growers Association has responded by establishing a conservation wing, Wyoming Stock Growers Land Trust (WSGLT). Founded in 2000, the WGLT was the first Wyoming based organization focused specifically on the conservation of agricultural land. The organization secures conservation easements on working ranchlands with the goal of preserving "Wyoming's wide-open space, natural habitats and the rural communities that they support." To date, the land trust holds 62 conservation easements, protecting a total of 170,000 acres of working ranchland across the state.

For more information see: <http://www.wsgalt.org/>.

While the WSGLT has been successful in protecting ranches and farms through the use of conservation easements, other organization, like the Quivira Coalition, have instead focused on education and restoration projects as tools to improve the economic and ecological health of agricultural lands.

Conservation and Ranching Leadership and Youth Program

Based in northern New Mexico, the Quivira Coalition works to promote ecologically and economically healthy western ranches and landscapes. The organization was founded on the principle “that the natural processes that sustain wildlife habitat, biological diversity and functioning watersheds are the same processes that make land productive for livestock.” Quivira deliberately avoids legislative or judicial approaches to conservation, and instead works through education, collaboration, and restoration projects.

To that end, the Quivira Coalition partnered with ranchers and agrarians across the Southwest to establish the Conservation and Ranching Leadership and Youth (CARLY) program. Under the program, individuals with an interest in sustainable ranching and farming are placed in a yearlong apprenticeship with an established agricultural operation in the region. The CARLY program is the only one of its kind in the West. Admission to the program is competitive – Quivira has implemented a formal application process. Participants have the opportunity to receive comprehensive leadership training in sustainable livestock production, range management, public engagement, dairy farming, cheese-making, and wool fiber production on working operations in New Mexico, Colorado, and Arizona.

Since the time of its establishment in 2008, Quivira has trained CARLY Mentors on four different agricultural operations, and graduated three CARLY Apprentices from the program. It is the organization’s hope that CARLY alumni will use the skills they have learned through the program to enhance the ecological and economic health of western landscapes and rural communities.

For more information see: <http://www.quiviracoalition.org/>.

Given that more western ranches are converted or developed for other uses each year, and that many of those that remain in operation suffer from the ecological impacts of poor management, significant opportunity exists to expand programs like the Quivira Cooperative’s that strive to improve ranch management for the economic benefit of ranches and ranching communities as well as the ecological benefit of the land.

Tourism

Tourism makes up a significant portion of the economies in some states in the Interior West. In Nevada, an incredible 28.5% of all non-farm labor is employed in the leisure and hospitality industry, due in no small part to the gaming industry in Las Vegas and Reno (Bureau of Labor Statistics, 2012b). The entertainment and hospitality industries account for 15.6% of GDP (U.S. Bureau of Economic Analysis, 2011). In Wyoming, home to Yellowstone and Grand Teton National Parks, 11.1% of non-farm labor is

employed by the leisure and hospitality industry (Bureau of Labor Statistics, 2012b). In 2010 alone, over 3.5 million visitors to Yellowstone spent an estimated \$334 million in the park and in adjacent communities – supporting nearly 4,900 jobs in adjacent areas (National Park Service, 2012).

Beyond the region's high profile National Parks and National Forests, many private tracts of timber and rangeland in the Interior West also serve as a recreational draw to tourists. These lands, such as those owned by the Stimson Lumber Company, face a much greater risk of development.

Stimson Forestlands Conservation Project

Hundreds of thousands of acres of timberland in Montana are owned by private timber companies, such as the Stimson Lumber Company of Portland, OR, from which they harvest timber to feed their mills and sell on the open market. Hit hard by the economic downturn and decades of unstable timber markets, Stimson had already been forced to close its mill in Libby, MT, and was feeling pressured to sell off the most scenic portions of its holdings in order to stay afloat. The subdivision of timberlands for real estate development has occurred throughout the Interior West.

At risk is a 28,000-acre parcel on the Kootenai River near the town of Troy, in northwestern Montana that offers exceptional recreational opportunities and habitat for threatened species such as grizzly bears, bull trout, and redbound trout. Like many timber company lands, Stimson had traditionally allowed public access on the parcel—attracting hunters, fisherman, and hikers—bolstering the local tourist economy.

In order to conserve the property, The Trust for Public Land approached Stimson about placing the property in a working forest conservation easement. Under the easement—which would be held by the Montana Department of Fish, Wildlife, and Parks—Stimson would maintain ownership of the land. The land would be permanently protected from development and recreational access would be allowed, but Stimson would be permitted to continue harvesting timber from the land – sustaining valuable rural jobs on logging crews, mills, and in the tourism industry.

The easement is projected to cost a total of \$16 million. Stimson will donate 25% of the cost. The U.S. Forest Service will provide \$6.5 million from the Forest Legacy program and the U.S. Fish and Wildlife Service will provide \$4 million from their Habitat Conservation Plan Land Acquisition Grant program.

The deal is expected to be closed in the fall of 2012 and follows the precedent of three earlier landmark easement deals involving Plum Creek Timber Company lands in Montana – the Fisher, Thompson and Swan easements. The Trust for Public Land purchased conservation easements on these properties that prevent development but allow commercial timber harvests to continue.

For more information see:

<http://www.tpl.org/what-we-do/where-we-work/montana/stimson-forestlands.html>.

The owners of private timberlands in the Interior West continue to face economic pressure to subdivide and sell scenically valuable parcels of land for residential development. However, the growing economic impact of recreation and tourism on these lands provides new avenues for private land conservation organizations. As the case of the Stimson parcel in Montana illustrates, traditional economic activities such as logging can coexist with recreational uses, which presents further opportunities for non-traditional alliances between industry and conservationists that will ultimately benefit rural economies and communities.

Energy

Mining and fossil fuel extraction remains a significant economic force in many western states. The region's mining industry produces copper, gold, silver, phosphate, molybdenum, coal, and natural gas, among other products. Although it accounts for only 6% of the region's GDP, it contributes 31% to Wyoming's GDP (U.S. Bureau of Economic Analysis, 2011). The Powder River Basin, in northeast Wyoming, is the largest single source of coal in the country. The state's mining industry directly supports more than 27,000 jobs (Bureau of Labor Statistics, 2012b). Mining is also a major industry in Nevada – the largest gold producing state in the country and the fourth largest gold producer in the world (Nevada Mining Association, n.d.).

Mining has had serious ecological consequences for landscapes in the Interior West, including habitat destruction and the contamination of water sources. As a lucrative business, it has also provided new sources of funding for conservation, such as in the Jonah and Pinedale Anticline Natural Gas Fields in Wyoming.

Jonah and Pinedale Anticline Fields

South of the town of Pinedale, in west-central Wyoming, lies one of the country's richest concentrations of natural gas – the Jonah and Pinedale Anticline Natural Gas Fields. The Jonah Field alone is estimated to contain 14 trillion cubic feet of natural gas, which is enough to heat 8.4 million homes for 20 years. These fields cover tens of thousands of acres and are managed primarily by the Bureau of Land Management. Recent development of these areas for natural gas extraction has contributed to the loss and degradation of critically important wildlife habitat for mule deer, pronghorn, and greater sage grouse.

To provide compensation for the loss of habitat as a result of the development of the Jonah Field, oil and gas operators EnCana Oil, Gas Inc., and BP America Production Company committed \$24.5 million to fund mitigation and monitoring projects in surrounding areas. On the Pinedale Anticline, Ultra, Shell, and Questar have committed to a contribution of \$7,500 to a monitoring and mitigation fund for each well drilled. Contributions to the fund are projected to total \$36 million over the lifetime of the project.

Mitigation funds from the Jonah Field have been used to conserve more than 35,000 acres of private land through easements and improve habitat on another 78,500 acres of both private and public lands through grazing plans and other enhancement efforts. The

Nature Conservancy is currently engaged in a mapping program in the areas surrounding the Jonah and Anticline Fields with the objective of maximizing the conservation impact of mitigation funding by identifying nearby private properties that contain intact wildlife habitat but are not suitable for energy development. The Nature Conservancy's research helped to identify the Cottonwood Ranch, which lies roughly 20 miles northwest of the Jonah Field. The Conservation Fund used mitigation funding to acquire a 1,042-acre easement on the ranch, which will protect it from future residential development. Mitigation funding was also used by The Conservation Fund to purchase an easement on more than 2,000 acres of the MJ Ranch – the largest purchased conservation easement in the area.

For more information see:

Bureau of Land Management: <http://www.wy.blm.gov/jio-papo/>.

The Conservation Fund:

http://www.conservationfund.org/mitigation_profile_offsetting_natural_gas_drilling_wyoming.

The Nature Conservancy:

http://www.nature.org/ourinitiatives/regions/northamerica/unitedstates/wyoming/howwe_work/energy-by-design-in-wyoming.xml.

As more energy projects come online that will both degrade habitat and provide new conservation funding opportunities, the private land conservation community will have to grapple with the complicated trade-offs that these arrangements involve.

Environmental Markets

Most water in the American West originates in mountainous and forested watersheds managed by federal and state agencies. These landscapes are susceptible to impacts from climate changes, including increased risk of wildfire and forest pests, shrinking snowpacks, altered timing of runoff, and changes in vegetation cover (Carpe Diem West, n.d.).

The Sonoran Institute has estimated the annual value of water produced by watersheds managed by the U.S. Forest Service to be in the billions of dollars (Berry, 2010). Rampant growth in water-scarce metropolitan areas has drawn attention to the valuable services provided by these watersheds. Yet, the fiscal condition of federal and state agencies calls into question who will pay to restore and maintain the health of western watersheds. Although markets for ecosystem services remain relatively undeveloped in the Interior West, downstream water users who receive benefits from upstream watersheds have been identified as a potential source of funding for restoration.

Denver Water

The 2,600 square mile Upper South Platte River watershed supplies nearly 75% of Colorado's drinking water. The Buffalo Creek Fire of 1996 and the Hayman Fire of 2002 scorched 150,000 acres of forest throughout the watershed, resulting in widespread stormwater runoff and soil erosion problems. Denver Water, which supplies drinking water to 1.2 million people, was compelled to spend \$26 million to dredge the Strontia

Springs Reservoir, which had filled with burned wood and over 1 million cubic yards of sediment as a result of the fires.

To protect the Upper South Platte River and other important watersheds from wildfire and forest health problems, Denver Water signed a \$33 million cost-sharing agreement with the U.S. Forest Service to restore Denver's forested watersheds through a series of thinnings, prescribed burning, and other wildland fuels reduction projects to be spread out over five years. Thinning projects will be implemented by private contractors, overseen and administered by the U.S. Forest Service, and will help to create and sustain forest restoration jobs throughout the state. The cost of these treatments will be split evenly between the Forest Service and Denver Water. Denver Water will recoup the cost of the treatment by charging water users an average of \$27 on their normal water bill spread out over five years, for a total of \$16.5 million.

For more information see:

Coalition for the Upper South Platte: <http://www.uppersouthplatte.org/watershed.html>.

Denver Water:

<http://www.denverwater.org/supplyplanning/watersupply/partnershipUSFS/>.

The case of Denver Water's forest restoration efforts provides an excellent model for how to fund restoration work in the forested watersheds of the Interior West. Similar arrangements have been used with success in other areas of the Interior West, such as Santa Fe, where city water users are helping to pay for forest thinning projects around sensitive areas of the watershed (The Nature Conservancy, 2012). Expanding funding schemes that connect urban water users with the rural areas that provide clean drinking water offers an opportunity for private land conservation organizations to not only support rural economies but to also address the impacts of climate change on western watersheds.

Discussion Questions

- The federal government manages the vast majority of undeveloped land in the Interior West. While this may benefit conservation, it also presents challenges to rural communities by limiting the land available for development projects and reducing revenue from taxes. How can private land conservation organizations help rural communities to overcome these challenges?
- Oil and natural gas development has contributed to the destruction, degradation, and fragmentation of wildlife habitat. It has also created high-paying rural jobs and new sources of funding for conservation. What conflicts does this present? Should conservation organizations involve themselves in projects funded by oil and gas projects?
- Collaborative efforts between conservationists, industry, and government have been successful in improving the health of forests and adjacent rural communities. How can this model be adapted to address other conservation challenges in the Interior West?

- As climate change progresses and the population of the Interior West continues to grow, the availability of water will become increasingly important. How can conservation organizations strengthen the connection between rural watersheds and urban water users in order to ensure a supply of clean drinking water?
- The challenges facing ranches and private timberlands demonstrate that the health and security of landscapes and rural economies are inter-related. How can the awareness of this connection among both landowners and conservationists be improved?

Organizations Doing Interesting Work

Agricultural Implementation, Research, and Education (AIRE) was founded by ethnobotanist and farmer Miguel Santistevan to create a new generation of farmers and to increase the amount of land under sustainable agricultural production through the education and mentorship of youth and aspiring farmers.

See <http://www.growfarmers.org/>.

Carpe Diem West engages a broad-based network of experts, advocates, decision makers and scientists to address the profound impacts the growing climate crisis is having on water in the American West.

See <http://www.carpediemwest.org/>.

Denver Water is working in partnership with the Rocky Mountain Region of the U.S. Forest Service to accelerate mutual efforts to improve forest and watershed conditions in the Colorado Front Range.

See <http://www.denverwater.org/supplyplanning/watersupply/partnershipUSFS/>.

Southwest Crown Collaborative is a partnership between economic development firms, conservation groups, federal and state land agencies, timber groups, land trusts, and the University of Montana, that aims to promote community well-being and forest restoration in the Southwest Crown of the Continent.

See <http://www.swcrown.org/>.

The Forest Guild is a professional organization of forest managers based in Santa Fe, NM, that is focused on restoring and sustaining the integrity of forests while meeting the needs of the communities that rely on them.

See <http://www.forestguild.org/>.

The Quivira Coalition fosters ecological, economic, and social health on western landscapes through education, collaboration, and progressive public and private land stewardship. See <http://www.quiviracoalition.org/>.

The Sonoran Institute seeks to promote healthy landscapes, communities, and economies in the West through programs that emphasize collaboration, civil dialogue, sound information, local knowledge, practical solutions, and big-picture thinking.

See <http://www.sonoraninstitute.org/>.

The Trust for Public Land has been involved in the protection of hundreds of thousands of acres of working timberlands in Montana, including the Crown of the Continent and Stimson forestland projects.

See <http://www.tpl.org/what-we-do/where-we-work/montana/>.

The Wyoming Stock Growers Land Trust focuses specifically on conserving ranchlands and ranching operations in order to preserve Wyoming's wide-open spaces, natural habitats, and the rural communities that they support.

See <http://www.wsgalt.org/>.

Useful Readings/Works Cited

- Arizona Republic. 2012. *Arizona's 100 Largest Employers*. Retrieved at <http://www.azdatapages.com/datacenter/business/arizona-republic-top-100.html> (accessed on May 3, 2012).
- Berry, A. 2010. Literature Review: The Economic Value of Water and Watersheds on National Forest Lands in the United States. *Prepared for Carpe Diem Project's Healthy Headwaters Meeting, September 16, 2010*. Retrieved at http://www.exloco.org/Headwaters_SLC/docs/Berry_Sonoran_FS_Water_Lit_Review.pdf.
- Briggerman, K. 2011. Stimson Lumber Company Begins Selling Off Western Montana Timberlands. *The Missoulian*. July 3. Retrieved at <http://www.forestbusinessnetwork.com/4656/stimson-lumber-co-begins-selling-off-western-montana-timberlands/>.
- Bureau of Labor Statistics. 2012a. *Local Area Unemployment Statistics*. Retrieved at <http://www.bls.gov/lau/> (accessed on April 3, 2012).
- Bureau of Labor Statistics. 2012b. *Products by State*. Retrieved at <http://www.bls.gov/> (accessed on April 3, 2012).
- Bureau of Land Management. 2012. *Jonah Interagency Office and Pinedale Anticline Project Office*. Retrieved at <http://www.wy.blm.gov/jio-papo/> (accessed on May 10, 2012).
- Carpe Diem West. *Healthy Headwaters Program*. Retrieved at <http://www.carpediemwest.org> (accessed on April 12, 2012).
- Coalition for the Upper South Platte. *Watershed Issues*. Retrieved at <http://www.uppERSouthPlatte.org/watershed.html> (accessed on April 12, 2012).
- Economic Research Service. 2012. *State Fact Sheets*. Retrieved at <http://www.ers.usda.gov/StateFacts/> (accessed on May 10, 2012).

- Huntington, R. 2010. Conservation Calculus: Are Trade-Offs in Wyoming's Jonah Natural Gas Field a Boon for Wildlife? *High Country News*. August 20. Retrieved at <http://www.hcn.org/issues/42.15/conservation-calculus>.
- Johnson, K. M. 2012. *Rural Demographic Change in the New Century: Slower Growth, Increased Diversity*. Durham, NH: Carsey Institute. Retrieved at <http://www.carseyinstitute.unh.edu/publications/IB-Johnson-Rural-Demographic-Trends.pdf>.
- Kennedy, D. 2008. Can the West Lead Us to a Better Place? *Stanford Magazine*. May/June 2008. Retrieved at <http://www.stanfordalumni.org/news/magazine/2008/mayjun/features/west.html>.
- Land Trust Alliance. 2011. *2010 National Land Trust Census Report: A Look at Voluntary Land Conservation in America*. Retrieved at <http://www.landtrustalliance.org/land-trusts/land-trust-census/national-land-trust-census-2010/2010-final-report>.
- LaRubbio, N. 2012. Communities Help Pay for Ecosystem Services Provided by Forests. *High Country News*. February 20. Retrieved at <http://www.hcn.org/issues/44.3/communities-help-pay-for-ecosystem-services-provided-by-forests>.
- Matthews, M. 2003. Timber Companies Borrow a Tool from Environmentalists. *High Country News*. September 29. Retrieved at <http://www.hcn.org/issues/259/14271>.
- Montana Department of Commerce. 2010. *Wood Products Revolving Loan Fund: Report on Outcome Measures as Required in MCA 90-1-503*. Retrieved at <http://recovery.mt.gov/content/Commerce/WPIRS/docs/WoodProductsRLFStatusReport>.
- Montana Wood Products Association. *Montana Forests*. Retrieved at <http://www.montanaforests.com/forests/> (accessed on April 3, 2012).
- Montana.gov. *The Economy*. Retrieved at <http://mhs.mt.gov/education/studentguide/economy.asp> (accessed on April 10, 2012).
- Morgan, T., S. Hayes, C. Keegan, and C. Sorenson. 2012. *Montana's Forest Products Industry*. Missoula, MT: Bureau of Business and Economic Research. Retrieved at <http://www.bber.umt.edu/pubs/forest/Outlook/forestproducts2012.pdf>.
- National Park Service. 2012. New Report Details Yellowstone's Economic Impact. *Yellowstone National Park News Release*. February 28. Retrieved at <http://www.nps.gov/yell/parknews/12009.htm>.

- Nevada Mining Association. *Frequently Asked Questions*. Retrieved at <http://www.nevadamining.org/faq/index.php> (accessed on May 4, 2012).
- Property Rights Research. *State by State Government Land Ownership*. Retrieved at http://www.propertyrightsresearch.org/2004/articles6/state_by_state_government_land_o.htm (accessed on May 3, 2012).
- Rueth, H., J. Baron, and L. Joyce. 2002. Natural Resource Extraction: Past, Present, and Future. In *Rocky Mountain Futures*, edited by J. Baron, 85-112. Washington, DC: Island Press.
- Semmens, D.J., J.S. Briggs, and D.A. Martin. 2008. An Ecosystem Services Framework for Multidisciplinary Research in the Colorado River Headwaters. *The Third Interagency Conference on Research in the Watersheds, 8-11 September 2008, Estes Park, CO*. Retrieved at <http://pubs.usgs.gov/sir/2009/5049/pdf/Semmens.pdf>.
- Southwest Crown Collaborative. *The Southwestern Crown*. Retrieved at <http://www.swcrown.org/the-southwestern-crown/> (accessed on April 10, 2012).
- The Conservation Fund. *Mitigation Profile: A First for Wyoming*. Retrieved at http://www.conservationfund.org/mitigation_profile_offsetting_natural_gas_drilling_wyoming (accessed on May, 10, 2012).
- The Nature Conservancy. 2011a. *Energy by Design in Wyoming*. Retrieved at <http://www.nature.org/ourinitiatives/regions/northamerica/unitedstates/wyoming/howwework/energy-by-design-in-wyoming.xml> (accessed on May 3, 2012).
- The Nature Conservancy. 2011b. *People Restoring America's Forests: A Report on the Collaborative Forest Landscape Restoration Program*. Retrieved at <http://voice.nature.org/assets/cflrp-annual-report.pdf>.
- The Nature Conservancy. 2012. *Santa Fe Water Fund*. Retrieved at <http://www.nature.org/ourinitiatives/regions/northamerica/unitedstates/newmexico/howwework/santa-fe-water-fund.xml> (accessed on May 3, 2012).
- The Trust for Public Land. *Stimson Forestlands*. Retrieved at <http://www.tpl.org/what-we-do/where-we-work/montana/stimson-forestlands.html> (accessed on April 10, 2012).
- U.S. Bureau of Economic Analysis. 2011. *Gross Domestic Product by State*. Retrieved at <http://www.bea.gov/regional/index.htm> (accessed on April 3, 2012).
- U.S. Census Bureau. 2010. *Resident Population Data: 2010 Census*. Retrieved at <http://2010.census.gov/2010census/data/apportionment-dens-text.php>.

U.S. Census Bureau. 2011a. Overview of Race and Hispanic Origin: 2010. *2010 Census Briefs*. Retrieved at <http://www.census.gov/prod/cen2010/briefs/c2010br-02.pdf>.

U.S. Census Bureau. 2011b. Population Distribution and Change: 2000 to 2010. *2010 Census Briefs*. Retrieved at <http://www.census.gov/prod/cen2010/briefs/c2010br-01.pdf>.

U.S. Census Bureau. 2012. Educational Attainment in the United States: 2009. *Current Population Reports*. Retrieved at <http://www.census.gov/prod/2012pubs/p20-566.pdf>.

U.S. Forest Service. *Ecosystems and Climate Change*. Retrieved at <http://www.fs.fed.us/ccrc/topics/ecosystem-services/> (accessed on April 12, 2012).

Section 6: *The Pacific Northwest*

6.1: Background

Michael Parks

Yale School of Forestry & Environmental Studies

From towering mountains to ancient redwoods, massive salmon runs to expansive rangelands, the Pacific Northwest is a region defined by its grandeur. When early European-Americans arrived in the territory, its abundant natural resources seemed inexhaustible. Today, the Pacific Northwest is in the midst of a debate about how to protect nature while still sustaining rural communities. For the moment, the future of the rural Pacific Northwest is wide open, and organizations throughout the region are working hard to imagine new ways of thinking about the connections between commerce and environment, rural areas, and cities.

For the purposes of this paper, we define the Pacific Northwest as the region encompassing northern California, Oregon, Washington, and Idaho. The paper is organized into three parts. The first section provides context on the Pacific Northwest, and the second section delves into the details of five economic sectors where there are opportunities for connecting land conservation and rural development goals. Finally, the third section poses a few questions for discussion and suggests resources for further reading.

People

The Pacific Northwest is one of the fastest growing regions in the country. All four states in the Pacific Northwest saw dramatic population increases from 1980 to 2010, and the U.S. Census Bureau projects that all four states will continue to grow rapidly through 2030 (U.S. Census Bureau, 2004; U.S. Census Bureau, 2009). To take one representative example, Washington's population stood at just over 4 million in 1980, but is expected to exceed 8 million by 2030 (U.S. Census Bureau, 2004).

Growth in the Northwest has been fastest in urban areas. Nonetheless, rural populations in the region have been relatively stable. The most rural Pacific Northwest state is Idaho (34.4%), followed by Oregon (22.2%), Washington (12.25%), and California (2.2%) (Economic Research Service, 2012).³

Several factors are shaping the geography and face of population change in the Pacific Northwest. One of the most important factors determining population change in the region is access to high natural amenity values (Economic Research Service, 2012). The Pacific Northwest has some of the best natural amenities of any part of the country. Indeed, a 1999 paper on the connection between migration and natural amenities ranked the Pacific Northwest in the highest category for every natural amenity category (e.g.,

³ Data for California includes the entire state, meaning the proportion of the population living in rural areas in the Pacific Northwest portion of the state is likely higher than the overall figure suggests.

mild winters, water area, and topography) but one (amount of sun in winter) (McGranahan, 1999). The Pacific Northwest's natural amenity values have been one of the primary drivers behind the region's overall growth. Natural amenities also help to explain the changing face of the rural Pacific Northwest. A number of communities that once served as hubs for natural resource extraction economies are now being reinvented as centers of tourism (McGranahan, 1999; Johnson, 2012; Economic Research Service, 2012).

Another factor driving population change in the Pacific Northwest is spillover from urban areas. One implication of this fact is that rural areas more distant from urban areas may be experiencing slower population growth and more difficult—or at least different—economic circumstances than state averages suggest (Economic Research Service, 2012).

In terms of ethnic diversity, most rural counties in the Pacific Northwest are predominantly non-Hispanic white. However, a number of rural areas—almost all around urban centers—have Hispanic populations exceeding 10%. A smaller number of counties have American Indian populations exceeding 10%, or two or more minority groups with populations exceeding 10% (Johnson, 2012).

Economy

The overarching economic narrative of the rural Pacific Northwest involves a region struggling to supplement traditional extractive products industries (e.g., forestry and agriculture) with more diverse restoration, manufacturing, and service-oriented models of economic growth and prosperity.

Historically, forestry was one of the most important industries in the rural Pacific Northwest. However, this has changed a great deal in recent decades as harvests from public lands have declined due to environmental concerns, and the vagaries of market demands—most notably during the recent recession—have hurt demand for timber from both private and public lands. In Oregon, to take one example, overall harvests have fallen from nearly 9 million board feet per year to under 4 million board feet per year since the 1980's. Not surprisingly, the economic impact of this decline has been substantial. In Oregon's wet (i.e., Westside) forests, rural unemployment has increased from 6% to 11% since the 1980's. On the dry side of the state, unemployment in many rural areas has stood as high as 13-15% for much of the past decade, with poverty levels in the 11-18% range (Dabson, 2012).

Agriculture is another industry that has played a declining role in sustaining rural economies. Every Pacific Northwest state still has more than 20% of its land area under cultivation, but this number belies agriculture's contribution to rural communities (Economic Research Service, 2012). As in the forestry sector, the increasing efficiency of commodity crop production has steadily replaced labor with capital, meaning that fewer Pacific Northwest jobs are based on agriculture. Indeed, according to a typology produced by the U.S. Department of Agriculture, the number of Pacific Northwest counties that can be classified as farming dependent—defined as 20% of income or county jobs derived from agriculture—declined between 1989 and 2000 (Economic Research Service, 2012).

The Changing Forest Economy Paradigm in the Pacific Northwest

	Old Paradigm		New Paradigm
Natural	Policies allowed historically high levels of harvesting, promoted active fire suppression, excessive livestock grazing, removal of old growth over story, reduced water health, and increased risk of catastrophic fire and disease. Spotted owl as the indicator of rapidly declining forest health.	→	Policies supporting forest restoration, where forests are actively managed to restore forest health (including trees, water, habitats, and aesthetics), thin overstocked forestlands to reduce fire and disease risk, and ensure a predictable, sustainable supply of timber harvest.
Social	Major conflict between government agencies, timber industry, communities, and environmental groups, fought through legislation and courts. Growing powerlessness of communities.	→	Focus on community-based collaboration where forest owners, environmental groups, and industry create forest restoration plans, and avoid continuing strife and litigation. Higher levels of self-determination at the community level. Emphasis on community capacity building and leadership development.
Individual	Loss of employment opportunities as timber harvesting on federal lands severely restricted; families and communities under pressure from poverty and unemployment.	→	Shift in employment opportunities from industrial logging to complex forest restoration contracting. Long-term prospects improve as economic development supports diversification.
Financial	Loss of household income as jobs disappear; payments to local governments based on timber harvests decline; dependence upon Federal SRS payments to keep county services and schools; soon to go away.	→	Incomes stabilize and rise as more jobs created in restoration and local value-added economy. Decoupling of county finances from timber harvest levels, and new revenue approaches have to be found to support county and community services.
Built	Closing of mill and other infrastructure essential to a working wood products industry.	→	Development of new infrastructure including local-scale mills, biomass energy plants, and support infrastructure. Broadband critical.
Intellectual	Skills of large scale logging and milling operations no longer in demand,	→	Development of new skills and knowledge base for managing forests for economic, social, and ecological goals. Development of entrepreneurial ventures to seize market opportunities from forest restoration.
Political	As population declines in rural regions, loss of political representation in state capital; as policy and legal battles become widespread, more intervention from outside region, less control at local level	→	Growing appreciation of rural-urban interdependence driven by “buying local/regional” preferences, and enlightened leadership around “One Oregon” message. Greater local engagement and control in management of Federal lands.

Source: Rural Policy Research Institute

Examining the rural economic situation described above in the particular context of Oregon’s forestry sector, the authors of a recent report from the Rural Policy Research Institute (RUPRI) wrote that, “It is hard to argue that these data show other than modest progress on some indicators and a worsening in conditions on others” (Dabson, 2012).

That being said, the RUPRI authors, like many conservation leaders spoken to for this report, also see an opportunity to develop a new, restoration-based economy in the Pacific Northwest. The RUPRI report provides an excellent snapshot of current thinking about how the transition to a new paradigm might play out (see diagram on the preceding page).

Though the RUPRI report focuses on Oregon's forestry sector, a similar vision is emerging in other sectors and in other states. Strong connections between rural and urban areas are being advanced as a means for building demand for value-added agricultural products that allow farmers to profit from stewarding natural resources. Services provision and rural entrepreneurship are increasingly seen as viable means for capitalizing on immigration and tourism related to high natural amenity values.

For conservation organizations in the Pacific Northwest, the next few years will be a period of major consequence. The region has an opportunity to demonstrate a new kind of rural economic paradigm. As the complexity of recent collaborative endeavors in the region attests to, building this economy will demand a level of cooperation far exceeding that which was required by older, extractive paradigms.

Place

Compared to some other regions, the Pacific Northwest has conserved a relatively small amount of private land. Of the region's nearly 200 million acres, only about 500,000 acres have been conserved by private land conservation organizations; in comparison, some 5 million acres of private land are protected in the Northeast (Land Trust Alliance, 2011).

However, this is largely because the Pacific Northwest has so much public land. Indeed, a majority of both Oregon and Idaho's acreage is public (Economic Research Service, 2012). This large public land base—a common feature of many Western states—has played a critical role in defining the shape of land conservation across the Pacific Northwest. So too have forward thinking policy measures, and a robust environmental community, which have allowed the region to take the lead in the development of some newer tools.

Despite the fact that we have lumped together the Pacific Northwest as a single region, it is important to recognize that conservation groups across the Pacific Northwest face a number of different challenges. Near the region's metropolitan centers, conservation organizations focus on issues like protecting farmland or finding ways to compensate farmers for reducing nutrient runoff into waterways. In other areas, such as on the dry side of the Cascades, the grand challenge for conservation organizations is to negotiate the complex public-private partnerships necessary to develop mutually beneficial relationships between rural communities and public landscapes. In other places, conservation organizations are playing a key role in resolving conflicts between different kinds of resource users. In still other areas, conservation organizations are working to ensure that booming natural amenity tourism helps rather than harms natural resources.

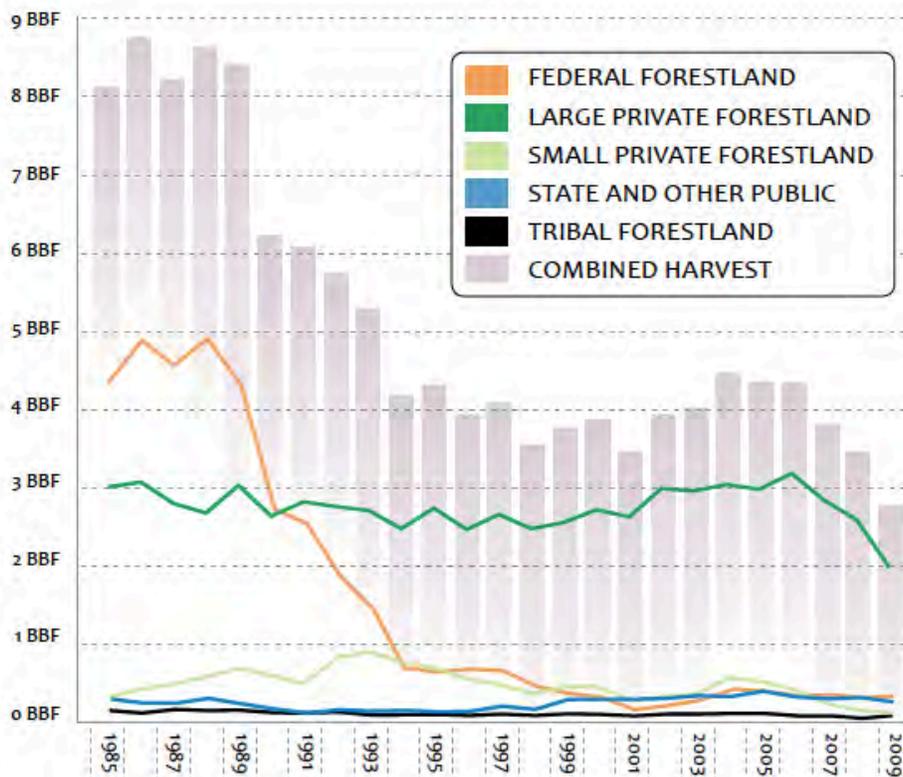
If there is one thing that conservation organizations increasingly have in common in the Pacific Northwest, it is that many are becoming more and more interested in finding ways to make conservation be about both nature and economy. The Pacific Northwest’s immense fertility presents unique opportunities to both use and restore natural resources. At the same time, a history rife with conflicts between environmentalists and resource users has led many in the Pacific Northwest to strive for compromise and common ground. The region is home to several impressive, landscape-scale collaborative endeavors, all of which focus on bringing together a wide variety of stakeholders.

How Can Conservation Organizations Help Support Rural Economies In The Pacific Northwest?

Forestry

Over the past three decades, the Pacific Northwest’s forestry sector has undergone a wrenching transition. During the 1980’s and 1990’s, a recession, followed by restrictions on the allowable timber harvest on federal properties—due in large part to environmental regulations—led to a decline in harvests on public lands. More recently, the housing crisis has impacted demand for timber, leading to a downturn in private land harvests throughout the Pacific Northwest. It should thus come as little surprise that many rural communities once dependent on the harvest and sale of timber today face some of the nation’s highest levels of unemployment and outmigration.

Declines in Oregon Timber Harvest



Source: Oregon Department of Forestry; Units: Billion Board Feet

Though it presents challenges, the recent history of the forestry sector in the Pacific Northwest also offers a historic opportunity for organizations seeking to forge new connections between conservation and rural economies. Tempers in the region still run high when it comes to questions about the proper management of public land, and the leftover tensions of the “timber war” years continue to thwart some of the most well-intentioned plans. Yet, there is also a growing movement to transcend old conflicts by creating new, restoration-based forest economies. Indeed, at the moment, the forestry sector in the Pacific Northwest might best be characterized by the old saying that “creativity loves constraint.” Facing a difficult situation, organizations with a wide variety of perspectives on forest issues have been forced to innovate and collaborate, and in doing so are blazing a path for the rest of the country.

On private land, conservation organizations have pioneered tools that allow landowners to maintain revenue while also protecting forests. The Pacific Forest Trust (PFT), for example, was one of the first land trusts in the nation to develop the concept of working conservation easements, which protect forests from development, but allow landowners to profit from timber harvested according to a pre-agreed management plan. The PFT has also made the demonstration of the possibilities that come with working forest easements a central goal, most notably at its Van Eck forest project site.

A Model Forest: Conservation and Timber Harvests in Co-Existence at the Van Eck Forest

The Pacific Forest Trust conserves and protects forests all over the Pacific Northwest. Yet, it has chosen one project—the 7,200-acre Van Eck Forest in northern California—to serve as a model for innovative approaches to reconciling tensions between timber production and conservation. Over the next 40 years, the property is expected to generate 95 million board feet of timber for sale in local markets. At the same time, however, a working forest conservation easement requires that standing timber volume increase by over 250% and that more than 70% of the property provide breeding and foraging habitat for the northern spotted owl and other forest wildlife.

Sales of carbon credits have already generated millions of dollars of additional revenue from the Van Eck Forest. Additionally, the Pacific Forest Trust helped the landowner—the Fred M. Van Eck Forest Foundation—enter into a Safe Harbor Agreement (SHA) for the northern spotted owl. The SHA rewards the Van Eck Foundation’s commitment to high-level sustainable forest management by protecting it from any changes in regulations should spotted owls take up residence on its property.

For more information see: <http://www.pacificforest.org/Van-Eck-Forest-California.html>.

On public lands, the challenge for conservation organizations has been more complex. A century of management for fire suppression has left many of the Pacific Northwest’s forests overgrown and prone to major fire and pest events. Restoration is desperately needed and many rural residents desperately need jobs. Yet, making this connection is easier said than done. In comparison with traditional practices, restoration forestry produces low-grade, small-diameter forest products for which there are currently limited

markets. Moreover, existing policies and funding are ill suited to creating the conditions necessary for large-scale, community-led restoration.

Among the organizations that are trying to bring about restoration-based economies are Wallowa Resources and Sustainable Northwest, both of Oregon. Both organizations have spun off for-profit arms aimed at driving capital to sustainable forest products. The Sustainable Northwest initiative, Sustainable Northwest Wood, Inc., focuses on connecting members of the organization's Healthy Forests, Healthy Communities network of wood products producers with green building and other consumer markets. Wallow Resources initially operated its for-profit arm, Community Solutions, Inc., as a start-up business focused on making products from small dimensional timber. Today, however, Community Solutions assists a range of community businesses with capital and technical support.

At the same time, federal policies are evolving, providing new ways for making the connection between public lands restoration and jobs. Since being implemented on a long-term basis in 2003, stewardship contracting has been recognized as a useful tool for helping communities benefit from public forest management. Traditional timber sale contracts last for a short time, and must be awarded to the highest bidder. Stewardship contracts, in contrast, can last for longer periods, and go to contractors that provide "best value." The best value contractor for a particular project might not be the highest bidder in monetary terms, but instead a contractor who can also provide auxiliary restoration services. This makes communities, which may be labor-rich but cash-poor, more competitive for long-term contracts (U.S. Forest Service, 2012). Additionally, the Pacific Northwest has benefited substantially from the creation of the Collaborative Forest Landscape Restoration Program (CFLRP), which provides funds for large-scale, long-term, collaborative, and community-based forest restoration projects. In February of 2012, the U.S. Department of Agriculture designated two Oregon projects as the largest CFLRP fund recipients to date. Combined, the projects will receive \$48,400,000 in federal dollars over the next 10 years (Sustainable Northwest, 2012).

A large amount of CFLRP funding went to Oregon in part because the state already boasts strong collaborative networks. Going forward, collaboration, often at the scale of landscapes, will undoubtedly be a central feature of Pacific Northwest forestry. After all, drawing new connections between sustainable forestry and rural economic development will involve creating entirely new markets and industries, as well as more flexible kinds of relationships between the non-profit, for-profit, and government sectors.

Tourism

Tourism, as well as immigration by people seeking outdoor recreation opportunities, is playing a major role in shaping rural economies in the Pacific Northwest. At the regional level, the Northwest's high natural amenity values have helped make it one of the fastest growing parts of the country. Within the region, city-dwellers increasingly see small towns and rural counties as places to escape to, either for a weekend or for life. Delving into a particular place helps to demonstrate how tourism and immigration can change the dynamics of rural communities, creating both challenges and opportunities for private land conservation organizations.

At one time, Bend, Oregon, was a hub for the timber industry, but between 2000 and 2007, the number of forestry and logging businesses in Deschutes County, where Bend is located, declined from 17 to 8 (Institute for a Sustainable Environment, 2010). Yet rather than shrinking during this period, Bend boomed. Between 2000 and 2010, population increased by 37%, a rate three times the state average (U.S. Census Bureau, 2010). Residents cite outdoor recreation and topography, scenic beauty, and open space as the top reasons they like living in Bend (The Trust for Public Land, 2010).

Meanwhile, studies of tourism have shown that “marketable trips”—defined as travel influenced by marketing and not comprised of those traveling for business or to visit friends and relatives—account for 55% of overnight trips to Oregon’s Central Region (Longwoods International, 2009). Some 1.9 million visitors travel to Deschutes National Forest each year, resulting in \$111 million in spending (Smith, 2011). To put it simply, within the span of a few years, Bend has transitioned from an economy based primarily on the timber industry to one based on tourism and a service economy.

What can conservation organizations do with information about the role tourism and natural amenities immigration are playing in the Pacific Northwest? One possibility is to find ways to directly leverage tourism dollars to pay for conservation measures that can improve natural amenity values. A good example of such an initiative is the National Forest Foundation’s partnership with the Sunriver Resort, in Deschutes National Forest.

Harnessing Tourism for Forest Restoration: The National Forest Foundation in Deschutes County, OR

Increased tourism may bring revenues for rural economies, but it can also be a headache, or worse, for conservationists seeking to protect and restore rural landscapes. This is particularly true on public lands, where the costs of tourism can exceed the ability of public agencies to capture monetary benefit from it.

In Deschutes County, the National Forest Foundation has found a simple way to use tourism to improve rather than degrade natural resources. In 2010, the Forest Foundation partnered with the Sunriver Resort, which is surrounded by the Deschutes National Forest, to provide resort guests with an “opt-in” \$1 room surcharge for donating towards forest restoration. In the two years since, the program has raised \$20,000, all of which the Forest Foundation has been able to further leverage and use for grants to local conservation and restoration programs.

For more information see: <http://www.nationalforests.org/blog/post/81/sunriver-resort-gives-back>.

Of course, tourism and immigration can be a double-edged sword. Conservation organizations have a role to play in ensuring that the phenomenon does not generate conflicts, and that its benefits actually create lasting prosperity for rural communities. Despite Bend’s booming population and economy, Deschutes County as a whole has fared poorly, particularly during the recent recession. In fact, according to the Associated Press’ Economic Stress Index, which ranks counties nationwide based on unemployment,

bankruptcy, and foreclosure data, Deschutes County and adjacent Crook County were as of May 2011 the two most “stressed counties” in Oregon (Associated Press, 2011).

A valuable, and as yet unanswered, question that conservation organizations could ask might be: How can we turn tourism into enduring, and equitable, prosperity? Or, how do we help tourism-based economies diversify to a degree necessary to insulate them from economic swings?

In a similar vein, new construction in the Wildland Urban Interface (WUI) is associated with sharply rising federal costs for wildland fire fighting. How might private land conservation organizations help to guide growth and tourism in ways that does not harm natural landscapes, or soak up funds that could otherwise be used for more positive purposes? How, for that matter, can conservation organizations help Bend and surrounding areas build and protect natural amenities over time, rather than seeing them degrade?

Some private land conservation organizations are already attempting to answer these questions. For example, The Trust for Public Land recently carried out an extensive, community-led “greenprinting” process for Deschutes County. The finished product of this process not only identifies places to protect, but also lays out a proactive vision for ecological restoration and the development of trails and other recreational amenities (The Trust for Public Land, 2010).

Agriculture

Agriculture continues to play a major role in the rural economies of the Pacific Northwest. However, as populations in the region have grown, land prices have increased, making it difficult for farmers and ranchers to expand their lands when necessary, creating barriers to entry for new farmers and ranchers, and leading to the loss of farm and rangeland to development. In Washington, for instance, land prices have increased by 69% since the year 2000, and the state loses roughly 23,000 acres of agricultural land per year (PCC Farmland Trust, n.d.).

As with other sectors in the rural Pacific Northwest, the challenge for conservationists working in the agricultural sector is to move beyond old tensions to form new alliances and paradigms. The simplest approach entails using agricultural conservation easements to simultaneously achieve conservation goals, prevent urban sprawl, and sustain rural economies. The Puget Consumers Coop Farmland Trust, for instance, was founded in connection with the Puget Consumer Coop—the largest consumer-owned retail-food cooperative in the U.S.—and has since placed organic agriculture easements on several development-threatened farms throughout Washington. The organic agriculture easements provide a source of cash for farmers, while also ensuring that farmland is managed in accordance to a strict plan.

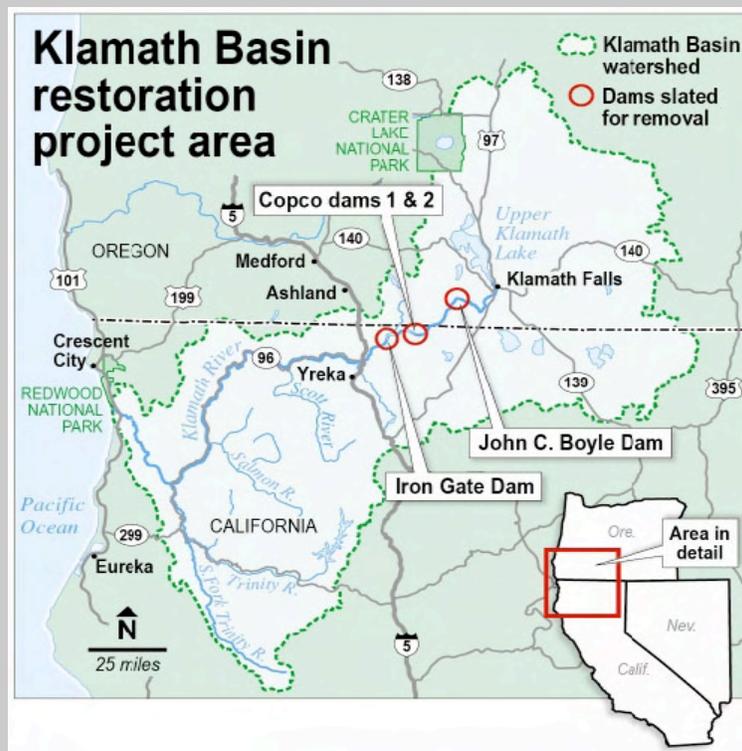
Another zone of opportunity is connecting urban centers with nearby rural food producers. Ecotrust, in Oregon, maintains several initiatives aimed at building locally based food networks. In the Puget Sound region, which has lost 60% of its farmland since 1950, the American Farmland Trust has been examining a 100-mile radius foodshed,

posing the question “Can the Puget Sound Feed Itself?” In both of these examples, conservation organizations are striving to forge alliances with rural communities by serving as a liaison between city and farm. Conservation organizations can also serve as an intermediary between producers and policy programs designed to benefit small-scale agriculturalists.

Many of the Pacific Northwest’s agricultural areas are far from cities, and present entirely different challenges and opportunities than those near cities. In these truly rural portions of the Pacific Northwest, promising work centers on collaboration that helps to resolve conflicts surrounding issues such as endangered species or large carnivore protection. The Lava Lake Lamb Company in Idaho has worked with The Nature Conservancy, Defenders of Wildlife, the Idaho Conservation Fund, The Conservation Fund, and the Wood River Land Trust to advance conservation initiatives on 900,000 acres of public and private land. Among other endeavors, the Company and its partners have conducted extensive habitat restoration, and studies related to livestock-carnivore conflicts. The Lava Lake Lamb Company has also put a portion of its land into conservation easements.

Another example of collaboration is underway in the Klamath Basin, which spans California and Oregon. In a region once marked by intense conflict, an ambitious effort is bringing diverse groups to the table to try to reconcile differing values surrounding the proper use of water resources.

Turning Conflict into Opportunity: Sustainable Northwest and the Klamath Basin Initiative



Spanning California and Oregon, the Switzerland-sized Klamath River Basin has for years been known as the setting for intense conflicts over water resources. Indeed, in

2001, more than 20,000 people protested in Klamath Falls, a town with a population of only about 21,000, after the federal government shut off area water for irrigation in favor of water for endangered fish species. Recently, however, the Klamath River Basin has gained a different kind of reputation. In 2010, more than thirty stakeholder groups signed two agreements, which could make the Klamath River Basin a model lesson in how to resolve, rather than perpetuate, conflict over natural resources.

One agreement puts forth a plan for removing four hydroelectric dams in the Klamath River Basin. The other specifies an approach for sharing water for farming and ecological purposes. Combined, the agreements have formed the basis for a Congressional bill that would provide approval and funding for dam removal, economic development, and ecological restoration initiatives in the region. As of this writing, it remains unclear whether the bill will pass. Nonetheless, Interior Secretary Ken Salazar has described the agreement as something that should be “emulated across the country and across the world.”

For more information see: <http://www.sustainablenorthwest.org/resources/klamath-basin>.

Image Source: Capital Press

Energy

Relative to the rest of the country, the Pacific Northwest has been fast to embrace various forms of renewable energy. In every Pacific Northwest state, large-scale hydroelectric plants already contribute either a large percentage or most of the total electricity generation. Biomass, solar, and wind make up a much smaller portion of the energy mix—from under 5% in Oregon, Washington, and Idaho, to over 10% in California—but are growing fast (The Pew Charitable Trusts, 2009). As of 2007, California and Washington had the first and fourth largest clean energy sectors in the country; Oregon had the largest number of clean energy jobs as a percentage of total state employment; and clean energy jobs in Idaho were growing much faster than jobs in any other sector (The Pew Charitable Trusts, 2009).

For organizations seeking to link conservation and rural economies, the Pacific Northwest’s leadership on renewable energy presents major opportunities. Renewable energy can serve as an additional source of revenue for rural communities, and dovetails with both global (e.g., climate change) and small-scale (e.g., biomass produced from forest restoration) environment and conservation goals.

At the same time, however, renewable energy development can also conflict with conservation goals such as the preservation of habitat or farmland. In the coming years, it will be crucial for conservation organizations to take a proactive stance on renewable energy, at once acknowledging its necessity for rural economic health and also helping to shape its development so as to safeguard natural resources.

Of all the forms of renewable energy, energy production from biomass holds perhaps the greatest potential for a rural economic and conservation “win-win” in the Pacific Northwest. Agriculture and forest products manufacturing businesses currently produce underutilized biomass byproducts. Meanwhile, having undergone decades of fire

suppression, many of the forests of the Pacific Northwest are in serious need of thinning or other fuel removal treatments. Capacity to carry out this work is currently limited; in Oregon, for instance, the U.S. Forest Service has estimated that the amount of work required to restore public forests to healthy conditions exceeds by 3.3 to 4.6 times the actual rate of restoration (MacDonald, 2006). It should therefore be possible to create new economies around energy produced from biomass while having few deleterious—and in many cases, positive—effects on regional landscapes. This possibility has made biomass energy production a major focus of investment and interest in the Pacific Northwest.

Biomass energy production can take on a number of forms. In the Pacific Northwest, broad categories of growth areas include: biomass usage for large-scale electricity production; biomass for community-level multiple purpose plants; biomass for institutional or residential heat; and biomass for densified fuel production (e.g., wood pellets). Slightly further on the horizon is the possibility of using biomass to produce liquid fuels. Recently, the U.S. Department of Agriculture announced \$80 million in grants that will go to the University of Washington and Washington State University to pursue basic research and development related to transforming trees into fuels for both cars and jets (Long, 2012). The trees would be grown on plantations, however, rather than harvested from standing forests.

To date, limited collaboration, capital, and entrepreneurial capacity have been among the primary barriers to successful efforts to create new rural economies around biomass for energy production in the Pacific Northwest. On the supply side, securing long-term sources of forest products for businesses to utilize often require complex contracts involving many parties, large up-front investments, and large-scale ecological assessments – particularly on public lands. On the demand side, many products produced through restoration forestry only become competitive when multiple sectors or industries collaborate (Institute for a Sustainable Environment, 2010).

Conservation organizations can play a key role in helping to overcome these barriers. In particular, there is a major need for organizations that can convene different stakeholders, create consensus around long-term, large-scale planning, and develop the capacity rural areas need to access capital and launch new businesses.

Environmental Markets

The Pacific Northwest is leading the nation in the development of environmental markets. In California, the passage of a cap-and-trade bill for CO₂ emissions may eventually present expanded opportunities for using carbon markets to derive revenue from land conservation. In all four Pacific Northwest states, pioneering work in multi-credit markets and wetland and stream banking has led to previously unimaginable partnerships and approaches to conservation.

The Pacific Northwest is home to a number of active markets related to improving the quality and quantity of water resources. Broadly speaking, these water-related markets can be broken down into wetland and stream banks, which provide an avenue for developers to mitigate the damage they do to wetlands and streams, and water quality

trading schemes (WQTs), which provide an avenue by which an organization or individual polluting a waterway can offset that impact. At the broadest level, the Clean Water Act stands behind both kinds of water-related markets – it is because companies and individuals must comply with the Clean Water Act that they are obliged to pay for mitigation.

Though all four Pacific Northwest states have active banks, California leads the way on wetland and stream mitigation banking (Madsen, 2011). One of the more prominent organizations carrying out wetland and stream mitigation banking work in the Pacific Northwest is Wildlands, Inc., which established the first wetlands mitigation bank West of the Mississippi in California in 1994.

On the WQT front, Oregon leads the Pacific Northwest states, thanks in large part to the example set by the Willamette Partnership. Moreover, there is a strong interest in using the Willamette Partnership model as the basis for new programs in more rural parts of Oregon. For example, the city of Medford will soon start paying farmers to plant shade species in the rural Rogue River Valley.

Proving Environmental Credit Trading Systems at Scale: The Willamette Partnership

Originally launched as a regional watershed planning coalition, the Willamette Partnership is today at the vanguard of water quality trading (WQT) markets. In the Partnership's most visible deal to date, a water resource agency, Clean Water Services (CWS), avoided some \$150 million in costs that would have been necessary to come into compliance with state water temperature laws by paying farmers to restore 35 miles of the Tualatin River, in northwest Oregon. By 2011, CWS had expanded the program to 50 miles of river, and paid for the planting of more than 4 million native shade providing plants.

In addition to WQT markets, the Willamette Partnership has helped to establish the Pacific Northwest as a hub for the development of multi-credit markets. Scalable “credit stacking” schemes, in which a single piece of land generates many different kinds of tradable credits, have long been an elusive goal for conservationists. In August of 2010, the Willamette Partnership cleared one hurdle when 25 stakeholders signed onto a General Crediting Protocol that provides a standard process for landowners to follow in generating four ecosystem credit types: upland prairie habitat; wetlands; water quality/temperature; and salmon habitat. At present, the organization is prototyping a multi-credit marketplace in the Willamette Basin. Success would mean providing rural landowners with a means to generate revenue from different types of services provided by their land. Crucially, the Willamette Partnership is also striving to create systems for credits that increase or decrease according to the functional ecosystem services value of lands, as opposed to older credit systems that are based primarily on raw acreage.

For more information see: <http://willamettepartnership.org/>.

Another area in which the Pacific Northwest leads is conservation banking. California was the first state to pass legislation (i.e., California Endangered Species Act)

establishing a framework for conservation banking and it remains a national leader in the area. Conservation banks function in a manner similar to wetland or stream banks. The difference is that while a wetland or stream bank generates tradable credits for a certain broad type of ecosystem, conservation banks generate credits for habitat for particular species. As of 2009, California had 82 active or sold out conservation banks, compared with a maximum of 3 in any other state (see map below). Among the habitats approved for conservation bank credits in 2012 were those for vernal pool fairy shrimps, valley elderberry longhorn beetles, burrowing owls, Swainson’s hawks, and giant garter snakes. Other states in the Pacific Northwest with burgeoning conservation market programs include Oregon and Washington (Madsen, 2011).

Active and Sold Out Conservation Banks by State, 2011



Source: Ecosystem Marketplace

Carbon markets are the least developed type of environmental market in the Pacific Northwest. Nevertheless, the Pacific Northwest leads the nation in the field, and will likely serve as a model for other regions in the future. California is the only state to have passed a cap-and-trade bill (i.e., AB 32) featuring mandatory compliance emissions reductions. Meanwhile, a number of conservation organizations working in the Pacific Northwest are developing protocols that will allow landowners who implement sustainable forestry projects to derive revenue from emerging voluntary and compliance carbon markets.

Giving Forests the Credit They Deserve: The Climate Action Reserve Forest Project Protocol

Forest restoration, afforestation, and reforestation initiatives can all help to combat climate change by increasing the amount of carbon stored in the world's forests. As such, both compliance and voluntary carbon markets hold major potential for incentivizing landowners to pursue sustainable forestry initiatives. One key tool that is necessary to realize this potential is an effective and widely recognized forest carbon protocol that allows different parties to measure, verify, and trade the carbon sequestration gains derived from sustainable forest management.

In the Pacific Northwest, the Pacific Forest Trust and Ecotrust have played an integral role in developing the pioneering Climate Action Reserve (CAR) Forest Project Protocol. The CAR protocol is already taking on a role as a platform for allowing California companies to meet new carbon emissions compliance regulations through investments in forests. At the same time, the Pacific Forest Trust is working with a number of partners to expand the protocol across the country, in part by developing voluntary carbon offset projects that meet the standard in states such as Virginia, Tennessee, Georgia, and Maine.

For more information see:

The Pacific Forest Trust: <http://www.pacificforest.org/Working-Forests-Winning-Climate.html>.

The Climate Action Reserve:

<http://www.climateactionreserve.org/how/protocols/forest/dev/>.

Discussion Questions

- What other economic sectors—outside of the ones addressed in this paper—present opportunities for private land conservation organizations to support rural economies in the Pacific Northwest?
- How can conservation organizations help to create the enduring collaborations necessary to resolve controversies surrounding public lands?
- How can conservation organizations help rural communities build the capacity necessary to reap economic benefits from restoration activities on public lands?
- How can environmental markets be scaled up to become a more useful conservation tool for rural landscapes?

Organizations Doing Interesting Work

Ecosystem Workforce Program is a University of Oregon-based research institute focused on supporting the development of a high-skill, high-wage ecosystem management and restoration economy in the Pacific Northwest. See www.ewp.uoregon.edu.

Ecotrust aims to foster a natural model of development that creates more resilient communities, economies, and ecosystems in the Pacific Northwest and around the world. See www.ecotrust.org.

Farmworker Housing Development Corporation is dedicated to developing affordable housing for low-income farmworkers in the mid-Willamette Valley of Oregon. See www.fhdc.org.

Institute for Sustainable Solutions advances sustainability research, education, and outreach at Portland State University. See www.pdx.edu/sustainability/institute-for-sustainable-solutions-at-portland-state-university.

Lava Lake Lamb Company is a working ranch that collaborates with numerous partners to actively promote conservation and increase understanding of the wildlife and ecosystems of Idaho's Pioneer Mountain-Craters of the Moon Region. See www.lavalakelamb.com.

National Forest Foundation brings people together to restore and enhance America's National Forests and Grasslands. Deschutes National Forest in Oregon is one of the Forest Foundation's designated "Treasured Landscapes." See www.nationalforests.org.

Northeast Washington Forestry Coalition is an alliance of timber companies, conservationists, business owners, and forestry professionals working together to demonstrate the full potential of restoration forestry to enhance forest health, public safety, and community economic vitality. See www.newforestrycoalition.org.

Oregon Solutions brings together public, private, and non-profit stakeholders to leverage resources and integrate programs for sustainable community projects. See www.orsolutions.org.

Pacific Forest Trust works with forest owners, communities and an array of partners to advance innovative, incentive-based strategies to safeguard diverse forests across the Pacific Northwest. See www.pacificforest.org.

PCC Farmland Trust secures, preserves and stewards threatened farmland in the Pacific Northwest, ensuring that generations of local farmers productively farm using sustainable, organic growing methods. See www.pccfarmlandtrust.org.

Sustainable Northwest is dedicated to a vision in which resilient local economies provide quality natural resource jobs that benefit human and natural communities. Areas of focus include creating collaborative, community-based solutions; fostering business models and markets; facilitating networks that connect people and ideas; and advocating for public policy. See www.sustainablenorthwest.org.

The Trust for Public Land conserves land for people to enjoy as parks, gardens, and other natural places, ensuring livable communities for generations to come. See www.tpl.org.

Wallowa Resources develops, promotes, and implements innovative solutions to help the people of Wallowa County and the Intermountain West sustain and improve their communities and their lands. See www.wallowaresources.org.

Wildlands, Inc. establishes and manages wetlands and wildlife habitat through mitigation banking and public and private restoration projects. See www.wildlandsinc.com.

Willamette Partnership is a diverse coalition working to shift the way people think about, value, manage, and regulate the environment. The Partnership is a noted leader in the area of environmental markets. See <http://willamettepartnership.org>.

Useful Readings/Works Cited

Associated Press. 2011. *AP Economic Stress Index: Measuring Financial Strain Across the U.S.* Retrieved at http://hosted.ap.org/specials/interactives/national/stress_index/.

Dabson, B. 2012. *Transitioning to a Restoration Economy: A Case Study of Oregon's Forestry Sector*. Columbia, MO: Rural Policy Research Institute Rural Futures Lab. Retrieved at http://ruralfutureslab.org/docs/OregonForestry_Transitioning_to_a_Restoration_Economy_CaseStudy.pdf.

Davis, E.J. and C. Moseley. 2010. *The State of the Dry Forest Zone and its Communities*. Eugene, OR: University of Oregon Institute for a Sustainable Environment Ecosystem Workforce Program. Retrieved at <https://scholarsbank.uoregon.edu/xmlui/handle/1794/10802?show=full>.

Economic Research Service. 2004. *Measuring Rurality: 2004 County Typology Codes*. Retrieved at <http://www.ers.usda.gov/Briefing/Rurality/Typology/>.

Economic Research Service. 2011. *Rural America at a Glance, 2011 Edition*. Retrieved at <http://www.ers.usda.gov/Publications/EIB85/EIB85.pdf>.

Economic Research Service. 2012. *State Fact Sheets*. Retrieved at <http://www.ers.usda.gov/StateFacts/>.

Institute for a Sustainable Environment, 2010. *The State of the Dry Forest Zone and its Communities*. Eugene, OR: University of Oregon. Retrieved at <http://www.scholarsbank.uoregon.edu/xmlui/handle/1794/10802>

Johnson, K. M. 2012. *Rural Demographic Change in the New Century: Slower Growth, Increased Diversity*. Durham, NH: Carsey Institute. Retrieved at

<http://www.carseyinstitute.unh.edu/publications/IB-Johnson-Rural-Demographic-Trends.pdf>.

Land Trust Alliance. 2011. *2010 National Land Trust Census Report: A Look at Voluntary Land Conservation in America*. Retrieved at <http://www.landtrustalliance.org/land-trusts/land-trust-census/national-land-trust-census-2010/2010-final-report>.

Long, K. 2011. UW, WS to Get \$80 M to Develop Biofuels. *Seattle Times*. September 28. Retrieved at: http://seattletimes.nwsourc.com/html/localnews/2016337161_biofuels28m.html.

Longwoods International. 2009. *Oregon Central Region Report*. Retrieved at http://industry.traveloregon.com/upload/otc/departments/consumer/research/regionalreportsjan20/centralregionalreport_jan20.pdf.

Madsen, B. and N. Carroll. 2011. *State of Biodiversity Markets*. Ecosystem Marketplace. Retrieved at http://www.ecosystemmarketplace.com/pages/dynamic/resources.library.page.php?page_id=8393§ion=our_publications&eod=1

Macdonald, C. and S. Buttrick. 2006. *The Condition of Oregon's Forests and Woodlands: Implications for the Effective Conservation of Biodiversity*. Retrieved at: <http://www.conservationgateway.org/file/condition-oregons-forests-and-woodlands-implications-effective-conservation-biodiversity>.

McGranahan, D. 1999. *Natural Amenities Drive Rural Population Change*. Washington, DC: U.S. Department of Agriculture. Retrieved at <http://www.ers.usda.gov/Publications/AER781/>.

PCC Farmland Trust. *Why This Matters*. Retrieved at <http://www.pccfarmlandtrust.org/about-us/why-this-matters/>. (accessed on April 24, 2012).

Smith, N. and R. Deal. 2011. *Ecosystem Services as a Framework for Forest Stewardship: Deschutes National Forest Overview*. Portland, OR: U.S. Forest Service. Retrieved at http://www.ecosystemcommons.org/sites/default/files/ecosystem_services_as_a_framework_for_forest_stewardship_deschutes_national_forest_overview.pdf.

Sustainable Northwest. 2012. *USDA Awards \$6 million to Rural Oregon Counties*. Retrieved at <http://www.sustainablenorthwest.org/media-room/press-releases/usda-awards-6-million-to-rural-oregon-communities>.

The Pew Charitable Trusts. 2009. *Clean Energy Economy Factsheets*. Retrieved at http://www.pewtrusts.org/news_room_detail.aspx?id=53254.

- The Trust for Public Land. 2010. *Oregon's Playground Prepares for the Future: A Greenprint for Deschutes County*. Retrieved at http://cloud.tpl.org/pubs/local_or_deschutes%20greenprint.pdf.
- U.S. Bureau of Economic Analysis. 2011. *Economic Recovery Widespread Across States in 2010*. Retrieved at http://www.bea.gov/newsreleases/regional/gdp_state/gsp_newsrelease.htm.
- U.S. Census Bureau. 2004. *Interim U.S. Population Projections by Age and Sex: 2004-2030*. Retrieved at <http://www.census.gov/population/www/projections/projectionsagesex.html>.
- U.S. Census Bureau. 2009. Population Dynamics of the Great Plains. *Current Population Reports*. Retrieved at <http://www.census.gov/prod/2009pubs/p25-1137.pdf>.
- U.S. Census Bureau. 2010. *State and County QuickFacts*. Retrieved at <http://quickfacts.census.gov/qfd/index.html>.
- U.S. Forest Service. 2012. *Stewardship Contracting: Basic Stewardship Contracting Concepts*. Retrieved at <http://quickfacts.census.gov/qfd/index.html>.